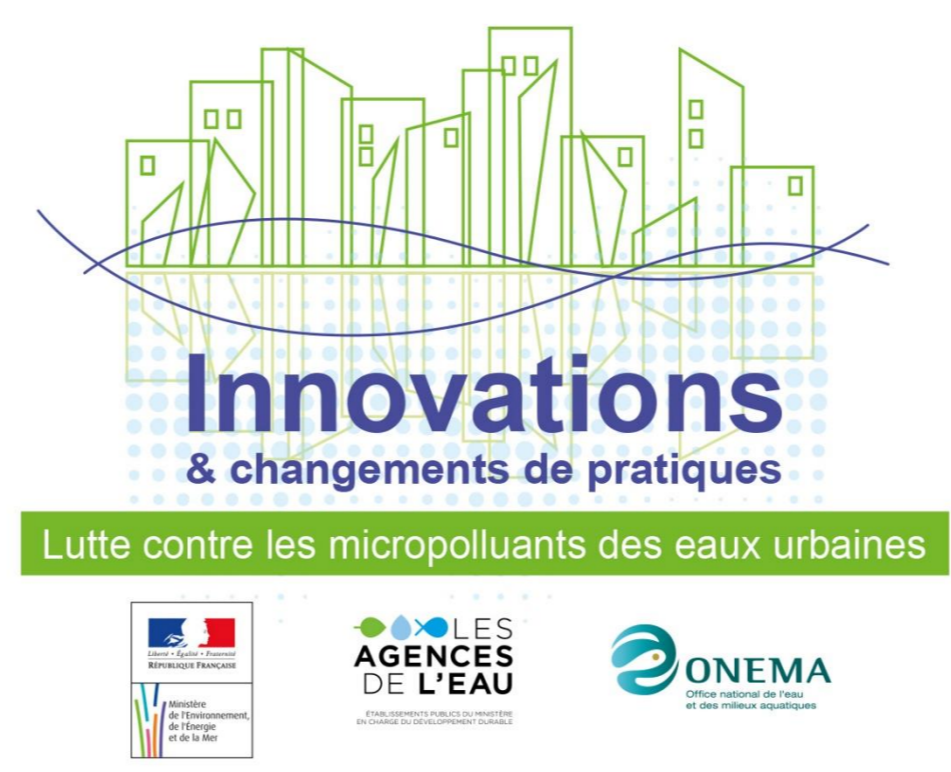


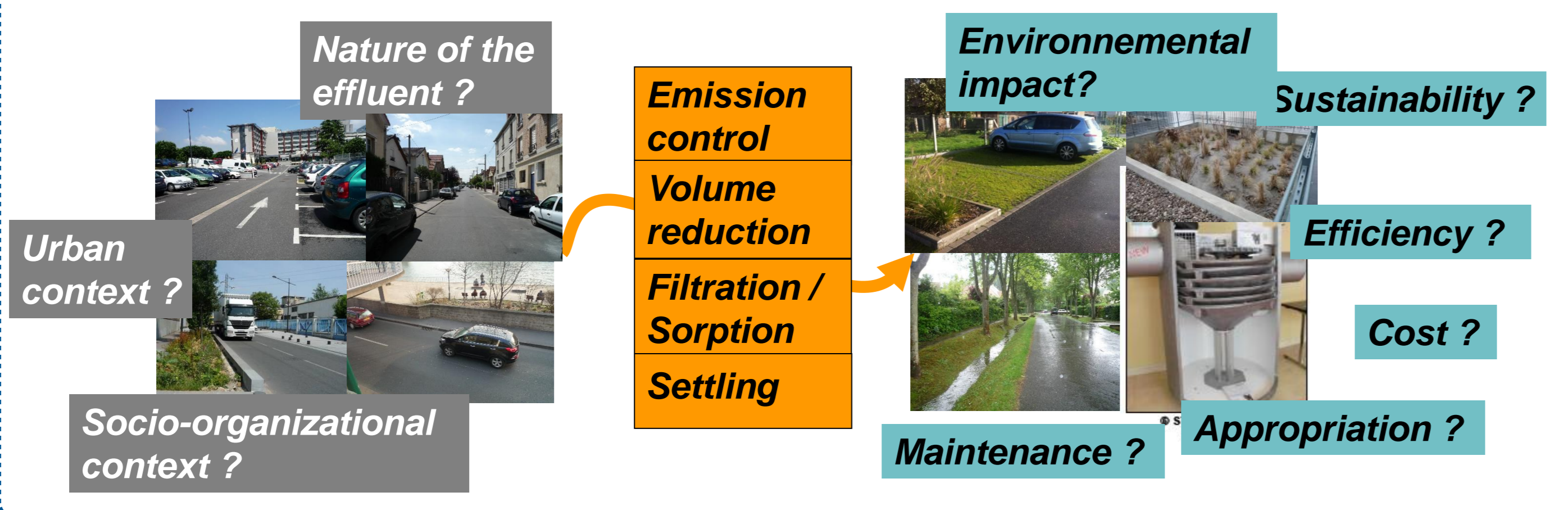
ROULÉPUR: Evaluating innovative solutions for the source control of micropollutants associated with road and parking lot runoff

ROULÉPUR: Evaluation de solutions innovantes de maîtrise à la source de la contamination en micropolluants des eaux de ruissellement des voiries et parkings



Context

- **Runoff from roadways and parking lots**
 - ⇒ A complex matrix of micropollutants
 - ⇒ Need for source control / treatment
 - ⇒ Necessity to adapt the solutions to site specifics



Objectives

- **Diagnose the composition** and toxicity of runoff water, identifying primary sources
- Evaluate several innovative treatment solutions **in situ** in terms of **efficiency** (hydrology, chemistry and ecotoxicity) and **sustainability** (maintenance, aging)
- Analyse the overall environmental performance through a **life cycle assessment (LCA)**
- Assess solutions' **ownership conditions** (social, technical and economic) and diffusion potential within the local context

Study sites

- 4 sites in Paris conurbation
- Contrasted pollution levels and urban contexts



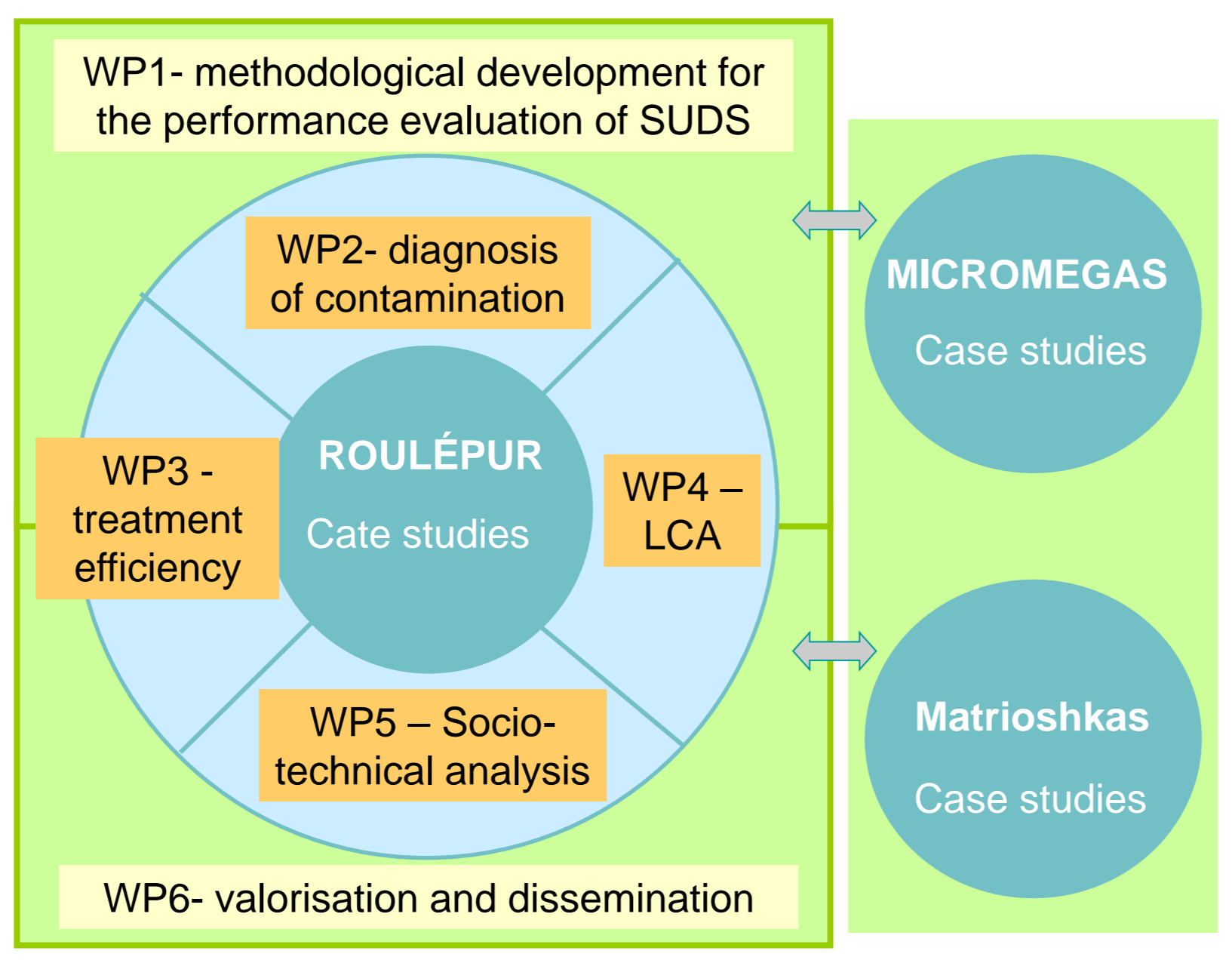
- 4 treatment facilities
- Both nature-based and technological devices

- Vegetative filter strip and biofiltration swale
- Pervious, vegetated car park
- Small, horizontal sand filter
- Compact settling / filtration / adsorption device



Methodology

- A holistic and multidisciplinary approach



- Micropollutants studied

- **Diagnosis of road runoff contamination**
 - Targeted screening: PBDE, DEHP, organotins, nickel, HBCDD, PFOS, benzotriazoles, tetrabromobisphenol A, platinoïdes
 - Non targeted screening
- **Performance evaluation of facilities**
 - SS, POC, DOC, N, P, major ions, Hydrocarbons
 - Micropollutants: 12 metals, PAH, alkylphenols, bisphenolA, phtalates
 - Toxicity analysis

Gromaire, Bak, Branchu, Bressy, Bruzzone, Budzinski, Caupos, De Gouvello, Deroubaix, Deshayes, Dubois, Erlichman, Flanagan, Gasperi, Georgel, Kanso, Labadie, Meffray, Moilleron, Neaud, Neveu, Paupardin, Ramier, Ratovelomanana, Saad, Seidl, Thomas, Viau