The world's food systems face an escalating challenge to meet accelerating demand for sustainably-produced, nutritious food in the face of climate change, human population pressure, resource scarcity, and ecosystem preservation. About 1 billion people lack sufficient food and another 2 billion suffer from micronutrient deficiencies.

Paradoxically, more than 2 billion adults are overweight, of which 500 million are obese. It is clear that actions are needed, but how can we reliably choose the path forward having the best overall outcomes, considering both human nutritional needs and sustainability requirements? We must have quantifiable metrics in order to identify areas of greatest current and future concern, to set meaningful goals, and to track progress.

The ILSI Research Foundation Center for Integrated Modeling of Sustainable Agriculture and Nutrition Security (CIMSANS) is fostering new public/private partnerships on novel food system modeling metrics, intended to better inform adaptation to the increasing impacts of climate change and resource scarcity on sustainable nutrition security (SNS). An important first step in this work took place on February 17, when 40 agriculture and nutrition scientists from public sector, governmental and private sector organizations attended a CIMSANS workshop in Washington DC.

The purpose of the workshop was to allow a broad set of stakeholders to agree upon a set of seven novel food system metrics and how they should be quantified for use in planned food system assessments.

Presentations
The meeting commenced with a series of context-setting presentations relevant to food system metrics. Four experts shared examples of useful tools for quantifying agricultural sustainability and nutrition security. Martijn Gipmans (BASF) presented AgBalance™, a tool used to assess the environmental and socio-economic sustainability of agricultural systems. Gerard Kramer (Blonk Consultants) illustrated Optimeal™, which optimizes Dutch diets according to various nutrition and environmental sustainability constraints. Sherman Robinson (IFPRI) discussed how their sophisticated economic simulation model, IMPACT, could be enhanced through the use of food system metrics to assess nutrition and sustainability outcomes. Anne Roulin and Karen Cooper (both with Nestlé) presented first new examples on the use of IMPACT model results in combination with such food system metrics.

Lastly, John Ingram (Oxford) gave a brief update on the plan of work for SUSFANS (Metrics, Models and Foresight for European SUSTainable Food And Nutrition Security), a highly relevant new food systems modeling initiative now being launched by the European Union as part of “Horizon 2020.”
The International Life Sciences Institute Research Foundation (ILSI Research Foundation) is a non-profit organization with a mission to improve environmental sustainability and human health by advancing science to address real world problems. Learn more here.

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