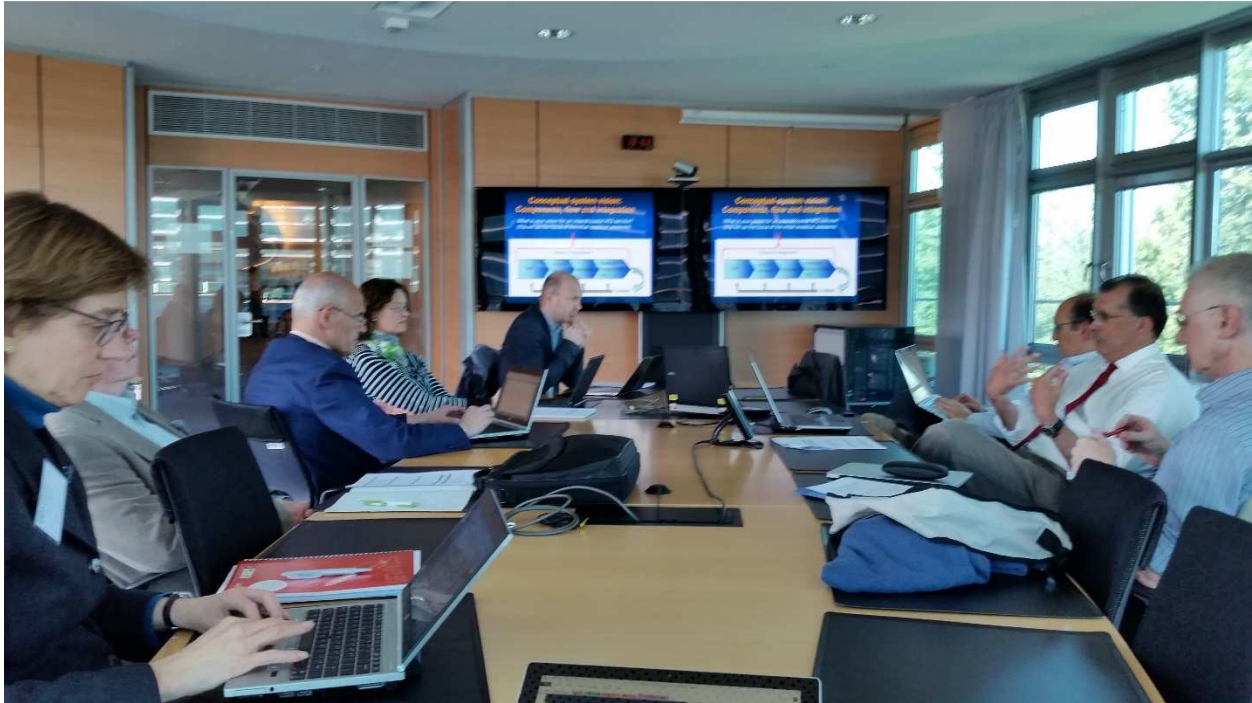


## Water Quality Service: Coastal Breakout Session



### Overarching service

- System of systems approach: global to regional to national to local; downscale-able and upscale-able as needed (consider Stommel/Dickey diagram).
- Definition should include list of key issues (e.g., marine strategy and water framework directives; examples in other nations/regions), policy drivers and coastal area – then define the attendant requirements
- Complementarity from basin/regional (synoptic) scale down and local (e.g., watershed/catchment) scale up; upstream core services enabled that will feed/facilitate downstream service (nations provide framework; local and commercial providers leverage at local scale)
- Uniformity and standardization of services – provides core background; build a portfolio of modules (e.g., HABs, etc) (top down: regional/national and bottom-up: local data) or “models”?!  
Technology transfer; esp developed to developing

## *Considerations and Context*

- Need to define information products that are needed by users
- What is the definition of EO data? Some element of synoptic, routine and sustained, consistent data. Keep in mind not just top down from space agencies, but bottom up – e.g., citizen science/crowdsourcing; but also need critical complementary data streams (e.g., FIBs) to complement the EO data
- Terrestrial and **oceanic** inputs/forcings (note: this makes coastal different from inland waters); climate change will be important
- Need global as well as regional scales
- Different levels and types of users – require different types of information
- Use of UNCLOS to define boundaries? Could serve as a potential guide – within and beyond national jurisdictions
- Ecosystem state/health and sustainable development; sea use
- Coastal pressures: anthropogenic (land and ocean-based, e.g., maritime industry/commerce) and climate change
- WQ classifications? Typological approaches? Archetypes that can be identified?
- Local scale too fine?; regional and national scales – important (report against SDG targets); also effective area of catchment influence on coastal receiving waters – don't go to local level? Not necessarily – depends on user needs. What about SIDS (small island developing states)?
- Are coastal aquifers part of the discussion? Yes - West asian nations have identified this as a concern; groundwater aquifers. Include but say not part of the focus here....
- Have local up complemented by regional down approach
- To what extent meteorology as model? Also coupling of hydrological services to met systems...

## *User needs/applications/ drivers*

- Policy issues are the main drivers
- Upstream (core services) vice downstream (e.g., commercial) providers
- Sources; fate and transport of pollutants/pathogen/contaminants
- Point versus non-point sources of pollutants
- Harmful algal blooms
- Eutrophication; hypoxia
- Radioactivity transfer into the marine food web?

### *Issues and Challenges*

- Getting people to adopt what we will/can provide in terms of EO data
- Many users don't know/understand the satellite data – how do we remedy these knowledge gaps?
- Need adequate resolution (spatial, temporal, spectral etc)
- Issues of proxies – scales of reporting and processes – coherence with different type of observations (satellite vice in situ); also continuity issues
- Mismatch between amount of EO data available and actual users of these data – give the people what they ask for, what do they need

### *Systems*

- Copernicus Marine Core Services (global 4 km coverage); focus largely on Europe (1 km coverage)
- CEOS agency satellite data; programmes such as ChloroGIN; CoastColour; CoastWatch/OceanWatch
- LMEs; Transboundary Water Assessment; GOOS activities
- Military/defence programmes
- Others

### *Data*

- 100-300m as a baseline?
- TBD

### *Products/Indicators*

- Driven by user needs; TBD

*Information*

- Driven by user needs; TBD

*Knowledge/Decision-Making*

- Depends on the policies, conventions, etc; TBD