

Interreg
Mediterranean



EUROPEAN UNION



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First Capitalisation Workshop

*Designing the future system of observing systems to assess and address threats to the Mediterranean marine ecosystem
- State-of-the-art, needs and future direction*

Webinar: 14-15th December, 2020



Richard Sempéré
ANDROMEDA JPI-Ocean

- AMU- MIO and IFREMER France; ILVO and VLIZ Belgium; SINTEF Ocean AS and NILU, Norway; Malta University; University of Gothenburg, Sweden; UFZ, Germany; MaREI Centre, Ireland; EIO, Spain; Tallinn Univ. of Technology, Estonia; Mc Gill University, Canada; Wageningen Univ., Netherlands; Merinov, Canada



Analysis techniques for quantifying nano-and microplastic particles and their degradation in the environment (ANDROMEDA)

PI: Richard Sempéré.

WPs leaders: Andy Booth, Bavo Dewitte, Natascha Schmidt, Kathrin Kopke

Project duration: 36 months

Funding authority: JPI-Ocean and associated national agencies...

Geographic extension: Med. Sea Baltic Sea,



<https://www.andromedaproject.net>



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□ What kind of observations/data is your project able to provide?


- To develop an instrument platform for in situ and cost-effective analysis of microplastics, along with advancing the characterisation of nanoplastic and microplastic materials and their accelerated degradation
- New sampling and advanced analysis methodologies that focus on MP, smaller microplastic ($< 10 \mu\text{m}$) and nanoplastic particles
- Mainly lab. work but one cruise will be devoted to MP sampling in NW Med. and Baltic Seas for further laboratory studies
- Conduct in situ microplastic degradation experiments in shallow and deep sea


- Marine Data Archive (MDA), ILVO Belgium and we follow the JPI and our national data dissemination rules

- What level of data dissemination do you adopt? How is your data shared and who are the main users? The project is mainly laboratory based and most of data are experimental and will be available at the end of the project and after publication

- Is your project addressing specific EU, international or regional regulations (e.g. MSFD)?
: Yes for marine litter

- What kind of added value do you generate from your data?
New techniques and information related to fragmentation and to degradation

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- How much is your collected data relevant to environmental threats or risks in the Mediterranean? Yes for plastic, POPs and endocrine disruptors
 - Which are the main gaps/needs that should be tackled to make observation systems better fit such challenges? Improve laboratory and in situ technologies
 - How much do you value the role of national observing systems in the framework of the European Ocean Observing System (EOOS)? This is not Andromeda relevant
 - Which technological advancements do you anticipate to impact ocean observations in the coming decade? Deep ocean observation, robotics,

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- ❑ Which governance frameworks are needed to address the challenge of cross-country and cross-border observing system of systems?

 - ❑ Main take home messages from your project ? Different needs :
 - Achieve cost-effective analysis of MP by in situ-methods and low-cost laboratory analysis, including efficient sampling.
 - Compare and cross-validate different analytical methods for MPs including the analysis of TWs, fibers and paint flakes
 - Develop and optimize advanced techniques to measure and quantify small and challenging types of MP particles.
 - Investigate the degradation and fragmentation mechanisms of plastic into micro- and NP particles.