

3RD INTERNATIONAL CONFERENCE ON GLOBAL FOOD SECURITY

GLOBAL CHALLENGES, LOCAL SOLUTIONS AND CONNECTED PATHWAYS

GLOBAL CHALLENGE

The triple burden of malnutrition affects all countries in the world

Malnutrition, including over- and under-nutrition and micro-nutrient deficiencies, is the top contributor to the global disease burden. Globally, 800 million people are under-nourished, 2 billion are overweight or obese and 2 billion are micronutrient deficient.

The vast majority of the world's hungry live in developing countries. Southern Asia faces the greatest hunger burden, with about 281 million undernourished people. In sub-Saharan Africa, the current rate of undernourishment is currently around 23 per cent. Despite decreasing under-nutrition, levels remain unacceptably high.

Despite improved food access at all income levels, diet quality is declining. Notwithstanding recent food production increases, nutritious foods remain unaffordable for many. The consequences are severe; poor nutrition causes nearly half the deaths in children under five, and one in four children suffer stunted growth; 66 million primary school-age children attend classes hungry across the developing world, with 23 million in Africa alone. Without policy changes, obesity will increase in

LOCAL SOLUTIONS

When it comes to ensuring food security and sustainable agriculture, there simply is no one size fits all. Many interventions which have attempted to address the challenges of food security have not considered adequately complexity of the problem nor the need for locally-driven solutions. **The 3rd International Conference on Global Food Security has intentionally included a focus on local solutions** in its thematic approach for this very reason.

all countries and reach 3.28 billion by 2030, increasing non-communicable disease prevalence and health costs.

Sustainable agriculture is the foundation of food security and has the potential to secure livelihoods

Agriculture is the single largest employer in the world, providing livelihoods for 40 per cent of today's global population and it is the largest source of income and jobs for poor rural households. Investing in smallholder farmers is an important way to increase food security and nutrition for the poorest, as well as food production for local and global markets.

However, providing food and securing livelihoods must be done in a manner which does not compromise the environment. Since the 1900s, some 75 per cent of crop diversity has been lost from farmers' fields. Better use of agricultural biodiversity can contribute to more nutritious diets, enhanced livelihoods for farming communities and more resilient and sustainable farming systems.

CONNECTED PATHWAYS

Another reason why solutions to the challenge of food security have proven elusive is the failure to consider issues from a systemic approach, a food systems approach – from field to fork – is needed to find viable solutions. In addition, the interrelated nature of the SDGs clearly illustrates a reorientation towards complexity thinking and the need to consider the interrelated nature of the various ecological and social systems which intersect and must be considered in relationship to each other. **The Conference themes have been explicitly selected to provide spaces for dialogues that acknowledge complexity.**

CROSS-CUTTING CONCERNS

Demographic shifts must influence approaches to food and nutrition security

General population megatrends have far-reaching implications for sustainability. As the world population continues to grow for decades to come, it is anticipated that by 2050, the world needs to produce at least 50 percent more food than it does today. Populations are also increasingly moving to urban areas, and by 2030 it is projected that 6 out of 10 people will be urban dwellers.

High-income and rising-income countries, are experiencing slow population growth or no population growth at all. Whereas developing countries continue to have large, growing, populations of young people (known as the youth bulge). Pertinently, the African Union Heads of State and Government declared the theme for 2017 as 'Harnessing the Demographic Dividend through Investments in Youth'. These shifts in population will bring challenges, but they also represent opportunities which need to be harnessed.

These trends affect economic development, employment, income distribution, poverty and social protections. They also affect efforts to ensure universal access to health care, education, housing, sanitation, water, food and energy. To more sustainably address the needs of individuals, science must consider populations in its academic endeavours. **The cross-cutting theme of Societal Dynamics calls on its participants to consider the five themes with a demographic lens.**

Innovation and technology can be catalysts for transformative change

Bill and Melinda Gates made their "big bet" that Africa will be able to feed itself by 2030 – an ideal which will only be attainable by accelerating the rate of innovation and access to agricultural extension services for smallholder farmers.

Innovation broadly defined, includes the implementation of "new or improved" things (whether technology or otherwise) in products (goods or services), processes, or organizational methods. It is context-specific, in that it involves applying ideas, knowledge or practices that are new to a particular context with the purpose of creating positive change that will take on challenges or seize opportunities.

This cross-cutting theme encourages the innovators and maverick thinkers along the food system to share their innovations – whether technological, social or institutional.

The gender agenda is a developmental imperative

Women prepare up to 90 per cent of meals in households around the world, yet during hard times, women and girls may be the first to eat less. In poor households, women are less likely to get the nutrients they need, including to manage the demands of pregnancy and breastfeeding. Gender inequality intersects with inadequate health care, insufficient education and limited income to drive these inequalities.

Inequities in food consumption are in stark contrast to women's role in agricultural production. Women comprise on average 43 per cent of the agricultural labour force in developing countries, and over 50 per cent in parts of Asia and Africa. Yet their contribution to food security remains restricted by unequal access to land and other productive assets. If women farmers had the same access to resources as men, the number of hungry in the world could be reduced by up to 150 million. **Hosted for the first time on the African continent, and marking the significant role of African women in Agriculture, this cross-cutting theme focuses discussions on eliminating gender inequality in all its form in the food system.**

THE FIVE CORE CONFERENCE THEMES REFLECT AN INTEGRATED APPROACH TO IDENTIFYING SOLUTIONS TO THE COMPLEX GLOBAL CHALLENGE OF FOOD SECURITY

Each of the conference themes, presented in tabular form on the following pages, have been organised according to core aspects for discussion with associated subthemes. Cutting across each of these five themes are the three concerns – societal change, innovation and technology, and gender. In addition, to illustrate the interconnected nature and relevance of each theme, the SDGs linked to a particular theme are summarised in the table.

An example of the thematic table is illustrated below:

THEME	CORE ASPECTS	SUB-THEMES	CROSS-CUTTING ISSUES			SDG ALIGNMENT
THEME NAME	The core aspects indicate the key topical areas for discussion.	The sub-themes outline the areas of interest within the core aspects.	The cross-cutting issues highlight the core intersections between global trends and the specific thematic areas. Oral presentations will be selected based on their direct relevance to the key topical areas, with a focus on including representation across all the cross-cutting issues.			Each of the thematic areas selected for the conference have been linked to one or more of the Sustainable Development Goals (SDGs). The SDGs articulate our shared global challenges and the focus of the conference is on identifying local solutions and solutions that are interconnected and contribute to solving the challenges related to one goal without compromising the others.
	Each of the core aspects outlines the primary issues which will be discussed in the oral presentations within the theme.	Paper presentations covering any of the sub-themes will be considered if they are directly linked to one or more of the core aspects.	Innovation Technological, social, systemic or institutional.	Societal Dynamics Population demographics, urbanisation etc.	Gender Under-resourced and vulnerable women in the food system.	

Knowledge sharing and ideas cross-fertilisation: The purpose of this integrated approach is to ensure that the Conference creates platforms for dialogue that are truly multi- and interdisciplinary in their focus, allowing disciplinary experts to present their work on platforms that cut across boundaries.

Fresh ideas and new networks for collaboration: The themed approach of the conference aims to provide exposure to participants to a wide range of approaches, opportunities and networks, which in turn have the potential to lead to new and creative ideas or partnerships. Designers of new technologies are brought into conversation with gender specialists and technical disciplinary experts are exposed to alternative approaches in thinking. The potential synergy of this is catalytic.

Challenging thinkers to make new connections: The cross-cutting themes create a channel through which local approaches to the topical areas under discussion can be showcased. At the same time, the integrated nature of the themes is a challenge to potential participants to think about their work in the context of its relevance to the SDGs. The challenge is for the academic community increasingly towards a connected approach to fixing the food system.

ONE

CORE ASPECTS

SUB-THEMES

CROSS-CUTTING ISSUES

SDG ALIGNMENT

The core aspects indicate the key topical areas for discussion.

The sub-themes outline the areas of interest within the core aspects.

The cross-cutting issues highlight the core intersections between global trends and the specific thematic areas.

Each of the thematic areas selected for the conference have been linked to one or more of the Sustainable Development Goals (SDGs).

Innovation

Societal Dynamics

Gender



FOOD CREATION

	Farm-Save-Seed	
Sustainable intensification	Plants for Food	
Water-energy-food nexus	Livestock Systems	
Climate change	Fish Harvesting	
Agricultural production systems.	Food Production	
	The politics of food production	

New technologies and innovative approaches that help to overcome the core challenges associated with food creation.

Strategies for managing food security in the context of shifting demographics.

The role of women in food production systems – challenges, successes and innovative approaches.

Example: A session on the impact of **CLIMATE CHANGE** in the context of **INTEGRATED CROPS SYSTEMS** could include a presentation on successful approaches to improving **the role of women** in crop production systems, a presentation on **technologies to improve crop yields** without compromising water availability in surrounding communities and a presentation on **innovative programmes to increase youth participation** in agricultural production through agri-preneurship.

THEME COORDINATOR:

Professor Ndiko Ludidi, Management Committee, Centre of Excellence in Food Security, University of Western Cape

SUPPORTED BY:

Professor Voster Muchenje, SARChI Research Chair, University of Fort Hare

Dr Siboniso Moyo, Program Leader, International Livestock Research Institute

TWO

CORE

SUB-THEMES

CROSS-CUTTING ISSUES

SDG ALIGNMENT

FOOD SAFETY &
BIO SECURITY

The core aspects indicate the key topical areas for discussion.

The sub-themes outline the areas of interest within the core aspects.

The cross-cutting issues highlight the core intersections between global trends and the specific thematic areas.

Each of the thematic areas selected for the conference have been linked to one or more of the Sustainable Development Goals (SDGs).

Innovation

Societal Dynamics

Gender

Potable water for food production

Sanitary and Phytosanitary challenges

Technologies to more rapidly detect hazards in diverse environments & food matrixes.

Social, economic, demographic, trade and political impact on biosecurity and SPS.

Reviving indigenous food safety knowledge.



Soil and plant health

Emerging Foodborne Pathogens

Chemicals in the food chain

Food trade wars.

Women as traditional custodians of safe food.

One Health

Antibiotic resistance in agricultural systems

Next generation metagenomics, plant microbiomes and big data to address one health and food safety.

Impact of food standards.

Female capacity building in technical & regulatory fields of plant health and food safety.



Bio-security

Biological and natural crop protectants

Fairness of global trade in the context of regulations and SPS Agreements.

Food Safety

Risk assessment in plant, animal and public health, as well as in food safety

Example: Transdisciplinary focus on foodborne pathogens within the water-plant-food-animal and human health nexus. Microbes know no boundaries and migrate between water, soil, plant, animal and human cut habitats sharing genetic traits that impact on human health and wellbeing. Antibiotic resistance and virulence genes are moving within microbial populations in ecosystems and impact on agricultural production, food safety and human health. Showing the linkages between the different systems will provide innovative solutions using novel technologies for sustainable food security, health and well-being.

THEME COORDINATOR:

Professor Voster Muchenje, SARChI Research Chair, University of Fort Hare



SUPPORTED BY:

Professor Lise Korsten, Co-Director CoE Food Security, University of Pretoria

Dr Moses Osiru, Deputy Executive Director, Regional Universities Forum (RUFORUM), Uganda

THREE CORE SUB-THEMES CROSS-CUTTING ISSUES SDG ALIGNMENT

FOOD LOSS AND WASTE

The core aspects indicate the key topical areas for discussion.	The sub-themes outline the areas of interest within the core aspects.	The cross-cutting issues highlight the core intersections between global trends and the specific thematic areas.			Each of the thematic areas selected for the conference have been linked to one or more of the Sustainable Development Goals (SDGs).
		Innovation	Societal Dynamics	Gender	
		Economic models to assess and predict losses.	Indigenous knowledge to save food.	Empowering women in food decisions to reduce losses and waste.	
		Technical and social innovation for loss and waste reduction.	Slow food	Enable women as homemakers to use traditional knowledge linked with smart food decisions to purchase, store and prepare food with minimal waste and nutritional loss.	
		Managing the cold chain and distribution- and storage systems to reduce waste.	Social dynamics.		
Farm-to-Fork losses	Low yield and crop losses The lost harvest				 
Postharvest losses	Food rot, decay and waste Food destruction				
Food waste	Sell-by-date food “losses” Economic impact of losses		Urban food gardens.		
Post-consumption waste	Nutritional food losses				
Example: Actual food waste and losses has a significant economic impact on the health and wealth of society. Linking losses throughout the supply chain and establishing innovative models to reduce waste can empower governments and woman to feed families and the nation. How losses link across many spectrums of society reflect on the urgency to address this critical element if true food security is to be achieved.					









THEME COORDINATOR:



Professor Lise Korsten, Co-Director CoE Food Security, University of Pretoria

SUPPORTED BY:

Professor Julian May, Director CoE Food Security, University of the Western Cape

Professor Hettie Schöenfeldt, Department of Animal and Wildlife Sciences, University of Pretoria (TBC)

FOOD IN A CHANGING SOCIETY	FOUR	CORE	SUB-THEMES	CROSS-CUTTING ISSUES			SDG ALIGNMENT
		The core aspects indicate the key topical areas for discussion.	The sub-themes outline the areas of interest within the core aspects.	The cross-cutting issues highlight the core intersections between global trends and the specific thematic areas.			Each of the thematic areas has been linked to one or more of the SDGs.
				Innovation	Societal Dynamics	Gender	
		Food sovereignty and the democratisation of food	Public policy and governance	Innovative approaches to govern, agri-business-science-community approaches, or protecting sustainable livelihoods.	Policies, strategies and practices to ensure food security in a rapidly urbanising society with vulnerable sub-groups such as waste pickers, the homeless, child families and the urban poor including rural poverty and exclusion.	Enhancing the role of women in the governance of food, strengthen their role in agri-business and approaches to empower women in family nutritional security.	   
		Social Protection	Agri-Business-Science-Community approaches				   
		Food access and markets	Value chain approaches				
		Sustainable livelihoods	Poverty and inequality				 
		Human capital development					
		Example: A session on the impact of SUSTAINABLE LIVELIHOODS could include a presentation on successful POLICIES AND PRACTICES to improving the role of women in decision making processes at community and local government level, a presentation on a successful agri-business-science-community project which focused on market access for rural women farmers and propose innovative models of urban food management.					
		THEME COORDINATOR:	Dr Joyce Thamaga-Chitja, African Centre for Food Security, University of Kwazulu-Natal				
		SUPPORTED BY:	Professor Lorenzo Fioramonti, Director Centre for the Study of Governance Innovation, University of Pretoria				
			Professor Andreis du Toit, CoE Food Security, University of the Western Cape				

FOOD UTILISATION	FIVE	CORE ASPECTS	SUB-THEMES	CROSS-CUTTING ISSUES			SDG ALIGNMENT					
		The core aspects indicate the key topical areas for discussion.	The sub-themes outline the areas of interest within the core aspects.	The cross-cutting issues highlight the core intersections between global trends and the specific thematic areas.			Each of the thematic areas has been linked to one or more of the SDGs.					
				Innovation	Societal Dynamics	Gender						
		Smart Foods	Smart Food technology & indigenous foods	Innovative approaches and technologies to improve food quality, nutritional content, palatability and shelf-life. Food knowledge; traditional foods, food cultures, ethical food, food values etc.	Foodways, nutrition and health in the context of shifting demographics and changing diets.	The role of women and men in food choices, preparation consumption, custodianship and expertise.	<div><div>9</div><div>INDUSTRY, INNOVATION AND INFRASTRUCTURE</div><div></div></div> <div><div>17</div><div>PARTNERSHIPS FOR THE GOALS</div><div></div></div>					
		Nutrition security	Under-nutrition, hidden hunger and obesity									
		Water, sanitation and hygiene	Maternal health and child development									
		Food literacies, cultures and politics	Environmental enteropathy and the physiology of nutrition									
			Informality and the urban food system									
			Contesting food security									
		Public Health										
		EXAMPLE: A session on Water Sanitation and Health could use a gendered lens to link falling prevalence of exclusive breastfeeding to urban food environments that are both risky due to poor WASH, and that encourage early weaning of infants, proposing ways in which information technologies can foster choices that are likely to result in better nutrition outcomes										
		THEME COORDINATOR:	Professor Julian May, Director CoE Food Security, University of the Western Cape									
		SUPPORTED BY:	Professor Rina Swart, Deputy Dean of the Faculty of Community and Health Sciences, University of the Western Cape (TBC) Professor Naushad Emmambux, Food Science, University of Pretoria									