VISION AND OBJECTIVES

The vision of the FtF Sustainable Intensification Innovation Lab (SIIL) is to become a world leader in interdisciplinary research, knowledge sharing, and capacity-building on sustainable intensification with measurable impacts on reducing global hunger and poverty and improving nutrition of smallholder farmers.

Objectives:

1. Use geospatial tools to identify SI needs, opportunities for intervention, scaling and to assess impact.

   Activities: Map data (ecology, resources, available technologies, and biophysical and socio-economic conditions); identify geographical regions and research technologies with a high potential for SI; prioritize research areas according to the greatest impact on enhancing food security and nutrition; determine strategies for project implementation, geospatially track the adoption and diffusion of technologies and their impacts on economic, social and environmental goals.

   Outcomes: Much improved understanding of ongoing intensification spatio-temporal patterns and projects and opportunities for and constraints to SI (including gender-specific opportunities and constraints). Useful information for preparing the RFAs and selecting the research portfolio and geography including databases, monitoring and evaluation of ongoing activities, identification and evaluation of technologies across scales, and ability to track adoption and diffusion of SI practices across scales.

   Areas of inquiry: Stocktaking, mapping, analysis, and guidance using geospatial analysis, remote sensing, survey and modeling (crop, household, and higher scales), and linking SI impacts across spatial scales.

2. Improve nutrition using integrated and environmentally sustainable technologies (nutrition-sensitive agriculture).

   Activities: Farming systems research focusing on integration of livestock; intensive cropping systems; effective land, soil, nutrient and water management (improve resource use efficiency); climate-smart and resilient crop production systems; increased biodiversity; enhanced nutritional value; and enhancing ecosystem services.

   Outcomes: A portfolio of successful SI practices/farming systems; enhanced knowledge of climate-smart and resilient farming systems; identification of practices that enhance biodiversity to improve resilience of farming systems, ecosystem services, and nutrition; development of gender-sensitive technologies.

   Areas of inquiry: Farming systems research, SI impacts on gender and nutrition, and the cross-cutting issues of natural resource management and climate change adaptation and mitigation.

3. Identify enabling conditions and social networks to support and enhance SI.

   Activities: Study economic and social constraints to adoption of SI practices, test new participatory approaches and integrated platforms for adoption, enhance and develop value-chain models, link farm behavior to decision-making and scaling up new SI practices.

   Outcomes: Identification of selected value-chain opportunities that promote SI; identification of successful participatory models for enhanced adoption of SI practices.

   Areas of inquiry: Farming systems research, linking SI impacts across spatial scales and the crossing issues of natural resource management and climate change adaptation and mitigation.
4. Develop platforms for communication, knowledge sharing, and capacity-building.

**Activities:** Identification of effective communication methods for all relevant stakeholders, deployment of short- and long-term training to meet capacity-building needs of all relevant participants, development of an open-access, interoperable, and spatially-explicit knowledge sharing platform for all audiences.

**Outcomes:** Increased research capacity of participants, widespread knowledge of resources, stronger partnerships with relevant stakeholders, research-based strategies and policies to support adoption of SI practices.

**Areas of Inquiry:** All areas of inquiry and cross-cutting themes.

Our vision and objectives will provide, by the end of the first 5 years of the award period, a portfolio of prioritized SI farming systems that offer the greatest potential to reduce hunger and poverty and improve nutrition of smallholder farmers in the target regions. The second 5-year award period would focus on widespread adoption of proven strategies and technologies and further refinement thereof and would position SIIL to be a global leader and resource for SI methodologies in broader geographic areas. SIIL management will develop a research portfolio based on country needs and measurable impact. The activities of SIIL will directly “sustainably reduce global poverty and hunger” by contributing to both of the major FtF objectives: (a) inclusive agricultural sector growth - by improving agricultural productivity and income of all value chains; and (b) improved nutritional status - by enhancing access to diverse and quality diets and income.

Kansas State University (KSU) has invested considerable resources in the selection of the geographical focus, countries, partners, and areas of inquiry. Selections were based on country-defined priorities and with active engagement of the various stakeholders, value-chain partners, government organizations, national agricultural research systems (NARS), international agricultural research centers such as the CGIAR, non-governmental agencies (NGOs), and private industry. We have proactively visited two of the three focus countries where we propose conducting research and capacity-building activities and hosting our regional coordinators. We conducted a complete SWOT analysis (Strengths, Weakness, Opportunities, and Threats) in Tanzania and Bangladesh and engaged with the main NARS, CGIAR centers, NGO representatives, and other key research and development personnel.