Dupont Summit Proposal

Linking Science, Communities and Public Policy under Deep Uncertainty in a Modern Risk Society

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A modern risk society is characterized by complexities and uncertainties at different levels, as exemplified by cascading disaster risks, which are dramatically changing in scope, severity, and impact. Specifically, at least three major drivers, i.e. globalization, urbanization, and climate variability are converging to dramatically increase cascading disaster risks which impact on human, social and natural systems from the global to the local level. Under these conditions, our modern risk society will not be understood primarily through our available knowledge but rather by a complex calculus premised on decision-making under uncertainties (Shimizu & Clark, 2019).

The above uncertainties interact with different human, social and natural systems which lead to deep uncertainty. Deep uncertainty refers to the reality that the various parties to a decision do not know or cannot agree on the system and its boundaries (Lempert et al.2003;Walker et al. 2013); or decisions are made over time in dynamic interaction with the system and cannot be considered independently (Haasnoot et al. 2013a,b;Hallegatte et al. 2012). These changes bring about the question of how to link science, communities and public policy under deep uncertainty for nurturing our resilient and sustainable society in the modern risk society.

For the challenge, traditional approaches to managing risks, such as management by “stove piped” specialized agencies or sec-tors/ organizations, or through vertical control-based management along fixed organizational lines, are not sufficient to address managing risks in a modern risk society. One of key components of decision-making under deep uncertainty is the pursuit of resilience, i.e., enabling the capacity to create environments or systems that remain functionally intact when impacted by unexpected events, which is accomplished by emphasizing situational awareness and understanding “whole system” linkages over short-, mid-, and long-term perspectives (Shimizu & Clark, 2019). Resilience-based thinking, which recognizes inextricable links between complex and non-linear systems, characterized by feedback loops and uncertainty (Berkes et al. 2003), may lead toward greater collaborations among sector, disciplines or organizations. Such collaborative processes can lead to more effective processes for managing risks or nurturing resilience in a modern risk society.

As such, the presentation will focus on the question of link science, communities and public policy under deep uncertainty in a modern risk society, by formulating theories, practices, and case studies such as disaster risk management for large-scale earthquake and climate change, through systemic view. The presentation will provide a basis for policy communities to manage changing risk environment for resilient and sustainable society through co-knowledge production and collaborative actions by multi-stakeholders.