

MONITOOL: new tools for monitoring the chemical status in transitional and coastal waters under the Water Framework Directive

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Introduction

The Water Framework Directive, WFD (2000/60/EC) establishes that the chemical status of water bodies must be determined by the comparison of the concentrations of priority substances with Environmental Quality Standards (EQSs). Nowadays, regulatory monitoring is mainly based on the collection of spot water samples, sediments and biota. Diffusive Gradients in Thin-films (DGTs) passive samplers might overcome the limitations related to spot sampling, providing time-integrated labile metal concentrations during the deployment time. The main barrier hindering the acceptance of DGTs for compliance checking is the lack of appropriate EQSs.

Overall Objective: to adapt the already existing EQSs for DGTs, enabling their use for regulatory monitoring.

Material and Methods

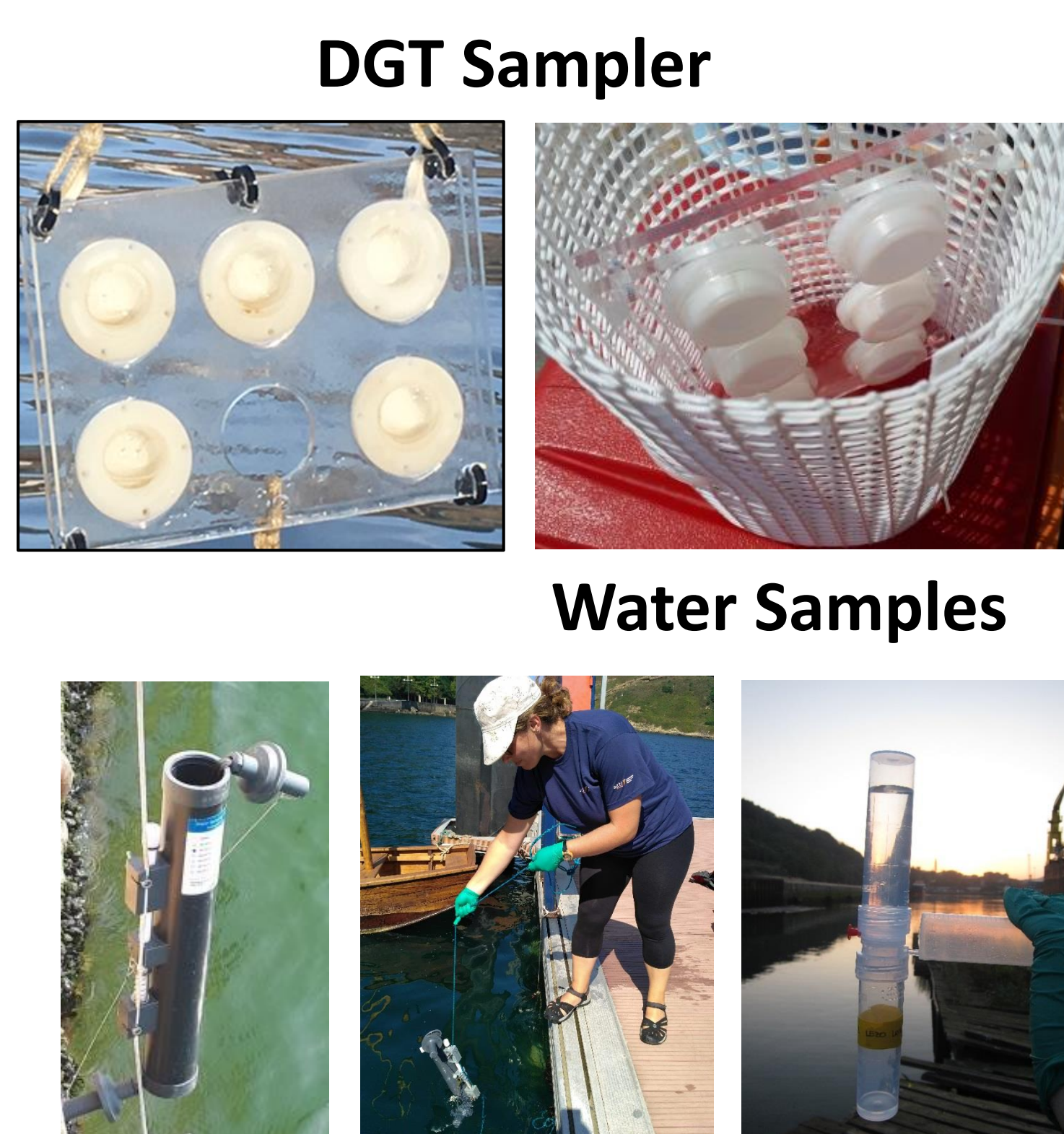
Develop sampling and analysis protocols (minimize operational variability)

Agreed protocols

Field study (8 regions x 4 sampling sites x 2 times = 64 samplings)
21 coastal and 13 estuarine sites. Over 250 DGTs and over 500 seawater samples

Laboratory

Database + statistical analysis

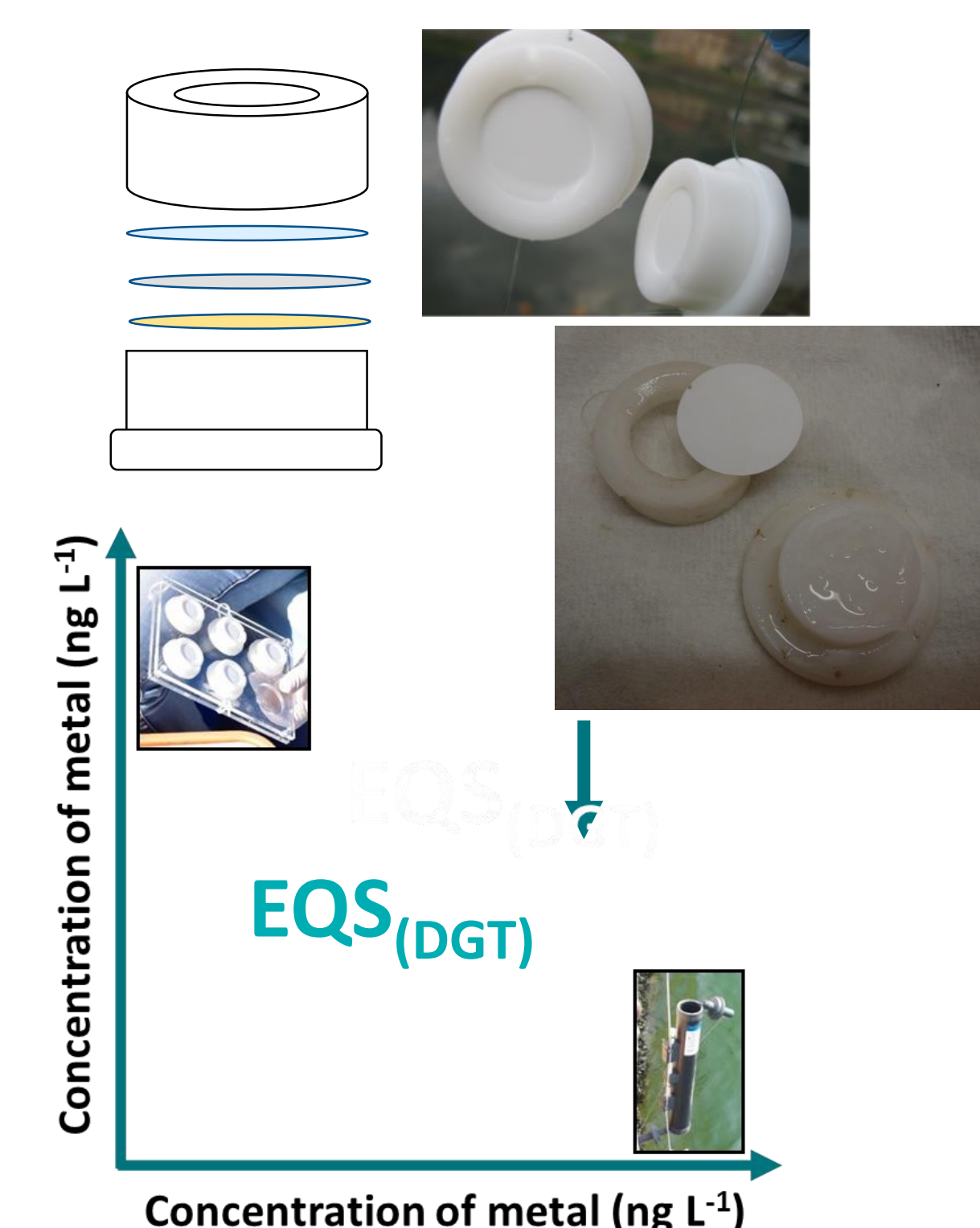


Metals in DGTs:
ICP-MS (IFREMER)

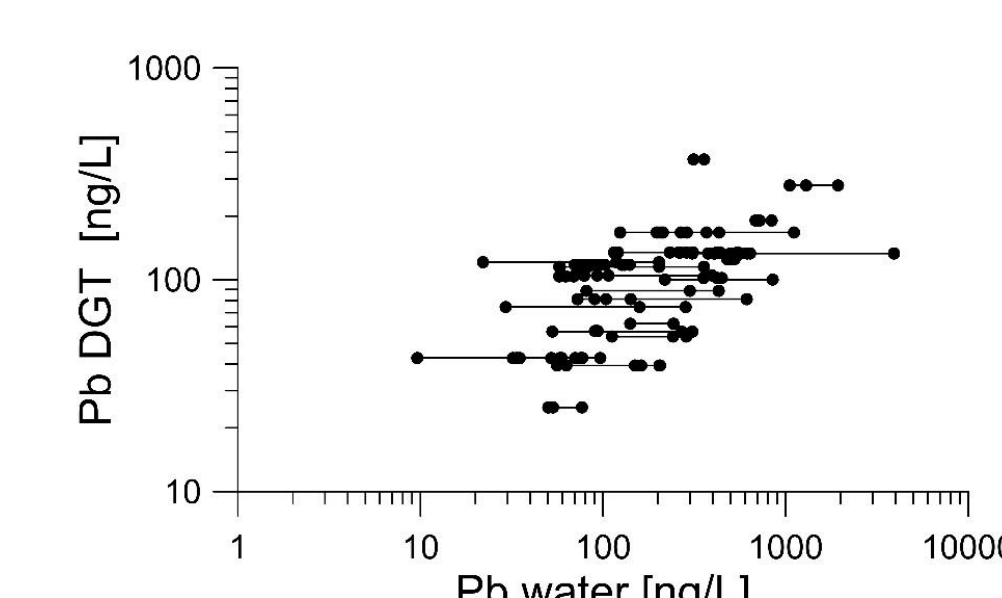
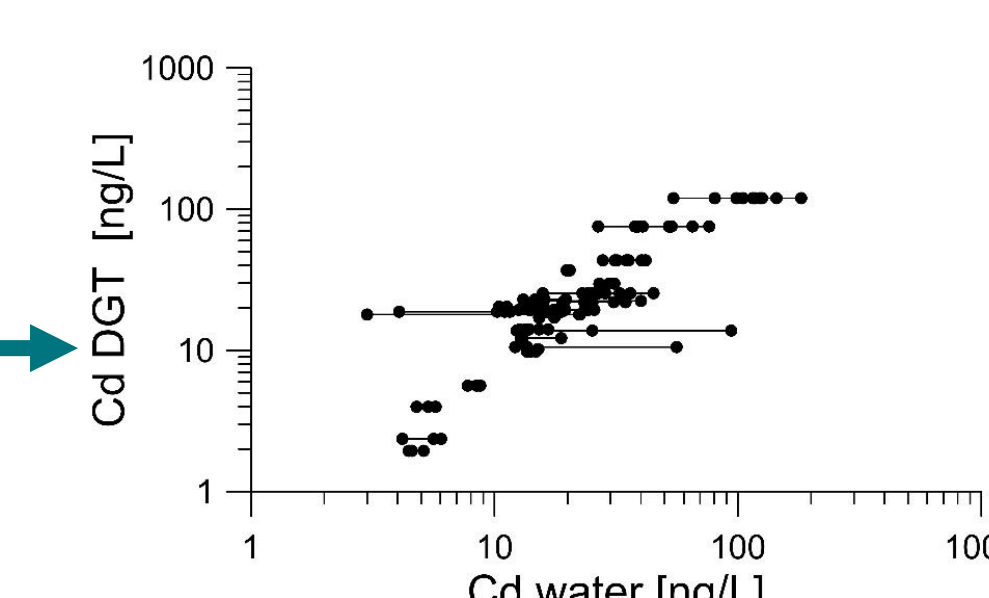
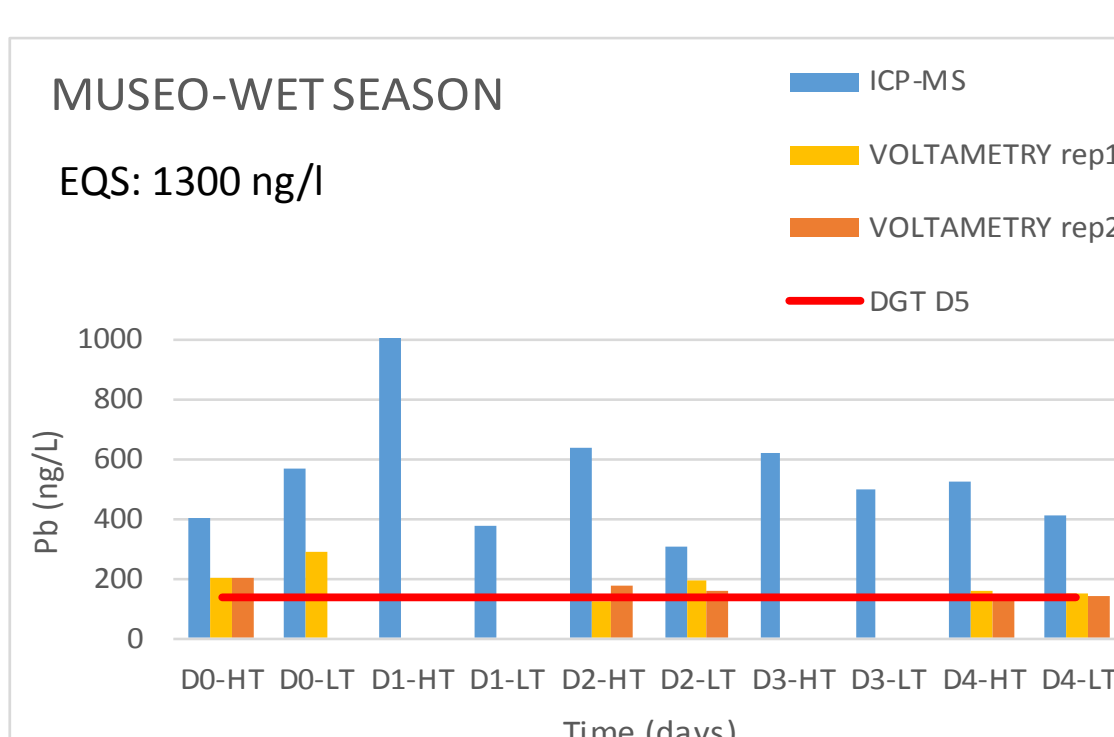
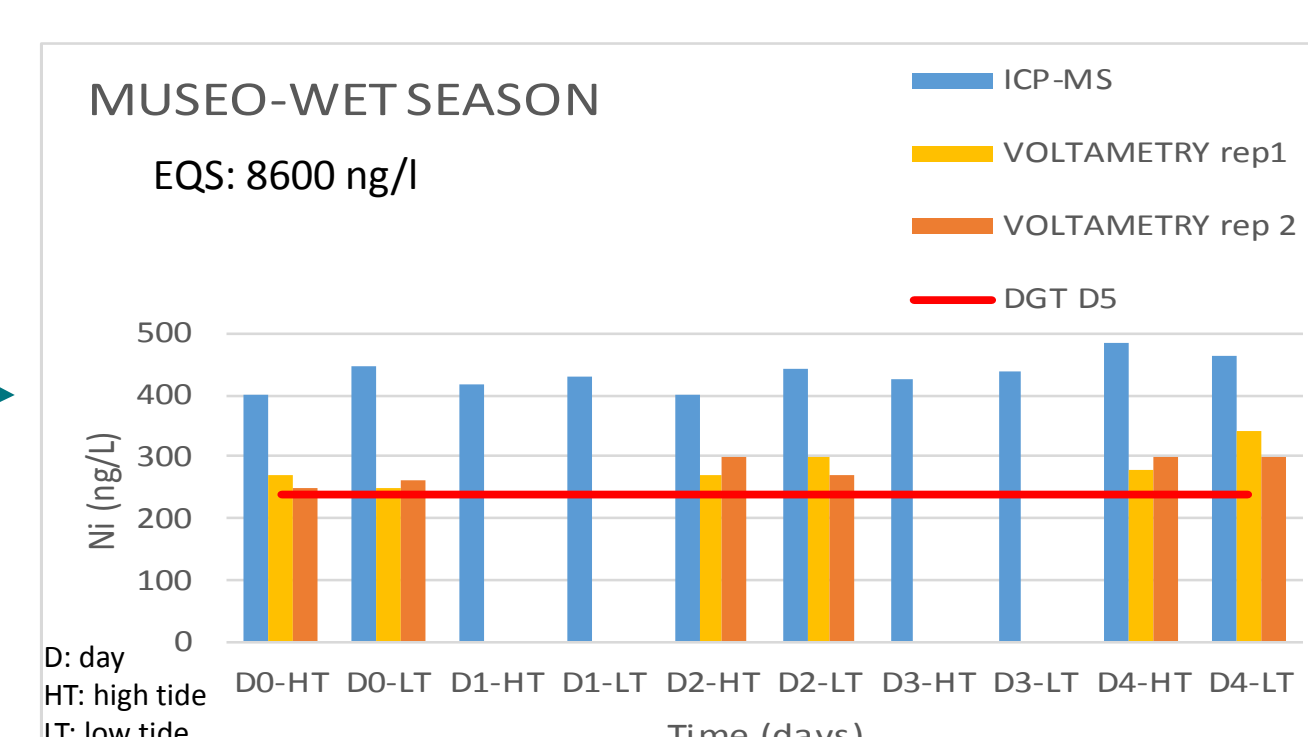
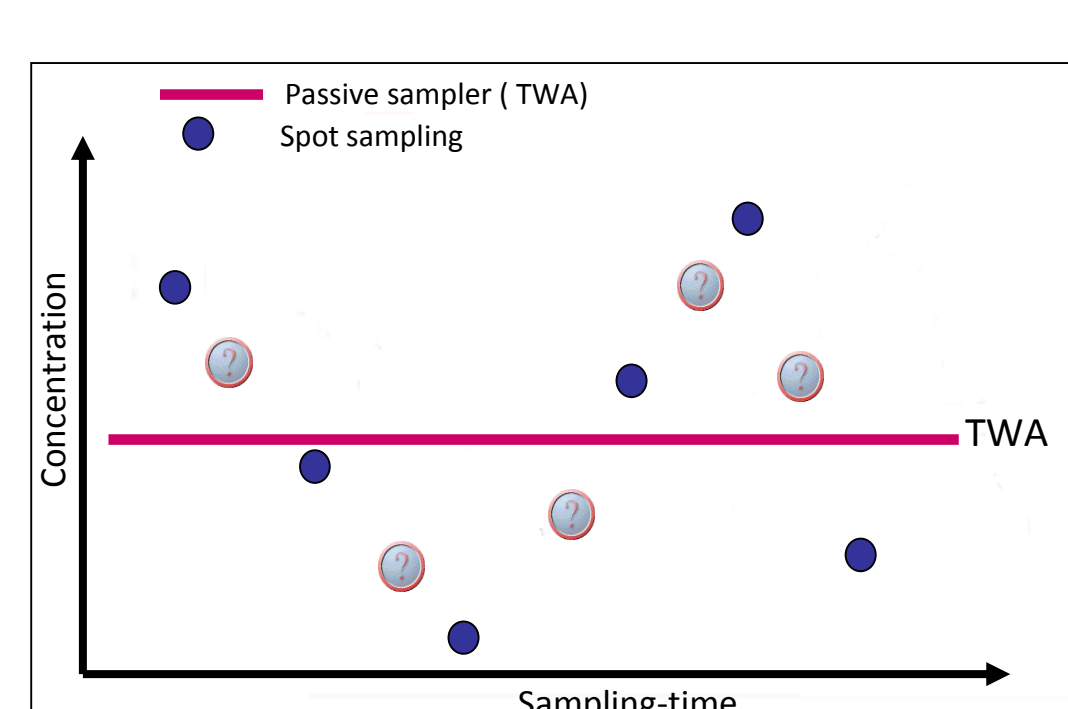
Dissolved metals in water:
SeaFast ICP-MS (IPMA)

Labile metals in water:
voltammetry (IST)

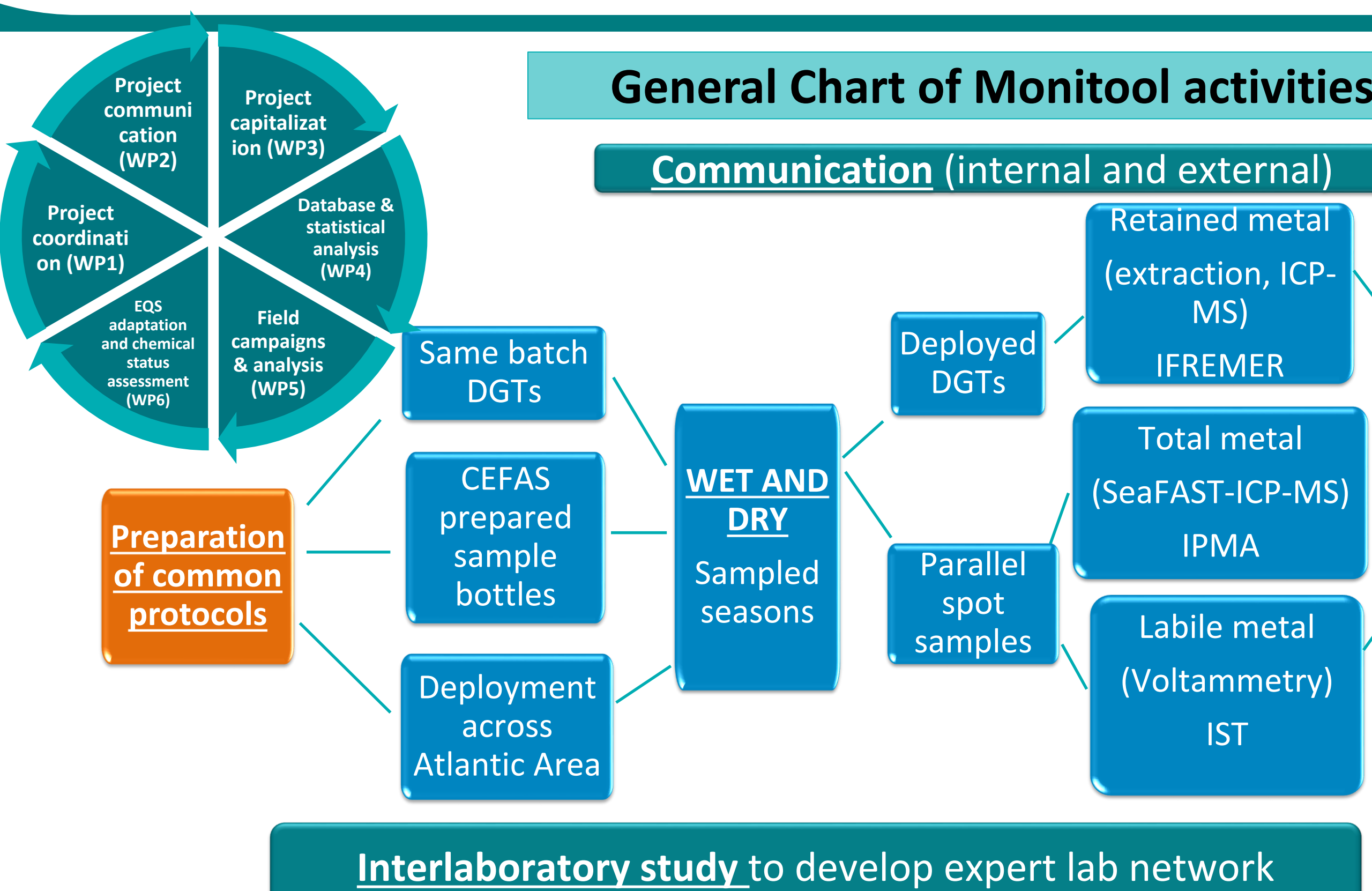
DOC, turbidity, suspended solids, biofouling (All partners)



Basque Country estuaries preliminary results



Work Packages



Interlaboratory study to develop expert lab network

Expected Results

- 1) Environmental Quality Standards and protocols for the use of DGTs in chemical monitoring within the European Water Framework Directive.
- 2) Network of laboratories focused on the use of DGTs within the European Water Framework Directive.



Partners



Associated Partners



Disclaimer

This project (nº contract: EPA_565/2016) is co-financed by the European Regional Development Fund through the Interreg Atlantic Area Programme. The present work reflects only the author's view and the funding Programme cannot be held responsible for any use that may be made of the information it contains.

