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## Evaluating the Participatory Modeling Process: an analysis of past practices for the development of best practices

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## **Evaluating the Participatory Modelling Process: an analysis of past practices for the development of best practices**

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**Abstract:** Participatory Modeling (PM) incorporates diverse stakeholders in a shared learning process that engages participants at multiple stages, from the co-formulation of a problem statement, through the selection and development of analytical models, the identification of solutions, and the making of decisions. PM is frequently applied to complex problems related to environmental and resource management contexts. The number of published PM projects has grown steadily in the last two decades. However, little is known about how different PM tools and processes are applied by researchers and practitioners. What are the PM processes most commonly implemented? What types of problems are most commonly addressed by PM? How has the PM process impacted policy and management strategies? To answer these questions, we analyzed 60 randomly selected PM case studies from the published academic literature and coded them to better understand major trends across the field. Our analysis identified the types of projects in which the PM approach has been most commonly applied, the common set of steps used to complete different forms of PM, and the tools most commonly employed to address specific types of environmental and resource management challenges. This has enabled us to identify a set of best practices for conducting PM processes involving diverse stakeholders to create a shared understanding of a problem with the breadth and depth needed for critical analysis informed by models that enable effective decision-making with consideration of the impacts across stakeholder groups.

**Keywords:** Participatory Modelling; Participatory Process; Environmental Resource Management