

## Hydrologicalwater management in spatial planning from the perspective of decision-aid science

Ngoc Tu Tong<sup>1,2,3</sup>, Bertrand Munier<sup>1,2</sup> and Abdelkrim Bennabi<sup>1</sup>

<sup>1</sup>University of Paris-East, Constructability Research Institute (CRI), France

<sup>2</sup>Paris Sorbonne's Business School, Institute of Business Administration (IBA), France

<sup>3</sup>Land Surveyor Association, France

The operation of spatial planning is carried out in an uncertain context because the modes of urban and suburban planning involve several aspects and uncertain parameters in which the risks, especially related to surface hydrological management, are important. This context leads us towards the application of decision-aid science to assist planners in making decisions which can cope with the different rationale of planning in an uncertain future.

The suggested decision-aid model in this paper allows choosing rationally an optimal mode (solution) among the different scenarios of spatial planning, taking into account the risks deriving from the general hydrology. Using experimental psychological approach to exploit the experience of urban planner, this model allows facilitate decision making of spatial planning because that it includes and integrates all the variables related to hydrological water management who can influence the decision. This study considers not only the natural risk, but also the human factor and modalities for assessing stakeholder group's risk attitude.

The feasibility of this research is based on the multidimensional decision analysis techniques of expected utility theory and multi-attribute utility theory that were developed by the "American school". The new use that we can make from this theory allows responding to problems of hydraulic/hydrological management in spatial planning, and finally providing an adaptable tool for each case considered.

### Biography

Ngoc Tu Tong, civil and planning engineer- researcher of French Land Surveyor Association, a professional association that make's a lot of planning in France and Europe. He is currently pursuing Ph.D. in laboratory GRID/GREGOR/Paris 1 and CRI/Paris-East.

ttong@adm.estp.fr