

Peyman Arjomandi A.<sup>1,2</sup>, Seyedalireza Seyedi<sup>3,4</sup>, and Nadejda Komendantova<sup>2</sup>

<sup>&</sup>lt;sup>1</sup>Department of Civil, Chemical, Environmental and Materials Engineering (DICAM), University of Bologna, Bologna, Italy

<sup>&</sup>lt;sup>2</sup>Advancing Systems Analysis Program, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

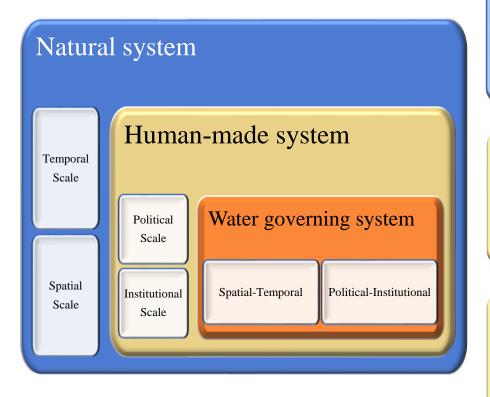
<sup>&</sup>lt;sup>3</sup>Department of Mathematical Sciences, Yazd University, Yazd, Iran

<sup>&</sup>lt;sup>4</sup>Mathematical Modelling Centre, Yazd University, Yazd, Iran



## System Fit





Selecting the focused spatiotemporal levels in the study case

Desk reviews/field evaluations and capturing the structure of the water governing system

Clustering the major and minor players in respect to their institutional/administ rative level Formulating the interaction structure by an appropriate device (i.e. statistical mechanics models)

Setting the interactions based on political/institutional (interaction) rules and regulations

Mapping out the players at spatial scale

Tuning the interaction set up with demand/supply rates

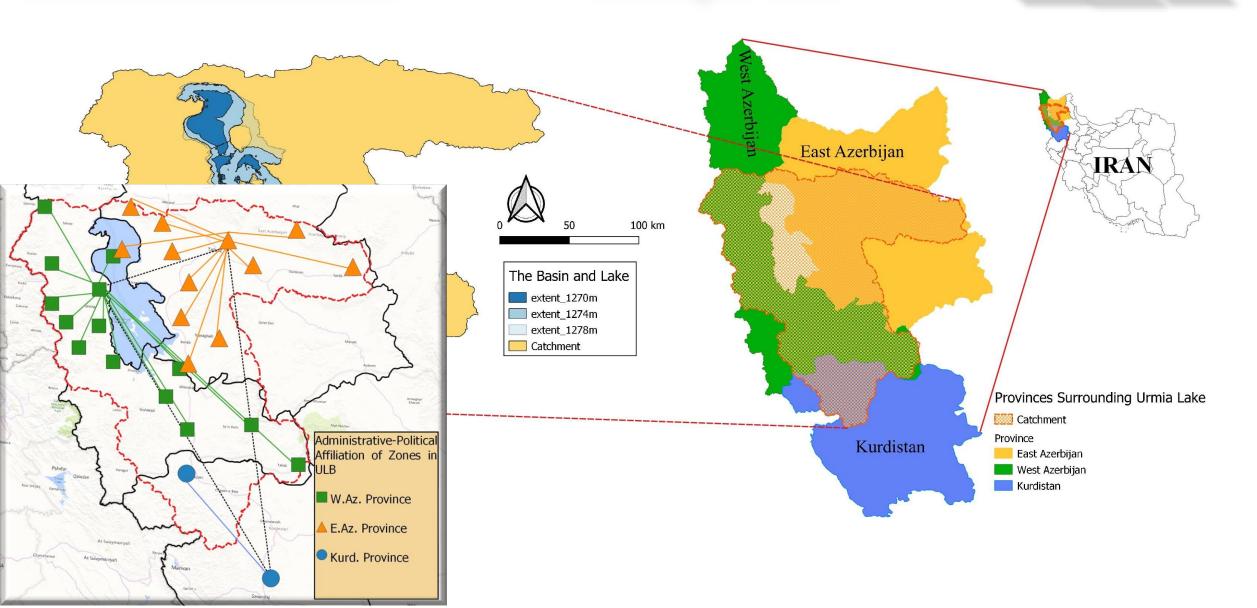
Measuring the system cost and handling capacity interlinked to those interactions

Comparing the results with alternative system structures



## Example case

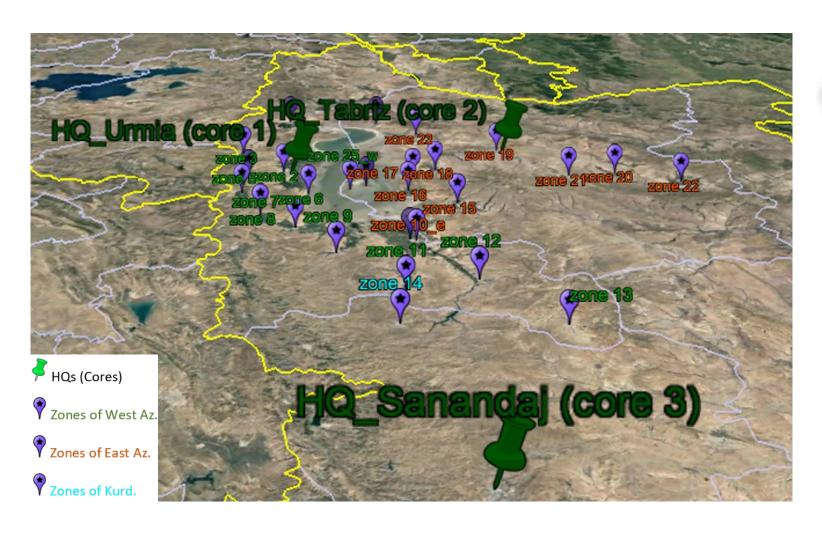


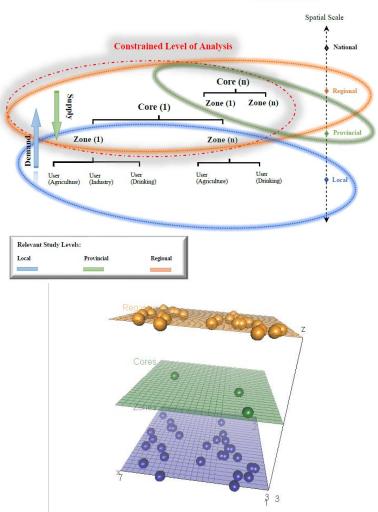




## Layers and Players



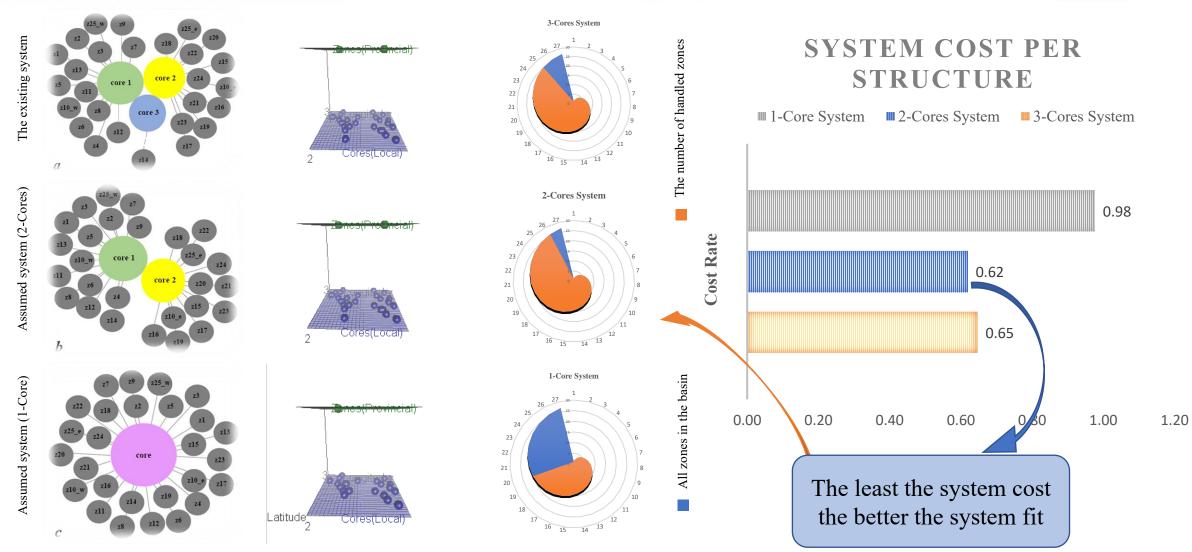




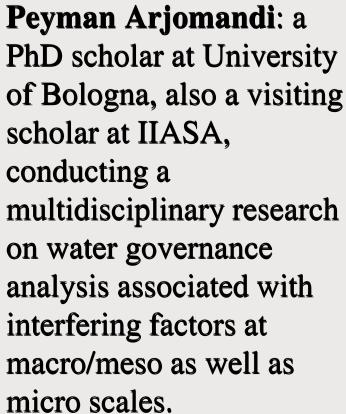


## Governing system state











Seyedalireza Seyedi: an honorary scholar at Mathematical Modelling Centre of Yazd University, with extensive expertise on applied stochastic differential equations, optimization techniques and numerical analysis



Nadejda Komendantova: a senior research scholar in the **Advancing Systems** Analysis Program at The International Institute for **Applied Systems Analysis** (IIASA), leading the Cooperation and **Transformative Governance** Research Group

