



EMODPACE-CEMDNET Data Cooperation Between EMODnet & NMDIS

Webinar - EMODnet
A decade of achievements
connecting marine data to knowledge

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EMODnet

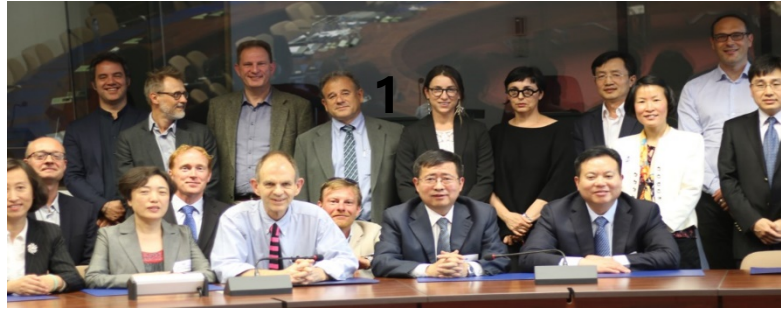


European Marine
Observation and
Data Network



- 1 | How we met?
- 2 | What we want to achieve?
- 3 | Where are we now?
- 4 | What's more to expect?

1 | How we met



EU China Blue Year Event - forecasting, data, monitoring, planning, indicators



June 2017



EU delegation visited NMDIS



September 26, 2018



July 16, 2018

China and EU signed a Blue Partnership for the Ocean



February 2020

*EMOD-PACE, **EMODnet** Partnership for China and Europe*

*CEMDNET, **China-EU Marine Data Network Partnership***

2 | What we want to achieve



Objective

EMODPACE- CEMDNET

facilitate European and Chinese engineers and scientists to build up a picture of the marine environment using data from both sources

promote international ocean governance and support the implementation of global commitments by making ocean marine data and data products more easily accessible and by providing better data and data products

2 | What we want to achieve

Basic

EMODPACE- CEMDNET

30 months project

Work Package 0 - Project Coordination, Management and Communication

Work Package 1 - EU-China Web Portal, creation of interoperable information system linking EMODnet & NMDIS

Work Package 2 - Establishing data interoperability between EMODnet and NMDIS

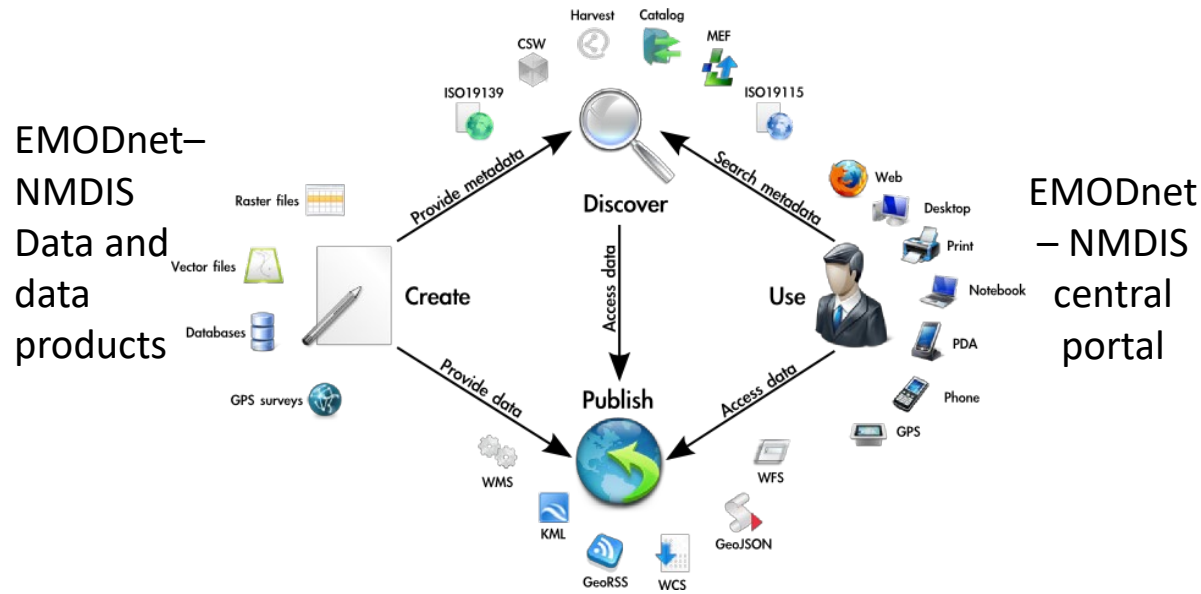
Work Package 3 - Comparison of European and Chinese models for regional sea reanalysis

Work Package 4 - Comparison of European and Chinese models for seabed habitat and ecosystem vulnerability

Work Package 5 - Coastal Adaptation

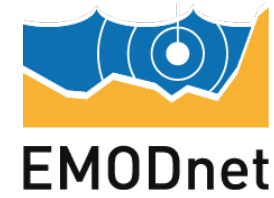
2 | What we want to achieve

EMODnet–NMDIS Catalogue service powered by Geonetwork and GEONODE



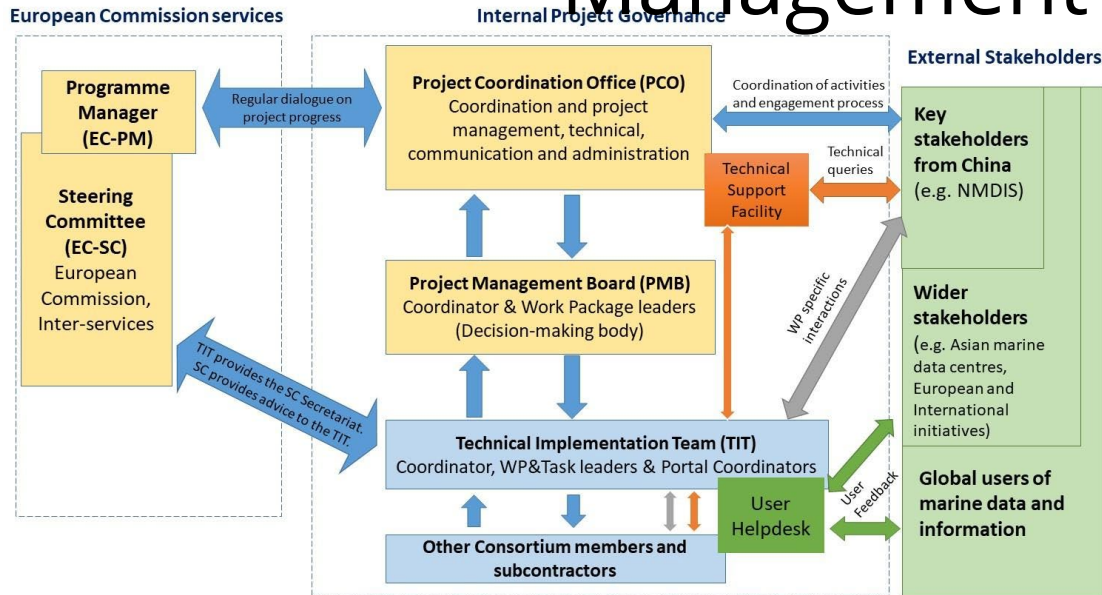
EMODnet – NMDIS data brokerage service

Vision for developing the services and how the different work packages will contribute to delivering the objectives (From EMODPACE Proposal)

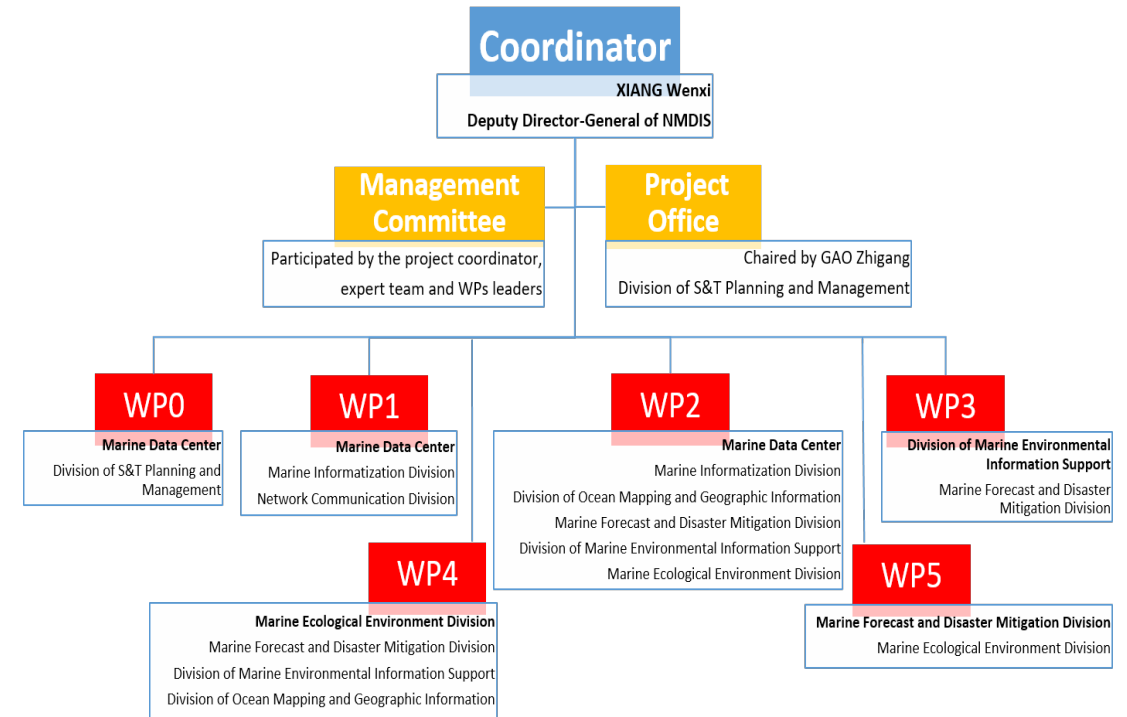


3 | Where are we now

Organization & Management



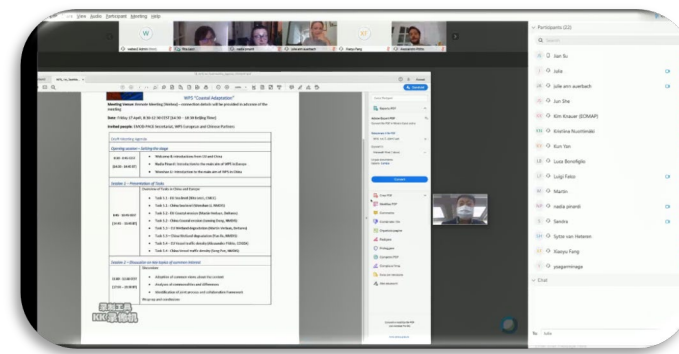
Governance components of the project and the internal and external communication flows at EU



Organizational Structure at NMDIS

3 | Where are we now

- ❑ Establish contact
- ❑ Identify gaps
- ❑ Assign "homework"
- ❑ Define common work plans
- ❑ Launch thematic studies



Common work plan on EMOD-PA3: Intercomparison of regional ocean reanalysis

The work plan is based on outputs of the kick-off meeting of EMOD-PA3 in 8 May 2020.

1. Objectives
The objectives of this common work plan is to i) define EU-CN cooperation framework on ocean reanalysis and modelling; ii) inter-compare European and China regional ocean reanalysis and modelling using a collective way, and make joint deliverables; iii) make recommendations for future EU-CN cooperation in ocean reanalysis and modelling.

2. Define a EU-CN cooperation framework on ocean reanalysis and modelling

2.1 Definition of a collected approach of EU-CN cooperation

A collective approach of EU-CN cooperation in EMOD-PA3 (WP3-WP5) should be defined, which focuses on common objectives and deliverables. Both sides will follow this approach. A draft version can be referred to Appendix 1.

2.2 Identification of the European basin and Asian basin, observation data, ocean models and reanalysis to be used

Primarily one European basin and one Asia area should be chosen for performing the intercomparison. Corresponding models, products and observation datasets for validating the models and products should also be identified. A preliminary result can be found in Appendix 2.

3 Joint activities

3.1 Literature review:

EMOD-PA3 Proposed way forward for analysis of interoperability

From: Dick M.A. Schaap and Michele Fichaut – WP2 Coordinating team
To: NMDIS

After consultation of: EMOD-PA3 European team
Date: 19 June 2020

Approach:
At the WP2 kick-off meeting (11 – 12 May 2020) the WP2 partners from Europe and have learnt a lot from each other about their marine and ocean data management and practices. However, from the meeting we also have learnt that it is most probable to work already on bridging online portals and services for exchange between EMO and NMDIS as originally planned in the WP2 description.

It seems better to approach the interoperability challenge from the basis by starting detailed analysis and comparison of **basic elements per data discipline**, such as:

- metadata formats
- data formats
- vocabularies
- QA-QC procedures
- available data sets
- available data products
- workflows for generating data products
- data policies for sharing and publishing of data and data products
- existing services
- use of IT standards (OGC, ISO, W3C)
- use of specific software tools

of course, making use as of the information as provided and discussed at the WP2 meeting as an initial starting point for the discussions, analyses, and brainstorming.

The idea is that by getting a more detailed understanding and comparing those basis elements at both sides, WP2 partners per data discipline can identify options for interoperability between the two sides, such as:

- mapping exercises concerning metadata formats
- adopting and further populating common vocabularies to code various metadata with controlled terms for semantic interoperability and also overcoming language barriers, as coded terms can refer to both English and Chinese translations
- further detailing and comparing inventories of available data sets, which might be

NMDIS will evaluate the capacity of CMIP6 models to project sea level rise along the maritime silk road using available observation data. Sea level rise

Joint work plan for WP3 "Coastal Ad."	
EMOD-PA3	
TS.0	EU-CN cooperation (network activities) Activities and tasks defined in WP0 M1-M12. Design detailed joint working plan for implementation of WP3 tasks. M5-M4. Contribute to meetings (M2, M12, M24, M30), reports (M2, M12, M24, M30), and feed into WPO.
TS.1	Relative and absolute sea level changes Provide relative and absolute sea level TRE interest.
TS.1.1	Methodology Develop a best practice methodology for evaluation of sea level rise at different time and space scales in Europe and China and estimating uncertainties in trends. Review references in Chinese on sea level changes, including annual national reports on sea level change.
TS.1.2	Web-GIS map Design and implement the Web-GIS map that will contain all information linked to source data such as EMOData Physics and equivalent data bases for the Chinese partners.
TS.1.3	Relative sea level trends Apply the methodology to tide gauge data and estimate relative sea level trends with uncertainties for the whole area of interest. Data both from PSMIS, services, GLOSS and other open source tide gauges should be used. Different length of the estimates should be given (10-20, 50 and 100 years) together with acceleration estimates, if possible.
TS.1.4	Absolute sea level trends Estimate the absolute sea level trends in the near-shore and open ocean areas of the target area from CHIEFS sea level anomaly satellite data along track and gridded data sets. Estimation of sea level contributions (mass and steric) in the area will also be produced.
TS.1.5	Numerical model estimates Estimation of absolute sea level trends from numerical model reconstructions, reanalysis and projections at the same stations of tide gauges and/or in relevant

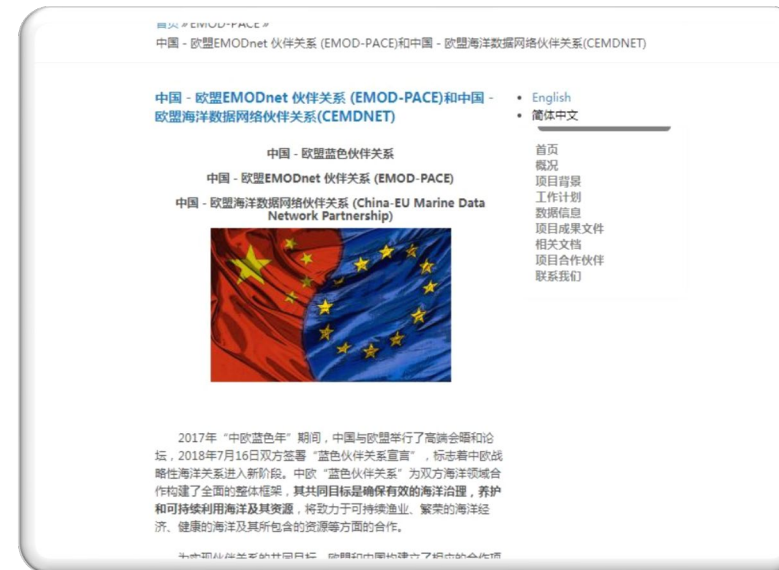


EMOD-PA3 WP2 kick
Monday 11 May 2020 - 08:00 hrs - 12:00 hrs Am
Tianjin time - Tuesday 12 May 2020 - 08:00 hrs - 12:00 hrs Tianjin t

AGENDA	
Time	Description
08:00 - 08:15	Welcome
08:15 - 08:30	Short introduction participants
08:30 - 08:45	General introduction of EMOData
08:45 - 09:00	General introduction of NMDIS
09:00 - 09:20	Approach for WP2: Establishing data interoperability between EMOData and NMDIS
09:20 - 10:20	Thematic Chemistry (15 minutes presentation per infrastructure and present interoperability options / issues)
10:20 - 10:35	EMOData Chemistry
10:35 - 10:50	NMDIS Chemistry and Biology
10:50 - 11:10	Short break
11:10 - 11:30	Thematic Biology (15 minutes presentation per infrastructure and present interoperability options / issues)
11:30 - 11:50	EMOData Biology
11:50 - 12:00	SeaDataNet - European network of
12:00 - 12:00	General discussion about first day

3 | Where are we now

Work Package 1 Provide visibility to the collaborative efforts, give access to data and data products currently available in EMODnet, NMDIS as well as those developed during the projects.



Published the bilingual EMODPACE-CEMDNET webpage

<http://www.emodnet.eu/en/emode-pace>

3 | Where are we now

Work Package 2 Specifying of interoperability solutions for developing the EMODnet – NMDIS data brokerage service and planning of physics NRT data exchange.

- ❑ Organize detailed analysis and comparison of basic elements per data discipline
- ❑ Identify options for interoperability between the two sides
- ❑ Have data sets at both sides documented and formatted
- ❑ Set-up 4 discipline teams for now, work in parallel on data syntax, semantics and quality control

3 | Where are we now

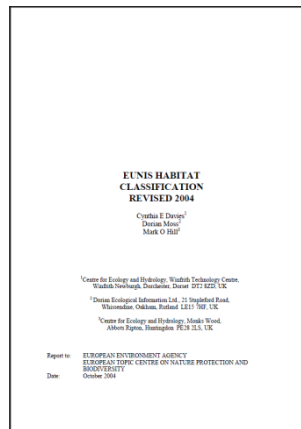
Work Package 3 Identify reasons for similarities and differences between European and Chinese ocean circulation models and reanalysis products, and also the most promising ways to improve the reanalysis.

- ❑ Develop common work plan: intercomparison of regional reanalysis
- ❑ Further decompose tasks in to 12 subtasks
- ❑ Detailed discussion on
 - Literature review on assimilation methods and reanalysis products in the Yellow Sea
 - Yellow Sea hindcast validation/intercomparison
 - North West Pacific hindcast validation/intercomparison
 - Data review: availability of observations for validation of regional sea reanalysis
 - Common observation dataset for model validation

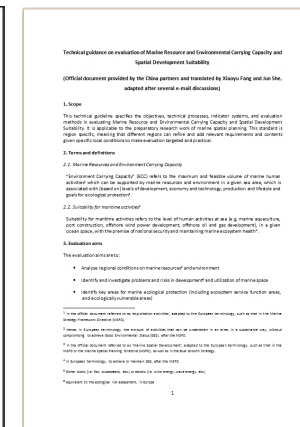
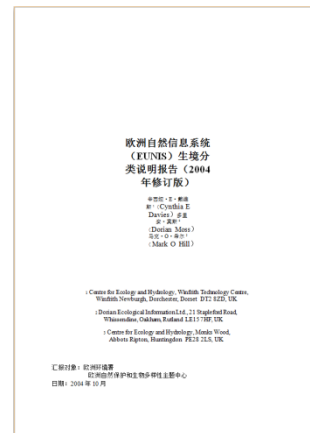
3 | Where are we now

Work Package 4 Compare European and Chinese models used for seabed habitats and ecosystem vulnerability by analysing the applicability of each side's models in different areas

- Exchange and translation of important documents
- A comparative study between European seabed habitat mapping method and the Chinese marine ecological classification and zoning methods, in Beibu Gulf of China as a pilot
- Implement and demonstrate China's marine resource and environmental carrying capacity assessment criteria in the Bay of Biscay



EUNIS HABITAT CLASSIFICATION and Chinese translation

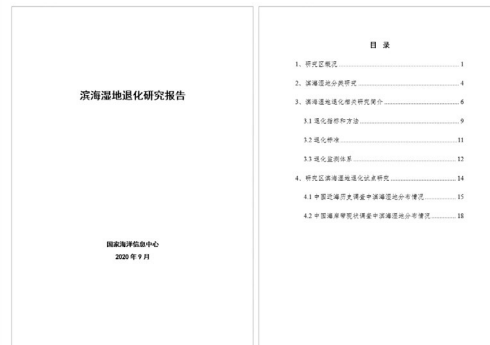
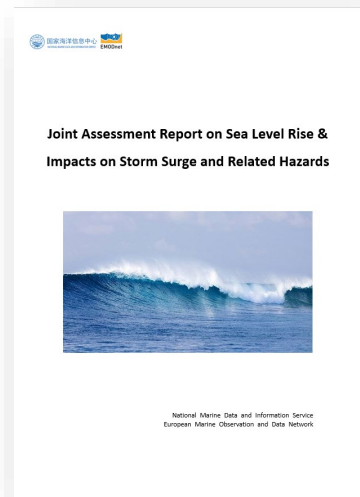


Technical Guidance on Evaluation of Marine Resource and Environmental Carrying Capacity and Spatial Development Suitability and English Translation

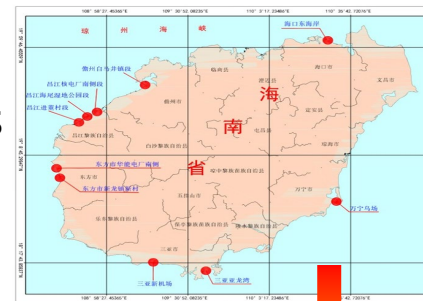
3 | Where are we now

Work Package 5 Provide data/information products covering the Seas crossed by the maritime silk road on: (i) relative and (ii) absolute sea level changes; (iii) coastal erosion; (iv) wetland degradation; and (v) vessel traffic density.

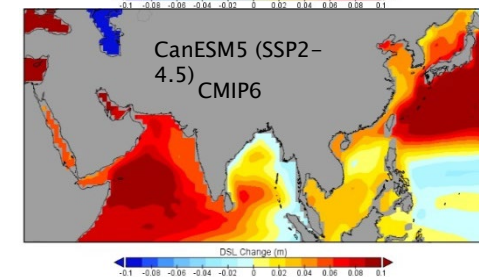
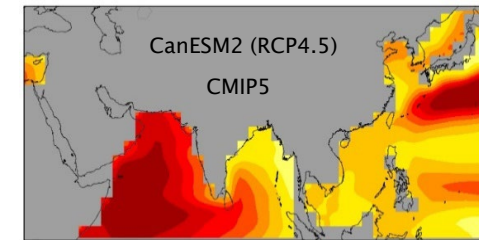
- ❑ Joint Assessment Report on Sea Level Rise & Impacts on Storm Surge and Related Hazards
- ❑ Carry out multi-scenario sea level rise forecast for CMIP5 and CMIP6 of the study area
- ❑ Study on the shoreline interpretation method, analyze the changes of shore line in typical areas
- ❑ Literature reviews
 - wetland distribution in the study area
 - wetland classification system in China
 - wetland degradation assessment methods



Report on wetland degradation



Shoreline change analysis of Hainan Island



The spatial distribution of projected Dynamic Sea Level Change for the period 2081-2100 relative to historical baseline under CMIP5 RCPs and CMIP6 SSPs

4 | What's more to expect

- Accomplish the cooperative projects with desired deliverables
 - Well operated data interoperable system between EMODnet & NMDIS
 - Safe and fast access to wider range of data and data products
 - Continuously updating and sharing of marine information products
 - Collaboratively verified and improved methods and standards
 - Jointly developed and published reports and papers

- Establish sustained China-EU partnership on ocean data exchange and service, benefit larger regions



www.emodnet.eu

Your gateway to marine data in Europe

