Large system change challenges: addressing complex critical issues in linked physical and social domains

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Most action to address contemporary complex challenges, including the urgent issues of global sustainability, occurs piecemeal and without meaningful guidance from leading complex change knowledge and methods. The potential benefit of using such knowledge is greater efficacy of effort and investment. However, this knowledge and its associated tools and methods are under-utilized because understanding about them is low, fragmented between diverse knowledge traditions, and often requires shifts in mindsets and skills from expert-led to participant-based action.

We have been engaged in diverse action-oriented research efforts in Large System Change for sustainability. For us, "large" systems can be characterized as large-scale systems – up to global – with many components, of many kinds (physical, biological, institutional, cultural/conceptual), operating at multiple levels, driven by multiple forces, and presenting major challenges for people involved. We see change of such systems as complex challenges, in contrast with simple or complicated problems, or chaotic situations. In other words, issues and sub-systems have unclear boundaries, interact with each other, and are often contradictory; dynamics are non-linear; issues are not "controllable", and "solutions" are "emergent" and often paradoxical. Since choices are opportunity-, power- and value-driven, these social, institutional and cultural factors need to be made explicit in any actionable theory of change.

Our emerging network is sharing and building a knowledge base of experience, heuristics, and theories of change from multiple disciplines and practice domains. We will present our views on focal issues for the development of the field of large system change, which include processes of goal-setting and alignment; leverage of systemic transitions and transformation; and the role of choice in influencing critical change processes, when only some sub-systems or levels of the system behave in purposeful ways, while others are undeniably and unavoidably deterministic.