



8th
World Water
Forum

Brasília-Brazil
2018

Circular Economy: Reuse in the Mediterranean and its impacts on territories

March, 20th – 14:30-16:00 (Room 8)



#WWF8Med

8th WORLD WATER FORUM | BRASÍLIA-BRASIL, MARCH 18-23, 2018

www.worldwaterforum8.org | secretariat@worldwaterforum8.org

Introduction and moderation by:

- Mrs. Kelly ROBIN, Project Manager, IPEMED
- Mr. Eric MINO, Director, EMWIS

Participants:

1) *Lessons learned from the ground: what are the main challenges as regards the reuse of treated waste water?*

- Mr. Giora Shaham, Director General, Israel National Water Authority, Israel
- Mr. Pedro Simón, Technical Director, ESAMUR - Wastewater Treatment Entity of the Region of Murcia, Spain

2) *What is / could be the role of local stakeholders in the conception and implementation of REUSE projects?*

- Mr. José Martinez, Deputy Director International Affairs, IRSTEA, France
- Mrs. Raphaëlle Primet, Vice President, SIAAP, France

3) *To all panelists: What about North-South cooperation?*

Debate with the audience – 30 min



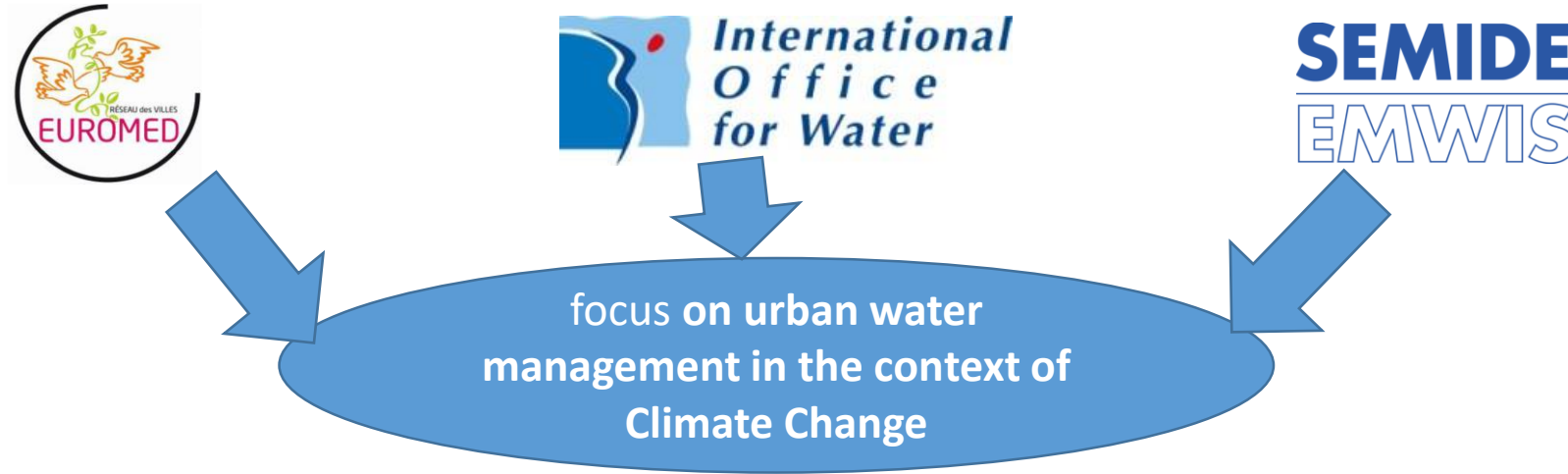
Circular Economy: Reuse in the Mediterranean and its impacts on territories

Session introduction

Eric Mino - SEMIDE – EMWIS “Euro-Mediterranean information system on know-how in the water sector” – e.mino@semide.org



Cooperation on Mediterranean Sustainable Cities



<http://cities.semide.net>



Mediterranean Water Forum

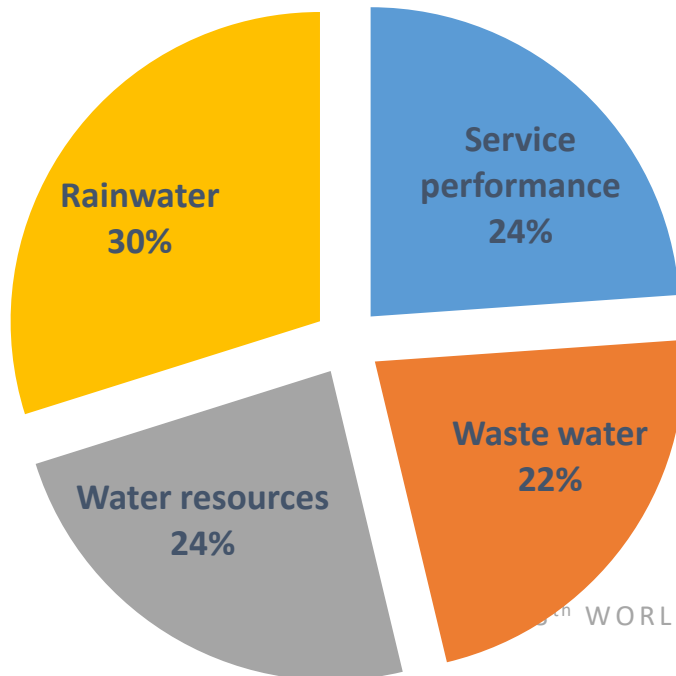
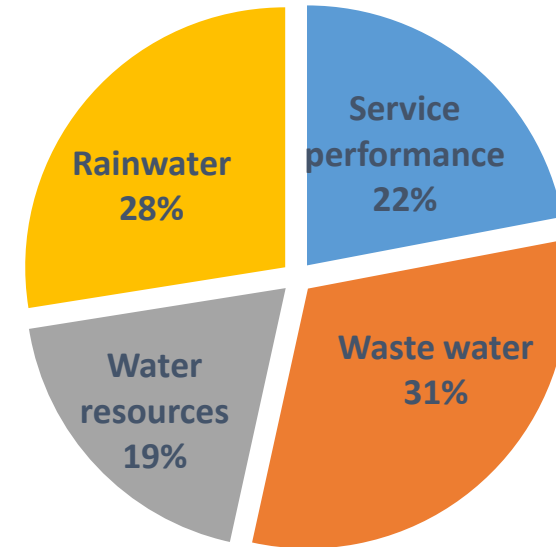
Reuse in the Med and its impacts on territories




- INSTITUT DE PROSPECTIVE ÉCONOMIQUE DU MONDE MÉDITERRANÉEN -

Good practices and needs

- Good practices
 - Other topics:
 - Solid Waste
 - Energy efficiency



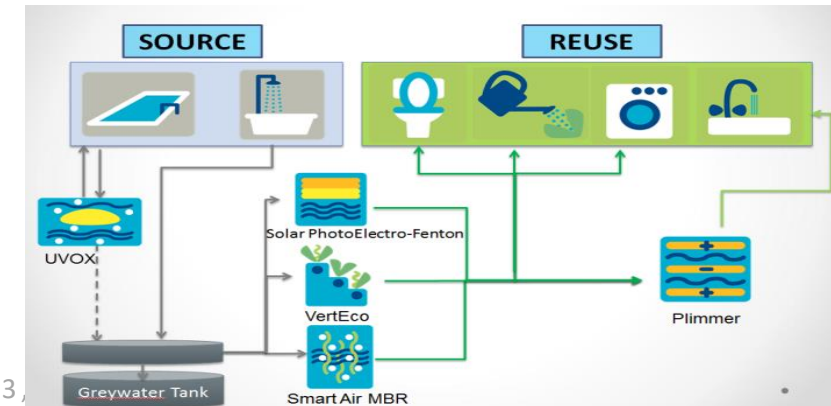
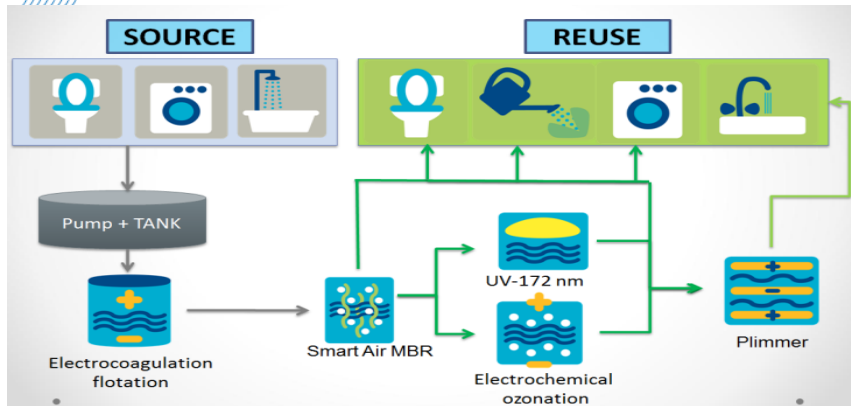
■ Needs

Other topics:

- Solid Waste, compost
- Solar Energy
- Green areas

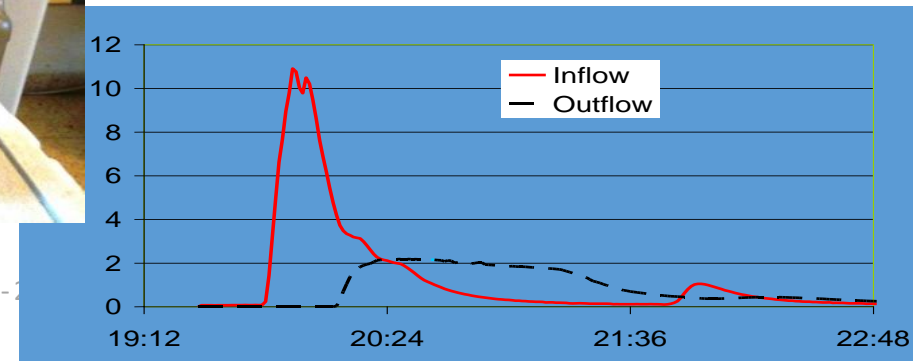
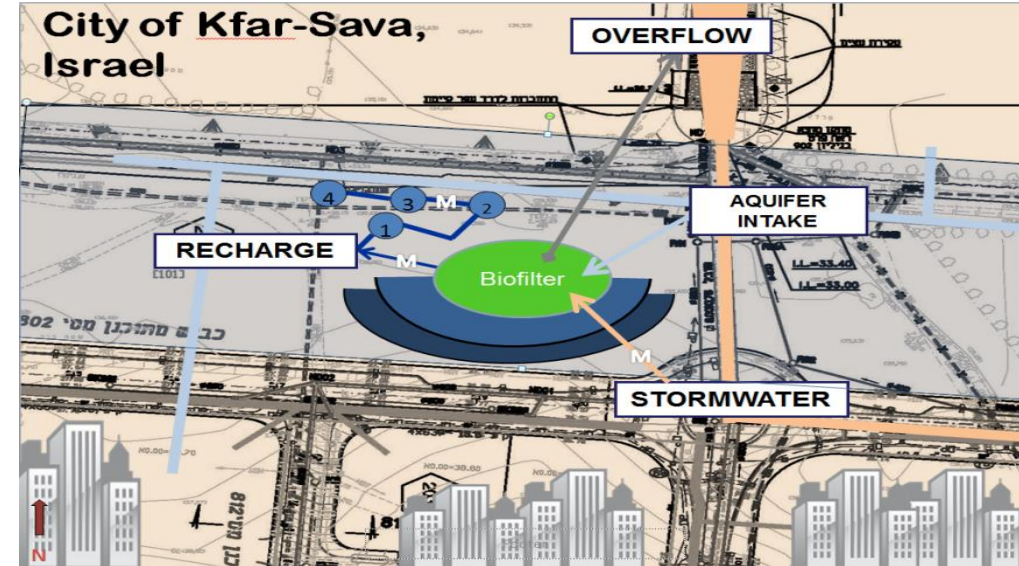
Decentralised reuse in Touristic areas

- Lloret del Mar (ES)
 - 40 000 inhab. winter
 - 1 500 000 during summer
 - Reuse technologies in hotel
 - 30% wastewater can be reused
 - At city level:
 - 3000 m³/day ~ 5000 tourist



Natural Based Solution – storm water

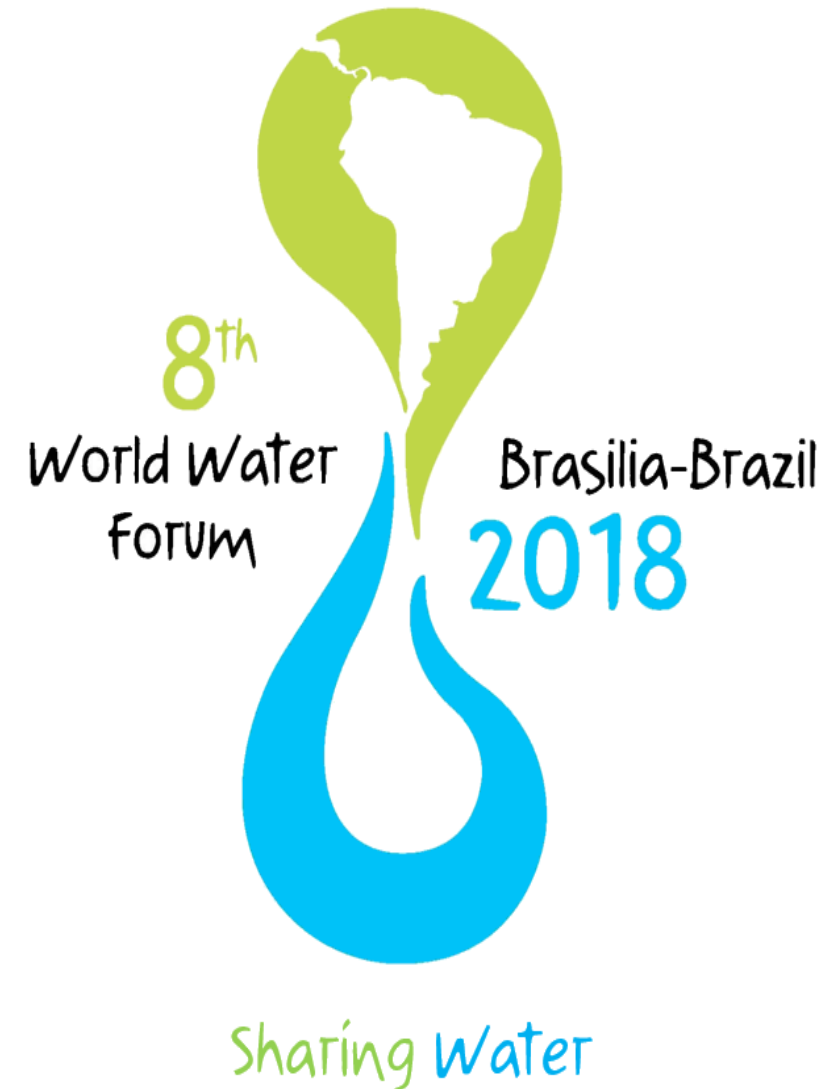
- Kfar Saba (IL)
 - Urban storm water / polluted water
 - Natural water retention
 - Biofilters
 - Aquifer recharge



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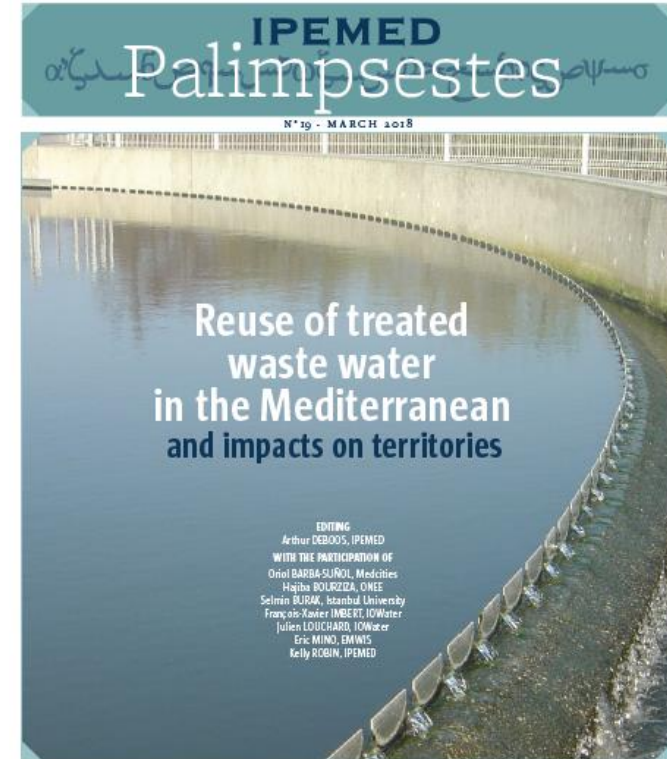
Session introduction

Mrs. Kelly ROBIN, Project Manager, IPEMED
Kelly.robin@Ipemed.coop



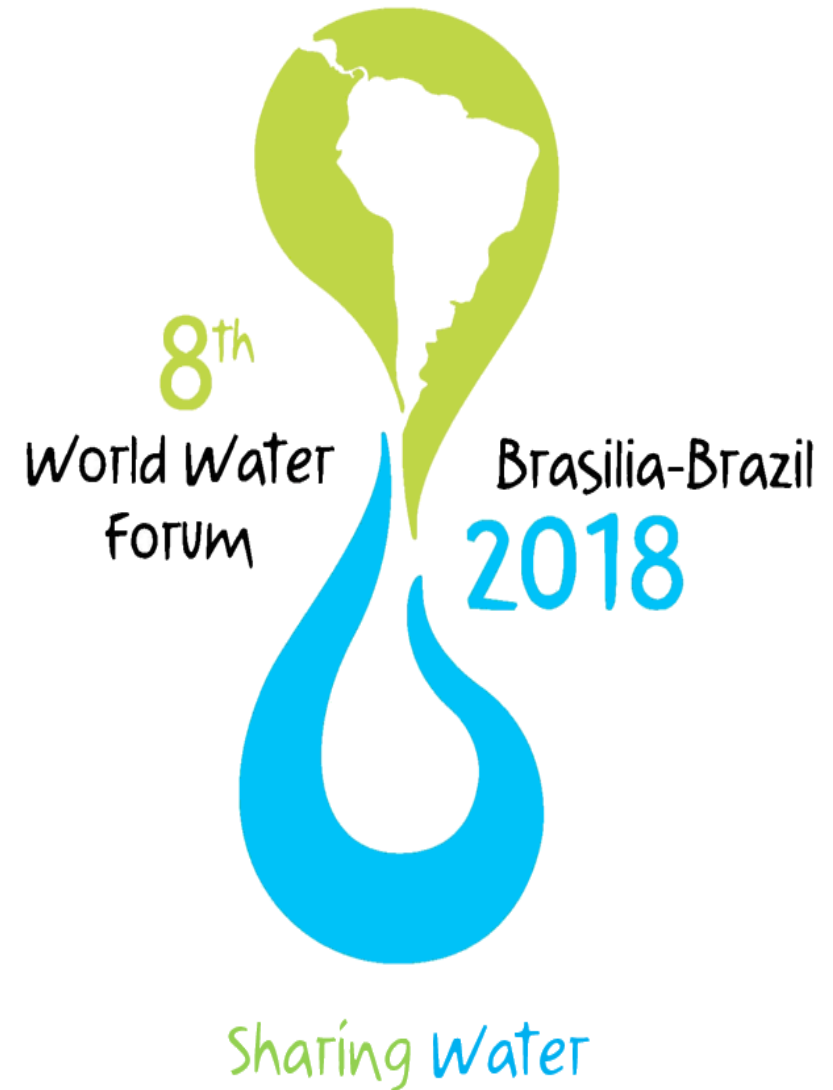
PUBLICATION: Reuse of treated waste water in the Mediterranean and impacts on territories

Policy paper available at www.ipemed.coop



Circular Economy: Reuse in the Mediterranean and its impacts on territories

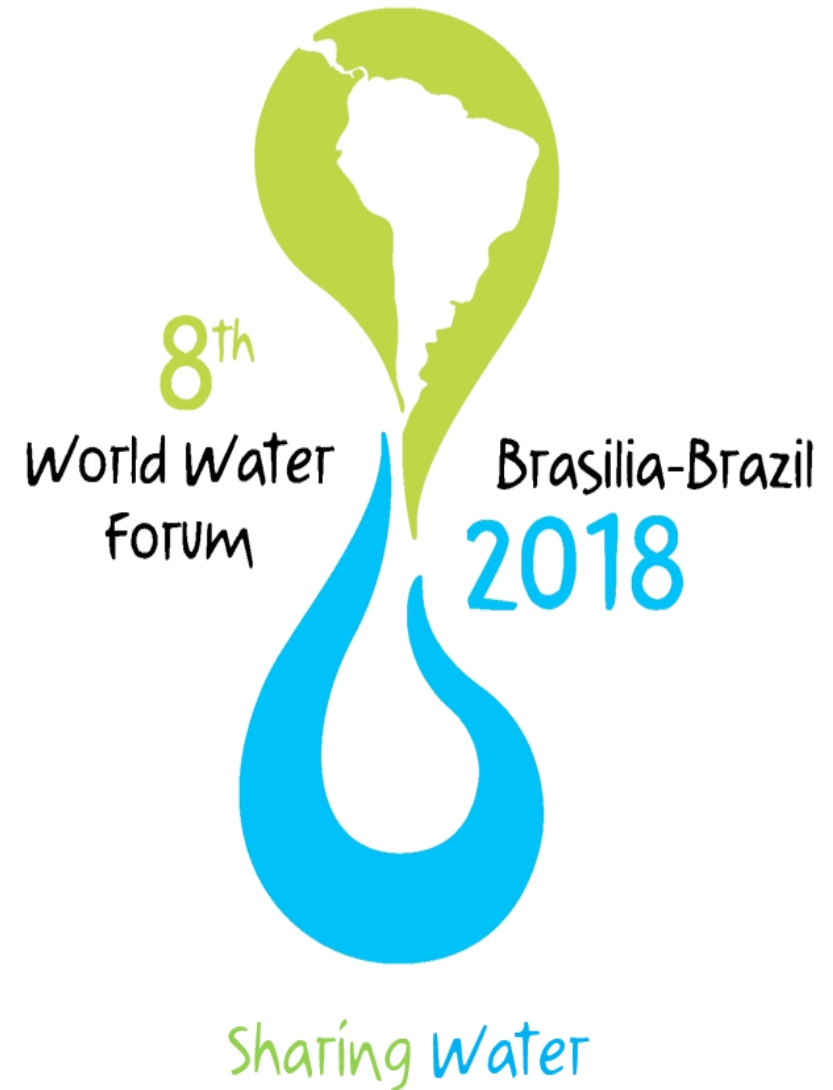
Mr. Giora Shaham,
Director General,
Israel National Water
Authority

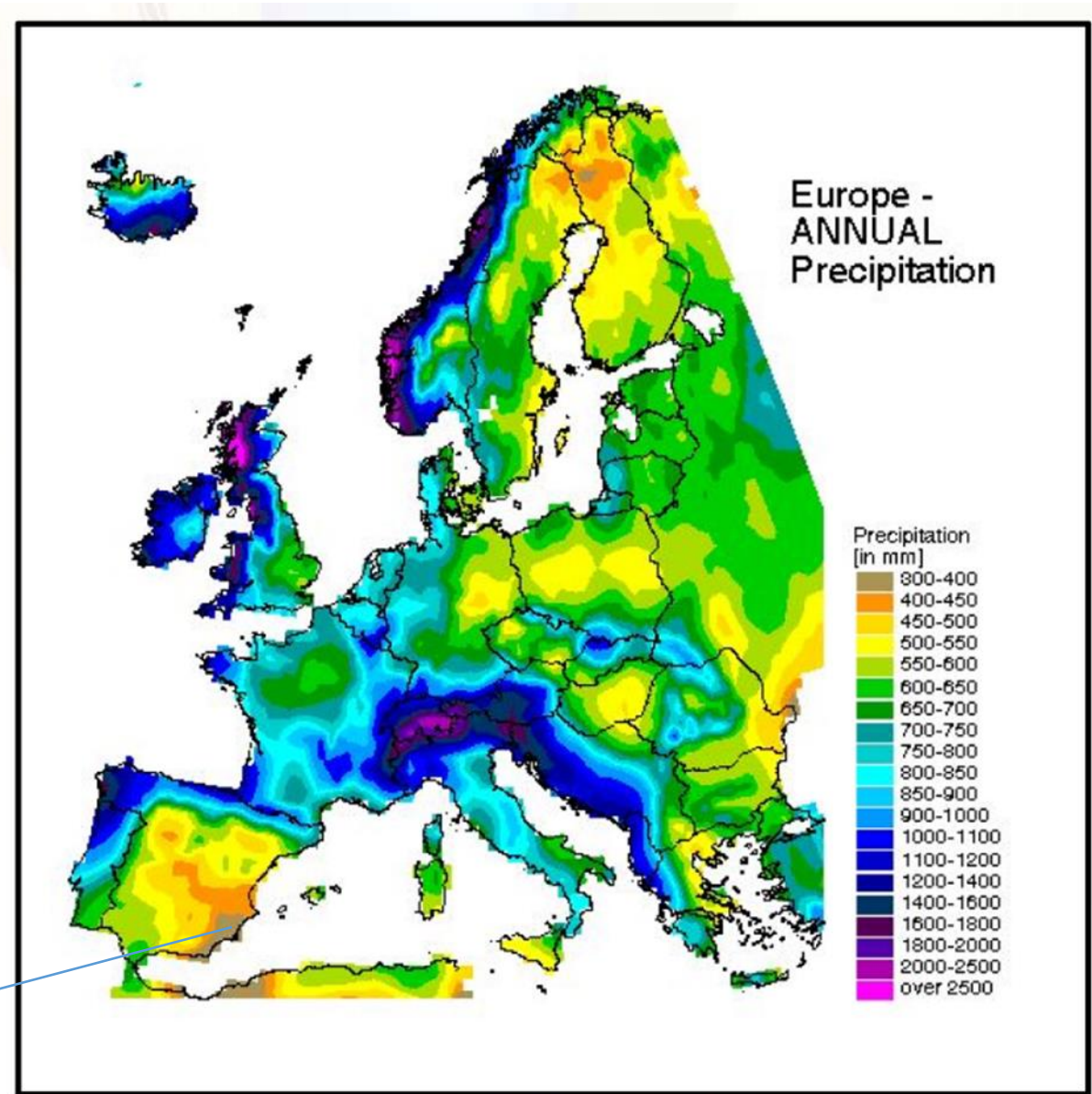


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WATER REUSE IN MURCIA REGION (SPAIN)

Pedro J. Simón Andreu
Technical director ESAMUR





MURCIA

Annual rainfall : 350 mm



2,5 million tons / year of
fruits and vegetables

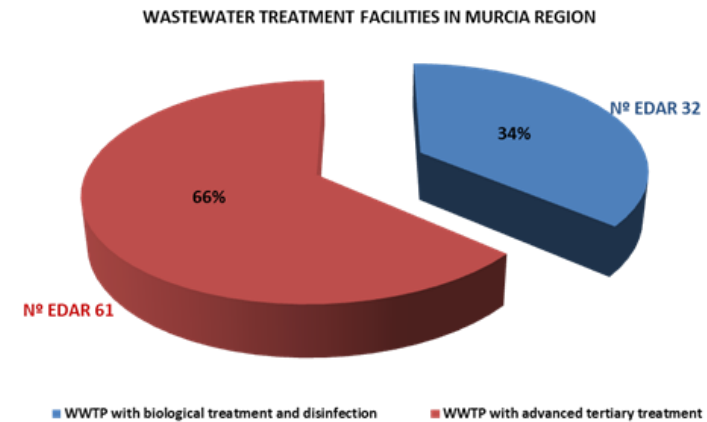


MURCIA REGION

1.500.000 inhabitants

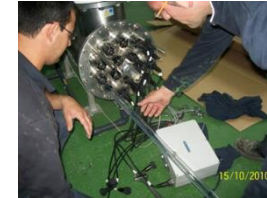
Number of WWTP	93
Population served	99,3 %
% Reuse	98 %

Annual volume of treated water : 105 Hm³

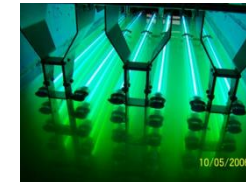


CURRENT CHALLENGES ABOUT WATER REUSE

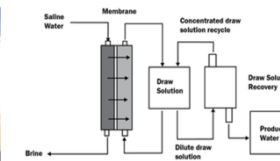
- To get the maximum reliability of the facilities and the maximum efficiency of the equipments



- To assure food safety with **affordable** treatments



- To reduce the salinity of reclaimed water



- To work about emerging compounds (Detection, effects and removal systems)



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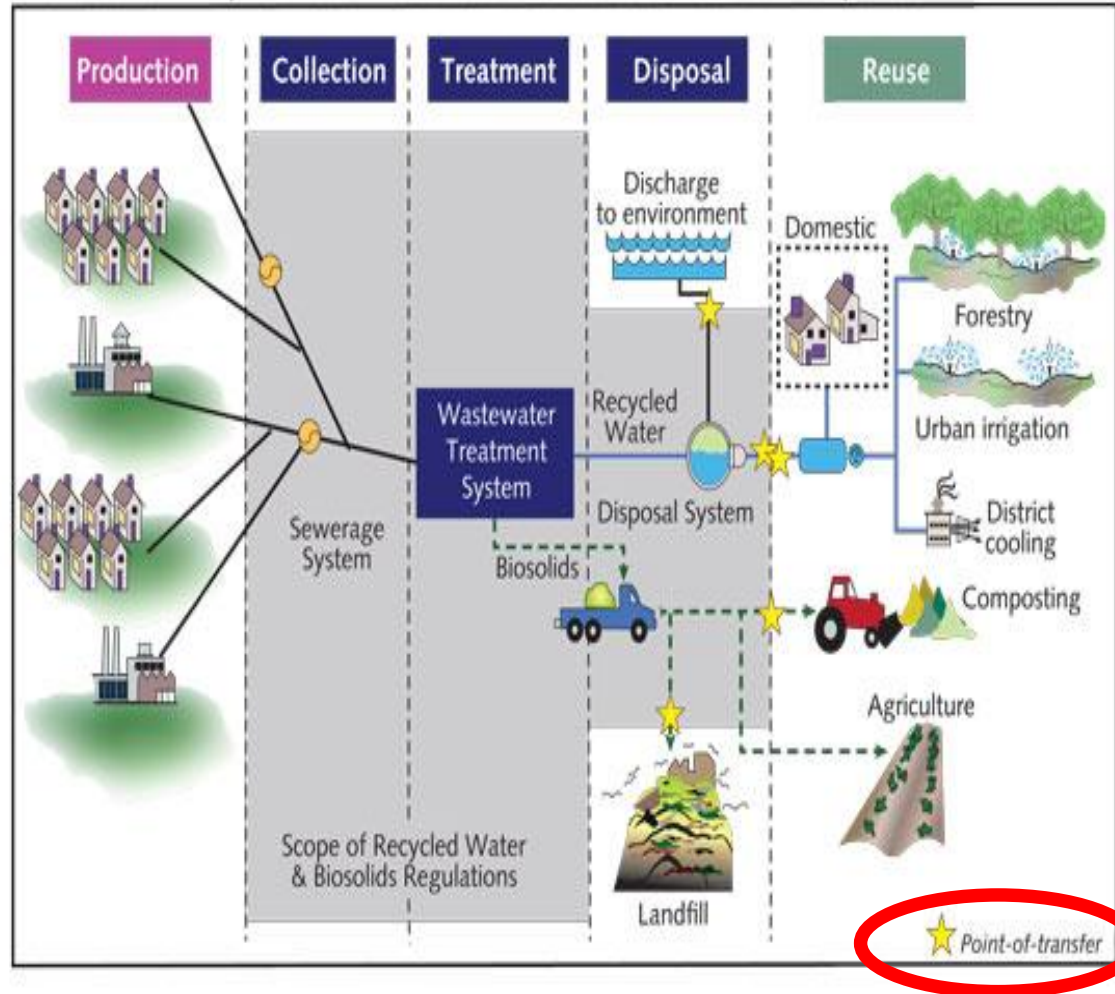
Interdisciplinary approach of Treated WasteWater Reuse at Irstea

Séverine Tomas, José Martinez

Contributors: Nassim Ait-Mouheb, Sami Bouarfa, Sylvie Gillot, Rémi Lombard-Latune, Sébastien Loubier, Bruno Molle, Pascal Molle



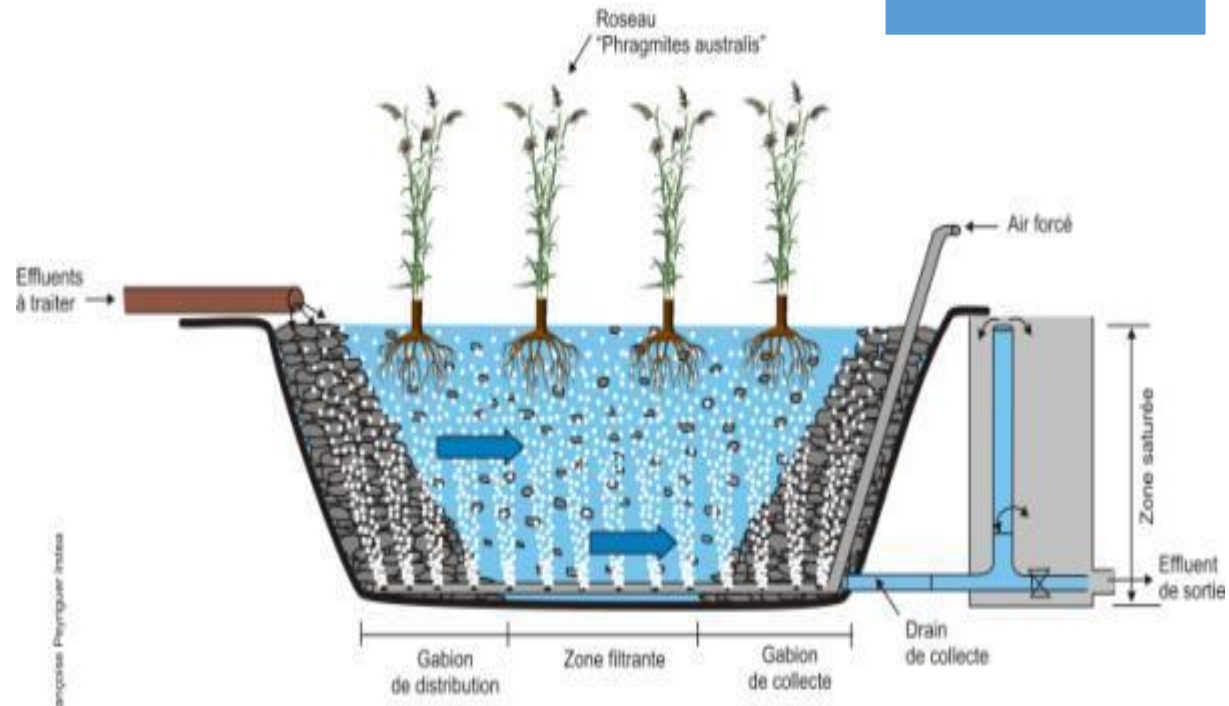
Issues of decentralized treatments



→ To limit point-of-transfer in adapting treatment to use



Forced ventilation



Issues for irrigation:

What potential in agriculture for wastewater?



Agronomic impact



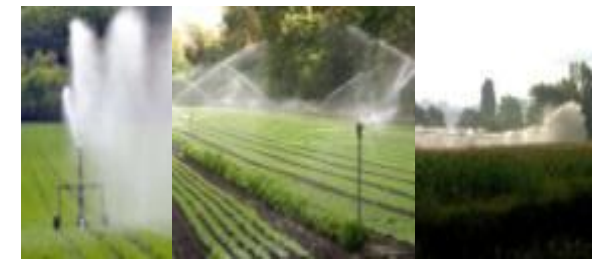
- ✓
 - Recycle residual nutrients
 - Expose pollutants and pathogens to degradation
- ✗
 - Risk of salinisation
 - Accumulate heavy metals and emerging pollutants
 - Diffuse diseases

Drip irrigation



- ✓
 - Water and energy efficient
 - Limit contacts to pathogens and pollutants
- ✗
 - Aging prematurely → heterogeneity of distribution
 - Accumulate/release pathogens and pollutants
 - Degrade soil by salt accumulation

Sprinkler irrigation



- ✓
 - Economical for investment
 - Robust (0 clogging)
 - Expose pathogens to degradation (UV, pressure)
- ✗
 - Contaminate leaves and products
 - Wind Sensitive → losses, drift
 - Possible aerosolization of contaminants

→ To develop beneficial recycling of water and nutrients without risk

Issues for irrigation:

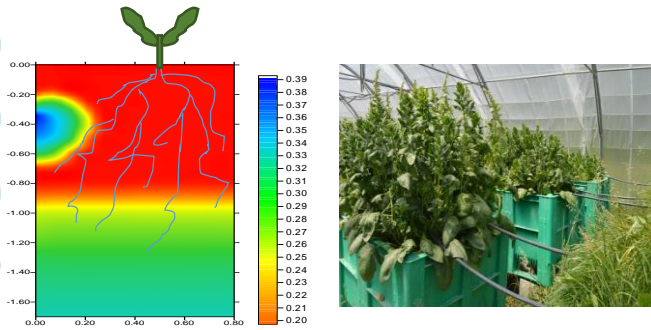
What potential in agriculture for wastewater?



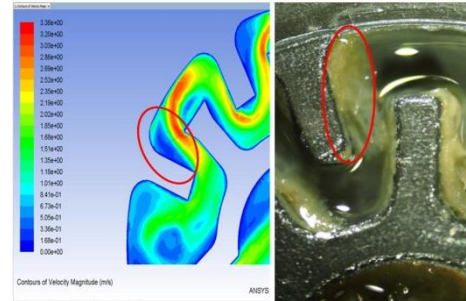
Agronomic impact

Drip irrigation

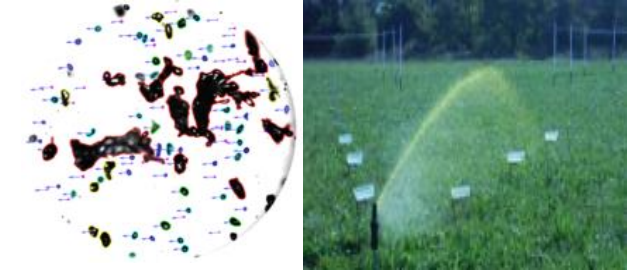
Sprinkler irrigation



Water and nutrient transfers



Premature aging and non-uniformity



Water transfers in the air and on plants, atomization

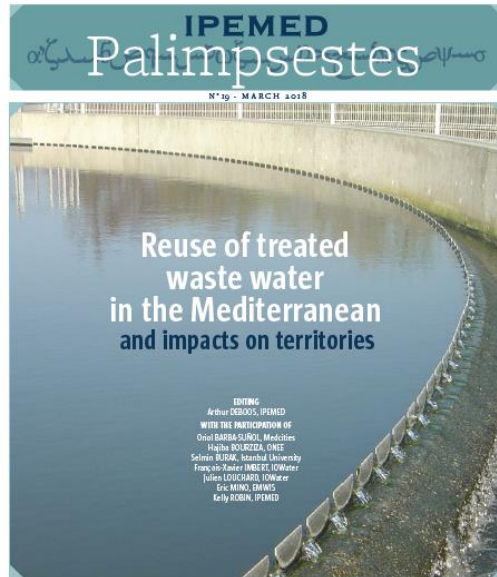
- To understand drivers to develop safe wastewater irrigation
- To better characterize demand in EUT, its determinants, advanced justifications
 - To have a qualitative and quantitative assessment

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Mrs. Raphaëlle Primet,
Vice President,
SIAAP, France



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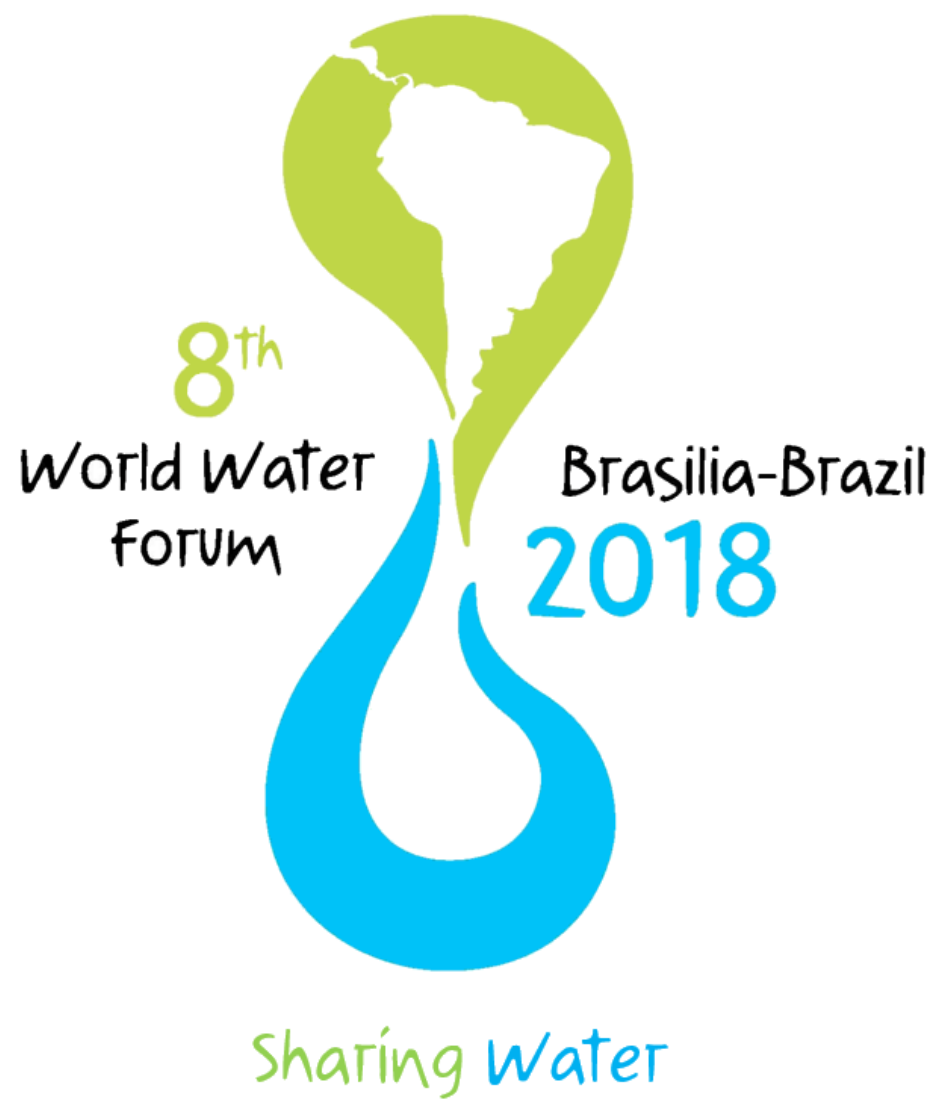


8 recommendations for the conception & implementation of REUSE projects:

- BETTER ANTICIPATING;
- BETTER UNDERSTANDING;
- BETTER PLANNING;
- BETTER INTEGRATING;
- BETTER SUPERVISING;
- BETTER FINANCING;
- BETTER INFORMING;
- BETTER COOPERATING.

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Thank you !



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Sharing Water

Organization



MINISTRY OF THE
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Support

