Multi-party Risk and Uncertainty Management Process (MRUMP) for Local Environmental Management

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Objective
Consensus building among key stakeholders in local environmental management is an urgent but difficult issue in many parts of the world. The application of the concept of multi-party risk and uncertainty management process (MRUMP), which was originally developed for better risk management for an infrastructure project by the author's team, seems an effective way of achieving consensus building. The objective of this research is to develop a methodology of applying the concept of MRUMP to achieve consensus building for better local environmental management.
Project

Project Outline
1) The objective of the MRUMP is to find a solution with multi-party risk efficiency. A risk efficient solution is one which simultaneously minimizes both expected value and variance of impacts for each stakeholder. Here, the latter of variance of impacts is called risk. Multi-party risk efficiency is the concept of risk efficiency extended to multiple parties.
2) The first tasks in this project are to survey the current situation of local environmental management and to formulate some environmental management problem as a risk management problem. These tasks include identifying the behavioral objectives for each key stakeholder and the risk factors that hinder the achievement of those objectives, and structuring the relationship among the identified objectives and risk factors.
3) The second task is risk analysis. i.e. to quantify effectiveness and discuss multi-party risk efficiency associated with alternative responses. To do so, an attempt should be made to obtain the expected impact and risk associated with each stakeholder's response. Here impacts represent how little of a behavioral objective is achieved for each stakeholder. To obtain the desired impact and risk, various simulation models have to be developed or applied such as water or air quality modeling.
4) The third task is to explore means of implementing the derived response. This in turn requires discussion of means of loosening constraints on the implementation of the response, such as modifications of law or policy in the society or in each organization.
References

References
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