Perceptions of the impact of urban land use planning on surface water contaminations in a Mediterranean catchment

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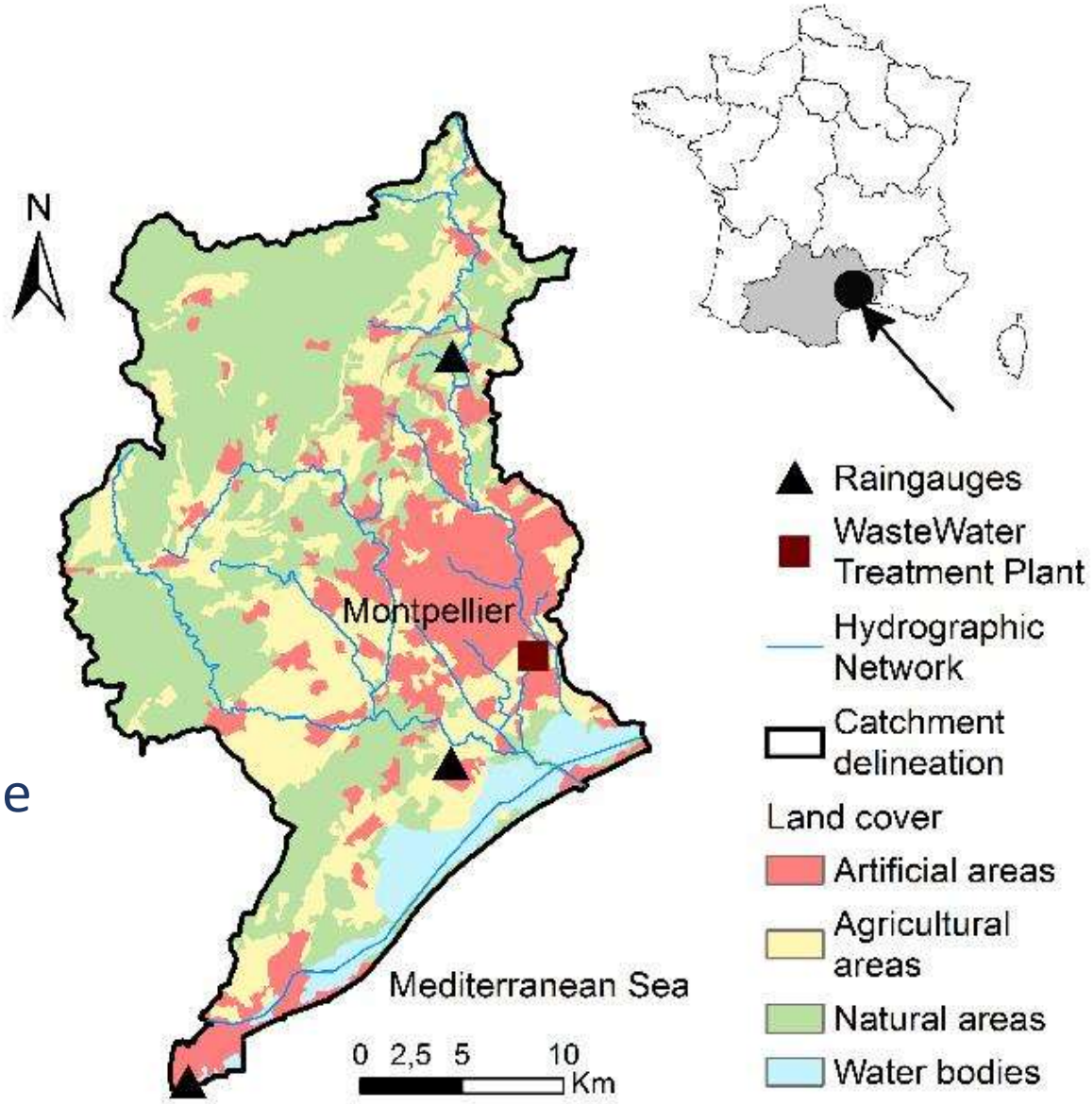
Context

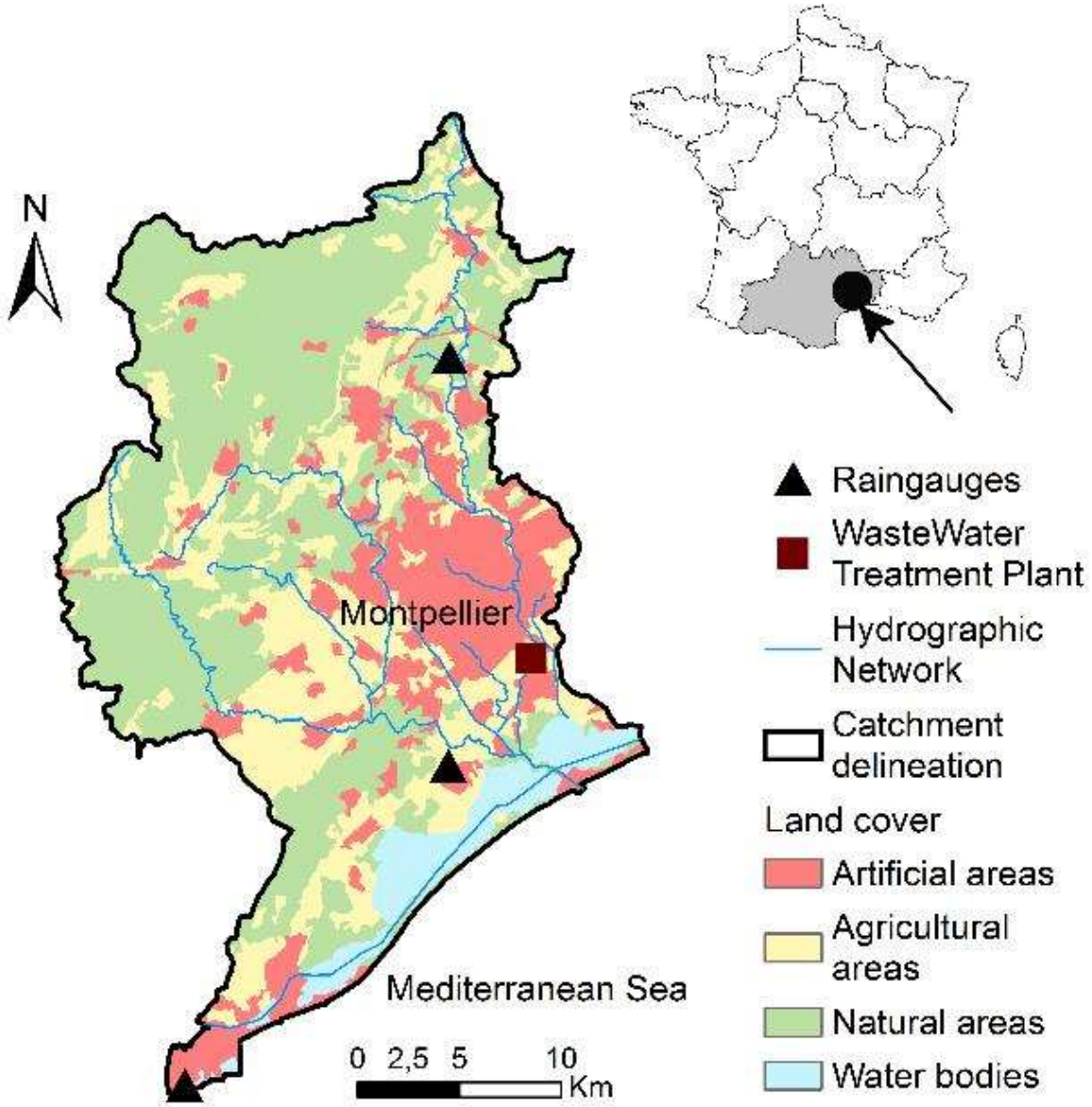
- The Montpellier metropolitan area is **densely urbanised**
  - Highest population growth in France
  - 277 639 inhabitants in Montpellier city
  - 4881 inhabitants/km²
- The Lez river is a 29 km long river flowing across the urban area

- What are the contaminants generated by the urban area of Montpellier ?



Contaminations in the Lez catchment

- **PAHs** (road traffic, combustion processes) (Liu et al., 2016; Stein et al., 2006)
- **Trace metals** (road traffic, roof surfaces) (Egodawatta et al., 2007; Fallah Shorshani et al., 2014)
- **Fecal Indicator Bacteria** (sewage overflows and animals) (Marsalek and Rochfort, 2004; Ram et al., 2007)
- **Organotins** (Domestic activities, Priority substance of the water framework directive) (Bancon-Montigny, 2001; David et al., 2012)



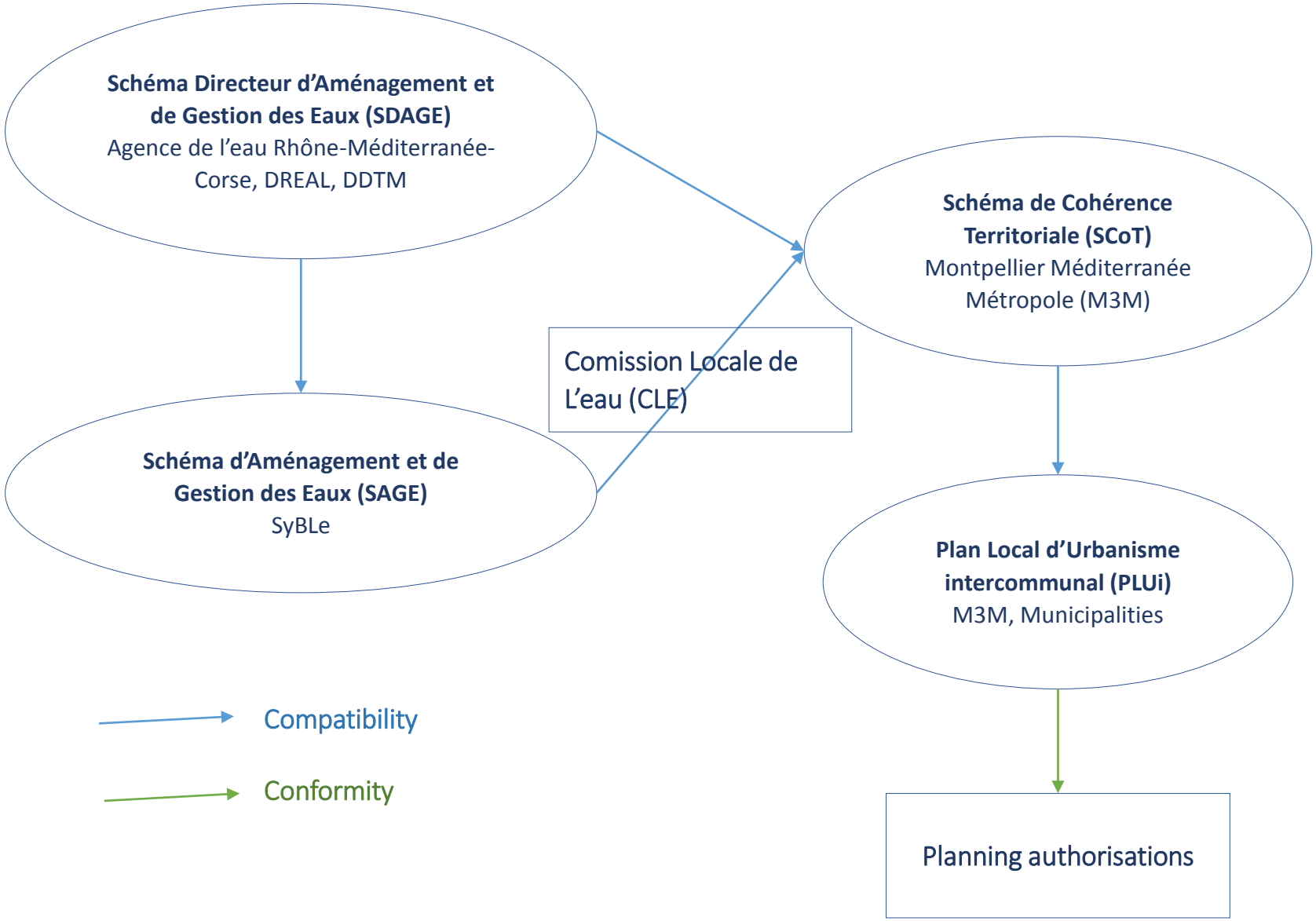
Aim of the study

What is the influence of urban land use planning on surface water contaminations?

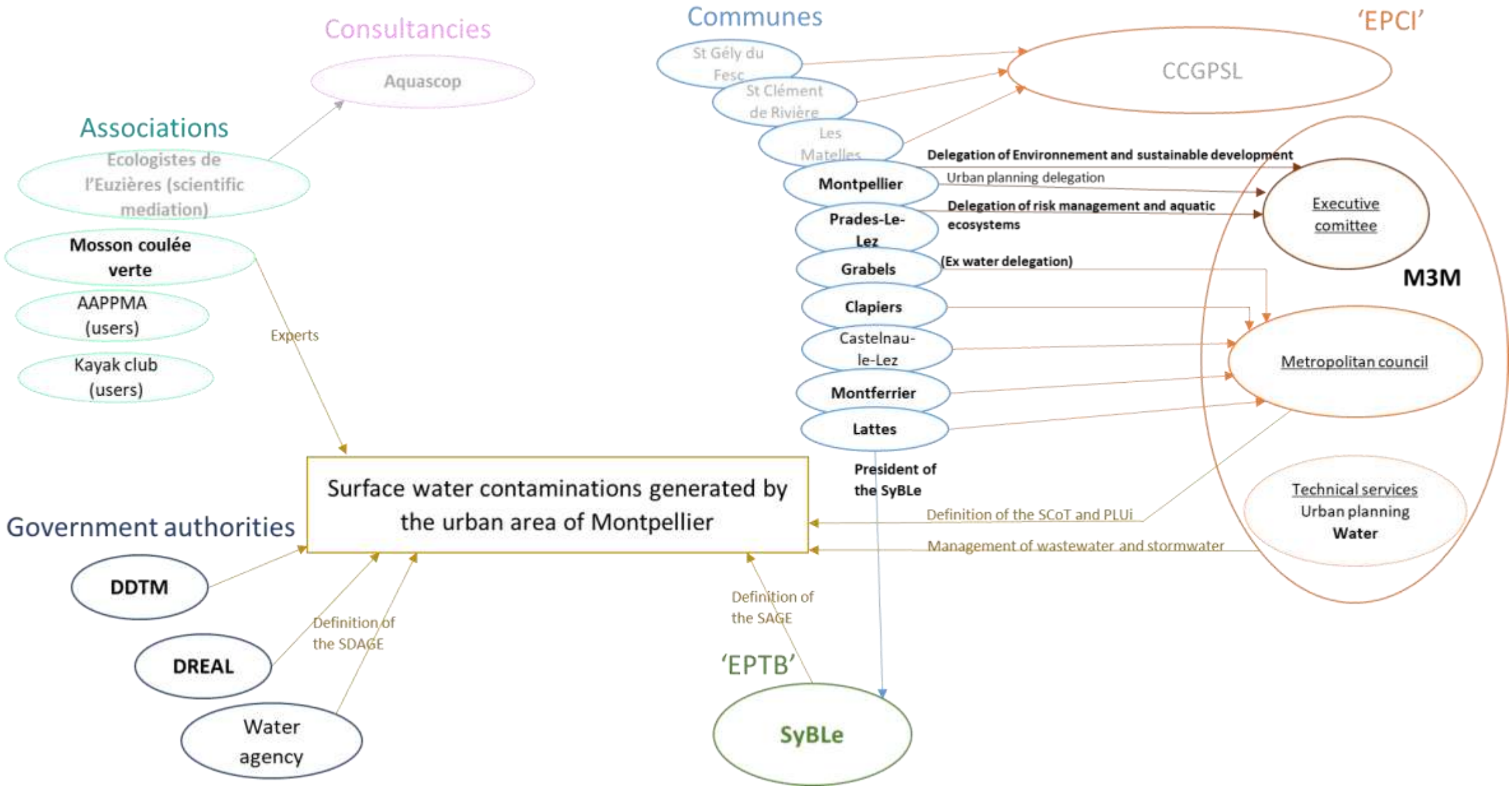
1. Hydrological modelling of contaminant loadings under three scenarios of urban land use planning

2. 15 Interviews with local stakeholders How do they consider water quality issues related to urban runoff?

Public policies

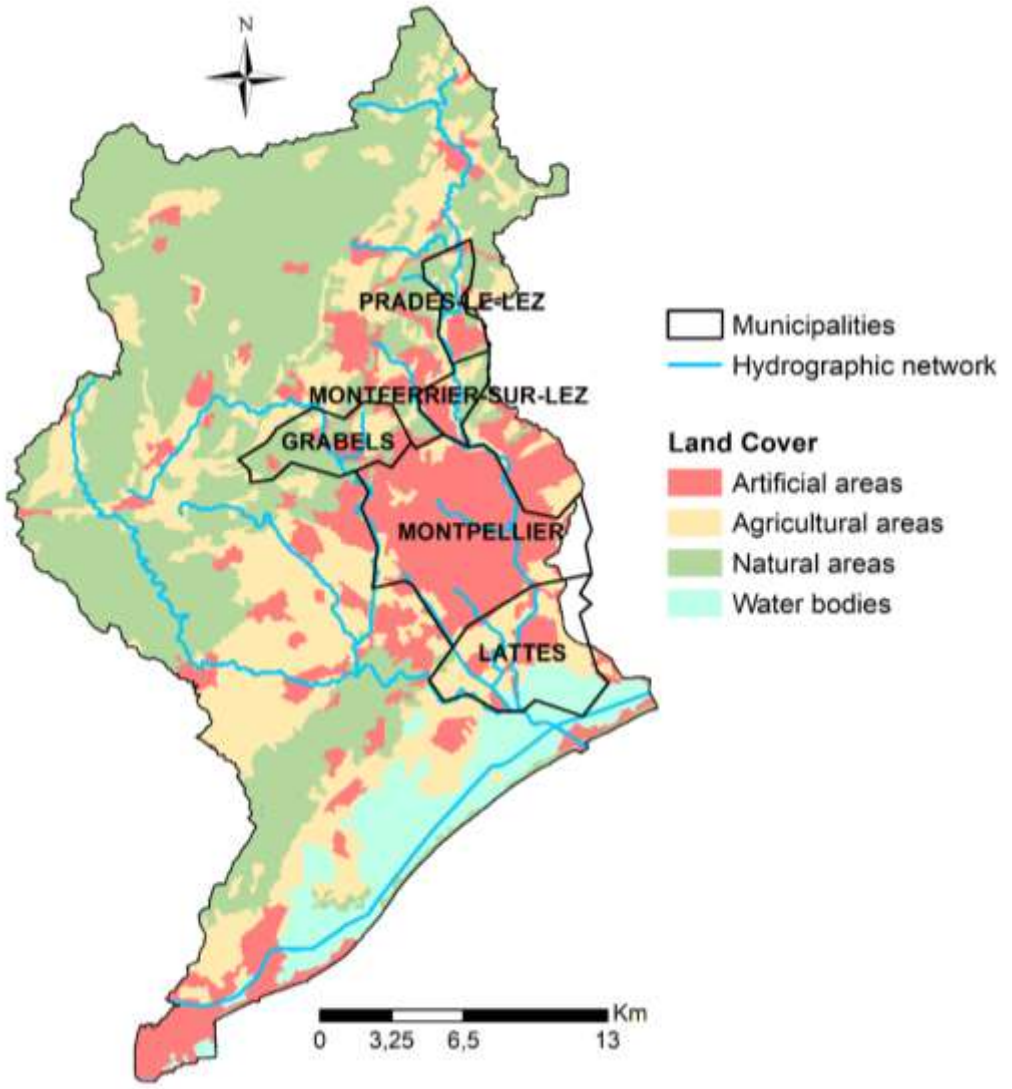


Presentation of local stakeholders

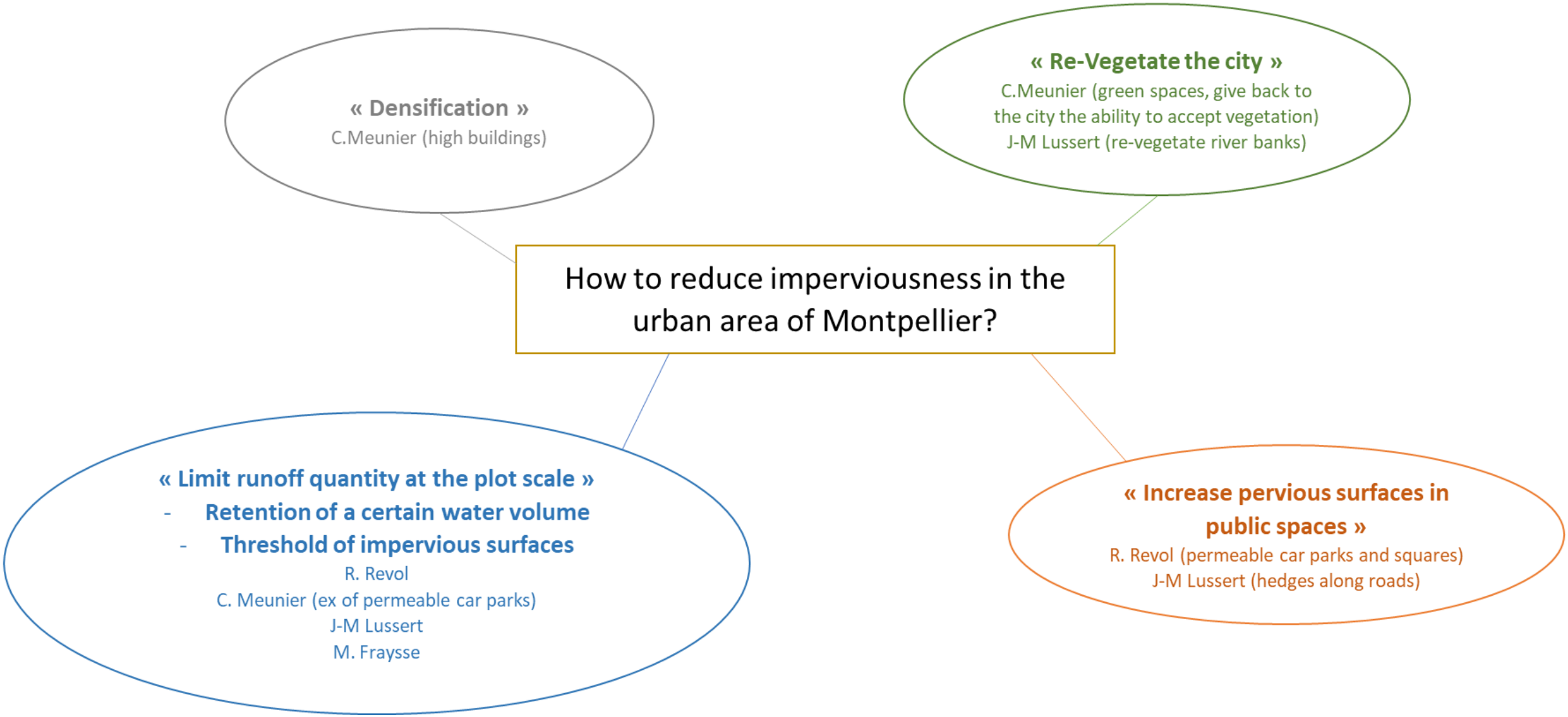


First results

- Limited knowledge of water quality issues compared to flood risk
- “Gap of knowledge” between elected representatives and technical services
- High variability in the approaches to reducing imperviousness
  - 4 different visions
    - C.Meunier, president of the SyBLe and mayor of Lattes
    - R.Revol, former elected representative in charge of the water delegation at M3M, mayor of Grabels
    - J-M Lussert, elected representative in charge of risk management and aquatic ecosystems and mayor of Prades-Le-Lez
    - M.Fraysse, mayor of Montferrier/Lez



First results



Conclusion and perspectives

Urban runoff transfers various contaminants to surface waters

What is the influence of urban land use planning on surface water contaminations?

Hydrological modelling
+
Scenarios of urban land use planning

Interviews with local stakeholders

Territorial context of the study

Participatory workshops to sensibilize local stakeholders to the results of the modelling

Identification of **implementation tools** for mitigation measures

Thank you for your attention