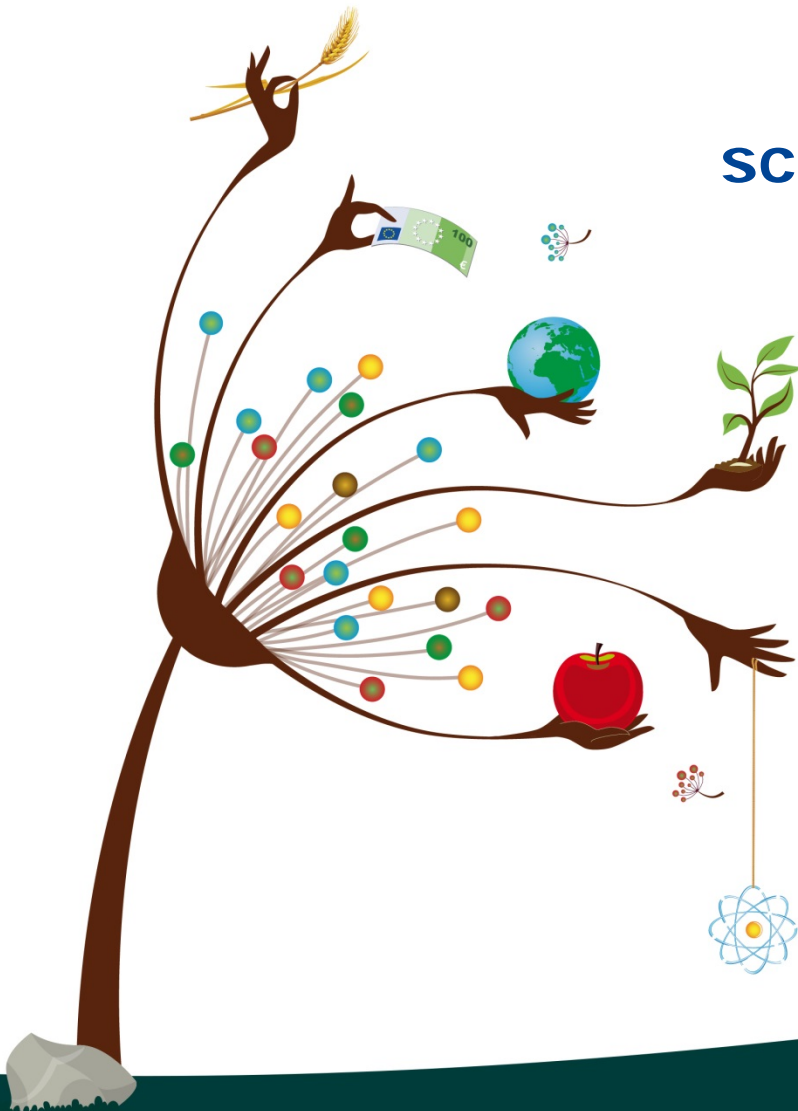


The European Commission's science and knowledge service

Joint Research Centre

Emerging contaminants in the marine environment *Challenges and new options*

Victoria Tornero, Georg Hanke



Marine Strategy Framework Directive (MSFD) (2008/56/EU)

Good Environmental Status of the EU's marine waters
Equal level of protection across different regions

2012 Initial Assessment

2014 Monitoring programs

2016 Program of measures

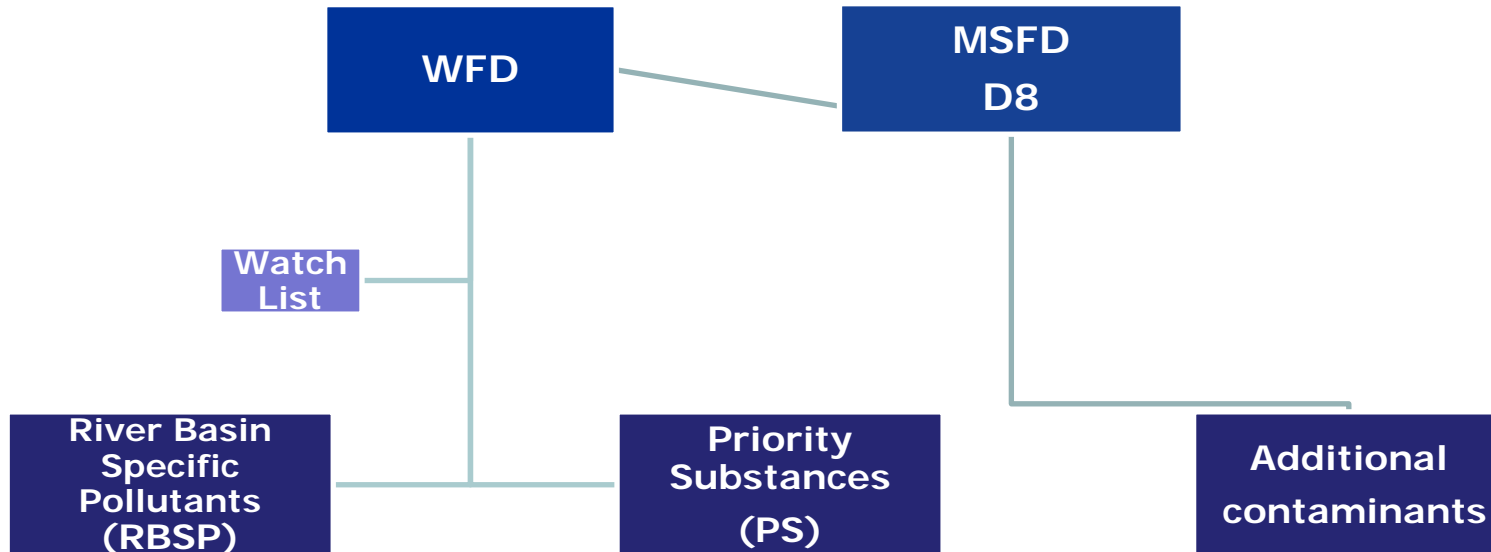
2017 Commission Decision 2010/477/EU revision

2018 MSFD Assessment

MSFD Descriptor 8

“Concentrations of contaminants are at levels not giving rise to pollution effects”

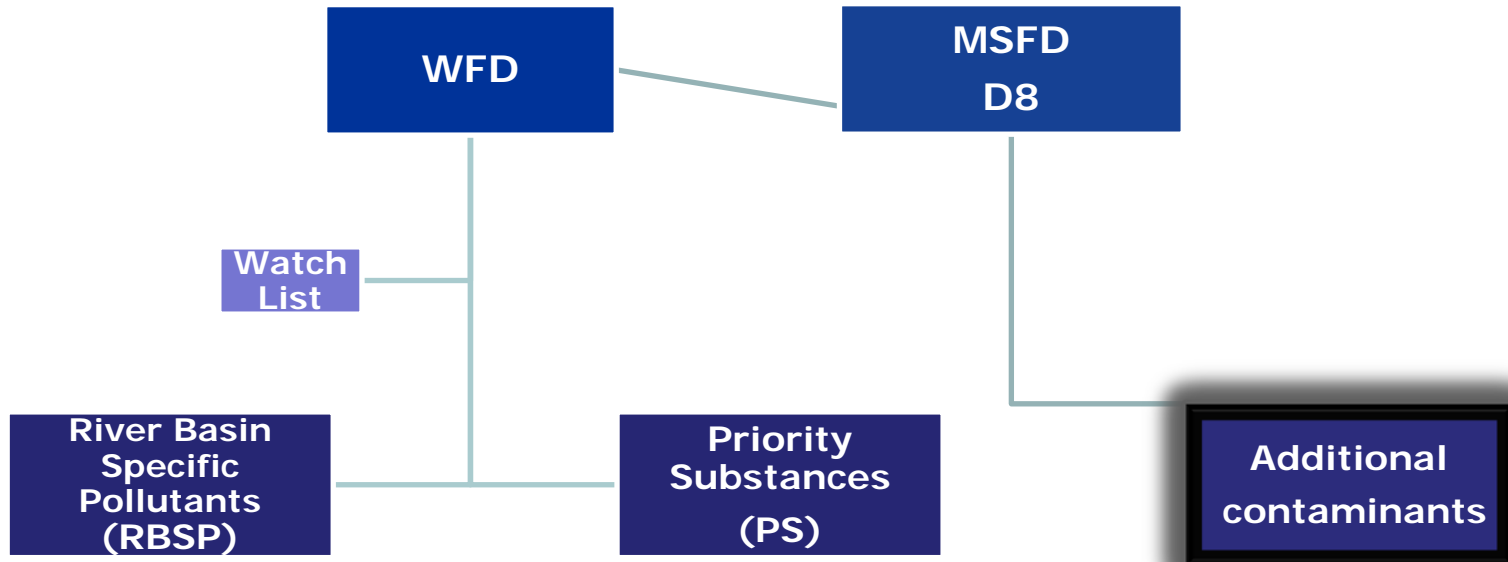
— New Commission Decision (EU) 2017/848 (May 2017)



MSFD Descriptor 8

“Concentrations of contaminants are at levels not giving rise to pollution effects”

— New Commission Decision (EU) 2017/848 (May 2017)



Limitations

Setting-up of priority contaminant lists differs between major marine frameworks

Monitoring is often limited to few and well-known chemicals

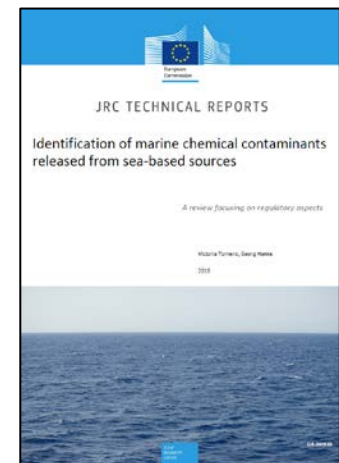
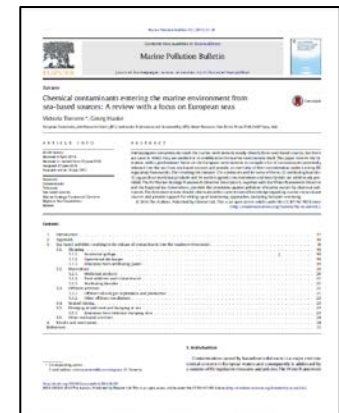
The identification of a contaminant of concern may not lead to routine monitoring



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Scientific review on marine specific contaminants (Tornero and Hanke, 2016)

- Chemical contaminants released from sea-based sources
- List of 276 marine-relevant contaminants
- Concentrations and toxicity data compiled
- Overview of those substances which have already been considered in European regulations
- Support for setting-up of monitoring approaches, including hotspots screening



Research shifting toward emerging pollutants:

Detected in the environment

Growing scientific concern

Largely unregulated/unmonitored

Fate and potential effects poorly understood

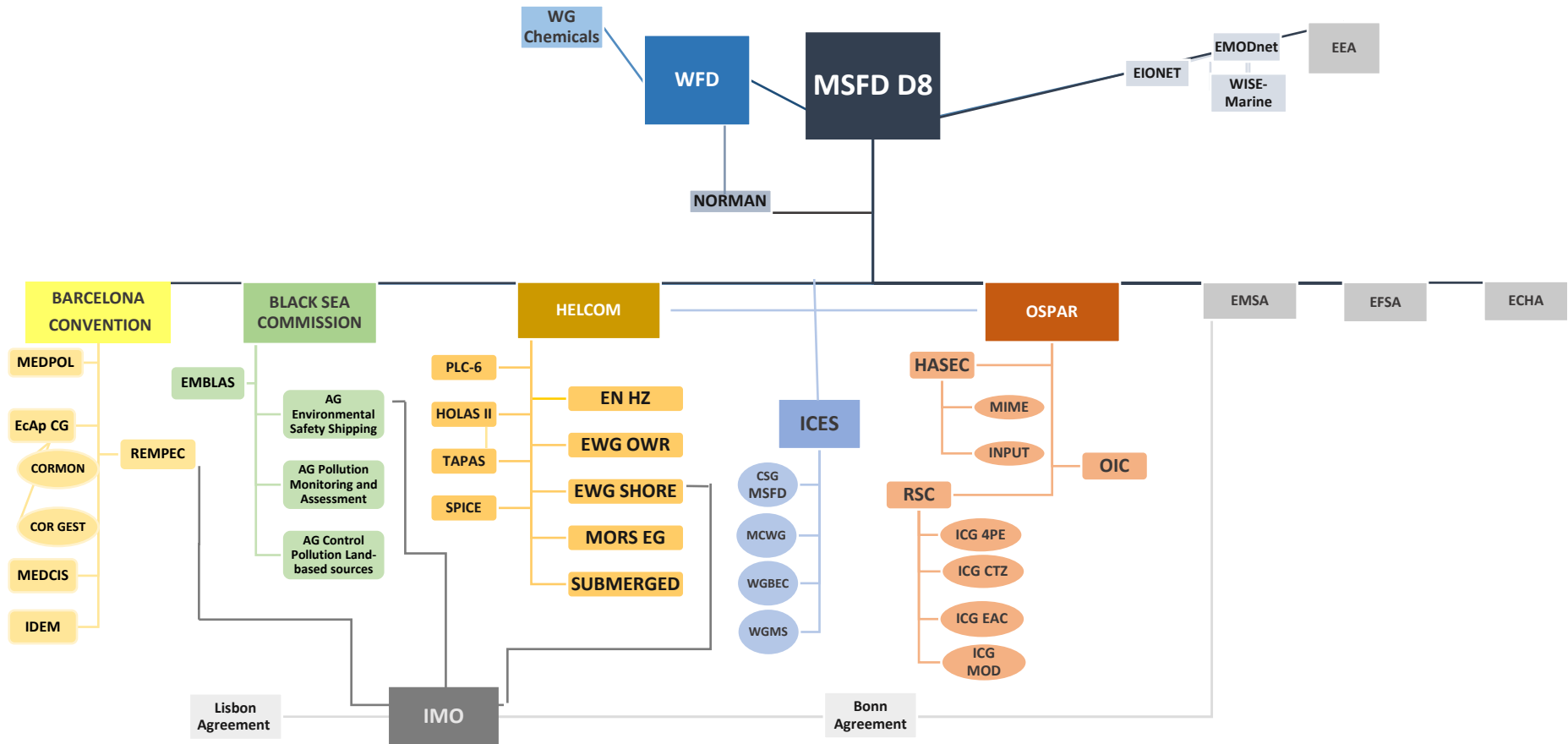
Increasing list of potential contaminants

Challenge for regulatory processes!



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Many relevant players...



Water Framework Directive (WFD, 2000/60/EC)

Current status

45 priority substances
(2013/39/EU)

8 other pollutants (pre
2009)

10 substances
recommended for the first
WFD Watch List (2015)

River Basin Specific
Pollutants (MS
prioritization)

Ongoing

2nd review PS list:

- Monitoring exercise
(Monitoring data-rich substances)
- Modelling exercise
(Exposure and hazard score)

To be completed beginning 2018

Regional Sea Conventions in Europe



Current status

~400 substances of possible concern (adopted 2002, last revised 2015)

43 chemicals for priority action (adopted 2002, revised 2013)

Ongoing

Compilation of information for the selection of hazardous substances:

- WFD PS/Watch list
- Sea-based sources
- Monitoring programmes, research projects...

(Hazard and chemical-physical properties, production volumes and use patterns)

Regional Sea Conventions in Europe

Current status:

11 hazardous substances of the Baltic Sea Action Plan (adopted 2010)

13 core indicators for hazardous substances (adopted 2013, regularly updated)

Ongoing

Compilation of information for the revision of the HELCOM list of priority pollutants:

- Core indicators
- Pharmaceuticals
- Airborne inputs of heavy metals and POP

(Usage and sources, pathways and concentrations in the marine environment)

Regional Sea Conventions in Europe

Current status:

27 substances in the
Barcelona Convention
Chemicals List (2000)

10 action priority
substances in the
UNEP/MAP MED POL
monitoring programme
(2008)

Ongoing

Proposal for the selection of candidate chemicals under MED POL:

- OSPAR, HELCOM...
- Sea-based sources
- WFD watch list
- Research studies

*(Known sources, production
and use, analytical methods,
current MEDPOL strategies)*

Regional Sea Conventions in Europe



Ongoing

Current status :

5 substances mandatory and 12 optional in the Black Sea Integrated Monitoring and Assessment Programme (BSIMAP)

EU-UNDP project EMBLAS II Identification of potential Black Sea Specific Pollutants:

- WFD PS
- Marine and river monitoring campaigns data
- Sea-based sources

**BSC monitoring programmes
under development**

Other relevant players

- EU legislation: REACH-ECHA
- International Conventions: Stockholm Convention, Rotterdam Convention, Basel Convention
- Food and feed safety: FAO, EFSA
- Shipping safety: IMO, EMSA
- Other Regional Programmes: Arctic Council
- Network on emerging environmental substances: NORMAN
- European Marine Data Portal: EMODNET

Research Community

Examples

Bioaccumulation

Modelling

Pathways (long-range transport)

Integrated effect-based indices

(Non)-target screening in the marine environment

.....

Conclusions

- **Currently, the identification of emerging pollutants is basically limited to the compilation of information from different sources**
- **Approaches still differ between RSC**

Actions and needs

- **Harmonization in selection criteria to identify relevant contaminants at regional/subregional/local level**
- **Provisions for proper mechanisms to include emerging contaminants into existing prioritization schemes**
- **Strengthening of capacities in Regional Sea Conventions in order to involve non-EU countries**

Actions and needs

- **Development and implementation of new techniques for the analysis of marine emerging pollutants, as e.g. target screening**
- **Fluent information exchange (appropriate platform) on methodologies in order to identify best approaches**
- **Increase of collaborative and targeted monitoring efforts**
- **Support for the collection and harmonization of data**



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*Thank you
very much for your
attention!*