



Theme 4 – URBAN / Topic A “Water and Cities”
Session 1 : Design for Water-Wise Cities

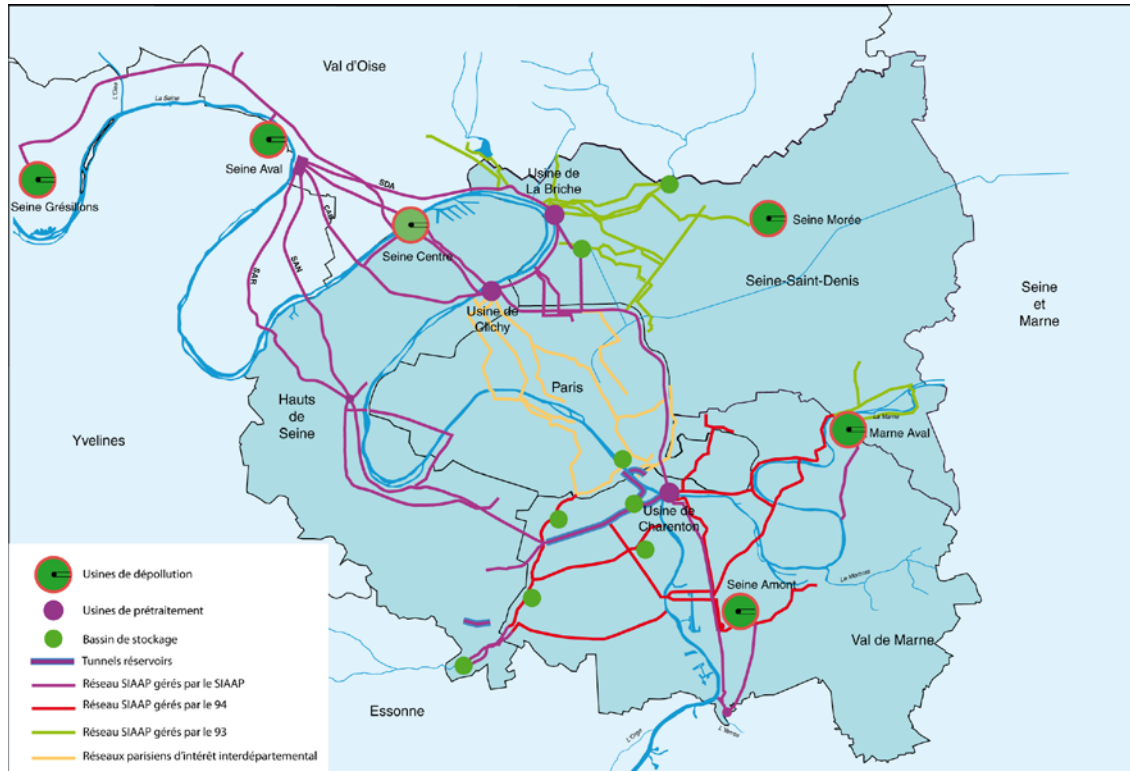
Transitioning Megacities to the Circular Economy :
New Synergies Through the Megacities Alliance
SIAAP, Alexandra LAURIAT

Monday, March 19 th

Secretariat of the 8th World Water Forum



The river Seine



Association of cities, departments, for Waste water transportation and treatment for :

9 000 000 inhabitants on a surface area of about 2000 km²

2,5 Millions m³ /day to 3,6 Millions m³/day

6 Waste Water treatment plants and 440 km collecting sewers

1 Million m³ dedicated to storage

Flow of the Seine River in Paris :

Lowest flow : 95 m³/s

Average flow : 310 m³/s

Annual rainfall: 650 mm



Densification of cities and their extension
Will increase the pressure around the urban water resource

Main water demands :

Population Consumption, Agricultural Practices, Energy Production, Industrial Use

Flow of the river Seine is decreasing

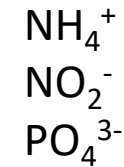
Increasing yields and reliability

Load entering the plant is increasing

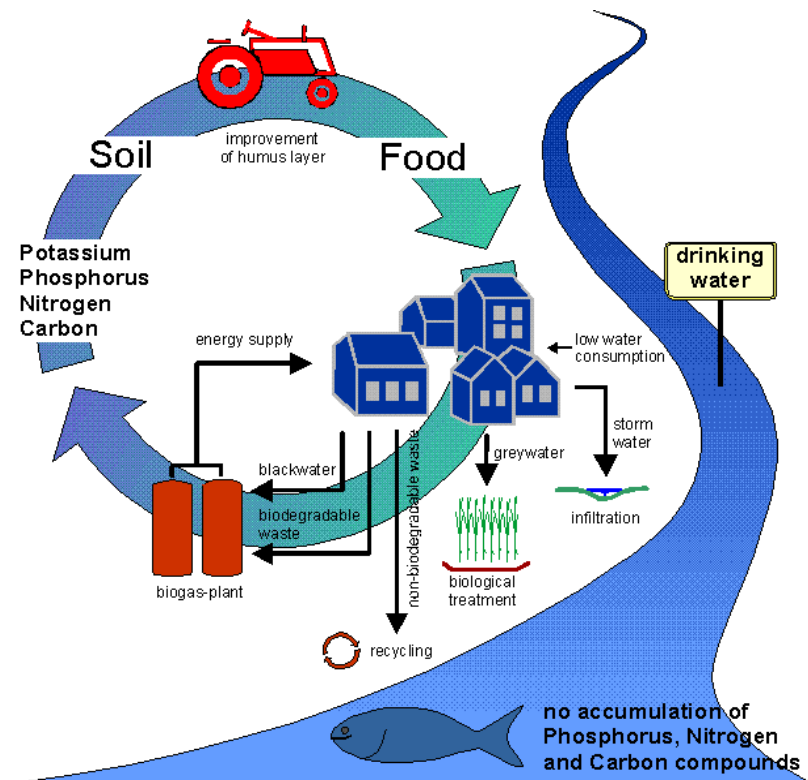
Respect release standards



Seine more vulnerable



Source : Otterwasser, Lübeck



Are there alternatives to conventional sanitation by exploiting opportunities throughout the water cycle ?

Wastewater must be considered as a resource: carbon, nitrogen and phosphorus are nutrients for the soil.

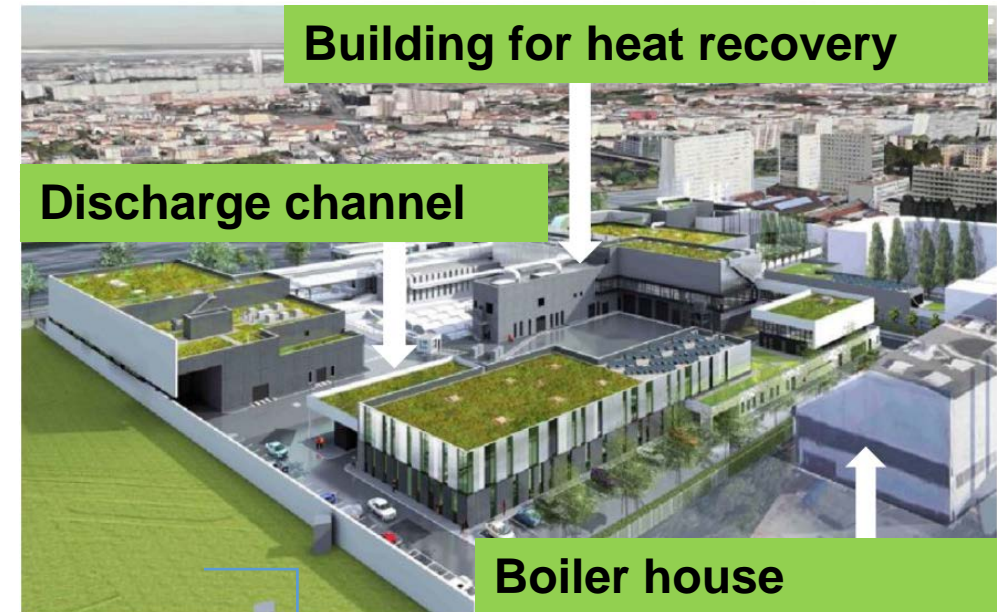
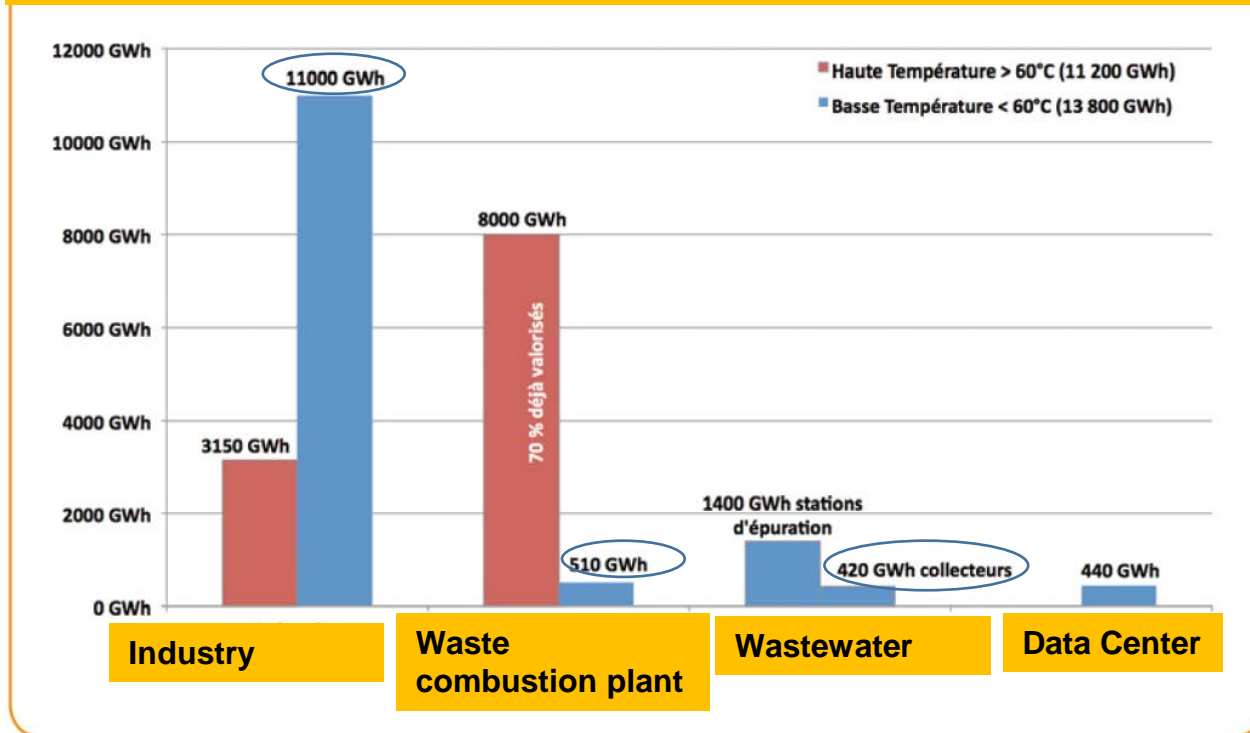
Recovering biological energy sources

Making sanitation energy self-sufficient should be an ambitious issue

Heat recovery from the wastewater networks?

Potential recoverable energy in the Paris' region : 25 TWh/year

Classification of heat sources according to the temperature level



2022: 63 GWh/an

What about the treatment capacities of SIAAP in 2030 ?



An issue: the treatment of nitrogen compounds ?

Nitrogen, a sensitive parameter :

Difficult to treat

Declassifying for good condition



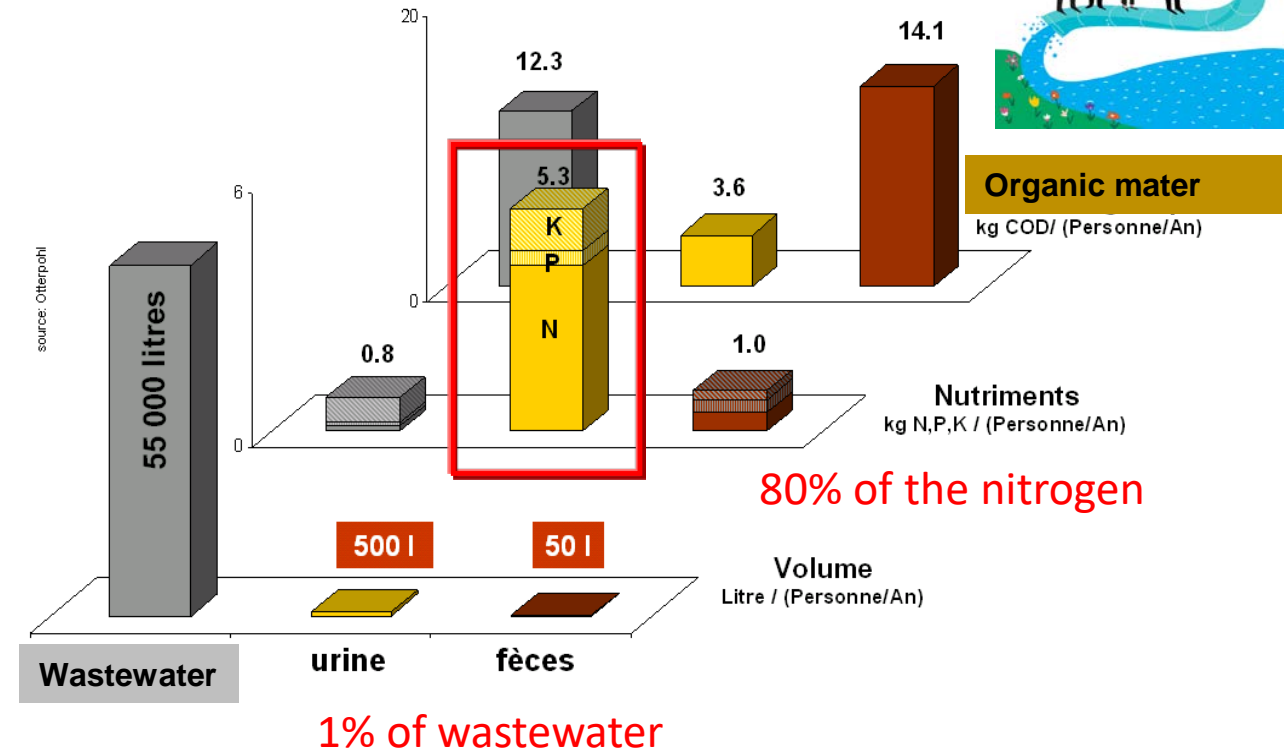
What potentialities, which difficulties?

Technical aspect : transport, storage, collection, treatment

Regulation aspect : link with current regulation texts

Environmental aspect : impact compared to conventional sanitation

Social aspect : user acceptability



The Future : Selective collection of local urine to a concentration unit

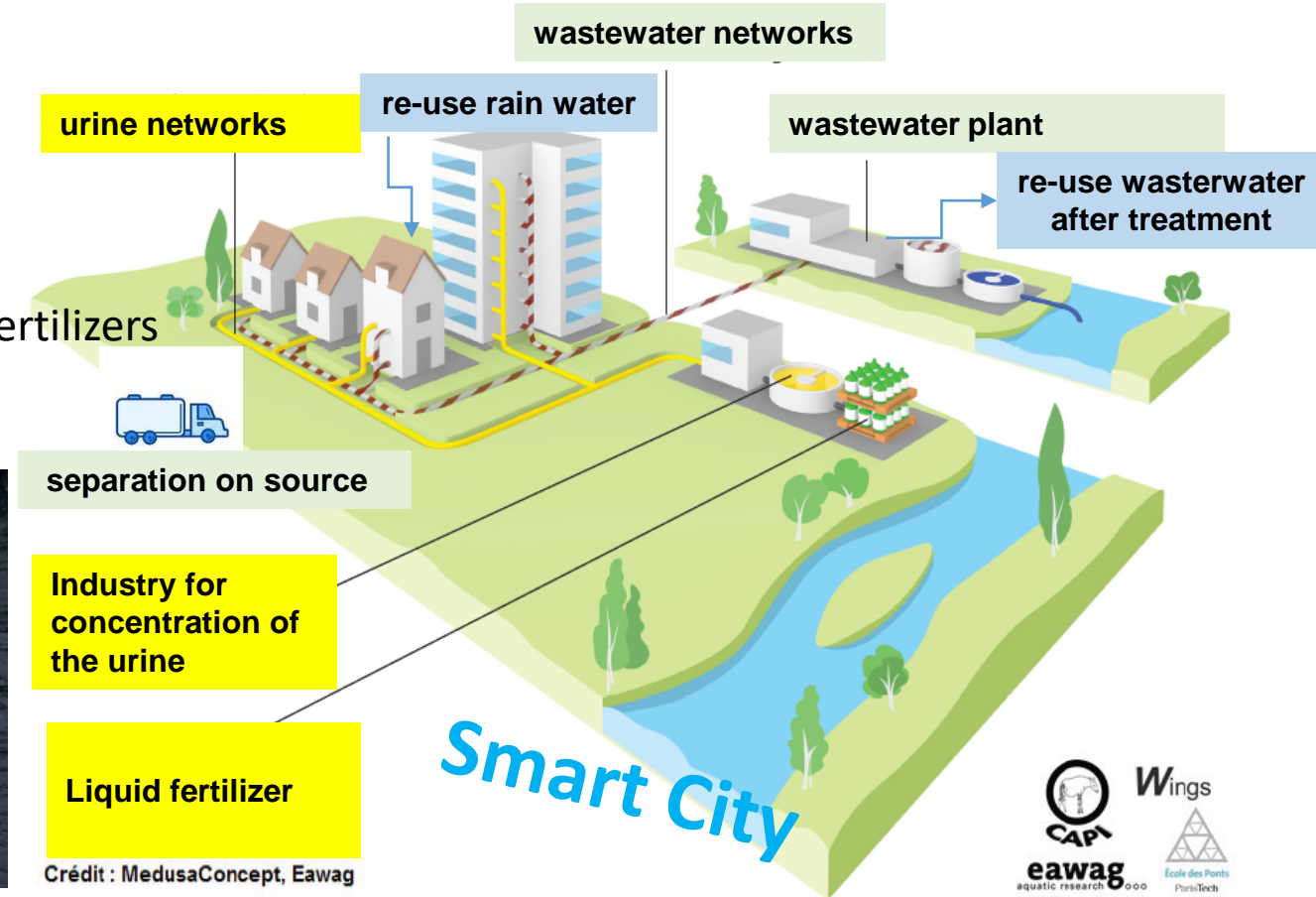
(source Thèse F. Esculier, March 19, University Est Paris)



reuse of treated water



good dosage of recycled fertilizers



➔ development of selective collection at source of solid waste from wastewater



Thanks for your attention



SIAAP
Greater Paris Sanitation Authority





8th
World Water
FORUM

Brasilia-Brazil
2018

Sharing Water

Organization



GOVERNO DE
BRASÍLIA

MINISTRY OF THE
ENVIRONMENT



Support

