Building A Network for A Resilient Food System in New Hampshire and Southern Maine

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Project Summary - This Research Coordination Network (RCN) will engage interdisciplinary partners to develop a CNH framework, enhance knowledge about the dynamic coupling between key drivers of food system sustainability in New Hampshire (NH) and southern Maine (ME), and build capacity for research, education, and outreach. Utilizing evidence-based social learning strategies, the RCN aims to achieve the following objectives: 1) Build trust and enhance bridging social capital among network participants; 2) Apply and adapt a conceptual framework that integrates the portals within a coupled natural-human system (CNH); 3) Identify other cross-cutting themes (e.g., altered biogeochemical cycles, climate change, emerging disease risks) that influence system dynamics; 4) Generate knowledge about the interactions and feedback loops between human and natural stressors that are critical to a resilient food system; 5) Select case studies and explore leverage points within the system; 6) Develop capacity to translate knowledge into action by linking existing data, building a foundation for integrated modeling, and partnering researchers with end-users; 7) Evaluate the effectiveness of the network in changing measurable social, health, economic, policy, and environmental outcomes, using a developmental evaluation process.

RCN participants will enter the network through three inter-related “portals”: 1) Sustainable water resources and fisheries; 2) Food insecurity/inequities and dietary-related illness (e.g. obesity, diabetes); and 3) Sustainable agriculture and food system integrity. Cross-cutting themes including law and policy, economic development, social justice, and climate adaptation will serve as conduits between the three portals. By engaging regional and national partners from the beginning, the RCN will provide a catalyst to integrate research, practice, and policy.

Intellectual Merit - Several innovations characterize this RCN. First, the RCN will apply and adapt a conceptual framework to generate knowledge about the interactions and feedback loops between human and natural stressors that are critical to developing a resilient food system. Second, the RCN will enhance the co-creation of knowledge by examining how theoretical and methodological constructs from different fields can be applied to the food system in NH and southern ME. For example, RCN participants will examine case studies using the concept of positive deviance, defined as intentional behavior that significantly departs from the norms of a referent group (in positive ways) to create social, technical, institutional, organizational, and policy innovations. The basic assumption underlying positive deviance is that that in any context, there are a few communities or organizations whose deviation from the norms generate innovative solutions to local problems, despite facing resource constraints similar to those
around them. It further implies that resources promoting resilience and adaptive capacity may already exist within the local context, and because these “solutions” are place-based and locally owned, they are potentially more sustainable than externally driven solutions. Third, interdisciplinary methods (e.g., derived from social/behavioral sciences, law, and computer science) will be used to support the network in three innovative ways: 1) to inform the network process; 2) to sustain the network by enhancing communication between researchers and end-users; and 3) to iteratively evaluate the effectiveness of the network in changing social, health, environmental, economic, and policy outcomes. By enabling synergistic collaborations between researchers and external partners, the RCN will contribute to the development of new paradigms capable of better addressing societal challenges across spatial and temporal scales.

**Broader Impacts** - The process of collaboratively generating knowledge related to the CNH, identifying leverage points and synergies within the system, and demonstrating the RCN’s capacity to affect outcomes will be relevant to a broad spectrum of stakeholders regionally, nationally, and globally. The dissonance between knowledge generation, translation, and use is increasingly recognized, and insights gained from this RCN will be broadly applicable to diverse audiences. Through its unique integration of natural sciences, social sciences, law, and epidemiology, the RCN will build a model to affect governance structures and policies related to sustainable food systems. Results will be broadly disseminated with guidance from a committed Dissemination Team. Finally, targeted efforts to reach students and stakeholders from underrepresented groups will enable dynamic integration of scientific and citizen knowledge as a basis for building capacity for a resilient, secure, and sustainable food system.