

A National Roadmap for Responsive Agriculture Solutions

Study Design and Charge¹

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*A collaboration between the Institute for Advancing Health through Agriculture
and the Chicago Council on Global Affairs*

Study Design

Texas A&M's Institute for Advancing Health through Agriculture (IHA) and the Chicago Council on Global Affairs' Center on Global Food and Agriculture (the Chicago Council) will convene a preeminent Task Force to conduct a study to set priorities for supporting health through food and agriculture. The Task Force will produce a consensus driven, science-based roadmap to catalyze innovation and foster alignment across the nation's agricultural systems and food environments with the goals of optimizing human health and advancing environmental sustainability and economic vitality. The Task Force will be informed by the work of three scientific expert committees, organized around achieving high-priority health outcomes, namely reducing chronic disease by transforming agricultural ecosystems and the agriculture food-value chain, and securing nutrition equity in the U.S. food environment. The three committees will work under the coordination of the Task Force.

The design of this multi-committee activity includes participation among the Task Force and three committees to ensure collaboration across stakeholders, consistency and transparency in process, and substantive integration across all of these key groups. This cross-cutting structure is also designed to engage the full spectrum of stakeholders (e.g., researchers, decision-makers, public health professionals, food and agriculture related industry representatives, professional societies, consumers, and policy and medical experts) who may not traditionally interact or work collaboratively, yet collectively hold the synergistic and unique potential to advance responsive agriculture in a way that identifies positive outcomes for food producers, consumers, and the nation. IHA, in collaboration with a leading group of scientists—including agricultural economists and nutrition researchers—has scoped a definition of Responsive Agriculture as a science-based, dynamic framework to promote innovations across agricultural systems and food environments to optimize human health while ensuring the system is economically robust and environmentally sustainable (Figure 1).

At the conclusion of this study, IHA and the Chicago Council will produce a capstone document with a consensus statement on achieving Responsive Agriculture Solutions across the nation. The capstone document will be informed by the Task Force report and committee reports. IHA and the Chicago Council may draw from members of the Task Force and committees to assist in producing the capstone document.

¹ This is potentially subject to further revisions based on additional stakeholder input.

A Systems-Approach for Achieving Responsive Agriculture

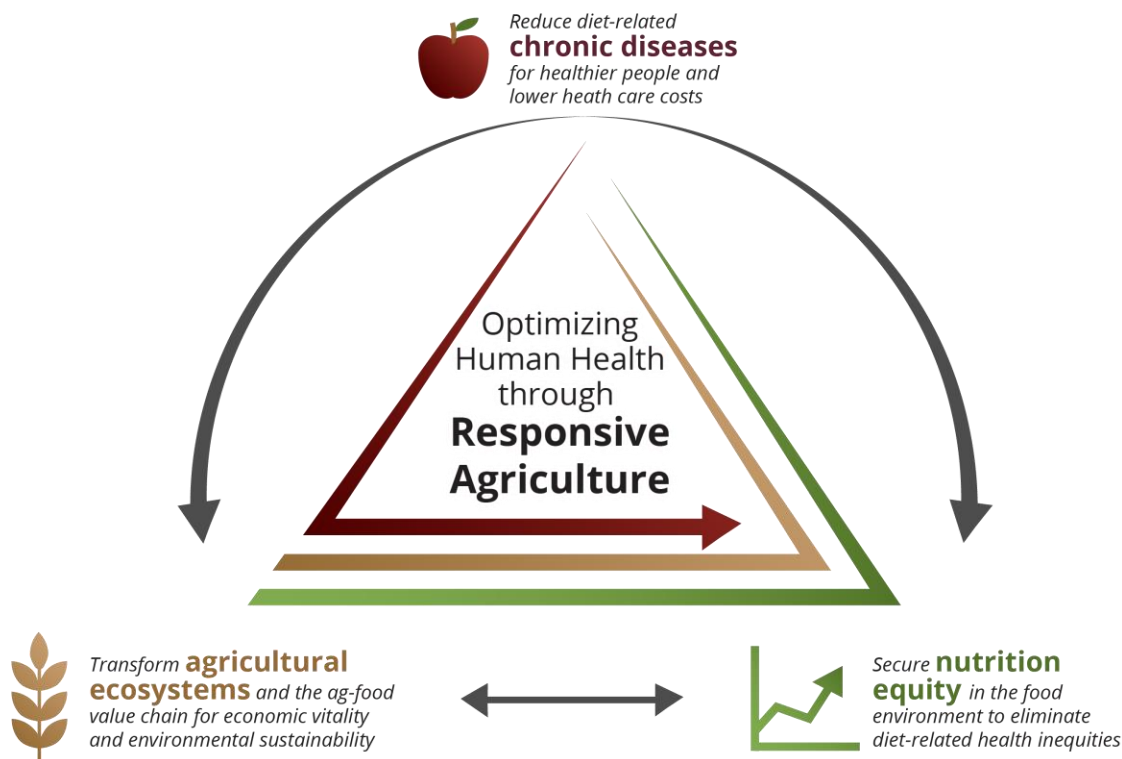


Figure 1 - Adopting a systems-approach to U.S. agriculture and food production – *from farm inputs through consumption (i.e., from farm to fork)*, this study will examine the dynamics across three domain areas essential for achieving human health as the endpoint. The study will develop short-term, medium-term, and long-term recommendations, through an inclusive and science-driven, priority-setting process, to position the agriculture and food system as the solution to human health.

Defining the Food Environment

Several external factors impact an individual's ability to secure health-promoting dietary patterns. These factors range from structural aspects of the food and agriculture supply chain that produces food to a host of physical, social, political, cultural, economic, and community influences affecting individual decision-making.

Collectively, the context of how individuals obtain food based on availability, access, and agency is referred to as the food environment. The food environment represents the critical intersection between the consumer and the food system, and plays an important role in food decision-making and behaviors.

It is understood that diet-related chronic diseases, in part, originate from complex interactions between individuals and the food environments they experience. The role of the individual consumer, their choices, and their agency to make health promoting choices are all important factors in the diet-disease relationship. However, fully understanding how to optimize food

environments that promote human health and lower diet-related health care costs depends on a range of factors across the U.S. agriculture and food production chain. In order to develop policies and programs to improve dietary choices, the food environment must be considered. It is for this reason that IHA/CC is planning a study of the food environment as it relates to human health. This study is centered on optimizing the food environment that the consumer experiences to promote health.

Responsive Agriculture refers specifically to an agricultural system and food environment that supports health through nutrition while ensuring the system is economically robust and environmentally sustainable for future generations. Drawing from the science of health, the science of precision nutrition, and the connection between food and health, alongside the dynamics of the food system, the study will make recommendations for what a food environment should look like to be capable of meeting the health needs of all the population as well as provide recommendations for how to achieve it.

This study will only address aspects of consumer behavior that directly influence or are influenced by the food environment and that are necessary for achieving a food environment that promotes health as opposed to other aspects of consumer behavior for optimizing health through nutrition that may be independent of the food environment. A separate but parallel effort is underway, centralized on the consumer, to identify other such strategies to build agency and support outcomes to optimize health through food.

Study Scope

This Responsive Agriculture study is focused on improving the health-promoting properties of Agriculture, Food Systems, and the Food Environments that all people experience daily by advancing Responsive Agriculture solutions. It is understood that diet-related chronic diseases originate from complex interactions between individuals and the food environments they experience. The role of the individual consumer, their choices, and their agency to make health promoting choices are all important factors in the diet-disease relationship. However, fully understanding how to optimize food environments that promote human health and lower diet-related health care costs depends on a range of factors across the U.S. agriculture and food production chain – from farm inputs through consumption (i.e., from farm to fork). This study will adopt a comprehensive systems approach to examine the dynamics across three domain areas of chronic disease reduction; transforming agriculture ecosystems and the agriculture-food value chain; and securing nutrition equity in the food environment that are essential for achieving human health as an endpoint.

Charge to the Task Force

Task Force on Developing a National Roadmap for Responsive Agriculture Solutions

The charge to the Task Force is to further define and develop the framework for Responsive Agriculture while producing a national strategy—a roadmap for action—to align efforts, resources, and incentives for advancing responsive agriculture solutions in order to support

health through nutrition while ensuring the food production system is environmentally and economically sustainable for future generations. The work of the Task Force will be informed by the work of three committees, organized by the domain specific areas of chronic disease reduction; agricultural ecosystems and agriculture-food value chain; and nutrition equity. The Task Force will provide direction to committee work to ensure integration and coordination across these domains. The Task Force will also be informed by the current body of knowledge, alongside input from stakeholders from across the agriculture and food value chain including consumer and producer groups, content experts, national organizations, advocacy groups, decision-makers, and subject matter experts.

Specifically, adopting a systems-approach, the Task Force will:

- Develop a framework document to guide the work of each domain specific committee;
- Review and integrate the major findings of the three committee reports into priority setting for the roadmap;
- Examine barriers to realizing responsive agriculture across the agriculture and food system and food environment;
- Identify opportunities for incremental improvements and innovation for responsive agriculture solutions with attention to environmental and economic sustainability;
- Identify the opportunities, incentives, challenges, tradeoffs, and other factors that may influence achievability of systems level change; and
- Prioritize and recommend short-, medium- and long-term actions to achieve responsive agriculture solutions across the nation.

The Task Force report will identify solutions for a range of stakeholders across the entire agriculture and food system but will refrain from any federal government policy recommendations.

Additional areas to be examined may include: the impact of new and emerging technologies and such as biotechnology, gene editing, controlled environmental agriculture, artificial intelligence and advanced computational systems, on responsive agriculture solutions; precision medicine; supply chain resilience; multi-disciplinary research mechanisms and incentive structures for advancing responsive agriculture solutions; the dynamics between systems-level drivers such as regulatory reform, consumer behavior, food environments, public trust, public opinion, and dietary guidance; the objectives and motivations of key stakeholders, including the public; and horizon scanning for agricultural and food system challenges that may impact the advancement and maintenance of responsive agriculture solutions.

Charges to the Committees

The three domain-specific committees will each produce a short scientific report that identifies and prioritizes strategies for advancing responsive agriculture solutions within their respective domains. In the context of a systems-based understanding of food production, the committees will identify effective interventions across short, medium, and long-term timeframes to

mitigate chronic disease through novel agricultural and food solutions that are economically and environmentally sustainable. The committees will explore opportunities across relevant science, policy, technology, regulatory, industry, and public sectors as well as identify gaps in knowledge, barriers to success, and potential trade-offs.

The work of the committees will draw from the scientific literature; input from industry, consumer groups, and community leaders; consultation with additional experts and scientific organizations through informational interviews and a seminar series. Moreover, this work can highlight strategies that have been successful in the past.

Committee on Reducing Diet-Related Chronic Disease

The Committee on Reducing Diet-Related Chronic Disease will present key concepts, findings, and conclusions for achieving an adequate, diverse food supply and system that supports the optimal dietary patterns of a heterogeneous population and individual nutrition needs that vary throughout the lifespan, integrating systems-based nutrition and behavior data to promote human health.

Specifically, the committee will:

- Provide a definition for “reducing diet-related chronic disease through food”;
- Explore opportunities, barriers, challenges, research gaps, and needs related to the development of and adoption of strategies to reduce chronic disease, promote lifelong health, and reduce chronic disease through responsive agriculture; and
- Identify and prioritize promising strategies and interventions for achieving a food system that supports lifelong health and reduces healthcare costs with attention to existing or potential challenges for implementation.

Committee on Securing Nutrition Equity Across the Food Environment

The Committee on Securing Nutrition Equity Across the Food Environment will present key concepts, findings, and conclusions for achieving a food environment characterized by equitable, stable, and consistent access that enables all people to make dietary choices that promote health through food.

Specifically, the committee will:

- Provide a definition for “nutrition equity across the food environment”;
- Explore opportunities, barriers, challenges, research gaps, and needs related to the development and adoption of strategies to ensure nutrition equity in the context of responsive agriculture; and
- Identify and prioritize promising strategies and interventions for securing nutrition equity across the food environment with attention to existing or potential challenges for implementation.

Committee on Transforming Agricultural Ecosystems and the Agriculture-Food Value Chain

The Committee on Transforming Agricultural Ecosystems and the Agriculture-Food Value Chain

will present key concepts, findings, and conclusions for transforming the agriculture and food system to ensure adequate capacity and resiliency for food production and distribution in striving toward the promotion of health through food. The primary focus area is the identification of new opportunities, innovations, and benefits for food producers and society while achieving economic vitality and sustainability across the food system.

Specifically, the committee will:

- Define the scale and scope of areas within the US Agriculture and Food System most relevant for advancing responsive agriculture;
- Explore opportunities, barriers, challenges, research gaps, and needs related to the development and adoption of strategies to adapt the agricultural ecosystem to incorporate a new, responsive agriculture approach to promoting human health, while achieving a thriving agriculture and food system economy that is environmentally sustainable; and
- Identify and prioritize promising strategies and interventions for advancing responsive agriculture across the agricultural ecosystem and agriculture-food value chain with attention to existing or potential challenges for implementation.

Dissemination

This study will culminate in outreach efforts to disseminate the findings and recommendations from the reports and related publications to key stakeholders across food and health systems including government representatives, funding agencies, researchers, and decision-makers in both the private and public sectors to inform research gaps, technology, and decision-making.

The Task Force and three committee reports will also be used to produce publications for submission to leading interdisciplinary scientific journals. Reports and publications will be presented at national and international conferences as part of dissemination efforts to outline and address the priorities, opportunities, and challenges for advancing responsive agriculture solutions across the nation.