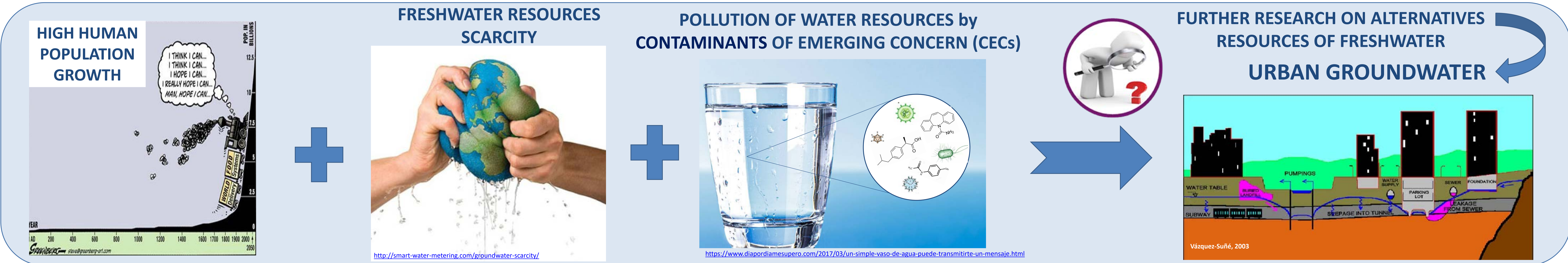


1. BACKGROUND OF THE PROJECT



2. OBJECTIVES

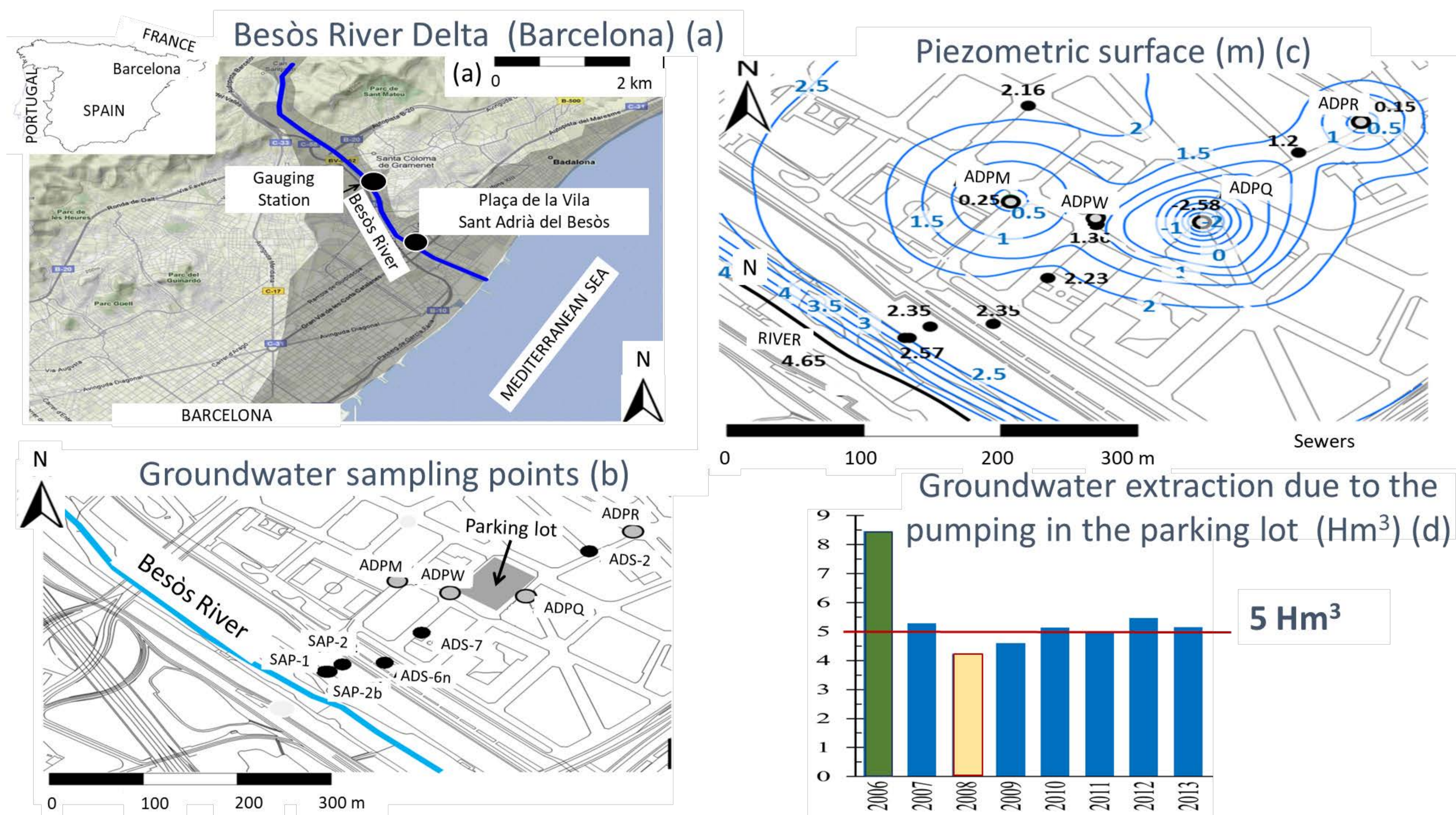
- Detection of selected CECs and other contaminants (virus) in urban groundwater (UGW)
- Identification and quantification of the chemical processes that contribute to the natural remediation of CECs in urban groundwater under different redox conditions at field scale.
- Development of solutions for the sustainable management of UGW resources by means of numerical modelling facilitating the decision making and improving its management.

EXPECTED OUTCOME

Integrated methodology for UGW management using monitoring, measuring and modelling approaches that will support improved decision-making to ensure the long-term availability of water resources. This approach can be used for water authorities and applied in other urban aquifers.

3. STUDY AREA

It is the lower part of the Besòs River Delta (NE Spain) where there is a huge amount of UGW pumped (5 Hm³ per year) to prevent structural damage of an underground parking lot. This resource is directly discharge into the sewage and there is an urgent need to improve the management of this valuable resource.



4. DESCRIPTION OF THE WORK PACKAGES (WPs)

WP1- Selection of the target CECs to be monitored in UGW

Pharmaceuticals, personal care products, drugs of abuse, among others.

WP3- Proposal and development of solutions for the sustainable management UGW resources

The **objective** is to identify real uses of the pumped urban groundwater in the Besòs River Delta by means of numerical model.

- Subtasks:
- 3.1 Identification the potential uses of the pumped groundwater
 - 3.2 Simulation of different management scenarios

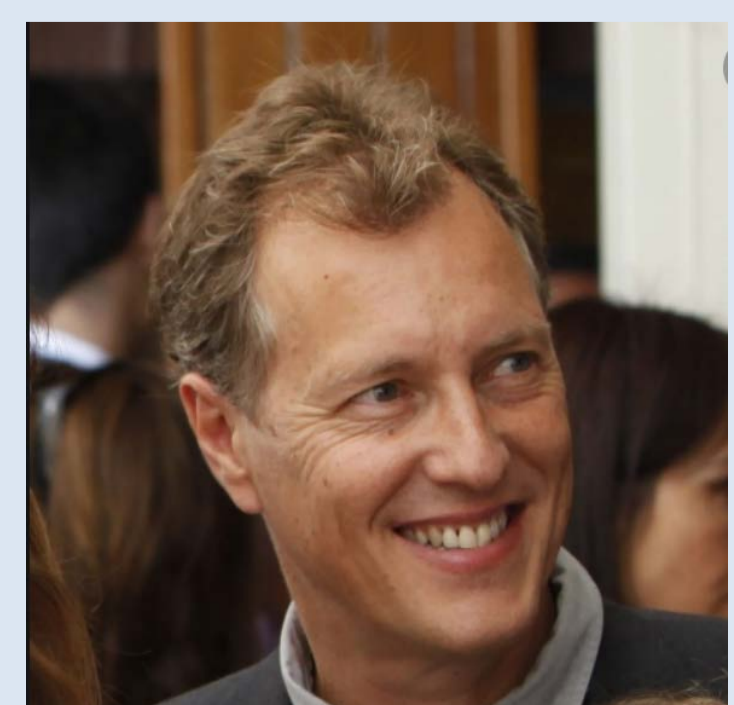
WP2- Fate of selected CECs in UGW at field scale

The **objectives** are to (1) investigate the occurrence, seasonal variation and spatial distribution of CECs in an urban environment and (2) study the behaviour of CECs in UGW (i.e., redox conditions enhance their natural attenuation).

Subtasks:

- 2.1. Geological and hydrogeological characterization of the study area
- 2.2. Sampling and analysis of CECs and inorganic chemicals in UGW and contaminant sources
- 2.3. Identification and characterization the sources of CECs pollution and UGW recharge quantification
- 2.4. Conservative transport model
- 2.5. Reactive transport model

5. RESEARCH TEAM & POTENTIAL COLLABORATIONS



Dr. Enric Vázquez-Suñé



Dr. Anna Jurado

Are you interested in **collaborating** with us in this project or in other similar research topics? Please, do not hesitate to **contact us!**

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