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&

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Food system innovations for sustainable nutrition


A new paradigm – “sustainable nutrition” – has emerged where distinct streams of scientific discourse are beginning to overlap: in global change, environmental science, agriculture, food security, nutrition, sustainable development, and public health. A broadening of perspective has accompanied this new way of thinking, which holistically considers overall food system performance, as measured by economic, environmental, societal, nutrition, and health outcomes. This systems approach includes analysis of entire food supply chains: beginning with the production of essential agricultural inputs, animal and crop farm operations, fisheries and aquaculture, processing, storage, distribution, preparation, consumption, and ending with waste disposal. Four key actions are needed to achieve sustainable nutrition: (1) carefully define terminology and agree upon quantifiable measures, metrics, and methods of assessing its status; (2) bridge the gap between the ability to characterize national-scale food system performance and the diet and health of individuals, by gender, age, and socio-economic status; (3) better coordinate and resource the efforts now underway at local and regional levels to enhance sustainable nutrition; and (4) facilitate consensus-building across the full spectrum of food system stakeholders on the trans-sectoral, ethically-based innovations that are needed across entire food supply chains in order to attain sustainable

nutrition. With regard to the first of these points, a set of seven comprehensive national food system performance metrics (food nutrient adequacy, ecosystem stability, food affordability and availability, sociocultural wellbeing, food safety, resilience, and waste & loss reduction) has recently been developed and applied globally. These metrics can be used to monitor progress within individual countries, as innovations are pursued that are intended to enhance sustainable nutrition, such as: boost fruit & vegetable consumption in a sustainable manner; invest in novel food production technologies; and explore the use of smart-phone App’s to help optimize diets for both nutrition and sustainability outcomes.

Speaker Biography

David I Gustafson is an independent scientist who uses modeling to help food systems meet human nutrition needs in more sustainable ways. His academic training was in chemical engineering (Stanford, B.S., 1980; University of Washington, Ph.D., 1983). He worked 30 years in private industry (Shell, Rhône-Poulenc, Monsanto), and then served at the ILSI Research Foundation as Director of the Center for Integrated Modeling of Sustainable Agriculture and Nutrition Security (CIMSANS) through 2016. His early career focused on predicting agricultural impacts on water quality. He subsequently developed new modeling approaches to pollen-mediated gene flow and the population genetics of insect and weed resistance. Beginning in 2007, Dave began leading efforts to understand climate adaptation and mitigation imperatives in the global agri-food system. He has served on various national and international teams looking at this issue, including the Executive Secretariat of the US Government’s National Climate Assessment Development & Advisory Committee (2011-2014).

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