

## **Participatory modeling: A way to promote collaborative learning in multilevel governance**

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These two sessions invite the community of sociological and political sciences, the community of modeling and cognitive sciences, and the community of collaborative action research to exchange and debate on the assets and limits of participatory modeling to promote adaptive governance in multilevel context. There are therefore at the cross-section among three of the conference themes (1, 3 and 4)

Globalization and decentralization of resource management have pushed for multi-level governance, and for a greater participation in decision-making. Besides, the inherent uncertainty and variability of complex socio-ecological systems calls for governance that would promote multi-level adaptation and learning to change.

Over the last decade, participatory modeling has become a popular way to support adaptive management of socio-ecological systems. It has allowed understanding the dynamics of these systems by sharing and integrating multiple viewpoints. In addition, it has facilitated the collective exploration of scenarios, the evaluation of trade-offs between scenarios by stakeholders, and the definition of paths for reaching desirable futures and avoiding undesirable ones. Participatory modeling is based on collaborative learning methods, and aim at knowledge sharing and innovation.

This approach has addressed the links between various levels and arenas involved in multi-scale governance, but with specific ethical and methodological challenges due to the diversity of stakeholders and arenas in interaction in multi-level context. Challenges come in particular from: (i) understanding multi-level governance dynamics before, during, and after the modeling process, (ii) using models as intermediary objects for linking diverse stakeholders among multiple arenas, and (iii) understanding and assessing knowledge sharing, transfer and creation.

We propose to address these challenges during two associated sessions: the first one is presenting various participatory modeling approaches applied on case studies, and the second one is exploring the application of such approaches to climate change adaptation.

The first section will include 3 to 4 paper presentations with a short discussion, and the second session will have an open format with a panel discussion and interactions with the audience.

Panel participants and papers:

Bert de Vries - "Engaging citizens in the quest for a sustainable world: the prospects for interactive models and games in the era of post-modern and complexity science"

Patrick d'Aquino, Alassane Bah - "Methodological steps of a multi level participatory modeling to support a policy decision process"

Alex Smajgl, Tira Foran, John Dore, Silva Larson, John Ward - "Visions, beliefs and transformation: Methods for understanding cross-scale and trans-boundary dynamics in the wider Mekong region"

Kirk Emerson, Tina Nabatchi, Steve Balogh - "An Integrative Framework for Collaborative GovernanceAn Integrative Framework for Collaborative Governance"

Marilyn Buchholtz ten Brink - "Contributions of Participatory Modeling to Development and Support of Coastal and Marine Management Plans"