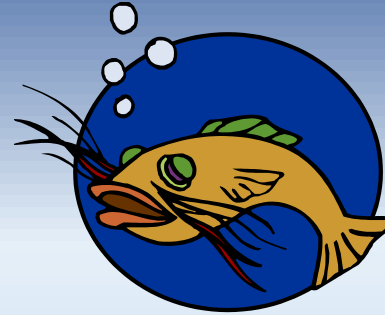


- **Roundtable1 – Contribution of Carlos Vale (pollution issue)**

- **Major Challenge:** Monitoring the **causes** or **effects** of Pollution?



- **Causes:** Monitoring changes of **physical, chemical or biological properties** that trigger ecosystem changes
- **Effects:** Monitoring **impacts** of pollution on the ecosystem services

- **Example:** monitoring toxic chemicals and toxic algae blooms (due to nitrogen excess), or surveying the wellbeing and poisoning of marine resources with impact on ecosystem and human health?

Fundamental observations related to Pollution:

- **Satellite images and drone observations** (eg., to map changes on *Ocean surface* such as oil spills, red tides, floods)
- **Laboratory analysis** (eg., to quantify *potential toxic chemicals* in water or organisms through high performance equipment such as *Chromatography* coupled with *Mass Spectrometry*)
- **Sensors (near future)**: nets of sensors and buoys to monitoring Ocean properties (eg., *3-D maps* of water properties related to dredging of sea bottom, mineral extraction)



Steps to transboundary cooperation:

- **Memorandum of Understanding** - Negotiation towards international agreements on the relevance of this issue
- **National capacitation** - similar access to analytical technologies and data
- **Monitoring programmes** - adoption of common methodologies, such as sampling and analytical ones, and data analysis
- **Sharing information** – dissemination of national information within the Medshare community in due time

Changes in governance structures

- **Task Force at national level:** production Position Paper on Emergent Topics and Priorities in research and monitoring activities (under the Ministry of Science)
- **Joint Regional Group:** harmonise national position papers and delivery a Common Strategy for Threats to Mediterranean (under European Commission)
- **Regional Funding Programmes** (under European Commission)

Pollution Monitoring: Specificities and Gaps



- Need to guarantee qualified **personnel** and well-equipped **laboratories** to survey complex mixtures of chemical compounds currently disposed in the coastal zone.
- Inputs and effects may be amplified under **Climate Changes Scenarios**, such as floods.
- Sudden discharges of potential toxic substances and plastic debris will cause **abrupt changes** in ecosystem equilibrium and functioning.
- Major **Gaps** and **Challenges:** Innovative technologies allowing **screening** approaches complemented by lab analysis will facilitate the operationalise of monitoring programmes