

PROCEEDINGS OF THE FAO/WHO INTERNATIONAL SYMPOSIUM ON SUSTAINABLE FOOD SYSTEMS FOR HEALTHY DIETS AND IMPROVED NUTRITION

1-2 DECEMBER, 2016
FAO HEADQUARTERS, ROME, ITALY

UNITED NATIONS DECADE OF
ACTION ON NUTRITION



2016-2025



Food and Agriculture
Organization of the
United Nations



World Health
Organization





PROCEEDINGS OF THE FAO/WHO INTERNATIONAL SYMPOSIUM ON SUSTAINABLE FOOD SYSTEMS FOR HEALTHY DIETS AND IMPROVED NUTRITION

1–2 DECEMBER, 2016
FAO HEADQUARTERS, ROME, ITALY

The Food and Agriculture Organization of the United Nations
and the World Health Organization
Rome, 2018

Preferred citation: FAO/WHO. 2018. Proceedings of the FAO/WHO international symposium on sustainable food systems for healthy diets and improved nutrition. Rome.

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture organization of the United Nations (FAO) or the World Health Organization (WHO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may be not full agreement. The mention of specific companies or products of manufactures, whether or not these have been patented, does not imply that these are or have been endorsed or recommended by FAO or WHO in preference to others of a similar nature that are not mentioned. Errors and omissions expected, the names of proprietary products are distinguished by initial capital letters. All reasonable precautions have been taken by FAO and WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The reasonability for the interpretation and use of the material lies with the reader. In no event shall FAO and WHO be liable for damages arising its use.

The views expressed herein are those of the authors and do not necessarily represent those of FAO or WHO.

ISBN 978-92-5-130474-7 (FAO)

ISBN 978-92-4-151378-4 (WHO)

© FAO and WHO, 2018

FAO and WHO encourage the use, reproduction and dissemination of material in this information product. Except where otherwise indicated, material may be copied, downloaded and printed for private study, research and teaching purposes, provided that appropriate acknowledgement of FAO and WHO as the source and copyright holder is given and that FAO and WHO's endorsement of users' views, products or services is not implied in any way.

All requests for translation and adaptation rights, and for resale and other commercial use rights should be made via www.fao.org/contact-us/licence-request or addressed to copyright@fao.org

FAO information products are available on the FAO website (www.fao.org/publications) and can be purchased through publications-sales@fao.org

Cover pictures:

© FAO/Sergey Kozmin

© FAO/Giulio Napolitano

© FAO/Tang Hongwen

© FAO/FAO El Salvador

CONTENTS

FOREWORD	vii
ACKNOWLEDGEMENTS	viii
ABBREVIATIONS AND ACRONYMS	x
EXECUTIVE SUMMARY	
Background	1
Introduction	1
SUBTHEME 1: <i>Supply-side measures for diversifying food production and for increasing availability and affordability of nutritious foods for healthy diets</i>	2
SUBTHEME 2: <i>Demand-side policies and measures for increasing access and empowering consumers to choose healthy diets</i>	3
SUBTHEME 3: <i>Measures to strengthen accountability, resilience and equity within food systems</i>	4
SYMPOSIUM OPENING SESSION	
Opening statement summaries	6
Keynote address: <i>Sustainable food systems for healthy diets and improved nutrition through implementing the ICN2 Framework for Action</i>	8
Verbatim transcript	8
SUBTHEME 1: SUPPLY-SIDE MEASURES FOR DIVERSIFYING FOOD PRODUCTION AND FOR INCREASING AVAILABILITY AND AFFORDABILITY OF NUTRITIOUS FOODS FOR HEALTHY DIETS	
Introduction and key messages	
Session 1.1: <i>Sustainable agricultural production and diversification for healthy diets</i>	15
Overview	16
Case studies	17
Highlights from audience discussion	20
Session 1.2: <i>Maintaining and improving nutritional value and food safety along the value chain</i>	22
Overview	22
Case studies	24
Highlights from audience discussion	26
Session 1.3: <i>Leveraging market opportunities for promoting healthy diets</i>	28
Overview	28
Case studies	30
Highlights from audience discussion	34

SUBTHEME 2: DEMAND-SIDE POLICIES AND MEASURES FOR INCREASING ACCESS AND EMPOWERING CONSUMERS TO CHOOSE HEALTHY DIETS	36
Introduction and key messages	
<i>Session 2.1: Regulations, awareness and advocacy for better-informed food choices</i>	39
Overview	39
Case studies	42
Highlights from audience discussion	49
<i>Session 2.2: Information and education for healthy food behaviours</i>	50
Overview	50
Case studies	53
Highlights from audience discussion	57
<i>Session 2.3: Increasing access to healthy diets through social protection and income-generation strategies</i>	58
Overview	58
Case studies	60
Highlights from audience discussion	66
SUBTHEME 3: MEASURES TO STRENGTHEN ACCOUNTABILITY, RESILIENCE AND EQUITY WITHIN FOOD SYSTEMS	67
Introduction and key messages	
<i>Session 3.1: Designing, implementing and monitoring evidence-based policies effectively with multiple actors</i>	70
Overview	70
Case studies	73
Highlights from audience discussion	78
<i>Session 3.2: Enhancing food-system resilience in areas affected by climate change and other crises</i>	79
Overview	79
Case studies	80
Highlights from audience discussion	84
<i>Session 3.3: Empowering women as key drivers of food-system change</i>	86
Overview	86
Case studies	88
Highlights from audience discussion	92

ICN2 NEXT STEPS: WORK PROGRAMME OF THE UNITED NATIONS DECADE OF ACTION ON NUTRITION IN THE ERA OF THE SUSTAINABLE DEVELOPMENT GOALS	
Opening	94
Plenary discussion highlights	95
STUDENTS' SESSION	99
SPECIAL EVENTS	
Spotlight on engaging with cooks for healthy diets	101
What I eat: around the world in 80 diets	102
Outcomes of the Second WHO Global Nutrition Policy Review ...	102
SYMPOSIUM CLOSING SESSION	
Closing remarks by José Graziano da Silva, Director-General, Food and Agriculture Organization of the United Nations (FAO)	104
Closing remarks by Oleg Chestnov, on behalf of Margaret Chan, WHO Director-General	104
Symposium close	105
REFERENCES	106
APPENDICES	111
ANNEXES	161



FOREWORD

Despite reductions in stunting and other forms of undernutrition, net prevalence of malnutrition, which includes overweight, obesity and diet-related diseases, is on the rise. Today, nearly one in three people suffers from at least one form of malnutrition. By 2025, projections indicate the number will be one in two, unless current trends are halted or reversed.

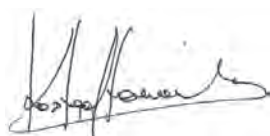
Although low-quality diets are the common denominator across all forms of malnutrition, nutritious foods that constitute a healthy diet are not available or affordable in many of today's food systems. Additionally, the agricultural production practices that comprise a central part of current food systems are major contributors to greenhouse gas emissions and consequent climate change.

These challenges were central to the agenda of the Second International Conference on Nutrition (ICN2), with both conference outcome documents – *The Rome Declaration on Nutrition and The ICN2 Framework for Action* – highlighting the need for food-system reform to improve dietary outcomes and environmental sustainability.

Against this background, the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) convened an international symposium on the theme of 'Sustainable Food Systems for Healthy Diets and Improved Nutrition' at FAO headquarters, Rome, in December 2016. The symposium aimed to increase awareness of today's urgent food and nutrition challenges, and to create a forum to discuss strategies for regulation and reform. Nine parallel sessions comprising expert presentations and country case studies were complemented by a session on the United Nations Decade of Action on Nutrition, a student's session, plenary and special events.

Over 600 people attended the symposium, including delegates from 90 UN Member States representatives of intergovernmental organizations, private-sector entities, civil society organizations, academia/research organizations and producer organizations/cooperatives.

These proceedings include summaries of the parallel sessions, summaries and transcriptions from the plenary and Decade of Action sessions and more. I hope they will contribute to better-informed, accelerated action at national, regional and global levels on the urgent need to improve the human and environmental health of food systems worldwide.



Kostas Stamoulis

Assistant Director-General

Economic and Social Development Department

Food and Agriculture Organization of the United Nations

ACKNOWLEDGEMENTS

The organization of this symposium would not have been possible without the guidance, support and assistance of many people.

First and foremost, we thank our Director-General, José Graziano da Silva, for foresight in suggesting this symposium. We wish to express our sincere thanks and gratitude to the International Advisory Panel for guiding the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) in the planning. We are extremely grateful to Kostas Stamoulis (FAO Assistant Director-General, Economic and Social Development Department) for chairing the Panel and to the other panel members for their substantive contributions. Panel members included: Andrea Pezzana (University of Turin and San Giovanni Bosco Hospital, Italy), Boyd Swinburn (University of Auckland, New Zealand, and Deakin University, Australia), Carlos Augusto Monteiro (University of São Paulo, Brazil), Dmitri Borisovich Nikity (Russian Institute of Nutrition, Russian Federation), Florence Lasbennes (Scaling Up Nutrition Movement, Switzerland), Jessica Fanzo (Johns Hopkins University, United States), Julia Tagwireyi (independent consultant, Zimbabwe), Majid Hajifaraji (Shahid Beheshti University, Islamic Republic of Iran), Randy Duckworth (Global Pulse Confederation, United States), Ren Wang (FAO Assistant Director-General, Agriculture Department), Shadi Hamadeh (American University of Beirut, Lebanon), Stefano Prato (Society for International Development, Italy), and Wenhua Zhao (Chinese Center for Disease Control and Prevention, China).

The Technical Task Team (TTT), working in collaboration with the International Advisory Panel, advised on themes, topics and overall structure of the symposium. We would like to gratefully acknowledge the support and assistance of TTT members: Catherine LeClercq (Nutrition and Food Systems Division [ESN], FAO), Chizuru Nishida (Department of Nutrition for Health and Development [NHD], WHO), Coumba Sow (Office of the Director-General, FAO), Fatiha Terki (World Food Programme), France Begin (United Nations Children's Fund [UNICEF]), Gina Kennedy (Bioversity), James Garrett (International Food Policy Research Institute), Karel Callens (Strategic Programme for Food Security and nutrition, FAO), Marzella Wüstefeld (NHD, WHO), Rosa Rolle (ESN, FAO), Shelly Sundberg (Bill & Melinda Gates Foundation), Steven Jafee (World Bank), Stineke Oenema (United Nations System Standing Committee on Nutrition), Terri Ballard (Statistics Division, FAO) and Wafaa El Khoury (International Fund for Agricultural Development).

We acknowledge the leadership of Kostas Stamoulis, Anna Lartey (Director of the Nutrition and Food Systems Division [ESN], FAO) and Francesco Branca (Director of NHD, WHO). Their full engagement and unequivocal support throughout the planning process were fundamental to the symposium's success.

We give a very special note of thanks to the Symposium Chair, H.E. Beatrice Lorenzin (Minister of Health, Italy), and to the symposium Vice-Chair, Professor Patrick Webb (Tufts University) who delivered an inspiring keynote address and provided guidance throughout the symposium. We also acknowledge with thanks the excellent work of Subtheme Chairs Eileen Kennedy (Tufts University), Carlos Augusto Monteiro (School of Public Health, University of Sao Paulo) and Jessica Fanzo (School of Public Health, Johns Hopkins University). They guided the presenters, moderated the discussions and distilled key messages of each parallel session, with the assistance of Gerda Verburg (Scaling Up Nutrition Movement, Switzerland), Andrea Pezzana and Maria Neira (WHO).

Subtheme Chairs and presenters were guided and supported by the ESN staff Fatima Hachem and Florence Tartanac for Subtheme 1, Ana Islas and Rosa Rolle for Subtheme 2, and Charlotte Dufour and Ramani Wijesinha Bettoni for Subtheme 3. Our deep appreciation is extended to the various FAO and WHO colleagues who worked with the ESN staff taking notes.

Kakoli Gosh (OPCP, FAO) is warmly thanked for organizing the Student Session with the help of ESN staff Yenory Hernandez Garbanzo, Marie Caroline Dode, Deborah Badombena Wanta and Ashraf Khosravi, as well as Kaia Engesveen (NHD, WHO). We are also very grateful to Guenter Hemrich

(Deputy Director a.i., ESN), Adelheide Onyango (WHO Regional Office for Africa), Andrea Pezzana, Julia Tagwireyi and Shadi Hamadeh for interacting with the students and providing them with inspiring insights.

An FAO Logistics Task Team (LTT) played a key role in ensuring the smooth running of the symposium by taking care of the behind-the-scenes details and communication. Our thanks to Guenter Hemrich for coordinating the LTT, and to all LTT members: Clara Velez Fraga (OCCO, FAO), Chiara Deligia (ESN, FAO), Denise C. Coitinho Delmuè (ESN, FAO; Symposium Coordinator), Francesca Locatelli (OPC, FAO), Gabriella Piacentini (CPAC, FAO), Gabriele Iallussi (ESN, FAO), Giuseppina Di Felice (ESN, FAO), Ivan Bentivegna (CIO, FAO), Jean-Philippe Decraene (CSAI, FAO), Joanna Lyons (ESN, FAO), Katia Meloni (OCCO, FAO), Massimo Albanesi (CSAI, FAO), Myrto Arvaniti (OCCO, FAO), Paola Dini (CPAP, FAO), Piervito Muscaridola (DDOS, FAO), Rafael Rodriguez (CPAP, FAO), Raffaella Rucci (OCC, FAO), Rebecca Andarias (CSAI, FAO), Sergio Ferraro (CPAM, FAO), Stefano Graziosi (CIO, FAO).

FAO provided the majority of funding required for hosting the symposium. WHO provided additional financial contributions. The Government of Germany financially supported the participation of delegates from Least Developed Countries and the Bill & Melinda Gates Foundation, through the New Venture Fund, facilitated the participation of civil society organizations. All financial contributions are gratefully acknowledged.

We are grateful to Denise C. Coitinho Delmuè for coordinating the symposium Secretariat, supporting and coordinating the planning of the Symposium in close collaboration with Marzella Wüstefeld. The following ESN staff also provided immense support and served as members of the Symposium Secretariat: Chiara Deligia, Giuseppina Di Felice, Jorge Fonseca, Janice Meerman, Leslie Amoroso, Veronique De Schutter and Trudy Wijnhoven.

Finally, we gratefully acknowledge all presenters and speakers. These proceedings were prepared by Janice Meerman and Denise C. Coitinho Delmuè. Credits for editing, cover design and layout of the proceedings respectively go to Paul Neate, Guido Chieffalo and Davide Moretti.

ABBREVIATIONS AND ACRONYMS

ATONU	Improving Nutrition Outcomes through Optimized Agricultural Investments
ATNI	Access To Nutrition Index
BCC	Behaviour-change communication
CFS	Committee on World Food Security
CIO	Information Technology Division, FAO
CLM	<i>Cellule de Lutte Contre la Malnutrition</i> [Fight Against Malnutrition Unit], Senegal
COFERSA	<i>Convergence des Femmes Rurales pour la Souveraineté Alimentaire</i> [Convergence of Rural Women for Food Sovereignty], Mali
CPAC	Conference, Council and Government Relations Branch, FAO
CPAM	Meetings Programming and Documentation Service, FAO
CPAP	Protocol Branch, FAO
CSAI	Infrastructure and Facilities Management Unit, FAO
CSO	Civil society organization
ENAM	Enhancing Child Nutrition through Animal-Source Food Management, Ghana
ESN	Nutrition and Food Systems Division, FAO
ESP	Social Policies and Rural Institutions Division (ESP)
ESS	Statistics Division, FAO
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	Food and Agriculture Organization of the United Nations
FBA	<i>Fondazione Banco Alimentare Onlus</i> [Food Bank Foundation], Italy
FBDGs	food-based dietary guidelines
GAIN	Global Alliance for Improved Nutrition
GIS	Geographic information systems
GLOPAN	Global Panel on Agriculture and Food Systems for Nutrition
GNR	Global Nutrition Report
HLSCN	High-Level Steering Committee on Nutrition, Tanzania
IANDA	Indicators for Affordability of Nutritious Diets in Africa
ICN2	Second International Conference on Nutrition
IFAD	International Fund for Agricultural Development
IFDA	Iran Food and Drug Administration
IFPRI	International Food Policy Research Institute
IFS	<i>Federazione Italiana dell'Industria Alimentare</i> [Italian Food and Drink Industry Federation], Italy
ILRI	International Livestock Research Institute
INDDEX	International Dietary Data Expansion Project
INFORMAS	International Network for Obesity/NCD Research, Monitoring and Action Support
ISYN	Institute of Research in Health and Nutrition, Ecuador
KNHANES	National Health and Nutrition Examination Survey, Republic of Korea

LTT	Logistics Task Team
MAELA	Agroecological Movement of Latin America and the Caribbean
NCD	non-communicable disease
NGO	non-governmental organization
NHD	Department of Nutrition for Health and Development, World Health Organization
NTFP	non-timber forest product
OCC	Office of Corporate Communication, FAO
OCDO	Outreach and Promotions Branch, FAO
ODG	Office of the Director-General, FAO
OIE	<i>Office International des Epizooties</i> [World Organization for Animal Health]
OPC	Office of Partnerships, Gender, Advocacy and Capacity Development, FAO
PAA	Purchase from Africa for Africans
PISA	<i>Produção Integrada de Sistemas Agropecuários</i> [Integrated Systems of Agriculture], Brazil
PPR	<i>Peste des Petits Ruminants</i> [ovine and caprine rinderpest]
REACH	Renewed Efforts Against Child Hunger and Undernutrition
SDG	Sustainable Development Goal
SMART	Specific, measurable, achievable, relevant and time-bound
SME	Small and medium-sized enterprise
SP1	Strategic Programme 1: Contribute to the eradication of hunger, food insecurity and malnutrition, FAO
SRID	Statistics, Research and Information Directorate, Ghana
SSB	Sugar-sweetened beverage
SUN	Scaling Up Nutrition
UNICEF	United Nations Children Fund
UNSCN	United Nations System Standing Committee on Nutrition
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WFP	World Food Programme
WHA	World Health Assembly
WHO	World Health Organization
WUWM	World Union of Wholesale Markets
YYB	<i>Yin Yang Bao</i> [Nutrition Pack], China



ber

INTERNATIONAL SYMPOSIUM ON SUSTAINABLE FOOD SYSTEMS FOR HEALTHY DIETS AND IMPROVED NUTRITION

INTERNATIONAL SYMPOSIUM
ACTION ON NUTRITION
2014-2015

Kostas Stamoulis
Assistant Director-General a.i.
Economic and Social Development Department, FAO

Francoise Branca
Director

H.E. Mgaleki Mphahlele
Minister of Agriculture, Forestry and Fisheries

John Emuze
Minister of Agriculture, Forestry and Fisheries

EXECUTIVE SUMMARY

Background

Today, nearly one in three people suffers from at least one form of malnutrition. By 2025, projections indicate the number will be one in two, unless current trends are halted or reversed.

Low-quality diets are the common denominator across all forms of malnutrition. Whether it is overweight, obesity, or undernutrition, including the 'hidden hunger' of micronutrient deficiency, poor-quality diet is a contributing factor. Diet-related non-communicable diseases (NCDs) are now associated with more premature deaths among adults than any other risk factor worldwide.

In many of today's food systems, nutritious foods that constitute a healthy diet are not available or affordable to many people. Additionally, the agricultural production practices that comprise a central part of current food systems are major contributors to greenhouse gas emissions and consequent global warming.

These challenges were acknowledged as grave and of the highest priority by the Second International Conference on Nutrition (ICN2)¹, and are addressed in the ICN2 Framework for Action through a series of normative policy recommendations to countries seeking to increase the nutritional and environmental viability of their food systems.

Introduction

Against this background, the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) convened an international symposium on the theme of 'Sustainable Food Systems for Healthy Diets and Improved Nutrition'. Held at FAO headquarters in Rome in December 2016, the symposium aimed to increase awareness of today's food and nutrition challenges, and to provide a forum to discuss strategies for food-system reform. Nine parallel sessions comprising expert presentations and country case studies were organized under three subthemes: Supply-side measures for diversifying food production and for increasing availability and affordability of nutritious foods for healthy diets; Demand-side policies and measures for increasing access and empowering consumers to choose healthy diets; and Measures to strengthen accountability, resilience and equity within food systems.

The symposium also included a session for students, several special events and a session entitled 'Next steps for the Second International Conference on Nutrition: Work programme of the United Nations Decade of Action on Nutrition in the era of the Sustainable Development Goals'. This session, which closed the symposium, took stock of issues addressed in previous sessions. Jointly moderated by WHO and FAO, it called for new ways of working together and expressions of specific, measurable, achievable, relevant and time-bound (SMART) policy commitments by countries and other key stakeholders to realize the opportunity presented by the Decade of Action on Nutrition.

Key messages from the symposium, organized by subtheme and informed by presentations and dialogue from the symposium as a whole, are provided below.

¹ Second International Conference on Nutrition, co-hosted by FAO and WHO at FAO headquarters in November 2014. For more information, see: <http://www.fao.org/about/meetings/icn2>

SUBTHEME 1: Supply-side measures for diversifying food production and for increasing availability and affordability of nutritious foods for healthy diets

Subtheme 1 highlighted the fundamental misalignment between supply-side agrifood policies and nutrition goals that characterize many of today's food systems.

In recent decades, heavy public-sector investment in a narrow range of staple crops has made grains and starchy staples cheaper and more abundant than nutrient-rich non-staples such as fruits and vegetables, contributing to a lack of diversity in the global food supply. Currently, demand for diversified diets is increasing, but the supply response has been slow, due in part to this imbalance in investment and related poor incentive structures for producers. Nutritious non-staple foods – fruits, vegetables, nuts, animal-source foods and pulses – are not readily available or affordable for many people.

At the same time, highly processed foods that are high in saturated fats, salt and sugar, such as soft drinks, instant foods and packaged sweet and salty snacks, have become more readily available in many countries. The rise in consumption of these ultra-processed foods reflects the abundant global supply of starchy cereals and oils, which are their main ingredients.

Today's food systems are also taking a heavy toll on the environment. Agricultural practices with high carbon and water footprints and pesticide and fertilizer pollution pose major global ecological challenges whose urgency is compounded by climate change.

Three parallel sessions presented current country-level strategies for improving availability and affordability of environmentally sustainable, nutritious foods:

- **Session 1.1:** Sustainable agricultural production and diversification for healthy diets
- **Session 1.2:** Maintaining and improving nutritional value and food safety along the value chain
- **Session 1.3:** Leveraging market opportunities for promoting healthy diets

KEY MESSAGES ON SUPPLY-SIDE MEASURES (SUBTHEME 1)

- The kind of food that is most available, affordable and convenient is a major determinant of people's diets. There is a misalignment between supply-side agrifood policies and investments, and nutrition goals.
- Availability, price, safety and quality of foods are influenced by many economic and agronomic supply-side factors (e.g. investment systems, agricultural subsidies, regulatory standards, seed supply, yield, pest resistance and perishability). Both public-sector and private-sector agricultural research and investment agendas need to address these factors if they are to increase productivity, profitability and availability of nutrient-dense non-staple foods.
- A systems approach is needed to increase the diversification of production and supply of vegetables, fruits, pulses and sustainably produced animal-source foods. This approach must include changes in agricultural systems to increase crop diversity and must also extend along the whole value chain to improve storage, transport, transformation, marketing and retail activities, while ensuring high levels of food safety and taking environmental sustainability into account every step of the way.

SUBTHEME 2: Demand-side policies and measures for increasing access and empowering consumers to choose healthy diets

Subtheme 2 recognized that the greater availability, marketing and consumption of convenient, inexpensive, highly processed food products, coupled with reduced physical activity, has contributed to the growing global burden of overweight, obesity and diet-related NCDs. The dramatic global rise in incidence of overweight and obesity in children is particularly alarming. At the same time, undernutrition, notably multiple micronutrient deficiencies, persists in many populations.

Parallel sessions under this subtheme highlighted country experiences in implementing food and nutrition policies that address these challenges. The focus was on supporting food environments² in which the consumer can access a high-quality diet and make well-informed, healthier choices for all family members, including infants and young children, as follows:

- **Session 2.1:** Regulations, awareness and advocacy for better-informed food choices
- **Session 2.2:** Information and education for healthy food behaviours
- **Session 2.3:** Increasing access to healthy diets through social protection and income-generation strategies

KEY MESSAGES ON DEMAND-SIDE MEASURES (SUBTHEME 2)

- Empowering consumers to make healthy food choices is essential to addressing both undernutrition and overnutrition, as a healthy diet helps prevent all forms of malnutrition and diet-related NCDs. People are much more likely to make healthy dietary choices when nutritious food is readily available, recognizable and affordable. Governments should prioritize food and nutrition policies that focus on improving the food environment.
- Food marketing and advertisements must be regulated to ensure that claims are not misleading and nutrition labelling is clear. Fiscal (dis)incentives such as taxes and subsidies, legislative mandates such as nutrition standards in government institutions, and nutrition education that starts with the very young are essential for creating consumer demand for nutritious foods. Together, they exert pressure on the food industry to improve food environments.
- Additional measures for empowering consumers include nutrition education and awareness-raising to enhance knowledge and motivation to select and prepare nutritious foods and to promote healthy dietary behaviour. Delivery platforms for these measures include nutrition-sensitive social protection programmes such as school food and nutrition schemes.
- There is huge potential for synergies between all these types of measures, with national or regional food-based dietary guidelines playing a critical role by anchoring the entire range of actions within the same implementation framework.
- It is possible for the private sector to play a constructive, positive role in these efforts. Government regulations and fiscal disincentives should be supported by the active collaboration of the food industry.

² 'Food environment' refers to the kinds of foods that are available, affordable, convenient and desirable to people in the settings in which they go about their daily lives. For more on the food environment, see FAO (2016a), GLOPAN (2016) and Turner *et al.* (2017).

SUBTHEME 3: Measures to strengthen accountability, resilience and equity within food systems

The policy agendas described in subthemes 1 and 2 propose significant changes to the status quo. On the supply side, there is an urgent need to better align agrifood policies with nutrition goals to improve availability and affordability of nutrient-dense non-staple foods. On the demand side, there is an equally urgent need for regulations and measures that create healthy food environments and that empower consumers to make healthy dietary choices.

Subtheme 3 comprised parallel sessions of presentations on three approaches for galvanizing these changes:

- **Session 3.1:** Designing, implementing and monitoring evidence-based policies effectively with multiple actors
- **Session 3.2:** Enhancing food-system resilience in areas affected by climate change and other crises
- **Session 3.3:** Empowering women as key drivers of food-system change

KEY MESSAGES ON ACCOUNTABILITY, RESILIENCE AND EQUITY (SUBTHEME 3)

- Governments have the responsibility to enact food-system policies that positively influence what people eat. All food-system stakeholders (including public and private actors) should be active participants in the food-system reform process. At a practical level, reforms must be implemented through evidence-based policies, informed by data on food prices, food intake, dietary quality and related metrics.
- Climate change and related crises are threatening populations around the world, many of which are vulnerable to poverty, food insecurity and malnutrition. However, these populations are also often custodians of knowledge and practices for healthy food systems. Strengthening food-system resilience in these populations calls for a paradigm shift that makes explicit investments in indigenous and local agricultural knowledge and food cultures.
- Women are gatekeepers for health and nutrition because it is most often women who care for infants and children and who set household dietary rules. As such, women hold enormous potential to become empowered consumers who demand healthy food systems. In many countries, women also have the potential to become empowered producers who increase the availability and affordability of nutritious foods. Unlocking this potential requires increased gender equity and equality in agriculture and other productive sectors, together with continued investment in nutrition education and awareness-raising.

These key messages are the culmination of three days of discussions, sharing of experience, and reflection by over 600 symposium participants, including delegates from 90 Member States, representatives of intergovernmental organizations, private-sector entities, civil society organizations, academia, research organizations and producer organizations. They should now be used for better-informed, accelerated, SMART policy actions that implement the ICN2 recommendations for food-system reform at national, regional and global level.

In this era of the Decade of Action on Nutrition and Sustainable Development Goals, such action is imperative not only to achieve the shared goal of ending malnutrition by 2030, but also to inform the broader scope of human development goals, each of which is underpinned by the fundamental right to adequate and healthy food.



SYMPOSIUM OPENING SESSION

Opening statement summaries

Mr Kostas Stamoulis, Assistant Director-General ad interim of the Economic and Social Development Department of the Food and Agriculture Organization of the United Nations (FAO), introduced the Symposium Chairperson, **Her Excellency Beatrice Lorenzin, Minister for Health of the Republic of Italy**, and Vice-Chair **Professor Patrick Webb, Professor of Nutrition Science and Policy, Tufts University, United States**.

Dr José Graziano da Silva, Director-General of FAO, delivered the welcome address, which included acknowledging **His Majesty King Letsie III of the Kingdom of Lesotho** as the African Union Champion for Nutrition, and nominating His Majesty as an FAO Special Ambassador for Nutrition.

Dr da Silva set the stage by reminding the plenary that 164 countries had gathered in Rome in November 2014 for the Second International Conference on Nutrition (ICN2), and had unanimously adopted the Rome Declaration and Framework for Action, and committed not only to eradicating hunger but also to tackling all forms of malnutrition. Dr da Silva also noted that the period 2016 to 2025 has been designated the United Nations Decade for Action on Nutrition. He explained that the symposium aimed to contribute to the momentum generated by these and related events by fostering engagement and collaboration between governments and stakeholders and by taking stock on progress made thus far in implementing the ICN2 recommendations and achieving Sustainable Development Goal (SDG) 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

Dr da Silva's speech called attention to:

- the fact that no country is immune to malnutrition, and that one in three people is currently affected;
- the impact of malnutrition on the global economy;
- FAO's role in supporting a food-systems approach to reducing malnutrition, extending from production all the way to consumption;
- the need to empower consumers to choose healthy foods and diets;
- the need to build resilience and equity in food systems.

Dr da Silva noted the fundamental roles played by nutrition-sensitive social protection policies, nutrition-education campaigns and awareness-raising initiatives. He also cited the importance of regulation on labelling and advertising, and the importance of post-harvest management and measures to improve food safety.

He also emphasized the need to frame nutrition as a public goods issue and state responsibility. He noted that, to succeed, national nutrition policies that aim to provide people with adequate, safe and nutritious food require joint and coordinated efforts from government, the private sector, civil society organizations and parliamentarians.

In conclusion, Dr da Silva highlighted FAO's very good working relationship with the World Health Organization (WHO) in the fight against malnutrition, as well as with other United Nations systems actors, including the International Fund for Agricultural Development (IFAD), the World Food Programme (WFP), the United Nations Children's Fund (UNICEF), the United Nations Standing Committee on Nutrition (UNSCN), and the Committee on World Food Security (CFS).

His Majesty King Letsie III of the Kingdom of Lesotho accepted his appointment as FAO's Special Ambassador for Nutrition and committed to continue championing nutrition efforts with the greatest of energy and passion. His Majesty noted recent commitments across Africa to nutrition by government and other stakeholders, in particular by the Pan-African Parliament, the Sixth Tokyo International Conference on African Development, the African Development Bank, and the Alliance for a Green Revolution in Africa (AGRA).

His Majesty recalled that the advocacy, political commitment and policy milestones achieved around nutrition in Africa today could not have been imagined even a few years ago. He expressed his satisfaction that the tide has now turned for the better, citing two important examples:

- Africa's Agenda 2063 strategic road map for development, which lays out a vision for eliminating food insecurity and hunger, and for reducing child stunting to 10 percent by 2025.
- The 23rd Ordinary Session of the Summit of the African Union, held in Malabo, Equatorial Guinea, in June 2014, which adopted a new declaration on nutrition while also renewing commitment to the Comprehensive Africa Agriculture Development Programme, which allocates 10 percent of national budgets to agriculture with a view to achieving a yearly increase in food production of at least six percent.

His Majesty concluded by noting that only well-fed, well-nourished individuals can drive economic development. The outlook and targets associated with the Decade of Action on Nutrition can only be realized through stronger nutrition governance, including policy reform, capacity-building and robust investment, he stated. The countdown for the Decade for Action on Nutrition started in 2017; everyone has a role to play.

Dr Francesco Branca, WHO Director of Nutrition delivered a message from **Dr Margaret Chan, Director-General of WHO**. Speaking for Dr Chan, Dr Branca noted that malnutrition in all its forms is a challenge facing all countries, and that an unhealthy diet is currently the top risk factor for the global burden of disease. He cited demands for land and water and greenhouse gas emissions from food systems as major threats to the planet's health, and called for an urgent change in food systems to reduce malnutrition and to ensure that food is produced sustainably.

Dr Branca reminded the plenary that responsibility for improving nutrition is also global and that FAO and WHO have been mandated to lead the implementation of the United Nations Decade of Action on Nutrition within the ICN2 framework, in collaboration with IFAD, UNICEF and WFP.

Dr Branca concluded by expressing his hope that, through the strong leadership of Members, the energy of civil society, the entrepreneurial spirit of the private sector, and the strong spirit of collaboration within the United Nations family, the dramatic changes in food systems and food environments needed for the improvement of everybody's nutrition can be achieved.

Her Excellency Beatrice Lorenzin, Minister of Health of Italy and Chair of the symposium, highlighted the importance of adopting a human rights approach to nutrition, noting that Article 25 in the Universal Declaration of Human Rights recognizes the right to food as an integral part to the right to an adequate standard of living.

H.E. Lorenzin noted that, like the rest of the world, Europe currently faces multiple malnutrition challenges. In Italy alone, about 700 000 adults – mostly the elderly, people with debilitating diseases and the poor – are at risk of malnutrition, 46.4 percent of adults are overweight and of those 10.2 percent are obese. Reducing child obesity is an objective that Europe must tackle, she stated.

H.E. Lorenzin called attention to actions being taken by the Government of Italy both nationally and in international cooperation efforts. These include promotion of breastfeeding; women's health and nutrition initiatives; voluntary food reformulation efforts that have achieved significant reductions in levels of sugar, saturated fats and salt in processed food products; reduction of food waste; nutrition education in schools and communities including promotion of local, traditional diets; and promotion of biodiversity.

H.E. Lorenzin also noted that by 2050, 70 percent of the world's population will live in big cities and the effects of climate change will be profound. The Milan Urban Food Policy Pact, signed by 160 cities worldwide, highlights the central role played by cities in setting food policies.

H.E. Lorenzin concluded by reiterating the Italian Government's commitment to using its G7 presidency to promote an in-depth, constructive conversation on the urgent need to increase the sustainability and dietary quality of food systems as fundamental to global health and welfare, not least with respect to climate change.

Full transcripts of the statements delivered during the symposium's opening session are available at: <http://www.fao.org/about/meetings/sustainable-food-systems-nutrition-symposium/en>

Keynote address: Sustainable food systems for healthy diets and improved nutrition through implementing the ICN2 Framework for Action

Presenter: Patrick Webb, Professor of Nutrition Science and Policy at Tufts University, United States, and Policy Evidence Advisor to the Global Panel on Agriculture and Food Systems for Nutrition (GLOPAN).

Verbatim transcript

Your Majesty, Directors-General, Honourable Ministers, Excellencies, Ladies and Gentlemen – not forgetting students from around the world – the next generation of nutrition champions:

We have roughly nine years – the first year of the Decade is almost over – we have nine years left until 2025 and we have a lot to achieve in those nine years: things that a few decades ago might have been considered radically impossible – transformation of food systems, a complete change in the way that we generate food, distribute food, make food available to all people to help them achieve healthy, sustainable diets and improve nutrition.

This is no small challenge, but nine years is a long time. Just think – in 1960, the Apollo Space Program was just a twinkle in the eye of engineers and nine years later they put a man on the Moon. In 1966, India was importing more than one million tonnes of rice and nine years later had cut that by about 90 percent to roughly 100 000 tonnes thanks to huge investments in agricultural productivity and output. In the last nine years, we have seen huge improvements, huge gains in poverty reduction; just in the last nine years we have seen roughly a halving of the number of people living on less than US\$1.90 per day.

So a lot can be done in nine years but we do have a lot to do, and the reason is that malnutrition in all its forms has become somewhat of an outlier. What we have seen is a somewhat dramatic decline since around 1990 in poverty, in maternal and other forms of mortality, in rates of illiteracy around the world, in famine deaths. Famine no longer stalks the Earth as it did 20 years ago. In terms of communicable diseases, we are seeing great improvements around the world in so many facets of human well-being and yet malnutrition is an outlier.

Malnutrition in all its forms is increasing. Let me let that sink in. Malnutrition in all its forms is growing, it is not declining. That is what makes this meeting and the next two days so important.

The Director-General of FAO mentioned today that one in three people is affected by one of the many forms of malnutrition. 'Business as usual' won't suffice because projections are quite clear that if things continue at the current pace then it will be one in two people by 2025. And so the number of people, the share of the world's population facing some form of malnutrition, if we don't change things now, will continue to grow. That is the challenge we have facing us in the next nine years.

We have heard that malnutrition is present in every single country around the globe. There is no longer any preferential position. We have undernourishment around the world, we know that. We have billions of people facing a wide range of vitamin and mineral deficiencies; we have overweight and obesity growing, together with diet-related non-communicable diseases. As a result of this, we can no longer think of malnutrition as a poor-country problem; it is everywhere and it's not even concentrated in low-income countries any more. If you combine what is referenced as simultaneous problems of undernutrition, overweight and obesity, what we are seeing today is very large numbers of people facing one or other or both of these problems in middle-income countries, in emerging economies that have shown dramatic poverty reduction, booming agricultural growth and improved health care.

We have to stop thinking of this as a problem that is only associated with poverty. Malnutrition is an outlier; it cannot be 'grown out of' at a national level. We have to address it head-on.

One of the key factors that is going to be addressed in all the three subthemes over the next two days of this symposium is the issue of healthy diets, as a link, as a bridge between sustainable food systems, improved agricultural productivity, and health and nutrition. Diets are the linchpin and the quality of those diets is one of the key issues we have to improve because a low-quality diet is one of the commonalities across all forms of malnutrition.

I should just like to draw your attention the risk factors that relate to today's global burden of disease around the world, not just death, but also disability, the years lost because of ill-health. Dietary risk factors combined are now the single largest cluster of risk factors for the global burden of disease.

This is really, really bad. It is really, really important to recognize that dietary risk factors contribute almost ten percent of the global risk. There are lots of other risks but the point is that diets are not helping us anymore. They are hindering our health and nutrition. There are many ways that we can assess diets. We have to do much more to understand what are good foods, what are good diets, and what are potentially harmful products within our diets. We have to understand this culture-by-culture, over time, but what we have a common sense of – and this is captured in most of the food-based dietary guidelines from around the world – is that there are some foods we know that are highly nutritious, nutrient-rich and nutrient-dense, and that we need to be prioritizing greater consumption of those products by everyone. And there are some that are known to be potentially harmful if they are over-consumed. We have to try to find ways to reduce the consumption of those. And there are others in the middle; the science continues to evolve on these. We need to know much more about what is a healthy diet in the context of sustainable food systems.

But, as I said, we cannot wait. This is happening right now. Diets are not the only cause but they are a major contributor to non-communicable diseases and the share of the adult population as well as children who are overweight and obese continues to grow. It is astonishing how many low-income and middle-income countries are going to carry huge burdens, huge health costs, huge economic costs associated with these non-communicable diseases, as well as the problems of undernutrition, in the coming years if we do not change things very quickly.

What I have tried to summarize here is that malnutrition is on the rise. This is a wake-up call. We need to understand that, although so many things have been getting better, malnutrition is not yet. Low-quality diets linked to non-sustainable, problematic food systems and poor food choices as well, poor food environments – these are common aspects of malnutrition, micronutrient deficiencies and overweight and obesity. They are not the only causes but they are the major contributors.

'Business as usual' will not help us. We already have a health and nutrition crisis in many parts of the world. This will continue to grow if we do not pay sufficient attention to this and the tweaking of the margins is not enough. We are now facing serious problems if we do not take this agenda seriously. This is calling for a radical transformation of our food systems. Working together in a coordinated fashion across sectors to nourish the world's population in just a few decades, not just feed them. 'Systems thinking' is nothing new, but 'systems doing' has not been very widely achieved and this is where we have to do better than we have in the past.

The ICN2 framework, what we are going to be essentially focused on in the next couple of days – it is a great place to start. It is a voluntary framework, remember – and it is focused primarily on governments, so we do need to remember that other stakeholders are engaged in this dialogue and we need to understand their incentives and disincentives to act.

Many of the recommendations – and I am just numbering a few of them here in the Framework for Action on Nutrition – are essential, we have to do them: adequately cost national plans for nutrition; increased domestic finance for nutrition; develop guidelines for healthy nutrition – all of these should be done, they are must-haves. There is really very little we can argue against the strengthening of smallholders, local food production and farm diversification, building capacity for front-line workers like extension workers and health workers. These things need doing. They are no-brainers.

But what we have to do are two things in the coming days: it is about specificity – not just what needs to be done but how. How we are going to do these things in nine years? How we are going to achieve them and what else needs to be done? How else can we be more ambitious to achieve this radical transformation that I believe is essential if we are going to achieve these goals?

I am just going to go through nine, very top-order things, very quickly, which I suggest require us to be paying more attention to; not just the text of the Framework for Action, other things in addition to that. Nine items: would it not be great if we could achieve just one of these per year for the next nine years?

Well, we can try. Starting with fully implementing what we know works. That goes along with doing no harm, not doing the wrong things, but doing what works. Many of you here today know very well about the *Lancet* series on maternal and child nutrition from 2013, which was a first crack at promoting understanding that there is empirical evidence of what works in terms of targeted nutrition interventions, timely interventions. That really focused on the importance of the first 1 000 days and that babies born small for gestational age – not pre-term but born too small as a result of foetal restriction – that that alone accounts for about 30 percent of the stunting by the time children are aged three, and all that tells us is that maternal health and nutrition – not just the infant's and the child's nutrition – matters hugely. Which also means that adolescent girls' health and nutrition matter immensely. So it is malnutrition in all its forms but also through the life cycle. We also found from this that ten targeted nutrition interventions – if implemented at 90 percent coverage in countries where it matters – can cut stunting by 20 percent.

We have some evidence, but that alone is not enough. Twenty percent is not enough. There are all these other policies and actions that were mentioned in agriculture, in health care, in education and social protection, in disaster mitigation and response. These all have to happen too, as long as they are evidence based and implemented at scale. So what we know works, has to be done.

How much does it cost? In 2017, the World Bank assessed the cost of those targeted actions and what they focused on was just the four that are listed here – it did not focus on costing prevention of obesity or non-anaemia micronutrient deficiencies – but the cost came to about seven billion dollars per year to achieve these reduction targets – for stunting, anaemia, wasting and exclusive breastfeeding. Bear that in mind – seven billion dollars per year though numbers have been estimated by different people but they are all in this kind of range. It sounds a lot but actually it is not.

My second point is subsidies. I am not going to make a political point here but let us just be aware that subsidies promoting certain kinds of agriculture – we have got 50 countries now that are spending almost 600 billion a year plus other service support in that sector – comes to almost 700 billion dollars a year. So that seven billion is just one percent of the 700 billion. I am not saying that this is necessarily bad but we have to focus on where those subsidies are going. Most of those subsidies are not going to support production and distribution of nutrient-rich foods. Most of them are on productivity gains and trade support for staple grains, for cereals. Is this the right allocation of resources? Just note that government support for agriculture as a share of gross domestic product is pretty high around the world except in countries where a lot of the problem currently resides, which is sub-Saharan Africa and South Asia. So we have to understand the effects of the choices made around these kinds of subsidies, as they affect not just output of certain foods versus others but also how it affects trade and food availability.

The third point that is very much linked to the other two: agricultural research. Where we choose to support research in agriculture is equally important. As you can see here, just in the CGIAR from a couple of years ago the vast majority of resources go to support just three crops. Far more than all the research that goes to support nutrient-rich foods like fruits and vegetables, lentils, pulses, animal-source foods including aquatic products and so on.

Again, we should be asking: is this what we want? These are choices. Is this the appropriate configuration of research support given the transformation in food systems that we want to achieve and the kinds of foods we want available to consumers worldwide? That is a choice. Can we bring

it up to be at least equal? I am not suggesting that there needs to be less research on cereals but I am suggesting that there should be a lot more on non-cereals.

Other evidence for policy decisions. There is a range of research that has been published recently that supports, that goes beyond targeted nutrition. We are beyond the phase of saying “We do not have the evidence that investments in agriculture can support nutrition.” Finally we are getting the evidence that, yes, investments in the right kinds of agricultural policies and programmes can, in fact, improve both dietary quality and nutrition. We are getting a sense that diversification can matter, not in every case, but it can matter in improving quality of diets. But we have to go beyond small-scale, pilot-level, home-garden thinking. We need transformation across agricultural sectors and beyond. That requires mainstream thinking about nutrition and dietary quality in all the policies that matter to this agenda.

The fourth: fair trade. Trade matters immensely to diets and nutrition and will matter even more so, especially if we want year-round access for everyone to nutrient-rich foods that tend to be seasonal and perishable. We cannot assume that every country in the world is going to be able to grow or produce everything it needs that is contributing to a quality diet. Trade, therefore, matters. I am just pointing out the Trans-Pacific Partnership Agreement, which you may have heard quite a bit about in the recent presidential elections in the United States. If that partnership goes ahead, agriculture and food are among the sectors in the United States that would see the greatest gain. Agriculture and food would see a huge gain and in fact trade in fresh fruit and vegetables and nuts would benefit as a result of that trade deal.

These kinds of policies, these kinds of trade partnership agreements matter to what is available in the global marketplace to improve diets. We have to pay attention. Nutritionists have not been very good traditionally with engaging with macroeconomic thinking, with trade policy understanding, with the national ministers for finance with what should or should not be supported as policy. That time is over. This has to be understood by all and mainstreamed by all.

Trade and access to nutrient-rich foods: I am not suggesting here that all processed foods are bad and that only fresh or organic foods are good. Processed foods are essential for delivering nutrients especially to urban populations; it is ultra-processed foods that we have to worry about. We have to consider how to define that appropriately, but trade in both fresh and processed products is important, as you can see. India exports processed foods to a range of different countries, so the point here is that processed food trade is not just from rich, industrialized countries to poorer countries – it is part of a global trade pattern. But if we’re going to make trade more nutrition-sensitive then there have to be incentives or disincentives in some ways for the food industry to make nutrient-rich, healthy products available and to promote those products through a global retail food industry that is huge – there is a lot of money in food! We have to eat every day so that is probably part of it. Therefore, we have to frame the incentives appropriately. Most people already purchase globally, procure their food from supermarkets or hypermarkets. That is only going to get bigger as populations become more urban. So we have to think of food systems as supplying urban consumers, not just small farmers. This is key. But rural poor producers are also purchasing more and more processed foods; that is already happening – two to five percent growth per year in low- and middle-income countries of packaged foods, soft drinks and other kinds of processed foods.

That is the food environment, the food system that is supplying those. What do we do to shape what is available to them? Part of that is about price, relative price. A study that was done by the Overseas Development Institute of five countries found that since 1990 the price of a lot of nutrient-rich foods across those five countries had increased on an annual basis over time and the price of a lot of processed packaged foods in relative terms had decreased on an annual rate over time.

It does not take an economist to figure out what this is going to do for people’s choices if they are constrained in terms of resources and they do not have adequate information to make well-informed choices. That information matters through dietary guidelines, through behaviour change, through education, but food-based dietary guidelines are not available in all countries. We assume they are but there are a lot of poor countries that do not have food-based dietary guidelines. We need to fix that. I would argue that those food-based dietary guidelines should be reframed and

rethought everywhere to guide policy-makers, not make them just consumer-focused but directly policy-maker-focused. If this is what we want people to eat, then the policy choices have to make that possible for the consumer. They need to be policy-facing.

Metrics, data. Yesterday evening [30 November 2016], *Nature* published a commentary from the Global Panel on Agriculture and Food Systems for Nutrition, of which the Director-General of FAO is a panel member that lays out a research agenda for agriculture and food.³ I recommend that you have a look at the ten points that it talks about. But let us be clear. We need more data, we need improved metrics, because, if diets are the number one risk factor for global burden of disease, we actually know amazingly little about diets around the world. We do not know what people are eating and yet we claim we want to change what they are eating for the better. We have no global databases on diet – that is something you can discuss: How are we going to get there? And quality of diet is not even an SDG goal, in part because there is no agreed metric. So this is a Catch-22 that has to be resolved.

In conclusion, I think policy-makers have to demand much more of their food systems rather than seeing them as passive or something that the private sector only is worried about. If food systems are essentially not fit for purpose – the purpose we want which is healthy, well-nourished people around the world – they are not currently fit for purpose. We need to change that. We have to demand, collectively, that policy-makers take this seriously. We need to figure out what the key problems are, culture-by-culture, country-by-country, and work backwards to how we retrofit our food systems to make them fit for purpose.

In the context of global needs and global trade, this is a challenge but it is one we have to step up to; we cannot do it from a top-down approach. Of course there are going to be trade-offs; of course there are synergies; of course there are vested interests; of course there are disincentives to change the status quo. We have to challenge all of these, and this is in the context of growing climate change risks, growing populations, growing urbanization. But this represents an opportunity as well. We have to capture this moment. We only have nine years.

So the message I am trying to give here is that malnutrition has re-emerged as a global public health problem – globally, not just in low-income countries. Low-quality diets, non-sustainable food systems are common to all these forms of malnutrition. Since diet is a modifiable risk factor for disease, then we absolutely have to modify it. That means we have to do all we can in the next nine years to make these systems different. We need them to nourish us, not just feed us.

Hunger is still a major problem, we have to deal with that, too. But the era of growing more food to alleviate hunger is past. We need to grow the right food to nourish the world. That is the future.

As a result of that, we need radical transformation in our thinking, in the way we act, in what we demand from our food systems. We can do this; this is not rocket science. We are not trying to put another man on the Moon – we have done that. In some ways, this is more complex because this is a planetary problem on the scale of HIV/AIDS or tobacco-related problems. Therefore, let us take it on as a planetary problem and address it the way it deserves to be addressed. Nine years, starting from now. Thank you.

³ Haddad, L., Hawkes, C., Webb, P., Thomas, S., Beddington, J., Waage, J. and Flynn, D. 2016. A new global research agenda for food. *Nature* 540: 30–32.
Available at: <https://www.nature.com/news/a-new-global-research-agenda-for-food-1.21052>

SUBTHEME 1: Supply-side measures for diversifying food production and for increasing availability and affordability of nutritious foods for healthy diets

Introduction and key messages

KEY MESSAGES ON SUPPLY-SIDE MEASURES (SUBTHEME 1)

- The kind of food that is most available, affordable and convenient is a major determinant of people's diets. There is a misalignment between supply-side agrifood policies and investments, and nutrition goals.
- Availability, price, safety and quality of foods are influenced by many economic and agronomic supply-side factors (e.g. investment systems, agricultural subsidies, regulatory standards, seed supply, yield, pest resistance and perishability). Both public-sector and private-sector agricultural research and investment agendas need to address these factors if they are to increase productivity, profitability and availability of nutrient-dense non-staple foods.
- A systems approach is needed to increase the diversification of production and supply of vegetables, fruits, pulses and sustainably produced animal-source foods. This approach must include changes in agricultural systems to increase crop diversity and must also extend along the whole value chain to improve storage, transport, transformation, marketing and retail activities, while ensuring of food safety and taking environmental sustainability into account every step of the way.



In recent decades, heavy public-sector investment in a narrow range of cereal and oil crops has contributed to a lack of diversity in the food supply, making grains and starchy staples relatively more abundant and cheaper than nutrient-rich non-staples such as fruits and vegetables, and contributing to a fundamental misalignment between supply-side agrifood policies and nutrition goals. Currently, demand is increasing for diversified diets, but the supply response has been slow, due in part to this imbalance in investment and related low incentive structures for producers. Nutritious non-staple foods – fruits, vegetables, nuts, animal-source foods and pulses – are not easily accessible for many people.

In addition, consumption of highly processed foods of little nutritional value, such as soft drinks, instant noodles and packaged sweet and salty snacks, has been rising in many countries. The rise in consumption of these ultra-processed foods reflects the abundant global supply of starchy cereals and oils, which are their main ingredients. Their ubiquity is one reason such products are cheap relative to more-nutritious alternatives.

Global food production systems are also exacting a heavy toll on the environment. Agricultural practices with large carbon and water footprints and pesticide and fertilizer pollution pose major global ecological challenges that need to be addressed urgently, especially in light of climate change.

Subtheme 1 comprised three sessions exploring promising action areas for improving availability and affordability of environmentally sustainable, nutritious foods:

- **Session 1.1:** Sustainable agricultural production and diversification for healthy diets
- **Session 1.2:** Maintaining and improving nutritional value and food safety along the value chain
- **Session 1.3:** Leveraging market opportunities for promoting healthy diets

The focus of Session 1.1 was on enabling diversification of agricultural production. Growth in agricultural productivity is important, but the traditional focus on staple food production and export-led growth is not enough to improve nutrition and sustainability. Research, subsidies and technologies are needed to provide producer incentives to grow more nutrient-rich non-staple crops, making them more accessible to consumers. Case studies presented in Session 1.1 described countries' experiences in pursuing this approach, including public-sector-driven incentives for large-scale organic horticulture, experiences in agroforestry and sustainable aquaculture, and in biofortification. The session emphasized the need to empower women financially and socially through 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.

However, improving the supply of food for healthy diets does not stop at production. There are numerous opportunities along the value chain to protect and enhance nutritional value and food safety and to reduce food losses. Session 1.2 provided examples of these opportunities, including national food fortification programmes and regulation of additives in processed foods. This session also provided examples of the role played by small and medium-sized enterprises (SMEs) in improving the nutrition sensitivity of food value chains. In many cases, SMEs use traditional, artisanal methods to produce food products that are increasingly valued on global markets for both their cultural heritage and their nutrient content. Such approaches often also exact a much lower environmental toll than large-scale, industrial agribusiness.

Strengthening SMEs' global presence was also covered during Session 1.3, which focused on the complex role played by the market in determining supply-side incentives. Consumer demand for healthy foods is increasing around the world, but to date the market is failing to deliver the range of products demanded. Government and industry must work together to meet consumer demand through policy reform and development of new products that increase availability and affordability of sustainably produced, healthy foods. Support for SMEs is a critical area of action in this respect. Case studies during this session showed how this can be done. Examples include government subsidies that encourage retail outlets to routinely stock and market healthy foods, and rural development programmes that both invest in the provision of inputs for production of nutrient-dense food and purchase those foods for consumption at public institutions. This session also considered the role played by trade policy in influencing what foods are available in a given country or region, and at what price.

Session 1.1: Sustainable agricultural production and diversification for healthy diets

SESSION MESSAGES

- The world is facing a shortage of nutritious food. Foods that constitute a healthy diet are neither available nor affordable to many people, despite the fact that consumer demand for nutritious foods is on the rise.
- Research and investment in a wider range of crop and livestock products is needed in both the public and the private sector to increase availability and affordability of nutrient-rich, non-staple foods.
- Women are the linchpin between production and consumption. Improving women's access to resources is critical for promoting healthy diets.

Chair and moderator: Eileen Kennedy (Friedman School of Nutrition, Tufts University, United States)

Shenggen Fan (Director-General of the International Food Policy Research Institute, United States) opened the session by highlighting the links between food-system transformation and climate-change mitigation. He also emphasized the need to engage the private sector in food-system reform; the need to ensure that vulnerable populations are considered in reform processes; and the need for hard data that prove that food supply and dietary problems exist and to hold stakeholders accountable to solving them.



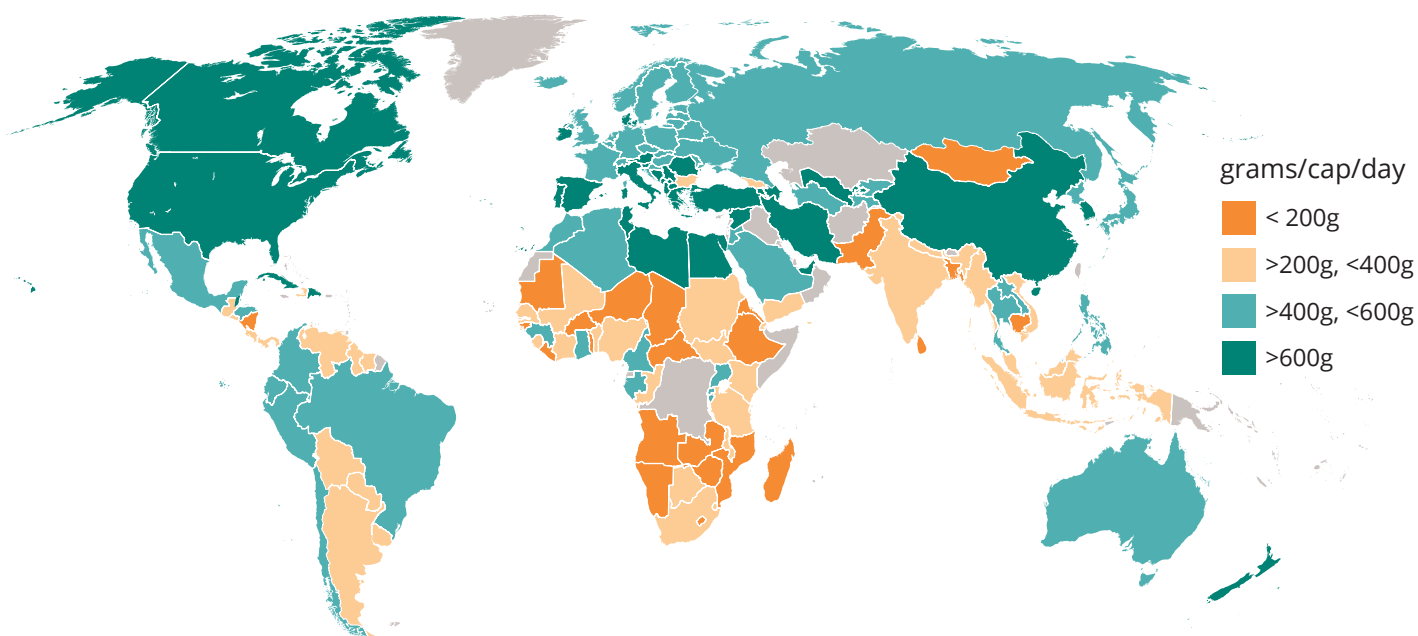
Overview

Presenter: Anna Herforth (independent consultant, United States)

Supply-side policies influence what is produced in agriculture, and how. For the most part, current supply-side policies are not aligned with the food needed to support healthy diets and nutrition. In the last several decades, heavy investment in a small number of cereal and oil crops has caused an erosion in nutritionally important diversity in food systems. While more calories have become available, food supplies worldwide have become homogenized and tied to these crops. As a result, fruits, vegetables, whole grains, legumes and nuts are under-represented in the food supply and in many countries are either unavailable or prohibitively costly. For example, there are many countries where availability of fruit and vegetable per capita falls far short of meeting the recommendations of the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO) (Figure 1).

The low availability of fruits, vegetables and other nutrient-rich foods is reflected in high prices. For many consumers around the world, a nutritious diet costs too much.

Figure 1. Per capita fruit and vegetable supply, 2009

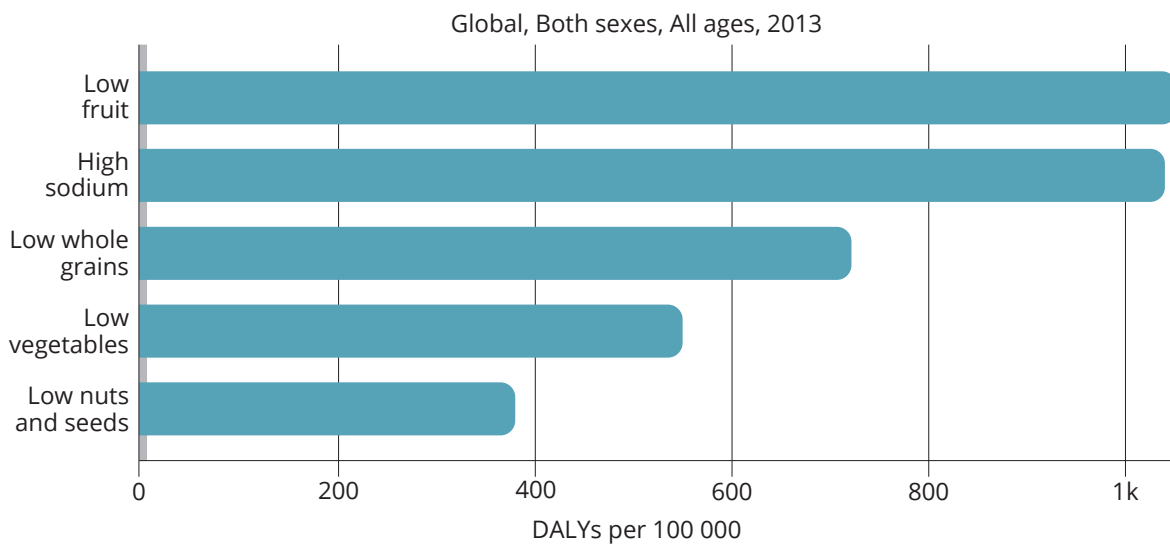


Source: Keats and Wiggins (2014)

Current dietary problems mirror this shortage of nutritious food, with major implications for human health. Today, poor diet is the number one risk factor for death and disability-adjusted life-years globally, with low consumption of fruit and high consumption of sodium having the greatest impacts (Figure 2).

Perishability of food, susceptibility to pests and disease and poor access to quality seeds and other inputs are three major supply-side barriers to increased production of nutritious foods. These factors are behind the low supply response to demand for many nutritious foods. Good transportation, strong market linkages and access to high-quality seeds are essential to incentivize farmers' investment in nutritious products. Without these, the risks of producing highly perishable foods like fruit and vegetables are prohibitive for many farmers, especially poor smallholders who are often nutritionally vulnerable themselves. Public investment in research and development, infrastructure and farmer organizations is needed to reduce these risks and to enable farmers to shift towards a more diversified production model involving a wider variety of crops, including fruits, vegetables and legumes.

Figure 2. Dietary problems mirror food supply



Source: GBD-compare tool (<http://www.healthdata.org/data-visualization/gbd-compare>)

Another factor influencing supply and demand of food stuffs is the growth of transnational food companies that mediate between consumers and producers. Not only are nutritious non-staples risky to produce and lacking in public support; they are also being displaced in diets by aggressive marketing of ultra-processed foods made from low-cost cereals and oils.

Should these trends continue, the result will be more dietary problems, increases in associated malnutrition and diet-related non-communicable diseases (NCDs), and continued pressure on planetary resources.

There are many supply-side actions that countries can take to better align food production systems with healthy diets. These include incentivizing diversification of production through greater public support to growing more-nutritious crops; expanding access to markets for nutritious foods (especially for vulnerable groups); and improving processing, storage and preservation techniques to retain nutritional value and to improve shelf-life and food safety. Many of these actions are best implemented via food security actions, which should support production of sufficient, safe, nutritious food to meet dietary needs and food preferences for active and healthy lives (FAO, 1996). In many countries, achieving this type of support will require a fundamental shift away from cereal-centric food security policy.

Case studies

Public-sector-led sustainable agriculture in the Republic of Korea

Presenter: Deok-Hoon Yoon, Hankyong University, Republic of Korea

The Government of the Republic of Korea currently uses six policy tools to encourage environmentally friendly production practices:

1. Direct payments to farmers who use sustainable agricultural practices
2. Creation of environmentally friendly farming districts
3. Support for soil improvement measures (use of silicate lime)
4. Support to farmers who use green manure crops and improved seed
5. Support for the distribution of environmentally friendly agricultural products
6. Support for livestock manure treatment facilities.

Additionally, soil analysis and fertilizer recommendations are available free of charge in the Republic of Korea's extension centres. Farmers can also access the national soil information system online.

This geographic-information-system-based database and mapping system provides information on the physical, chemical and biological properties of soil countrywide.

Organic farming is now common practice in the Republic of Korea; pesticide use has been decreasing since the 1990s and was formally abolished in 2016. Despite this policy, fruit and vegetable production has continued to increase, which is attributed largely to public-sector-funded research and development on fruit and vegetable production. Consumption of fruits and vegetables has increased concomitantly, reducing reliance on rice and improving dietary quality.

The Republic of Korea provides an example of how public policy can simultaneously improve both agricultural production practices and dietary quality.

***Produção Integrada de Sistemas Agropecuários* programme, Brazil**

Presenter: Paulo César Carvalho, Federal University of Rio Grande do Sul, Brazil

Produção Integrada de Sistemas Agropecuários (PISA) translates roughly into 'integrated systems of agriculture' and is currently rolled out in over 30 municipalities in Brazil's subtropical region, with plans to scale up further.

The programme currently targets low-income smallholders, primarily small-scale dairy farms with an average of 14 lactating cows per farm. These farmers are facing many challenges. They are heavily dependent on external inputs, rely on labour-intensive production systems and have a large environmental footprint.

PISA is working to address these challenges using holistic, locally available and environmentally sustainable approaches. The programme promotes sound grazing practices, discourages tillage and supports crop rotation and integrated crop–livestock production systems. It also provides financial training.

Assessment data indicate that PISA has improved soil health and reduced production costs. The latter is largely attributed to switching from a silage-based feed model to grazing. This has also reduced labour costs and increased efficiency. Milk yields have increased by an average of 30 percent, as has milk quality. To date, PISA has assessed approximately 500 farmers using FAO's Sustainability Assessment of Food and Agriculture Systems, with 90 percent of farmers scoring high across most of the tool's parameters (Carvalho, 2013).

Smallholder livestock production is critical to providing nutritious animal-source foods for healthy diets among vulnerable populations. PISA demonstrates how livestock production practices can be reformed to increase environmental sustainability while simultaneously increasing yield and improving producer welfare.

Fisheries management in Norway

Presenter: Ole Arve Misund, National Institute of Nutrition and Seafood Research, Norway

Norway's fishing industry has transitioned from overfishing and depletion of fish stocks to sustainable management of wild fisheries, which has led to replenished fish biomass and biodiversity.

Norway is one of the world's largest fish exporters. It also has a large aquaculture industry farming salmon and trout. Farmed salmon is high in omega-3 fatty acids; it is also possible to fortify farmed salmon with vitamin D and other micronutrients. Aquaculture reduces pressure on wild stock but comes with its own set of environmental challenges, including sea lice and sourcing fish feed. The challenge of responsible fish feed sourcing is a Norwegian research priority – currently, more than 70 percent of fish feed is from vegetable protein and oil – as is studying the human health effects of consumption of farmed and wild fish.

Seafood is an important part of the Norwegian diet, and the government has a national policy to increase fish consumption in the general population. Despite this, fish consumption among Norwegian women is not as high as it should be and appears to be levelling off.

Non-timber forest products in Cameroon

Presenter: Cécile Ndjebet, African Women's Network for Community Management of Forests, Cameroon

Non-timber forest products (NTFPs) hold great potential for improving dietary quality, increasing earned income and empowering women.

The presentation provided two examples from Cameroon, bush mango and njansang. Bush mango (*Irvingia gabonensis*) fruits, kernel, bark, seeds and wood are all valued. Its fruit is rich in carbohydrate, fibre, vitamins A and C, iron, zinc and copper. Kernels of njansang (*Ricinodendron heudelotii*) are processed into powder or paste and used as an ingredient in sauces. Njansang kernel products are rich in protein, lipids, carbohydrates, micronutrients and minerals.

Women are the primary harvesters of both bush mango and njansang. Demand for both products is high and women have been documented as earning up to US\$9 000 a year from sales of bush mango (WWF & World Agroforestry Centre, n.d.) and up to US\$3 500 from njansang (Biango and Um, 2010).

Challenges to the development of NTFPs include:

- unpredictable production cycles, exacerbated by climate change
- insufficient or inadequate market information for potential wholesale buyers
- poor infrastructure, including lack of roads and bridges
- isolated production zones
- lack of suitable equipment for harvesting, processing and conservation
- deforestation and degradation

Supporting the development of small-scale women's enterprises can help address these challenges. Such support includes technical assistance in organization, marketing and financial management, as well as investment in the development of high-potential NTFP value chains.

Another important area is formal – ideally legislated – recognition of women's user's rights.

Food security policy and programming are critical delivery platforms for these action areas.

Promoting underutilized nutritious forest foods in Cameroon and elsewhere goes hand-in-hand with empowering women, who are the key actors in the NTFP sector. Investing in women also contributes to improving dietary quality, as the resources and income flows that women control have been shown to have disproportionately positive impacts on nutrition security.

Promotion of agro-ecology and healthy diets in Mali

Presenter: Alimata Traoré, Convergence des Femmes Rurales pour la Souveraineté Alimentaire [COFERSA], Mali

COFERSA is a rural women's organization. Founded in 2009, it comprises 36 cooperatives with around 4 000 women members.

Sustainable food systems that are also nutritious extend from field to fork, and that COFERSA is active along this entire continuum. The organization practices organic farming methods, supports

land tenure for women, provides harvest and storage facilities and local seed banks, and provides training and technical assistance in irrigation and soil management. It also sponsors cooking demonstrations, radio broadcasts, leaflets and posters promoting community-level awareness of healthy diets using local, traditional and wild ingredients. COFERSA has distributed 2 000 copies of its leaflet, *Consuming local biodiversity for better nutrition*, within Mali and internationally. In addition to raising awareness on dietary quality and safety, these actions aim to increase local food processing for at-home consumption and sale.

Inventories of cultivated and wild biodiversity and rural women's know-how lie at the very heart of nutrition and healthy diets, and at the heart of the debate which COFERSA champions. COFERSA cooperatives keep inventories of cropland and non-cropland activities, generating substantial data on local commodities such as sorghum, millet and fonio, and enabling reforestation, especially with medicinal plants and fruit trees.

Finally, COFERSA networks regularly with national and international organizations to exchange experiences in traditional farming practices and promotion of biodiversity.

Biofortification of crops in Uganda

Presenter: Bho Mudyahoto, Head of Monitoring and Evaluation, HarvestPlus

Biofortification increases micronutrient density of crops through plant breeding or changes in agronomic practices. Consuming food made from biofortified crops regularly results in measurable improvements in health and nutrition. Biofortification has strong potential for scale-up, especially in rural areas where chronic food insecurity and poverty place nutritious diets out of reach for many households.

Biofortification is best framed as complementing (as opposed to replacing) the promotion of dietary diversity, industrial fortification of staple foods and micronutrient supplementation. In many contexts these interventions are difficult to implement or expensive to sustain on a large scale, and biofortification can greatly expand the coverage and efficacy of nutrition programming while being firmly placed in the hands of the poor. For example, in Uganda the number of households that HarvestPlus and its partners have reached with vitamin-A-biofortified orange-fleshed sweet potato (OFSP) increased from 33 000 in 2012 to 132 000 in 2015. In terms of efficacy, impact evaluations of Ugandan households consuming OFSP have found that intake of vitamin A in children under-five increased by 53 percent over 3 years, while prevalence of low serum retinol decreased by 9.5 percent (Hotz *et al.*, 2012).

Challenges to biofortification of OFSP include balancing dry-matter content and high β -carotene in biofortified varieties, putting in place regulatory policy on vine quality, and vine production in dry areas. Consumer acceptance is also crucial. A critical mass of partners and a network of distributors is imperative to overcoming these challenges. HarvestPlus has learned over the years that public-private partnerships among private breeders, commercial farmers and farmers groups, research institutions and government play a crucial role. Community radio has also proven vital in sharing promotional messages about OFSP, resulting in increased demand for OFSP vines and roots.

It is precisely these partnerships that are helping scale up biofortification and help reduce micronutrient malnutrition. One billion people are projected to have access to nutritious biofortified foods globally by 2030.

Highlights from audience discussion

The fact that most biofortified crops are not genetically modified was clarified, as was the fact that HarvestPlus routinely draws from a large germplasm pool, including traditional varieties.

The need to better link small-scale producers with global food systems was noted, with the closure of local slaughterhouses in Brittany held up as an example.

Questions were raised regarding the nutrition benefits of organic versus non-organic farming. Dr Fan noted that although evidence to date indicates no difference in terms of human nutrition, there is clear evidence that overuse of chemical fertilizers is a major problem, particularly in India and China.

Bibi Giyose (Nutrition and Food Systems Division, FAO), inquired as to whether any country or agency had explicit plans for scaling up and investing in dietary diversification. Ms Giyose also asked Dr Fan whether the CGIAR had plans to invest less in the crops on which they have focused in the past (e.g. rice, wheat, maize) and more in other, nutrient-dense commodities. Dr Fan responded by asserting that the CGIAR is beginning to change, noting increased application of a nutrition lens within the consortium. He also noted that currently it would not be possible to feed the world using organic production methods alone.

The need to include a nutrition-education component in nutrition programming was emphasized by multiple speakers. Education was also noted as crucial to moderating pesticide and fertilizer use.

Questions were asked regarding the scale-up and nutrition impact of PISA. Dr Carvalho confirmed that the programme is expanding its coverage, explaining that Brazil's Ministry of Agriculture is currently preparing a plan to roll the programme out to the entire country. With respect to nutrition impacts, Dr Carvalho cited what is commonly referred to as the income-effect pathway from agriculture to nutrition, describing how increased purchasing power among PISA households was leading to increased consumption of more nutrient-dense foods. He also reiterated a point made during his presentation, that improvements in the quality of milk produced by PISA dairy farmers have been documented, with positive implications for food safety.

Session 1.2: Maintaining and improving Nutritional value and food safety along the value chain

SESSION MESSAGES

- Nutrient-dense foods are highly perishable. Strategies for reducing spoilage and increasing the safety of these foods are critical to improving their availability.
- Additional value-chain strategies for improving diets include product reformulation and fortification. In most contexts, a combination of voluntary and legislated reform is necessary.
- Providing public support for small and medium-sized enterprises can improve the availability of nutrient-dense foods.
- More sharing and policy dialogue on how to make value chains more nutrition-sensitive is needed.

Chair: Eileen Kennedy, Friedman School of Nutrition, Tufts University, United States

Moderator: Gerda Verburg, Coordinator, Scaling Up Nutrition (SUN) Movement, Switzerland

Overview

Presenter: Marie Ruel, Poverty, Health and Nutrition Division, International Food Policy Research Institute, United States

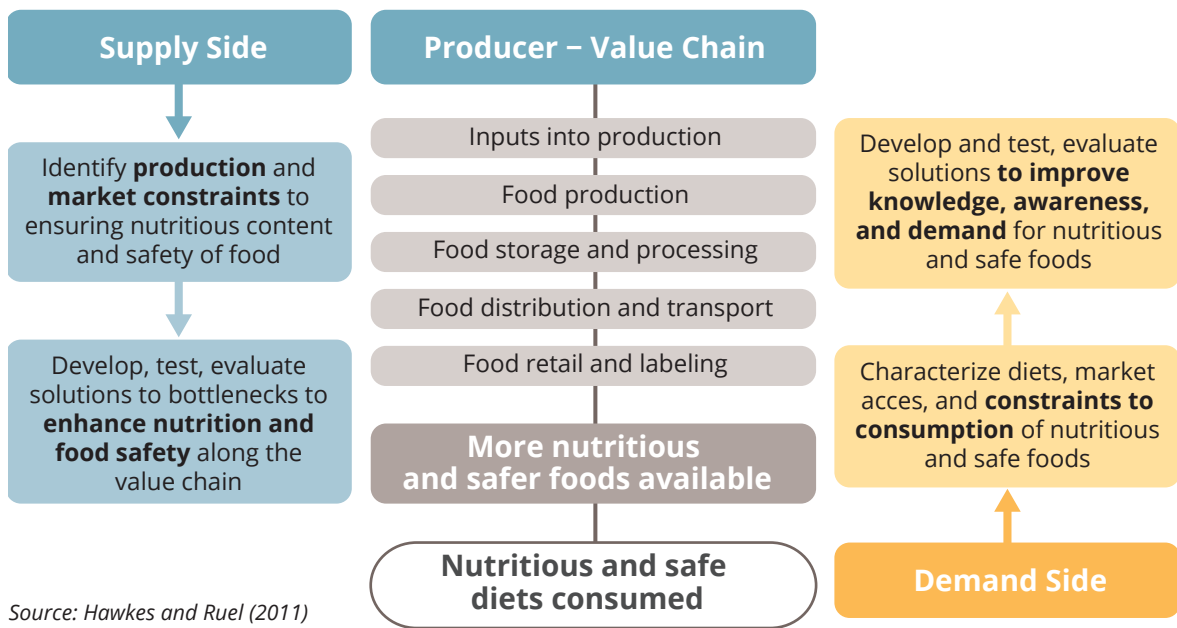
Food safety is closely related to nutrition, as nutrient-dense foods are often perishable and susceptible to contamination and spoilage. Ensuring food safety is a challenge; at least 600 million cases of food-borne illness were reported in 2010 (Havelaar *et al.*, 2015). Using the value chain to enhance the availability, affordability and safety of nutritious foods such as dairy, meat and fresh fruit and vegetables can help address malnutrition in all its forms by increasing the nutrient intake and improving the dietary quality of consumers and by reducing both food-borne diseases and diet-related NCDs such as heart diseases, diabetes and many forms of cancer.

Value chains are defined as the full range of activities that are required to bring a food product from conception through the different phases of production to delivery to consumers and disposal after use. Value chains offer a host of opportunities to improve nutrition and food safety because they:

- involve and promote coordination among multiple actors at several levels
- can be used to identify where in the food supply chain challenges occur, and to test options to address them
- focus on adding value; this is usually in economic terms but can also be nutritional and safety value
- are versatile and can be used to tackle different problems in an integrated way (i.e. both over- and undernutrition, in traditional and modern contexts)

Conventional value chains typically focus on increasing income for producers, processors, traders and other supply-side stakeholders but they can be leveraged to play a greater role in improving the availability, affordability, quality and acceptability of nutritious and safe foods and in creating demand for them. In other words, value chains can be used to reduce constraints to supply and intake of healthy and safe foods and to help create an enabling environment for healthier choices (see Figure 3).

Figure 3. What is a nutrition-sensitive value chain?

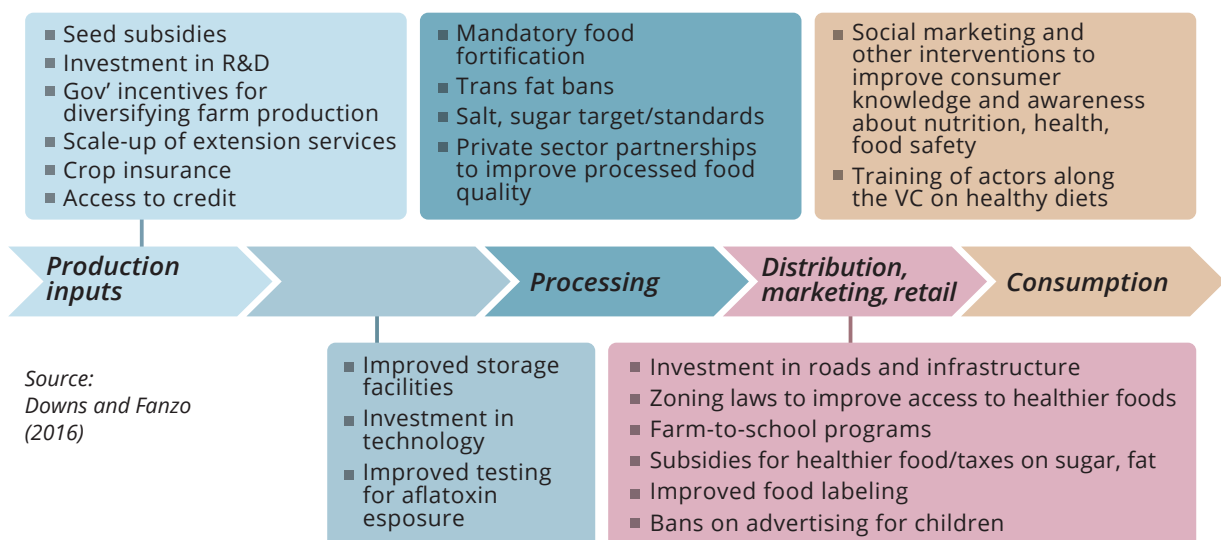


Source: Hawkes and Ruel (2011)

Increasing the nutrition sensitivity of the value chain requires identification of entry points where nutrition can be protected or enhanced. Figure 4 illustrates these points of entry and presents some interventions for each, e.g., at the processing stage, nutrient fortification and the establishment of salt and sugar targets to ensure that food products are not excessively rich in additives. Similarly, entry points for protecting food safety exist at many steps along the value chain, including post-harvest, processing, distribution, marketing and retail, and at the time of consumption. All stakeholders involved in value chains, including consumers, should be educated regarding measures needed to improve food safety.

One example of a highly preventable type of contamination is aflatoxin, which poses a major challenge to peanut- and maize-based value chains in many countries. Safe and affordable measures for reducing aflatoxin risk can be used in a number of value chain stages, including preproduction (e.g. plant breeding for aflatoxin-resistant traits), production (e.g. use of Aflasafe®, a harmless fungus that competes with and prevents the growth of the aflatoxin-producing fungus), and post-harvest drying and storage (e.g. use of properly ventilated, temperature-regulated warehouses).

Figure 4. Sample value-chain intervention points to address all forms of malnutrition



Source: Downs and Fanzo (2016)

Much conceptual work has been done in the past few years on how food systems, and value chains in particular, can be made more nutrition-sensitive and how agriculture can be leveraged to deliver improved nutrition. In parallel, the area of food safety is also gaining momentum, as value chains become increasingly long and populations become more urbanized and change their food sourcing and consumption patterns. A wealth of material is being produced as a result of these developments, including guidance documents; online courses on agriculture and nutrition, value chains for nutrition, and gender and/or food safety; as well as reports on how to make agriculture and food systems more nutrition-sensitive (for example: Hawkes and Ruel, 2011; World Bank, 2013; Save the Children, 2014; GLOPAN, 2014; FAO, 2015a; Herforth, 2016). New communities of practice, partnerships and networks have also been created to build and maintain momentum.

While these initiatives are welcome, there is still an enormous gap in knowledge and evidence derived from rigorous and credible research, from shared learning, and from the documentation, publication and dissemination of lessons learned on implementation, impact and cost effectiveness of investing in nutrition through agriculture and value chains. Research is ongoing, but more investments are required to generate actionable knowledge and evidence if we are to maintain the momentum we currently have on working with food systems and value chains to improve nutrition and food safety.

Case studies

Product reformulation for reduced fat, sugar and salt content in the Netherlands

Presenter: Jantine Schuit, Netherlands Institute for Public Health and the Environment

In 2014, in partnership with the Netherlands' food industry, the Netherlands Ministry of Health signed The National Agreement to Improve Product Composition. The agreement's goals aim for substantial reductions by 2020 in consumption of salt, saturated fats and sugars in the Netherlands, together with decreased portion sizes and reduced total caloric intake. Implementation is via a working group, which, in collaboration with food companies, develops proposals to reformulate specific food products. These are reviewed by a steering committee pending inputs from a scientific advisory committee regarding viability of the proposed reformulations. The entire process is overseen by a supervisory committee. The agreement depends on industry self-regulation, as opposed to government legislation.

To date, the average proposed reductions have been 5 to 10 percent over a 2 to 3 year period, with the majority of proposals focusing on reduced salt content.

With respect to impact, sodium content has declined in bread and cheese products, but these improvements are not reflected in the population; three studies on salt consumption conducted in 2006, 2010 and 2015 indicate no change in intake (Hendriksen *et al.*, 2016). Moreover, certain products with a high salt content that are consumed in large quantities have still not been reformulated.

The scientific advisory committee is of the opinion that proposals for reductions could be more ambitious in terms of: i) the number of products targeted; ii) the magnitude of proposed reductions; and iii) rate at which the proposals are generated.

An additional problem is that data are lacking on consumption and sales of products specifically targeted for reformulation (i.e. pre-reformulation), which precludes *ex ante* estimation of the public health impact of the proposed reformulations. Post-reformulation monitoring is thus critical.

Food safety and regulation challenges in Serbia

Presenter: Tamara Boskovic, Ministry of Agriculture and Environmental Protection, Republic of Serbia

Food safety and regulation challenges facing value chains in Serbia include adoption of European Union food hygiene standards and meeting import regulations imposed by regional trade agreements.

Agribusiness, especially in milk and meat, is an important engine for growth in Serbia. As such, improved adherence to trade partners' regulatory requirements poses both opportunities and risks; opportunities in terms of increased export earnings and strengthened livelihoods; risks in terms of ensuring that growth is inclusive and that small-scale farmers are not crowded out because of economies of scale.

There are thousands of small-scale dairy farmers and meat producers in Serbia producing food for both domestic consumption and export, often using traditional production practices. These smallholders are uncompetitive in terms of product volume and also face significant constraints because of lack of refrigeration and poor transport infrastructure. In addition, there is a lack of knowledge and training regarding food safety, especially formal hygiene measures in food-producing facilities.

National legislation, guidelines and training on food hygiene, safety and quality are pending, as are capacity-building measures on advertising and retail. Efforts to improve agricultural production practices are also under way. Additionally, the government is linking smallholders to high-value export chains. This is in line with efforts to build capacity of producers' associations and encourage open dialogue between stakeholders. In some cases, smallholders are receiving government subsidies to keep their businesses alive. The Government of Serbia is also working to increase empowerment of rural women, for example through support of local value chains that employ women to produce food for schools and other public institutions.

Food fortification policies and programmes in Senegal

Presenter: Abdoulaye Ka, Cellule de Lutte Contre la Malnutrition (CLM), Office of the Prime Minister, Republic of Senegal

As in many countries in Africa, the nutrition situation in Senegal ranges from precarious to very serious, depending on the indicator. In terms of micronutrient deficiencies, there are major concerns about anaemia as well as iodine and zinc deficiencies. The Government of Senegal is using industrial fortification, small-scale fortification and home fortification as strategies to address these challenges, as follows:

- **Industrial:** Working with the flour and oil industries to add vitamin A to oil and folic acid to flour.
- **Small scale:** Working with domestic salt producers on iodine fortification.
- **Home based:** Providing community-based nutrition services, including promotion of home enrichment of foods for children.

These strategies are feasible because of the enabling environment fostered by the CLM, which is located at the highest level of government and which provides a national platform for convening ministries and stakeholders involved in nutrition. Under the CLM, a food fortification committee⁴ has been created which includes the private sector and multiple ministries.

An additional aspect of the enabling environment is legislation. Fortification of salt with iodine is now compulsory in Senegal, as is fortification of oil and flour with vitamin A and folic acid, respectively.

⁴ Comité Sénégalais Pour la Fortification des Aliments en Micronutriments (COSFAM)

The Ministry of Trade and other stakeholders collaborate with CLM on monitoring Senegal's fortification standards. Activities include monitoring of capacity of small-scale producers, monitoring larger-scale producers and importers in terms of quality assurance and control, and monitoring micronutrient content of enriched foods.

In terms of impact, consumption of fortified foods has increased among women and children, while anaemia and iodine deficiencies have gone down.

While fortification is an effective way to reduce malnutrition, more sustainable changes to the food system are also needed to increase production and availability of nutrient-dense foods. These changes can only be achieved by working across sectors, something Senegal is already doing in terms nutrition policy and strategic planning.

Support for the tempeh industry in Indonesia

Presenter: Muhammad Ridha, Entrepreneur and Training Division, Rumah Tempeh Indonesia
The Government of Indonesia is engaging with SMEs to contribute to healthy diets.

Tempeh is a traditional fermented soy product rich in vitamins, minerals and beneficial enzymes. Seventy percent of Indonesians – about 170 million people – eat tempeh every day. Average per capita consumption is 8.5 kg per year, compared with 3.9 kg of chicken per capita per year. Tempeh provides up to ten percent of daily protein requirements in the Indonesian diet and is very much at the heart of Indonesian food culture.

In Indonesia, the tempeh industry is comprised primarily of SMEs, the vast majority of which are home-based. These SMEs sell mainly to traditional local markets, where demand for fresh tempeh is high.

Tempeh producers are currently facing economy-of-scale challenges similar to those faced by Serbian smallholders.⁵ Most lack the capital and technology required to enlarge or improve their businesses. Production permits are often non-existent, and there is a general lack of basic production standards in terms of food safety, hygiene and sanitation.

These issues are at odds with growing demand for tempeh. Historically considered a poor person's staple eaten to keep hunger at bay, tempeh's health benefits have increased its popularity, as has increased use of tempeh as an ingredient in chips and biscuits.

Since 2012, the Rumah Tempeh Indonesia factory has been working to help SMEs meet the growing demand for tempeh. The factory provides training and access to technology and promotes consumer awareness through factory visits and social marketing. Initiated by Indonesian and local non-governmental organizations (NGOs), the factory is funded by the European Union, the private sector and a cooperative of tempeh producers.

⁵ See presentation by Tamara Boskovic.

Highlights from audience discussion

It was noted that while voluntary product reformulation holds potential to change the nutrient composition of foods, it must be accompanied by additional measures (e.g. mandatory labelling) to meet the nutrition challenges countries currently face. The need for stronger government oversight to increase pressure on industry and to accelerate progress was cited repeatedly, with Dr Schuit stating the need for some type of national nutrition institute to set limits and deadlines, and Dr Verburg noting the need to make reformulation a political imperative.

The need for more knowledge sharing and policy dialogue on implementation was noted. Lack of data is a major stumbling block in nutrition and food-system reform, and is one of the reasons why it is often difficult to make nutrition a priority on political agendas. Dr Ruel introduced the International Society for the Implementation of Science in Nutrition as a new platform aiming to address this issue. The society aims to support research into implementation of improvements to nutrition and food safety and dissemination of its findings. In a related comment, Dr Verburg noted the vast body of implementation knowledge already held at country level by national practitioners. To date, this knowledge is underutilized.

Questions were raised regarding how to work with government on women's empowerment. As with reformulation, the need to make this subject a political imperative was noted.

Dr Boskovic emphasized the importance of subsidies in encouraging Serbian smallholders to use organic production methods, and in terms of supporting women-led value-chain activities.

In response to a question on home-based food fortification, Dr Ka explained that, with assistance from the United Nations Children's Fund (UNICEF) and WHO, CLM is targeting children through promotional campaigns, and that the primary fortification vehicle is micronutrient powder. A study is under way to assess the impact of these efforts.

Numerous comments were made regarding the benefits of value-chain-based strategies for improving food systems. Unlike intervention paradigms, which take an eat-what-you-grow approach (e.g. home gardening), value-chain programming promises to reach a much wider range of consumers, including those whose diets consist of a complex mix of domestic and imported products. Value chains weave through almost all aspects of food systems, from preproduction inputs all the way to what ends up on the plates of consumers. When leveraged to address nutrition and health, they can convene a range of stakeholders around a common goal, thus serving as a moral compass to guide broad food-system reform.

Dr Verburg closed the session by noting that pro-nutrition value chains will only be successful if there is demand for their products. He recommended that developing such value chains should start with consumers and work back to producers.

Session 1.3: Leveraging market opportunities for promoting healthy diets

SESSION MESSAGES

- Consumer demand for healthy foods is increasing around the world, but the market is failing to provide the range of foods demanded.
- Government and industry must work together to meet consumer demand through policy reform and development of new products that increase availability and affordability of sustainably produced, healthy diets. A key area of action is support to small and medium-sized enterprises.
- Trade policy can play an important role in shaping market opportunities for promoting healthy diets by influencing what foods are available in a given country or region, and at what price.

Chair and moderator: Eileen Kennedy, Friedman School of Nutrition, Tufts University, United States

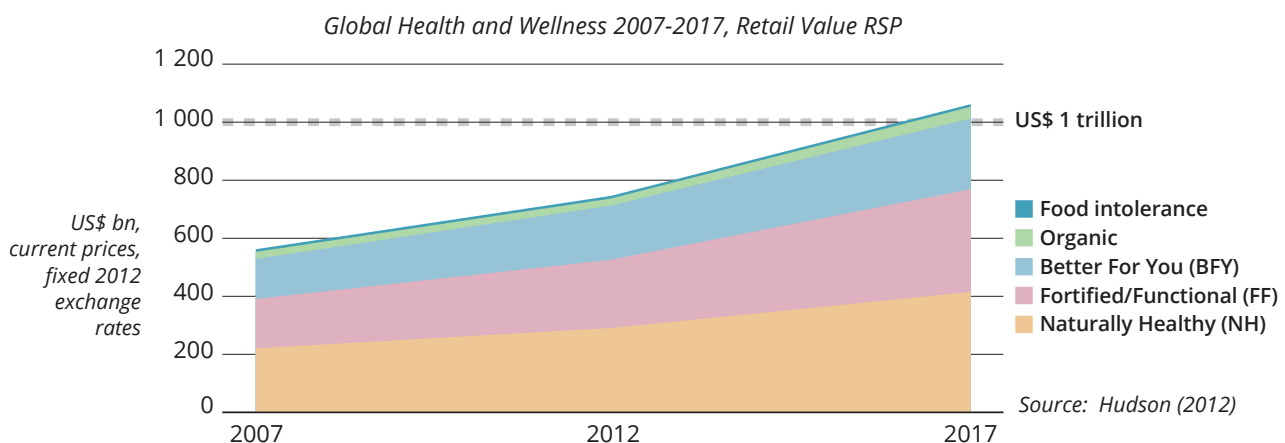
Overview

Presenter: Gianluca Brunori, Department of Agriculture, Food and the Environment, University of Pisa, Italy

Health has become one of the most important drivers of the food industry. Demand for healthy food products – gluten-free, organic, natural, vegan, low fat, dairy-free etc. –has grown more rapidly than demand for conventional products in recent years, and industry is running to keep up (Figure 5). Changes made in response to this demand include reduction of sugar in soft drinks and yoghurt, removal of palm oil from baked goods and snacks, and reduction in the use of antibiotics in livestock and poultry production. Many mainstream food stores have increased shelf space allotted to ‘healthy’ brands, and are actively promoting these products. At the same time, market share of retailers who specialize in healthy foods has increased enormously.

These trends, however, do not necessarily result in healthier diets. First and foremost, there are doubts about the healthiness of many products that carry health claims. Second, even when a given product does contain relatively healthy ingredients, there is no reason to assume that consumers of that product are eating healthily overall. Indeed, the marketing of supposedly healthy products focuses on one or a few beneficial items within the product, thus disconnecting the product from what constitutes a healthy diet, and in some cases encouraging overconsumption of the item(s) in question.

Figure 5. Changes in the global market for ‘healthy’ food products, 2007–2017



As such, these trends are insufficient in and of themselves to produce better dietary and health outcomes. For these outcomes to occur at population level, efforts must be made to deliver systemic changes in consumer behaviour and increased availability of healthy foods. Changes in behaviour require education. To increase availability of healthy foods, new markets must be created that improve the entire foodscape.

Government policies have an important role to play in achieving both of these goals. These include, for example:

- national dietary guidelines, which can serve as a national roadmap to improved diets and which can be used to promote sustainably produced food;
- public procurement measures that can be used in schools and other institutions to introduce appropriate diets and support local value chains;
- urban food planning and programming, such as support to farmers markets and commercial regulations.

In a growing number of countries, these and other policy measures are being used to support small-scale farmers and associated supply chains. Increasingly, these alternative food networks hold an advantage over large, mainstream agrifood firms in providing products that match current consumer values. These products and their associated supply chains are also more in line with quality-standard goals needed to improve entire food systems. This includes, for example, organically and humanely produced foods that enhance environmental sustainability, biodiversity and animal welfare; ethically produced fair trade foods; and locally produced foods grounded by geographical indication and cultural tradition.

These networks are valuable: i) because they fundamentally increase availability of nutritious, ethical and environmentally viable food; and ii) because they can be used as drivers for innovation and improvement in the entire global system. For example, in a comparison of local, regional and multinational bread companies, the local product had the highest standard in terms of healthy and ecological characteristics (Table 1).

Table 1. Ecological and nutritional assessment of breads produced locally, regionally and globally

<i>Supply-chain level</i>	<i>Indicators</i>	<i>Global</i>	<i>Regional</i>	<i>Local</i>
Farmers and farmers' consortia	Varietal diversity	Low	Medium	High
	Saving of seeds	No	No	Yes
	On-farm ecosystem management	N/A	Low	High
Millers	Presence of ancient wheat varieties	No	Medium	High
	Kernel in flour	No	Yes	Yes
	Whole grain, multigrain	Yes	No	Yes
	Milling rate	No	Yes	Yes
Bakers	Discontinuous leavening	No	Yes	Yes
	Sourdough	No	Yes	Yes
	Additives to improve flour strength	Yes	No	No
	Starters to speed up leavening	Yes	No	Yes
	Additional functional ingredients	Yes	No	No
	Salt level	Low	No	Low
	Use of preservatives	Yes	No	No
Retailers	Health claims	Yes	Yes	No
	Traceability	No	Yes	No

Source: Bartolini et al. (2017)

Given the current food-industry environment, which recognizes the potential returns on foods with healthy characteristics but which is lagging in terms of delivering them, government and other stakeholders should develop strategies for leveraging alternative production practices for greater use on regional and global markets.

Case studies

Expert consultation on trade policies and nutrition

Presenter: Josef Schmidhuber, Trade and Markets Division, FAO, Italy

A consultation focused on how trade and associated agricultural policies affect value chains and food systems concluded that such policies are often ineffective or inefficient instruments for improving nutrition, which requires specific, targeted policies. However, there is a growing recognition that there are possibilities to make otherwise-blunt policy tools effective options for improving diets.

One explanation for the low effectiveness of agricultural policies is that price transmission between the primary products and the final consumer good is often low. Modern supply chains are often long and complex, with the vast majority of value added post-farmgate. Where these supply chains are shorter and less complex, agricultural policies can and indeed have changed consumption patterns. For instance, the use of cereal export subsidies in countries belonging to the Organisation for Economic Co-operation and Development is believed to have changed consumption preferences in North Africa and the Near East, encouraging consumption of western grains and bread. Once these consumption patterns had changed, they were hard to reverse and have persisted over generations despite the export subsidies having been removed.

Particularly in developed countries, consumers are unresponsive to price changes (low price elasticity of demand), notably for commonly eaten foods. As a consequence, trade and associated agricultural policies are often ineffective in improving dietary quality

However, despite these rigidities, the right circumstances can make consumers change their habits, even swiftly and substantially. Where healthy substitutes are available, even a small subsidy to reduce the price of the healthy alternative (or a small tax on the unhealthy product to raise its price) can help change consumer behaviour. For example, a small tax on sugar-sweetened beverages, or a small incentive (nudging) on unsweetened or artificially sweetened beverages, can make consumers switch to the healthier product.

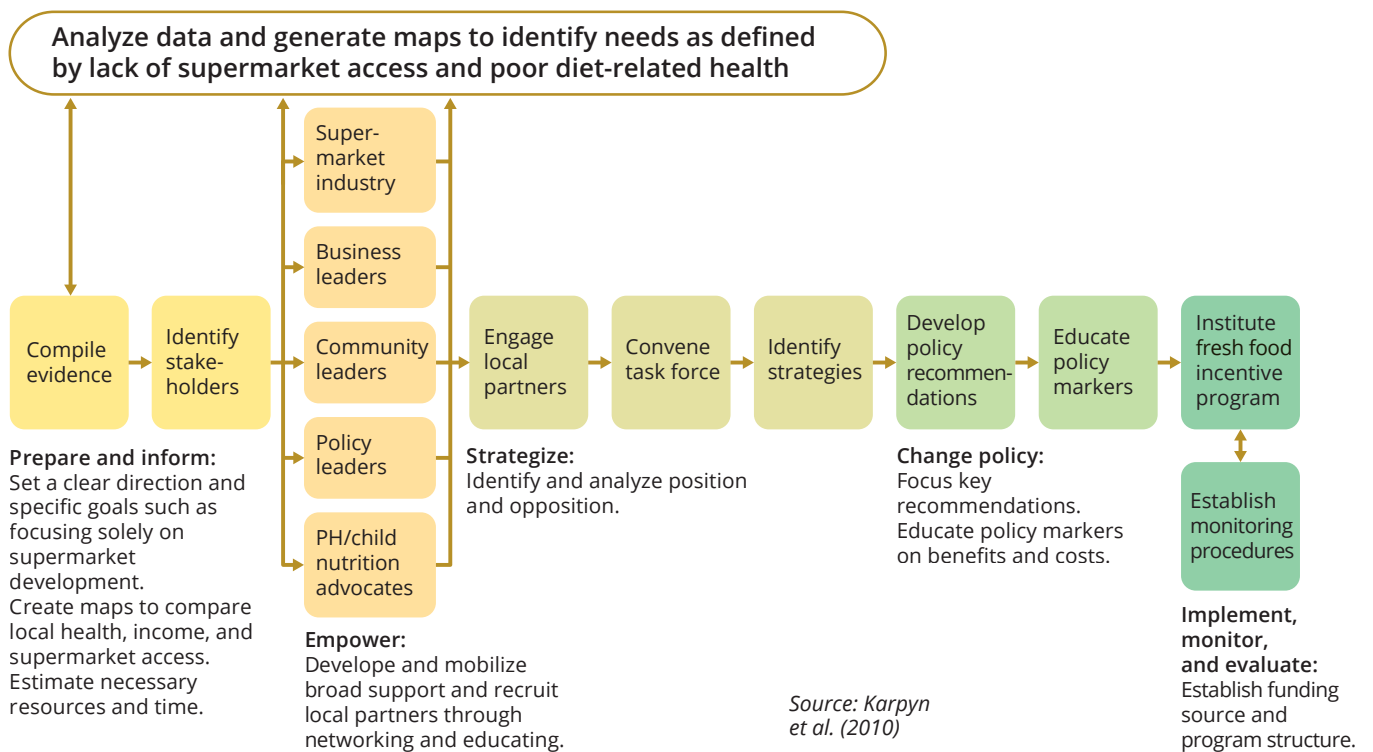
Overall, food taxes and other regulatory measures to increase consumer demand for healthy products can be efficient if such alternatives are present and consumers consider them reasonable substitutes in terms of price and taste. Trade and agricultural policy can help increase the availability and affordability of these alternatives.

Improving access to healthy food in Philadelphia, United States

Presenter: Allison Karpyn, Center for Research in Education and Social Policy, University of Delaware, United States

Like many American cities, Philadelphia faces major disparities in access to healthy food and in prevalence of non-communicable diseases (NCDs). Supermarkets are concentrated in higher-income areas, and NCD prevalence is higher in lower-income ones. The Food Trust – a Philadelphia-based NGO – mapped and analysed these disparities using a geographic information system (GIS) and used the results to recruit industry, business, community and policy leaders to serve as public-health nutrition advocates for underserved communities. Using the maps as a starting point, these high-level stakeholders were convened in a task force to identify strategies, develop recommendations and educate policy-makers on the benefits and costs of different options (Figure 6).

Figure 6. The Food Trust solution to food and health disparities in Philadelphia, United States



Over the course of four meetings, the task force identified a number of possible interventions, the largest being a fresh-food incentive programme comprised of one-off grants and loans given to grocery stores, farmers’ markets and small corner shops to facilitate the stocking and sale of healthy foods. Monitoring, to be conducted by The Food Trust, was built into the proposal.

This model has now been replicated in many American cities. It is also being used at federal level via the Healthy Food Financing Initiative, which has disbursed over US\$160 million since 2011.

Helping small-scale farmers to commercialize in Ecuador

Presenter: Hermel Tayupanda, Mayor of Colta, Ecuador

Tierras Altas is a municipal enterprise that is helping small-scale farmers in Colta canton of Ecuador to commercialize their operations. Tierras Altas provides fair prices to small-scale producers who are growing healthy foods in an environmentally sustainable way. Its ripple effects are far-reaching and include improved food security and better quality of life for the entire canton (Figure 7).

Initiated as part of a larger rural development programme, Tierra Altas provides capacity-building and financial and technical support. The programme works with four producers’ associations – cereals, vegetables, small livestock and dairy – to strengthen value chains for quinoa and a host of other nutritious foods. Activities include organizing producers, providing training and technical advice, providing collateral to secure credit and providing insurance to protect against the effects of severe weather events and other shocks.

Tierras Altas also serves an intermediary function, buying directly from producers and selling the products on regional markets and to hospitals and other public institutions.

The aim of Tierras Altas is not to make profits as such but rather to provide a social investment in the community. In many cases, children have been able to attend secondary school, and in some cases university, thanks to the money their parents are earning through this programme.

Figure 7. Ripple effects of Tierras Altas in Ecuador



Creating a marketplace for nutritious foods in Mozambique

Presenter: Katia Santos Dias, Global Alliance for Improved Nutrition (GAIN), Mozambique

In Mozambique, as in many other countries, nutritious, diverse diets are neither available nor affordable for the average citizen. GAIN is helping to address this challenge through the Marketplace for Nutritious Foods project. This supports SMEs whose innovative products and services make diverse, nutritious food more available and more affordable in the country. Examples include butter manufacturing, tilapia farms, milk dispensaries and bakeries producing soy-based products.

The project provides financing facilities, training, infrastructure and technical assistance. It also facilitates communities of practice in which SMEs convene and exchange information and advice. These communities of practice enable capacity-building on topics ranging from business plans to food safety and hygiene practices.

The Marketplace also includes an innovation accelerator to foster new practices aimed at helping entrepreneurs align with market demands while increasing availability and affordability of nutrient-dense foods to poor consumers. The innovations are often simple, such as, for example, selling chicken quarters rather than whole chickens. The quarter chickens are more affordable and do not need refrigeration as they are meant to be eaten on the day of purchase. Other concepts include a fortified porridge mix made from a corn-soya blend, iodized salt sold in small packages, yoghurt made with native fruits, and kiosks selling nutritious foods.

Improving nutrition sensitivity of Italian and global food systems

Presenter: Luigi Pio Scordamaglia, Food and Drink Industry Federation (IFS), Italy

The Italian food industry is contributing to improving the nutrition sensitivity of both Italian and global food systems.

The Italian food and drink industry is fully aware of its responsibilities not only to provide healthy and safe food products, but also to support the adoption and promotion of a varied, nutritionally balanced and healthy diet.

On the supply side, the Italian food industry has strong negotiation powers and uses them to encourage producers to meet high standards in quality and quantity. However, these can be met only if farmers receive fair remuneration. There are cases of this happening in Italy. For example, long-term contracts with farmers are now the norm in the Italian grain, meat and hazelnut sectors. These contracts have permitted farmers to invest in sustainable production practices, resulting in improved stewardship of natural resources as well as high-quality products. Environmental sustainability is paramount for the IFS.

On the demand side, the IFS plays critical roles in ensuring that healthy foods are available to Italians, and in enabling well-informed and educated dietary decisions. To date, IFS has reformulated approximately 4 000 products to reduce energy density and improve their alignment with nutrition needs. Additionally, the IFS has signed an agreement with the Italian Ministry of Health to improve the nutrition content of foods targeted to young children. It has also adopted self-imposed rules on food advertisements, especially marketing to children.

For public-private partnerships to be most effective, transparency and education are crucial. Guidelines must be developed by accountable and independent institutions and professionals, and must be based on solid scientific evidence.

Additionally, it is critical to uphold responsible industry practices in Europe, and to transfer them to emerging markets. This requires encouraging an integrated involvement of the entire food supply chain and promoting valorization of agriculture, especially in emerging economies where there are large, unrealized opportunities for agribusiness.

Role of food banks in Italy

Presenter: Angela Frigo, European Union Liaison Officer, Fondazione Banco Alimentare Onlus, Italy

Food banks are increasing access to safe and healthy diets while simultaneously reducing food waste in Italy.

Fondazione Banco Alimentare Onlus (FBAO) was established in 1989 in Italy and has been a member of the European Federation of Food Banks since 1990. Food banks serve two functions: they increase access to food for vulnerable people, and they prevent safe and nutritious food from going to waste. In 2015, there were an estimated 1 200 food banks in 60 countries worldwide.

In Italy, FBAO coordinates a network of 21 food banks. Every day, surplus food that is still edible but no longer marketable is donated to these food banks, and every day volunteers sort, shelve and refrigerate these food products. Traceability and sell-by dates are recorded in the network's integrated transaction control system.

Italy's food banks provide thousands of civil society organizations (CSOs) with free food products to give to poor families and individuals. The quantities and types of foods provided are tailored to match beneficiary needs. So, for example, a CSO serving mainly children and families may receive a different basket of food products than one serving the elderly and infirm.

One of the many positive spillovers from this system is that it frees up time and money that CSOs would otherwise spend on procuring food for their beneficiaries, allowing them to use these resources to provide other social services, such as job training or financial advice. Another benefit is the opportunity to originate a virtuous circle involving many different stakeholders (public authorities, food supply chain, CSOs, volunteers, poor households) promoting partnerships between private and public sectors on food safety, food poverty and reduction of food waste.

The food-bank model strengthens local food environments through increasing the availability of safe and nutritious food for those who need it most, and by reducing food waste. It also provides a good platform for engaging public- and private-sector food-system actors. The model is flexible and can be adapted to local contexts worldwide.

Highlights from audience discussion

Francesco Branca (Director, Nutrition for Health and Development, WHO) clarified that there is growing evidence for the effectiveness of fiscal policies such as taxes on unhealthy food and beverages and traffic-light food-labelling systems, citing examples from Ecuador (the first country in Latin America to implement a traffic-light front-of-pack food-labelling protocol), Mexico and the United States (PAHO, 2015; Colchero *et al.*, 2016; WHO, 2016a). Dr Branca noted that the Mexico analysis includes findings specific to low-income consumers indicating increased water consumption in place of soda (as opposed to unhealthy substitutes or regressive effects).

Numerous comments were made in response to Dr Schmidhuber's statement that trade and associated agricultural policies are largely ineffective or inefficient instruments for improving nutrition. For nutrition advocates, one of the main requirements is to increase policy coherence between health objectives and trade objectives. It was noted that statements such as those made by Dr Schmidhuber close the door on that dialogue by sending the message that trade policy-makers should not be held accountable for global health outcomes.

A do-no-harm approach was proposed as an alternative way to frame the issue, considering where there are opportunities for improving nutrient content and for reducing risks in current, internationally traded food value chains.

Additionally, it was noted that in many cases, the effects of trade policy infringe on government attempts to improve national health. For example, trade liberalization can flood local markets with unhealthy ultra-processed foods, and aggressive export policies can raise local prices for healthy foods, especially in countries where supply chains are relatively short.

Dr Schmidhuber responded by noting that, in many cases, governments exacerbate these problems, for example by neglecting to impose tariffs and quotas, or by maintaining consumer subsidies that indirectly lower the price of certain unhealthy food products.

Dr Anna Lartey (Director of the Nutrition and Food Systems Division, FAO) noted that context is crucial when making recommendations for healthy diets. She noted that, while in this session there had been discussion regarding the risks of [over]consumption of meat, another parallel session had included presentations on the benefits of eating meat in populations where anaemia and iron deficiency are problems.

A question was raised regarding the role played by alternative food systems in shaping global trends: will they lead the way in reshaping conventional supply chains in terms of environmental sustainability and healthier products, or will they merely increase the availability of the latter without inducing broader systemic reform? Dr Karpyn responded by describing the American experience, which has differed by state, with California developing a full-blown alternative food system that has been leveraged to improve practices state-wide, and Pennsylvania integrating alternative food systems into the existing, conventional food system.

A speaker from Chad noted the urgent need for technological know-how and infrastructure in sub-Saharan African countries where post-harvest losses are high. The comment was reiterated by Dr Schmidhuber, who noted that economists consider technology transfer to low-income contexts an efficient policy option.

SUBTHEME 2: Demand-side policies and measures for increasing access and empowering consumers to choose healthy diets

Introduction and key messages

KEY MESSAGES ON DEMAND-SIDE MEASURES (SUBTHEME 2)

- Empowering consumers to make healthy food choices is essential to addressing both undernutrition and overnutrition, as a healthy diet helps prevent all forms of malnutrition and diet-related non-communicable diseases. People are much more likely to make healthy dietary choices when nutritious food is readily available, recognizable and affordable. Governments should prioritize food and nutrition policies that focus on improving the food environment.
- Food marketing and advertisements must be regulated to ensure that claims are not misleading and nutrition labelling is clear. Fiscal (dis)incentives such as taxes and subsidies, legislative mandates such as nutrition standards in government institutions, and nutrition education that starts with the very young are essential for creating consumer demand for nutritious foods. Together, they exert pressure on the food industry to improve food environments.
- Additional measures for empowering consumers include nutrition education and awareness-raising to enhance knowledge and motivation to select and prepare nutritious foods and to promote healthy dietary behaviour. Delivery platforms for these measures include nutrition-sensitive social protection programmes such as school food and nutrition schemes.
- There is huge potential for synergies between all these types of measures, with national or regional food-based dietary guidelines playing a critical role by anchoring the entire range of actions within the same implementation framework.
- It is possible for the private sector to play a constructive, positive role in these efforts. Government regulations and fiscal disincentives should be supported by the active collaboration of the food industry.

Coherent public policies are needed to enhance sustainable food systems so that they maintain or improve nutrition and promote healthy diets for everyone, at all times and in all stages of life (FAO/WHO, 2013). While such policies need to address both the supply and demand sides of food systems, this subtheme specifically explored demand-side policies to create enabling food environments that empower people to choose and consume healthy diets.

Greater availability of convenient, inexpensive, ultra-processed food products has contributed to a growing global burden of overweight, obesity and non-communicable diseases (NCDs). The dramatic global rise in the prevalence of childhood overweight and obesity is particularly alarming. At the same time, undernutrition, including multiple micronutrient deficiencies, persists in many populations.

What can be done to counter these trends from the demand side? First and foremost, people need to be better informed on what comprises a healthy diet; nutrition education and information has proved effective in helping consumers make healthy food choices. Second, people need to

be able to access healthy foods easily. Indeed, if nutritious foods are not available and affordable, people simply will not include them in their default dietary choices. Countries can maximize the likelihood of meeting both these goals by implementing a portfolio of complementary regulations and measures, beginning with nutrition education and awareness-raising on i) what constitutes a healthy diet and ii) the health risks of ultra-processed foods, as follows:

- **Nutrition education on what constitutes a healthy diet:** The World Health Organization (WHO) definition of a healthy diet emphasizes consumption of fruits and vegetables, legumes, nuts and whole grains, and limitations on the intake of sugary snacks and beverages, processed meats and salt. It also stipulates using healthier cooking methods to limit fat intakes and replacing saturated and industrial trans fats with unsaturated fats (WHO, 2016b). WHO guidance on healthy diets also highlights the need to start healthy eating habits in early life through proper breastfeeding and complementary feeding practices, and cites the importance of food safety (WHO, 2016b). Educating consumers, including children, on these requirements is fundamental to improving nutrition worldwide.
- **Health risks of ultra-processed foods:** Easy-to-understand nutrition labelling of ultra-processed foods helps increase consumer awareness of nutrient contents and health implications by listing the ingredients in individual food products and in ready-to-eat meals. Increasingly, government nutrition authorities are introducing simplified front-of-pack, shelf or menu labelling schemes to ensure that nutrition information is readily accessible and can be easily interpreted. It is imperative to strengthen these government labelling schemes by prohibiting industry-based nutrient or health claims on foods that are high in fats, sugars or salt. These claims are often misleading and can encourage consumers to make poor dietary choices. Children are particularly susceptible to inappropriate marketing tactics and as such require high levels of protection, per the WHO recommendations on marketing of foods and non-alcoholic beverages to children (WHO, 2010). Aggressive marketing of breast-milk substitutes and baby foods can undermine optimal breastfeeding and complementary feeding practices. As such, policy-makers are urged to implement *The International Code of Marketing of Breast-Milk Substitutes*⁶ (WHO, 1981) and WHO guidance on ending the inappropriate promotion of foods for infants and young children (WHO, 2016c).

In addition to these fundamentals, policy-makers are strongly urged to use additional regulatory tools that empower consumers and shape the food environment in ways that make healthy diets default diets. These include taxes and subsidies, which serve the dual purpose of influencing consumers through price effects and incentivizing food manufacturers to reformulate their products; quality standards for food served in public institutions, most notably schools but also hospitals, prisons and government offices; and restriction of or outright bans on certain foods and ingredients, such as trans fats.

There is huge potential for synergies between all these types of measure, with national or regional food-based dietary guidelines (FBDGs) playing a critical role by anchoring the entire range of actions within the same implementation framework. FBDGs translate WHO dietary guidance into messages that are easily understood in a given country context. They can be used to raise awareness of what constitutes a healthy diet, and provide a clear legal rationale for all measures that aim to reduce proliferation and consumption of unhealthy food products.

Against this background, Subtheme 2 of the symposium comprised three sessions on demand-side policies for increasing access and empowering consumers to choose healthy diets, as follows:

- **Session 2.1:** Regulations, awareness and advocacy for better-informed food choices
- **Session 2.2:** Information and education for healthy food behaviours
- **Session 2.3:** Increasing access to healthy diets through social protection and income-generation strategies

⁶ The International code of marketing of breast-milk substitutes, adopted in 1981 by Resolution 34.22, must be read in conjunction with relevant subsequent WHA Resolutions. See <http://www.who.int/nutrition/netcode/resolutions/en/>

Session 2.1 focused on the regulatory measures described above, including tighter regulation of advertising, especially to children; traffic-light labelling schemes that alert consumers to unhealthy products; and fiscal disincentives such as taxes on sugar-sweetened beverages (SSBs). As previously noted, FBDGs greatly facilitate implementation of these policies by establishing a formal, legally-framed dietary vision for countries. Case studies presented in Session 2.1 described country experiences in advocating for and implementing these types of regulations. Multiple countries noted that advocacy campaigns that lead to enactment and implementation of regulations and measures to improve diets require alliances between civil society, academia and researchers. The involvement of these actors is essential to galvanizing the critical combination of public pressure and hard data to which politicians respond. The session also underscored the role of the private sector, noting that it is possible for the private sector to play a constructive, positive role in these reforms. Regulations and fiscal disincentives must be balanced by active collaboration with the food industry.

Session 2.2 focused on provision of information and education. These types of actions have a synergistic relationship with the regulatory measures covered in Session 2.1. Both are needed to fully empower consumers and drive a demand response that will incentivize industry to produce healthier products. Case studies during this session focused heavily on the importance of instilling healthy food behaviours at an early age. Reinforcing nutrition education with provision of healthy, appealing meals in primary and secondary schools has lifelong impact and should be a political priority. Sending nutrition messages that are easily understood and that resonate with as many people as possible was also repeatedly noted to be critically important. A wide range of delivery modes was discussed, with social media, television, radio and print cited as almost universally appealing, but with additional, context-specific platforms such as local fresh-food markets, agricultural extension and celebrity nutrition champions also being discussed. Both this session and Session 2.1 highlighted the need for an enabling political environment, noting the key role played by FBDGs.

An additional delivery platform, social protection programmes, was the focus of Session 2.3. Social protection schemes reach many vulnerable people in many countries, and improve food security and purchasing power. As such, they can – in some contexts – be leveraged to increase demand for and supplies of nutrient-dense food, not least because they provide a large captive audience for nutrition-education interventions as well as activities that facilitate increased access to healthy foods. Examples were provided by case studies on school feeding schemes, including those that procure food from local smallholders, and on cash transfers linked to agricultural inputs and nutrition education. This session also reiterated the need to anchor these types of schemes – which typically require collaboration between the education, health and agriculture sectors – in a strong national policy framework that makes nutrition a priority.

Session 2.1: Regulations, awareness and advocacy for better-informed food choices

SESSION MESSAGES

- Children and adults become accustomed to the foods around them. If nutritious foods are not easily available and affordable, they will not be included in everyday food choices.
- A suite of policies that sends a coherent message can increase consumer demand for healthy food choices. Key among these policies are: tighter regulation of advertising, especially to children; school-based education programmes; labelling schemes that alert consumers to unhealthy products; and fiscal disincentives such as taxes on sugar-sweetened beverages.
- Food-based dietary guidelines greatly facilitate implementation of these policies by establishing an official national dietary vision that drives food and nutrition standards from production to consumption.
- Alliances among civil society, academics and researchers are essential if advocacy campaigns are to lead to enactment and implementation of these policies.
- The private sector can play a constructive, positive role in these reforms. The food industry should support the regulations and fiscal disincentives.

Chair and Moderator: Carlos Monteiro, Professor of Nutrition and Public Health, School of Public Health, University of São Paulo, Brazil

Overview

Presenter: Corinna Hawkes, Professor of Food Policy and Director, Centre for Food Policy, City, University London, United Kingdom

What people choose to eat is not just a matter of how knowledgeable they are and how much money they have; it is also a question of the environments around them – the social and information environments and the food environment. Food environments, in particular, shape what options are available for people to choose from with the money they have. Moreover, evidence shows that they shape what people want (Hawkes *et al.*, 2015). Thus, children learn from the food environment that they grow up with and they learn what they like from it. Food environments influence dietary choices throughout people's lives.⁷

How can regulations help improve food environments and the dietary choices they affect? In answering this question, it is important to put ourselves into the shoes of a parent or a caregiver. There is no evidence from anywhere that shows that parents and caregivers want anything other than to provide their families with healthy and nutritious diets. However, most parents and caregivers are exposed constantly to unhealthy dietary prompts because of their food environments.

⁷ Herforth and Ahmed (2015) describe food environments as the range of foods that are available, affordable, convenient and desirable to people in a given context, while Hawkes *et al.* (2015) describe the concept as comprising the everyday prompts that nudge consumers' food choices in particular directions, and that contribute to dietary habits and preferences that can have long-term impacts, especially in children. Both of these definitions trace a clear trajectory from food systems to food environments to dietary choices, with implications for nutrition.

Consider a day in the life of a caregiver from lots of places around the world. They give their children white toast because it is what everyone around them gives their children; it is a standard breakfast, a social norm. They give their children that for breakfast, they eat it themselves, but they have no idea that that bread actually contains very high levels of salt.

They then take their children to school. They know perfectly well that snack foods are not a good thing for their children to eat, except maybe as a treat. However, they are faced with their child begging for these snacks, because they are available everywhere and advertised heavily. Their child gets little nutrition education at school, and if they are given lunch, it is not very appetizing and it is certainly not particularly nutritious.

They go to work themselves. They are not given any kind of food in the workplace and tend to skip lunch to save money. Moreover, there is no fresh, clean water in the workplace. They leave work thirsty and walk past a place selling soft drinks. They would like to buy water – they know it is the healthiest option – but it is so much more expensive than the sugary drink that they end up buying.

After work, they go shopping for their family and they see a cereal product they have not seen before and they think, “This looks great, it has got vitamins and fibre in it. I will buy it for the children and they will be excited at breakfast-time.” Like the white bread they toasted this morning, they have no idea that this cereal is full of additives; indeed it contains more sugar than fibre.

Finally, they collect their children from school. Once home, they serve the evening meal of prepared foods purchased at the grocery store or from a take-out restaurant. More often than not, this meal is high in saturated or trans fats, sodium, sugars and other additives and lacking in minimally processed, nutrient-dense foods. The streets are not safe and they do not have a garden to play in so after dinner their children stay indoors and watch television, exposed to yet more food advertising.

That is their day.

If you grew up in this kind of situation, why would you demand a healthy diet? Children and adults become accustomed and used to the foods around them. If nutritious foods are not present, they are not the default and indeed in many cases may be viewed with suspicion and distaste.

Let us imagine a different world, one in which regulations play a role in helping children grow up eating well; a world in which healthy diets are the default option. This world would include regulations reducing the amount of salt, sugar and other additives in food. In today's world, such regulations pose a problem for the producers of food products in terms of compromising taste. But in our alternative world, we would engage with these producers and work out healthier ways to get more taste into foods using whole, nutritious ingredients.

This world would also regulate groceries and other types of food retailers. Importantly, however, we would have again made engagement key, working with stores to develop strategies that protect livelihoods while simultaneously increasing the healthiness of foods sold.

There would also be regulations on standards of food served in public institutions, including schools. Every weekday, schoolchildren would consume a nutritious and delicious meal and would carry the habit of enjoying healthy food forward to adulthood. And again, imagine that the process of implementing these public food standards involved real engagement with the institutions, with the food suppliers and with the people who are serving the food, so that everyone was in agreement.

All this engagement with stakeholders would be supported by economic disincentives, such as taxes on sugary drinks. These taxes would discourage retailers from selling such products, which would in turn affect industry, resulting in an increased desire by both food sellers and food makers to explore options that are healthier and thus unregulated. Industry is very good at making people love products. Why not use regulations to push them to make beverages and foods that people love and that are healthy as well?

To strengthen our agenda further, imagine regulations mandating nutrition labelling to make it crystal clear to consumers which products are high in sugar, salt and other additives and which are not. There again, the disincentive is passed up to industry, eventually resulting in high-additive products disappearing from the shelves and being replaced by healthier options.

Finally, let us imagine that there are regulations restricting marketing of unhealthy food to children. But instead of just banning these advertisements there is also investment in replacing them with social marketing on healthy diets.

Children growing up in this alternative food environment would naturally prefer wholesome, nutritious products over unhealthy, ultra-processed foods. Additionally, in this world, food-system actors like the agrifood industry and major retailers would unleash their formidable marketing power in a race to the top to produce healthier food. In this alternative reality, there would be no need for regulation. But until we get to that point, the need to level the playing field regarding what is acceptable and what is not is urgent. Public-sector regulation throughout the food system is critical to put people, not market signals, at the centre of our food systems.

This would not require a large number of regulations. There are about six areas in which regulations would be needed to have substantial impact in most countries (Figure 8).

Figure 8. Six areas requiring regulations to increase demand for healthy diets



These interventions are people-centred. They aim to change what is normal eating for the average consumer. But to be successful they must also change industry by way of incentives for food-system actors to deliver healthy alternatives.

As such, it is imperative to remember that regulations are not about banning and negativity. They are about support; about supporting change in norms for businesses as well as people. Regulations are to engage the private sector, to say “Continuing business as usual is to continue an unhealthy intrusion into people’s lives. We want your innovation, your entrepreneurship and your marketing know-how to change the status quo from unhealthy to healthy food preferences; to increase consumer demand for healthy diets.”

Case studies

Implementing food-based dietary guidelines in Brazil

Presenter: Eduardo Nilson, Vice-Coordinator, Division of Food and Nutrition, Ministry of Health, Brazil

Brazil is challenged by both under and overnutrition. Infectious disease is still a major problem in many population groups, while rates of obesity and chronic disease have increased substantially.

Through its FBDGs, Brazil is addressing both these challenges. The ultimate goal of these guidelines is to support healthy dietary practices and healthy traditional food cultures. In so doing, the guidelines also aim to improve Brazil's food system by increasing the availability and affordability of healthy foods, by diversifying what food crops are prioritized, especially by family farmers, and by improving agro-ecological practices.

The guidelines are being implemented through four strategies:

- Education, communication and information
- Food regulation
- Assessing the health of food systems and supporting healthy food systems
- Embedding food and nutrition components into the health care system

These strategies are interlinked. For example, the Ministry of Health now routinely provides education and information to tackle overweight in health clinics and also provides training on breastfeeding and complementary feeding as a part of antenatal care. This training is critical because infancy and childhood are when dietary habits are established.

In terms of healthy settings, a government decree now mandates that all food served in federal facilities must meet the food guidelines standards. Importantly, the government is supporting implementation of this mandate through food subsidies for ministries and other government agencies. It is also trying to scale up its school feeding programme to have 100 percent coverage. These activities have implications for producers, in terms of what foods the government wishes to procure.

With respect to regulation, the government is working on various initiatives, including regulating the marketing of infant formulas and improving labelling systems and food reformulation activities. Brazil has had a very successful strategy for sodium reduction and is now starting on sugar reduction, including looking to Mexico and other countries for ideas on tax disincentives.

There are three key messages from Brazil's experience. First, successful implementation of dietary guidelines depends from the beginning on technical and political support at the highest level. Second, to reform the entire food system, multiple stakeholders must be engaged. Third, dietary guidelines are relevant to many health and other sector-specific policies and as such should be supported through planning and budgetary instruments.

Use of labelling to reduce fat, sugar and salt consumption in the Islamic Republic of Iran

Presenter: Rassoul Dinarvand (Deputy Minister of Health and President, Iran Food and Drug Administration (IFDA))

In the Islamic Republic of Iran, many of the leading risk factors for mortality and morbidity are diet-related. These include high body mass index, high blood pressure, high blood glucose and high total cholesterol.

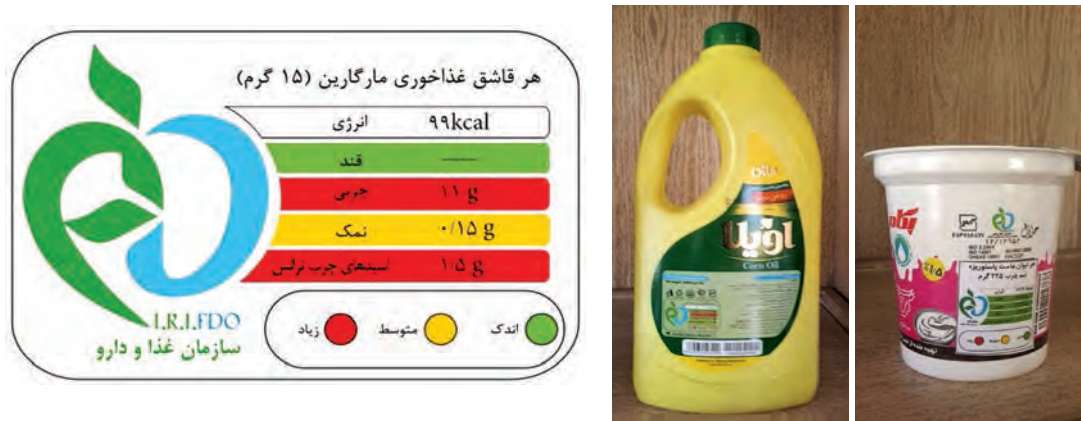
As the regulatory authority for food systems in the Islamic Republic of Iran, IFDA is trying to reduce these risk factors by reducing consumption of sodium and other unhealthy dietary components.

For example, IFDA has introduced traffic-light labelling for all packaged foods. This system uses easily interpreted colour coding to show consumers, at a glance, whether a product is high, medium or low in fat, trans fats, sugar and salt and overall energy (Figure 9). More than 75 percent of all industrially produced food products in the Islamic Republic of Iran currently have this type of labelling on their packages.

Traffic-light labelling systems are important regulatory instruments for two reasons. First, they make it easy for consumers to recognize whether food products are high or low in fat, sugar and salt. Second, given that consumers tend to prefer healthier products when they are aware of them, traffic-light labelling creates incentives for the food industry to prioritize production and sale of 'green' items as opposed to 'red' ones.

In addition to traffic-light labelling, IFDA is implementing a ten-year programme for both compulsory and voluntary reduction of calories, fat, salt and sugar contents in food products. Fines are levied for non-compliance, while awards such as the Green Apple Award are given to products whose sugar, salt and/or fat content is at least 50 percent less than that of similar products.

Figure 9. Traffic-light food-labelling system in Islamic Republic of Iran



Source: Dinarvand (2016)

While current health policy in the Islamic Republic of Iran is focused on reducing the presence of unhealthy dietary components in the national food supply, recent studies conducted by the Digestive Disease Research Institute of Tehran University of Medical Sciences concluded that more emphasis should be placed on promoting healthy foods, namely fruits, whole grains, fibre, omega-3 fatty acids, vegetables, polyunsaturated fatty acids, nuts and seeds and dairy products.

Qualitative evaluation of food-labelling policy in Ecuador

Presenter: Wilma Freire, Director, Institute of Research in Health and Nutrition (ISYN), Colegio de Ciencias de la Salud, University San Francisco de Quito, Ecuador

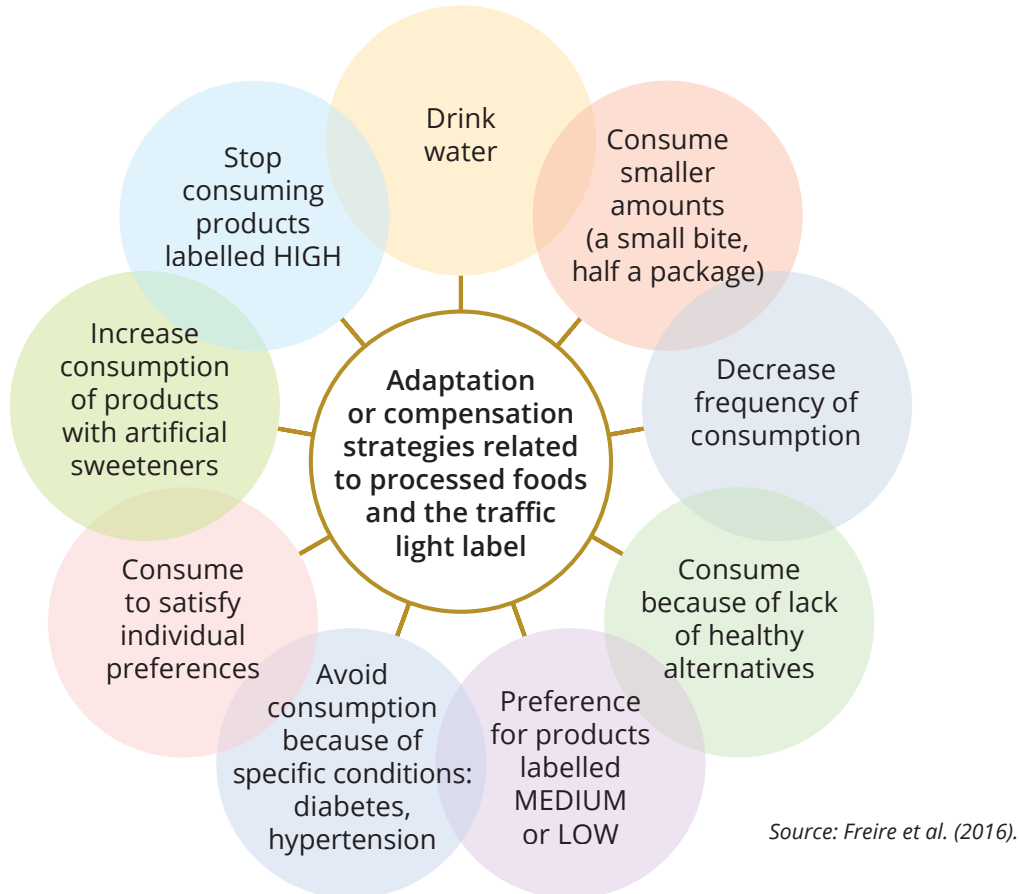
In response to a growing national burden of overnutrition and associated NCDs (Freire *et al.*, 2014), in August 2014 the Government of Ecuador instituted a food-labelling policy aimed at reducing consumption of highly processed foods.

One year after this system was introduced, ISYN conducted a qualitative evaluation of the policy at the request of the Ministry of Health and with the support of WHO and the United Nations Children's Fund (UNICEF). The evaluation comprised 21 focus groups, informant interviews and analysis of food packages and containers.

The study identified a number of changes in behaviour (Figure 10). Many consumers reduced consumption of products that were identified as unhealthy. For example, some consumers

started drinking water or other healthier alternatives to sugary drinks. However, the magnitude of reduction was influenced by availability of healthy substitutes. Schoolchildren frequently cited lack of available alternatives as the reason for continuing to consume unhealthy food and drinks.

Figure 10. Changes in consumer behaviour in response to traffic-light labelling in Ecuador



Informant interviews with food-industry representatives revealed opposition to the traffic-light labelling system, including accounts of active lobbying against its introduction. Concerns included insufficient time allowed for changing packaging and other implementation challenges. Industry representatives also argued that the labels were not useful for consumers, that consumers were not interested in them, and that they created confusion in terms of natural versus added fats, sugars and salt. Many representatives stated that they did not believe that labelling would help reduce overweight and obesity.

In terms of structural observations, the study found that label application was problematic and inconsistent with regulations. The food industry created their own labels and applied them ad hoc next to official labels, creating confusion and reducing the clarity of the official labels' messaging. In addition, labels were applied inconsistently. In many instances, children's food was not properly labelled.

Based on these observations, several conclusions were reached. The Ecuadorian traffic-light labelling system provides nutritional information that, according to focus group results, is easily understood by consumers and has led to behaviour change in terms of purchasing choices. The most important feature of the labels is their simplicity. As such, successful implementation must be accompanied by monitoring and evaluation to ensure these simple messages are not compromised.

Restricting food marketing and advertising to children in Norway

Presenter: Knut-Inge Klepp, Executive Director, Norwegian Institute of Public Health, and Professor, Department of Nutrition, Faculty of Medicine, University of Oslo, Norway

Food marketing targeting children is widespread. It has a negative influence on food choices and consumption habits, and undermines public service messages about healthy eating, such as those provided at schools. It also has long-term negative effects on children's health and well-being.

As such, there is now widespread international agreement that marketing to children should be restricted. For example, the Framework for Action arising from the Second International Conference on Nutrition (ICN2) includes the recommendation to regulate the marketing of food and non-alcoholic beverages to children in accordance with WHO recommendations (WHO, 2010). These recommendations have undergone several iterations; the framework for implementing the set of recommendations provides very clear technical support, including a nutrient profiling model for identification of products to be restricted (WHO, 2012). Such models are currently available in most WHO regions.

In Norway, a proposed regulatory code based on these guidelines faced strong opposition from industry. In response, the government stated that if the food industry put in place effective, voluntary actions based on the proposed legislation, the code would be shelved.

As a result, the Professional Policy Committee of the Food and Drink Industry was formed, consisting of industry representatives, representatives from the public sector and parent representatives. The committee aims to ensure compliance by industry with the code as formerly proposed by government, including adherence to the same level of nutrient profiling stipulated under the draft legislation.

A major objective of the committee is increased awareness in the business community regarding the rationale for and logistics of regulation of marketing and advertising aimed at children. It also assists companies in staying within the code.

While there is consensus that this voluntary system is working quite well overall, there is criticism that it does not address marketing in all arenas and that the age limit – currently set at 13 years – is too low.

Technical guidance for governments on restricting marketing of harmful food to children exists and must be much more commonly applied. The Norwegian experience provides a useful example of how to enable the private sector to play an active and constructive role.

Advocating for a tax on sugar-sweetened beverages in Mexico

Presenter: Marisa Macari, Coordinator of Nutritional Health Research, El Poder del Consumidor, Mexico

In Mexico, a consortium of more than 25 civil society organizations played a central role in advocating for policies to reduce consumption of SSBs. The goal was to have a tax of 20 percent tax or Mex\$2 per litre on all drinks with added sugar and to use the tax revenue to fund policies to prevent obesity and related chronic diseases and installation of drinking-water fountains. This is part of a much larger strategy to reduce the control of the food and beverage industry over consumption practices and restore traditional dietary values in Mexico.

The campaign had three phases. The first was to raise awareness of the impacts of diabetes and other diet-related NCDs on people's quality of life. The second phase was to make people aware of the role of SSBs in creating this health crisis. The third phase was to propose solutions, including the tax disincentive.

Throughout its course, the campaign tried to engage the public and create public debate. For example, on a popular holiday in Mexico – the Day of the Dead – the campaign presented a play in front of the Ministry of Health to demonstrate the death toll from diabetes in the last six years in Mexico. This garnered a lot of media attention. It also worked to engage with legislators.

Inevitably, the campaign's strongest opponent was the soft-drinks industry. This employed a variety of techniques including taking out advertisements in major newspapers and elsewhere in an attempt to destigmatize SSBs.

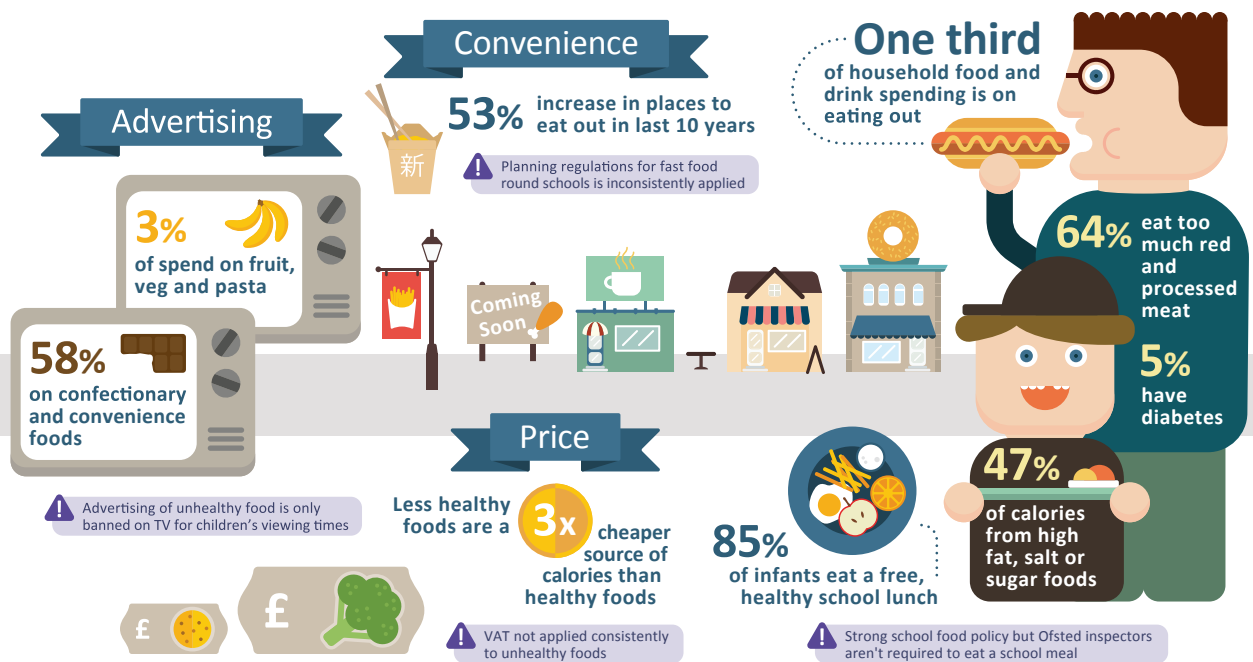
The tax law was finally passed at the end of 2013 and was implemented at the beginning of 2014. Although the rate was reduced from 20 percent to 10 percent, there is clear evidence that it has worked. On average, households have reduced SSB consumption by six percent, with low-income households reducing SSB consumption by up to nine percent, and water consumption has increased by four percent (Colchero *et al.*, 2016).

This is not the end of the story, but rather the beginning. The campaign continues to face a variety of challenges. First, industry continues to lobby each year against the tax being approved again and is financing its own studies to counter the findings reported in peer-reviewed journals. Additionally, not enough of the tax revenues are being allocated to public health. Thus far, only a small percentage is being spent on water fountains and prevention efforts. Finally, there is a need for comprehensive policy reform, not just fiscal measures. Food and nutrition policy-making must be transparent process to reduce conflicts of interest and to ensure effective utilization of funds for obesity prevention. This would also permit adherence to the recommendations by WHO for a 20-percent tax in the Pan American Health Organization. The campaign continues to advocate for this level of tax.

Food-system effects on diet in United Kingdom

Presenter: Anna Taylor, Executive Director, The Food Foundation, United Kingdom

The Food Foundation is an independent non-governmental organization (NGO) in the United Kingdom trying to influence food policy. At the beginning of 2016 it published a report called *Force-fed: Does the food system constrict healthy food choices for typical British families?*



Making healthy choices easier

- 1 Set out a clear vision for achieving healthy and sustainable diets for all with measurable targets
- 2 Control food marketing, formulations and planning so it is more conducive to healthy eating

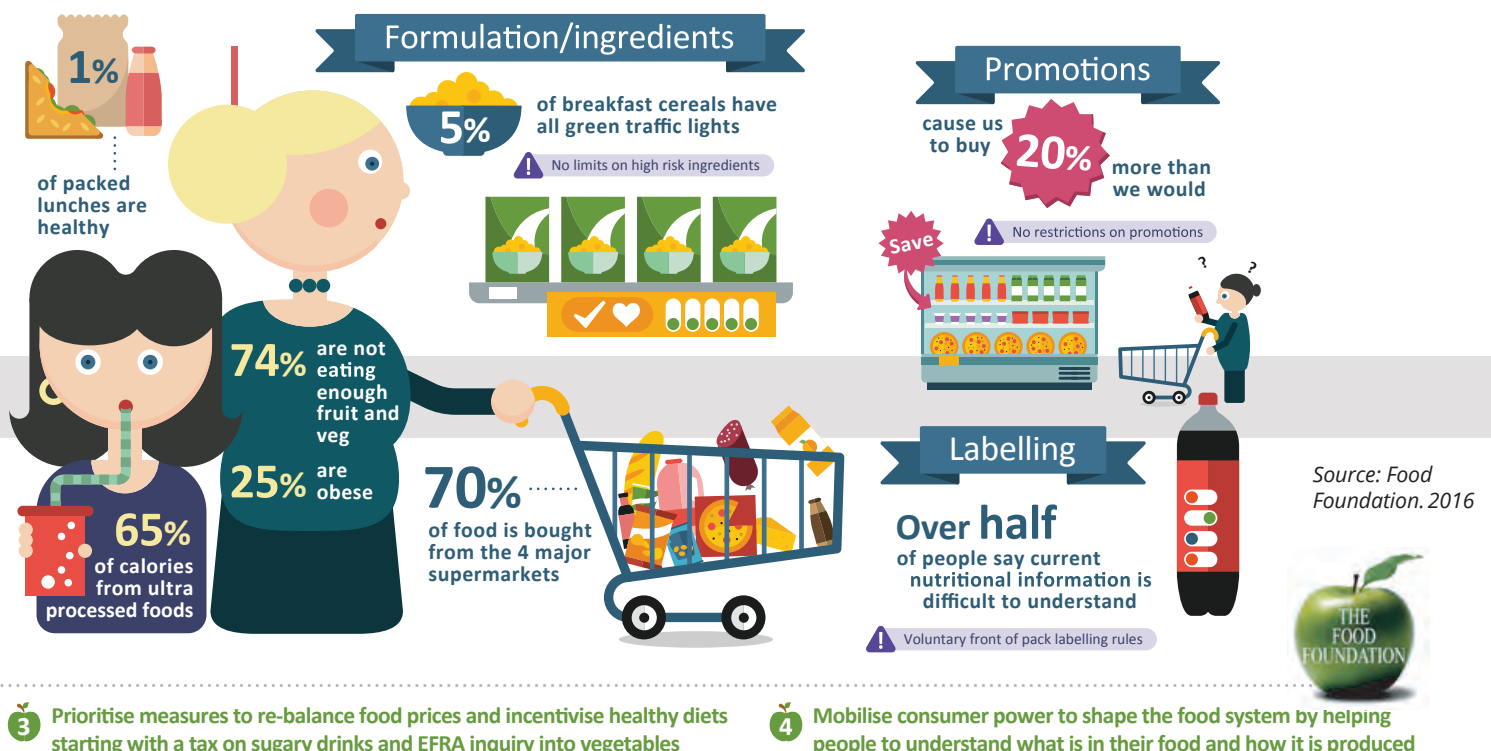
Force-fed describes how the British food system affects food choices in households in England. Using multiple national data sets, study looked at a variety of food-related metrics for a typical British family of medium income, with two adults and two children. It looked at their health outcomes in the Health Survey for England, examined their dietary intake through the National Diet and Nutrition Survey, and investigated how much they were paying for food with the Living Costs in Food Shopping Survey. It also aggregated commercially produced supermarket data in order to trace the farm-to-fork trajectory of some commonly eaten food items, including what the typical family throws away.

All this research was guided by the question, how easy is it for our families to choose a healthy diet?

The study revealed a disturbing picture. Here are some of the most striking findings:

- Calorie for calorie, unhealthy foods are one-third of the cost of healthy foods in the United Kingdom. This tremendous price incentive is compounded by a huge imbalance in advertising: three percent of money spent on advertising food is for fresh fruit and vegetables, compared with 58 percent spent on confectionary and convenience foods.
- People in the United Kingdom buy 40 percent of their food on promotion; this is much higher than the global average and results in people buying 20 percent more calories than they otherwise would.
- Seventy percent of the food a typical British family buys comes from just four major supermarkets.
- Over half of consumers say current [voluntary] nutrition labelling is hard to understand.
- Almost half of the calories consumed by children in primary school come from foods that are high in fat, sugar and salt. These are the same foods that are banned from being advertised on television during children's viewing times.
- Sixty-five percent of calories consumed by children in secondary school come from ultra-processed foods.

Figure 11. Key findings from *Force-fed*: Does the food system constrict healthy food choices for typical British families?



The end goal of *Force-fed* is to put pressure on the British Government to set out a clear vision for sustainable and healthy diets in the United Kingdom, including measures to control the food environment, particularly its impact on children. These include exactly the sorts of regulations and disincentives that have already been discussed during this session, such as a tax on sugary drinks, stronger restrictions on food marketing, and efforts to help people better understand what is in their food so that they can start to demand better options, thus incentivizing the private sector to focus more on healthy alternatives.

Britain's current food narrative asserts that dietary choices are made freely by individuals. *Force-fed* makes the case that people are actually not free to choose; that this narrative is an illusion. The playing field is very tipped in favour of unhealthy foods. Justifying the current food system by saying it is what consumers want is a lazy excuse for inaction by both business and government.

Developing regulatory frameworks to enable healthy diets in Chile

Presenter: Guido Girardi, Senator for District No. 7, Santiago Poniente, Chile

Prevalence of obesity in Chile is extremely high, especially among children. Twenty-five percent of six-year-olds in our country are obese, and people as young as 25 years of age are dying of stroke, diabetes, hypertension and cardiovascular diseases.

In the past, Chile's public policies ignored the problem. The agrifood lobby is very strong in Chile and although historically the country had a self-regulatory system, it has been co-opted by industry and the market has been flooded with ultra-processed foods labelled with misleading and enticing messages, often targeted specifically to children.

Against this background, Chile began collaborating with public-health practitioners, including high-profile academics, on solutions, including hosting a World Congress on Obesity in 2007. A law passed in 2012 set a response in motion that targeted improved labelling laws, tighter restrictions on marketing to children, and regulations regarding what foods may be sold in and near schools.

The linchpin of this approach is the labelling system. Initially the Ministry of Health used traffic lights but in 2016 it adopted black warning signs that label foods that are high in calories (275 calories/100 g) sugar (10 g/100 g), sodium (400 mg/100 g) and saturated fat (4 g/100 g) (Figure 12). The ministry is also trying to institute taxes on SSBs and solid foods with high sugar content.

In addition to reducing demand for ultra-processed products, the Ministry of Health is working with the Ministry of Finance to promote organic and natural foods. Healthy food rations are currently distributed in schools for poor and underprivileged children, and schools are educating children on the effects of salt and sugar in their diets. Children are now also obliged to do physical activity during the school day, and are encouraged to change their habits to encompass more exercise.

Figure 12. Alto En warning labels used in Chile



Source: Girardi (2016)

The Government of Chile has fought hard and managed to pass a few laws relating to promotion of healthy foods, but there is still much to be done. Every day, in many countries, children drink sugary drinks, many of which contain the equivalent of 12 cubes of sugar; this is grossly unhealthy. Addressing this urgent problem requires the engagement of many stakeholders and a critical mass for action. Government cannot do all the work: a broad alliance is needed to counter opposition by some members of the food industry.

Highlights from audience discussion

A number of comments were made regarding the need to strengthen the regulatory agenda at global and national level, with one speaker calling for an international treaty along the lines of the WHO Framework Convention on Tobacco Control (WHO, 2003). Several speakers also underscored the role of Codex. With respect to the latter, Maria Xipsiti (Nutrition and Food Systems Division, Food and Agriculture Organization of the United Nations [FAO]) noted that the Codex Committee on Food Labelling had agreed to undertake work on front-of-pack nutrition labelling schemes, including considering the need for development of global principles. Ms Xipsiti also noted publication by FAO of the *Handbook on food labelling to protect consumers* (FAO, 2016b). This handbook aims assist regulators and others working in the food system who are responsible for formulating and implementing food-labelling policies.

A question was raised as to what are the barriers to implementing regulatory policy. Norway, Chile, Ecuador and Brazil all responded that industry presents the greatest challenge, as civil society has much less financial leverage and, moreover, in many countries, industry also wields political influence. All of these countries cited the importance of building stakeholder alliances to raise consumer awareness, mobilize evidence and pressure government, with Mexico's successful attempts to implement a tax on SSBs cited as a case in point.

Dr Freire (Ecuador) also stressed that labelling alone is not sufficient, that the messages the labels are trying to send must be reinforced in schools and by health professionals. She explained that in Ecuador there is an ongoing programme in schools that combines education on labelling with other nutrition and health-related activities.

It was asked whether the distinction between processed and ultra-processed foods is sufficiently robust to be applied globally. Dr Monteiro responded that the distinction is clear and has been articulated in papers published by *The Journal of Nutrition*, *The Lancet*, *Obesity Reviews* and several other academic journals. Dr Monteiro noted that the key distinguishing criterion between processing and ultra-processing is industrial formulation, which, besides salt, sugar, oils and fats, includes substances not used in culinary preparations. Many of these substances are additives used to imitate sensorial qualities of minimally processed foods. The distinction between processed and ultra-processed demarcates what belongs in healthy dietary patterns – which include minimally processed foods such as bread and cheese – and industrially manufactured formulations that are associated with diabetes, hypertension and other NCDs.

An assertion was made that undernutrition is still the primary challenge in rural populations in many low-income countries. How can national guidelines and regulations be developed that include these demographics? In response, both Dr Nilsen (Brazil) and Dr Taylor (United Kingdom) noted that it is imperative to remember that the double burden of undernutrition and overnutrition is occurring around the world, especially in the poorest countries, which are changing very fast and facing increasing prevalence of NCDs and obesity. In this context, promoting healthy diets, which help people who are both undernourished and eating too many unhealthy foods serves double duty.

Maria Cavat (Secretary-General of the World Union of Wholesale Markets) noted the important role played by municipal markets in increasing availability and affordability of fresh, healthy foods. These markets are accessible to communities; they are also affordable. Moreover, they are an area where there is still government involvement and control over food supply chains. They thus have a role to play in promoting a healthy eating agenda.

In a related comment, Dr Klepp (Norway) noted the critical role played by local governments and politicians in promoting healthy diets, for example in regulating what foods are allowed on school grounds and as a public employer.

Session 2.2: Information and education for healthy food behaviours

SESSION MESSAGES

- Instilling healthy food behaviours requires use of proven methods to change knowledge and attitudes at individual level. However, these efforts must be complemented by national policy actions that target the entire food supply chain, making the default food choice a healthy one. Food-based dietary guidelines should be used to anchor both types of action within the same implementation framework.
- Healthy food behaviours should be instilled from a young age. Providing nutrition education and healthy meals in primary and secondary schools has the potential for lifelong impact and should be a political priority.
- Social media, television and print media are popular platforms for raising awareness. However, there are many other options for instilling healthy food behaviours, including leveraging local fresh-food markets, strengthening nutrition capacity within agricultural extension, and using celebrities to champion the healthy food agenda.

Chair: Carlos Monteiro, Professor of Nutrition and Public Health, School of Public Health, University of São Paulo, Brazil

Moderator: Andrea Pezzana, Professor, Faculty of Medicine, University of Turin, Italy

Overview

Presenter: Angela Tagtow, Executive Director, United States Department of Agriculture Center for Nutrition Policy and Promotion

The *Dietary Guidelines for Americans* is the national nutrition policy of the United States. Mandated by Congress, the Guidelines were initiated in 1990 and are routinely revised under the purview of the United States Department of Agriculture and the United States Department of Health and Human Services. In the 2015–2020 edition (USDA and USDHHS, 2015a), there are five overarching guidelines:

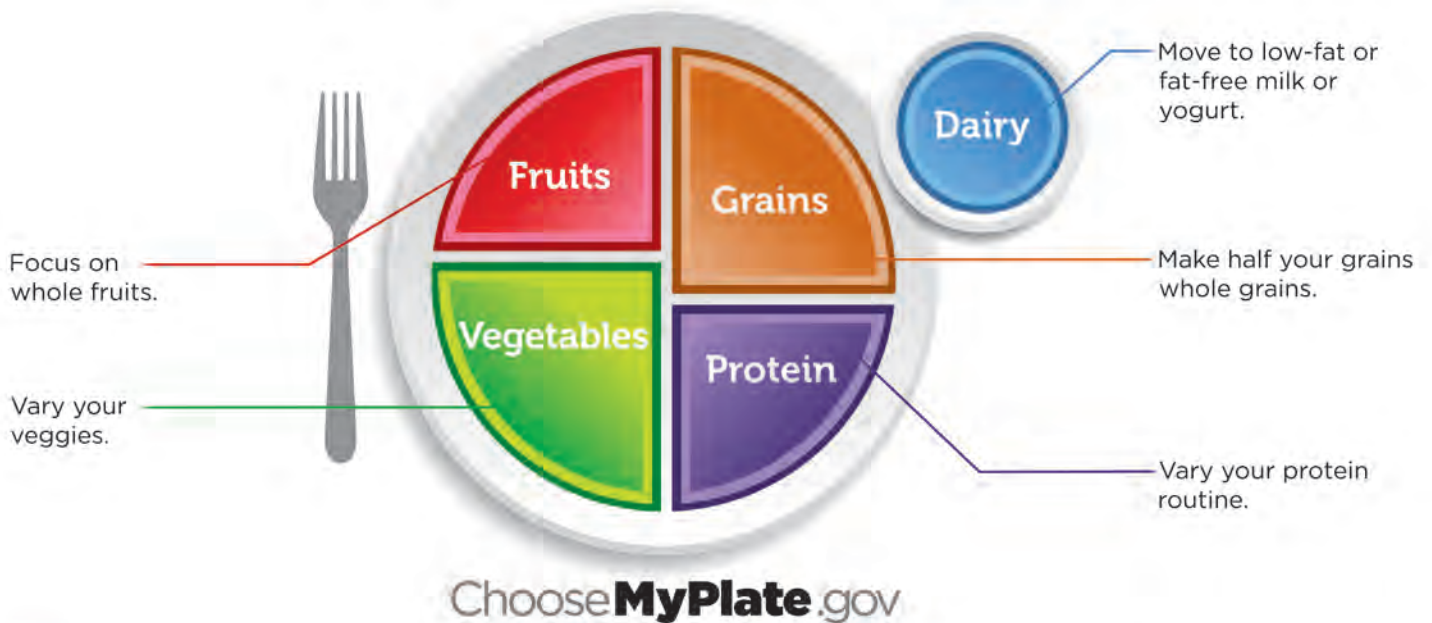
1. **Follow a healthy eating pattern across the lifespan.** This is an important new guideline for the United States in that it focuses on eating patterns. This is a direct reflection of the evolution in science. Thirty years ago science was connecting nutrients to overall health. It later evolved to connect food and food groups to overall health. Now there is a robust body of science that looks at dietary patterns and their relationship to diet-related chronic disease (USDHHS and USDA, 2015b).
2. **Focus on variety, nutrient density and amount.**
3. **Limit calories from added sugars and saturated fats and reduce sodium intake.**
4. **Shift to healthier food and beverage choices.** This seeks to make nudges and small shifts within and across food groups.
5. **Support healthy eating patterns for all.** This last one is really a call to action: the theme that this session has heard today in supporting healthy eating patterns for all.

A series of key recommendations provide additional information to support the guidelines. These include, for example, details on what foods comprise a healthy eating pattern, and quantitative limits to encourage reduced consumption of added sugars, saturated fats, sodium and alcohol.

Figure 13. MyPlate mini-poster

MyPlate, MyWins: Make it yours

Find your healthy eating style. Everything you eat and drink over time matters and can help you be healthier now and in the future.



Limit

Limit the extras.

Drink and eat beverages and food with less sodium, saturated fat, and added sugars.



MyWins

Create 'MyWins' that fit your healthy eating style.

Start with small changes that you can enjoy, like having an extra piece of fruit today.

The guidelines are evidence based and designed specifically for policy-makers, practitioners and other health professionals, with the intent to inform policies, programmes and campaigns. The Center for Nutrition Policy and Promotion translates the guidelines into consumer-friendly messages and tools. These are anchored by the MyPlate symbol, which is a visual symbol of a healthy diet. MyPlate replaced the Food Pyramid in 2011 as the graphic representation of the guidelines, and provides the platform for the 'MyPlate, My Wins' campaign. The underlying message of this campaign is that healthy eating styles can be adapted to a range of preferences, and that small changes in one's diet add up to big success over time (Figure 13).

The Center has a variety of online materials that support the 'MyPlate, My Wins' message, including animated videos, A Day in the Life videos featuring families from across the country, and a Twitter account. It also has interactive, online tools such as Supertracker, which provides personalized recommendations to users on what and how much to eat. These interactive tools are really important, as self-monitoring empowers consumers to make healthy choices, helps them to manage their weight and reduces risk of chronic disease (Carels *et al.*, 2017). There is also a variety of MyPlate tools for health professionals and nutrition educators in the form of graphics, communicators and guides, and an ongoing library of messages that can be used with social media.

In addition to supporting change in individual knowledge and behaviour, the Center is also working at the macro level to impact policy systems and environments to better support positive health behaviours. Application of a food systems lens is extremely relevant to this multifaceted approach. Both policy-makers and the public need to make the link between food systems, access to healthy foods, healthy eating patterns and positive health outcomes (Figure 14).

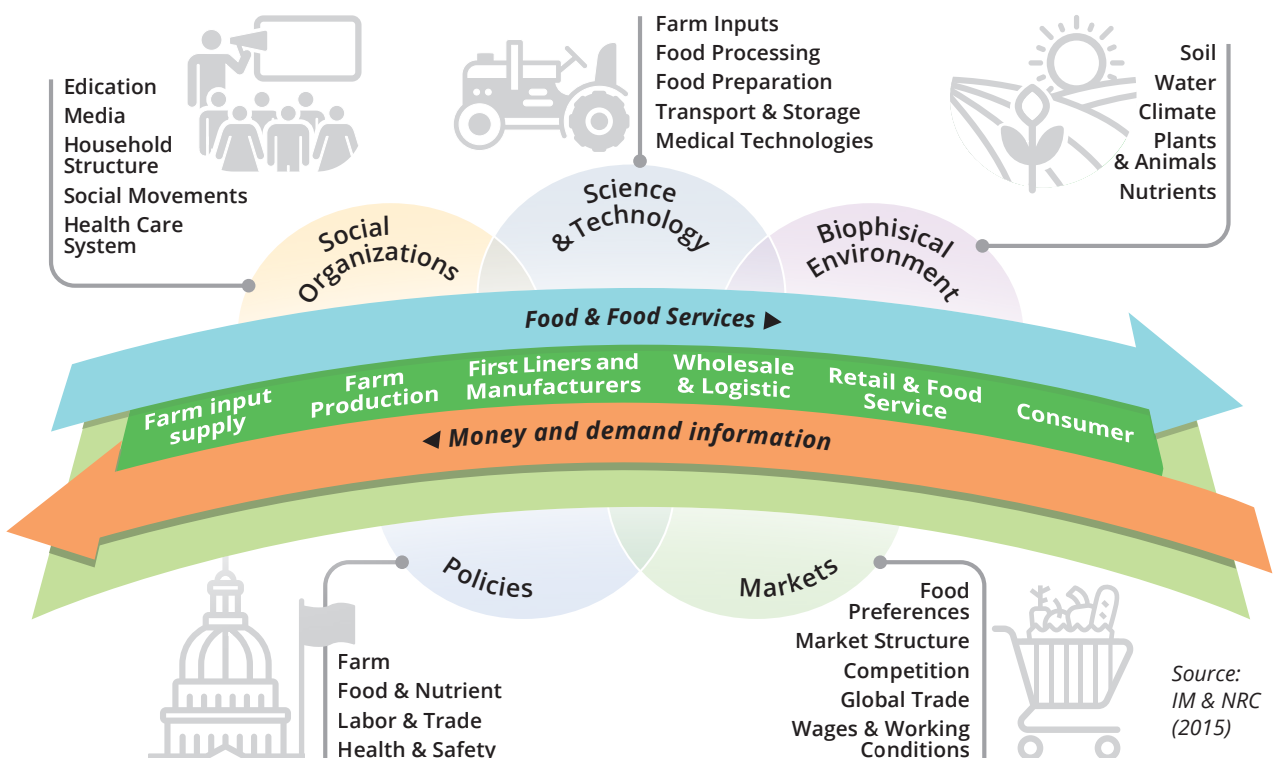
One of the best ways to achieve this goal is to improve access to local and regionally grown food, much of which is fresh produce. As such, between 2009 and 2016, the United States Department of Agriculture invested more than US\$1 billion dollars in over 40 000 local and regional food businesses. This has resulted in a significant increase in local food supplies, better infrastructure that supports more diversified farms, and strengthened distribution networks.

The number of farmers' markets has doubled since 2009 to more than 8 200 across America and 42 percent of schools are now buying food directly from farms. In addition, the Center now has the 'MyPlate, My State' subinitiative. This celebrates healthy eating, home-town pride, local flavours and regional agriculture.

In conclusion:

- It is imperative evidence-based nutrition guidance is translated and used to create easily understood messages and tools that empower and inspire healthy solutions for individuals.
- Strategies for change must address policy systems and environments as well as individual knowledge and behaviours.
- Messaging and action on the linkages between food systems, access to healthy foods, healthy eating patterns and positive health outcomes must be prioritized.

Figure 14. Conceptual framework for United States policy-makers explaining links between the food chain and the larger social and biophysical context



Case studies

Jamie's Food Revolution, United Kingdom

Presenter: Fran Eatwell-Roberts, Senior Advocacy Consultant, Jamie's Food Revolution, United Kingdom

Since 2002, celebrity chef Jamie Oliver has been leveraging his social capital as a celebrity chef to improve food standards in the United Kingdom and elsewhere. Jamie's Food Revolution rolls many of his previous successes into an ambitious global initiative aiming to provoke debate and inspire real, positive change in the way children and households access, consume and understand food. Launched in 2009, Jamie's Food Revolution is anchored by a six-point plan for action on childhood obesity:

- **Food education:** With better food education, people can make better choices with what is available to them, wherever they are in the world.
- **Nutrition:** Understanding food and nutrition and the dual role they play as part of a healthy lifestyle is essential.
- **Food waste:** Not only is food waste immoral, it is unnecessary. Through better food education, teaching people to value their food and manage waste better, as well as the promotion of better production practices from farm to fork, can largely prevent food waste.
- **Planet:** To sustain nutritious food for now and for the future, there is a need to care for the planet that produces it, linking up individuals, food and the environment to create a sustainable, healthy food system on both a commercial and a domestic level.
- **Cooking:** Knowing how to cook from scratch empowers people to appreciate the value of food.
- **Ethical buying:** Supporting food that has been responsibly produced, with the environment, animals and people in mind, supports a healthier, more sustainable food system for now and the future. Our food choices are a vote for the system that produced them.

To date, Jamie's Food Revolution has had substantial policy impact in the United Kingdom in two areas: increased investment by government in improving school meal quality, and implementation of a sugar tax. Its programmes include kitchen gardens and cooking classes in primary and secondary schools, and outreach programmes that provide cooking training to thousands of people nationwide.

Jamie's Food Revolution is also working with NGOs, politicians and the United Nations around the world to raise awareness and pressure governments and businesses to get serious about ensuring that children have access to healthy food. Food Revolution Day – held annually on 20 May – aims to highlight some of the most exciting global initiatives and to build momentum. In 2015, there were high-profile events in Dar-es-Salaam, Lagos, Mumbai and Nairobi, as well as events in Brazil, Canada, Germany, the Netherlands, the United Kingdom and the United States. To date, the Jamie's Food Revolution message has been viewed by an estimated 1.4 billion people on Twitter and 15 million people on Facebook. Over three-quarters of a million people have signed its nutrition petitions, and it now has about 3 000 volunteer campaigners working across most countries in the world.

Role of fresh-food markets in healthy diets

Presenter: Fabio Massio Pallottini, Managing Director, Centro Agroalimentare di Roma, Società Consortile per Azioni; President of Italmercati; and International Board Member of the World Union of Wholesale Markets (WUWM)

Fresh-food markets play an important role in many countries' food supply chains. They offer consumers very fresh produce at a competitive price, promote environmentally sustainable food-production practices, and serve as locations for activities promoting nutrition education, for example by hosting visits by schools.

Fresh-food markets also function as hubs for promoting social cohesion. They can be used as a delivery platform for social services targeting ethnic minorities, youth, the elderly and the unemployed, and provide municipalities with a location to promote and encourage the dissemination of public information.

They are also good for the economy. In Europe, over one million people work in retail markets alone, with estimated annual revenues of over €40 billion.

In Italy, especially in Rome, there have been many events in retail markets to support consumer nutrition, including cooking shows with well-known Italian chefs and free tastings of in-season produce.

Globally, the Love Your Local Market campaign celebrates the importance of local wholesale and retail markets for fresh foods. Supported by WUWM since 2014, this annual event takes place each May. Love Your Local Market unites market authorities, small business, traders and communities. It is open and free to fresh-food markets worldwide.

In terms of future initiatives, WUWM would be glad to work with more municipal authorities, as well as FAO and WHO, to establish a Love Your Local Market subcampaign promoting natural and healthy eating. In May 2017, WUWM held a conference at FAO headquarters, hosted by the Centro Agroalimentare Roma Wholesale Market. The conference included a plenary session on nutrition.

Promoting a healthy food culture in schools in Germany

Presenter: Klaus Heider, Director-General, Food Policy, Product Safety and Innovation, Federal Ministry of Food and Agriculture, Germany

The German Federal Ministry of Food and Agriculture supports the global implementation of the outcomes of the Second International Conference on Nutrition. The ministry has a national action plan aimed at preventing unhealthy eating, promoting exercise and reducing overweight and related diseases. In place since 2008, the action plan attempts to strengthen people's dietary knowledge and to create conditions that make it easier for people to choose healthier foods. The objective is to motivate and inform people and create structures for a healthy lifestyle.

Since 2008, the ministry, together with the Federal Ministry of Health, has supported almost 200 projects with funds totalling around €77 million. These projects address all age groups in their direct living environments, e.g. in the family, in childcare facilities and schools, at work, in retirement homes or in the district/community. The goal is to create an environment in which a well-balanced diet and sufficient physical activity are firmly established as norms in the places where people regularly spend long periods of time.

Within the school context, the ministry has contributed to dietary education schemes that aim to instil conscious eating habits at an early age. For primary-school students, the educational package 'Nutrition Licence' teaches children how to prepare foods in a light and tasty manner. Around 800 000 children have already obtained their licences. There are similar programmes tailored to preschoolers and secondary school pupils as well. The aim is to teach children not only about nutrient content but also about where food comes from, how plants grow, how crops are harvested and finally how tasty dishes are prepared from scratch.

Dietary education in German childcare facilities and schools includes provision of healthy, tasty meals. School catering services are supported by the German Nutrition Society, which has developed evidence-based quality standards for schools and day-care centres and provides practical guidance for catering arrangements on the ground. This support is currently being provided throughout Germany.

Additional support to catering services is being provided by a network of centres that are jointly funded by central Government and by the German federal states. These centres act as contact points and help implement quality standards. They provide training, place advisory staff and maintain

networking between all the actors. On top of this, the German Government has established and equipped a National Quality Centre for Healthy Nutrition in Schools and Childcare Facilities (NQZ). This is to be the central cross-cutting school catering institution in Germany. These institutions serve a critical function in supporting dietary education and healthy school meals as complementary actions. This integration contributes both to the pupils' good health and to their learning and performance capabilities. It also promotes the development of a pro-nutrition food culture where the healthier choice is also the easiest.

Integrating nutrition education in extension services in Kenya

Presenter: Teresa Tumwet, Head of Nutrition, Home Economics Department, Ministry of Agriculture, Livestock and Fisheries, Kenya⁸

The main role of the Kenyan Ministry of Agriculture, Livestock and Fisheries is to foster sustainable productivity increases via environmentally viable crop, livestock and fishery practices. Its goals include poverty reduction, improved food and nutrition security, and strengthened livelihoods.

The ministry provides extension services that address marketing issues, environmental deterioration, off-farm rural employment, HIV/AIDS, food processing, partnerships with other service providers, and nutrition.

Kenya has a number of nutrition-education initiatives, guided by a national food and nutrition security policy and implementation framework. The framework calls for integrating nutrition education into all food security projects and programmes. Within the Ministry of Agriculture, Livestock and Fisheries nutrition education is implemented through the Home Economics Programme. Strategic approaches being used include e-extension, farmer field schools, information and communication technology and public-private partnerships. A comprehensive training-of-trainers manual is also under development. Whenever possible, the ministry attempts to harmonize the nutrition messages and build synergies between stakeholders. It is also advocating for creating a formal nutrition-education curriculum, and for creating nutrition awareness in every possible forum.

Some of our toughest challenges within the ministry are low funding and staff shortages. More capacity-building is needed at county level to scale up and harmonize nutrition programming, especially with respect to processing and preservation. There is also a major gap regarding dissemination of lessons learned; these should be used to inform the entire implementation framework.

Raising public awareness of healthy dietary behaviour in France

Presenter: Michel Chauillac, National Nutrition and Health Programme, Ministry of Social Affairs and Health, France

France's National Health and Nutrition Programme is a multisectoral initiative that aims to change the entire enabling environment for food, and as such involves the Ministries of Agriculture, Consumption and Education. The programme includes FBDGs and physical activity recommendations. It also mandates that all advertising (TV, radio, press, urban displays, leaflets, Internet) for drinks or foods that are processed must include a health warning.

After long discussions with advertisers, four warning messages were identified. All four must be included in a given advertising campaign with each message receiving equal time for airing or press. Each message begins with "For your health..." and then emphasizes one of the dietary guidelines. For example, each print advertisement for a processed pasta meal is required to include one of the four health messages (Figure 15). All four messages have to appear across the whole campaign for this product (which appears in multiple newspapers and magazines).

⁸ Dr Tumwet was unable to attend the Symposium. Her abstract was read by the Moderator.

Figure 15. Example of an advertisement in France for processed food that includes mandated health message



Source: French National programme health and nutrition, www.mangerbouger.fr

people, especially children, and were understood and appreciated. One evaluation found that, before the guidelines were developed in 2003, only 2.5 percent of the population was familiar with the message, "Eat at least five fruits and vegetables per day". Ten years later, 85 percent of French people reported awareness (INPES, 2014). Another assessment found that, between 2008 and 2011, 70 percent of people were aware of all four messages, 42 percent said the messages had made them think about their eating habits, and 21 percent reported actual influences on food purchase habits (INPES, 2014). Even if one assumes that a degree of reporting bias is skewing these statistics, the results are positive. People are also increasingly aware of the 'Manger Bouger' website (www.mangerbouger.fr) which provides information on the guidelines and the four messages. In 2006, 13 percent of the population was aware of this resource; by 2011 that figure had risen to 65 percent (INPES, 2012).

This health messaging is now enshrined in law⁹; advertisers have the choice to use these messages or to pay a tax of 5 percent of the cost of the advertisement to the government. More than 95 percent are currently choosing to use the health messaging. A link has also been created between these messages and the Public Agency for Health Education website. The website address is routinely included as part of every message and people now know to go online to that site for information and advice on nutrition and physical activity.

Looking ahead, these messages have been in use for several years and now need to be refreshed and updated. Much thought and reflection is needed to maximize the meaningfulness of new versions.

Figure 16. Health message aired on children's television in France (appears on screen preceding advertisement for processed food, accompanied by audio)



Source: French National programme health and nutrition, www.mangerbouger.fr

The same messages are also used on television and radio. For children's TV programmes, advertisements for processed foods are preceded by a short audio and visual 'for your health' announcement with the health message adapted for young children (Figure 16).

Various studies were undertaken to estimate the impact of this measure. The ministry wanted to be sure that the warnings reached

Highlights from audience discussion

Participants noted the need for a holistic approach, promoting both good dietary practices and physical activity.

In response, Francesco Branca (Director, Nutrition for Health and Development, WHO) acknowledged the need to increase physical activity but also cited robust evidence linking increased sugar intake to weight increases (WHO, 2015). He noted this association holds for both children and adults, and cited a dramatic increase over the last few years in consumption of SSBs by Africans, with concomitant weight increases (Manyema *et al.*, 2016). Dr Branca cautioned that this trend should not be taken lightly, noting the need for public policies on labelling, taxation and reduction in marketing (WHO, 2016d).

Boyd Swinburn (Professor of Population, Nutrition and Global Health, University of Auckland, New Zealand), asked two questions about the French system. First, what proportion of processed food companies are paying the tax versus carrying the four messages? And second, is there a difference in attitude to the positive messages about eating more fruit and vegetables versus the negative messages about eating less junk food and fewer snacks?

In response, Dr Chauliac stated that 97 percent of advertisers are currently carrying the messages rather than paying the tax. In terms of the attitude towards the messages, he both industry and consumers react poorly to the negative messages regarding reduced consumption of junk foods. He also noted that it is impossible to have universally appealing messaging; some people will respond positively and others will reject any given message. Dr Chauliac posed some of the questions that are being discussed relative to the reformulation of the messaging: Should the messages be information-based or address emotions? Should there be a more humorous approach, because jokes can be more effective? Or should there be a direct link between the product which is being promoted and the message?

A question was asked regarding resources for fast-tracking the development of FBDGs in African countries. To date, only three countries on the continent have such guidelines. In response, Dr Tagtow first dispelled the notion that the United States has invested heavily in its dietary guidelines, stating that there has been no investment in dietary guidance in the US since 1990. He pointed to the dietary guidelines page on the website of the Office of Disease Prevention and Health Promotion (<https://health.gov/dietaryguidelines/>) as a useful source of information for adapting the American process to other country contexts. She also suggested leveraging work done elsewhere, including the European Union, Brazil, Australia and New Zealand. Each of these countries has well-defined, high functioning dietary guidance systems. Finally, Dr Tagtow emphasized the power of collaboration, citing regional workshops held by FAO in Togo and South Africa in 2016 to assist countries in developing their own FBDGs. Ana Islas (Nutrition and Food Systems Division, FAO) added that although FAO is seeking funding mechanisms for these countries to develop national guidelines, governments should also mobilize currently available resources for this purpose.

Questions regarding equity were raised with respect to German school food standards. Does the German Government plan to make these standards mandatory to ensure that all students across Germany benefit? Or is it up to individual schools? Dr Heider responded that, under German law, it is the *Länder* (states), as opposed to federal government that are responsible for school systems. To date, two states have made the quality standards mandatory, and the National Nutrition Centre is supporting the efforts of others to follow suit.

⁹ Article 29 of Law n° 2004-806 of the 9th August 2004 on public health policy:
<https://www.legifrance.gouv.fr/affichLoiPubliee.do?idDocument=JORFDOLE000018157637&type=general>

Session 2.3: Increasing access to healthy diets through social protection and income-generation strategies

Chair and Moderator: Carlos Monteiro, Professor of Nutrition and Public Health, School of Public Health, University of São Paulo, Brazil

Overview

Presenter: Harold Alderman, Senior Research Fellow, International Food Policy Research Institute, United States

SESSION MESSAGES

- Social protection schemes reach many people in many countries, and improve food security and purchasing power. In some contexts, they can be leveraged to increase demand for and supplies of nutrient-dense food, for example through home-grown school feeding programmes and cash transfers that are linked to agricultural inputs and nutrition education.
- To be sustainable and scalable, nutrition-sensitive social protection programmes must be anchored by a strong national policy framework that makes food and nutrition security a priority, and that establishes social-protection-related goals and budgets for different sectors.

The 2013 Lancet Nutrition Series estimated that scaling up ten proven, nutrition-specific interventions would reduce global stunting by 20 percent (Bhutta *et al.*, 2013). While this would be a major improvement in the health and development of children, it is not enough. There is also a need for nutrition-sensitive programmes that address the core determinants of undernutrition through programming based in agriculture, education and early-childhood development.

Cash and in-kind transfers are included in this portfolio of nutrition-sensitive programme options. Their potential comes, in part, simply from their scale. Social protection programmes are dynamic components of the budgets of most countries. The share of government expenditures devoted to social protection has been growing more rapidly in low- and middle- income countries than investments in other sectors. By 2015, 1.9 billion people were enrolled in social safety-net programmes in 136 countries (Alderman, 2016).

Additionally and equally fundamental, safety nets increase food security, either by reducing the price of food with subsidies or vouchers, or by increasing purchasing power if the transfer is cash-based. Transfers can also strengthen household preferences for spending additional funds on food, especially if the programme is targeted to women and includes empowerment as a component.

Safety-net programmes also increase utilization of health services, most systematically when preventative medical care is a conditionality tied to receipt of the transfer. From a nutrition perspective, this can have powerful repercussions in terms of child health.

Finally, safety-net programmes can be leveraged as platforms for delivery of nutrition-specific interventions. In some cases, behaviour-change communication (BCC) with respect to hygiene, and childcare practices is an explicit consideration of the programme, with positive implications for nutrition. Micronutrient fortification through in-kind transfers, including universal subsidies, has demonstrated results (Alderman, 2016), and deworming has been linked to school feeding schemes. Including micronutrient fortification in emergency relief programming improves nutrition sensitivity in highly vulnerable populations.

Surprisingly, despite this substantial potential, there is little evidence to date that social protection programmes have delivered improvements in anthropometric nutrition indicators commensurate with their success in addressing poverty (Alderman, 2016). This is despite the existence of a substantial body of evidence showing increased food consumption across the board, as well as frequently increased participation in health care (Alderman, 2016). For example, a meta-analysis of 17 primarily Latin-American cash-transfer programmes showed that, on average, there was little impact on height-for-age (Manley, Gitter and Slavchevska, 2013).

In some cases, this lack of impact can be attributed to insufficient emphasis on BCC, which is absolutely crucial for nutrition impact. One of the best examples of the critical role played by BCC comes from a randomized control trial conducted in Bangladesh where a cash transfer was implemented with and without a BCC component. The cash alone did not lead to improvements in height-for-age, but the cash combined with BCC did (Alderman, 2016). Another example comes from Nepal, where a cash transfer was implemented in conjunction with a BCC strategy (Alderman, 2016).

Why are so few transfer programmes achieving these types of results? In many cases, it is a challenge to set up the necessary cross-sectoral coordination mechanisms between transfer administration and health professionals, especially when the transfer program is unconditional or uses soft conditions. Additionally, there are major staffing and training challenges involved in scaling up small-scale pilot programmes in BCC that have demonstrated success.

Implementation can also be a challenge with respect to large-scale programmes due to political and economic complexities. For example, both Egypt and India spend billions of dollars on in-kind food-transfer programmes that have only a modest element of targeting. These programmes are potential vehicles for micronutrient fortification but neither Egypt nor India has consistently pursued this strategy. Egypt ceased fortifying its highly subsidized flour with iron in the absence of WFP support. In India, states faced opposition from small-scale millers to large-scale, centralized iron fortification because they feared they would lose business.

Another challenge is that, in the short run, transfer programmes can exacerbate overnutrition while aiming to reduce undernutrition. For example, Fernald, Gertler and Hou (2008) found that Oportunidades, Mexico's conditional cash-transfer programme, led to unhealthy increases in body mass index as well as higher blood pressure. School feeding is a form of in-kind assistance where this risk may be particularly high. To date, studies show that, on average, school feeding schemes lead to weight gain in schoolchildren (Kristjansson *et al.*, 2007). Unfortunately, it is not known whether that is a good or a bad thing. What is known, however, is that these programmes are good platforms for deworming and nutrition education, as well as micronutrient fortification. Given the challenge of the double burden, school feeding schemes should prioritize dietary diversity and nutrient-rich foods rather than simple food security. Home-grown school feeding programmes, which create a short, local food supply chain between smallholders and schools, are one way to increase the likelihood that school feeding programmes include fruits, vegetables and other nutrient-dense products with a short shelf-life.

In conclusion, the main functions of social safety nets are to take the edge off extreme poverty and to reduce vulnerability. As such, they also have enormous potential for improving nutrition outcomes through BCC, micronutrient fortification and improved access to diverse, nutrient-dense foods. In many cases, achieving this potential is more a matter of implementation frameworks and political motivation than technical challenges. How do we coordinate among ministries? How do we incentivize schools to provide nutrition-sensitive services? Answering these questions requires more investment in implementation science globally, and increased policy dialogue at country level.

Case studies

Integrating social protection into food security and nutrition policies in Brazil

Presenter: Elisabetta Recine, Professor, University of Brasilia, Brazil, and member of the National Food and Nutrition Security Council, Brazil

Since 2006, Brazil has had an established national food and nutrition security system. The national plan established goals and defined budgets for different government sectors to promote and implement actions. The annual budget has been estimated at around 30 billion dollars.

The current national plan has nine pillars:

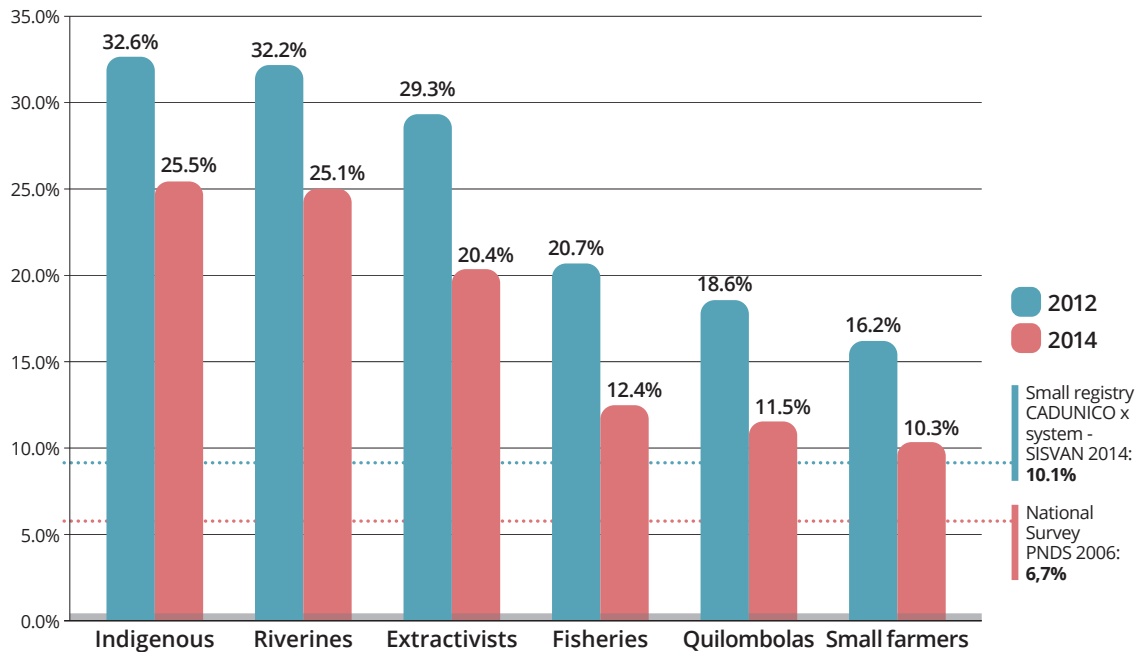
1. Promote universal access to adequate and healthy food, with priority given to families and individuals experiencing food and nutrition insecurity.
2. Promote productive inclusion of vulnerable groups, with an emphasis on indigenous populations and traditional communities in rural areas.
3. Promote the production of healthy and sustainable food, strengthening the production of small-scale farmers and agro-ecologically based production systems.
4. Promote local food supplies to guarantee regular and permanent access to healthy food.
5. Promote and protect availability and affordability of adequate and healthy food through food and nutrition education strategies and regulatory measures.
6. Control and prevent diseases related to unhealthy diet.
7. Extend water availability and access especially to rural poor families.
8. Consolidate the implementation of the national food and nutrition security system, improving federal government management, intersectoral collaboration and social participation.
9. Support international initiatives promoting food sovereignty, food and nutritional security and the human right to adequate food.

Under the national plan, low-income families are eligible for the national cash-transfer programme, *'Bolsa Familia'*. The impacts of this social protection programme on child malnutrition are well-documented. Data from some of the most vulnerable demographic groups in Brazil show consistent improvement in child growth (Figure 17).

Another major area of investment has been support to family agriculture, growing from less than one billion dollars in 2003 to nine billion dollars in 2015. The Brazilian Government considers these investments good economic policy in addition to social protection.

Brazil is also using its impressive school meal programme to link social protection with food and nutrition security policy. In 2015, Brazil offered meals to almost 42 million students, with 65 percent of municipalities buying food from family farms. Public procurement of local food is a condition of the national plan; at least 30 percent of the federal budget must be allocated for the purchase of food from family farms. Consequently, funds spent on public procurement of food produced by family farms increased from practically zero in 2000 to half a billion dollars in 2015.

Figure 17. Average children’s height-for-age is improving in the most vulnerable households receiving cash transfers under the ‘Bolsa Familia’ scheme in Brazil



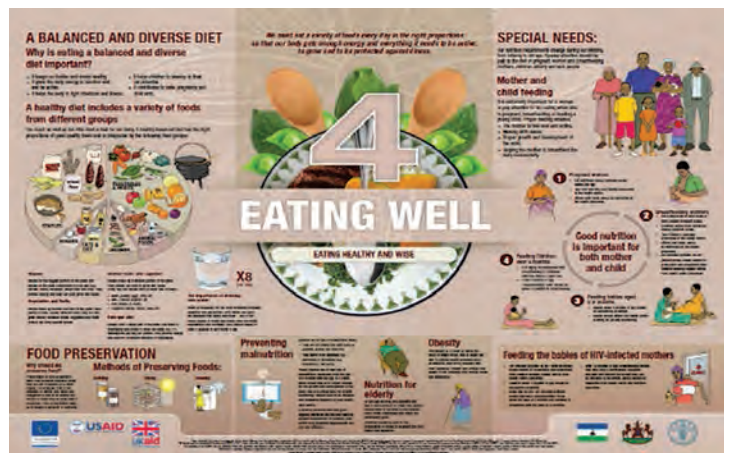
Source: Recine (2017)

Cash transfer to improve food security and dietary diversity in Lesotho

Presenter: Tuoane Ntitia, Director of Field Services, Ministry of Agriculture and Food Security, Lesotho

Livelihood challenges in Lesotho include severe weather events and natural disasters, many related to climate change; very high prevalence of HIV/AIDS; land degradation and associated soil erosion and fertility loss; policy incoherence; and low technical and operational capacity. In an effort to deal with some of these challenges, the Government of Lesotho upgraded the Department of Social Welfare to an independent ministry providing policy leadership and strategic direction for implementing social protection programmes. The ministry emphasizes coordination with productive sectors for better impact. Agriculture is especially important, as the majority of Lesotho’s population is rural and because agriculture has been especially adversely impacted by the challenges listed above.

Figure 18. Protective vegetable tarp (net) and dietary practices brochure distributed through the Linking Food Security to Social Protection (LFSSP) project, Lesotho



Source: Tuoane (2016)

Historically, neither agricultural nor social protection programmes have adequately reached labour-constrained, destitute families. In an effort to better target these vulnerable households, the government – assisted by FAO – initiated the Linking Food Security to Social Protection (LFSSP) project in 2013, complementing the Ministry of Social Development’s Child Grant Programme with a home gardening and nutrition kit.

Components of the programme include quarterly cash transfers and distribution of vegetable planting supplies and protective nets (Figure 18), as well as training brochures designed to increase yields, increase production diversification and improve dietary practices (Figure 18).

Initially targeting 800 families, the project is now set to scale up to approximately 65 000 households, following the results of an FAO evaluation showing positive results on both welfare and productivity indicators (FAO, 2015b).

The LFSSP demonstrates how existing social protection platforms can be leveraged for improved food security, nutrition and poverty reduction. Pro-poor targeting and thoughtful delivery mechanisms for major programmes can make a huge difference.

School meal programme in Armenia

Presenter: Robert Stepanyan, Head, Development Programmes and Monitoring Department, Ministry of Education and Science, Armenia

In 2010, with WFP support, the Government of Armenia introduced a national school meal programme. Initiated in response to the global financial crisis, which hit the national economy and many Armenian households very hard, the programme initially served only the most vulnerable regions of the country. Today, it covers all provinces and serves over 50 percent of all children in grades 1 to 4.

There are two coexisting school meal models in Armenia. The WFP provides complementary food rations while the government provides cash transfers to schools to allow them to procure food and prepare school meals. In 2017, WFP also started cash transfers. WFP currently administers the programme in seven provinces, while the government is implementing in three. A hand-over strategy is in place, including capacity strengthening, to ensure sustainability and national ownership of the programme.

At the beginning of the programme, some schools in the provinces covered by the government programme were providing only biscuits and juice rather than a cooked meal. This was due in part to poor understanding of the importance of nutritious, hot meals, exacerbated by a lack of appliances in school kitchens. Thanks to donations from the Russian Federation and WFP, 260 schools have been equipped with appropriate cooking equipment and hot meals are the default (Figure 19). Schools have a weekly rotational menu providing buckwheat, rice, pasta, wheat flour, vegetable oil and pulses. Fresh fruits and vegetables are provided through parents’ contributions.

Figure 19. Armenian schoolchildren enjoying a hot meal



Source: Stepanyan (2016)

In terms of future procurement, the government and WFP are looking into several options including private-sector financing and buying from local smallholders. Linking the school feeding programme to small-scale farmers and producers is an important strategy to strengthen Armenia's national food system. However, to make the programme home-grown requires strong policies and legal frameworks. Currently five line ministries are working together to embed multiple facets of the school meal programme into national policy frameworks and budgets.

The school meal programme in Armenia is a critical safety net for vulnerable households. A daily school meal reduces pressure on families, helps children focus, increases school enrolment and attendance, and reduces the risks of malnutrition, including compromised physical growth and cognitive function.

Linking smallholders to school feeding programmes in Malawi

Presenter: Albert Saka, Chief School Health and Nutrition Officer, Ministry of Education, Science and Technology, Malawi

Malawi is currently piloting a home-grown school meals project in two districts: Mangochi and Phalombe. The project has been rolled out to ten schools total and is part of the Purchase from Africa for Africans (PAA) programme, which is using Brazil's local purchase schemes for school feeding and food assistance as a model. The programme promotes market linkages by connecting the farmers directly to the schools, so that schools procure foods that are locally produced. PAA is a partnership between the Government of Brazil, the Government of the United Kingdom, FAO and WFP's Purchase for Progress initiative.

The Malawi project is being collaboratively implemented by the Ministries of Agriculture and Education, with support from FAO and WFP. Other important partners include the communities themselves, schools, NGOs and community-based organizations.

Under the project, farm households receive loans for productive inputs from a revolving fund, together with technical training on production practices, post-harvest food management, marketing and finance, and nutrition. The project also connects farmers directly to schools, strengthening demand and market linkages. Farmer cooperatives have been formed and warehouses have been built to reduce post-harvest losses.

More than 10 000 students covered by the project receive school meals that include pulses, cereals, fruits, vegetables and meat, locally procured from over 1 200 participating farmers (FAO/ WFP, 2014). The students are also learning more about the importance of a diversified diet through the project's nutrition-education messaging. This messaging increases the schools' demand for a variety of healthy foods and creates incentives to the farmers to diversify production. These numbers do not capture the ripple effects of the project, which extend throughout the community. Parents, teachers, siblings and others benefit as everyone increasingly recognizes the enormous value of eating a healthy diet.

Challenges to date include financing delays, heavy paper work and high and volatile domestic food prices. Additionally, because there is a shortage of health-care providers at local level, it has been challenging to collect anthropometric data for the students; as such it has not been possible to assess the full impact of the project in terms of nutrition outcomes.

Although the benefits unquestionably outweigh the costs, the project is expensive. One way this challenge is being met is through the evolution of a government-financed community home-grown school meals programme. Initiated in 2014, this programme provides financial support for procurement of seeds and fertilizer directly to schools, allowing them to grow their own food.

Evolution of a complementary feeding supplement for infants and young children in China

Presenter: Wenhau Zhao, Deputy Director, National Institute for Nutrition and Health/Chinese Center for Disease Control and Prevention, China

Although stunting and anaemia prevalence rates in poor rural areas of China remain persistent and high relative to other regions (Chen *et al.*, 2011; Yu *et al.*, 2016), the Yin Yang Bao (YYB) programme has made considerable inroads against these and related forms of malnutrition since its introduction in the early 2000s.

YYB is a high protein, soy-based supplement 'super pack' fortified with vitamins and minerals. It was developed to provide the nutrients that are commonly lacking in the diets of babies and toddlers from low-income families in China. One pack per day can meet the child's nutritional needs and make up for deficiencies. YYB can be mixed with water or added to porridge of different types, depending on the preferences of the child and caregiver. It is cheap, easily accepted in rural areas, and has proven very effective (Siyi, 2015).

The YYB programme has been implemented in three stages. The first was between 2000 and 2006. During this period the distribution of the supplement was piloted as a randomized controlled trial in five counties of Gansu Province, which is one of the poorest regions of the country. The results of the trials were impressive (Wang *et al.*, 2007; Wang *et al.*, 2009; Chen, Wang and Chang, 2010) and nutritionists began to call on the government to scale up the programme. The second phase took place between 2006 and 2012, during which YYB was rolled out to additional counties, supported by the Global Alliance for Improved Nutrition and implemented through the Ministry of Health. As YYB expanded, nutrition services at county and local level improved through a three-level distribution system for the supplement packs, involving county hospitals, town hospitals and village doctors.

National standards for an infant and toddler supplementary feeding pack were established in 2008. The release of these standards, combined with emergency use of the YYB package during the 2008 Wenchuan earthquake (Huo *et al.*, 2015), paved the way for the third phase, consisting of even wider roll-out, increased funding and a major public-health campaign to eradicate infant anaemia.

YYB has expanded public-health and nutrition services for infants and young children. To date, an estimated 4.23 million children have benefited from the programme.¹⁰

Reducing inequalities and improving nutrition in New York City, United States

Presenter: Sonia Angell, Deputy Commissioner, New York City Department of Health and Mental Hygiene, United States

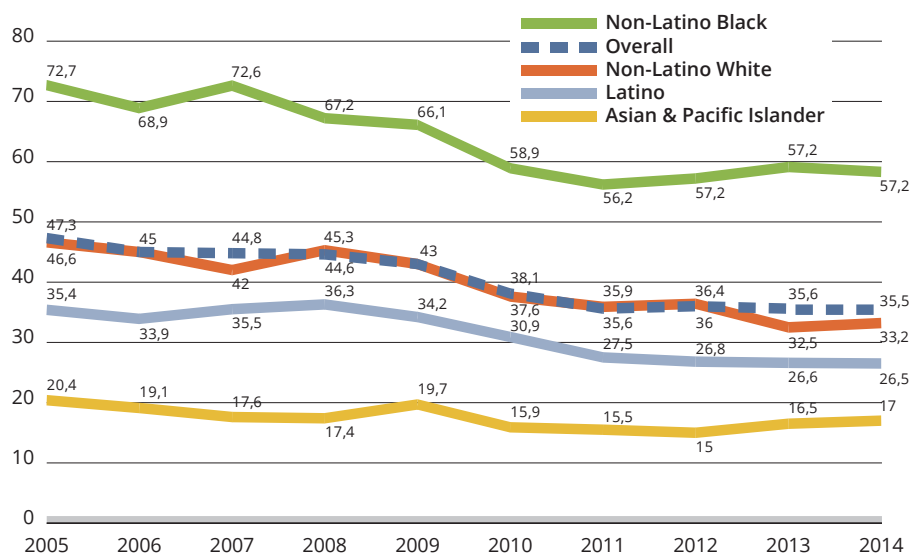
Health and nutrition programming for New York City must consider how actions layer and reach all neighbourhoods. New Yorkers do not stay in one place; they often spend considerable time outside of their own neighbourhoods for work or play. As such, although place-based programming is important, it must be implemented concurrently with citywide action. To advance opportunities for good nutrition, key considerations include access and affordability; marketing; and the availability of information or education to support healthy decisions. Efforts to improve nutrition in New York City must also respond to the stark disparities that underpin the city's health statistics. When health outcome indicators related to poor nutrition are disaggregated by race, it becomes clear that African-American adults are significantly more likely to be at risk of diet-related diseases such as heart disease than other races or ethnicities (Figure 20).

¹⁰ Personal communication between L.Y. Zhao and colleague at National Institute for Nutrition and Health, China CDC.

There is a wide spectrum of opportunities available for ensuring that food in New York (and in other cities) is more nutritious and more equitably available, including:

- industry reformulation;
- procurement for both public institutions and vulnerable populations;
- feeding programmes;
- labelling of packaged and restaurant foods;
- marketing;
- price controls;
- media awareness campaigns; and
- change ingredients and habits to improve meals cooked at home.

Figure 20. Premature mortality due to heart disease by race/ethnicity, New York City, United States, 2005–2014



Source: Bureau of Vital Statistics, New York City Department of Health and Mental Hygiene, unpublished

Across the board, the goal is to make the healthy choice the easy choice. For example, by executive order all city government agencies are now required to follow specific nutrition standards during food procurement and service. This order applies to over 260 million meals and snacks served each year by New York City agencies. It is hoped that this order will also influence downstream food supply, as food companies that reformulate to meet the city's contract nutrition criteria may choose to use the same reformulation when bidding on contracts in other locations.

Additional examples of how city authorities are changing New York City's food system include the restaurant restriction on trans-fat and the requirement that chain restaurants post sodium warning labels on products containing 2 300 mg or more of sodium. There is anecdotal evidence that this regulation also is driving product reformulation. The city authorities have also instituted calorie labelling in all chain restaurants. In 2010, calorie labelling requirements were included in national law but to date they have not been implemented nationwide.

Examples of how the department is specifically targeting disadvantaged populations include the Health Bucks initiative, which uses the federal Supplemental Nutrition Assistance Programme as a delivery platform for fresh fruit and vegetable vouchers to be redeemed at local farmers' markets. They are also responding to diabetes prevalence using the city's mandatory A1C registry, a laboratory that captures data on blood-sugar control in people with diabetes. This registry is being used to map and identify areas of very high uncontrolled diabetes prevalence, and a model program has been introduced in one of these areas that uses community health workers to promote behaviours that reduce diabetes and hypertension, and more broadly, to activate the community to improve the neighbourhood food environment.

Highlights from audience discussion

The issues of sustainability, comprehensiveness and scaling up were raised repeatedly. Dr Recine and a representative from Ecuador stated that national policy frameworks that include multisectoral goals, and subsequent interministerial coordination – including shared budgets – are imperative. Dr Alderman noted the critical role of resilience – that is, the ability of a social protection programme to scale up in crises and then ideally scale back down once the crisis is over. Both Dr Alderman and Dr Angell also noted that the success of a programme depends very much on context, including the overarching policy framework, institutional architecture and operational capacities at central and decentralized levels. A model that works in one country will not necessarily work in another.

The question of how best to provide nutrition-sensitive social protection was asked repeatedly. In response, Dr Alderman noted that even though it only costs between one and two percent of gross domestic product to have a comprehensive national social protection system, countries still have to prioritize among competing demands. Unfortunately, the countries with the greatest number of poor people also have the least amount of resources, so in these countries prioritization is a major issue, not least with respect to BCC, which is critical to the success of nutrition interventions.

Dr Alderman raised the importance of nutrition actions that target babies and toddlers between 0 and 2 years of age, given the now-widespread consensus that the foundations of an individual's health are largely set during this 1 000 day window. Given this, there is a strong incentive to support school feeding programmes that start earlier, at preschools and crèches. However, this faces major challenges because most preschools are not integrated into national education systems; thus, even in countries that are capable of providing nutritious school meals will have a hard time reaching these younger children. This is an area at the forefront of better programme design.

Dr Angell cited a New York City initiative to offer meals at all New York preschools, regardless of students' ability to pay. This project relies on the procurement standards Dr Angell described during her presentation, and is one of the ways New York's Department of Health is shaping the city's food environment. Dr Angell also mentioned the Farm to Preschool New York programme, which includes using local foods in preschool snacks and meals; promoting and increasing access to local foods for providers and families; offering nutrition and/or garden-based curricula; school gardening; in-class food preparation and taste testing; field trips to farms, farmers' markets and community gardens; and parent workshops.

More comments were made with respect to home-grown school feeding. Dr Alderman described trade-off challenges in terms of complicated marketing arrangements and coordination between education and agriculture. Stineke Oenema (United Nations Standing Committee on Nutrition [UNSCN]), referred to a pending UNSCN brief providing a joint policy statement on the subject from United Nations agencies and research consortia, and a representative from the Ministry of Agriculture, Democratic Republic of the Congo, made a call for stronger promotion of local products.

A number of comments were made regarding the importance of food-based approaches, with a question directed to Dr Zhao regarding the YYB programme, which relies on a powdered supplement packet as opposed to whole foods. Dr Zhao responded that the programme includes a nutrition-education component, and that the packet is considered the most effective and efficient approach to addressing widespread child malnutrition in rural China.

SUBTHEME 3: MEASURES TO STRENGTHEN ACCOUNTABILITY, RESILIENCE AND EQUITY WITHIN FOOD SYSTEMS

Introduction and key messages

KEY MESSAGES ON ACCOUNTABILITY, RESILIENCE AND EQUITY (SUBTHEME 3)

- Governments have the responsibility to enact food-system policies that positively influence what people eat. All food-system stakeholders (including public and private actors) should be active participants in the food-system reform process. At a practical level, reforms must be implemented through evidence-based policies, informed by data on food prices, food intake, dietary quality and related metrics.
- Climate change and related crises are threatening populations around the world, many of which are vulnerable to poverty, food insecurity and malnutrition. However, these populations are also often custodians of knowledge and practices for healthy food systems. Strengthening food-system resilience in these populations calls for a paradigm shift that makes explicit investments in indigenous and local agricultural knowledge and food cultures.
- Women are gatekeepers for health and nutrition because it is most often women who care for infants and children and who set household dietary rules. As such, women hold enormous potential to become empowered consumers who demand healthy food systems. In many countries, women also have the potential to become empowered producers who increase the availability and affordability of nutritious foods. Unlocking this potential requires increased gender equity and equality in agriculture and other productive sectors, together with continued investment in nutrition education and awareness-raising.

The policy agendas described in Subthemes 1 and 2 propose significant changes to the status quo. On the supply side (Subtheme 1), there is an urgent need to better align agrifood policies with nutrition goals, with respect to improving availability and affordability of nutrient-dense, non-staple foods. On the demand side (Subtheme 2), there is an equally urgent need for regulations and measures that create healthy food environments and that empower consumers to make healthy dietary choices.

These agendas – which are complementary and synergistic – require an enabling policy environment and improved governance mechanisms for food, health and related systems. Subtheme 3 addresses three complementary strategies for achieving these goals: using evidence-based policies; enhancing food-system resilience in the face of climate change and other crises; and empowering women to initiate food-system change.

Creating an enabling policy environment and improving governance mechanisms for nutrition begins with countries making nutrition a development priority in national policies, investments and regulations. In addition to meeting this baseline criterion, it is also critical that they review

and map the landscape of national policies,¹¹ investments and regulations that influence the agriculture, food and health sectors (see, for example, WHO, 2013). The ultimate goal of such reviews is increased coherence of policies governing all public-sector actors involved in food chains, and especially for those governing trade, agriculture and health. If policies in these sectors consistently promote preferences for foods that enable healthier dietary patterns, they will contribute to building momentum to shift private-sector mechanisms, leading to a positive set of reforms across the entire food system.

In addition to a nutrition-friendly policy and governance environment, increasing the nutrition sensitivity of food and agriculture agendas requires evidence-based solutions. Comprehensive information systems that provide credible, relevant and timely information are critical to the rationale and success of food-system policy adjustments. Without data, governments may not be convinced of the urgency of national challenges such as rising childhood obesity rates, reduced access to healthy diets, looming food safety crises or costly food loss and waste issues. As such, metrics that provide valid data on these and similar issues are important for two key purposes: first for convincing decision-makers that there are problems; and second, for holding governments and the private sector accountable for solving them. The six global nutrition targets and nine non-communicable disease (NCD) targets set by the 2012 World Health Assembly (WHA), and reconfirmed during the Second International Conference on Nutrition (ICN2) (WHO, 2012; WHO, 2013; FAO/WHO, 2014), provide an important example of how data can be used to both identify food and nutrition problems in countries and increase pressure to address them.

According to the Global Panel for Agriculture and Food Systems, areas essential to tracking the healthiness of food systems include:

- data on dietary intake;
- indicators of dietary quality, not just quantity;
- information on gender roles in dietary choices with a view to tailoring education measures, and policies;
- indicators of changes in the food environment in relation to policy and programmatic interventions;
- metrics that assess the healthiness of steps along the food value chain; and
- indicators of the ability of vulnerable people to access food of sufficient quantity and quality year round and under varying market/price conditions (GLOPAN, 2015).

Leveraging issue-specific entry points is another strategy for promoting the complementary supply- and demand-side agendas noted above.

Climate change, which is empirically linked to unsustainable agricultural practices, food insecurity and compromised human health, is one of the most important of these windows of opportunity. Currently, the interactions between agriculture, food systems and the natural environment contribute to climate change. The agricultural production systems that supply today's food systems are major contributors to greenhouse gas emissions and consequent global warming. At the same time, climate change adversely affects agricultural production, food security, nutrition and human health status through severe weather events, rising temperatures, decreased yields and related effects. Climate change is also linked to political unrest and conflict.

Women's empowerment is a second priority entry point for catalysing food-system reform. As primary care providers for infants, children and other family members, the resources and income that women control have been shown to have disproportionately positive impacts on household

¹¹ Policy coherence is the systematic promotion of mutually reinforcing policy actions across government agencies, creating synergies towards achieving agreed objectives. As such, incoherence occurs when policies support outcomes that, accidentally or intentionally, undermine each other. For example, an export subsidy for canned tuna that aims to promote economic growth but that also (inadvertently) encourages decreased domestic consumption is at cross purposes with a public health campaign to encourage increased intake of fish (Adapted from OECD [2002]).

food security and child nutrition (World Bank, 2007; UNICEF, 2011; Ruel, Alderman and the Maternal and Child Nutrition Study Group, 2013). Women also make important contributions to agriculture and rural economies in many countries. Because of these connections, policies and programmes that empower women through agricultural production and rural development can be leveraged to also drive food-system reform, via production for own consumption and via increased income that can be spent on healthy diets. Examples of such interventions include a grassroots food security project promoting kitchen and village gardens, or a larger project promoting cultivation and value addition through processing and marketing of nutrient-dense food such as groundnuts, biofortified sweet potato, dairy products or fish.

Any efforts to strengthen women's ability to make decisions that can lead to desirable food-system changes will be most effective when they are supported by national efforts to rectify fundamental gender inequities. Examples of these inequities include restricted access to land and other productive resources, credit, extension services, information and technology in countries where most people are employed in agriculture. Inequalities in pay and benefits in post-industrial countries are another example.

Because women are so often the primary custodians of natural and household resources, they are well-positioned to contribute to livelihood strategies adapted to climate change. It is precisely these qualities that can also be leveraged for transforming food systems in terms of improved agricultural production and value-chain practices as described under Subtheme 1, and with respect to becoming empowered consumers who make healthy food choices for themselves and their families, as described under Subtheme 2.

Subtheme 3 of the symposium comprised three parallel sessions:

- **Session 3.1:** Designing, implementing and monitoring evidence-based policies effectively with multiple actors
- **Session 3.2:** Enhancing food-system resilience in areas affected by climate change and other crises
- **Session 3.3:** Empowering women as key drivers of food-system change

Session 3.1 included country case studies of nutrition governance and accountability mechanisms that are creating an enabling policy environment for nutrition. These all highlighted the need for multisectoral, multistakeholder and multidisciplinary platforms. These platforms catalyse action and are important for holding a range of stakeholders to account. They are critical to the governance architecture in countries seeking to improve nutrition and dietary outcomes. It is particularly important to leverage these types of mechanisms to include the food industry, and to hold them more accountable than they currently are in many countries.

This session also included presentations on the mechanics of gathering food-price and food-consumption data, with a focus on how to integrate the collection of these types of data into existing national survey activities.

Finally, the session highlighted the fundamental feedback loop between data and effective policy. Policy commitments that are i.e. specific, measurable, achievable, relevant and time-bound (SMART) are absolutely critical to the creation and sustainability of to a nutrition-friendly policy and governance environment. As above, without clear, SMART goals, holding government – and the private sector – to account is difficult.

Session 3.2 focused on resilience-building. Several country case studies emphasized indigenous knowledge and production practices as key to mitigating the effects of climate change and war. Protecting and working with these knowledge systems is imperative to the survival not only of vulnerable indigenous populations, but to the planet as a whole. Case studies in this session also described the need for fundamental paradigm shifts to bridge the gap between emergency and development funding, and to reduce the environmental and welfare costs of current agricultural production practices. Biofortification and the importance of livestock vaccines were among the issues highlighted in this session.

Session 3.3 looked at the rationale and strategies for empowering women as food-system change agents. Case studies in this session showed how women the world over are important gatekeepers for health and nutrition because it is most often women who do the cooking and who set household dietary rules. In many countries, women also provide a substantial portion of the rural labour force. In these countries, empowering women by strengthening gender equity in agriculture – e.g. through land tenure rights, access to credit or agribusiness entrepreneurship – is critical to promoting healthy diets. This session also highlighted the crucial role played by nutrition education of mothers and caregivers in establishing lifelong healthy eating habits.

Session 3.1: Designing, implementing and monitoring evidence-based policies effectively with multiple actors

SESSION MESSAGES

- Too little pressure is being exerted on government and on the private sector to increase accountability for nutrition. Improving nutrition needs to be more of a political imperative.
- Data are fundamental to taking action and to holding government and other stakeholders accountable to policy commitments. Data-collection efforts focused on assessment of dietary intake, dietary quality and the food environment are needed to help guide efforts to improve food systems.
- It is critical to identify which indicators are most likely to galvanize increased political commitment and operational capacity in a given country. It is also critical to understand how different sectoral policies interact to affect diets.
- Successful nutrition policy implementation requires multisectoral, multistakeholder and multidisciplinary platforms. These platforms catalyse action and are important for holding a range of stakeholders to account. They are no longer optional in countries seeking to improve nutrition and dietary outcomes.

Chair/Moderator: Jessica Fanzo, Bloomberg Distinguished Associate Professor of Global Food and Agriculture Policy and Ethics, Johns Hopkins University, United States

Francesco Branca (Director, Department of Nutrition for Health and Development, World Health Organization [WHO]) opened the session by stating that accountability is critical to taking action, first in terms of who and second in terms of how. SMART policy commitments are key, because without clear goals it is impossible to hold government and other actors to account. Dr Branca also emphasized the multistakeholder aspects of nutrition policy commitments. A range of actors and agencies must be held to account in order to meet these commitments.

Overview

Presenter: Boyd Swinburn, Professor of Population, Nutrition and Global Health, University of Auckland, New Zealand

What needs to be done to improve nutrition outcomes? There has been a lot of work, a lot of evidence development, a lot of presenting and a lot of agreement at the level of WHO and the Food and Agriculture Organization of the United Nations (FAO). There is now general consensus on broad goals and strategies, as per the Sustainable Development Goals (SDGs) and the 2025 nutrition targets, but the specifics need to be defined much more tightly and explicitly, especially for implementation at country level; hence the need for SMART policy commitments as noted by Dr Branca.

The United Nations Decade of Action on Nutrition aims to generate precisely these types of commitments. The more explicit and defined the commitment, the easier it will be to hold government and other actors to account. Figure 21 provides a conceptual framework for an accountability cycle. This is based on four consecutive steps – assessment, communication, enforcement, and improvement – that, together, comprise a feedback loop between data collection, analysis and dissemination; policy reform; and improved outcomes. Clear objectives are placed in the centre of the cycle, anchoring the entire process. This framework can be applied at global, regional or country level. How each step can be applied in a nutrition governance context is described below.

Figure 21. Conceptual framework for accountability cycle



The governance process should be transparent, credible, verifiable, trustworthy, responsive, timely and fair; and have formal mechanisms to identify and manage conflicts of interest and settle disputes.

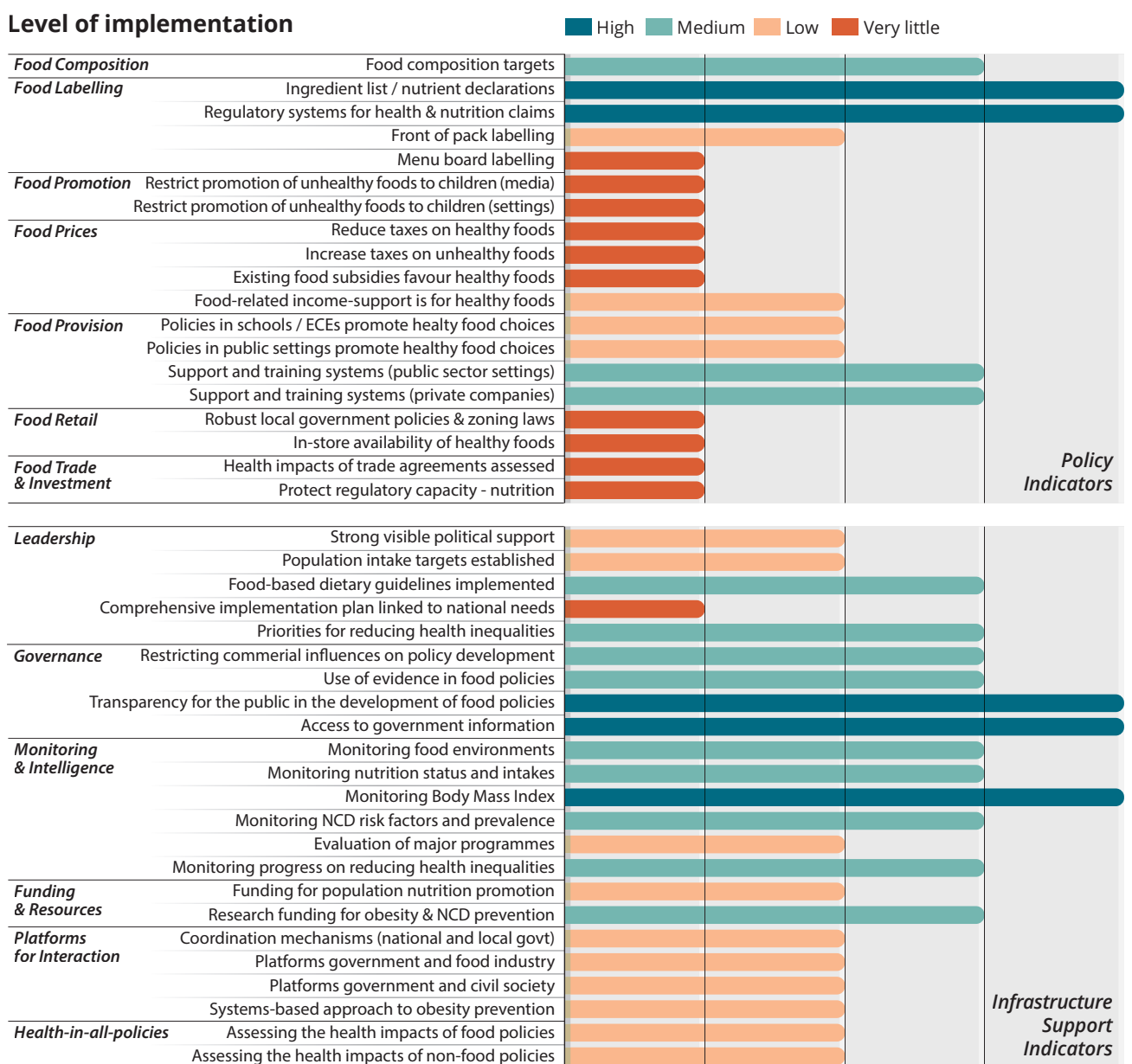
Source: Kraak *et al.* (2014)

- Step 1: Assessment (Take the Account):** This step uses monitoring and evaluation to collect and analyse evidence. What data are collected is determined by how the goals in the centre of the diagram are defined. In the case of nutrition, the focus is on food environments and population health, not only with respect to dietary and nutrition outcome indicators but also in terms of process indicators such as funding and policy action. Shifting the focus more upstream to these types of process indicators is important for understanding whether an enabling environment for nutrition exists in a given country. If it does not, there is little chance of improving outcomes. Currently, there are several systems collecting data on upstream indicators. These include WHO's Country Capacity Surveys (WHO, 2017a) and Global Database on the Implementation of Nutrition Action (WHO, 2017b), and the International Network for Obesity/NCD Research, Monitoring and Action Support (INFORMAS) (Swinburn *et al.*, 2015). The Access to Nutrition Index (ATNI, 2017) is another important source of upstream information, ranking the world's largest food manufacturers on their nutrition-related commitments, practices and performance globally. Civil society is a useful source of monitoring data that, to date, remains largely untapped. Engaging civil society more in this initial assessment step would increase the comprehensiveness, validity and use of evidence.
- Step 2: Communication (Share the Account):** This step consists of communicating the evidence collected during Step 1 in user-friendly formats such as scorecards, league tables and progress charts. For example, an INFORMAS food environment assessment looked at 40 indicators of food policies; 20 were specific food policies and 20 were support infrastructure indicators (Figure 22). These and similar types of assessments are very fine-grained and provide important information for assessing how each country is doing in terms of nutrition-sensitive policy-making. Benchmarking comparisons can also be done, with multiple countries

ranked in a single index. The Global Nutrition Report (GNR, 2017) and the NOURISHING initiative from the World Cancer Research Fund International (WCRFI, 2017) are currently reporting these types of data, with the GNR reporting a wide variety of outcome indicators as well.

- Enforcement (Hold to Account):** This step involves power relationships and as such it is the most difficult and most important stage in the cycle. First and foremost, countries can vastly improve their accountability by making nutrition a high-level political priority, including restricting the influence of multinational corporations on development of agrifood and nutrition policy. This increased commitment by government is absolutely critical to overcoming the powerful pressure exerted by industry, which – to date – is rarely held to account in terms of population health and environmental sustainability.

Figure 22. Level of implementation of food environment policies and infrastructure support by the New Zealand Government



Source: Swinburn, B. et al., 2014

If countries systematically validate these values with legislation – e.g. regulation of health and nutrition claims; subsidies for healthy foods and taxes on unhealthy ones; restriction of marketing unhealthy foods to children – the enormous power wielded by industry can be redirected towards actions that are more compatible with food systems that support healthy diets. In addition to this urgent need to tie industry operations much more closely to country requirements, there is also substantial potential for public-interest non-governmental organizations (NGOs), research consortia and foundations to become more involved in this step through strengthening quasi-regulatory mechanisms targeting both government and industry (Swinburn *et al.*, 2015).

- **Improvements (Respond to the Account):** This step requires substantially increased support for governments who are ready to act. For example, currently a miniscule amount of development funding for health is targeted at NCDs (IHME, 2017), most of which are diet-related, yet NCDs are the biggest cause of premature death in low and middle-income countries. Double-duty actions that address obesity and undernutrition simultaneously may be the most effective in many contexts, as these problems are not separate; most food systems around the world are simultaneously enabling both. Promoting local fruit and vegetable production, regulating the marketing of ultra-processed foods and beverages, and constraining the influence of large food corporations on development of food and nutrition policy are key double-duty actions. Some of these actions may also serve triple duty by reducing the impacts of food systems on climate change.

Case studies

Enabling policy environment for healthy diets in the Republic of Korea

Presenter: Kim Cho-Il, Research Fellow, Korea Health Industry Development Institute, Republic of Korea

Four ministries and several acts are involved in enabling healthy diets in the Republic of Korea:

1. The Ministry of Health and Welfare promotes the *National Health Promotion Act*, which includes a national health promotion fund financed by tobacco taxes. This revenue is used to support research and programming, including NutriPlus, which was developed to address poor nutrient intake in low-income children. The Act also mandates execution of the National Health and Nutrition Examination Survey (KNHANES) every three years. This is an enormous investment, the equivalent of € 4 billion annually. The Ministry of Health also promotes the National Nutrition Management Act, which mandates local governments to develop annual nutrition action plans and mandates central government to develop and revise dietary guidelines and dietary reference intakes every five years.
2. The Ministry of Food and Drug Safety promotes *the Special Act on Safety Control of Children's Dietary Life* and the *Food Sanitation Act*. This legislation was enacted in response to a sharp increase in national child obesity. It includes establishment of 200-metre Green Food Zones around all elementary, junior high and senior high schools. In these zones, the sale of nutritionally poor foods is prohibited. As of 2015, over 90 percent of schools were Green Zoned. There are also over 200 centres providing healthy foods in nursery schools and kindergartens.
3. The Ministry of Agriculture, Food and Rural Affairs is responsible for the *Food Education Act*, which mandates local governments to provide food education and promotes use of local produce in school meals.
4. The Ministry of Education is responsible for the *School Meals Act*, which mandates provision of nutritious and healthy meals to schoolchildren based on the dietary guidelines and dietary reference intakes developed under the *National Nutrition Management Act*. All schools participate in this programme.

In addition to these Acts, a national movement launched in 2012 is garnering cooperation of the food industry of the Republic of Korea to make healthier products. This initiative is complementary to the legislation cited above, which has helped shape consumer demand for healthier products. For example, sales of low-sodium soy sauce have increased and sodium content has decreased in instant noodles by at least 20 percent, in line with a substantial decline in mean daily sodium consumption. These data on sodium intake and other dietary and nutrition outcomes are available because of KNHANES. Concrete, reliable data are absolutely critical to creating and maintaining an enabling policy environment.

The International Dietary Data Expansion Project

Presenter: Jennifer Coates, Associate Professor of Food Policy and Applied Nutrition, Friedman School of Nutrition Science and Policy, Tufts University, United States

It is critical to have information on what people are eating and why in order to successfully promote food-based policies that enable healthy and sustainable diets. Unfortunately, to date, the collection of food-consumption data in low- and middle-income countries is not common. When such data do exist, they are rarely publically accessible or nationally representative. Often, the sample population is very small, with the surveys designed for a specific research purpose as opposed to being routinely executed to inform broader policy-making.

Reasons for this include:

- Limited research infrastructure investment: Each time a survey is conducted, survey implementers have to start from scratch, as the research infrastructure needed to collect and process food-consumption data, such as food composition and portion size conversion information, is weak.
- Limited capacity: Collection and analysis of food-consumption data are perceived as highly technical and exclusively the purview of trained nutritionists, who are few and far between in many countries.

The end result is a perception that collection of dietary data requires highly trained specialists and is prohibitive in terms of time and money.

The International Dietary Data Expansion Project (INDDEX) is working to address these bottlenecks. Implemented in partnership with FAO and the International Food Policy Research Institute (IFPRI), with funding from the Bill & Melinda Gates Foundation, INDDEX's centrepiece is a standardized yet flexible software that dramatically decreases the amount of time it takes to construct food-consumption questionnaires and to process and analyse dietary information.

Additionally, to address the issue of public accessibility of data, FAO and WHO, through INDDEX and other funding, have partnered to develop the Global Individual Food Consumption Tool, which will be a dissemination platform housing the results of INDEDEX and other dietary surveys. The intention is to allow users to generate policy-relevant information with the click of a few buttons.

These investments are expected to make the collection, analysis and use of food-consumption data more streamlined and cost-effective. Doing so is essential to enable urgently needed, effective policies for sustainable food systems and high-quality diets.

Food-price monitoring to track the cost of a healthy diet in Ghana

Presenter: John Nortey, Deputy Director, Statistics, Research and Information Directorate (SRID), Ministry of Food and Agriculture, Ghana

Ghana collects data on 42 food commodities. District, regional, and national averages are reported weekly and monthly, and about 15 selected markets across the country send price data directly to SRID to provide real-time information on what is happening in individual markets.

The problem with this system is that it does not collect price information on foods comprising a healthy diet. As such, SRID is working to expand the scope of its food-price data collection model through the Indicators for Affordability of Nutritious Diets in Africa (IANDA) project. Currently SRID is piloting expansion of its food list from 42 to 64, with the new foods being exclusively nutritious ones, such as *nkontomire*, *okro* and other vegetables important in Ghanaian diets; pawpaw, avocado and watermelon; fresh fish; and minimally processed versions of raw commodities (e.g. cassava dough and fresh meat). Training for collecting data on these additional foods was carried out in November 2016, both in the classroom and in one of the biggest markets in the country, so as to get a practical feel for how to deal with the extra commodities.

Together with IANDA, SRID is working on ways to use price data on these new foods to construct indicators such as the cost of a minimally diverse diet and the cost of nutrient adequacy. Eventually, these missing foods and the new indicators will be incorporated into the national food-price monitoring system.

This vanguard programme provides a blueprint for how food-price monitoring infrastructure can be expanded to track availability and access to nutritious food. Such retrofitting can be done at very little added cost, and provides high returns by providing much-needed evidence to increase accountability and enhance policy reform in support of sustainable food systems and healthy diets.

Preliminary results from the second WHO Global Nutrition Policy Review

Presenter: Chizuru Nishida, Coordinator of Nutrition Policy and Scientific Advice, Department of Nutrition, WHO

Following the first Global Nutrition Policy Review conducted in 2009–2010 (WHO, 2013), WHO undertook a second review in 2016. The aim was to compile updated information on countries' progress in implementing: i) actions to achieve global nutrition and diet-related NCD targets; and ii) recommended actions of the ICN2 Framework for Action.

As of 7 November 2016, 121 countries (60 percent) had responded. Preliminary findings are as follows:

- A majority of countries have incorporated global nutrition and diet-related NCD targets into their national policy documents.
- While about three-quarters of countries reported having nutrition policies in place, comprehensiveness varied from country to country. Only three of the global targets (stunting, wasting and overweight/obesity in adults) were included in a majority of the documents; the four diet-related NCD targets (blood pressure, diabetes, saturated fat intake and blood cholesterol) were included in less than a quarter.
- Nutrition was not adequately integrated into sectoral policies. Less than a quarter of policies reported for the health sector or food and agriculture sector included any diet-related NCD targets other than adult overweight.
- Certain double-duty actions are commonly being implemented. Approximately 90 percent of countries reported growth monitoring and promotion, breastfeeding counselling and complementary feeding. Fewer implemented specific programmes such as a baby-friendly hospital initiative or had specific protocols on infant feeding in difficult situations.
- More than two-thirds of countries reported implementing measures on dietary guidelines, nutrition labelling, media campaigns and nutrition education. However, further efforts are needed to protect and promote healthy diets. Possible measures that are not yet widely utilized include: front-of-pack labelling; measures to regulate

nutrition claims; reformulation of foods; introduction of taxes or subsidies to support healthy diets; removal of taxes and subsidies that are not conducive to creation of a food environment to promote healthy diets; bans on trans fats; restriction of marketing of foods and non-alcoholic beverages to children; and control of portion sizes.

- Eighty-six countries reported actions to promote healthy diets (Figure 23). Of these, demand-side measures to change individual behaviours – nutrition education and dietary guidelines – are the most commonly enacted, while supply-side regulations that attempt to create an enabling food environment are less common. Thus far, the review has found relatively few regulatory actions aimed at promotion of healthy diets and nutrition in both Africa and South Asia (Figure 24).

In conclusion, more and more countries are enacting comprehensive national nutrition policies and strategies that explicitly address the WHA global nutrition and diet-related NCD targets. Although food security and agricultural policies and plans and national development plans remain too limited in their uptake of nutrition objectives, food-system transformation is happening. Many regions are taking upstream regulatory actions, including policy changes such as taxation of sugar-sweetened beverages. Much more effort is needed globally, but a transformation has begun in many countries.

Figure 23. Policy measures to promote healthy diets and nutrition (reported in 86 countries)

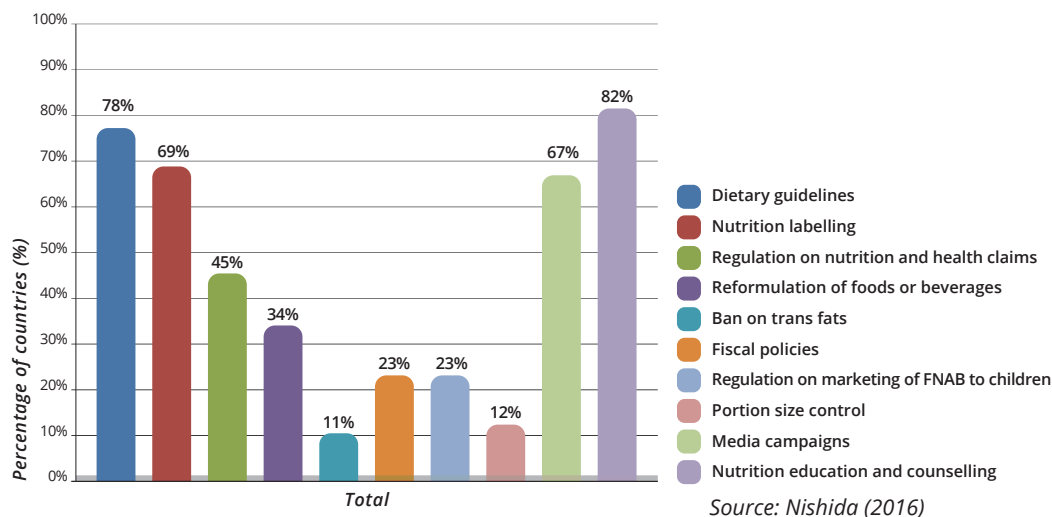
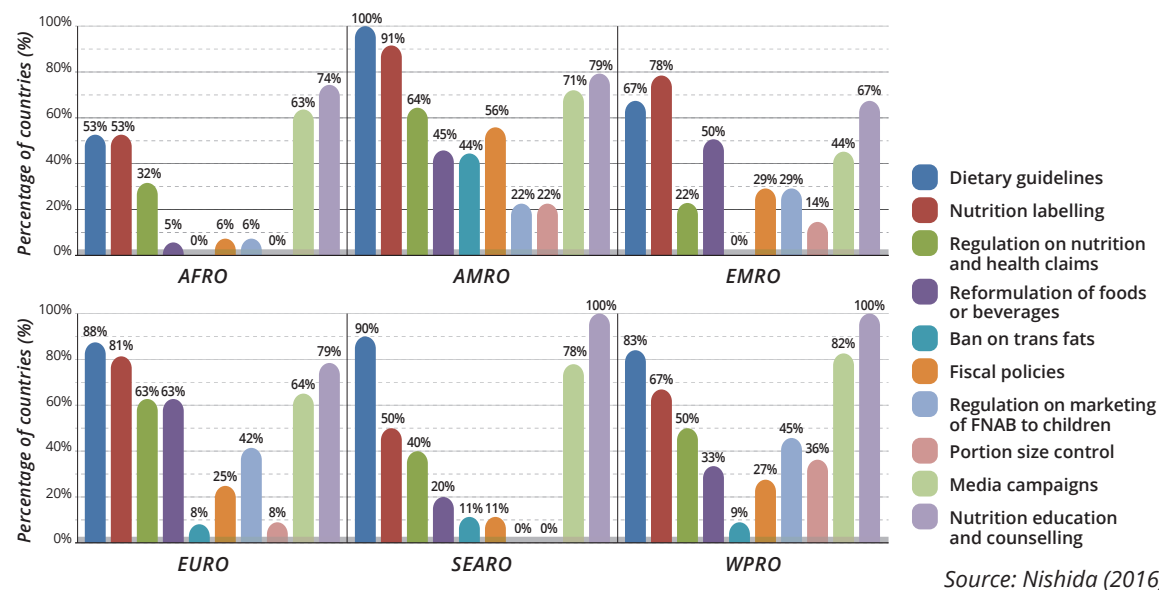


Figure 24. Regional differences in implementing policy actions to promote healthy diets and nutrition



Use of multisectoral platforms to reduce malnutrition and promote healthy diets in the United Republic of Tanzania

Presenter: Sarah Lilian Mshiu, Senior Economist and Nutrition Focal Point, Office of the Prime Minister, the United Republic of Tanzania

The United Republic of Tanzania is using a multisectoral approach to reducing malnutrition and to promoting healthy diets and improved nutrition. The strategy is anchored by a High-Level Steering Committee on Nutrition (HLSCN), which resides in the Office of the Prime Minister. This committee is multisectoral, multidisciplinary and multistakeholder in nature. Its achievements include:

- integration of dietary and nutrition considerations into multiple sectoral policies, including agriculture, health and education;
- tracking of nutrition expenditures, beginning in 2013; and
- increased alignment of donor nutrition programming with national plans.

The HLSCN is replicated at subnational level via regional steering committees and council steering committees.

In addition to the government committees, the approach also includes donor, civil society and business platforms. All three were created in 2011 as part of the country's commitment to the Scaling Up Nutrition (SUN) Movement¹². These platforms are highly flexible in terms of recruiting any sectors that are seen to be making an important contribution to nutrition or have the potential to do so.

A participatory process involving all platforms has now produced the National Connection Action Plan. This plan has been active since mid-2016 and is the successor of the National Nutrition Strategy. It uses a single connection mechanism and a single monitoring and evaluation system, including a common results, responsibility and accountability framework.

What are the gaps in this approach? Quantifying the contribution of nutrition-sensitive interventions to reducing malnutrition remains a challenge, as does understanding the impact of mycotoxins. Also, while substantial progress has been made in reducing undernutrition, more needs to be done to address overnutrition. At the moment, the government would like to see more emphasis in the media on healthy diets and lifestyles. In this area, the private sector and civil society are critical; multisectoral platforms are no longer optional for pushing the nutrition agenda.

¹² Countries that join SUN commit to forming or strengthening multistakeholder platforms that include relevant line ministries (agriculture, health, education, social welfare, women's affairs and local government) and key partners including civil society, United Nations agencies, donors, the technical and research community, parliamentarians, media and business.

See: <http://scalingupnutrition.org/about-sun/the-vision-and-principles-of-sun/how-do-countries-join/>

Highlights from audience discussion

Dr Nortey noted the challenge of ensuring that all of Ghana's districts know how to make use of the new price monitoring data; there is also a need for better food-price data to be submitted by the districts.

A representative from the World Food Programme (WFP) spoke on the Filling the Nutrient Gap Tool that WFP is piloting in a number of countries. In Madagascar, it has already informed the enactment and implementation of the current national nutrition policy.

Comments were made regarding the critical need to consider a country's power relationships and institutional architecture – how governance structures are configured and function – when designing and implementing monitoring and evaluation systems. This requires including decision-makers in defining monitoring frameworks so as to ensure that the indicators for which data are collected are relevant in political circles; this increases the likelihood of strong, transparent links between evidence generation and policy-making. Dr Cho-Il noted that in the Republic of Korea, government-affiliated research institutions (e.g. the Korea Health Industry Development Institute) strengthen these links by offering recommendations to increase coordination and policy coherence between ministries. Dr Mshiu cited the HLSCN and other nutrition platforms as playing a similar role in the United Republic of Tanzania.

In a related comment, Charlotte Dufour (Nutrition and Food Systems Division, FAO) noted the lack of evidence on interactions between policies. How do regulations, programmes and other instruments in social protection, agriculture and trade interface to create a certain food environment? In many cases, policies may be at odds with each other. These issues of policy coherence are key to better linking of research with the policy cycle. The research agenda needs to evolve accordingly, with more qualitative data on how multiple policies in a given context are interacting to impact food availability and food consumption.

In response to a question regarding identification of policy bottlenecks, Dr Swinburn added to Ms Dufour's point by explaining that, in most countries, the predominant political thinking is a neo-liberal one that favours market solutions as opposed to proactive consideration of how sectoral policies impact health and food environments. He noted that opposition from the private sector to policy reform that affects their bottom line compounds the problem, as does the accepting nature of the general population. To date, there has not been nearly enough pressure exerted on government to increase their own and the private sector's accountability. No one is marching in the streets to make action on obesity a political imperative.

With respect to increasing private-sector accountability, Dr Mshiu cited development of a scorecard with standardized indicators for monitoring progress on implementing the National Nutrition Action Plan in the United Republic of Tanzania. The private sector is required to rate itself regularly based on this scorecard and to report back to the HLSCN.

Dr Swinburn noted the need for more information on culture and cuisine in relation to obesity and overweight. Why is it that in some countries obesity has increased slowly, despite increased ubiquity of ultra-processed foods, while in others prevalence has risen dramatically? There is something about national cultures and cuisines that either attenuates or accelerates the impact of globalization. This is a grossly understudied area.

A comment was made regarding the high time and cost commitments required by monitoring and evaluation activities. Drs Coates and Swinburn acknowledged that the comment was well-founded, and that efforts are being made to facilitate both data collection and follow-up activities. Dr Coates also noted that smart sampling techniques can help get a picture of how things are changing over time using relatively small samples.

Session 3.2: Enhancing food-system resilience in areas affected by climate change and other crises

SESSION MESSAGES

- Climate change is one of the biggest resilience challenges we face today. How and what we eat is driving climate change, and climate change is increasingly affecting what foods are available. A stronger emphasis on environmental sustainability from production to consumption is essential to mitigating the impact of climate change.
- In addition to environmental sustainability, food systems can be strengthened by: leveraging indigenous knowledge of agriculture and food; cultivating biofortified crops; introducing technologies and skills that strengthen livelihoods in vulnerable communities; and by improving infrastructure and distribution channels to keep food available and affordable.
- Building resilience to climate change and other crises requires fundamental shifts: i) to bridge the gap between emergency and development funding; and ii) within agriculture to reduce the environmental, health and associated costs of current production practices.

Chair: Jessica Fanzo, Bloomberg Distinguished Associate Professor of Global Food and Agriculture Policy and Ethics, Johns Hopkins University, United States

Moderator: Maria Neira, Director, Department of Public Health, Environmental and Social Determinants of Health, WHO

Overview

Presenter: François Grünewald, Director-General, Groupe URD (Urgence, réhabilitation, développement), France

Climate-change shocks are characterized by unpredictability. For example, typhoons have been abnormally strong in recent years and have occurred out of season and out of their normal trajectory. Weather experts call these phenomena 'black swans' because they are unforeseeable and impossible to forecast. In addition to these unpredictable shocks, climate change is also creating new climatic patterns. Ten years ago, El Niño was confined to Southeast Asia, Central America and the Caribbean. Now everyone is talking about the effect of El Niño in Africa because of the new weather patterns emerging there. Is it really El Niño or is it some other effect?

Regardless of meteorological debates, it is clear that the world is facing new, devastating weather phenomena that have dramatic consequences, not least of which is increased violence and unrest. The wars in Syria, Rwanda and Darfur, Sudan, can all be traced back to severe and unprecedented drought conditions that led to the failure of agricultural production systems, which in turn led to ethnic and regional violence.

The effects of climate change are now being felt worldwide. The south of France, for example, where the presenter lives, is now experiencing unprecedentedly frequent mild winters and rainy springs. These are affecting the Mediterranean agricultural system in a number of ways. The lack of cold winters and frost, which used to help control pests, has resulted in dramatic infestations of parasites. For example, there is now a major problem with fruit flies affecting olives. Farmers who have made heavy investments in organic production methods are forced to use chemicals to control these pests. Bee populations have also declined by 40 or 50 percent, threatening not only honey production in the region but also pollination of crops and wild plants.

It is very difficult to find ways to adapt to these changes. Climate change is creating vicious cycles that are leading to the disenfranchisement of entire populations, especially among poorer, more vulnerable people. Land is degrading and livestock being lost, with terrible implications for the health and well-being of farm families. Coping and adaptation mechanisms that worked in the past are no longer applicable, given the frequency and severity of current climate-change-related events.

A lot of work is being done in development and aid circles to address the situation. However, in many cases the reality is that, unless solutions are developed at the grassroots, there is a strong likelihood that the strategies that are proposed will be bureaucratic ones that look nice on paper but not actually work in practice. Communities, especially women, must be systematically involved in developing these solutions. Whether it be nutrition or other issues, women are at the heart of innovation.

Changing paradigms this way requires much more emphasis on translating data sets into operational knowledge and embracing the concept of 'optimal ignorance' (Chambers, 1989). Optimal ignorance can be thought of as the end goal in a process of getting only the information that is really needed and no more. It is linked to the concept of 'appropriate imprecision,' which evolved in response to conventional rural appraisal and other surveys that collect lots of data to increase precision and certainty, without controlling for errors in the survey protocols.

In other words, it is often more useful to research the causes of problems and trends in or directions of change, rather than attempting to collect accurate information on absolute numbers with absolute certainty. This is especially true when time is of the essence, as it is now with respect to climate change.

What do we need in order to make brave and courageous decisions? In many cases, what is desperately needed is not more data but brave, courageous leaders and institutions that are capable, within unpredictable 'black swan' contexts, of making broad, sweeping changes. Such decisions will not be perfect, but strong decision-makers are needed to take the lead and to learn by doing.

Who would disagree with the goals of sustainable food production and food systems, and use of agricultural practices that benefit farming communities? These are 'no regret actions' that must be promoted independent of the data sets in front of us.

Case studies

Increasing resilience to economic and food-price crises in Uganda

Presenter: Stephen Biribonwa, Senior Agricultural Officer, Ministry of Agriculture, Animal Industry and Fisheries, Uganda

The majority of Uganda's population lives in rural areas and depends on what they produce for food; there is little dependence on the market. That said, food grown in rural areas of Uganda is routinely sold in cities and peri-urban areas where food supply chains are longer and where food affordability can be very challenging. Kitchen gardens and poultry holdings are also promoted in cities and city outskirts.

The ministry prioritizes crops that are both high-yielding and resilient to climate change – such as tomatoes, cocoyams, yams and gooseberries. Indigenous knowledge has played a role in promoting consumption of grasshoppers and white ants, which are widely consumed when they are in season, and in the brewing and consumption of fermented drinks, including *ajon* and *muramba* (made from millet) and *bongo* (a type of yoghurt). These fermented drinks help people during times of economic crisis due to their low perishability.

Vitamin-A-enriched sweet potatoes and iron- and zinc-enriched beans are also helping to build resilience, as is the production and consumption of small livestock and poultry.

A wide spectrum of policies is supporting these and similar initiatives through a multisectoral approach that prioritizes reduction of malnutrition and production and consumption of diverse diets.

Maya Chichen production system, Guatemala

Presenter: Antonio Gonzalez, Agroecological Movement of Latin America and the Caribbean (MAELA)

The Maya Chichen people are indigenous farmers in the Altiplana region of Guatemala. Their traditional food and agricultural system is healthy and resilient for humans and for the land.

The Maya Chichen grow multiple crops together using the *milpas* intercropping approach that plants corn with beans, pumpkins, sweet potato and herbs such as black nightshade, *chipilín* and *apazote* (Figure 25).

Figure 25. Plants used for intercropping in the Altiplana



Source: Gonzalez, 2016

Milpas and similar intercropping systems are important for soil health, which is in turn critical to plant health. These systems also protect biodiversity and reduce or eliminate the need for herbicides and pesticides. They are important for how the indigenous people eat. A *milpas* field is planted with a variety of crops, many of which have symbiotic relationships. These relationships are reflected in the traditional diet, which consists of nutritious foods that, when eaten together, complement each other in terms of taste and function. For example, adding *apazote* (otherwise known as American basil or Mexican tea) to beans not only reduces gas, but also fights against parasites.

Unfortunately, these indigenous systems and the healthy diets they support have been losing ground as a result of global economic forces. The food industry is undermining the traditional lifestyle and cuisine. Instead of being raised on the land and eaten whole, chickens are now imported as stock cubes and powdered soups. Both culture and health are suffering in the process.

Every country has its own production system based on indigenous crops. In the past, it has been possible to survive economic crises because local food systems do not depend on external systems. Undermining indigenous agriculture and diets compromises this resilience.

National agenda for sustainable livestock production in Mongolia

Presenter: Munkhbolor Gungaa, Communication, Networking and Monitoring and Evaluation Coordinator, FAO Mongolia

Today, pastoralists in Mongolia face drought in both summer and winter, as well as rapid economic change. Micronutrient intake is low in Mongolia, largely because of inadequate vegetable consumption. Inadequate energy intake is also a problem among poor households; average per capita intake in low-income families is 1 782 kcal per day, 64 percent of the recommended daily requirement.

In response to these and related challenges, and in line with FAO's Pastoralist Knowledge Hub¹³ and Global Agenda for Sustainable Livestock,¹⁴ Mongolia is developing a national agenda for sustainable livestock.

With this agenda, Mongolian pastoralists have taken collective action to improve their purchasing power, nutrition and well-being. Collective management of pasture has helped provide reserves of animal fodder for hard times, while livelihood diversification into the production and sale of livestock products such as milk, meat, leather, wool and cashmere has raised herders' incomes and improved food security. Other elements of the agenda include: introduction of innovative technology; capacity-building in financial literacy, branding and other areas related to efficient value chains and marketing; and awareness-raising on nutrition and healthy diets.

The agenda emphasizes a shift from quantity to quality for both nutrition – with more attention paid to the types of foods consumed – and livestock – with less focus on maximizing holdings and more attention paid to how the animals are raised.

Women are leading many of these actions and as such are playing an important role in strengthening Mongolian resilience to climate change. Women ensure food security, safeguard seeds and breeds, add value to livestock products and transfer knowledge to younger generations.

The engagement of women pastoralists is essential in national platforms like the Mongolian Pastoralist Alliance, in global platforms such as the World Alliance of Mobile Indigenous Peoples, in programmes implemented by FAO and in follow-up actions related to ICN2.

¹³ The Pastoralist Knowledge Hub is formed by pastoralist alliances and networks that wish to join global policy dialogue and share their knowledge and views, and by international partners that wish to incorporate the pastoralist voice in their discussions and share technical knowledge they have gathered on pastoralism. The Pastoralist Knowledge Hub serves both as a repository of technical excellence on pastoralism and pastoral people's livelihoods, and as a neutral forum for exchange and alliance building among pastoralists and stakeholders working on pastoralist issues. The Hub is hosted by FAO and combines the organization's expertise in livestock production with its knowledge on civil society and indigenous peoples

¹⁴ In 2010, the Food and Agriculture Organization of the United Nations, with financial support from the Netherlands' Ministry of Economic Affairs, Agriculture, and Innovation, initiated a Global Agenda for Sustainable Livestock based on voluntary and informal stakeholder commitment to act towards improved sector performance by targeting natural resource protection, while including poverty reduction and public health protection, as they relate to the livestock sector. More recently, the Swiss Federal Office for Agriculture has also pledged its financial support to the initiative.

Building resilience by embedding development into relief in Lebanon

Presenter: Shadi Hamadeh, Director, Environment and Sustainable Development Unit (ESDU), American University of Beirut, Lebanon

For ten years, the ESDU has been supporting community kitchens that provide rural women with income-generating activities that also preserve their food heritage through sustainable diets. The unit has also been mainstreaming urban agriculture in cities.

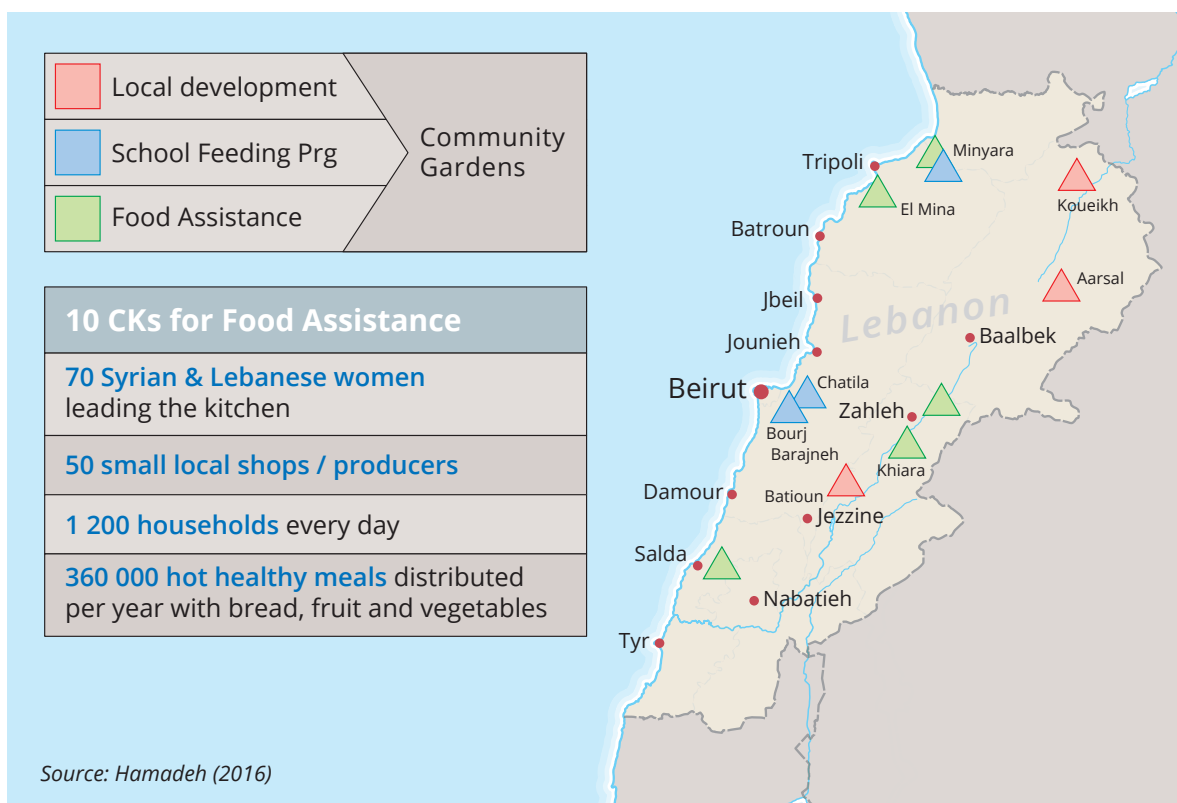
Lebanon is currently home to more than 1.5 million Syrian refugees, which means that 25 percent of the people who now live in Lebanon are Syrian. This has put huge pressure on the country's resources.

Against this background, and with a lot of help from NGOs, ESDU has now modified its community kitchen and urban gardening initiatives to target both Syrian refugees and vulnerable members of their host communities.

There are a number of advantages to the community kitchen approach in Lebanon. First, unlike traditional food aid vouchers, which are divisive because they target displaced people exclusively, community kitchens build social cohesion between Syrian and Lebanese communities, both of whom are targeted. Second, this approach celebrates culinary heritage and allows participants to cook healthy, traditional food for themselves and their families. As such, it promotes social rehabilitation and healing for both refugee and disadvantaged host populations. Third, it creates a value-chain effect around the kitchen as participants are remunerated for their work, and markets are created for local producers and shops.

Currently, ESDU is working with the Lebanese Ministry of Social Affairs to scale up and increase sustainability of these kitchens countrywide. Activities include linking to school feeding and rural development programmes, traditional food assistance programmes and local farmers (Figure 26). The programme is also linking to urban markets through commodities such as traditional Syrian sweets.

Figure 26. Community kitchens and related initiatives in Lebanon



With respect to urban gardening, the unit is providing capacity-building packages that help women and children grow their own food, mainly vegetables, coupled with composting and recycling units to increase environmental viability. With the help of microfinance agencies, participants have been developing their own individual management units.

Both of these initiatives are underpinned by the belief that relief activities should be development-oriented, strengthening resilience and long-term food security.

***Peste des Petits Ruminants* Global Eradication Programme**

Presenter: Bouna Diop, Secretary, FAO/Office International des Epizooties (OIE) joint Global Secretariat for the *Peste des Petits Ruminants* Global Eradication Programme

Small ruminants (sheep and goats) represent the primary livestock resource for many food- and nutrition-insecure, low-income rural families. These animals provide meat, milk, wool, skins and other products, providing both food and livelihoods for many smallholders, traders and processors. In many cultures, women look after sheep and goats and associated food and income streams.

Unfortunately, small ruminants are currently under threat from *Peste des Petits Ruminants* (PPR), a fast-spreading virus that kills sheep and goats. To date, PPR has been reported in more than 70 countries, threatening the livelihoods of 300 million families and causing annual losses of US\$1.4–2.1 billion (OIE and FAO, 2015). These losses are forcing pastoralists and farmers to migrate away from their homelands and cultures in search of alternative livelihoods. In some cases, the search for new land creates conflicts resulting from encroachment and land tenure issues.

Vaccinations are critical to reduce the spread of PPR. However, national vaccination programmes may not work because pastoralists are nomads who may cross country borders and pick up the disease in a neighbouring country. This is why, in 2015, FAO and OIE developed a global strategy for control and eradication of PPR (OIE and FAO, 2015). Goals include strengthened veterinary services and increased political, financial and technical investment in the causes and prevention of this disease.

The eradication of PPR is essential for three reasons. First, it will help build resilience against shocks for people living in conflict zones and fragile regions, both in terms of asset preservation and in terms of sustained access to nutritious animal-source foods. Second, it will help reduce migratory pressure. And third, it will contribute to women's empowerment, given that small ruminants are often kept by women.

Highlights from audience discussion

Comments were made regarding the links between decreased resilience and increased urbanization. Poor urbanites (who have often moved from rural areas) are unable to afford foods that are available in cities. More priority should be given to reducing incentives to migrate from rural to urban areas, e.g. by improving rural infrastructure.

A speaker from Bangladesh described how imported germplasm has improved the nutrition security of his country's food production systems. He also noted that both cropping patterns and climatic conditions are the same across certain countries. In these cases working together on solutions will accelerate progress.

A series of speakers highlighted the need to better link indigenous knowledge with science. It was noted that better linking of pastoralists and agriculturalists in drought-prone areas could increase resilience in terms of climate-smart pasturing, which also reduces conflict associated with encroachment. Several speakers noted the value of indigenous practices for controlling diseases in plants and livestock. Dr Grünewald called for a better dialogue between the scientists and those with indigenous knowledge, noting that sometimes the scientific community looks down on indigenous knowledge, and sometimes people who are involved in protecting local knowledge look upon scientists with suspicion.

An important related point was made regarding the need to understand and work within the parameters of indigenous peoples' cultures when promoting dialogue on awareness-raising, education and training.

A number of people questioned the role of women, which was endorsed as fundamental across the board but which can seem unclear in terms of practical implementation. One respondent noted the critical need to use culturally sensitive strategies to increase women's empowerment. Many cultural constraints can be removed if the approach is engaging and supportive. Another respondent cited poor access to credit as a key constraint to better engaging women. Once this hurdle is overcome, women will be able to lead the whole process.

The need for fundamental paradigm shifts was noted repeatedly, both in terms of revamping humanitarian aid cycles to be more development-oriented, and in terms of food-system transformation.

With respect to the former, speakers noted the persistent lack of resolution on bridging the gap between emergency and development funding despite more than two decades of discussion about linking relief and development and resilience. There is an urgent need to change the structure of funding mechanisms.

With respect to food-system reform, numerous comments were made regarding the changing role of agricultural development institutions. For decades, these have focused on increasing yields and returns to agriculture, but this has led to land degradation and worsened market opportunities for many people. A revolution is under way based on growing recognition of these mistakes, with a new focus on minimization of risk and optimization of quality. This revolution needs to be accelerated and strengthened by all stakeholders. A comment on industrial livestock was also made, with the speaker noting the urgent need to address its high costs: "We should be very clear that the [global] intensive livestock system is destroying the planet."

Session 3.3: Empowering women as key drivers of food-system change

SESSION MESSAGES

- The world over, women are important gatekeepers for health and nutrition because it is most often women who set household dietary rules.
- In many countries, women also comprise a substantial portion of the rural labour force. In these countries, empowering women by strengthening their contribution to agriculture – e.g. through land tenure rights, access to credit or agribusiness entrepreneurship – is critical to promoting healthy diets.
- Empowering women as drivers of food-system change means everyone gains: women, children and men. Initiatives must make this clear from the beginning, as long-term success is predicated on community support.

Chair/ Moderator: Jessica Fanzo, Bloomberg Distinguished Associate Professor of Global Food and Agriculture Policy and Ethics, Johns Hopkins University, United States

Overview

Presenter: Lindiwe Sibanda, Chief Executive Officer and Head of Mission, Food, Agriculture and Natural Resources Policy Analysis Network [FANRPAN], South Africa

The world over, women tend to set the dietary rules for their families and are important gatekeepers to health and nutritional behaviour. The more empowered women are, the more likely they will be to make good decisions regarding household meals, and to take better care of themselves and their families in terms of health and nutrition.

Empowerment can be defined as the range of options that create opportunities and reinforce individual and collective capacities to exercise control over life choices. In the context of women, food and nutrition, this definition translates to exercising control of intrahousehold dynamics that determine allocation of food and other resources. It also translates to exercising control over who does what work. When the gender division of labour is balanced, women have more time to care for themselves and for their children.

In low- and middle-income countries, women play a leading role in growing food as well as preparing it. Women produce between 60 and 80 percent of the food in developing countries, and are heavily involved in cultivating food crops, managing livestock and running small-scale agricultural business enterprises. It is in these countries that the connection between women's empowerment and household nutrition outcomes is most evident. For example, it is estimated that more than half of the reductions in child stunting from 1970 to 1995 came from increased empowerment of women, specifically via increased access to resources and income, improved time management, greater decision-making power and playing more leadership roles in the house and community. In many cases, it is likely that some or all of these improvements were achieved via agriculture, for example in terms of increased control over the sale of agricultural products and increased control over what crops to grow.

However, the cards are stacked against women in many agricultural systems. Many cannot access credit, productivity-enhancing inputs or services. Land tenure is a major problem, as cultural norms in many countries do not allow women to share property rights alongside their husbands. Women commonly have little or no access to agricultural technologies and innovations, or education and

training. For example, an FAO global survey on extension services showed that female farmers receive only 5 percent of all agricultural extension services worldwide (FAO, 1990), and almost 500 million women are illiterate (SPRING, 2016).

That said, in the dawn of a new era – the SDGs, the Paris Agreement on Climate Change, the United Nations Decade of Action on Nutrition and, in Africa, Agenda 2063 – offers an opportunity to promote a food-system approach that enables women to be drivers on the farm, in the kitchen and commercially. In line with this approach, FANRPAN is leading an intersectoral, operational research initiative entitled Agriculture to Nutrition (ATONU): Improving Nutrition Outcomes through Optimized Agricultural Investments. Implemented by a FANRPAN-led consortium of regional and international organizations, ATONU focuses on how agriculture can deliver positive nutrition outcomes to smallholder farm families through the implementation of robust, evidence-based nutrition-sensitive interventions. The project aims to design, pilot, evaluate and promote a suite of interventions that empower women and improve nutritional outcomes in existing and pipeline agricultural projects. The interventions address the variety of social, cultural and environmental contexts found in African agriculture, and target women and children under two years of age.

ATONU is currently being piloted in Ethiopia and the United Republic of Tanzania through an initiative of the International Livestock Research Institute (ILRI): the African Chicken Genetic Gains Project. The ATONU consortium approached ILRI about this project, which aims to increase household poultry holdings, and asked if the consortium could help to increase its nutrition sensitivity. Five recommendations resulted from the collaboration, as follows:

- **Improve consumption of animal-source foods.** In many cases, agricultural programmes focus on impact on income and do not consider consumption in the household. Who is eating the products? In most cases in traditional African culture, the male head of household gets priority on eating such delicacies as eggs and chicken, while women may get soup. Ensuring more equitable intrahousehold food allocation practices is absolutely essential to improving nutrition outcomes for women and children.
- **Nutrition and hygiene education.** Behaviour-change communication, especially with respect to feeding very young children, food hygiene and managing health environment challenges posed by agricultural activities – e.g. poultry keeping – is not included in conventional agricultural training, but is fundamental to the nutrition success of a project.
- **Increase expenditure of income on nutrition-dense foods.** This intervention class is focused on maximizing the chances that households use income generated from the sale of poultry products (and from other sources) to purchase nutrient-dense foods and non-food items that improve household health.
- **Women's empowerment.** This intervention class is aimed at improving women's empowerment, especially their ability to influence changes in time use and decision-making within the household.
- **Vegetable production.** Without this recommendation, ILRI would have just gone ahead with increasing egg and chicken production. Introducing vegetable production into the intervention cycle increases the likelihood that dietary diversity and quality will increase in targeted households.

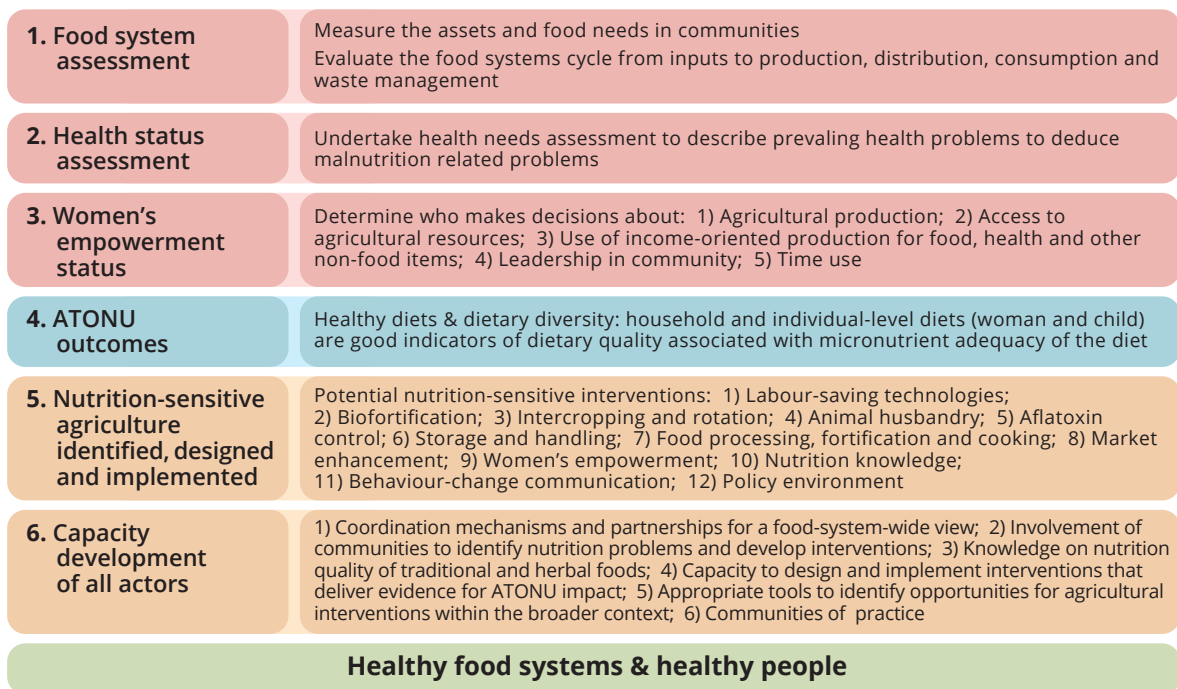
This ILRI example shows how a new lens is needed in agriculture. Development projects cannot stop at production level and assume that improvements will follow automatically. We are dealing with food systems, so let us get into the households and the kitchens.

This brings us back to women's empowerment. Once projects are in homes and kitchens, they need to look at primary caretakers and do everything they can to ensure their behaviour maximizes health outcomes. ATONU has identified six steps that can help achieve this (Figure 27). These steps boil down to assessing the food assets and food needs in the target community, assessing what malnutrition problems are prevalent and deducing which of these can be addressed by an improved food system. If agriculturists and health experts would sit side by side to address the challenges of nutrition, we would be halfway towards solving the problems of malnutrition.

What will success look like in 2025? Is it possible that by then, ATONU will have empowered women, will have validated evidence on how to deliver nutrition-sensitive interventions in agriculture, and will have a community of practice where agriculture and health experts work together to address the challenge of nutrition. Most importantly, by 2025 policy-makers should be saying 'no' to agricultural models based on yield, and 'yes' to agricultural models based on delivering nutrient-dense foods and nutrition-positive outcomes.

Women's empowerment is a key driver of food systems. Strategies for creating sustainable and healthy food systems in developing countries cannot ignore the empowerment of women as an essential early step.

Figure 27. Six steps to empower women to enhance nutrition outcomes of agricultural interventions



Source: Sibanda (2016)

Case studies

Land reform in Tajikistan

Presenter: Nodira Sidykova, Director, Legal Aid, Tajikistan

In collaboration with the United States Agency for International Development (USAID), the Government of Tajikistan has undertaken a project to increase equity in farm restructuring through improved recognition of land-use and property rights, including promotion of equal rights for women. The project consists of four components:

1. Promoting legislative reforms
2. Building capacity of public officials, farmers, NGOs and other beneficiaries
3. Expanding awareness of land-use rights and farm restructuring
4. Providing legal consultations and legal aid

With respect to legislative reforms, a working group under the Office of the President of Tajikistan comprising the Ministries of Justice and Agriculture, the State Land Committee, the Committee of the Registration of Immovable Property and other agencies related to agriculture has formulated and passed multiple laws aiming to improve women's land tenure. For example, there is now a law to increase women's access to mortgages, a law for the registration of immovable property, and a law for the registration of land-use rights.

With respect to capacity-building and related components, the project has conducted training courses at legal aid centres for female farmers, NGOs and other beneficiaries to raise awareness on the new legislation. These courses are critical as in many cases few people are aware of these recently enacted laws. The project has also conducted training courses for judges and developed special guidelines for the resolution of agricultural land disputes. This, again, is critical as, historically, women have been forced to work as leaseholders on farm collectives rather than being given full membership as owners.

Additional activities include the publication of 22 brochures targeting women, a conference on 'Women's rights to agricultural land: capacity-building of female leaders in Tajikistan', and a study tour for female farmers from the southern Sughd Region of Tajikistan to the northern Khatlon Region. These resources have provided information on how to resolve land disputes, on production techniques and crops, and on household budgeting and exporting techniques. As a result, women from the south are now running their own private farms, growing cotton, wheat, potatoes and tomatoes and providing for their families.

Indigenous food systems knowledge and resilience to climate change in Paraguay

Presenter: Maria Luisa Duarte, Cultural Advisor, Institute for the Indigenous Peoples, Paraguay

The indigenous Guaraní people of Paraguay, and the women in particular, are repositories of indigenous knowledge about the country's nature and natural resources. Guaraní women understand the seasons; they know when fruit should be picked from the mountains and when it should not. They know about traditional foods and their uses, and they know about planting, growing, harvesting and storage.

Guaraní women farm and cook collectively, for the community and for their families. Children are the first to receive food from the communal pot in Guaraní culture, followed by the elderly and finally the adults.

The Guaraní are concerned by the growing heavy use of pesticides around their communities. These pesticides are killing the plants and animals that live in the rivers and creeks and lakes and mountains. How can one talk about health when one's physical environment is being polluted?

It is imperative that Paraguay and other countries around the world validate and defend the value of indigenous food and knowledge. These are important for nutrition and medical knowledge, not least in terms of potential treatments for cancer and other diseases.

Specific, explicit policy actions are needed to revitalize indigenous food knowledge systems and to ensure that they are not lost. Such actions will also support conservation and use of biodiversity and sustainable production practices that increase adaptation to and mitigation of climate change. This is something that impacts the entire world, not just indigenous peoples.

Empowering mothers and improving children's consumption of animal products in rural Ghana

Presenter: Grace Marquis, School of Dietetics and Human Nutrition, McGill University, Canada

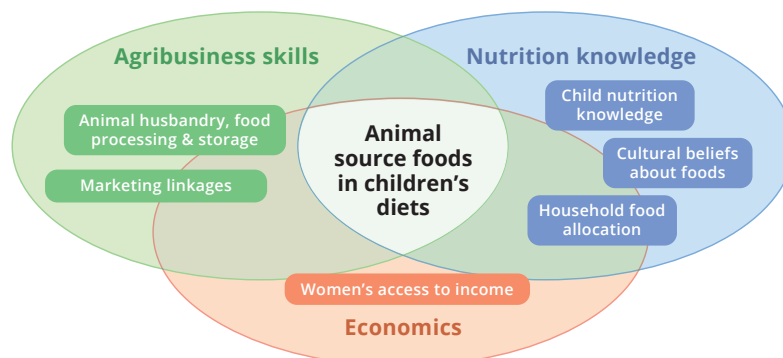
Animal-source foods improve children's physical and cognitive development, their school performance and physical activity (Allen, 1993; Neumann, 2007). However, children's diets in many countries are lacking in animal products (WHO, 1998).

The ENAM project aimed to find answers to this question in the Ghanaian context. ENAM stands for 'Enhancing Child Nutrition through Animal-Source Food Management'. However, *enam* also means animal foods in the Akan language that is widely spoken in Ghana, so it was an easily recognized name for the people with whom the project worked. Designed as a 16-month study across three ecological zones, the project is a wonderful example of collaboration across nutrition, agriculture and economics. In addition to McGill, it involved the University of Ghana, Heifer Ghana and Iowa State University, United States.

The first phase of ENAM used formative research to investigate availability of animal-source foods at local level, accessibility of animal-source foods to households, and use of animal-source foods in children's diets. The conceptual model that was developed as a result of this initial research identified three main focus areas: economics, agribusiness skills, and family nutrition knowledge (Figure 28).

The initial assumption of the project was that the main barriers would be local and household economics, but in talking with stakeholders it became clear that agribusiness skills were considerations, as was intrahousehold food allocation. This demonstrates that understanding cultural beliefs about food requirements and household food allocation is imperative to improving nutrition.

Figure 28. Factors affecting children's consumption of animal products in households in Ghana



Source:
Marquis (2016)

The project used a microcredit programme as a platform to deliver financial, business and nutrition-education interventions targeted explicitly to women with small children. Participants convened for weekly group meetings on topics such as marketing, customer service and financial literacy, and nutrition education on the benefits of animal-source food, dietary diversity and food safety. Supplementary trainings were held on poultry raising and fish smoking.

With respect to results, women reported improved business and better nutrition knowledge. Per one participant: *"I did not know that meat and eggs were good for children and would make them grow well. In our culture, meat is not usually given to children, so whenever I prepared food with meat, I would give the meat to the adults. Now I know that meat and eggs will make a child grow well and strong."*

Most importantly, children's diets and nutritional status improved; consumption of animal-source foods increased and weight-for-age, BMI-for-age and height-for-age improved (Homiah *et al.*, 2012; Marquis and Colecraft, 2014; Marquis *et al.*, 2015; Christian *et al.*, 2016).

ENAM provides a strong example of an integrated agriculture–nutrition project that addressed economic and cultural barrier head-on to empower mothers to better meet the nutrition needs of their young children.

Food Heritage Foundation approach to promoting traditional cuisine in Lebanon

Presenter: Dominique Anid, Executive Secretary and Treasurer, Food Heritage Foundation, Lebanon

The Food Heritage Foundation is a non-profit organization that works to revive and promote traditional Lebanese cuisine and to strengthen the livelihoods of rural producers and processors – primarily women – through the creation of rural–urban linkages. Traditional Lebanese cuisine is based on the Mediterranean diet and is inherently healthy. The foundation’s vision is to become a major driver of economic development through the promotion of this local food heritage.

The foundation has four main programme areas: farmers’ markets; community kitchens (Figure 29); food tourism; and community gardening. Each targets small-scale enterprises that support local food systems and traditional eating habits. Most importantly, all these programmes aim to create stable livelihood opportunities that generate income for participants. As such, the foundation routinely provides capacity-building on food production, food safety, sustainable agricultural production and related areas. These skills can then be brought to bear not only outside the home, for profit, but also in the kitchens of participating women themselves.

Figure 29. Syrian, Palestinian and Lebanese women working jointly in community kitchens



Source: Anid, 2016

This theory of change is supported by findings from a study (conducted by the American University of Beirut, Lebanon, and the University of Maryland, United States) of two foundation-supported community kitchens serving schoolchildren from a Palestinian refugee camp (Ghattas *et al.*, 2017). The study assessed how women who were working in these kitchens were affected with respect to food security, income and empowerment. Statistically significant findings include:

- increased total household and food expenditures;
- increased decision-making power over minor household expenses;
- decreased household-level food insecurity;
- decreased harmful food-related coping mechanisms.

Programmes such as farmers’ markets, community kitchens, community gardening and food tourism empower women to serve as ambassadors for traditional, healthy foods. As such, they are key grassroots entry points for preserving local food systems and reinforcing healthy dietary values.

Dimitra Clubs in Burundi, the Democratic Republic of the Congo, Ghana, Mali, Niger and Senegal

Presenter: Christiane Monsieur, Dimitra Project Coordinator, FAO

Dimitra Clubs are a grassroots initiative working to empower and strengthen small communities in Burundi, the Democratic Republic of Congo, Ghana, Mali, Niger and Senegal.

Participation, information and organizational skills are an integral part of the approach to community mobilization taken by FAO's Dimitra Project. Launched in 1994, Dimitra uses participatory information and communication techniques to empower women and men to improve their own livelihoods, food security, health, welfare and social status.

Dimitra's work is guided by three important principles:

- **Partnership** – working closely with local partner organizations to highlight local knowledge
- **Participation** – active participation of civil society organizations
- **Networking** – supporting the exchange of good practices, ideas and experiences

Dimitra pays special attention to strengthening links between women and men farmers' organizations and to community radio. Community radio is an important information conduit contexts where other types of technology are not always available.

Much of Dimitra's work is done through clubs. These clubs target both women and men to ensure that changes in social norms – including increased gender equality – are owned by the entire community. For example, in the village of Isangi, Tshopo Province, Democratic Republic of the Congo, where fishing is a key economic activity, a redefinition of gender roles initiated through the local Dimitra club has led to more women fishing. This increased household purchasing power, with implications for improved dietary quality, improved housing and allowed households to send more children to school. A few kilometres from Isangi, in Yelosona, Dimitra Clubs have encouraged communities to question food taboos, including consumption of certain fish species by women. As a result of discussions and awareness activities in the Dimitra Clubs, women in Yelosona have increased their protein intake by consuming more fish.

These and many other Dimitra club experiences are routinely shared through community radio. Each week, clubs discover what other clubs are doing, talk about it and build on these experiences. Thanks to their work and their networking, Dimitra Clubs are empowering rural African communities to redefine their daily lives and futures.

Highlights from audience discussion

Comments were made regarding the male ‘fear factor’ – that is, men feeling threatened by projects and activities promoting women’s empowerment, leading to resistance and refusal to participate. Many speakers acknowledged this issue and the urgent need to address it, noting that involving the entire community in active dialogue is a crucial first step, with language used and how the issue is framed also making a big difference. For example, Dr Marquis noted that the ENAM project was clear from the beginning that its goal was improving children’s lives. This is a goal that both women and men in the community supported unconditionally. It was easy to achieve buy-in for empowerment activities when they were framed in this context. Similarly, casting women as food-system champions has helped overcome initial reluctance from men in many contexts. Speakers also noted that empowerment activities gain legitimacy and value once men see how women’s participation in income-generating activities improves total household welfare.

A question was put to the floor and to the panellists regarding which countries currently have policies in place that explicitly promote empowerment of women. Of the countries represented in the room, South Africa, Tajikistan and Uganda all cited extant laws, while Ms Anid noted that, although Lebanon has not yet passed legislation, there is strong advocacy from NGOs to pass legislation protecting women from marital abuse and to prevent underage marriage.

Mr Bheki Cele, Deputy Minister of Agriculture, Forestry and Fisheries, South Africa, challenged the focus on healthy diets when so many millions are still going to sleep hungry:

“Forget about nutrition, forget about the luxury of choosing: the crux of the matter is when there is no food. There are children who rummage through dustbins and have no idea what nutritious food is; they are just trying to survive.”

This question was acknowledged as fundamental and incredibly important, with multiple speakers noting that food systems are the linchpin between food availability, sustainable agricultural production practices and healthy diets. Dr Sibanda noted the need to educate policy-makers and parliamentarians on the fact that hunger and micronutrient deficiencies – caused by unhealthy, nutrient-poor diets – are intertwined.

“Although we have to worry about the 800 million people who go to bed hungry, we also have to worry about the two billion people who are malnourished.”

Dr Sibanda explained that much of today’s malnutrition burden is the result of decades-long heavy focus on staple cereals. Because these crops are calorie dense, it has – up until recently – been assumed that this focus was the best route to food security and improved nutrition. However, animal-source foods, fruits, vegetables, legumes and nuts are also critical to human health. It is up to policy-makers to institute reforms that make these nutrient-dense foods more affordable and accessible worldwide.

ICN2 NEXT STEPS: WORK PROGRAMME OF THE UNITED NATIONS DECADE OF ACTION ON NUTRITION IN THE ERA OF THE SUSTAINABLE DEVELOPMENT GOALS

Opening

Chairs: Anna Lartey, Director of the Nutrition and Food Systems Division, Food and Agriculture Organization of the United Nations (FAO), and Francesco Branca, Director of Nutrition for Health and Development, World Health Organization (WHO)

The United Nations Decade of Action on Nutrition was proclaimed in April 2016 by the United Nations General Assembly to strengthen collective efforts worldwide on eradicating hunger, ending all forms of malnutrition, and strengthening the 2030 agenda and the Sustainable Development Goal (SDG) vision. FAO and WHO were called upon to lead the development and implementation of a work programme based on the Framework for Action arising from the Second International Conference on Nutrition (ICN2), in collaboration with the World Food Programme (WFP), the International Fund for Agricultural Development (IFAD), the United Nations Children's Fund (UNICEF) and with the engagement of the United Nations Standing Committee on Nutrition (UNSCN) and the Committee on World Food Security (CFS).

The aim of this programme is to create a 'movement of movements' led by United Nations Member States and having civil society as its backbone. No new structures are envisioned but rather a loose and inclusive governance mechanism bringing together, connecting and creating synergies between existing initiatives.

The development process and time frame for the work programme are as follows:

- An online consultation was run by the UNSCN in September and October 2016 to inform a zero draft of the work programme.
- A first draft was shared in February 2017 for formal consultation with Member States through the CFS Open-Ended Working Group on Nutrition, with the final draft submitted to the WHA and FAO Council.
- The final draft of the work programme was transmitted to the United Nations General Assembly in October 2017.
- The work programme is based on the following guiding principles:
 - Support the 60 recommendations of the ICN2 Framework of Action and the SDGs.
 - Aim to achieve the WHA targets on nutrition and diet-related non-communicable diseases.
 - Be government-led and based on specific national and regional priorities.

The six cross-cutting and connected pillars around which actions during the Decade will focus are:

1. Sustainable, resilient food systems for healthy diets
2. Aligned health systems providing universal coverage of essential nutrition actions
3. Social protection and nutrition education
4. Trade and investment for improved nutrition
5. Safe and supportive environments for nutrition at all ages
6. Strengthened governance and accountability for nutrition

These pillars are based on the ICN2 Framework for Action.

Implementation mechanisms include:

- formulation of specific, measurable, achievable, relevant and time-bound (SMART) commitments including financial and in-kind resources allocation;
- country-led action networks; and
- champion countries.

One hundred and nineteen contributions from 48 countries were made during the online consultation. The main messages arising from these are:

- The work programme of the Decade of Action could generate transformational change if binding or quasi-binding priorities are defined and agreed upon.
- The work programme needs to be forward-thinking and adaptive to the constantly evolving nutrition landscape.
- Action and policies need to be rights-based and focus on those most in need.
- Programme priorities should include: awareness-raising; food-system transformation; capacity development and knowledge-sharing, including for and with the media; and development of a common vision of success.

Plenary discussion highlights

During discussion in plenary, representative of countries and other key stakeholders made valuable suggestions on the initial draft work programme, and expressed commitments to seize the opportunities presented by the Decade of Action.

The Permanent Representative of Switzerland to the Rome-based United Nations agencies expressed Switzerland's engagement in nutrition by referring to its new multisectoral Nutrition Strategy 2017–2024. Focus areas include: i) consumers' nutrition knowledge and competence; and ii) voluntary improvement of nutritional quality of industrialized food products and meals cooked outside the home. At the international level, Switzerland's priorities include continued engagement in the Scaling Up Nutrition movement, particularly with respect to strengthening capacities for a multistakeholder approach. An additional priority is co-leading the Sustainable Food Systems Programme of the United Nations Ten-Year Framework Programmes on Sustainable Consumption and Production Patterns¹⁵. The Swiss representative noted that sustainable diets are healthy, but healthy diets are not necessarily sustainable.

A representative from the Ministry of Health, Brazil, reaffirmed commitment to the Decade, which Brazil has supported since its initiation, and noted the importance of intersectoral policies. Such policies, which must be enacted with social participation and anchored by food-based dietary guidelines, promote critical synergies between health, nutrition, social protection, food systems and sustainability and are imperative to achieve the right to adequate food. Brazil's annual planned investment of 30 billion dollars in its national food and nutrition security plan was also mentioned. Brazil suggested the following priorities for the Decade's work programme:

- dissemination of best practices
- establishment of a monitoring system based on the commitments set in ICN2
- setting global, regional and national goals
- making a strong global commitment on food-system regulation, as set previously for tobacco, particularly for labelling, marketing, fiscal incentives and taxation.

¹⁵ <http://web.unep.org/10yfp/programmes/sustainable-food-systems-programme>

A representative from the Ministry of Agriculture and Forestry, Finland, stressed that national commitments are not enough, and proposed that the work programme include regional collaborations such as those that currently exist between the Nordic countries. The representative also highlighted the importance of food-based dietary guidelines and food composition data to guide policy-making.

A representative from the Federal Ministry of Food and Agriculture, Germany, commended the 'movement of movements' concept, and confirmed the German Government's interest in joining the effort. He also called for the work programme to track new technologies and to focus nutrition education and promotional work in institutional settings such as nurseries, schools, workplaces, retirement homes and hospitals.

A representative from the Ministry of Food and Agriculture, Ghana, mentioned the country's cross-sectoral planning approach coordinated by the National Development Planning Commission under the Office of the President and the support that non-traditional stakeholders, like banks, are providing. Coordination is a challenge and needs to be strengthened. In future work, Ghana plans to focus even more on supporting and developing further the capacities of women farmers.

A representative of the United States State Department of Agriculture stressed the need for the Decade to map the global nutrition landscape and infrastructure for better alignment, given the many parallel but complementary initiatives such as the SDGs, the WHA targets, the Scaling Up Nutrition movement, Nutrition for Growth, Every Woman Every Child, and the Zero Hunger challenge. She suggested that the work programme present available evidence of what works and identify knowledge gaps, and noted the importance of improving communication and alignment across domestic and global initiatives, citing the United States initiatives MyPlate and the Supplemental Nutrition Assistance Program as possible models for integrated social-protection-nutrition programmes. To this end, within the United States, a Global Nutrition Coordination Plan and an interagency working group on global nutrition have been created.

The Permanent Representative of Iceland to the Rome-based United Nations agencies and Vice-Chair of the CFS expressed his personal view that there is a need to focus on education, capacity-building, advocacy and communication for much more than a decade. As Vice-Chair of the CFS, he reminded the audience that three of the six ICN2 Recommendation Pillars are also at the core of the CFS mandate: sustainable and resilient food systems for healthy diets; safe and supportive environments for nutrition at all ages; and the goal to review, strengthen and promote nutrition governance and accountability. CFS 43 (November 2016) included commitment to greater CFS engagement in nutrition. To date, this commitment is reflected in the commissioning of an independent, evidence-based report on nutrition and food systems by the High-Level Panel of Experts on Food Security and Nutrition (HLPE); an open discussion of the Decade's work programme scheduled for February 2017; and a strong focus on nutrition during CFS 44 (October 2017).

The Director-General of the International Food Policy Research Institute (IFPRI) proposed a focus on three words – urgency, evidence and data – and stated that IFPRI remains committed to supporting the Decade by providing data, conducting evidence-based research, facilitating innovation and strengthening country capacity. IFPRI recommendations – based on experience in Bangladesh, Ethiopia, Malawi and Rwanda – to inform the work programme include:

- Make strategies, policies, programmes and investments nutrition-driven by putting nutrition up front. This means making improved nutrition an explicit goal that informs policy design and investment decisions.
- Strengthen capacity for nutrition action at the national level, the grassroots level and everywhere in between.
- Empower women not just in agriculture, but throughout the entire value chain linking agriculture to consumption.
- Empower women in parliament.
- Do not let the Decade duplicate efforts by Scaling Up Nutrition (SUN) movement, the African Union and others. Rather provide assistance to these existing initiatives to help them achieve their goals faster.

The Coordinator of SUN made three recommendations for the work programme:

- Focus strongly on country-driven processes and on the need for women to be front and centre of all politics. Ending malnutrition is a political choice.
- Avoid building new pillars as it risks putting up more silos and weakening cohesion.
- Amplify and catalyse existing country-based activities, including public–private and private–private collaboration.

The Global Coordinator of Renewed Efforts Against Child Hunger and Undernutrition (REACH) and Co-Facilitator for the United Nations Network for SUN confirmed that the United Nations Network is committed to the Decade of Action and introduced the Compendium of Actions for Nutrition as a newly published tool for accelerating progress. This compendium comprises 40 actions and sub actions from different sectors presented together to support multisectoral dialogue around nutrition at country level.

The Chief Executive Officer of HarvestPlus recommended that the work programme allow for evidence-led prioritization by countries themselves. She committed to leveraging the Decade to increase access to biofortified foods for all who stand to benefit, working closely with stakeholders and more actively promoting the empowerment of women and youth along the supply chain.

The Lead Health and Nutrition Specialist at the World Bank commended FAO and WHO for not proposing new structures for the Decade but rather to use existing structures, perhaps addressing overlaps and redundancies where possible. She recommended framing the Decade in a way that clearly links the 12 nutrition-related SDGs to national economic growth. Under this framework, a wider swathe of academia, foundations and development banks will be galvanized to participate. She also recommended a focus on a few desirable results. In terms of commitments, the World Bank has committed to work with at least 22 countries in the first phase to scale up actions across sectors, and developed an investment framework for four of the six WHA targets that will guide future financing.

A representative from the World Food Programme (WFP) Nutrition Division described what WFP is doing and will do more of to contribute to the Decade, namely:

- Strengthening WFP participation in coordination platforms, including the CFS, SCN, SUN, regional organizations and partnerships with the private sector and other actors at country level;
- reinforcing the agency's work on nutrition in emergencies by working with partners and governments on nutrition preparedness;
- applying a stronger nutrition lens to all operational programmes, from school feeding to helping women build community assets; and
- working with partners to build evidence of what works and how.

Patrick Webb, Professor of Nutrition Science and Policy, Tufts University, United States, and vice-chair of the symposium, noted the need for communication around what the work programme will cost; the need for more research that cuts across sectors and deals with operations or delivery science; and the need for the United Nations to act differently during the Decade, leading by example via a system-wide commitment.

A representative of the International Indian Treaty Council spoke on behalf of civil society, calling for governments and partners to take civil society into greater account, and ensuring the participation of civil society representatives in the Decade work programme. The representative also requested that WHO and FAO play a clear role in providing policy guidance to governments, promoting a holistic, food-systems approach to increase understanding of the complex relationship between agriculture, value chains, health and nutrition. A successful Decade depends on better coordination between United Nations agencies and platforms, not least the CFS, which is critical to the promotion of a mandate and regulatory structure that focuses primarily on nutrition.

Senator Guido Girardi, Chile, emphasized the urgency of the global health and nutrition situation. The number of people suffering from diet-related non-communicable diseases is increasing, and legislation has a key role to play in reducing prevalence. In Chile, two bans – one on advertising of ultra-processed foods and a second on the sale of these products in schools – have proven to be effective strategies for reducing salt, sugar and trans-fat intake. The Senator called upon WHO to make this approach universal via a global framework similar to the Framework Convention on Tobacco Control. He also recalled the fundamental importance of alliances between the scientific community, academia, government, parliamentarians and non-governmental organizations, at both national and regional level. Finally, Senator Girardi called for stronger action from WHO and other United Nations agencies.

A representative from the Norwegian Ministry of Trade, Industry and Fisheries endorsed the mechanisms proposed for implementing the Decade and expressed Norway's interest in taking an active part in production of animal-source food through responsible fisheries, as pertaining to Pillar 1 (sustainable, resilient food systems for healthy diets). Seafood can be an important contributor to the healthiness of diets and increasing fish intake is a strategy that is underutilized in approaches to reduce micronutrient deficiencies. In addition to its domestic production potential, Norway offers knowledge on increasing sustainable sea-based production globally.

The Minister for Agriculture, Guyana, committed to improving national and regional food and nutrition security, the latter in Guyana's capacity as the lead in food and agriculture in the Caribbean regional association (CARICOM). The Minister also made two suggestions for the United Nations and other agencies: 1) to increase the communication and information tools at countries' disposal; and 2) to be more activist and assertive in transforming countries' food systems by decreasing the proliferation of fast foods, ultra-processed imports and highly concentrated food retailers.

STUDENTS' SESSION

A special session with students from different regions of the world was organized to identify and convey messages from the student community to policy- and decision-makers on ways to strengthen sustainable food systems for healthy diets and improved nutrition¹⁶.

Student representatives from eight universities participated in person and online for an interactive conversation with a panel of experts at the symposium. The participating universities were University of Sao Paulo (Brazil), University of Ghana (Ghana), Chouaib Doukkali University (Morocco), Mahidol University (Thailand), Oslo and Akershus University College of Applied Sciences (Norway), Tufts University (United States), Università degli Studi di Roma Tre (Italy) and University of Ghent (Belgium).

The expert panel comprised Günter Hemrich (Deputy Director of Nutrition and Food Systems Division, Food and Agriculture Organization of the United Nations [FAO]), Dr Adelheid Onyango (Regional nutrition advisor for Africa, World Health Organization), Shadi Hamadeh (Professor, American University of Beirut, Lebanon), Andrea Pezzana (University of Turin and San Giovanni Bosco Hospital Turin, Italy) and Julia Tagwireyi (independent consultant on food and nutrition policy, planning and advocacy).

In preparation for the event, the eight universities hosted webinars to follow the opening session of the symposium, including the keynote address, and to gather feedback from students to be presented by representatives at the Students' Session.

A wide range of topics was raised during the session, including the following four issues:

- **The need to change the perceptions and mindset of the youth, particularly in developing countries, on agriculture as a profession and regarding the need to promote food value chains as business opportunities.**

Elma Kontor-Manu, a master's degree student in food science at the University of Ghana, highlighted the urgency of this challenge by noting that it is primarily older people who are currently farming in Ghana and across Africa, despite increased labour needs facing the sector, given the growing demand for food. Ms Kontor-Manu further argued that the goals of the United Nations Decade of Action on Nutrition are unlikely to be realized without the full engagement of youth in the agricultural sector.

- **How to retain the positive aspects of customary food systems and diets at a time of fundamental changes in traditional practices and loss of knowledge of traditional diets.**

The need to embrace and protect food heritage while being open to changes in food systems that bring improvements was discussed by Alicia Gomez, an undergraduate student in nutrition at the School of Public Health, University of São Paulo, Brazil. Ms Gomez highlighted the issue of food sovereignty and the human right to adequate nutrition, both of which are fundamental elements of Latin America's nutrition and health agendas: "Our native seeds have been set aside and our food sovereignty has been called into question. How can our food sovereignty and our social right to adequate food be respected and protected by current food systems, which involve food conglomerates deciding what and how should be produced and eaten?"

¹⁶ A webcast of the session is available at:
<http://www.fao.org/webcast/home/en/item/4261/icode/>

- **Importance of corporate responsibility within the food industry regarding formulation and marketing of products, particularly to children.**

Camilla Warren, a master's degree student in public health nutrition, Oslo and Akershus University College of Applied Sciences, Norway, cited Norwegian concern regarding how current food environments in Norway and globally affect peoples' ability to make healthy food choices. She pointed to the social role and responsibilities of various food-system stakeholders and drew attention to the critical challenge of reconciling economic and financial objectives with those of public health. Calling for more consideration to be given to potential conflicts of interest when engaging different stakeholders, Ms Warren concluded her presentation with the question: "What types of incentives could be used to motivate the food industry to contribute to healthier food environments?"

- **The pivotal role played by data and evidence in showing how environmental sustainability and good nutrition can and should complement each other.**

Orion Kobayashi, a master's degree student in food policy and nutrition, Friedman School, Tufts University, United States, elaborated on the work of his university in refining metrics and data for improved nutrition and sustainable food systems. Mr Kobayashi cited the need to identify indicators that measure environmental sustainability and to use these indicators to observe statistically significant relationships. Tufts University is using existing data sources to prototype indices for precisely this purpose, to be used for policy guidance and increased accountability. By combining existing databases on food and nutrition it is pushing for multidisciplinary responses.

In addition to these and related points, comments made during this session underscored the importance of reaching students, youth and young researchers using social media and new technology, while bridging gaps between country specificities and traditions.

The Student Session demonstrated the need to engage students and youth as agents of change and powerful nutrition champions. It was organized through the Young Professionals for Agricultural Development and FAO's Nutrition and Food Systems and Partnerships, Advocacy and Capacity Development Divisions.

SPECIAL EVENTS

Spotlight on engaging with cooks for healthy diets

*"Eating is sharing and celebrating.
Cooking healthy food does not have to be difficult or expensive.
On the contrary, cooking can be easy and fun and can create
very special moments with loved ones, especially children."*

Jenny Chandler – celebrity chef, blogger, food writer, cooking teacher and FAO Special Ambassador for the International Year of Pulses – spoke on the importance of cooking and eating simple, healthy, balanced food with family and friends.

Ms Chandler noted the need to communicate more widely about healthy eating, with less sugar, less meat and more plant-based ingredients, and described a number of pulse-based dishes from around the world. She also emphasized the fundamental importance of decreasing food waste by using simple cooking techniques accessible to everyone.

In conclusion, Ms Chandler spoke to improving our understanding of where food comes from, as well as where we ourselves come from based on our food.

*"Food is culture and makes us who we are.
Precious food memories need to be preserved
and passed on to the next generations."*



What I eat: around the world in 80 diets

Photo journalist Peter Menzel and editor and writer Faith D'Aluisio presented their book, *Around the World in 80 Diets*, comprising portraits of people from around the world, photographed with their daily meals.¹⁷



©Peter Menzel/menzelphoto.com

The book provides powerful images of how diets are changing by documenting how, in many places, food cultures based on unbranded, whole, plant-based products are being replaced by increased meat consumption and ultra-processed, industrially produced foods.

The book also documents the extraordinary differences in food supply between countries and individuals, with implications for food waste as well.

Around the World in 80 Diets gives readers the opportunity to examine how other diets presented in a non-judgemental way compare with their own.

Outcomes of the Second WHO Global Nutrition Policy Review

Following the first Global Nutrition Policy Review conducted in 2009–2010, the World Health Organization (WHO) undertook a second review in 2016–2017. The purpose of this second review was to compile updated information on countries' progress in implementing actions to achieve the Global Nutrition Targets 2025, adopted by the Sixty-Fifth World Health Assembly (WHA) in 2012, as well as the diet-related non-communicable disease (NCD) Targets adopted by the Sixty-Sixth WHA in 2013. Both sets of targets were endorsed by the Second International Conference on Nutrition (ICN2) in 2014.

The Second Global Nutrition Policy Review compiled and assessed country policies, strategies and plans relevant to improving nutrition and promoting healthy diets. The review covered comprehensive national policies, policies focusing on specific nutrition issues, and policies, strategies and plans in which nutrition is one out of several strategic areas (e.g. NCD strategies, health sector strategic plans, social protection plans, food security strategies, national development plans).

Three country representatives presented aspects of their national policy environment at the side event, followed by two global level presentations.

¹⁷ A webcast of the event is available at:
<http://www.fao.org/webcast/home/en/item/4261/icode/>

Freddie Mubanga, Head of Public Health and Community Nutrition, National Food and Nutrition Commission, Zambia, described how global nutrition targets to address all forms of malnutrition have been adapted to Zambia's country context, and how they will be included in the revised National Food and Nutrition Strategic Plan (scheduled for 2017) under the National Food and Nutrition Policy (initiated 2006). Through multisectoral collaboration, nutrition-specific and sensitive actions are being scaled up throughout the country.

Sirpa Sarlio-Lahteenkorva, Ministerial Advisor, Ministry of Social Affairs and Health, Finland, described the updating of Finland's dietary guidelines in 2014 and 2016 to include guidance on family foods for complementary feeding, climate-friendly agriculture considerations and consumer information on non-packaged foods. Guidelines for school meals and reformulation are currently being developed. Finland is also taking steps to improve environmental sustainability through consumer-focused messaging to reduce meat consumption and through efforts to improve traceability and responsibility. The country is also setting stricter criteria for warning labels on foods high in salt.

Zalma Abdul Razak, Director, Nutrition Division, Ministry of Health, Malaysia, described policies and actions taken in Malaysia to address all forms of malnutrition. Initially developed in 1992 after the first International Conference on Nutrition, Malaysia's National Plan of Action for Nutrition was revised in 2006 and 2016. More than 70 ministries and agencies were involved in developing the most recent version, which incorporates the global nutrition targets and the global diet-related targets for NCDs. Malaysia is implementing a range of activities to promote healthy diets, including front-of-pack and menu labelling, reformulation of selected foods to reduce fat, sugar and salt content, guidelines on healthy school meals, guidelines on sales of foods around schools, and modification of national sugar and oil subsidies.

Meera Shekar, Lead Health and Nutrition Specialist, The World Bank, presented an investment framework for nutrition, including cost estimates for the four global nutrition targets on stunting, anaemia, breastfeeding and wasting; projected potential gains in terms of nutrition and health outcomes and economic benefits; and potential financing options. An estimated US\$70 billion over 10 years is needed to fund an affordable package of nutrition-specific interventions, equal to US\$10 per child per year in addition to current spending. This level of financing is feasible under a global solidarity scenario where increased domestic resources are pooled with increased official development assistance and other innovative sources.

Chizuru Nishida, Coordinator, Nutrition Policy and Scientific Advice Unit, Department of Nutrition for Health and Development, WHO, presented preliminary results of the Second Global Nutrition Policy Review. Based on responses received as of November 2016, numerous policies related to nutrition and food security exist. These policies represent a wealth of commitments to nutrition made by national governments and indicate that countries are implementing evidence-based nutrition-specific interventions. Although challenges remain in comprehensively addressing nutrition problems and scaling up nutrition actions, especially with respect to prevention of overweight, obesity and diet-related NCDs, actions are being taken in more and more countries to improve food environments, to promote healthy diets and to address malnutrition in all its forms. For example, countries are beginning to complement behavioural interventions (e.g. dietary guidelines, nutrition education) with regulatory actions (e.g. reformulation, taxation, trans-fat bans, marketing restrictions). Countries are also requesting that obesity and NCD concerns be included in Codex guidelines and standards.

SYMPOSIUM CLOSING SESSION

Closing remarks by José Graziano da Silva, Director-General, Food and Agriculture Organization of the United Nations (FAO)

Dr da Silva extended his thanks to all involved in the planning and delivering of the symposium and also to the participants, and summarized four messages he had taken from the experience:

1. There is an urgent need to promote change across food systems and food environments to promote healthy diets and to tackle all forms of malnutrition concurrently.
2. Achieving these changes requires strong political commitment at national level. Parliamentarians, the private sector and civil society are key to realizing this commitment; each of these stakeholder groups must be held to account as active participants in promoting reform.
3. There is an urgent need to empower consumers to choose healthy diets. At the same time, food producers – especially the world's 500 million family farmers – must not be forgotten. These smallholders must have equal access and equal rights.
4. Building resilience and promoting adaptation is imperative to meeting the challenge of climate change, which is one of the most important risks facing the world today. Many approaches to building resilience and promoting adaptation to climate change are rooted in improving the environmental sustainability and nutritional quality of food systems.

Concluding, Dr da Silva stressed the importance of the United Nations Decade of Action on Nutrition, which provides a high-profile platform for mobilizing action and having impact. He also stressed the importance of addressing the whole food chain: starting from healthy soils and healthy seeds, building a sustainable agricultural production system to support healthy food chains free of food waste and loss.

Closing remarks by Oleg Chestnov, on behalf of Margaret Chan, WHO Director-General

Dr Chestnov, Assistant Director-General, World Health Organization (WHO), congratulated FAO for taking on the difficult issue of food-system reform. He emphasized the importance of creating a common language among different stakeholders – private sector, non-governmental organizations (NGOs), academics, government and politicians – and of a paradigm shift to transform food systems. He also called for a stronger emphasis on measurable, results-oriented actions to achieve the Sustainable Development Goals and the goals of the Decade of Action targeting farmers, children, adults and governments. In conclusion, Dr Chestnov highlighted the fundamental role of NGOs in making progress, and proposed the possibility of a global convention to protect and promote healthy diet, similar to the Framework Convention on Tobacco Control.

Symposium close

The symposium was formally closed by Patrick Webb, with the following statement:

In this Decade of Action, we have to focus on the action and not let it be a 'Decade of Work Planning'.

We all have a responsibility to promote this action, to engage it, to demand that action takes place. It is not something we can leave to WHO and FAO to do. We are all in this together, it is our collective responsibility.

Did I mention we only have nine years left? There is a time-bound pressure here; we cannot waste time. That said, hurrying is not the right action. We want to do the right things, and do them well and once and for all.

We have to transform the system.

Thank you to all the organizers, the speakers and to everyone who has participated, who has come a very long way to engage in this dialogue. This is the beginning of the process, not the end. Use your voices. If we want to be heard, we have to collectively be quite loud in what we demand of our food systems for nutrition.

With that, I formally bring this symposium to a close.

REFERENCES

- References**Allen, L.H. 1993. The Nutrition CRSP: What is marginal malnutrition and does it affect human function? *Nutrition Reviews*, 51(9):255–267.
- Alderman, H.** 2016. *Leveraging social protection programs for improved nutrition: Summary of evidence prepared for the Global Forum on Nutrition-Sensitive Social Protection Programs, 2015*. Washington, DC, World Bank. (also available at <https://openknowledge.worldbank.org/handle/10986/24450>).
- ATNI.** 2017. *Global index* [online]. The Netherlands, Utrecht, Access to Nutrition Index. [Cited 9 December 2017]. <https://www.accesstonutrition.org/global-index/homepage-global-index>
- Bartolini, F., Brunori, G., Marescotti, A., Gava, O. & Galli, F.** 2017. Sustainability performance of local versus global food supply chains: The case of bread chains in Italy. In *Proceedings of the 4th World Sustainability Forum, 1–30 November 2014*. Sciforum Electronic Conference Series, Vol. 4, 2017, g008; doi:10.3390/wsf-4-g008.
- Bhutta, Z.A., Das, J.K., Rizvi, A., Gaffey, M.F., Walker, N., Horton, S. Webb, P., Lartey, A. & Black, R.E.** 2013. Evidence-based interventions for improvement of maternal and child nutrition: What can be done and at what cost? *Lancet*, 382 (9890): 452–477.
- Biango, L.B. & Um, P.A.** 2010. *Etude de faisabilité pour la commercialisation et la transformation de trois PFNL: Le njansan, la kasimanga, et le miel*. Cameroun-Ecologie, Edéa.
- Carels, R., Selensky, J., Rossi, J., Sola, C. & Hlavka, R.** 2017. A novel stepped-care approach to weight loss: The role of self-monitoring and health literacy in treatment outcomes. *Eat. Behav.*, 26: 76–82.
- Carvalho, P.C.F.** 2013. Harry Stobbs Memorial Lecture: Can grazing behaviour support innovations in grassland management? *Trop. Grasslands*, 1: 137–155.
- Chambers, R.** 1989. *Farmer first: Farmer innovation and agricultural research*. London, ITDG Publishing.
- Chauliac, M.** 2016. *Collaboration avec les medias en vue de favoriser des comportements alimentaires sains* [PowerPoint slides]. [Cited 11 December 2017] <https://www.slideshare.net/ExternalEvents/collaboration-avec-les-medias-en-vue-de-favoriser-des-comportements-alimentaires-sains-dr-michel-chauliac-direction-gnrale-de-la-sant-ministre-des-affaires-sociales-et-de-la-sant-france>
- Chen, C.M., Wang, Y.Y. & Chang, S.Y.** 2010. Effect of in-home fortification of complementary feeding on intellectual development of Chinese children. *Biomed. Environ. Sci.*, 23: 83–91.
- Chen, C., He, W., Wang, Y., Deng, L. & Jia, F.** 2011. Nutritional status of children during and post global economic crisis in China. *Biomed. Environ. Sci.*, 24: 321–328.
- Christian, A.K., Marquis, G.S., Colecraft, E.K., Lartey, A., Sakyi-Dawson, O., Ahunu, B. & Butler, L.M.** 2016. Caregivers' nutrition knowledge and attitudes are associated with household food diversity and children's animal source food intake across different agro-ecological zones in Ghana. *Brit. J. Nutr.*, 115: 351–360.
- Colchero, M.A., Popkin, B.M., Rivera, J.A. & Ng, S.W.** 2016. Beverage purchases from stores in Mexico under the excise tax on sugar sweetened beverages: observational study. *BMJ Brit. Med. J.*, 352:h6704.
- Dinarvand, R.** 2016. *Food Regulatory Authority role in providing healthier food and diet in Iran* [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/food-regulatory-authority-role-in-providing-healthier-food-and-diet-in-iran-r-dinarvand-phd-deputy-minister-and-president-iran-food-and-drug-administration-71902065>
- FAO.** 1990. *Report of the global consultation on agricultural extension*. Rome.
- FAO.** 1996. *Rome declaration on world food security* (available at <http://www.fao.org/docrep/003/w3613e/w3613e00.htm>).
- FAO.** 2015a. *Designing nutrition-sensitive agriculture investments. Checklist and guidance for programme formulation*. Rome. (also available at <http://www.fao.org/3/a-i5107e.pdf>).
- FAO.** 2015b. *Lesotho Child Grant Programme and Linking Food Security to Social Protection Programme: A From Protection to Production Report*, by J. Dewbre, S. Daidone, B. Davis, B. Miguelez, O. Niang & L. Pellerano. Rome.
- FAO.** 2016a. *Influencing food environments for healthy diets*. Rome. (also available at <http://www.fao.org/policy-support/resources/resources-details/en/cj459821/>).
- FAO.** 2016b. *Handbook on food labelling to protect consumers*. Rome. (also available at <http://www.fao.org/documents/card/en/c/fc5f4bc2-650a-4704-9162-9eb9b3a1fdd0/>).
- FAO & WFP.** 2014. *Purchase from Africans for Africa: Phase I learning & results report*. Rome.
- FAO & WHO.** 2013. *Proceedings of the preparatory technical meeting for the joint FAO/WHO Second International Conference on Nutrition*. Rome.
- Fanzo, J.C., Downs, S., Marshall, Q.E., de Pee, S. & Bloem, M.** (2017). Value Chain Focus on Food and Nutrition Security. In *Nutrition and Health in a Developing World* (pp 753–770). Springer International Publishing.
- Fernald, L., Gertler, P.J. & Hou, X.** 2008. Cash component of conditional cash transfer program is associated with higher body mass index and blood pressure in adults. *J. Nutr.*, 138(11): 2250–2257. doi: 10.3945/jn.108.090506.
- Food Foundation.** 2016. *Force-fed: does the food system constrict healthy food choices for typical British families?* London.
- Freire, W.B., Ramírez-Luzuriaga, M.J., Belmont, P., Mendieta, M.J., Silva-Jaramillo, M.K., Romero, N., Sáenz, K., Piñeros, P., Gómez, L.F. & Monge, R.** 2014. *Encuesta Nacional de Salud y Nutrición de la población ecuatoriana de cero a 59 años*. ENSANUT-ECU 2012. Ministerio de Salud Pública/Instituto Nacional de Estadísticas y Censos. Quito, Ecuador.

- Freire, W.B., Waters, W.F., Rivas-Mariño, G., Nguyen, T. & Rivas, P.** 2016. A qualitative study of consumer perceptions and use of traffic light food labelling in Ecuador. *Public Health Nutr.*, 13: 1–9. Doi: 10.1017/S1368980016002457.
- Ghattas, H., Jamaluddine, Z., Choufani, J., Btaiche, R., Reese-Masterson, A. & Sahyoun, N.R.** 2017. A community-based intervention improves economic, social and food security outcomes of refugee women – The Healthy Kitchens Experience. *FASEB J.*, 31(1): Supplement 313.6 (available at http://www.fasebj.org/content/31/1_Supplement/313.6).
- Girardi, G.** 2016. *Chile País saludable* [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/chile-pas-saludable-senador-guido-girardi>
- GNR.** 2017. *Global nutrition report* [online]. Washington, DC, Global Nutrition Report. [Cited 9 December 2017]. <http://www.globalnutritionreport.org/>
- GLOPAN.** 2014. *How can agriculture and food system policies improve nutrition?* Technical Brief. London, Global Panel on Agriculture and Food Systems for Nutrition. (also available at <http://www.glopan.org/technical-brief>).
- GLOPAN.** 2015. *Improved Metrics and Data Are Needed for More Effective Food System Policies in the Post-2015 Era.* Technical Brief. London: GLOPAN.
- GLOPAN.** 2016. *Food systems and diets: Facing the challenges of the 21st century.* London, Global Panel on Agriculture and Food Systems for Nutrition. (also available at <https://www.glopan.org/foresight>).
- Hamadeh, S.** 2016. *Response to the food security crisis in conflicts: embedding development into relief* [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/response-to-the-food-security-crisis-in-conflicts-embedding-development-into-relief-by-shadi-hamadeh-director-environment-and-sustainable-development-unit-american-university-of-beirut>
- Havelaar, A.H., Kirk, M.D., Torgerson, P.R., Gibb, H.J., Hald, T., Lake, R.J., Praet, N., Bellinger, D.C., de Silva, N.R., Gargouri, N., Speybroeck, N., Cawthorne, A., Mathers, C., Stein, C., Angulo, F.J. & Devleeschauwer, B.** 2015. World Health Organization global estimates and regional comparisons of the burden of foodborne disease in 2010. *PLoS Med.*, 12(12): e1001923. doi:10.1371/journal.pmed.1001923
- Hawkes, C.** 2016. *Regulations, awareness, advocacy to change for healthier diets* [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/regulations-awareness-advocacy-to-change-for-healthier-diets-professor-corinna-hawkes-director-centre-for-food-policy-city-university-of-london-U.K.-cochair-global-nutrition-report>
- Hawkes, C. & Ruel, M.** 2011. *Value chains for nutrition.* 2020 Conference Paper 4. Washington, DC, International Food Policy Research Institute.
- Hawkes, C., Smith, T.G., Jewell, J., Wardle, J., Hammond, R.A., Friel, S., Thow, A.M. & Kain J.** 2015. Smart food policies for obesity prevention. *Lancet*, 385: 2410–2421.
- Hendriksen, M., Etemad, Z., Bogaard, C.H.M. & Van der, A.D.L.** 2016. *Salt, iodine and potassium intake among adults in Doetinchem in 2015* [in Dutch]. Netherlands, Bilthoven, National Institute for Public Health and the Environment (RIVM).
- Herforth, A.** 2016. How agriculture can boost nutrition. In: *Rural21* [online]. 01/2016. <http://www.rural21.com/english/news/detail/article/how-agriculture-can-boost-nutrition-00001842/>
- Herforth, A. & Ahmed, S.** 2015. The food environment, its effects on dietary consumption, and potential for measurement within agriculture-nutrition interventions. *Food Secur.*, 7(3): 505–520.
- Homiah, P.A., Sakyi-Dawson, O., Mensah Bonsu, A. & Marquis, G.S.** 2012. Effects of microenterprise development on caregivers' incomes and consumption of animal source foods. *Afr. J. Food Agric. Nutr.*, 12(1): 5725–5745.
- Hotz, C., Loech, C., Lubowa, A., Tumwine, J.K., Ndeezi, G., Nandutu Masawi, A., Baingana, R., Carrquiry, A., de Brauw, A., Meenakshi, J.V. & Gilligan, D.O.** 2012. Introduction of B-carotene-rich orange sweet potato in rural Uganda results in increased vitamin A intakes among children and women and improved vitamin A status among children. *Journal Nutr.*, 142: 1871–1880.
- Hudson, E.** 2012. Health and wellness: The trillion dollar industry in 2017: Key research highlights. *Euromonitor International* [online]. <http://blog.euromonitor.com/2012/11/health-and-wellness-the-trillion-dollar-industry-in-2017-key-research-highlights.html>
- Huo, J., Sun, J., Fang, Z., Chang, S., Zhao, L., Fu, P., Wang, J., Huang, J., Wang, L., Begin, F., Hipgrave, D.B. & Ma, G.** 2015. Effect of home-based complementary food fortification on prevalence of anemia among infants and young children aged 6 to 23 months in poor rural regions of China. *Food Nutr. Bull.*, 36: 405–414.
- INPES.** 2012. *Évaluation interne.* Paris, Institut National de Prévention et d'Éducation pour la Santé.
- INPES.** 2014. *Mécanismes d'action des messages sanitaires nutritionnels, Présentation au comité de suivi du PNNS.* Paris, Institut National de Prévention et d'Éducation pour la Santé.
- IHME.** 2017. Global health financing. In *Institute for Health Metrics and Evaluation* [online]. USA, Seattle, WA, Institute for Health Metrics and Evaluation. [Cited 9 December 2017]. <http://www.healthdata.org/data-visualization/financing-global-health>
- IM & NRC.** 2015. *A framework for assessing effects of the food system. Key figures.* Washington, DC, Institute of Medicine and National Research Council of the National Academies. (also available at <http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/2015/FoodSystem/FoodSystemKeyFigures.pdf>).
- Karpyn, A., Manon, M., Treuhaft, S., Giang, T., Harries, C. & McCoubrey, K.** 2010. Policy solutions to the “grocery cap”. *Health Affair.*, 29:473–480.
- Keats, S. & Wiggins, S.** 2014. *Future diets: Implications for agriculture and food prices.* London, Overseas Development Institute.
- Kraak, V.I., Swinburn, B., Lawrence, M. & Harrison, P.** 2014. An accountability framework to promote healthy food environments. *Public Health Nutr.*, 17(11): 2467–2483. Available at https://www.researchgate.net/publication/260377530_An_accountability_framework_to_promote_healthy_food_environments


- Kristjansson, B., Petticrew, M., MacDonald, B., Krasevec, J., Janzen, L., Greenhalgh, T., Wells, G.A., MacGowan, J., Farmer, A.P., Shea, B., Mayhew, A., Tugwell, P. & Welch, V. 2007. School feeding for improving the physical and psychosocial health of disadvantaged elementary school children. *Cochrane DB Syst. Rev.*, Issue 1 Art CD004676 [online]. www.cochrane.org/reviews/en/ab004676.html
- Manley, J., Gitter, S. & Slavchevska, V. 2013. How effective are cash transfers at improving nutritional status? *World Dev.*, 48: 133–155.
- Manyema, M., Lennert, J., Veerman, A.T., Demetre, L. & Hofman, K.J. 2016. Modeling the potential impact of a sugar-sweetened beverage tax on stroke mortality, costs and health-adjusted life years in South Africa. *BMC Public Health.* 16: 405 (also available at <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3085-y>).
- Marquis, G.S. 2016. Empowering women to provide healthy diets for infants and young children, the ENAM project in Ghana [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/empowering-women-to-provide-healthy-diets-for-infants-and-young-children-enhancing-child-nutrition-through-animal-source-food-management-enam-project-in-ghana-by-grace-marquis-school-of-dietetics-and-human-nutrition-mcgill-university>
- Marquis, G.S. & Colecraft, E.K. 2014. Community interventions for dietary improvement in Ghana. *Food Nutr. Bull.*, 35(4 Suppl): S193–S197.
- Marquis, G.S., Colecraft, E.K., Sakyi-Dawson, O., Lartey, A., Ahunu, B.K., Birks, K.A., Butler, L.M., Reddy, M.B., Jensen, H. & Huff-Lonergan, E. 2015. An integrated microcredit, entrepreneurial training, and nutrition education intervention is associated with better growth among preschool-aged children in rural Ghana. *J. Nutr.*, 145(2): 335–343.
- Neumann, C. G., Murphy, S.P., Gewa, C., Grillenberger, M. & Bwibo, N.O. 2007. Meat supplementation improves growth, cognitive, and behavioral outcomes in Kenyan children. *J. Nutr.*, 137(4): 1119–1123.
- Nishida, C. 2016. Mapping food and nutrition security policies [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/mapping-food-and-nutrition-security-policies-by-chizuru-nishida-coordinator-nutrition-policy-scientific-advice-department-of-nutrition-for-health-and-development-nhd-world-health-organization>
- OECD. 2002. *Development co-operation report 2001: Efforts and Policies of the Members of the Development Assistance Committee*. Paris, Organisation for Economic Co-operation and Development. (also available at http://www.oecd-ilibrary.org/development/development-co-operation-report-2001_dcr-2001-en).
- OIE & FAO. 2015. *Global strategy for the control and eradication of PPR*. Paris, Office International des Epizooties and Rome, FAO. (also available at <http://www.fao.org/3/a-i4460e.pdf>).
- PAHO. 2015. *Taxes on sugar-sweetened beverages as a public health strategy: the experience of Mexico*. Mexico DF, Pan American Health Organization Representative Office. (also available at http://iris.paho.org/xmlui/bitstream/handle/123456789/18391/9789275118719_eng.pdf?sequence=1&isAllowed=y).
- Recine, E. 2017. *Integrating social policies in FSN policies to strengthen food systems for healthy diets* [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/integrating-social-protection-in-fsn-policy-to-strengthen-food-systems-for-healthy-diets-elisabetta-recine-observatory-of-food-and-nutrition-security-policies-university-of-brasilia-brazil>
- Ruel, M.T., 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? *Lancet*, 382(9891): 536–551. DOI: 10.1016/S0140-6736(13)60843-0.
- Save the Children. 2014. *Nutrition sensitivity. How agriculture can improve child nutrition*. London, Save the Children Fund. (also available at https://www.savethechildren.org.U.K./sites/default/files/docs/Nutrition_Sensitivity2.pdf
- Sibanda, L. 2016. Empowering women as key drivers of food system change [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/empowering-women-as-key-drivers-of-food-system-change-lindiwe-majele-sibanda-chief-executive-officer-and-head-of-mission-food-agriculture-and-natural-resources-policy-analysis-network-fanrpan-south-africa-71993822>
- Siyi, C. 2015. *The story of Ying Yang Bao*. Beijing, China, ILSI Focal Point In China, National Institute for Nutrition and Health, Chinese Center for Disease Control and Prevention, and UNICEF China. (also available at <http://www.unicef.cn/en/uploadfile/2016/0331/20160331123625525.pdf>).
- SPRING. 2016. *Evaluation of the Community Infant and Young Child Feeding Counselling Package in Nigeria. Brief 3: Women's empowerment*. Arlington, Virginia, USA, JSI Research and Training Institute, Inc. (also available at https://www.spring-nutrition.org/sites/default/files/publications/briefs/spring_nigeria_c-iyfc_brief_womens_empowerment.pdf).
- Stepanyan, R. 2016. School meals in Armenia [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/nutrition-sensitive-schools-meals-in-armenia-by-robert-stepanyan-head-of-development-programmes-and-monitoring-department-of-the-ministry-of-education>
- Swinburn, B., Kraak, V., Rutter, H., Vandevijvere, S., Lobstein, T., Sacks, G., Gomes, F., Marsh, T. & Magnusson, R. 2015. Strengthening of accountability systems to create healthy food environments and reduce global obesity. *Lancet*, 385(9986):2534–2545.
- Swinburn, B., Dominick, C.H., and Vandevijvere, S. 2014. Benchmarking Food Environments: Experts' Assessments of Policy Gaps and Priorities for the New Zealand Government. Auckland: University of Auckland. Available at <https://www.fmhs.auckland.ac.nz/assets/fmhs/soph/globalhealth/informas/docs/Full%20Food-EPI%20report1.pdf>.
- Tayupanda, H. 2016. *Empresa Pública Municipal De Transformación Y Comercialización De Productos De Tierras Altas* [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/empresa-pblica-municipal-de-transformacin-y-comercializacin-de-productos-de-tierras-altas-tayupanda-hermel-mayor-of-colta-ecuador>
- Tuoane, N. 2016. *Linking sustainable food and nutrition security to social protection programmes* [PowerPoint slides]. [Cited 12 December 2017]. <https://www.slideshare.net/ExternalEvents/cash-transfers-for-improved-food-security-and-diet-diversity-the-lessons-from-lesotho-by-ntitia-tuoane-director-of-field-services-ministry-of-agriculture-and-food-security>

- Turner, C., Kadiyala, S., Aggarwal, A., Coates, J., Drewnowski, A., Hawkes, C., Herforth, A., Kalamatianou, S. & Walls, H.** 2017. *Concepts and methods for food environment research in low and middle income countries*. Agriculture, Nutrition and Health Academy Food Environments Working Group (ANH-FEWG). Innovative Methods and Metrics for Agriculture and Nutrition Actions (IMMANA) programme. London, UK, ANH-FEWG. (also available at http://anh-academy.org/sites/default/files/FEWG_TechnicalBrief_low.pdf).
- UNICEF.** 2011. *Gender influences on child survival, health, and nutrition: A narrative review*. New York, USA.
- USDA.** 2016. *MyPlate, MyWins: Make it yours*. Mini-poster. Washington, DC, US Department of Agriculture, Center for Nutrition Policy and Promotion. (also available at https://choosemyplate-prod.azureedge.net/sites/default/files/printablematerials/mini_poster.pdf).
- USDHHS & USDA.** 2015a. *2015–2020 dietary guidelines for Americans*. 8th Edition. Washington, DC, US Department of Health and Human Services and US Department of Agriculture. Available at <http://health.gov/dietaryguidelines/2015/guidelines/>.
- USDHHS & USDA.** 2015b. *Scientific report of the 2015 Dietary Guidelines Advisory Committee*. Advisory Report to the Secretary of Health and Human Services and Secretary of Agriculture. Washington, DC, US Department of Health and Human Services and US Department of Agriculture.
- Wang, Y., Chen, C., Wang, F. & Wang, C.** 2007. Effects of nutrient fortified complementary food supplements on growth of infants and young children in poor rural areas of Gansu Province. [In Chinese.] *Wei Sheng Yan Jiu*. 36: 78–81.
- Wang, Y.Y., Chen, C.M., Wang, F.Z., Jia, M. & Wang, K.A.** 2009. Effects of nutrient fortified complementary food supplements on anemia of infants and young children in poor rural areas of Gansu. *Biomed. Environ. Sci.*, 22(3): 194–200.
- WCRFI.** 2017. *NOURISHING framework* [online]. London World Cancer Research Fund International. [Cited 9 December 2017]. <http://www.wcrf.org/int/policy/nourishing-framework>
- WHO.** 1998. *Complementary feeding of young children in developing countries: A review of current scientific knowledge*. Geneva, Switzerland.
- WHO.** 2003. *WHO Framework convention on tobacco control*. Geneva, Switzerland. (also available at <http://apps.who.int/iris/bitstream/10665/42811/1/9241591013.pdf?ua=1>).
- WHO.** 2010. *Set of recommendations on the marketing of foods and non-alcoholic beverages to children*, 1–16. Geneva, Switzerland. (also available at http://apps.who.int/iris/bitstream/10665/44416/1/9789241500210_eng.pdf).
- WHO.** 2012. *A framework for implementing the set of recommendations on the marketing of foods and non-alcohol beverages to children*. Geneva, Switzerland. (also available at http://www.who.int/dietphysicalactivity/framework_marketing_food_to_children/en/).
- WHO.** 2013. *Global nutrition policy review: What does it take to scale up nutrition action?* Geneva, Switzerland. (also available at http://www.who.int/nutrition/publications/policies/global_nut_policyreview/en/).
- WHO.** 2015. *Sugar intake for adults and children: Guideline*. Geneva, Switzerland. (also available at http://www.who.int/nutrition/publications/guidelines/sugars_intake/en/).
- WHO.** 2016a. *Fiscal policies for diet and the prevention of noncommunicable diseases*. Geneva, Switzerland. (also available at <http://www.who.int/dietphysicalactivity/publications/fiscal-policies-diet-prevention/en/>).
- WHO.** 2016b. *Healthy diet*. Factsheet No. 394. In World Health Organization [online]. Geneva, Switzerland. [Cited 12 December 2017]. <http://www.who.int/mediacentre/factsheets/fs394/en>.
- WHO.** 2016c. *Maternal, infant and young child nutrition: Guidance on ending the inappropriate promotion of foods for infants and young children*. A69/7 Add.1. (available at http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_7Add1-en.pdf).
- WHO.** 2016d. *Report of the Commission on Ending Childhood Obesity*. Geneva, Switzerland. (Also available at <http://www.who.int/end-childhood-obesity/publications/echo-report/en/>).
- WHO.** 2017a. *Assessing national capacity for the prevention and control of NCDs*. In: *World Health Organization* [online]. Geneva, Switzerland. [Cited 9 December 2017]. <http://www.who.int/ncds/surveillance/ncd-capacity/en/>
- WHO.** 2017b. *Global database on the Implementation of Nutrition Action (GINA)*. In: *World Health Organization* [online]. Geneva, Switzerland. [Cited 9 December 2017]. <http://www.who.int/nutrition/gina/en/>
- World Bank.** 2007. *From agriculture to nutrition: Pathways, synergies and outcomes*. Washington, DC.
- World Bank.** 2013. *Improving nutrition through multisectoral approaches*. Washington, DC. (also available at <http://documents.worldbank.org/curated/en/625661468329649726/pdf/75102-REVISED-PUBLIC-MultisectoralApproachesoNutrition.pdf>).
- WWF & World Agroforestry Centre.** n.d. *Etude de Marché en vue de la Mise en Place Effective d'une Filière de Ricinodendron heudelotii (njansang) et de Irvingia sp (mangue sauvage) Zone de Campo-Ma'an*. Linking Futures Programme – Economic Opportunities, Livelihoods and Ecological Sustainability in The Campo-Ma'an Landscape, Cameroon.
- Yu, D.M., Zhao, L.Y., Yang, Z.Y., Chang, S.Y., Yu, W.T., Fang, H.Y., Wang, X., Yu, D., Guo, Q.Y., Xu, X.L., Fang, Y.H., Zhao, W.H., Yang, X.G., Ding, G.Q. & Liang, X.F.** 2016. Comparison of undernutrition prevalence of children under 5 years in China between 2002 and 2013. *Biomed. Environ. Sci.*, 29(3): 165–176. DOI: 10.3967/bes2016.021.

1-2
December
2016

INTERNATIONAL SYMPOSIUM ON
SUSTAINABLE FOOD SYSTEMS FOR HEALTHY
DIETS AND IMPROVED NUTRITION

PROGRAMME

UNITED NATIONS DECADE OF
ACTION ON NUTRITION

2016-2025



Food and Agriculture
Organization of the
United Nations



World Health
Organization

INDEX

Introduction	3
Plan your day	4
Detailed Programme - DAY 1	6
Detailed Programme - DAY 2	10
Practical information	13
Map	14



All sessions will be webcast:

www.fao.org/about/meetings/sustainable-food-systems-nutrition-symposium/webcast

FAO News Flickr Collection: photo-library@fao.org

www.flickr.com/photos/faonews/collections/72157675409676882

www.fao.org/about/meetings/sustainable-food-systems-nutrition-symposium

Contact: ICN2-Nutrition-Symposium@fao.org

INTRODUCTION

Every person on this planet has the right to adequate nutrition, a prerequisite for health and well-being. Yet, almost 3 billion people in the world still suffer from some form of malnutrition.

November 2014 164 countries attend the **Second International Conference on Nutrition (ICN2)**, joined by civil society, private sector, UN and intergovernmental organizations. By endorsing the Rome Declaration on Nutrition and its Framework for Action, Governments committed to:

“enhance sustainable food systems by developing coherent public policies from production to consumption across relevant sectors to provide year-round access to food that meets people’s nutrition needs and promote safe and diversified healthy diet.”

September 2015 The **Sustainable Development Goals** are adopted to guide global development through 2030, while ensuring that no one is left behind, reiterating and reinforcing the commitments made at ICN2.

April 2016 The **UN Decade of Action on Nutrition 2016-2025** is proclaimed by the United Nations General Assembly, following on the outcomes of ICN2. The Decade creates an enabling political environment for turning commitments into action. Countries need additional technical support to translate their commitments into actionable programmes.

December 2016 The **International Symposium on Sustainable Food Systems for Healthy Diets and Improved Nutrition** provides multiple actors with an opportunity to share practical solutions and successful country experiences in implementing sustainable food systems for healthy diets. It is also a forum to update the global community on those actions countries have taken to comply with ICN2 commitments.

The Symposium focuses on three sub-themes that together provide a comprehensive picture of food systems and their actionable entry points for promoting healthy diets:

1. Supply-side policies and measures for diversifying food production and for increasing the availability and affordability of nutritious foods for healthy diets
2. Demand-side policies and measures for increasing the access and empowerment of consumers to choose healthy diets
3. Measures to strengthen accountability, resilience and equity within food systems



UNITED NATIONS DECADE OF
ACTION ON NUTRITION
2016-2025



Food and Agriculture
Organization of the
United Nations



World Health
Organization

PLAN YOUR DAY

Take a look through the programme of the Symposium and plan your day simply by selecting the events that interest you. The map of the meeting rooms can be found at p. 14

DAY 1 - 01 December 2016

I will attend

	SHEIKH ZAYED CENTRE	GREEN ROOM	GERMAN ROOM
09:00 ▼ 11:00		<p>OPENING CEREMONY <input type="checkbox"/></p> <p>Opening by the Symposium Chair</p> <p>Address by José Graziano da Silva, Director-General of the Food and Agriculture Organization of the United Nations, FAO</p> <p>Address by His Majesty King Letsie III of the Kingdom of Lesotho</p> <p>Address by Margaret Chan, Director-General of the World Health Organization, WHO</p> <p>Address by Her Excellency Beatrice Lorenzin, Minister of Health of the Republic of Italy</p> <p>Keynote address by Patrick Webb, Professor of Nutrition Science and Policy, Tufts University, United States of America</p> <p><i>During the opening ceremony, H.M. King Letsie III of Lesotho will be nominated FAO Special Ambassador for Nutrition</i></p>	
11:00 ▼ 13:15	<p>Sub-theme 1 <input type="checkbox"/></p> <p>SUPPLY SIDE POLICIES AND MEASURES FOR DIVERSIFYING FOOD PRODUCTION AND FOR INCREASING AVAILABILITY AND AFFORDABILITY OF NUTRITIOUS FOODS FOR HEALTHY DIETS</p> <p>Session 1.1 Sustainable agriculture production and diversification for healthy diets</p>	<p>Sub-theme 2 <input type="checkbox"/></p> <p>DEMAND SIDE POLICIES AND MEASURES FOR INCREASING ACCESS AND EMPOWERING CONSUMERS TO CHOOSE HEALTHY DIETS</p> <p>Session 2.1 Regulations, awareness and advocacy for better informed food choices</p>	<p>Sub-theme 3 <input type="checkbox"/></p> <p>MEASURES TO STRENGTHEN ACCOUNTABILITY, RESILIENCE AND EQUITY WITHIN THE FOOD SYSTEMS</p> <p>Session 3.1 Designing, implementing and monitoring evidence-based policies effectively with multiple actors</p>
15:00 ▼ 17:15	<p>Session 1.2 <input type="checkbox"/></p> <p>Maintaining and improving nutritional value and food safety along the value chain</p>	<p>Session 2.2 <input type="checkbox"/></p> <p>Information and education for healthy food behaviours</p>	<p>Session 3.2 <input type="checkbox"/></p> <p>Enhancing food system resilience in areas affected by climate change and other crises</p>
17:30 ▼ 18:30		<p>WRAP-UP OF THE DAY AND DISCUSSION <input type="checkbox"/></p>	
18:30 ▼ 19:30			<p>RECEPTION HOSTED BY THE DIRECTOR-GENERAL OF FAO <input type="checkbox"/> Aventino Room, Floor 8 building B</p>

DAY 2 - 02 December 2016

I will attend

	SHEIKH ZAYED CENTRE	GREEN ROOM	GERMAN ROOM
09:00 ▼ 11:15	Session 1.3 Leveraging market opportunities for promoting healthy diets <input type="checkbox"/>	Session 2.3 Increasing access to healthy diets through social protection and income generation strategies <input type="checkbox"/>	Session 3.3 Empowering women as key drivers of food system change <input type="checkbox"/>
11:45 ▼ 12:45		WRAP-UP OF THE SYMPOSIUM AND DISCUSSION <input type="checkbox"/> With the participation of Her Majesty Queen Letizia of Spain, FAO Special Ambassador for Nutrition	
12:45 ▼ 15:30	Special Event <input type="checkbox"/> <ul style="list-style-type: none"> • Student interactive session: bringing fresh perspectives (12:45 - 13:40) • Spotlight on “Engaging with cooks for Healthy Diets”, by Jenny Chandler, FAO Special Ambassador for International Year of Pulses (14:00 - 14:30) • Visit of the photo exhibit in the Atrium (14:30 - 15:00) • Spotlight on “What I eat: around the world in 80 diets” by Peter Menzel and Faith D’Aluisio (15:00 - 15:30) 		Special Event (13:30 - 14:45) <input type="checkbox"/> <ul style="list-style-type: none"> • Meeting the challenge of a new era for achieving healthy diets and nutrition: outcomes of the 2nd Global Nutrition Policy Review
15:30 ▼ 17:30		Second International Conference on Nutrition (ICN2) next steps: programme of the UN Decade of Action on Nutrition in the era of the Sustainable Development Goals <input type="checkbox"/>	
17:30 ▼ 18:00		CLOSING CEREMONY <input type="checkbox"/> Remarks by José Graziano da Silva , Director-General of the Food and Agriculture Organization of the United Nations, FAO Remarks by Margaret Chan , Director-General of the World Health Organization, WHO Wrap-up and closure by the Chair of the Symposium	

DETAILED PROGRAMME

DAY 1 - 01 December 2016

Map of the meeting rooms can be found at p. 14

GREEN ROOM (Building A, 2nd floor)

09:00



11:00

OPENING CEREMONY

Keynote speeches by

José Graziano da Silva, Director-General of the Food and Agriculture Organization of the United Nations, FAO

His Majesty **King Letsie III** of the Kingdom of Lesotho

Margaret Chan, Director-General of the World Health Organization, WHO

Her Excellency **Beatrice Lorenzin**, Minister of Health of the Republic of Italy

Keynote address on

Sustainable Food Systems for Healthy Diets and Improved Nutrition through implementing the ICN2 Framework for Action recommendations, by **Patrick Webb**, Professor of Nutrition Science and Policy, Tufts University, United States of America

Chair of the Symposium Her Excellency **Beatrice Lorenzin** introduced by

Kostas Stamoulis, Assistant Director-General *ad interim*, Economic and Social Development Department, FAO

During the opening ceremony, H.M. King Letsie III of Lesotho will be nominated FAO Special Ambassador for Nutrition

SHEIKH ZAYED CENTRE (Atrium, ground floor)

11:00



13:15

Symposium sub-theme 1

SUPPLY SIDE POLICIES AND MEASURES FOR DIVERSIFYING FOOD PRODUCTION AND FOR INCREASING AVAILABILITY AND AFFORDABILITY OF NUTRITIOUS FOODS FOR HEALTHY DIETS

Opening remarks by **Shenggen Fan**, Director-General of the International Food Policy Research Institute (IFPRI)

Session 1.1: Sustainable agriculture production and diversification for healthy diets

Sub-theme Chair & Moderator: Professor **Eileen Kennedy**, Friedman School, Tufts University, United States of America

Overview by **Anna Herforth**, Independent Consultant, United States of America

Sustainable production of fruits and vegetables. A case study from the Republic of Korea, by **Deok-Hoon Yoon**, Hankyong National University, the Republic of Korea.

Livestock production and climate change: towards sustainable production with smaller environmental footprints: the *Produção Integrada de Sistemas Agropecuários* (PISA) System in Brazil, by **Paulo César F Carvalho**, Federal University of Rio Grande do Sul, the Federative Republic of Brazil.

Aquaculture and sustainable fisheries for nutrition. Lessons learned from Norway, by **Ole Arve Misund**, Director-General, National Institute of Nutrition and Seafood Research, the Kingdom of Norway.

Underutilized nutritious food resources: the case of forest foods in Cameroon, by **Cécile Ndjebet**, President of the African Women's Network for Community Management of Forests, the Republic of Cameroon.

Biodiverse agroecological systems for traditional nutritious foods in Mali, by **Alimata Traoré**, President of Convergence des Femmes Rurales pour la Souveraineté Alimentaire (COFERSA), the Republic of Mali.

Biofortification for nutritious crops production in Uganda, by **Bho Mudyahoto**, Senior Monitoring, Learning and Evaluation Specialist, Harvest Plus/IFPRI.

Discussion

Wrap-up by **Anna Herforth**

Closing remarks by **Eileen Kennedy**

GREEN ROOM (Building A, 2nd floor)

11:00



13:15

Symposium sub-theme 2

DEMAND SIDE POLICIES AND MEASURES FOR INCREASING ACCESS AND EMPOWERING CONSUMERS TO CHOOSE HEALTHY DIETS

Opening remarks by Professor **Carlos Monteiro**, School of Public Health, University of Sao Paulo, Federative Republic of Brazil

Session 2.1: Regulations, awareness and advocacy for better informed food choices

Sub-theme Chair & Moderator: **Carlos Monteiro**

Overview by **Corinna Hawkes**, Director, Centre for Food Policy, City University, London, the United Kingdom of Great Britain and Northern Ireland

Food-based dietary guidelines for reshaping food systems: the Brazilian experience, by **Eduardo A. F. Nilson**, Vice Coordinator, General Coordination of Food and Nutrition at the Ministry of Health, the Federative Republic of Brazil.

Improving labelling to reduce fat, sugar and salt consumption in Iran, by **Rassoul Dinarwand**, President of the Food and Drug Administration of the Islamic Republic of Iran.

Improving labelling to reduce fat, sugar and salt consumption in Ecuador, by **Wilma Freire**, University San Francisco de Quito, the Republic of Ecuador.

Restricting food marketing and advertising to children: the success story of Norway, by **Knut-Inge Klepp**, University of Oslo, the Kingdom of Norway.

Tax disincentives for promoting healthy diets: the case of Mexico, by **Marisa Macari**, *El Poder del Consumidor*, the United Mexican States.

Consumer demand to reshape food systems: lessons learned from the UK, by **Anna Taylor**, Executive Director at The Food Foundation, the United Kingdom of Great Britain and Northern Ireland.

Parliamentarians for healthy diets: shaping enabling regulatory frameworks, by **G. Girardi**, Senator of the Republic of Chile.

Discussion

Wrap-up by **Corinna Hawkes**

Closing remarks by **Carlos Monteiro**

GERMAN ROOM (Building C, 2nd floor)

11:00



13:15

Symposium sub-theme 3

MEASURES TO STRENGTHEN ACCOUNTABILITY, RESILIENCE AND EQUITY WITHIN THE FOOD SYSTEMS

Opening remarks by **Francesco Branca**, Director Department of Nutrition for Health and Development, WHO

Session 3.1: Designing, implementing and monitoring evidence-based policies effectively with multiple actors

Sub-theme Chair & Moderator: **Jessica Fanzo**, Professor, School of Public Health, Johns Hopkins University, United States of America

Overview by **Boyd Swinburn**, Professor of Population Nutrition, University of Auckland, New Zealand

11:00



13:15

Reviewing national policies, investments and regulations to enable healthy diets: the South Korea story, by **Cho-II Kim**, Korea Health Industry Development Institute, the Republic of Korea.

Strengthening capacity for data-driven policy and programming decisions that promote healthy diets: the International Dietary Data Expansion Project (INDDEx), by **Jennifer Coates**, Associate Professor Feinstein International Center at Tufts University, United States of America.

Tracking affordability/price of diverse, nutritious foods in Ghana, by **John Nortey**, Statistics Research and Information Directorate, Ministry of Food and Agriculture, the Republic of Ghana.

Mapping food and nutrition security policies, by **Chizuru Nishida**, Coordinator, Department of Nutrition for Health and Development, WHO.

Tracking food loss and waste: implications for narrowing the nutrition gap in Timor-Leste, by **Cesar da Cruz**, Secretary General of the Ministry of Agriculture and Fisheries, the Democratic Republic of Timor-Leste.

Effective platforms and coalitions for healthy diets: what concrete results? by **Sarah Lilian Mshiu**, Senior Economist/Nutrition Focal Person, Office of the Prime Minister, the United Republic of Tanzania.

Discussion

Wrap-up by **Boyd Swinburn**

Closing remarks by **Jessica Fanzo**

13:20

*Light Lunch will be offered for the participants of the special event at the **Tree of Life***

15:00



17:15

Session 1.2: Maintaining and improving nutritional value and food safety along the value chain

Moderator: **Gerda Verburg**, Coordinator, Scaling Up Nutrition (SUN) movement

Overview by **Marie Ruel**, Director, Poverty, Health and Nutrition Division, International Food Policy Research Institute (IFPRI)

Products reformulation for reduced fat, sugar and salt content in the Netherlands, by **Jantine Schuit**, Netherlands Institute for Public Health and the Environment (RIVM), the Kingdom of the Netherlands.

Improving food safety and quality along the food value chain in formal and informal markets: the case of Serbia, by **Tamara Boskovic**, Ministry of Agriculture and Environmental Protection, the Republic of Serbia.

Food fortification policies and programs for improved nutrition in Senegal, by **Abdoulaye Ka**, National Coordinator of Senegal's cellule for fighting malnutrition, Office of the Prime Minister, the Republic of Senegal.

Promoting and qualifying Small and Medium Enterprises (SMEs) as key suppliers for healthy diets: the case of the pulse-based protein tempeh, by **Muhammad Ridha**, Head of entrepreneur and training division, Rumah Tempe Indonesia, the Republic of Indonesia.

Discussion

Wrap-up by **Marie Ruel**

Closing remarks by **Eileen Kennedy**

GREEN ROOM (Building A, 2nd floor)

15:00

Session 2.2: Information and education for healthy food behaviours

17:15

Moderator: **Andrea Pezzana**, Professor, Faculty of Medicine and Surgery, University of Turin and San Giovanni Bosco Hospital Turin, the Republic of Italy

Overview by **Angela Tagtow**, Executive Director, Center for Nutrition Policy and Promotion, US Department of Agriculture, United States of America

From Schools to the community for advocacy and education on healthy diets, by **Fran Eatwell-Roberts**, Senior Advocacy Consultant, Jamie Oliver Food Foundation, the United Kingdom of Great Britain and Northern Ireland.

Engaging with food retailers for nutrition education, by **Fabio Massimo Pallottini**, President of Italmercati, Italian wholesale markets network, the Republic of Italy.

Integrating school meals and nutrition education programme in high income country setting: the German experience, by **Klaus Heider**, Federal Ministry of Food and Agriculture (BMEL), the Federal Republic of Germany.

Integrating nutrition education in agriculture extension services in Kenya by **Teresa Tumwet**, Head of Nutrition, Ministry of Agriculture – Home Economics Department, the Republic of Kenya.

Working with mass media for awareness and advocacy campaigns on healthy diets, what concrete results? The experience of France, by **Michel Chauliac**, National Programme for Nutrition and Health, Ministry of Health, the French Republic.

Discussion

Wrap-up by **Angela Tagtow**

Closing remarks by **Carlos Monteiro**

GERMAN ROOM (Building C, 2nd floor)

15:00

Session 3.2: Enhancing food system resilience in areas affected by climate change and other crises

17:15

Moderator: **Maria Neira**, Director, Public Health and the Environment Department, WHO

Overview by **François Grünewald**, Director-General, Groupe Urgence-Réhabilitation-Développement (URD), the French Republic

Food system resilience in economic/food price crisis in Uganda, by **Stephen Biribonwa**, Senior Agriculture Officer, Nutrition and Home Economics, Ministry of Agriculture, Animal Industry and Fisheries, the Republic of Uganda.

Agro-ecology for enhancing food systems resilience and healthy diets, by **Antonio Gonzales**, Agroecological Movement of Latin America and the Caribbean (MAELA), the Republic of Guatemala.

Women pastoralists for improved nutrition and increased resilience to climate shocks and soil degradation in Mongolia, by **Munkhbolor Gungaa**, FAO Mongolia, Promoter of the Mongolian Alliance of Nomadic Indigenous People (MANIP) and of the World Alliance of Mobile Indigenous Peoples and Pastoralists (WAMIP).

Response to the food security crisis in conflicts: embedding development into relief, by **Shadi Hamadeh**, American University of Beirut, the Lebanese Republic.

Food Security and Nutrition and the global control and eradication of Peste des Petits Ruminants (PPR), by **Bouna Diop**, Animal Health Division, FAO.

Discussion

Wrap-up by **François Grünewald**

Closing remarks by **Jessica Fanzo**

GREEN ROOM (Building A, 2nd floor)

17:30



18:30

WRAP-UP BY SUB-THEME CHAIRS, OVERALL SUMMARY BY SYMPOSIUM CHAIR AND DISCUSSION

AVENTINO ROOM (FLOOR 8, BUILDING B)

18:30



19:30

RECEPTION

Reception hosted by **José Graziano da Silva**,
Director-General of the Food and Agriculture Organization of the United Nations, FAO

DAY 2 - 02 December 2016

The map of the meeting rooms can be found at p. 14

SHEIKH ZAYED CENTRE (Atrium, ground floor)

09:00



11:15

Session 1.3: Leveraging market opportunities for promoting healthy diet

Moderator: **Eileen Kennedy**

Overview by **Gianluca Brunori**, Department of Agrarian, Agrifood and Agroecology Science, University of Pisa, the Republic of Italy

Can trade policies have co-benefits for nutrition? The findings of an expert consultation on trade and nutrition, by **Josef Schmidhuber**, Deputy Director, Trade and Markets Division, FAO.

The grocery gap: food retail outlets mapping and reorganization for promoting healthy diets, by **Allison Karpyn**, University of Delaware, United States of America.

Short supply chains and direct marketing for healthy foods: the Municipal Public Enterprise Tierra Altas experience in Colta, Ecuador, by **Hermel Tayupanda**, Mayor of Colta, the Republic of Ecuador.

Engaging effectively with the private sector actors in the food systems for healthy diets: the marketplace for nutritious foods in Mozambique, by **Katia Santos Dias**, Director of Global Alliance for Improved Nutrition (GAIN) Mozambique, the Republic of Mozambique.

Engaging effectively with the private sector for healthy diets: the experience of Federalimentare, by **Luigi Pio Scordamaglia**, President of Federalimentare, the Republic of Italy.

Successful reduction of food waste along the value chain. The success story of the Italian food banks, by **Angela Frigo**, European Union (EU) liaison Officer, Fondazione Banco Alimentare Onlus, Milan, the Republic of Italy.

Discussion

Wrap-up by **Gianluca Brunori**

Closing remarks by **Eileen Kennedy**

GREEN ROOM (Building A, 2nd floor)

09:00



11:15

Session 2.3: Increasing access to healthy diets through social protection and income generation strategies

Moderator: **Carlos Monteiro**

Overview by **Harold Alderman**, Senior Research Fellow, IFPRI

Integrating social policies in Food Security and Nutrition (FSN) policies to strengthen food systems for healthy diets in Brazil, by **Elisabetta Recine**, National Council on Food and Nutrition Security (CONSEA), Federative Republic of Brazil.

Cash transfers for improved food security and diet diversity: the lessons from Lesotho, by **Ntitia Tuoane**, Director of Field Services a.i., Ministry of Agriculture and Food Security, the Kingdom of Lesotho.

Nutrition sensitive schools meals in Armenia, by **Robert Stepanyan**, Head of Development Programmes and Monitoring Department, Ministry of Education, the Republic of Armenia.

Public procurement from family farmers for improved food basket in Malawi, by **Albert Saka**, Senior Officer, Ministry of Education, Science and Technology, the Republic of Malawi.

Provision of food supplements to socially deprived people: the YIN YAN BAO Programme in China, by **Zhao Wenhua**, National Institute for Nutrition and Health, Chinese Center for Disease Control and Prevention (China CDC), People's Republic of China.

Reducing inequalities and improving nutrition in New York City, by **Sonia Angell**, Deputy Commissioner of the City of New York, United States of America.

Discussion

Wrap-up by **Harold Alderman**

Closing remarks by **Carlos Monteiro**

GERMAN ROOM (Building C, 2nd floor)

09:00



11:15

Session 3.3: Empowering women as key drivers of food system change

Moderator: **Jessica Fanzo**

Overview by **Lindiwe Sibanda**, Chief Executive Officer, Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), the Republic of South Africa

Enabling gender equitable access to productive agricultural resources in Tajikistan, by **Nodira Sidykova**, Director Legal Aid, the Republic of Tajikistan.

Indigenous women's role in biodiversity protection and transmission of food traditions, by **María Luisa Duarte**, Cultural Advisor, Institute for the Indigenous Peoples of Paraguay, the Republic of Paraguay.

Empowering women to provide healthy diets for infants and young children, Enhancing Child Nutrition through Animal Source Food Management (ENAM) project in Ghana, by **Grace Marquis**, School of Dietetics and Human Nutrition, McGill University, Canada.

Empowering women for improved household access to healthy diets in Lebanon, by **Dominique Anid**, the Food Heritage Foundation, the Lebanese Republic.

Engaging women and men as agents of change in agriculture and nutrition in sub-Saharan Africa, by **Christiane Monsieur**, Dimitra Project Coordinator, FAO

Discussion

Wrap-up by **Lindiwe Sibanda**

Closing remarks by **Jessica Fanzo**

GREEN ROOM (Building A, 2nd floor)

11:45

▼
12:45

WRAP-UP BY SUB-THEME CHAIRS, OVERALL SUMMARY BY SYMPOSIUM CHAIR AND DISCUSSION

12:45

*Light Lunch will be offered for the participants of the special event at the **Tree of Life & German Room***

SHEIKH ZAYED CENTRE (Atrium, ground floor)

12:45

▼
15:30

SPECIAL EVENT

Student interactive Session: Bringing Fresh Perspectives (12:45 - 13:40)

Spotlight on “Engaging with cooks for Healthy Diets” by **Jenny Chandler**, Food writer and cookery teacher and FAO Special Ambassador for the International Year of Pulses for Europe (14:00 - 14:30)

Guided tour of the photography exhibit in the Atrium (14:30 - 15:00)

Spotlight on “What I eat: around the world in 80 diets” by **Peter Menzel**, freelance photojournalist, and **Faith D’Aluisio**, editor and lead writer (15:00 - 15:30)

GERMAN ROOM (Building C, 2nd floor)

13:30

▼
14:45

SPECIAL EVENT

“Meeting the challenge of a new era for achieving healthy diet and nutrition: outcomes of the 2nd Global Nutrition Policy Review”

Organized by the World Health Organization, WHO

GREEN ROOM (Building A, 2nd floor)

15:30

▼
17:30

Second International Conference on Nutrition (ICN2) Next Steps: Work Programme of the UN Decade of Action on Nutrition in the era of the Sustainable Development Goals (SDGs)

Co-Chairs: **Anna Lartey**, Director, Nutrition and Food Systems division, FAO, and **Francesco Branca**

In this session, the Zero Draft work programme of the UN Decade of Action on Nutrition will be presented by FAO and WHO, along with the conclusions of the on-line consultation that has been held on the Decade. A Town Hall-style meeting will follow in which participants will be invited to discuss the Zero Draft work programme of the UN Decade of Action on Nutrition by addressing two guiding questions in three minutes or less. The moderators will wrap up and close the session.

Framing Presentation: Building the Work Programme of the UN Decade of Action on Nutrition 2016 - 2025 by co-chairs **Anna Lartey** and **Francesco Branca**

Results of the online consultation on the UN Decade of Action on Nutrition by **Michel Mordasini**, Vice President International Fund for Agricultural Development (IFAD) and Chair United Nations System Standing Committee on Nutrition (UNSCN)

Guided discussion moderated by co-chairs **Anna Lartey** and **Francesco Branca**

Guiding Questions:

1. What do you suggest to strengthen this proposal for the work programme of the UN Decade of Action on Nutrition?
 2. What are you going to do differently to seize the opportunity presented by the UN Decade of Action on Nutrition, and what are you committing to do differently to make this happen?
- Moderators will invite responses from participants from different countries ensuring regional coverage
 - Moderators will invite responses from other key stakeholders
 - Moderators will invite other responses from the audience and open the discussion on the work programme of the UN Decade of Action on Nutrition

Wrap up, next steps and guided discussion by co-chairs **Anna Larthey** and **Francesco Branca**

17:30

CLOSURE CEREMONY

18:00

Remarks by
José Graziano da Silva, Director-General, Food and Agriculture Organization of the United Nations

Remarks by
Margaret Chan, Director-General of the World Health Organization, WHO

Symposium wrap-up and closing by the Chair of the Symposium

PRACTICAL INFORMATION

Wireless internet: Available in the Atrium and in some meeting rooms.

Login information: username: guest_internet, / password: wifi2internet.

Electricity supply: Italy has a 220 volts electricity supply, the sockets are 3 round pins in a row.

Banks: You can carry out all banking operations within FAO, at the branches of Banca Intesa (ground floor, Building B) and Banca di Sondrio (ground floor, Building D). Opening hours are Monday-Friday, 8.40 to 16.30. Next to either Bank you will find cash dispensers accepting international bank cards, at your disposal 24 hours.

Travel Agency: You may call upon Carlson Wagonlit Travel agency located on the ground floor of FAO. The Agency is open Monday-Friday between 9.00 to 12.45 and 14 to 17. A small commission may be applied to travel operations.

Meditation room: A meditation area is available in Building A, second floor, room A 250.

Medical Services and Emergencies: A medical unit is permanently on duty Monday-Friday, 8.30 to 17 hours, in Building B first floor, office 162, tel: 53400. For a serious emergency outside FAO, call 118.

FAO Restaurants and Bars

Within the FAO buildings there are three coffee shops, a cafeteria and a restaurant. These facilities only accept Euro cash. No credit cards are accepted.

- Polish Bar: Coffee shop located on the ground floor of Building A. Serves coffee, tea, drinks, cakes and sandwiches all day, with cold meals for lunch. Hours from 7.30-17.00.
- Blue Bar: Coffee shop located on the 8th floor of Building C. They serve snacks and sandwiches all day, with cold meals for lunch. Hours from 7.30-13.00.
- Casa Bar: Building D ground floor. Salads and light meals, with cold and hot meals for lunch.
- Cafeteria: Self-service restaurant located on the 8th floor of Building B. They serve entrees, pasta, grilled meat or cheese, salads, desserts and drinks. Hours 12.00-14.00.

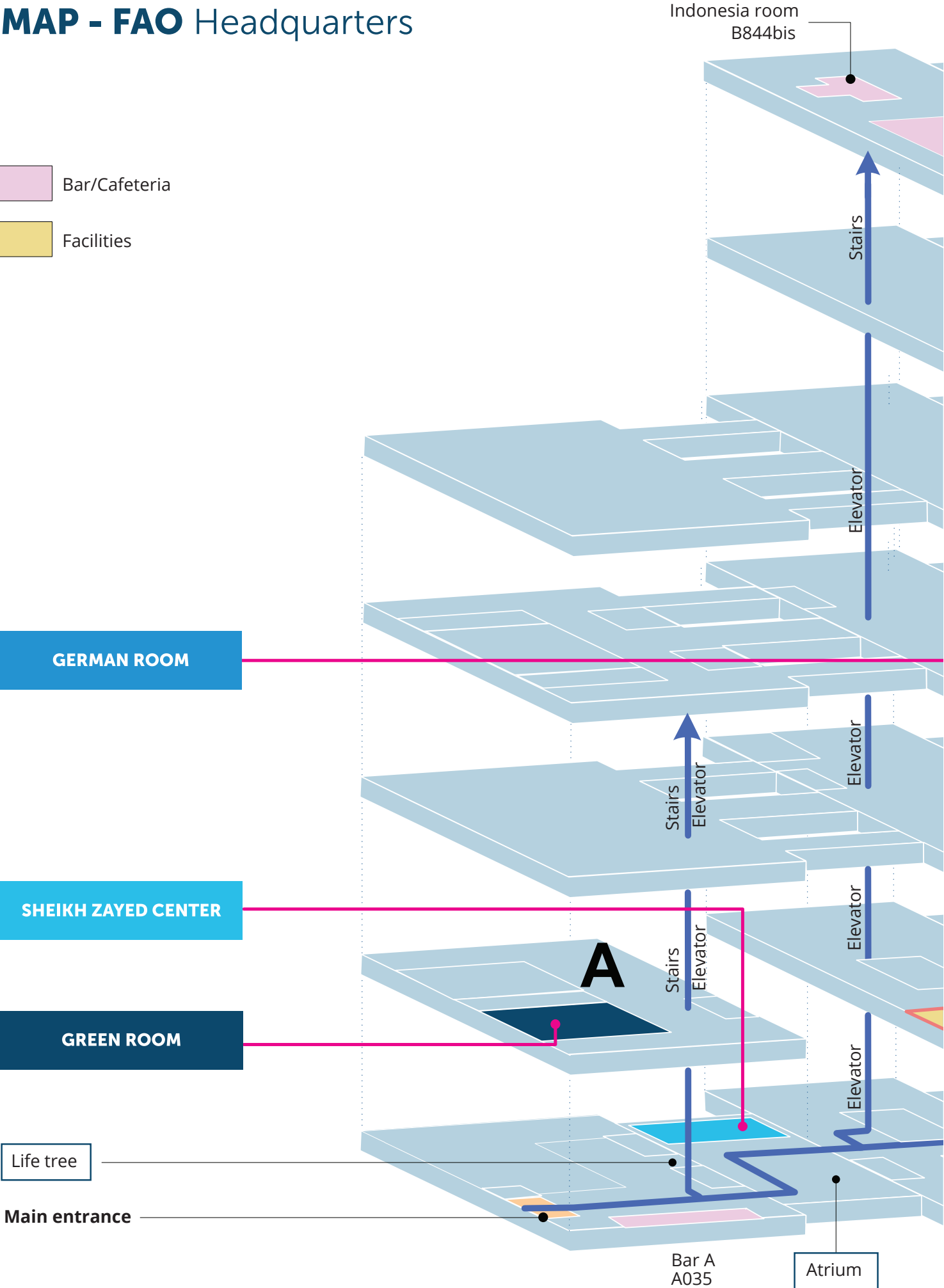
Facilities for disabled persons

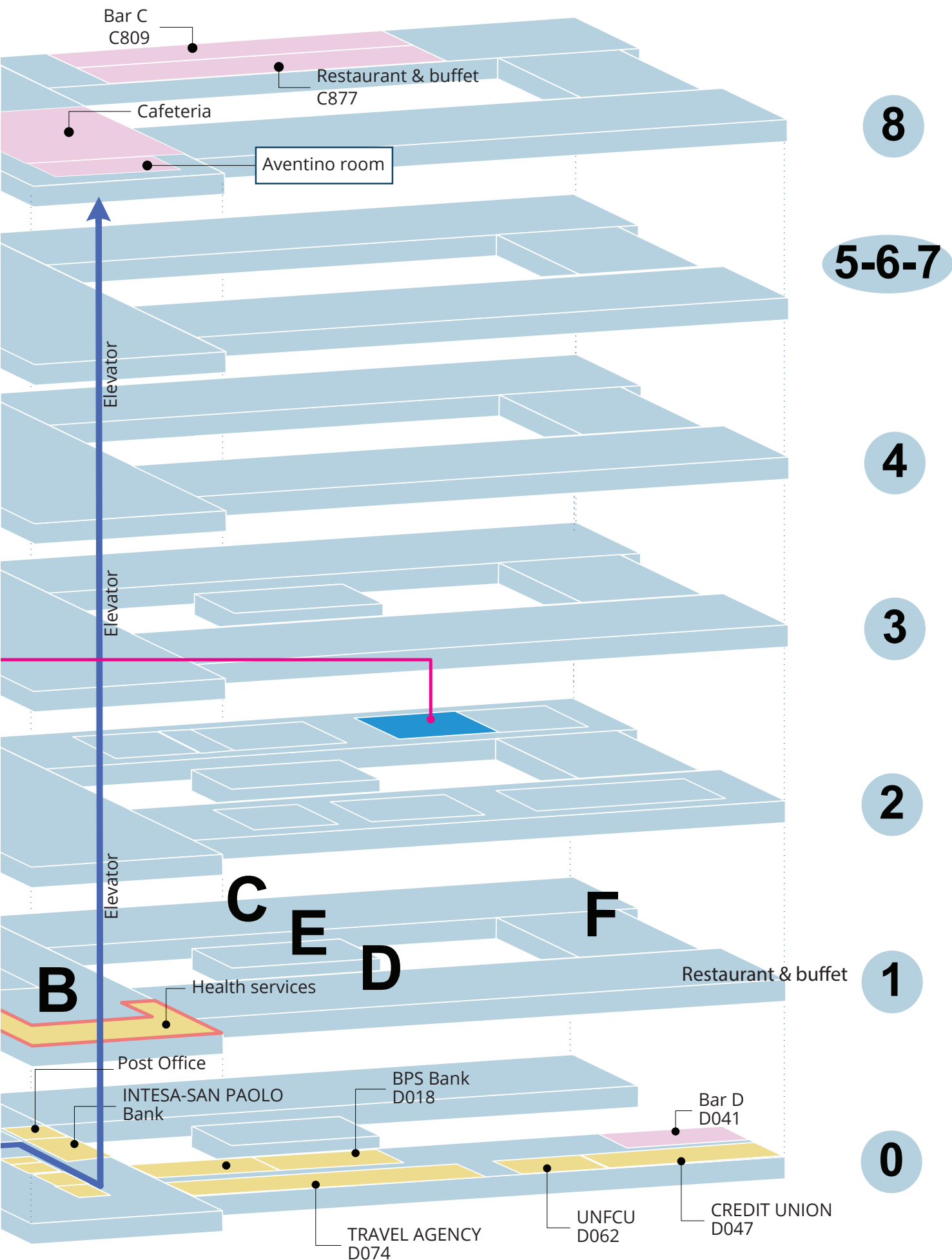
The FAO buildings correspond to European Community and Italian disabled facility building codes. All entrances at FAO headquarters are accessible for disabled persons in wheelchairs. An elevator is provided in Building A and a ramp is provided in Building D. Accessible restroom facilities are located in Building A on the ground, first and third floors.

Please note that FAO is a smoke-free area. Smoking is not permitted inside FAO buildings.

MAP - FAO Headquarters

- Bar/Cafeteria
- Facilities





**1-2
December
2016**

INTERNATIONAL SYMPOSIUM ON
SUSTAINABLE FOOD SYSTEMS FOR HEALTHY
DIETS AND IMPROVED NUTRITION

SYMPOSIUM SPEAKERS' BIOGRAPHIES

**FAO/WHO INTERNATIONAL SYMPOSIUM
SUSTAINABLE FOOD SYSTEMS FOR HEALTHY
DIETS AND IMPROVED NUTRITION**

**1-2 DECEMBER 2016
FAO HEADQUARTERS, ROME**

HIGH LEVEL OPENING AND CLOSING

SPEAKERS' BIOGRAPHIES



**Food and Agriculture
Organization of the
United Nations**



**World Health
Organization**



H.M. King Letsie III of Lesotho

His Majesty King Letsie III is the first son of the late King Moshoeshoe II and Queen Mother 'Mamohato Bereng Seeiso. He was born at Scott Hospital in Morija on July 17 1963 and named Mohato Bereng Seeiso. He was christened into the Roman Catholic Church as David.

He did part of his primary education at Iketsetseng Private School in Maseru from 1968 to 1972, when he completed Standard Five. He then proceeded to Gilling Castle in the United Kingdom, in 1973, a Roman Catholic School run by the order of St. Benedictine in Yorkshire, where he completed his primary education in 1976. He then proceeded to his father's Alma mater, Ampleforth College in 1977, where he completed his secondary and high school education in 1980.

From 1980 to 1984 he pursued his University education at the National University of Lesotho where he graduated with a Bachelor of Arts Degree in law.

Between 1984 and 1986 he completed a Diploma in English Legal Studies at the University of Bristol in Britain. King Letsie III later spent a year at the University of Cambridge where he studied Development Studies, completing in 1989. At the same time he enrolled with Wye College of the University of London where he studied Agricultural Economics. He was installed as the Principal Chief of Matsieng on December 16, 1989. He was sworn into the Office of King on November 12, 1990, under the new Office of the King Order NO. 14 of 1990, promulgated on November 6, 1990. He was then named King Letsie III after King Letsie I, the eldest son of King Moshoeshoe I, the founder of the Basotho nation. He abdicated on January 25, 1995, the day on which His Majesty King Moshoeshoe II was reinstated.

Following the tragic death of his father King Moshoeshoe II on January 15, 1996, King Letsie III was reinstated as King on February 7, 1996. His coronation took place on October 31, 1997, in Maseru.

His Majesty got engaged to Miss Karabo Anna Mots'oeneng, the first daughter of Mr. Thekiso and Mrs. 'Makarabo Mots'oeneng of Leribe on October 23rd, 1999. They were joined in holy matrimony on February 18th, 2000. Their Majesties have been blessed with two daughters and a son: Her Royal Highness Princess Senate was born on October 7th, 2001, Her Royal Highness Princess 'Maseiso on November 20th, 2004, and His Royal Highness Prince Lerotholi on April, 18th, 2007.



Her Majesty Queen Letizia of Spain

Her Majesty the Queen Letizia Ortiz Rocasolano was born in Oviedo on 15 September 1972, and is the daughter of Jesús Ortiz Álvarez and Paloma Rocasolano Rodríguez.

She started school in Oviedo, at La Gesta public school, and later at the Alfonso II Institute. At the age of 14, she moved, together with her parents and sisters, to Madrid, where she finished her secondary education at the Ramiro de Maeztu Institute. She contracted civil marriage in 1999, and divorced a year later.

Her Majesty has a Bachelor's Degree in Journalism from the Complutense University of Madrid and a Master's Degree in Audiovisual Journalism from the Institute for Audiovisual Journalism Studies.

Their Majesties The King and Queen announced her engagement to the then Prince of Asturias on 1 November 2003.

The religious wedding ceremony was held on 22 May 2004 at the Santa María la Real de la Almudena Cathedral of Madrid.

They have two daughters: Infanta Leonor, born on 31 October 2005, and Infanta Sofía, born on 29 April 2007, both in Madrid.

From a very young age, as a student, she also worked at the newspapers La Nueva España and ABC, and at the EFE News Agency, where she worked in international editing during her last year at university. She began her PhD studies in Mexico, where she collaborated with the newspaper Siglo 21. The Queen's TV career began in the Madrid branch of Bloomberg TV, specialising in the economy, finance and the markets, under the supervision of the EFE News Agency. She was later hired by the private channel formed by CNN and Canal+, CNN+, as a reporter, editor, and broadcaster.

In 2000, she entered Televisión Española, where she worked with the editing team of the news programme Telediario Segunda Edición, and presented Informe Semanal. Later, she presented the morning news programme Telediario Matinal, the special sections on the Euro broadcast during the news programmes, and she was sent as a special correspondent to different countries to report on current events. Following that, she was an editor in the society, education and science department, and later once again joined the editing team of Telediario Segunda Edición, which she co-anchored.

She was awarded the Larra Prize by the Madrid Press Association to the year's most outstanding journalist under 30.

Her Majesty was appointed FAO Special Ambassador for Nutrition in June 2015.



Da Silva José Graziano (Italy)
Director-General of FAO

José Graziano da Silva has worked on food security, rural development, and agriculture issues for over 30 years, most notably as the architect of Brazil's Zero Hunger (Fome Zero) programme and now as the Director-General of FAO.

Graziano da Silva led the team that designed the Zero Hunger programme, and, in 2003, was charged by then-President Luiz Inácio Lula da Silva to implement the programme as Special Minister of Food Security and the Fight against Hunger.

He headed the FAO Regional Office for Latin America and the Caribbean from 2006 to 2011. Elected Director-General of FAO, he took up office on 1 January 2012. After his first term from 1 January 2012 to 31 July 2015, Graziano da Silva was re-elected for a second 4 year-term (1 August 2015 to 31 July 2019) with the votes of 177 countries during FAO's 39th Conference.

At the helm of FAO, Graziano da Silva has sharpened the Organization's strategic focus; and is strengthening its field presence. He is also working to instill a best value-for-money culture. At the international level, he is working to build consensus on food security-related issues.

He has also encouraged closer cooperation with development partners, supports South-South cooperation, and has increased collaboration with civil society and private sector entities, including farmer organizations and cooperatives for smallholder producers.

Graziano da Silva holds a Bachelor's Degree in Agronomy and a Master's Degree in Rural Economics and Sociology from the University of São Paulo (USP), and a Ph.D. in Economic Sciences from the State University of Campinas (UNICAMP). He also has post-Doctorate Degrees in Latin American Studies (University College of London) and Environmental Studies (University of California, Santa Cruz).

A Brazilian and Italian by nationality, he is married to Paola Ligasacchi and has two children and three grandchildren.



Chan Margaret (Switzerland)
Director-General of WHO

Dr Margaret Chan, from the People's Republic of China, obtained her medical degree from the University of Western Ontario in Canada. She joined the Hong Kong Department of Health in 1978, where her career in public health began.

In 1994, Dr Chan was appointed Director of Health of Hong Kong. In her nine-year tenure as director, she launched new services to prevent the spread of disease and promote better health. She also introduced new initiatives to improve communicable disease surveillance and response, enhance training for public health professionals, and establish better local and international collaboration. She effectively managed outbreaks of avian influenza and of severe acute respiratory syndrome (SARS).

In 2003, Dr Chan joined WHO as Director of the Department for Protection of the Human Environment. In June 2005, she was appointed Director, Communicable Diseases Surveillance and Response as well as Representative of the Director-General for Pandemic Influenza. In September 2005, she was named Assistant Director-General for Communicable Diseases.

Dr Chan was elected to the post of Director-General on 9 November 2006. The Assembly appointed Dr Chan for a second five-year term at its sixty-fifth session in May 2012. Dr Chan's new term will begin on 1 July 2012 and continue until 30 June 2017.



Her Excellency Beatrice Lorenzin (Italy)

Ministry of Health

Overall Chair of the Symposium

Beatrice Lorenzin was born in Rome on 14 October 1971. She was appointed Minister of Health in the Government for the first time in April 2013. She was reconfirmed Minister of Health in the 63rd Government led by Matteo Renzi in February 2014. She started her political career in October 1997, with the election to the Council of XIIIth Municipal district XIII of Rome.

In May 2001, she was elected Town Councillor of Rome. Between 2005 and mid-2006, she was Head of the Technical Secretariat of Undersecretary to the Presidency of the Council of Ministers for the Information and Publishing during the third government Berlusconi.

Elected to the Chamber of Deputies in 2008, she was reconfirmed in the Chamber of Deputies in the general elections of 24-25 February 2013.

Beatrice Lorenzin is one of the founders of the NCD political party.



Stamoulis Kostas (Italy)

FAO Assistant Director General ad interim, Economic and Social Development Department

Kostas G. Stamoulis is currently the Assistant Director-General ad interim of the Economic and Social Development Department at the Food and Agriculture Organization of the United Nations.

He served as Director, Strategic Programme Leader, Food Security and Nutrition in FAO. He led through 2015 the design and provided strategic guidance of FAO's Strategic Programme on Food Security and Nutrition which cuts across several disciplines and geographical regions.

Between 2008 and 2015 he was the Director of the Agricultural Development Economics Division of FAO. ESA carries out the bulk of analytical and evidence-based policy work of FAO with about 150 staff members.

From 2007 to 2015 he has been the Secretary of the Committee on World Food Security (CFS) and played a key role in the reform of the committee.

Since joining FAO he has held progressively responsible technical and management positions.

Before joining FAO in 1989, he was Assistant Professor of Agricultural Economics at the University of Illinois in Urbana Champaign. From 1985 to 1987 he was a post-doctoral fellow at the University of California at Berkeley. His work includes issues related to the role of agriculture in rural development and rural poverty reduction in developing countries; the impact of changes in food systems on smallholder farmers and on rural poverty; the linkages between the agricultural sector and the rural non-farm economy and the integration of food security and nutrition in sectorial policies and programs.

He has also carried out work on the assessment of the role of macroeconomic and exchange-rate policies on agriculture and the rural sector and the interdependence between exchange rate, financial and commodity markets. He has published a large number of papers, articles, books and monographs on a variety of subjects.

He holds a degree in Economics from the Economics University of Athens (Greece), a Master's Degree in Agricultural Economics from the University of Georgia (USA) and a Ph.D. in Agricultural and Resource Economics from the University of California at Berkeley.

FAO/WHO INTERNATIONAL SYMPOSIUM SUSTAINABLE FOOD SYSTEMS FOR HEALTHY DIETS AND IMPROVED NUTRITION

**1-2 DECEMBER 2016
FAO HEADQUARTERS, ROME**

SYMPOSIUM CHAIRS' BIOGRAPHIES



Symposium Vice Chair

Webb Patrick (USA)

Professor of Nutrition Science and Policy, Tufts University, policy and evidence advisor to the Global Panel on Agriculture and Food Systems for Nutrition - GLOPAN

Patrick Webb is the Alexander McFarlane Professor of Nutrition at the Friedman School of Nutrition Science and Policy at Tufts University. He was Dean for Academic Affairs from 2005 to 2014. Currently he is a senior adviser to the Global Panel on Agriculture and Food Systems for Nutrition and Director for USAID's Feed the Future Nutrition Innovation Lab (fieldwork in Nepal, Uganda, Malawi, Bangladesh, Egypt and Cambodia), and he leads the US government's Food Aid Quality Review (cost-effectiveness trials in Burkina Faso, Sierra Leone and Malawi). Until 2005, he was Chief of Nutrition for the UN World Food Programme. He was part of the MDG Hunger Task Force reporting to Secretary General Kofi Annan, and a steering committee member of the UN's Standing Committee on Nutrition. Earlier, he spent 9 years with the International Food Policy Research Institute. His expertise lies in food policy analysis, agriculture systems, international nutrition programming, and emergency relief. He is a member of the Independent Science and Partnership Council of the Consultative Group on International Agriculture Research, and a member of the WHO/UNICEF Technical Expert Advisory committee on nutrition monitoring.

Contact: Patrick.Webb@tufts.edu



Chair of sub-theme 1 sessions: Supply side policies and measures for diversifying food production and increasing availability and affordability of nutritious foods for healthy diets

Kennedy Eileen (USA)

Professor at the Friedman School of Nutrition Science and Policy - Tufts University

Eileen Kennedy is a professor and former dean of the Friedman School of Nutrition Science and Policy of Tufts University. She is a member of the High Level Panel of Experts on Food Security and Nutrition of the UN Committee on World Food Security and the World Economic Forum's Global Council on Food Security and Nutrition. She founded and was the first Executive Director of the USDA Center for Nutrition Policy and Promotion. She created the Healthy Eating Index which is a single summary measure of diet quality. Her research interests include assessing the health, nutrition, diet and food security impacts of policies and programmes; nutrient density and diet diversity; and agriculture nutrition linkages. She is primary investigator of the Empowering New Generations for Improved Nutrition and Economics (ENGINE) and Nutrition Innovation Lab research projects. She has a doctorate degree in Public Health from Harvard University.

Contact: Eileen.kennedy@tufts.edu



Chair of sub-theme 2 sessions: Demand side policies and measures for increasing access and empowering consumers to choose healthy diets

Monteiro Carlos Augusto (Brazil)

Professor of Nutrition and Public Health at the School of Public Health - University of São Paulo

Carlos Monteiro is the Head of the University of São Paulo (USP) Center for Epidemiological Studies in Health and Nutrition. His research lines include methods in population nutritional and dietary assessment; secular trends and biological and socioeconomic determinants of nutritional deficiencies and obesity and other nutrition-related chronic diseases; food processing in the food system and human health; and food and nutrition programme and policy evaluation. He has published numerous books and book chapters and over 100 articles in scientific journals, which are widely cited. He is Scientific Editor of the Brazilian Public Health Journal ('Revista de Saude Publica') and member of the Advisory Board of Public Health Nutrition. Since 2008, he has been a member of the Brazilian Academy of Sciences. He has served on numerous national and international nutrition expert panels and committees. Presently, he is member of the WHO Nutrition Expert Advisory Group and the Working Group on Science and Evidence of the WHO Commission on Ending Childhood Obesity. In 2010, he received the PAHO Abraham Horwitz Award for Excellence in Leadership in Inter-American Health.

Contact: carlosam@usp.br



Chair of sub-theme 3 sessions: Measures to strengthen accountability, resilience and equity within the food systems

Fanzo Jessica (USA)

Bloomberg Distinguished Associate Professor of Global Food and Agriculture Policy and Ethics - Johns Hopkins University

Jessica Fanzo is the Bloomberg Distinguished Associate Professor of Global Food and Agriculture Policy and Ethics at the Berman Institute of Bioethics, the Nitze School of Advanced International Studies, and the Bloomberg School of Public Health at the Johns Hopkins University. She serves as the Director of the Global Food Ethics and Policy Program. Prior to joining Johns Hopkins University, she served as an Assistant Professor of Nutrition in the Institute of Human Nutrition and Department of Pediatrics, as well as the Senior Advisor of Nutrition Policy at the Center on Globalization and Sustainable Development within the Earth Institute at Columbia University. Prior to her academic positions, Jessica held positions in the United Nations World Food Programme, Bioversity International, and the World Agroforestry Center. She was the first laureate of the Carasso Foundation's Sustainable Diets Prize for her work on sustainable diets for long-term human health. She has a PhD in nutrition from the University of Arizona.

Contact: jfanzo1@jhu.edu

SYMPOSIUM SPEAKERS' BIOGRAPHIES

THURSDAY 1 DECEMBER

PLENARY SESSION 10:15 – 11:00

KEYNOTE SPEECH: SHAPING SUSTAINABLE
FOOD SYSTEMS FOR HEALTHY DIETS AND
IMPROVED NUTRITION



Webb Patrick (USA)

Professor of Nutrition Science and Policy, Tufts University, policy and evidence advisor to the Global Panel on Agriculture and Food Systems for Nutrition - GLOPAN

Patrick Webb is the Alexander McFarlane Professor of Nutrition at the Friedman School of Nutrition Science and Policy at Tufts University. He is a senior adviser to the Global Panel on Agriculture and Food Systems for Nutrition and Director for USAID's Feed the Future Nutrition Innovation Lab.

Contact: Patck.Webb@tufts.edu

PARALLEL SESSIONS: 11:00 – 13:15

SHEIKH ZAYED CENTRE

Chaired by **Eileen Kennedy** (USA)

Sub-theme 1: Supply side policies and measures for diversifying food production and increasing availability and affordability of nutritious foods for healthy diets

Session 1.1: Sustainable agriculture production and diversification for healthy diets



Herforth Anna (USA)

Independent consultant on global food security and nutrition

Anna Herforth is a senior researcher and consultant specializing in the links between agriculture, food systems and nutrition. She is adjunct Associate Research Scientist at Columbia University and a consultant for the FAO and Gallup World Poll on diet quality and food system issues.

Contact: anna@annaherforth.net



Yoon Deok-Hoon (Korea, Republic of)
Professor at Research Institute of International Agriculture, Technology and Information - Hankyong National University

Deok-Hoon Yoon is a research professor at Hankyong National University, focusing on agro-food safety and hygiene and nutrient movement in soils. She is chairman of the GLOBALG.A.P. National Technical Working Group in Korea and the Korean Association of GLOBALG.A.P.

Contact: tropagri@hknu.ac.kr



Misund Ole Arve (Norway)
Director General National Institute of Nutrition and Seafood Research. Ministry of Trade, Industry and Fisheries

Ole Arve Misund is Managing Director of the National Institute of Nutrition and Seafood Research. He was professor in fisheries and seafood, University of Bergen and Chairman of the Sven Lovén Center, University of Gothenburg. He was Chairman of the International Council for the Exploration of the Sea Fishing Technology Committee.

Contact: OleArve.Misund@nifes.no



Carvalho Paulo César F (Brazil)
Professor at Federal University of Rio Grande do Sul

Paulo Carvalho is Professor Titular at the Federal University of Rio Grande do Sul. He was Coordinator of the Animal Science Advisory Committee of the National Council of Technological and Scientific Development; and Committee member on Low Carbon Agriculture of the Advisory Council of Alianza del Pastizal/BirdLife International.

Contact: paulocfc@ufrgs.br



Ndjebet Cécile (Cameroon)
President - African Women's Network for Community Management of Forests

Cécile NDJEBET is an Agronomist and Social Forester. She is a leader of the Civil Society Organizations on Reducing Emissions from Deforestation and forest Degradation and Climate Change (REDD&CC) in Cameroon and the Regional Coordinator of CSO REDD+&CC Platform of Central Africa. She founded the African Women's Network for Community Management of Forests.

Contact: cecilendjebet28@gmail.com



Traore Alimata (Mali)
President of CONFERSA (Convergence des Femmes Rurales pour la Souveraineté Alimentaire)

Alimata Traore is a peasant woman. After leaving primary school in 1991 she received additional training from 1992 to the present. She is a member of a peasant organization and she has been responsible for a rural women's organization from 2001 to the present time.

Contact: alimaatou@yahoo.fr



Mudyahoto Bho (Uganda)
Senior Monitoring, Learning and Evaluation Specialist, HarvestPlus - International Food Policy Research Institute

Bho Mudyahoto is a Senior Monitoring Learning and Evaluation Specialist at IFPRI-HarvestPlus covering Africa, Asia and the Latin America and Caribbean regions. He has worked as an Educator and Agricultural Extension Officer, lecturer with Zimbabwe Open University and Midlands State University in Zimbabwe.

Contact: E.Boy@cgiar.org

PARALLEL SESSIONS: 11:00 – 13:15
GREEN ROOM

Chaired by **Carlos Augusto Monteiro** (Brazil)

Sub-theme 2: Demand side policies and measures for increasing access and empowering consumers to choose healthy diets

Session 2.1: Regulations, awareness and advocacy for better informed food choices



Hawkes Corinna (United Kingdom)
Professor of Food Policy, Director, Centre for Food Policy - City University London

Corinna Hawkes is Director at the Centre for Food Policy and Co-Chair of the Global Nutrition Report. She has published on the role of globalisation, trade, retailing and agriculture in diet and diet change worldwide. She was a member of the Lead Expert Group on the report Food systems and diets: Facing the challenges of the 21st century.

Contact: Corinna.Hawkes@city.ac.uk



Nilson, Eduardo (Brazil)

National Nutrition Coordinator - Ministry of Health

Eduardo Nilson is Vice Coordinator of Food and Nutrition in the Ministry of Health. He is responsible for Monitoring and Evaluation in the Coordination of Food and Nutrition, including health information systems, nutrition surveys and studies and food and nutrition regulation. The international nutrition agenda is shared with the General Coordinator. A biologist, he specialized in Public Management and Molecular Biology.

Contact: Eduardo@saude.gov.br



Dinarvand Rassoul (Iran)

Deputy Minister of Health & President - Iran Food and Drug Administration (IFDA)

Rassoul Dinarvand was instrumental in the fight to reduce salt, sugar and saturated and trans fat contents of food stuffs, including traffic light labelling of food packages. He was the Dean of the Faculty of Pharmacy at Tehran University of Medical Sciences and full professor in Pharmaceutics.

Contact: dinarvand@gmail.com



Freire Wilma (Ecuador)

Director of the Institute of Research in Health and Nutrition, Colegio de Ciencias de la Salud, COCSA - University San Francisco de Quito

Wilma B. Freire is Professor and Co-director of the Institute for Research in Health and Nutrition and Director of the Master's in Nutrition programme at the Universidad San Francisco de Quito. She was Regional Coordinator in Food and Nutrition for the Pan American Health Organization/WHO.

Contact: wfreire@usfq.edu.ec



Klepp Knut-Inge (Norway)

Executive Director, Norwegian Institute of Public Health/Professor II Department of Nutrition, Faculty of Medicine - University of Oslo

Knut-Inge Klepp is Executive Director at the Norwegian Institute of Public Health. He was Director General of the Division of Public Health at the Norwegian Directorate of Health. He has been a professor of public health nutrition at the University of Oslo and professor in international health promotion at the University of Bergen.

Contact: k.i.klepp@medisin.uio.no



Macari Marisa (México)

Coordinator of Nutritional Health Research at El Poder del Consumidor (Consumer Power)

Marisa Macari is the Coordinator of Nutritional Health Research at El Poder del Consumidor (Consumer Power), a not-for-profit, consumer-rights organization, based in Mexico City, that advocates for policies in the public interest that protect the right to adequate food and nutritional health. Marisa's research explores the sugar-sweetened beverage tax, child-targeted food and beverage marketing bans, policies on healthy school food, front-of-pack warning labeling and the contextual factors shaping the consumption of ultra-processed foods.

Contact:
saludpublica@elpoderdelconsumidor.org



Taylor Anna (United Kingdom)

Executive Director - The Food Foundation UK

Anna Taylor is the Executive Director of the Food Foundation that tackles the challenges facing the UK's food system. She worked at the Government of the UK Department for International Development (DFID) where she led the policy team on nutrition and supported delivery of the UK's commitments to tackle undernutrition.

Contact: Anna.Taylor@FoodFoundation.org.uk



Girardi Guido (Chile)

Senator of Chile

Senator Guido Girardi is a physician and very active in work to promote healthy diets. Senator Girardi masterminded the Chilean law, that recently entered into force, which stipulates the mandatory use of warning labels on food products containing what are considered to be 'excess' levels of salt, sugar or saturated fat.

Contact: ggirardi@senado.cl

PARALLEL SESSIONS: 11:00 – 13:15
GERMAN ROOM

Chaired by **Jessica Fanzo** (USA)

Sub-theme 3: Measures to strengthen accountability, resilience and equity within the food systems

Session 3.1: Designing, implementing and monitoring evidence-based policies effectively with multiple actors



Kim Cho-II (Korea, Republic of)
Invited Research Fellow - Korea Health Industry Development Institute (KHIDI)

Cho-II Kim is a research fellow at the Korea Health Industry Development Institute, where she was Director General of the Bureau of Health Industry Promotion. She developed methodologies and tools for national nutrition surveys, the special supplemental nutrition programme 'NutriPlus'; the Korean total diet study, and DHRA (diet-related health risk appraisal).

Contact: kimci@khidi.or.kr



Swinburn Boyd (New Zealand)
Professor of Population Nutrition and Global Health - University of Auckland

Boyd Swinburn is Professor of Population Nutrition and Global Health at the University of Auckland and Alfred Deakin Professor and Director of the WHO Collaborating Centre for Obesity Prevention at Deakin University. He investigates actions to prevent childhood and adolescent obesity, and 'obesogenic' food environments. He is Co-Chair of the World Obesity/Policy & Prevention.

Contact: boyd.swinburn@auckland.ac.nz



Coates Jennifer (USA)
Associate Professor Feinstein International Center - Tufts University

Jennifer Coates is an Associate Professor of Food Policy and Applied Nutrition at the Tufts Friedman School of Nutrition Science and Policy, focusing on methods to improve the international nutrition and food security programmes. She served the UN Expert Advisory Group on Food and Nutrition Security Measurement.

Contact: jennifer.coates@tufts.edu



Nortey John (Ghana)

Statistics Research and Information Directorate (SRID) - Ministry of Food and Agriculture (MOFA)

John Okang Nortey is the Deputy Director of the Ministry of Food and Agriculture, Statistics, Research and Information Directorate (SRID). He is the Head of the Marketing Services Unit, which deals mainly with market Information. He was the Deputy Head of the Agricultural Statistics and Census Unit.

Contact: johnnorts@yahoo.com



Nishida Chizuru (Switzerland)

Coordinator Nutrition Policy & Scientific Advice, Department of Nutrition for Health and Development (NHD) - World Health Organization.

Chizuru Nishida is the Coordinator of the Nutrition Policy and Scientific Advice Unit in the WHO Department of Nutrition for Health and Development in Geneva. Her career in WHO began in 1984 in the Maternal and Child Health Programme in the WHO Headquarters. She also worked in the WHO Regional Office for the Western Pacific and on several country programmes in Asia.

Currently, she leads the Unit working on: 1) development of evidence-informed WHO

guidelines related to dietary goals and policy options for preventing obesity and diet-related NCDs, dissemination of these guidelines and latest available evidence on effective nutrition-related interventions through the WHO e-Library of Evidence for Nutrition Action (eLENA), and 2) provision of guidance and support to the Regions and countries in scaling up the implementation of intersectoral nutrition policies and strategies to address malnutrition in all its forms throughout the lifecourse. She also represents WHO at the Codex Committees related to Nutrition and Food Labelling.

Contact: nishidac@who.int



Da Cruz Cesar (Timor Leste)

Secretary General of the Ministry of Agriculture and Fisheries

Cesar Jose Da Cruz is Permanent Secretary in the Ministry of Agriculture and Fishery (MAF), implementing the MAF Decree Law and activities, including inter-ministerial coordination for food security, nutrition and the Zero hunger programme. He was Secretary General to the Ministry of Agriculture and Fishery.

Contact: cejocruz@yahoo.com.au



Mshiu Sarah Lilian (Tanzania)
Senior Economist/ Nutrition Focal Person - Prime Minister's Office

Sarah Lilian Mshiu is a Senior Economist at the Prime Minister's Office. She is a President Advisor on nutritional Issues and member of the Secretariat of Cabinet Working Session and High Level Steering Committee on Nutrition as well as a Co- convener of Training Nutrition Leaders Network.

Contact: smshiu@yahoo.com

THURSDAY 1 DECEMBER

PARALLEL SESSIONS: 15:00 – 17:15
SHEIKH ZAYED CENTRE

Chaired by **Eileen Kennedy** (USA)

Sub-theme 1: Supply side policies and measures for diversifying food production and increasing availability and affordability of nutritious foods for healthy diets

Session 1.2: Maintaining and improving nutritional value and food safety along the value chain



Ruel Marie (USA)
Director, Poverty, Health, and Nutrition Division - International Food Policy Research Institute (IFPRI)

Marie T. Ruel is Director of IFPRI's Poverty, Health and Nutrition Division. She focuses on evaluating and strengthening integrated, multi-sectoral development programmes in the areas of agriculture, social protection and health, and their role in reducing maternal and child malnutrition. She was head of the Nutrition and Health Division at the Institute of Nutrition of Central America and Panama/Pan American Health Organization.

Contact: m.ruel@cgiar.org



Schuit Jantine (The Netherlands)

Professor of Health Promotion and Policy, Head of Centre for Nutrition, Prevention and Health Services, National Institute for Public Health and the Environment - Vrije Universiteit Amsterdam (VU University in Amsterdam)

Jantine (A.J.) Schuit is Head of the Center for Nutrition, Prevention and Health Services at the National Institute of Public Health and Environment and professor of Health Promotion and Policy at the Vrije Universiteit Amsterdam. Her expertise covers the effectiveness of lifestyle and community-based interventions.

Contact: jantine.schuit@rivm.nl



Boskovic Tamara (Serbia)

Head of the Department for Veterinary Public Health - Ministry of Agriculture and Environmental Protection

Tamara Bošković is Head of the Veterinary Public Health Department in the Ministry of Agriculture/Veterinary Directorate. She is national focal point for the European Food Safety Authority; the OIE-World Organisation for Animal Health; the Rapid alert system for food and feed and is a member of European Union negotiation team.

Contact: tamara.biskovic@minpolj.gov.rs



Ka Abdoulaye (Senegal)

National Coordinator of Senegal's La Cellule de Lutte contre la Malnutrition (The fight against malnutrition unit) - Office of the Prime Minister

Abdoulaye Ka is a Public Health and Human Development Specialist. He is the National Coordinator of La Cellule de Lutte contre la Malnutrition (CLM), which develops and monitors the implementation of nutrition policies. He is Vice Chairman of the Executive Committee of the Scaling Up Nutrition Movement (SUN).

Contact: aka@clm.sn



Ridha Muhammad (Indonesia)

Head of entrepreneur and training division - Rumah Tempe Indonesia

Muhammad Ridha manages the entrepreneur and training division in Rumah Tempe Indonesia, a model tempe factory, which encourages traditional tempe producers and new tempe producers to produce tempe with proper knowledge on food production, hygiene, sanitation and business.

Contact: muhammad_rdh@yahoo.com

PARALLEL SESSIONS: 15:00 – 17:15
GREEN ROOM

Chaired by **Carlos Augusto Monteiro** (Brazil)

Sub-theme 2: Demand side policies and measures for increasing access and empowering consumers to choose healthy diets

Session 2.2: Information and education for healthy food behaviours



Eatwell-Roberts Fran

Jamie Oliver Food Revolution

Fran Eatwell-Roberts supports the Jamie Oliver Food Foundation at Future Advocacy. He was a nutrition policy and advocacy advisor for Save the Children and worked for the Global Panel on Agriculture and Food Systems for Nutrition. He shouts out about food issues and policies to realise our human right to good, fresh and nutritious food. He studied at the University of Manchester and SOAS, University of London.

Contact: fran.eatwell-roberts@jamieoliver.org



Tagtow Angela (USA)

Executive Director - Center for Nutrition Policy and Promotion - United States Department of Agriculture (USDA)

Angela Tagtow is the Executive Director for the USDA Center for Nutrition Policy and Promotion. She is a registered dietitian with experience in food and nutrition policy, public health nutrition, surveillance systems, research, professional and consumer communication, social marketing, training and education.

Contact: angela.tagtow@cnpp.usda.gov



Pallottini Fabio Massimo (Italy)

Managing Director of CAR ScpA, President of ITALMERCATI, International Board Member of the World Union of Wholesale Markets (WUWM)

Fabio Massimo Pallottini is Managing Director of CAR ScpA and President of ITALMERCATI, a network of Italian agribusiness centres. He was elected International Board Member of WUWM in 2015. He has served as Special Commissioner of Agency for the Agricultural Development of Lazio.

Contact: fm.pallottini@agroalimroma.it



Heider Klaus (Germany)

Director-General for Food and Nutrition Policy, Product Safety and Innovation - Federal Ministry of Food and Agriculture, BMEL.

Klaus Heider is the Director-General for Food and Nutrition Policy, Product Safety and Innovation at the Federal Ministry of Food and Agriculture. He was a member of the Permanent Representation of the Federal Republic of Germany to the European Union/Brussels.

Contact: Klaus.Heider@bmel.bund.de



Chauliac Michel (France)

Responsible of the French National Nutrition and Health Programme at the Ministry of Social Affairs and Health

Michel Chauliac is responsible of the French National Nutrition and Health Programme at the Ministry of Social Affairs and Health. Previously, he worked at the International Children's Center in Paris, working on nutrition issues in Africa, Latin America, Southeast Asia and Eastern Europe.

Contact: michel.chauliac@sante.gouv.fr



Tumwet Teresa (Kenya)

Head of Nutrition, Ministry of Agriculture – Home Economics Department, Nairobi, Kenya.

Teresa Tumwet is Senior Assistant Director and Head of Home Economics in the Ministry of Agriculture, with responsibility to ensure dietary diversity through home gardening and nutrition supporting technologies. She has worked with the Ministry of Agriculture, Livestock and Fisheries for 28 years. She has a Bsc in Agriculture and Msc and PhD in Applied Human Nutrition from University of Nairobi and attended leadership courses.

Contact: teresatumwet@gmail.com

PARALLEL SESSIONS: 15:00 – 17:15
GERMAN ROOM

Chaired by **by Jessica Fanzo** (USA)

Sub-theme 3: Measures to strengthen accountability, resilience and equity within the food systems

Session 3.2: Enhancing food system resilience in areas affected by climate change and other crisis



Biribonwa Stephen (Uganda)
Senior Agriculture Officer: Food & Nutrition Security Division, Ministry of Agriculture Animal Industry & Fisheries

Stephen Biribonwa is Senior Agricultural Officer at the Ministry of Agriculture Animal Industry and Fisheries. He is active in the Uganda Multisectoral Food Security Nutrition Project-GAF SP and the Accelerated Nutrition Improvement project and was involved in the Early Childhood Development Policy; the National Anemia Prevention and Control Strategy; the National Food Fortification Strategy.

Contact: sbiribonwa@yahoo.com



Grünewald François (France)
Director-General - Groupe URD (Urgence - Réhabilitation-Développement)

François Grunewald is Director-General of the Group URD. He worked with the Inter-Agency Standing Committee for coordination of humanitarian assistance. He worked with non-governmental organizations, the United Nations and the International Committee of the Red Cross.

Contact: fgrunewald@urd.org



Gonzales Antonio (Guatemala)
Agroecological Movement of Latin America and the Caribbean (MAELA)

Contact: atunkuljay@gmail.com



Gungaa Munkhbolor (Mongolia)

Mongolian Alliance of Nomadic Indigenous People (MANIP)

Munkhbolor Gungaa (Bolor) is a Focal point of the World Alliance of Mobile Indigenous Peoples and the World Pastoralist Alliance in Central Asia and Mongolia. She participated in the Committee on World Food Security; the 2nd International Conference on Nutrition; Slowfood Indigenous Terra Madre; We Feed the Planet and the Global Agenda for Sustainable Livestock.

Contact: bolor_3095@yahoo.com



Diop Bouna (Italy)

Secretary of the FAO and OIE joint Global Secretariat for the Peste des petits ruminants Global Eradication Programme

Bouna A. Diop is Secretary of the FAO and OIE Joint Global Secretariat for the Peste des petits [sheep and goat plague] ruminants Global Eradication Programme. He served as the National Coordinator for PARC (Campaign for Rinderpest Eradication) in Senegal. He worked for African Union as Regional Coordinator for the Pan African Program for the Control of Epizootics for West and Central Africa.

Contact: Bouna.diop@fao.org



Hamadeh Shadi (Lebanon)

Director, Environment and Sustainable Development Unit - American University of Beirut

Shadi Hamadeh is a professor of animal sciences, Head of the Department of Agriculture and leader of the Environment and Sustainable Development Unit at the American University of Beirut. His research interests range from animal- environment interactions to sustainable food systems.

Contact: shamadeh@aub.edu.lb

FRIDAY 2 DECEMBER

PARALLEL SESSIONS: 9:00 – 11:15
SHEIKH ZAYED CENTRE

Chaired by **Eileen Kennedy** (USA)

Sub-theme 1: Supply side policies and measures for diversifying food production and increasing availability and affordability of nutritious foods for healthy diets

Session 1.3: Leveraging market opportunities for promoting healthy diets



Brunori Gianluca (Italy)
Professor, Department of Agriculture, Food and Environment, University of Pisa

Gianluca Brunori is full professor of Food Policy in the Department of Agriculture, Food and Environment at Pisa University. He served as President of the International Sociological Association's Research Committee 40 (Sociology of agriculture and food). He is involved in European-funded projects on farming, sustainability and food security.

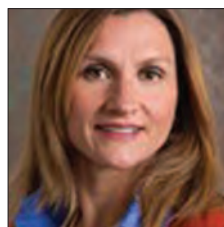
Contact: gianluca.brunori@unipi.it



Schmidhuber Josef
Deputy Director of the Trade and Markets Division - Food and Agricultural Organization of the United Nations (FAO)

Josef Schmidhuber is Deputy Director in the FAO Trade and Markets Division. He is co-author of *World agriculture: Towards 2015/2030*. He has published in numerous books, peer reviewed journals, or documents of the Organization for Economic Co-operation and Development (OECD), the Intergovernmental Panel on Climate Change (IPCC), and the FAO.

Contact: Josef.Schmidhuber@fao.org



Karpyn Allison (USA)
Associate Director, Center for Research in Education & Social Policy, Assistant Professor of Education - University of Delaware

Dr. Allison Karpyn is Senior Associate Director of the Center for Research in Education and Social Policy and Associate Professor in the Human Development and Family Studies Department at the University Delaware. Her publications cover programme evaluation, school food, supermarket access, food insecurity, healthy corner stores and farmer's markets in low income areas.

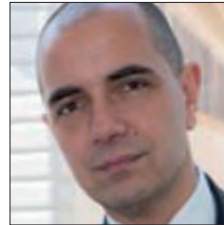
Contact: karpyn@udel.edu



Tayupanda Hermel (Ecuador)
Mayor of Colta

Hermel Tayupanda Cuvi is by profession a Mechanical Engineer, Civil Engineer, with a Master in Water Resources, a diploma in Project Management of Government Intervention, a Diploma in senior management in public administration as well as a Diploma in Leadership and Municipal Management. He is currently Executive Member of AME (Ecuadorian Municipalities Association), President of the Commonwealth of 3 cantons (Colta-Guamote-Alausi) and re-elected Mayor of the Canton of Colta.

Contact: gadcolta@municipiodecolta.gob.ec



Scordamaglia Luigi Pio (Italy)
President, Italian Food and Drink Industry Federation - FEDERALIMENTARE

Luigi Scordamaglia is CEO of INALCA Inc. and President of FEDERALIMENTARE, representing the Italian Food and Drink Industry. He is a leader in several international trade organizations. He was awarded the Knighthood of the Order of Merit of the Italian Republic. He studied veterinary science and received his PhD from the University of Perugia and he studied Corporate Finance and Management Control at the University of Modena.

Contact: presidenza@federalimentare.it



Dos Santos Dias Katia (Mozambique)
Country Director, Mozambique - Global Alliance for Improved Nutrition (GAIN)

Contact: ksdiass@gainhealth.org



Frigo Angela (Italy)
EU Liaison Officer, Fondazione Banco Alimentare Onlus

Angela Frigo is EU Liaison Officer for Fondazione Banco Alimentare Onlus, focusing on food waste and feeding deprived people in Italy. She advises on European legislation and policies and collaborates with the European Federation of Food Banks. She holds an Executive Master in European Union Studies from Université Libre de Bruxelles. Her Bachelor and Master's degrees are from the Università di Verona, Italy.

Contact: frigo@bancoalimentare.it

PARALLEL SESSIONS: 9:00 – 11:15
SHEIKH ZAYED CENTRE

Chaired by **Carlos Augusto Monteiro** (Brazil)

Sub-theme 2: Demand side policies and measures for increasing access and empowering consumers to choose healthy diets

Session 2.3: Increasing access to healthy diets through social protection and income generation strategies



Recine Elisabetta (Brazil)
National Food and Nutrition Security Council (CONSEA)

Elisabetta Recine is a professor at the University of Brasília, Department of Nutrition, Faculty of Health Sciences. She worked on the implementation of the Food and Nutrition National Policy (Ministry of Health – 2000-2003) where she led the process of preparing the first Brazilian food based dietary guidelines and the first edition of the Brazilian regional food atlas.

Contact: recine@unb.org



Alderman Harold (USA)
Senior Research Fellow - International Food Policy Research Institute (IFPRI)

Harold Alderman is Senior Research Fellow at IFPRI. He contributed to the Lancet reviews on Early Child Development and nutrition-sensitive nutrition investments. At the World Bank, he divided his time between the Development Research Group and the Africa region, where he advised on social protection policy.

Contact: H.Alderman@cgiar.org



Tuoane Ntitia (Lesotho)
Director of Field Services - Ministry of Agriculture and Food Security

Ntitia Tuoane is the Acting Director of the Department of Field Services in the Ministry of Agriculture and Food Security. He participates in the Smallholder Agricultural Development Project; Research and Extension Capacity Building; National Plant Genetic Resources; and Lesotho–Thai Cooperation Programme on Sustainable Agriculture.

Contact: ntitia@hotmail.com



Stepanyan Robert (Armenia)

Head of Development Programmes and Monitoring Department of the Ministry of Education

Robert Stepanyan is Head of Development Programs and Monitoring Department at the Ministry of Education and Science in Armenia. He is a member of the Technical Cooperation Group on the Indicators for SDG4: Education 2030. He is responsible for coordinating of Sustainable School Feeding Program development and expansion in Armenia.

Contact: r_stepanyan@edu.am



Zhao Wenhua (China)

Deputy Director, National Institute for Nutrition and Health - Chinese Center for Disease Control and Prevention

Wenhua Zhao was field director of the China National Nutrition and Health Survey in 2002 at the Institute of Nutrition and Food Safety and Director of the National Working Group of the 2010 China Chronic Disease and Behavior Risk Factors Surveillance at the National Center for Chronic and Non-communicable Disease Control and Prevention.

Contact: zhaowh@chinaccdc.cn



Saka Albert (Malawi)

Senior officer, Ministry of Education, Science and Technology

Albert Saka is coordinating the School Health and Nutrition Policy and the Malawi Homegrown School Meals Programme. He was a Nutritionist in the Ministry of Health, managing acute and moderate malnutrition in children <5 years old and pregnant and lactating mothers using WHO guidelines and promoting the Baby Friendly Hospital Initiative.

Contact: albertsakah@yahoo.com



Angell Sonia (USA)

Deputy Commissioner - New York City Department of Health and Mental Hygiene

Sonia Angell is Deputy Commissioner at the New York City Department of Health and Mental Hygiene, overseeing the Division of Prevention and Primary Care. She was a Senior Advisor for Global Noncommunicable Diseases at the US Centers for Disease Control and Prevention and directed the NYC DOHMH Cardiovascular Disease Program.

Contact: SANGELL@health.nyc.gov

PARALLEL SESSIONS: 9:00 – 11:15

GERMAN ROOM

Chaired by **Jessica Fanzo** (USA)

Sub-theme 3: Measures to strengthen accountability, resilience and equity within the food systems

Session 3.3: Empowering women as key drivers of food system change



Sibanda Lindiwe Majele (South Africa)
Chief Executive Officer and Head of Mission - Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN)

Lindiwe Majele Sibanda is Chief Executive Officer and Head of Mission for the Food, Agriculture and Natural Resources Policy Analysis Network. She is a commissioner for the EAT-Lancet Commission. She is leading a multi-country project on Agriculture to Nutrition (ATONU): Improving Nutrition Outcomes through Optimized Agricultural Investments.

Contact: LMSibanda@fanrpan.org



Sidykova Nodira (Tajikistan)
Director Legal Aid. Dushanbe

Nodira Sidykova Nasrullaevna is a land reform advocate and lawyer. She managed and contributed to USAID-funded public awareness initiatives and media outreach campaigns

providing female farmers with guidance on land-related rights and laws. She led efforts to protect farmers' land use rights in court during the Land Reform Project in Tajikistan.

Contact: sidnodira@rambler.ru



Duarte Medina Maria Luisa (Paraguay)
Cultural Advisor - Institute for the Indigenous Peoples of Paraguay (INDI)

María Luisa Duarte Medina (Uarukugi) belongs to CCNAGUA, the Indigenous Women's Network on Biodiversity in Latin America and the National Council of Indigenous Health. She was active in the Indigenous Partiality Association, the Peasant Movement Oñondivepá, the Native League for Autonomy and Democracy, the Organization of Leaders of the Lower Canindeyú; the Movement of Native People and Kuña Guaraní Aty.

Contact: buarukugi@hotmail.com



Marquis Grace (Canada)
School of Dietetics and Human Nutrition - McGill University

Grace S Marquis works at the School of Dietetics and Human Nutrition at McGill University. Her community-based research examines interactions of social, cultural, biological, and environmental factors and their influence on households' abilities to provide

optimal feeding and caregiving for young children. She has worked in Peru and Ghana.

Contact: grace.marquis@mcgill.ca



Anid Dominique (Lebanon)
Executive Secretary and Treasurer - The Food Heritage Foundation

Dominique Anid works at the Environment and Sustainable Development Unit, Faculty of Agricultural and Food Sciences of the American University of Beirut. She led nutrition and food security projects, focusing on Community Kitchens. She co-founded The Food Heritage Foundation that revives the traditional cuisine and promotes rural producers' livelihoods.

Contact: dominique.anid@food-heritage.org



Monsieur Christiane (Italy)
Dimitra Project Coordinator - Food and Agriculture Organization of the United Nations (FAO)

Christiane Monsieur is the Coordinator of the FAO-Dimitra Project at the Food and Agriculture Organization of the United Nations (Social Policies and Rural Institutions Division). She has over 20 years of professional experience working with FAO and other Rome-based UN organizations (WFP and IFAD) in the sector of gender and rural development, notably on participatory methodologies, communication and capacity development in sub-Saharan Africa.

Contact: Christiane.Monsieur@fao.org

FAO/WHO INTERNATIONAL SYMPOSIUM

SUSTAINABLE FOOD SYSTEMS FOR HEALTHY DIETS AND IMPROVED NUTRITION

**1-2 DECEMBER 2016
FAO HEADQUARTERS, ROME**

SPECIAL EVENTS

SPEAKERS' BIOGRAPHIES

SPOTLIGHT ON "ENGAGING WITH CHEFS FOR HEALTHY DIETS"

SHEIKH ZAYED CENTRE
2 December – 14:00 – 14:30



Chandler Jenny (United Kingdom)
FAO Special Ambassador for International Year of Pulses

Jenny Chandler is a UK based cook, food journalist, blogger and cookery teacher. Passionate about the role of pulses in healthy, modern, balanced diets, she published an illustrated cookbook "Pulses" which includes 180 pulse recipes. Jenny regularly demonstrates pulse recipes at Europe's foremost food market, London's Borough Market. She has also been working with the U.K.

IYP Promotion Group on UK Signature Recipe (home-cooked British Baked Beans with variations) and Public Health England for uncomplicated pulse recipes to feature on the UK "Change 4 Life" website in 2016.

Jenny Chandler was appointed FAO Special Ambassador for the International Year of Pulses in Europe in June 2016.

Contact: <http://jennychandlerblog.com/>

SPOTLIGHT ON "WHAT I EAT: AROUND THE WORLD IN 80 DIETS"

SHEIKH ZAYED CENTRE

2 December – 14:30 – 15:00



Peter Menzel and Faith D'Aluisio (USA)

Photojournalist Peter Menzel is known for his coverage of international feature stories on food issues, culture, science, and the environment. His award-winning photographs have been published in *National Geographic*, *Smithsonian*, *the New York Times Magazine*, *Time*, *Stern*, and *GEO*. He has received both World Press and Picture of the Year awards and has authored seven books, most recently, *What I Eat: Around the World in 80 Diets*, with his wife Faith D'Aluisio.

Faith D'Aluisio, a former television news producer, is editor and lead writer for the award-winning Material World Books series, an imprint of Ten Speed Press/Crown Books/Random House. She and Peter Menzel received the James Beard Foundation

Award in 1999 for Best Book: Reference and Writing on Food, for *Man Eating Bugs: The Art and Science of Eating Insects*. In 2005 the James Beard Foundation awarded their book *Hungry Planet: What the World Eats* Best Book of the Year and Best Book: Reference and Writing on Food.

Peter Menzel and Faith D'Aluisio are the co-creators of several other award-winning books - *Material World: A Global Family Portrait*; and *Women in the Material World*; *Robo sapiens: Evolution of a New Species*; and a children's version of *Hungry Planet* called *What the World Eats*.

In 2011 their most recent book *What I Eat: Around the World in 80 Diets* was awarded the Jane Grigson Award by the IACP, the International Association of Culinary Professionals. The first of several museum exhibits featuring *What I Eat* premiered in 2012 at the Boston Museum of Science, and at the Food and Agriculture Organization of the United Nations in Rome. In 2013, *Hungry Planet: What the World Eats*, began a run as the featured solo exhibit at the Nobel Peace Center in Oslo, Norway, and it continued into 2014.

Contact: www.menzelphoto.com

UNITED NATIONS DECADE OF
ACTION ON NUTRITION

2016-2025

International Advisory Panel members

Randy Duckworth (United States) – Executive Director of the Global Pulse Confederation.

Jessica Fanzo (United States) – Bloomberg Distinguished Associate Professor of Global Food and Agriculture Policy and Ethics at the Berman Institute of Bioethics, the Nitze School of Advanced International Studies, and the Bloomberg School of Public Health at the Johns Hopkins University.

Majid Hajifaraji (Islamic Republic of Iran) – Research Associate Professor in Nutritional Sciences of the National Nutrition and Food Technology Research Institute, and President of Iranian Nutrition Society from 2011–2015.

Shadi Hamadeh (Lebanon) – Professor of animal sciences at the American University of Beirut since 1988.

Florence Lasbennes (France) – Director of the Scaling Up Nutrition (SUN) Movement Secretariat. She was head of the unit for Food Security and Economic Development in the French Ministry of Foreign Affairs and the coordinator of the French interministerial group on food security, set up in 2008.

Carlos Augusto Monteiro (Brazil) – Professor of Nutrition and Public Health at the School of Public Health, University of São Paulo.

Dmitry Nikity (Russian Federation) – Professor, MD, Director, Russian Institute of Nutrition.

Andrea Pezzana (Italy) – Director, Department of Clinical Nutrition, San Giovanni Antica Sede Hospital, Turin (1993–2009) and San Giovanni Bosco Hospital, Turin (2009–2016).

Stefano Prato (Italy) – Managing Director of the Society for International Development (SID) and the Editor of SID's quarterly journal *Development*. He is one of the coordinating members of the global ICN2/Nutrition Civil Society Group and member of the Editorial Board of the Right to Food Watch.

Boyd Swinburn (Australia) – Professor of Population Nutrition and Global Health at the University of Auckland, New Zealand, and Alfred Deakin Professor and Co-Director of the World Health Organization (WHO) Collaborating Centre for Obesity Prevention at Deakin University, Melbourne, Australia.

Julia Tagwireyi (Zimbabwe) – International independent consultant in programme planning and management, institutional and capacity development for nutrition, food and nutrition policy development, intersectoral coordination and advocacy.

Wenhua Zhao (China) – Professor in Nutrition and Public Health, Deputy Director, National Institute for Nutrition and Health Chinese Center for Disease Control and Prevention (CDC).

Ren Wang (Food and Agriculture Organization of the United Nations [FAO]) – Assistant Director-General of FAO's Agriculture and Consumer Protection Department. Washington, DC, United States.

Technical Task Team Members

<i>Institution</i>	<i>Name</i>
WHO	Chizuru Nishida (NHD) Marzella Wüstefeld (NHD)
FAO	Terri Ballard (ESS) Karel Callens (SP1) Rosa Rolle (ESN) Catherine LeClercq (ESN) Coumba Sow (ODG)
WFP	Fatiha Terki
IFAD	Wafaa El Khoury
IFPRI	James Garrett
Bioversity	Gina Kennedy
UNICEF	France Begin
UNSCN	Stineke Oenema
BMGF	Shelly Sundberg
World Bank	Steven Jaffee
<i>Observers</i>	Nancy Walters (REACH) Anna Herforth (Earth Institute, Columbia University)
<i>Secretariat</i>	Anna Lartey (Director, ESN, FAO) Francesco Branca (Director, NHD, WHO) Denise C. Coitinho Delmuè (Symposium Coordinator, ESN, FAO)

Logistics Task Team Members

Guenter Hemrich (ESN),
Logistics Task Team Coordinator

Denise C. Coitinho Delmuè (ESN),
Symposium Coordinator

Rafael Rodriguez (CPAP)

Paola Dini (CPAP)

Gabriella Piacentini (CPAC)

Sergio Ferraro (CPAM)

Rebecca Andarias (CSAI)

Raffaella Rucci (OCC)

Clara Velez Fraga (OCCO)

Myrto Arvaniti (OCCO)

Katia Meloni (OCCO)

Guido Chieffalo (OCCO)

Francesca Locatelli (DPS)

Ivan Bentivegna (CIO)

Stefano Graziosi (CIO)

Massimo Albanesi (CSAI)

Jean-Philippe Decraene (CSAI)

Piervito Muscaridola (DDOS)

Chiara Deligia (ESN)

Giuseppina Di Felice (ESN)

Joanna Lyons (ESN)

Secretariat

Symposium leadership

Kostas Stamoulis, Assistant Director-General, Economic and Social Development Department, FAO

Anna Lartey, Director, Nutrition and Food Systems Division (ESN), FAO

Francesco Branca, Director, Nutrition for Health and Development Department (NHD), WHO

Guenter Hemrich, Deputy Director, ESN, FAO

Symposium overall coordinator

Denise C. Coitinho Delmuè, Senior Nutrition and Food Systems Consultant, Nutrition and Food Systems Division, FAO

Symposium overall coordinating team

Marzella Wüstefeld, Technical Officer, NHD, WHO

Leslie Amoroso, ICN2 Follow-up Officer, ESN, FAO

Chiara Deligia, Communication Expert, ESN, FAO

Véronique De Schutter, Communications Consultant, ESN, FAO

Jorge Fonseca, Agro-Industry Officer, ESN, FAO

Trudy Wijnhoven, Nutrition Officer, ESN, FAO

Giuseppina Di Felice, Assistant, Office to the Director, ESN, FAO

Symposium overall supporting team

Indre Baublyte, Assistant, Office to the Director, ESN, FAO

MilitezeggaAbduk Mostafa, Consultant, ESN, FAO

Sarah Levesque, Consultant, ESN, FAO

Gabriele Iallussi, Consultant ESN, FAO

Francesca Locatelli, Partnerships Consultant, OPCP, FAO

Joanna Lyons, Budget Clerk, ESN, FAO

Lydie Ange Gahama, Operations Officer, ESN, FAO

Ryan Brown, Intern, ESN, FAO

Donna Kilcawley, Office Assistant, ESN, FAO

Federica Pagnottella, Office Assistant, ESN, FAO

Natascia Alessi, Office Assistant, ESN, FAO

Michele Rude, Office Assistant, ESN, FAO

Claudia Bastar Castro, Office Assistant, ESN, FAO

Symposium Subtheme 1 Chair and sessions supporting persons (CSPs) and team

Florence Tartanac (CSP), Senior Officer, ESN, FAO

Fatima Hachem (CSP), Senior Officer, ESN, FAO

The CSPs were supported in their task by **Israel Klug**, ESN, FAO

Note takers for Subtheme 1 sessions

Ruth Charrondièrè, Food Composition Officer, ESN, FAO

Sergio Dahdouh Cabia, Intern, ESN, FAO

Sarah Najera Espinosa, Intern, ESN, FAO

Doris Rittenschober, Consultant, ESN, FAO

Maria Xipsiti, Nutrition Assessment Officer, ESN, FAO

Yvette Fautsch, Officer, ESN, FAO

Ayurzna Puntasagdavaa, Network Consultant, ESN, FAO

Symposium Subtheme 2 Chair and sessions supporting persons (CSPs) and team

Ana Islas (CSP), Officer, ESN, FAO

Rosa Rolle (CSP), Senior Officer, ESN, FAO

The CSPs were supported in their task by **Andrea Polo Galante**, Consultant, ESN, FAO

Note takers for Subtheme 2 sessions

Dalia Mattioni, Food Systems Consultant, ESN, FAO

Giorgia Nicolo, Consultant, ESN, FAO

Ashraf Khosravi, Intern, ESN, FAO

Trudy Wijnhoven, Nutrition Officer, ESN, FAO

Ahmed Raza, Social protection Junior Professional Officer, ESN, FAO

Jessica Owens, Social Protection and Nutrition Consultant, ESP, FAO

Symposium Subtheme 3 Chair and sessions supporting persons (CSPs) and team

Charlotte Dufour (CSP), Officer, ESN, FAO

Ramani Wijesinha Bettoni (CSP), Officer, ESN, FAO

The CSPs were supported in their task by **Leslie Amoroso**, Officer, ESN, FAO

Note takers For Subtheme 3 sessions

Matthias Leitner, Consultant, ESN, FAO

Alessandra Mora, United Nations System Standing Committee on Nutrition (UNSCN)

Domitille Kauffmann, Nutrition & Resilience and Capacity Development Consultant, ESN, FAO

Melissa Vargas, Consultant, ESN, FAO

Bianca Carlesi, Communication Consultant, ESN, FAO

Christine Campeau, UNSCN

Note takers for High-level opening and closing and plenary sessions

Boitshepo Giyose, Senior Officer, ESN, FAO

Adelheide Onyango, Regional Nutrition Advisor for Africa, WHO

Lina Mahy, Technical Officer, NHD, WHO

Trudy Wijnhoven, Nutrition Officer, ESN, FAO

Janice Meerman, Consultant, ESN, FAO

Student Session support team

Kakoli Gosh, Coordinator, OPCP, FAO

Yenory Hernandez Garbanzo, Officer, ESN, FAO

Marie Caroline Dode, Policy Analysis Consultant, ESN, FAO

Kaia Engesveen, Technical Officer, NHD, WHO

Deborah Badombena Wanta, Intern, ESN, FAO

Ashraf Khosravi, Intern, ESN, FAO

Special events and communication support

Chiara Deligia, Communication Expert, ESN, FAO

UNITED NATIONS DECADE OF
ACTION ON NUTRITION

2016-2025

ISBN 978-92-5-130474-7



9 789251304747
I9025EN/1/03.18

