



SeaDataCloud

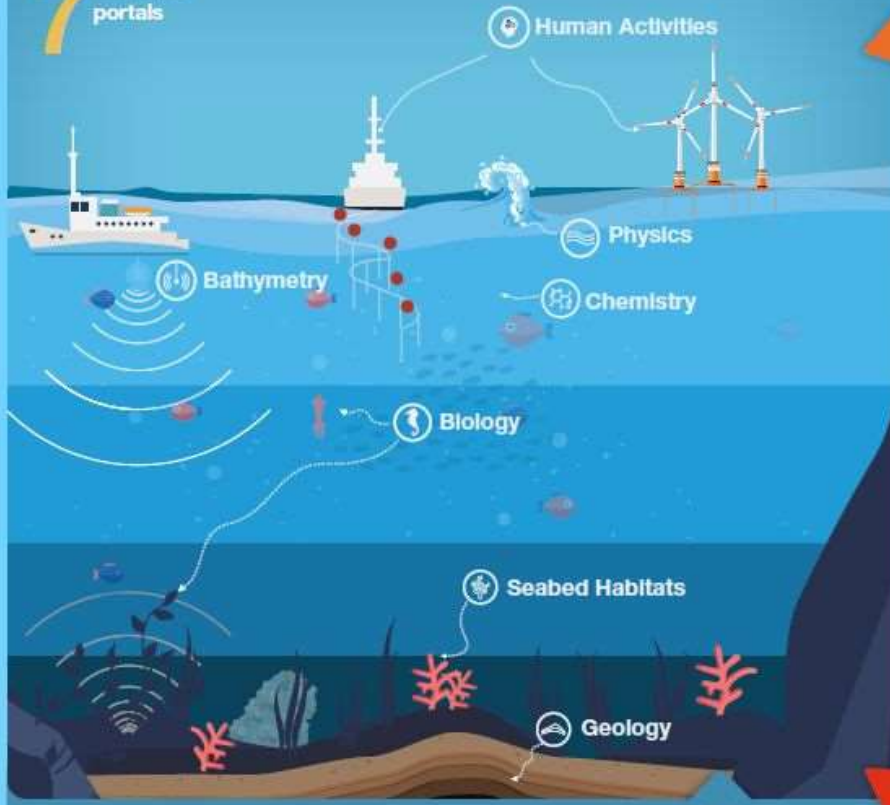
Using SeaDataNet for EMODnet Chemistry

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Over 150 organisations assembling and making available
marine data, metadata & products

EMODnet

7 Thematic portals



1 Central Portal (www.emodnet.eu)

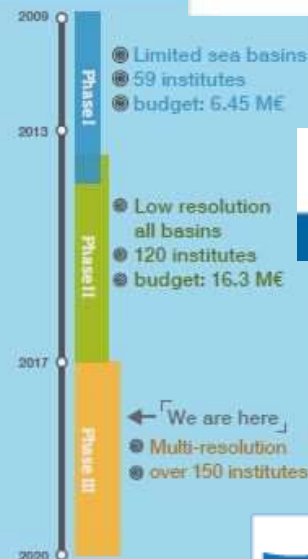
Gateway to all EMODnet data resources and tools allowing users to retrieve data layers from multiple themes

6 Sea-basin Ch...

- ARCTIC
- BALTIC
- MED SEA

Checking the fitness of marine data in E basins

EMODnet Timeline



1 Ingestion Portal

facilitating submission of new datasets

From raw data to real-life applications



Long-term initiative as part of Blue Growth strategy (Marine Knowledge 2020)

EMODnet Chemistry 3

→ 6/3/2017 - 5/3/2019

Aims to collect, aggregate, **standardize**, check the **quality** of data
developing new services to **share** information and products

Collects data on:

In 3 matrices:

- water column;
- biota;
- sediment.

	Group	Examples
Eutrophication	nutrients, dissolved gasses ...	N, P, Si, Oxy, Chl-a
Ocean acidification	acidity	pH, pCO ₂
Contaminants	hydrocarbons, heavy metals, pesticides, ...	anthracene, fluoroanthene, Me, Cd, Pb, TBT, DDTs
Marine Litter	beach litter, seabed litter, microlitter	

Data products generation are organized at **Regional level**

Link to EU Marine Strategy Framework Directive

- ❖ Tight connection with EEA, RSC, JRC, ICES, Experts Group to provide relevant information for parameters identified as indicators of MSFD descriptors

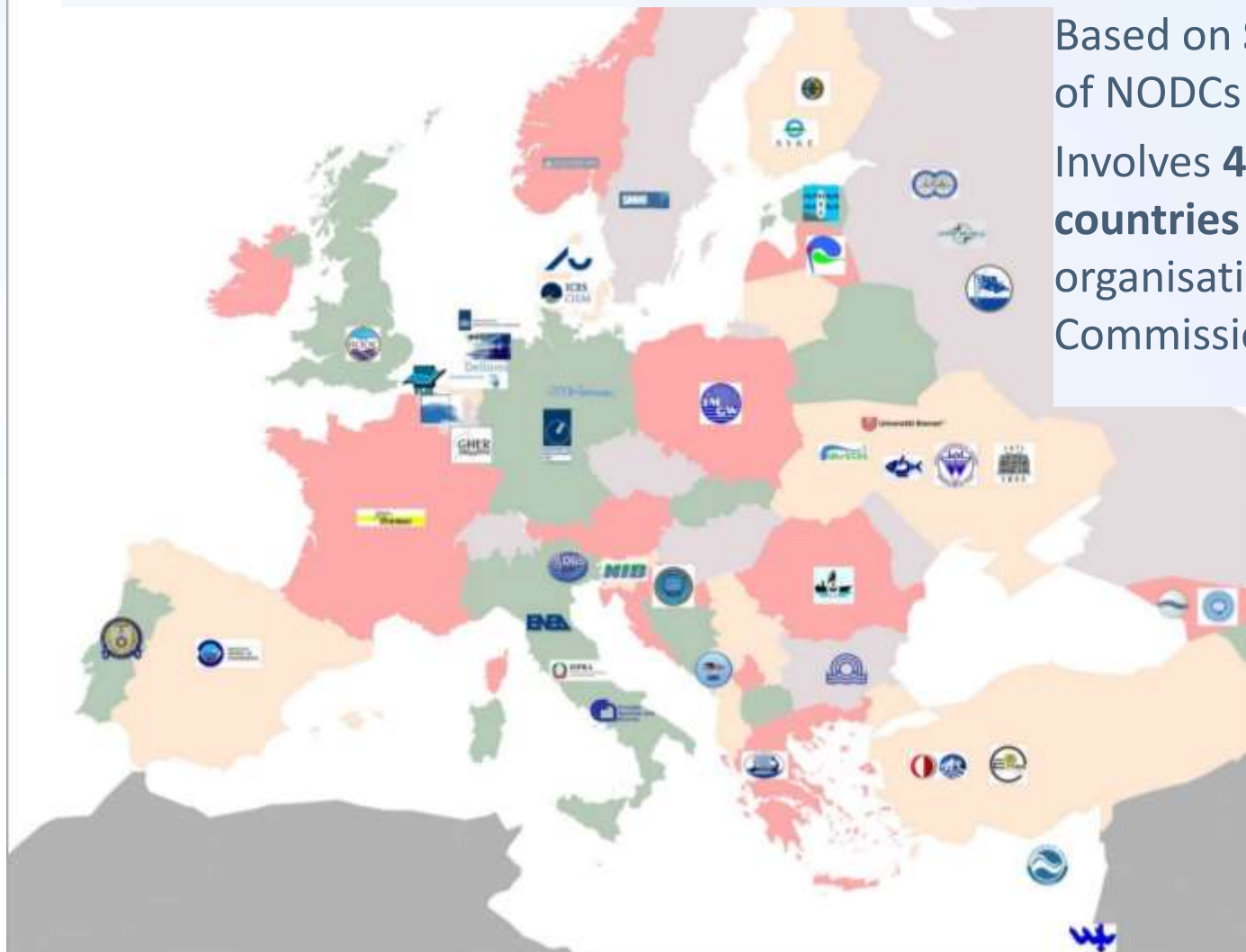


EMODnet Chemistry and EEA

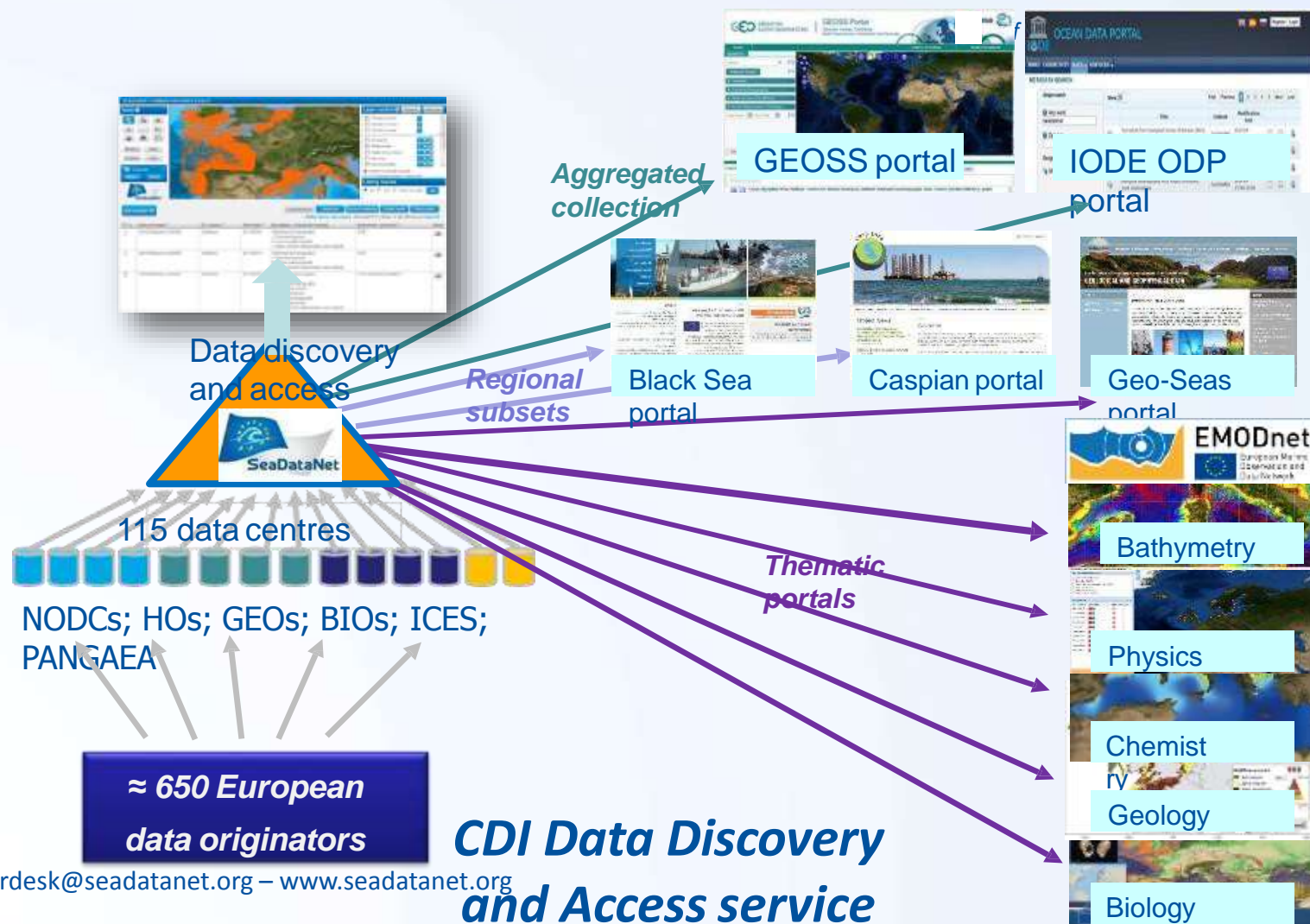
- ⦿ EMODnet Chemistry has **shared validated data collections** on Hazardous substances in marine organisms, Nutrients and Chlorophyll in TCM waters
- ⦿ EEA has informed the Eionet National Reference Centers representatives that data on contaminants and nutrients will no longer be requested via the WISE SoE data call, but **collected from EMODnet Chemistry/ICES** (Nov 2018)
- ⦿ EMODnet Chemistry **adapts data format to EEA** needs, including collect **additional metadata** related to QA-QC methods and data collection programs
- ⦿ TG DATA discuss the adoption of EMODnet Chemistry/SeaDataNet platform for **MSFD data reporting** (Art. 19.3- delivery data **INSPIRE** compliant)

EMODnet Chemistry 3 network

Involves **45 institutes** from **27 countries** and 3 international organisations (ICES, Black Sea Commission, UNEP/MAP)



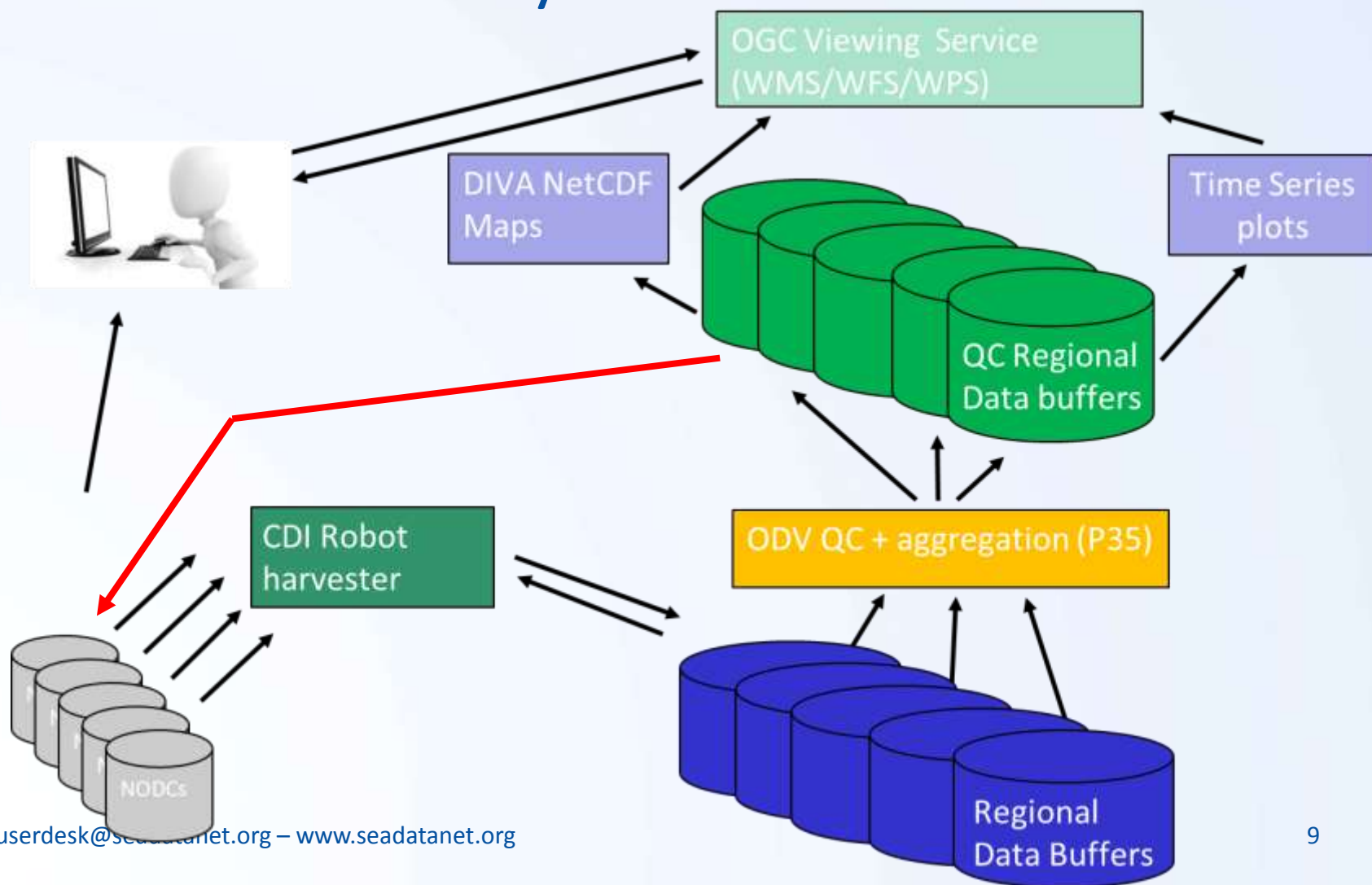
Approach: to adopt and adapt SeaDataNet



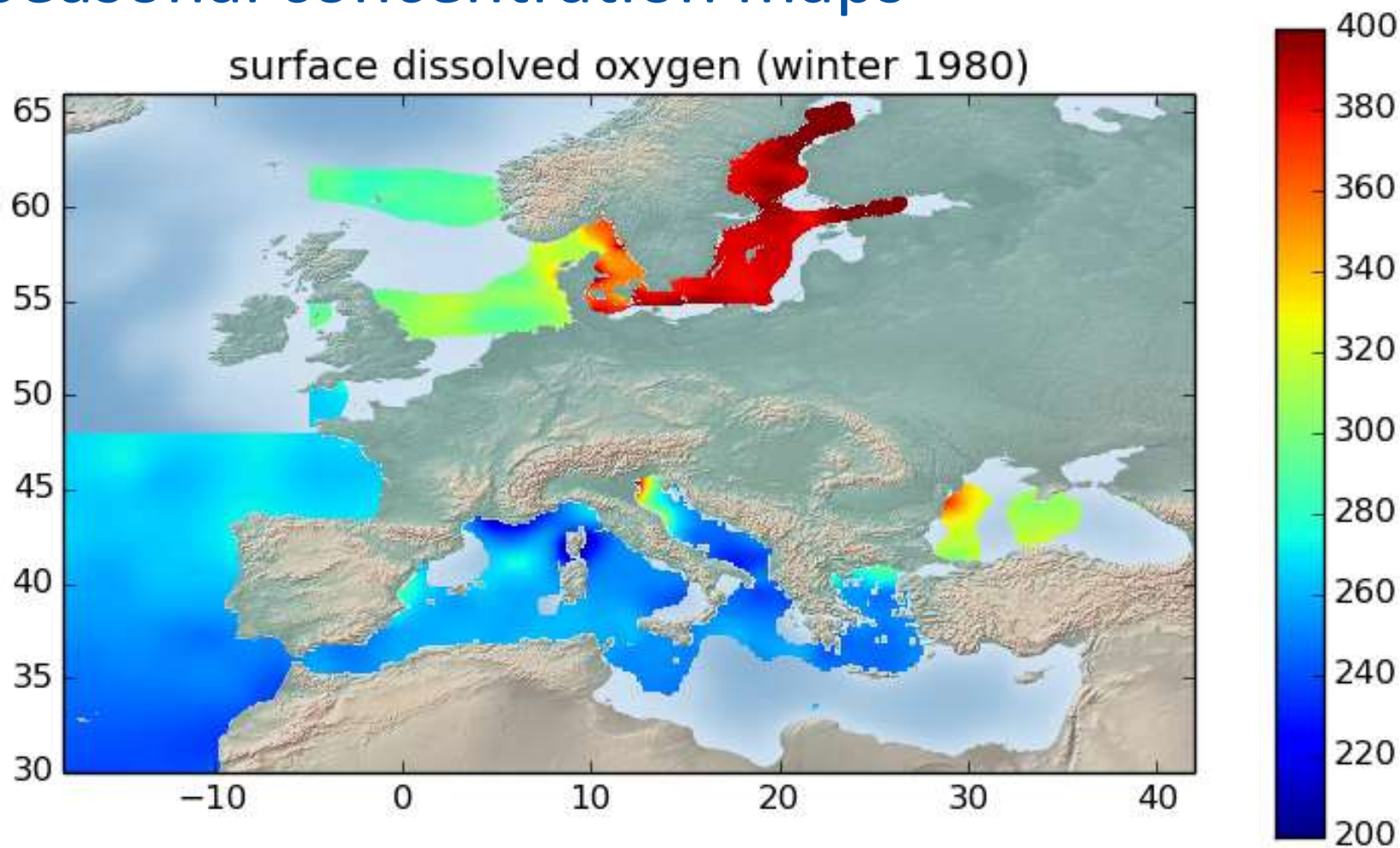
Using SeaDataNet for EMODnet Chemistry

- SDN Standards for metadata, data and products
 - Metadata directories
 - Controlled vocabularies
- SDN Infrastructure:
 - CDI mechanism to access and download data with policy management
 - SDN Security Services for users registrations
 - SDN Products Viewing Services for discovery, visualization and downloading of products
- SDN Tools for data analysis and quality control

EMODnet Chemistry Architecture



Seasonal concentration maps

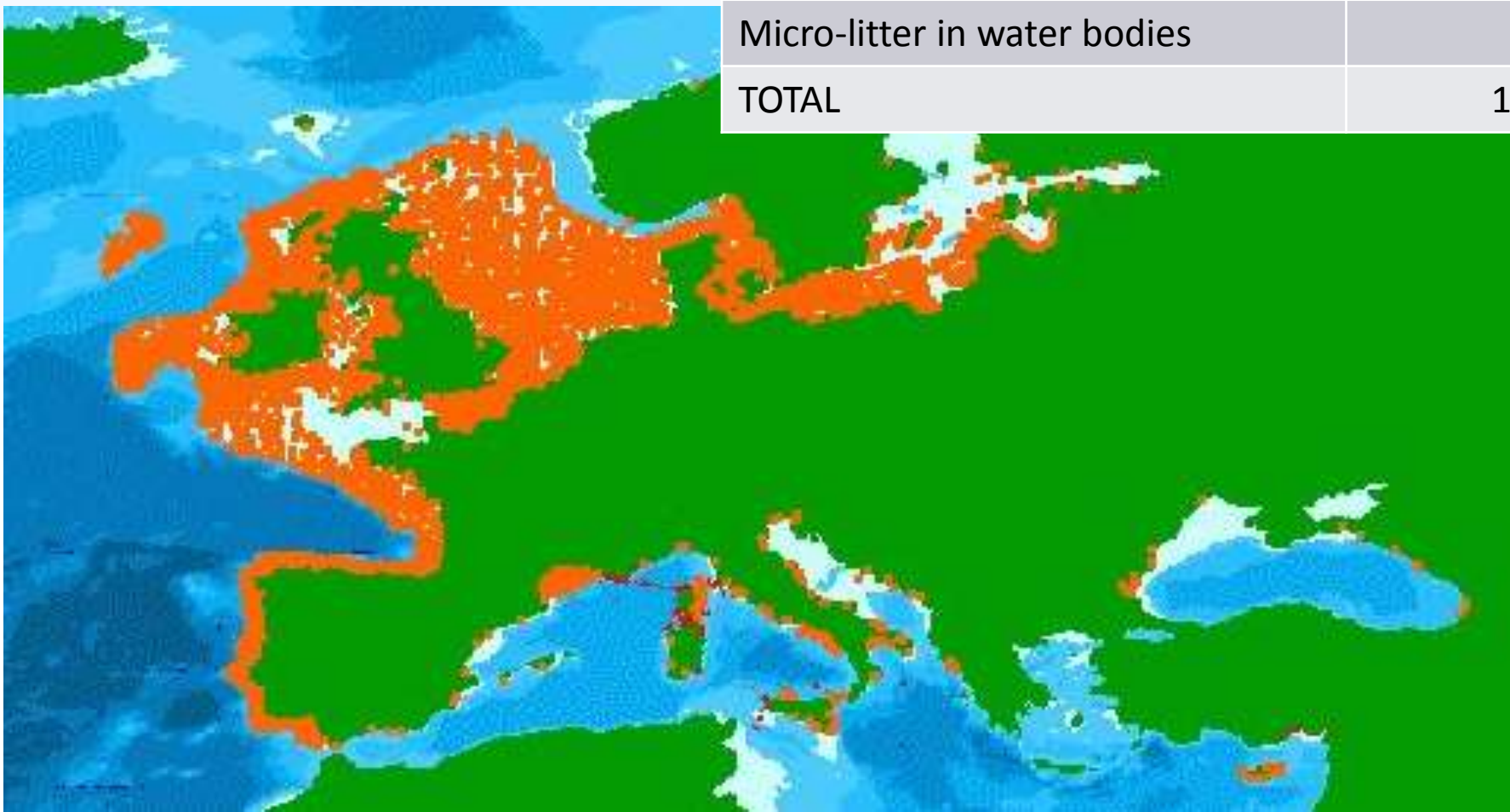


Using SeaDataNet for Marine Litter

- ⦿ Build on existing systems two **central** databases:
 - ⦿ For **beach litter**, modelled after the OSPAR-MCS, TG ML and UNEP/MAP approach
 - ⦿ For **seafloor litter**, modelled after the ICES-DATRAS, TG ML and MEDITS approach
 - ⦿ Adopt **SeaDataNet infrastructure** and standards for **micro litter**
 - ⦿ Approach and developments endorsed by TG ML
-
- ⦿ **Data** available from CDI Data Discovery and Access Service
 - ⦿ **Products** available from Viewing and Downloading Service

Marine litter data

Discovery Parameter	Datasets
Sea-floor litter abundance	12,777
Beach litter abundance	6,893
Micro-litter in water bodies	131
TOTAL	19,801

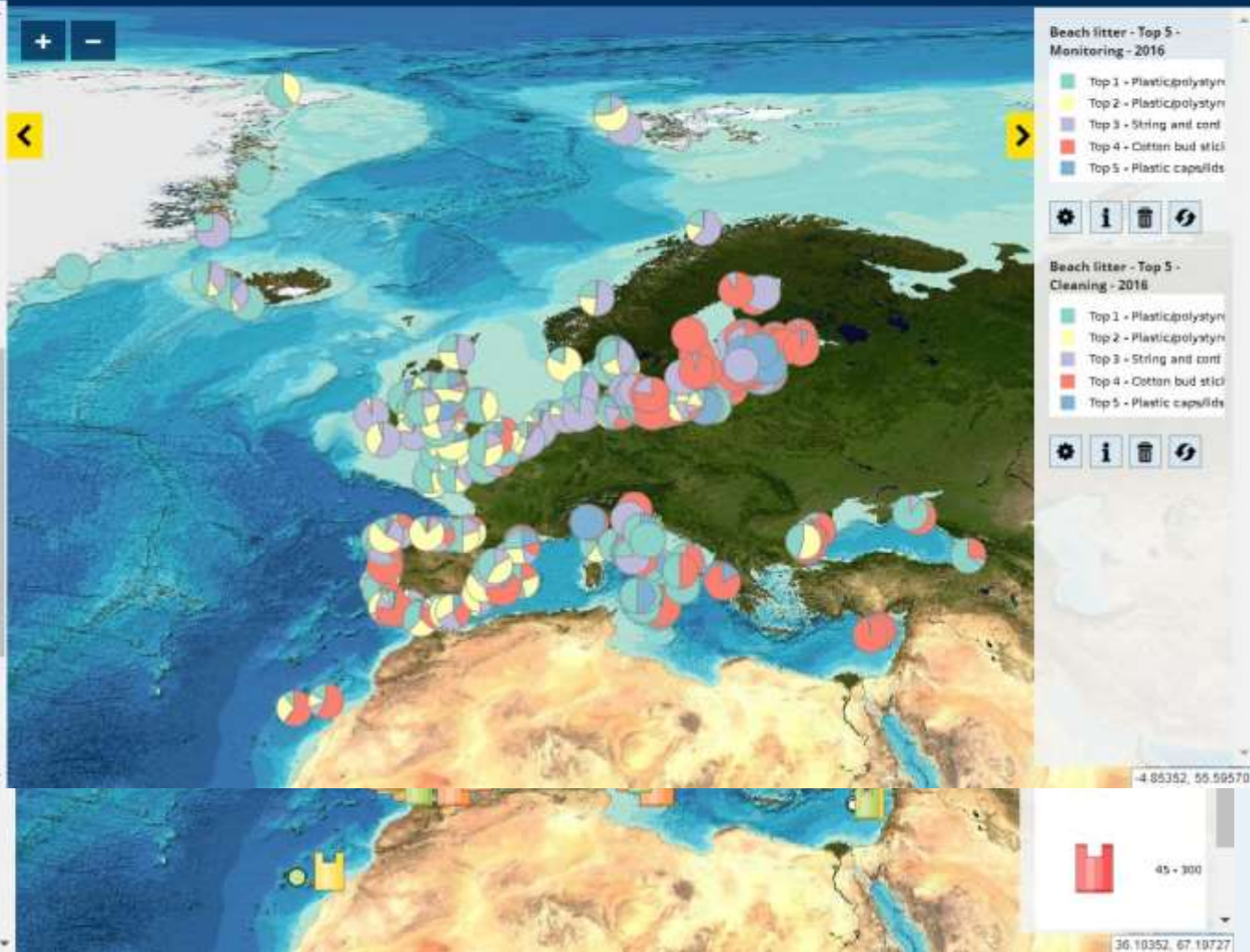


EMODNET CHEMISTRY - LITTER

- ✓ Beach litter
 - ☐ Beach litter - Beaches locations
 - ☐ Beach litter - Temporal cover - Number surveys
 - Beach litter - Total abundance - Monitoring
 - Beach litter - Total abundance - Cleaning
 - Beach litter - Category abundance - Monitoring
 - Beach litter - Category abundance - Cleaning
 - Beach litter - Top 5 - Monitoring
 - ✓ Beach litter - Top 5 - Cleaning
 - ☐ Beach litter - Top 5 - Cleaning - 2012
 - ☐ Beach litter - Top 5 - Cleaning - 2013
 - ☐ Beach litter - Top 5 - Cleaning - 2014
 - ☐ Beach litter - Top 5 - Cleaning - 2015
 - ☐ Beach litter - Top 5 - Cleaning - 2016
 - ☐ Beach litter - Top 5 - Cleaning - 2017
 - Beach litter - Cigarette items and related abundance
 - Beach litter - Fishing items and related abundance
 - Beach litter - Plastic bags abundance
- Seabed litter

EMODNET CHEMISTRY - DISTRIBUTION OF CDI OBSERVATIONS PER DATA CATEGORY (P36) AND MSFD SEA REGIONS

- ☐ Acidity
- ☐ Antifoulants
- ☐ Chlorophyll
 - ☐ Beach litter - Plastic bags abundance - 2008
 - ☐ Beach litter - Plastic bags abundance - 2009
 - ☐ Beach litter - Plastic bags abundance - 2010
 - ☐ Beach litter - Plastic bags abundance - 2011
 - ☐ Beach litter - Plastic bags abundance - 2012
 - ☐ Beach litter - Plastic bags abundance - 2013
 - ☐ Beach litter - Plastic bags abundance - 2014



Adopting and adapting SeaDataNet

- **New vocabs** for Marine Litter (H01-...H05 for micro-litter types, shapes, size classes, colour classes, polymer type)
- **New Data Transport Format** for micro-litter with **CDIs** (include micro litter metadata, no change) & **ODVs** (extending ODV **mandatory** fields with **additional selected fields** necessary to describe marine micro litter)
- **CDI Service** extended to deliver data as EBL & ESFL
- **ODV** tuned for Nutrients (P35) and Contaminants (P01 to preferred units)

Conclusions

The use of SeaDataNet for EMODnet Chemistry, following approach of adopting and adapting

- **Synergy** between DG MARE, DG RTD and DG ENV
- **Win-win** interaction (EMODnet needs SeaDataNet, SeaDataNet improves with EMODnet)
- **No duplication** of efforts
- **Building on top** of consolidated system without reinventing the wheel, in close cooperation