



Modelling and Decision Support Systems for Integrated Urban Water Management

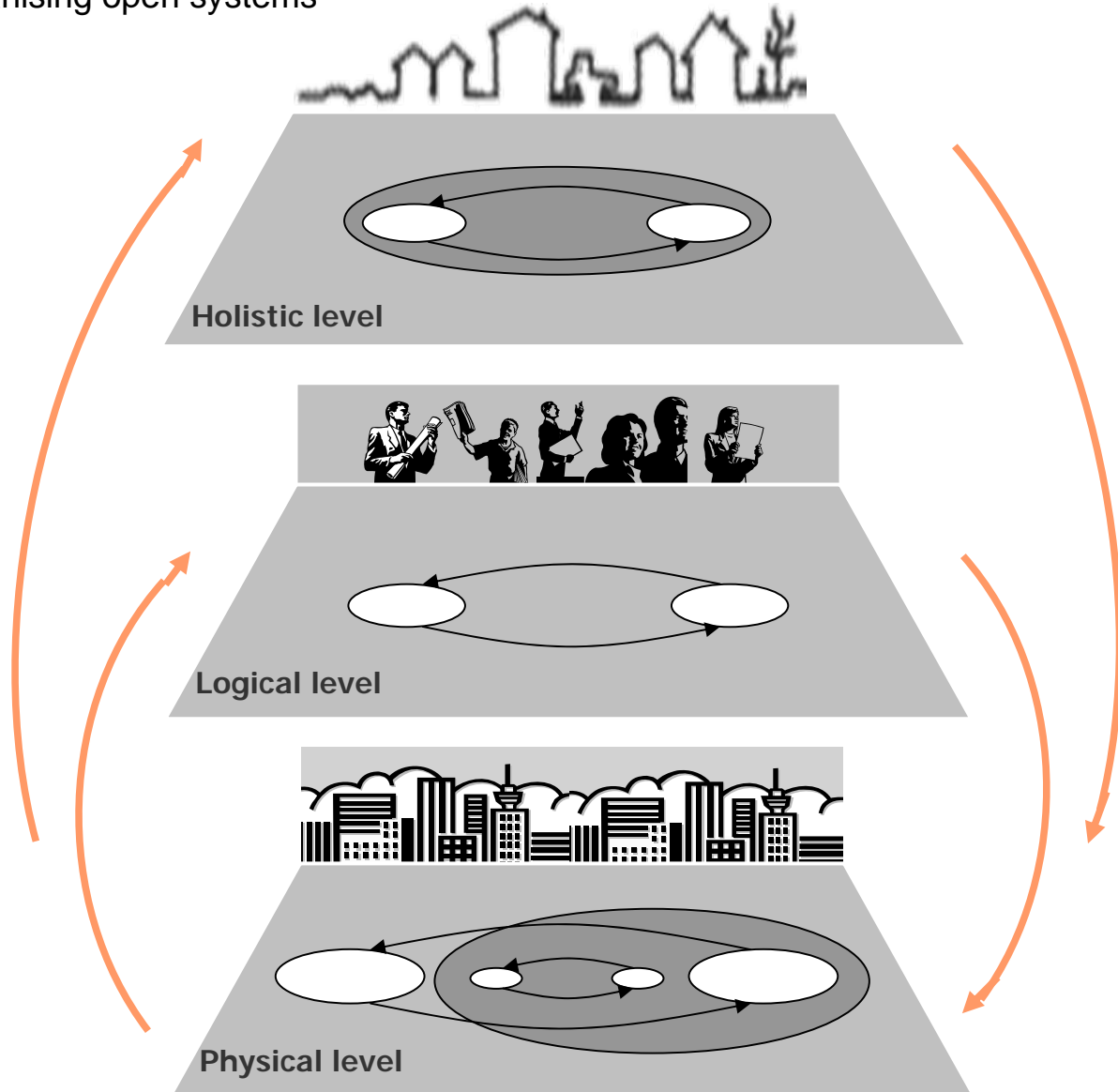
Switch 1st scientific meeting, Birmingham 9-12 January 2007

Dr. Marc Soutter,
Swiss Federal Institute of Technology
EPFL, Lausanne

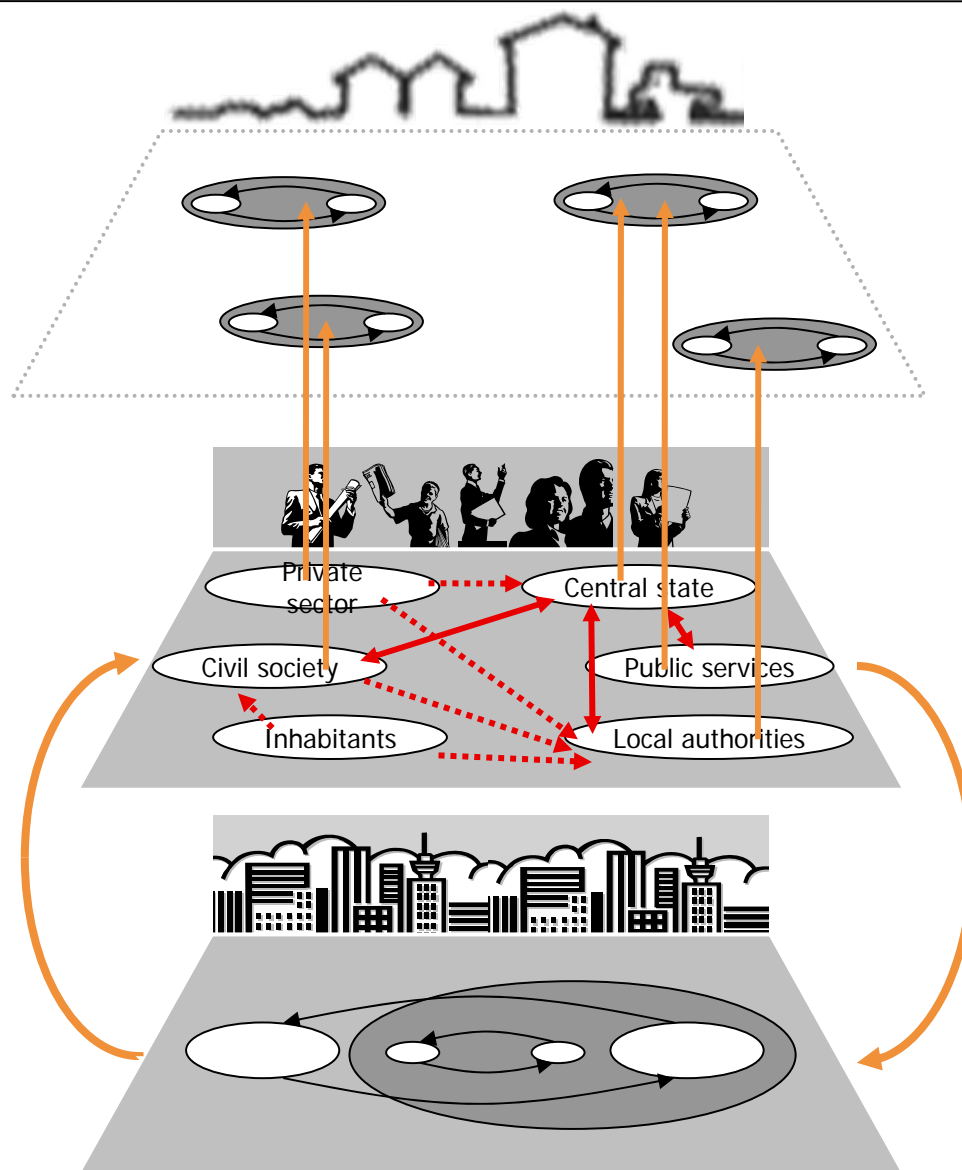


Systemic analysis applied to cities

model of self-organising open systems



Stakeholders and visions



Learning Alliance & Decision Support System

Should be easy to use :

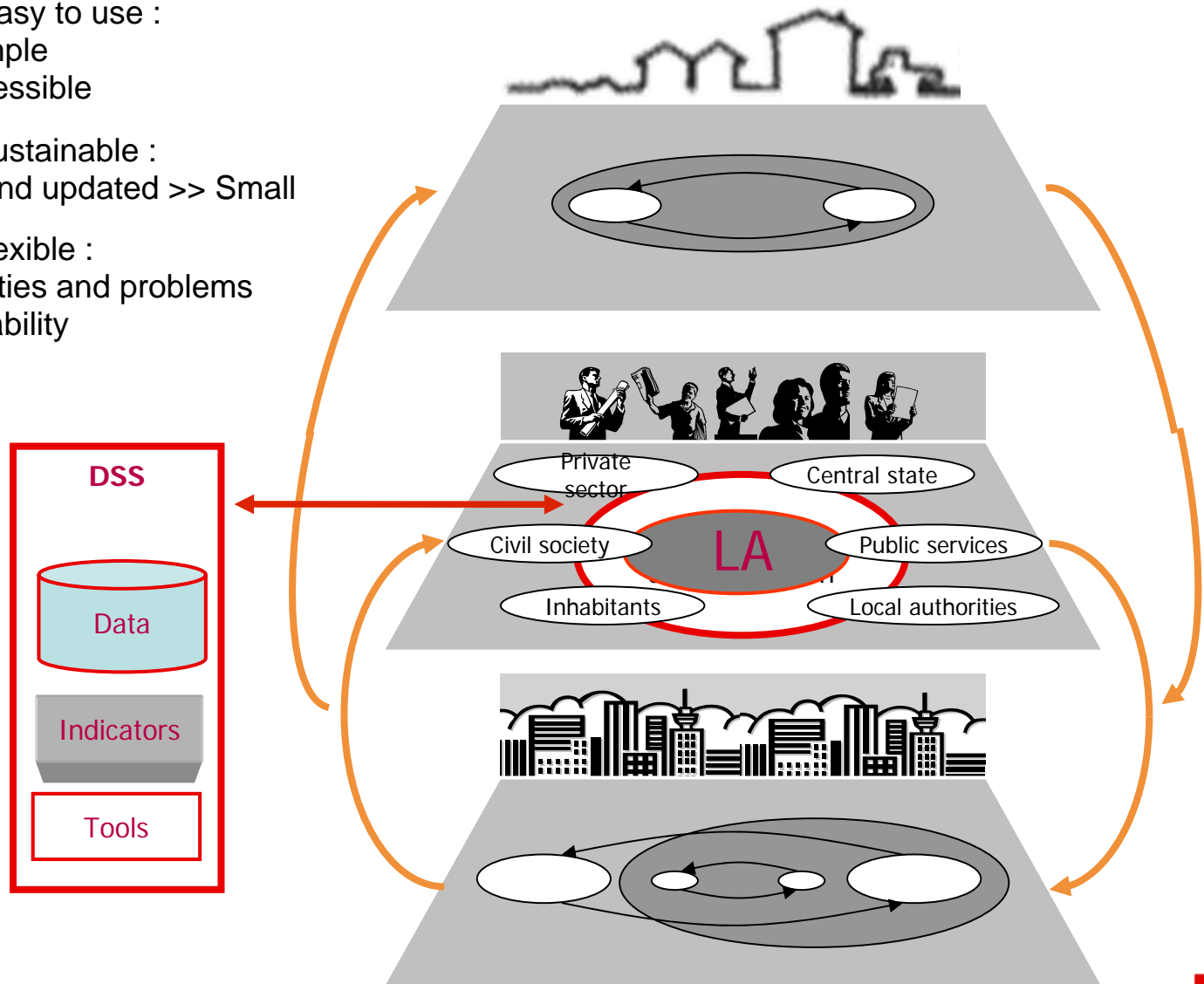
- Remain simple
- Widely accessible

Should be sustainable :

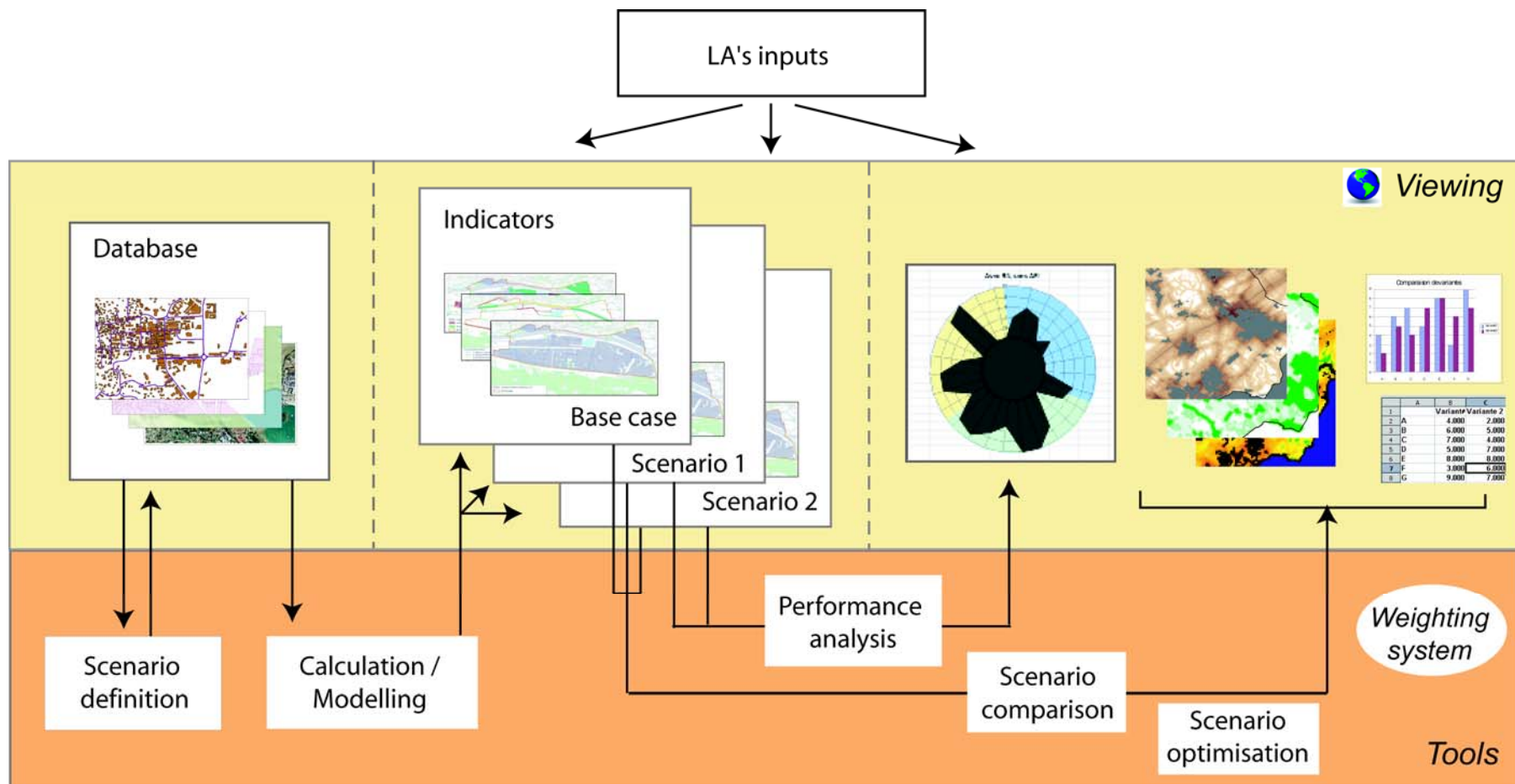
- Relevant and updated >> Small

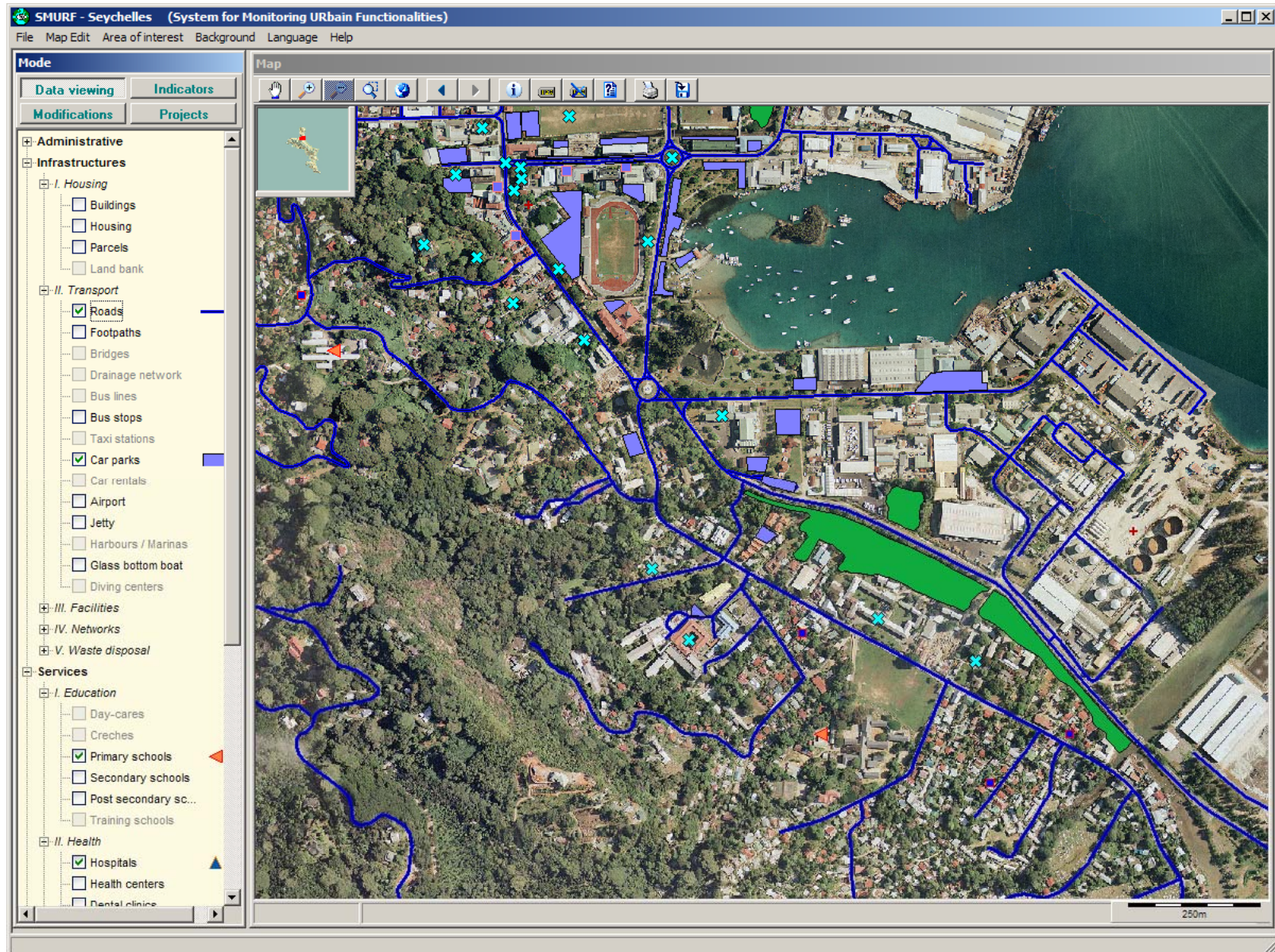
Should be flexible :

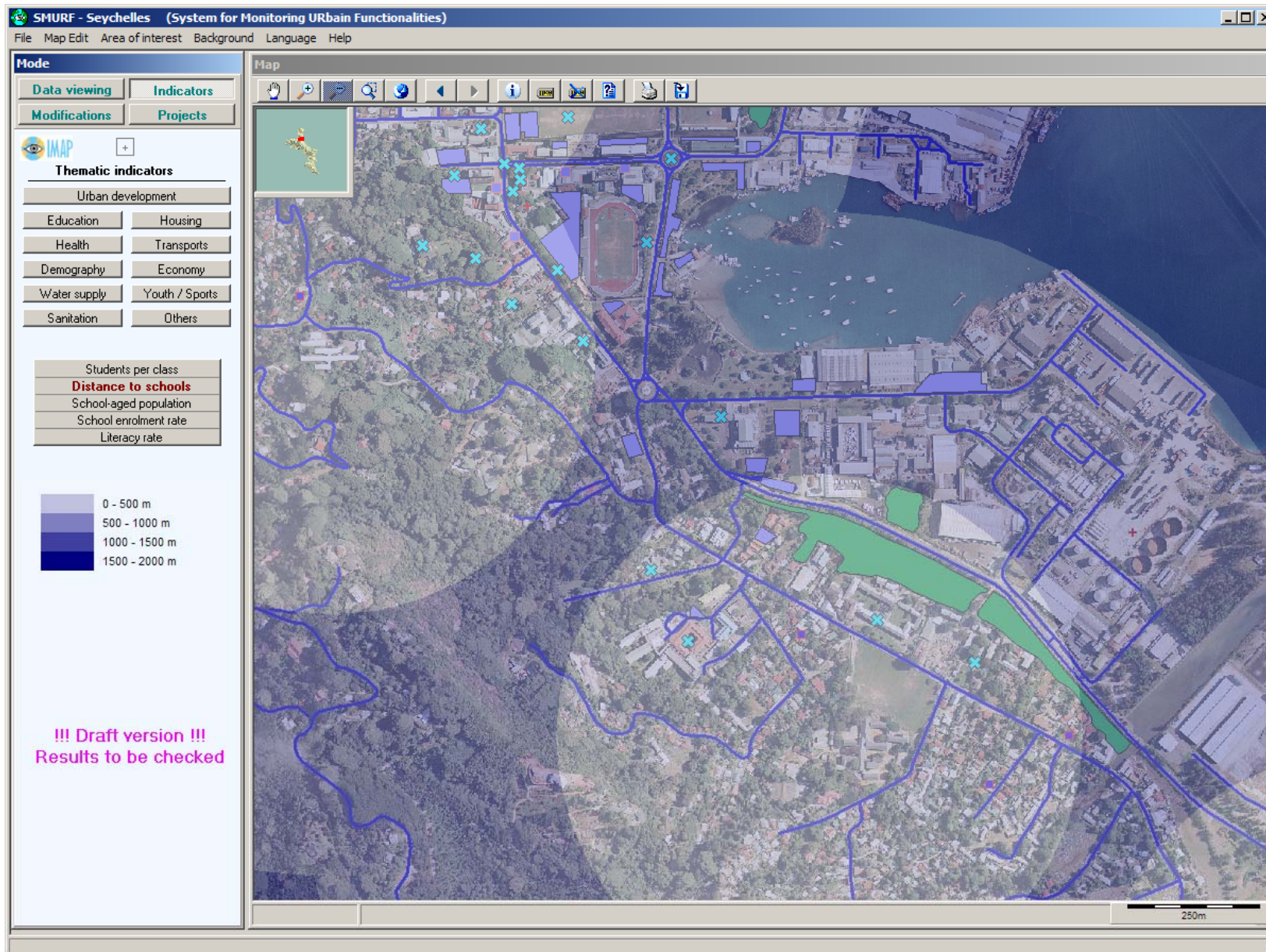
- Different cities and problems
- Data availability

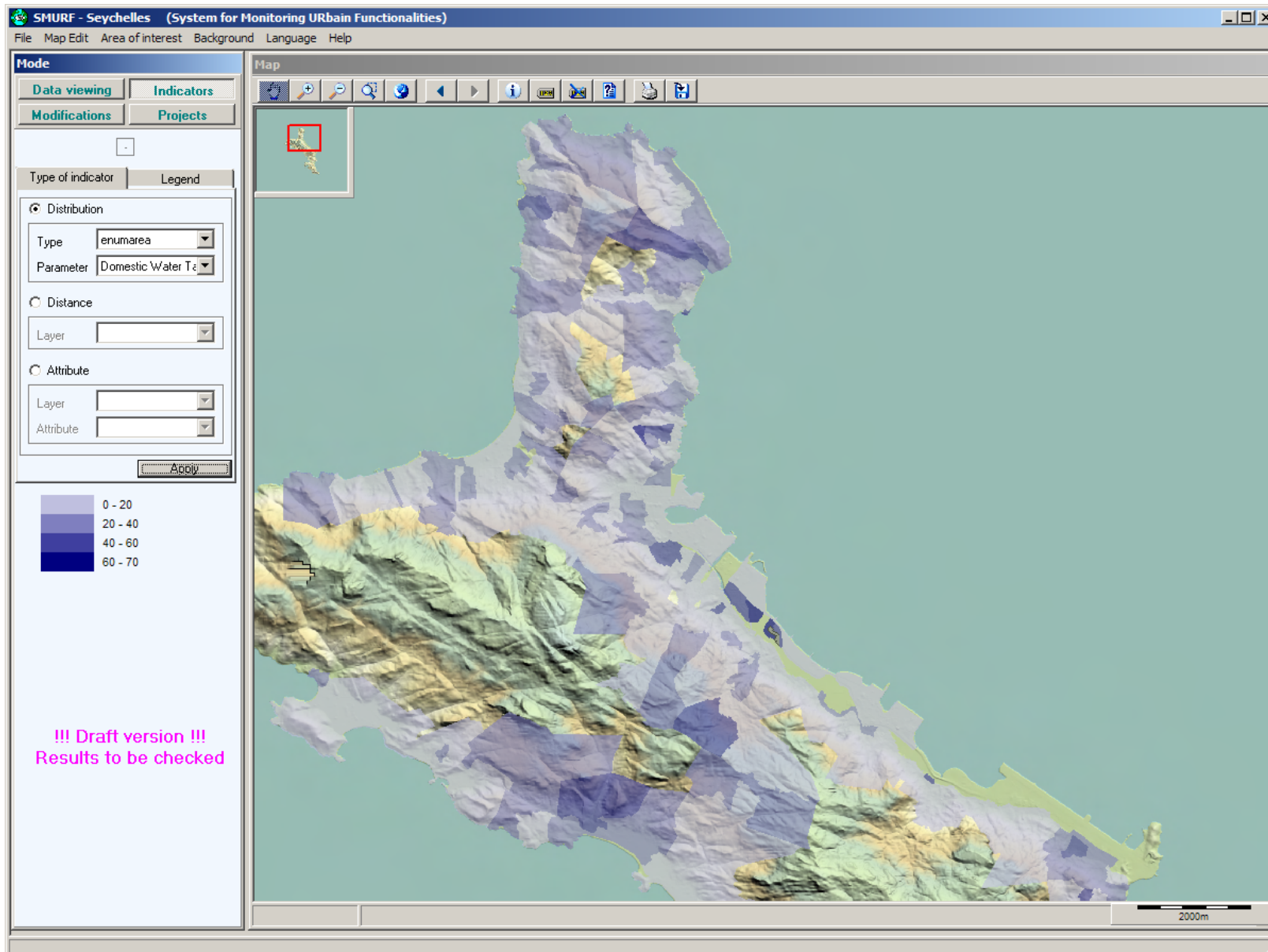


Decision Support System



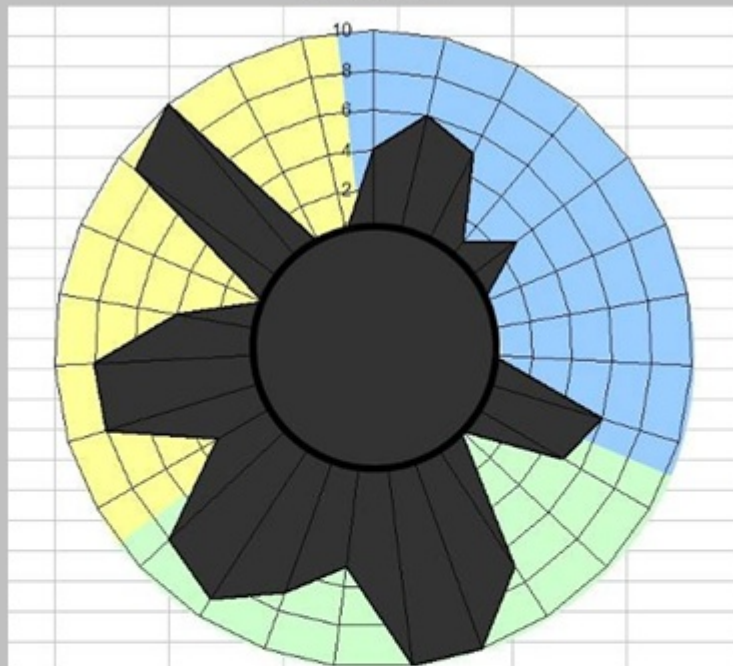




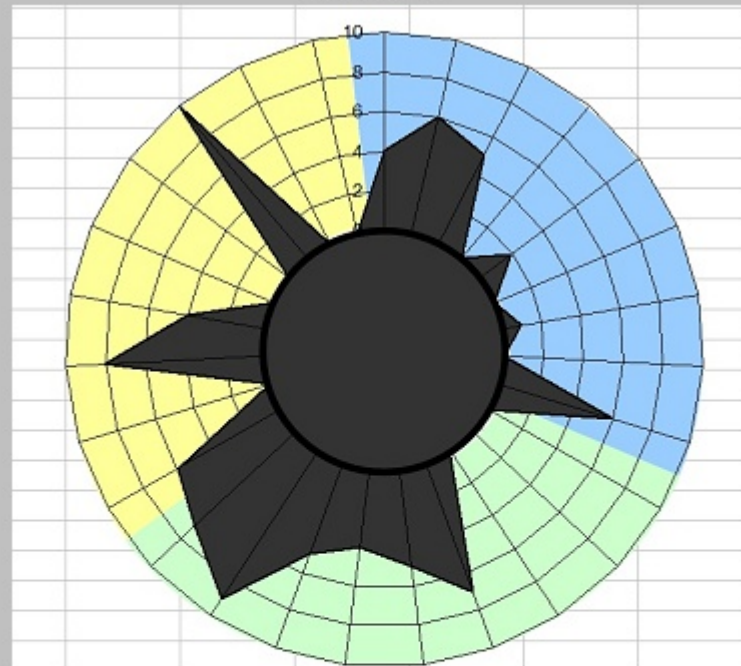


Analyse d'utilité

Scenario A



Scenario B



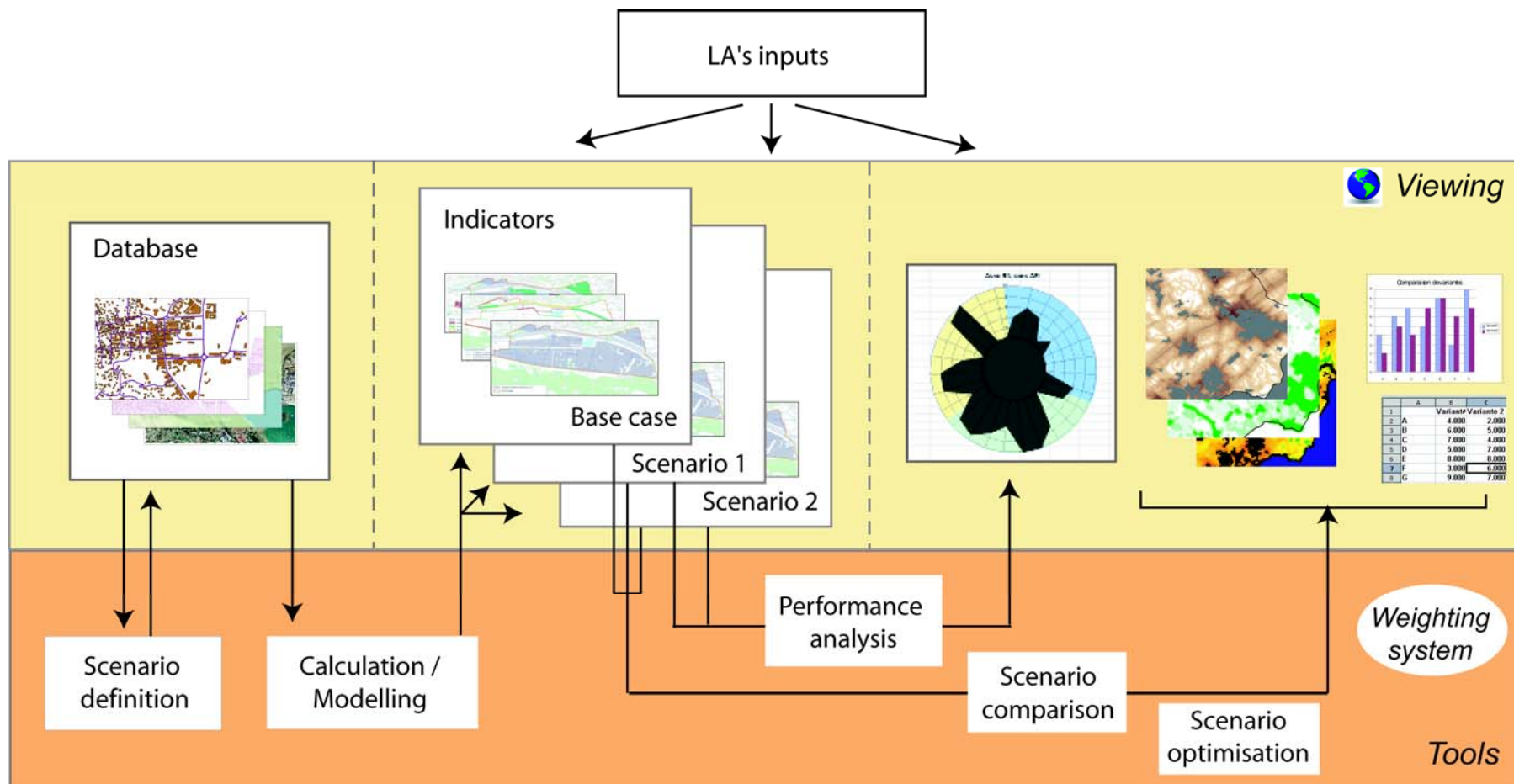
Indicateur A

Indicateur B

Indicateur C



Modelling ?



Modelling

Integrated Urban Water Management

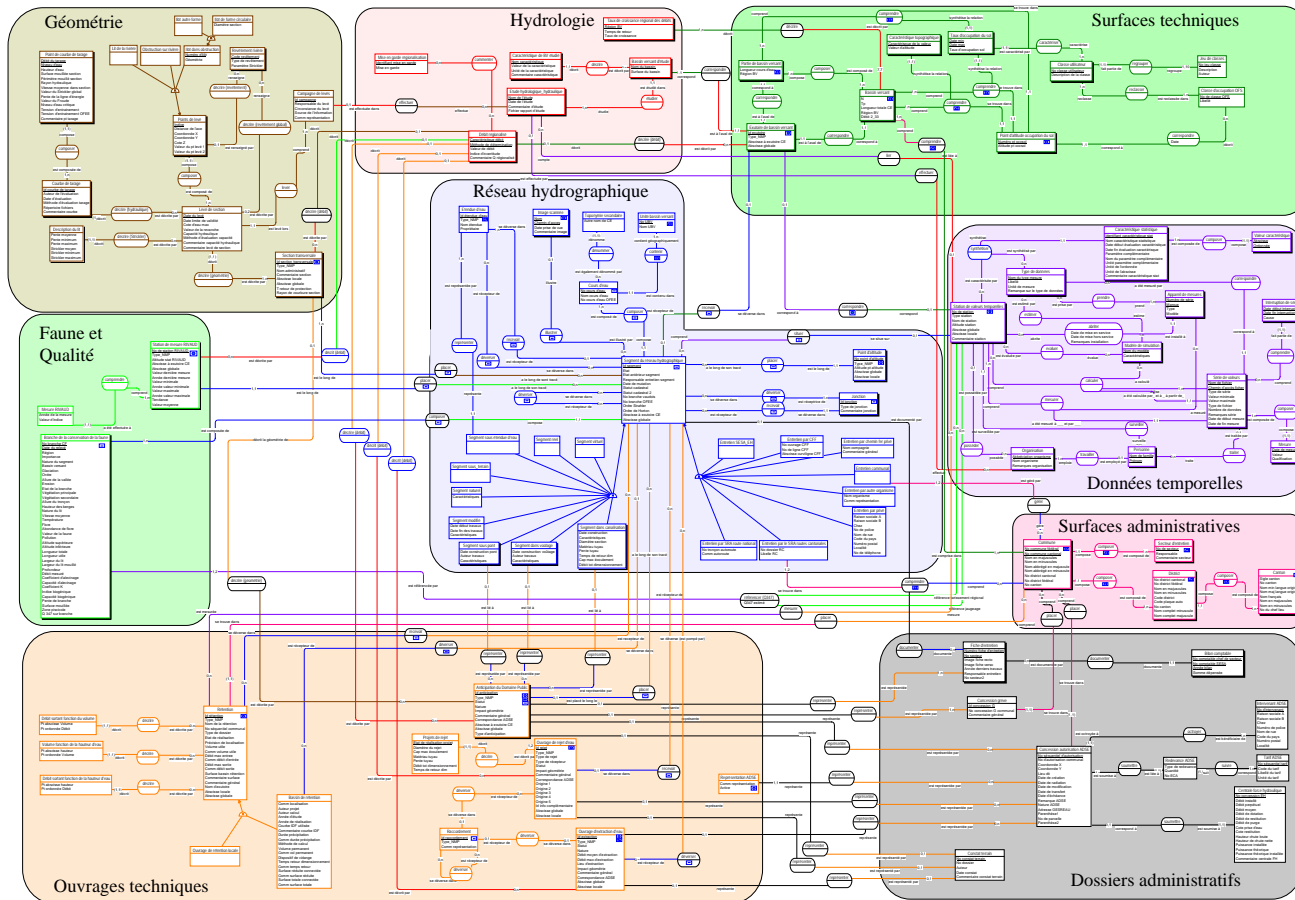
- Integration of Urban Water Management Domains
Integrated models / sectorial models (to model the urban water cycle)
Model(s) needed to calculate water related indicators
- Integration of Water in Urban Management
To capture the links among the water domain and other domains such as, for example, health, education, etc.
Model(s) needed for scenario definition and optimisation



Hydroplanner©

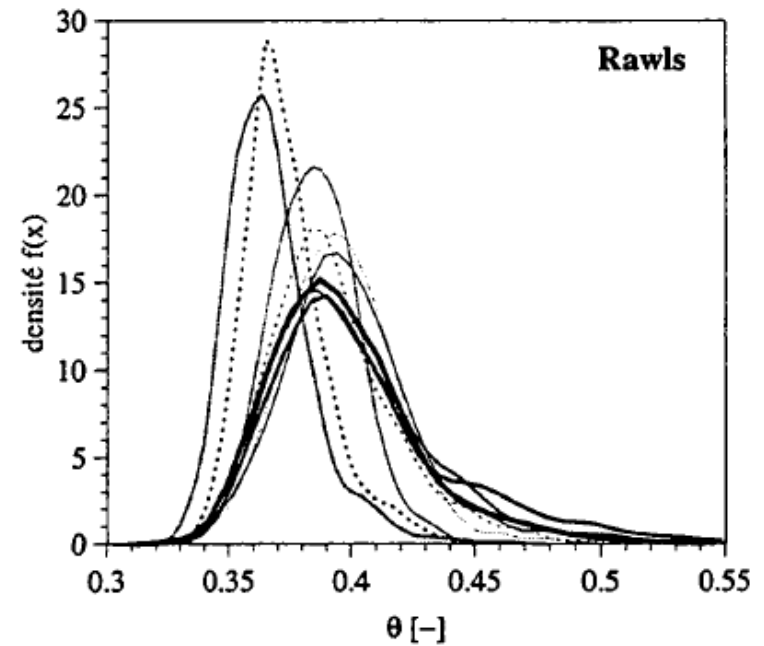
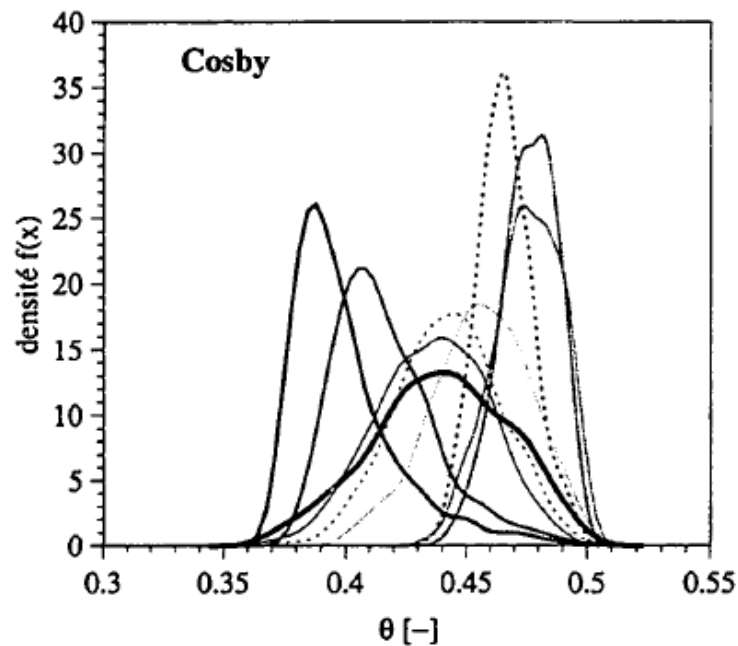
Issue 1 : Conceptual data model

- Objects / elements
- Attributes / descriptors
- Relations



Issue 2 : Uncertainties

- Probabilistic models / variables are probability density functions
- Monte-Carlo / repeated runs of the model with randomly chosen inputs to sample the output
- Fuzzy approach / fuzzy



That's all for now