

# Minutes

WP 3 CAPACITY BUILDING THROUGH STAFF TRAINING AND EQUIPMENT PURCHASE. THE AIM OF WP2 IS TO ENHANCE CAPACITIES RELATED TO FIELD OF MEP&M AND E-LEARNING.

DEV 3.4.2: KNOW-HOW TRANSFER RELATED TO THE LATEST TOPICS IN CLIMATE CHANGE AND MARINE POLLUTION EFFECTS ON MARINE ECOSYSTEMS



**Development of Regional Joint Master Program in Maritime Environmental  
Protection and Management – MEP&M**

Project no. 619239-EPP-1-2020-1-ME-EPPKA2-CBHE-JP

**Online Training**

**DEV 3.4.2: KNOW-HOW TRANSFER RELATED TO THE LATEST TOPICS IN CLIMATE  
CHANGE AND MARINE POLLUTION EFFECTS ON MARINE ECOSYSTEMS**

**20 December 2021**

**Organized by: University of Cadiz (UCA-E)**

**List of Participants**

**Monday, 20<sup>th</sup> December, 2021**

1. Sandra Jokanovic, University of Montenegro
2. Denis Sinanaj, University of Vlora, Albania
3. Djana Ilia, University of Vlora, Albania
4. Alketa Hyso, University of Vlore, Albania
5. Rajko Martinović, University of Montenegro
6. Ilinka Aloric, University of Montenegro
7. Kristofor Lapa, University of Vlore, Albania
8. Rezarta Sinanaliaj, University of Vlore, Albania
9. Danka Mirovic, Institute of Marine Biology
10. Dragana Jovanović, Institute of Marine Biology
11. Ana Macías, University of Cadiz, Spain
12. María de Andrés, University of Cadiz, Spain
13. Miriam Hampel, University of Cadiz, Spain
14. Laura Martín, University of Cadiz, Spain
15. Milagrosa Oliva, University of Cadiz, Spain
16. Aurora Bakaj, University of Vlore, Albania
17. Maja Škurić, University of Montenegro
18. Ana Pesic, University of Montenegro



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**Agenda**

**Monday 20<sup>th</sup> December 2021**

- |                     |  |
|---------------------|--|
| <b>9:00- 9:15</b>   | <b>Entry and welcome</b><br>Link for the meeting: <a href="https://meet.google.com/txu-yntm-cfb">https://meet.google.com/txu-yntm-cfb</a>                          |
| <b>9:15 – 10:00</b> | <b>Milagrosa Oliva, PhD</b><br><b>Topic 1: Main pollutants in the marine environment and some tools for their analysis (Part 1)</b><br>University of Cádiz (UCA-S) |
| <b>10:00-10:15</b>  | <b>Break</b>   |
| <b>10:15- 11:00</b> | <b>Milagrosa Oliva, PhD</b><br><b>Topic 1: Main pollutants in the marine environment and some tools for their analysis (Part 2)</b><br>University of Cádiz (UCA-S) |
| <b>11:00-11:15</b>  | <b>Discussion and questions</b>  |
| <b>11:15-11.30</b>  | <b>Break</b>   |
| <b>11:30- 12:20</b> | <b>Laura Martín</b><br><b>Topic 2: Emerging pollutants in the marine environment: contribution of maritime transport activity (Part 1)</b>                         |
| <b>12:20-12:30</b>  | <b>Break</b>   |



<b>12:30-13:15</b>	<b>Laura Martín, PhD</b> <b>Topic 2: Emerging pollutants in the marine environment: contribution of maritime transport activity (Part 2)</b>
<b>13:15-13:30</b>	<b>Discussion y questions</b>
<b>13:30-14:30</b>	<b>Lunch</b>
<b>14:30-15:20</b>	<b>Miriam Hampel, PhD</b> <b>Topic 3: Environmental risk assessment and sediment quality guidelines (Part 1)</b>
<b>15:20-15:30</b>	<b>Break</b>
<b>15:30-16:30</b>	<b>Miriam Hampel, PhD</b> <b>Topic 3: Environmental risk assessment and sediment quality guidelines (Part 2)</b>
<b>16:30-16:45</b>	<b>Discussion and questions</b>
<b>16:45-17:00</b>	<b>Closing</b>

## Summary of the training

**Topic 1:** Main pollutants in the marine environment and some tools for their analysis

**Recording link:**

<https://drive.google.com/file/d/18f-jZGVIV3RWUtb6Ts88d8ltrcnTiMlu/view?usp=sharing>

**Presentation link:**

<https://drive.google.com/file/d/1r2bDRnEzyLnn48fbYlxIHpjSHtbv-Ts0/view?usp=sharing>

**Trainer:** Milagrosa Oliva

### Summary and objective:

The main objective of this task was to provide teaching staff from Montenegro and Albania with additional knowledge with research on the impact of marine and coastal pollution on the marine environment. The training was entitled “Main pollutants in the marine environment and some tools for their analysis” and was developed by Milagrosa Oliva from University of Cadiz (Spain).

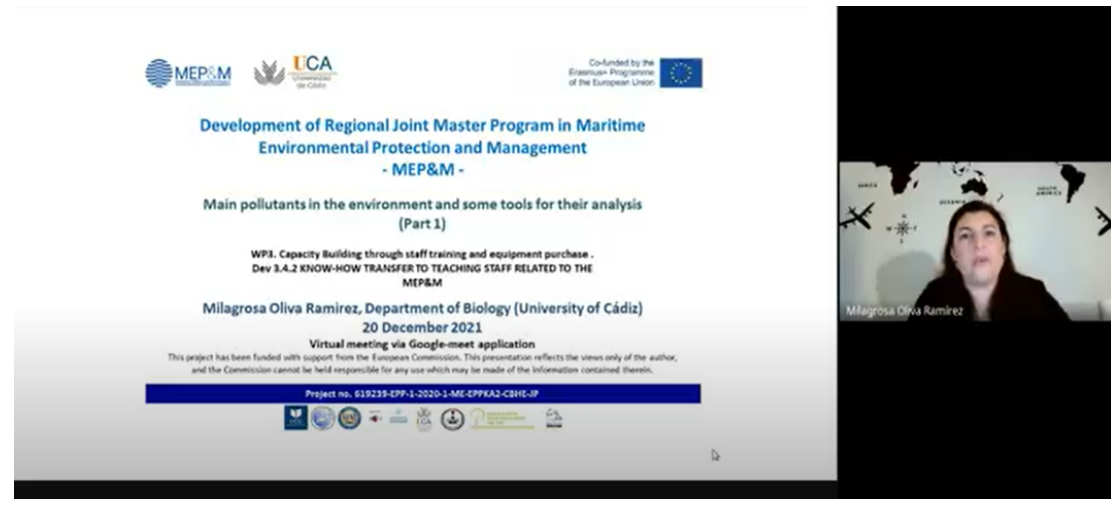
### Contents taught:

In this session the professor talks about the pollution related with maritime transport. A complex pollution where an air pollution, acoustic pollution and water pollution are integrated. It's necessary to know de characteristics of pollutant to understand de mechanisms and effects of different pollutions on the aquatic environment. The air pollution produced by de diesel exhausts causes respiratory problems and contributes to the greenhouse effect. Acoustic pollution produced by the propulsion systems causes serious problem in the behaviour of aquatic mammals and water pollution produced by sewage as waste water, solid waste an oil spills are the main pollution in the aquatic environment with devastating effects. A note about the regulation through different agreements as for example MARPOL agreement is also realised. On the other hand, toxicity bioassays and pollution biomarkers are described as tools to pollution assessment. Characteristics of bioassays as taxon used, time exposure, life stages of the organisms tested etc. are presented. Different toxicity parameters as LOEC, NOEC, LC50 concentration etc. are used in the ecotoxicological studies. Biomarkers as oxidative stress biomarkers or histopathology are other tools to assessment de effects of pollution on the organisms.

### Discussion and questions:

Professor Djana Ilija comments the importance of the technology as a tool to avoid de pollution but not also the regulation. But this is an interesting and wide topic to develop in other moment.

### Photo of the training:



**Topic 2:** Emerging pollutants in the marine environment: contribution of maritime transport activity

**Trainer:** Laura Martín

### Summary and objective:

This topic was not developed because Prof. Laura Martin's presentation file had technical problems. The participants understood the situation and the Professor's session was postponed to 20 January. Her session is recorded in the corresponding minutes

### **Topic 3:** Environmental risk assessment and sediment quality guidelines

**Recording link:**

<https://drive.google.com/file/d/1HL9oJ2RipwtSWSwnR2tESmkbFetDeuys/view?usp=sharing>

**Presentation link:**

<https://drive.google.com/file/d/1MSenh6vgn3iQmxnBq5cGGz7buKwgMwDa/view?usp=sharing>

**Trainer:** Miriam Hampel

**Summary and objective:**

The topic “Environmental risk assessment and sediment quality guidelines” was developed by Dra. Miriam Hampel, from University of Cadiz (Spain). The objective of the topic was about the introduction to the marine pollutants and environmental risk evaluation process of contaminants, including main pathways of contaminant generation and release as well as explanation of the main tools for analysis and environmental regulations.

**Contents taught:**

The topic of this talk was the introduction to the environmental risk evaluation process of contaminants. This included the main pathways of contaminant generation and release as well as explanation of the main environmental regulations. The environmental risk assessment was explained for the aquatic and sediment compartments, with the main focus on the generation of toxicity parameters and the derivation of predicted no effect concentrations for their posterior employment in the risk assessment. Examples of exercises from previous years under different master programs were presented, and practical sessions outlined.

**Discussion and questions:**

No questions were asked at this point, but postponed to the definitive creation of the teaching material for the Development of Regional Joint Master Program in Maritime Environmental Protection and Management.

**Photo of the training:**

M Miriam Hampel está presentando

Co-funded by the Erasmus+ Programme of the European Union

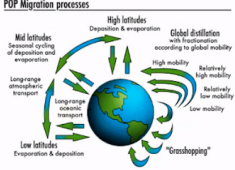
**Regulated contaminants: e.g. Priority Organic Pollutants (POPs):**

**Characteristics:**

- High stability (resistant to degradation) → decennia or centuries to be degraded
- Mobility (Transported by draughts of air or water at great distances from their sources)
- Toxicity (produce adverse effects)
- Bioaccumulation (lipophilic → accumulate in organisms over time) and biomagnification (move from one species to another through the food chain) capacity

**Stockholm Convention (2001):** Signed by 90 countries → Regulation to reduce or eliminate the production, use and discharge of the 12 most dangerous POPs = **Dirty Dozen**.

➔ Reduce exposure → reduce risk of harmful effects.



**POP Migration processes**

Mid latitudes: Seasonal loading of deposition and evaporation

High latitudes: Deposition & evaporation

Global distillation with fractionation according to global mobility

High mobility: Relatively high mobility

Low mobility: Relatively low mobility

Long-range atmospheric transport

Long-range "oceanic" transport

Low latitudes: Evaporation & deposition

"Crosshopping"

Miriam Hampel

dragana kjajic

Djana Ilija

Kristofor Lapa

Ana Pesic

Ilinka Aloric

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