

MEETING DOCUMENT

Wadden Sea Board (WSB 36)

28-29 April 2022
Varde, Denmark



Agenda Item:	5.3 Trilateral Monitoring and Assessment Programme
Subject:	TMAP data handling scenarios
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Submitted by:	TG-MA / EG-Data / CWSS

During its 34th meeting, the Wadden Sea Board (WSB) raised concern “specifically” about “the data handling workshop” and that “more concrete information would be needed about the obstacles, possible solutions and consequences to make progress. The topic would need to be addressed in time for the preparation of the next Governmental Conference.” The Board “as a matter of urgency, encouraged all members to support the work of TG-MA with high priority to enable the TG-MA to submit to the WSB the options ahead.”

As a first step to fulfil the ambition to re-vitalize TMAP after respective activities were put on hold, a TMAP data handling workshop was held in January 2022 (see also document [WSB 35/5.3](#)). The event revealed that the current situation of TMAP and the resulting production of QSR Thematic Reports (in the further course described as “status quo”) was unanimously regarded as insufficient and dissatisfying. This was underlined by the assessment, but also by the presentation of corresponding technical possibilities, by invited external data experts (e.g. from the International Council for the Exploration of the Sea, ICES).

This document contains potential future TMAP data handling scenarios jointly developed by the Task Group Monitoring and Assessment (TG-MA) and Expert Group Data (EG-Data). The requested options on the future data handling are displayed as different scenarios, with their implications and decisions to be considered towards each scenario. The starting point of any decision to be made during the process of finding an appropriate scenario are regional data storage arrangements, which will remain untouched in any case. This implies that any activity towards a common monitoring and assessment will be applied on data extracted from these regional data bases.

Additional to the newly developed scenarios I to IV, the “status quo” is included to describe the current situation. Each further scenario can be regarded as a development step towards scenario IV, which is considered to be a comprehensive arrangement, with most elaborate and multifaceted data accessibility and an extended GIS based display, and the possibility to produce parameter related maps in a web portal. It is assumed that the effort might increase with each scenario, but further investigation would be needed on the specific techniques (e.g. web-services) that would be applied under each scenario. Such investigation is initiated within EG-Data as a feasibility study, at the same time and might need to be expanded to small projects as suggested by TG-MA.

A background document on TMAP and data handling is in ANNEX I.

Proposal: The meeting is invited to note the options presented and to decide on the preferred future data handling scenarios, taking also into account the desired features and outcomes of TMAP to meet the monitoring and assessment requirements proposed in the applications for the inscription of the Wadden Sea on the World Heritage List, as well as previous agreements (Tønder Declaration §§ 59.-60.). TG-MA requests further guidance from WSB on how to proceed.

POTENTIAL FUTURE TMAP DATA HANDLING SCENARIOS

Predefinition:

The scenarios outlined in this document share the following aspects/characteristics:

- no changes will apply to the national/regional databases
- any basic data quality control happens at national/regional level

The displayed features and keywords are defined as such:

Interoperability:

The possibility for (spatial) data sets to be combined, and for services to interact, without repetitive manual intervention, in such a way that the result is coherent, and the benefit of the data sets and services is enhanced.

Storage:

Trilateral data storage – central physical storage of harmonized data

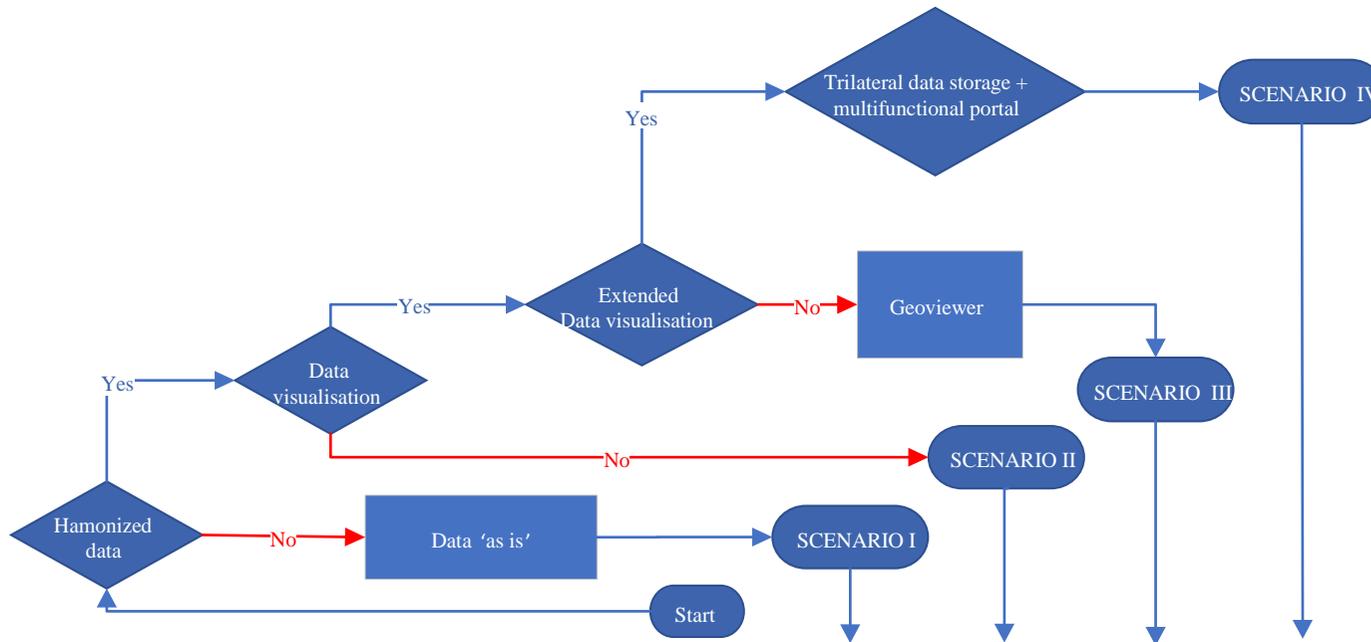
Visualization:

Discrimination between a simple and an extended visualization

- Simple visualization in e.g. a basic GeoViewer that also can serve as a data portal, presentation of single layers
- Extended visualization via a GIS-based system (e.g. Cadenza) with options for presenting different data layers in one map and presentation of predefined tables and diagrams

Data access:

Central access point – options range from a simple index of available data sources to a multifunctional portal with all data being available and displayed.



Features	SCENARIO ->	sq*	I	II	III	IV
Data access	Central access point	no	yes	yes	yes	yes
Interoperability	Data harmonized + metadata	no	no	yes	yes	yes
Display	Simple visualization (Geoviewer)	no	no	no	yes	yes
Display	Extended visualization (multifunctional portal)	no	no	no	no	yes
Storage	Trilateral data storage	no	no	no	no	yes
Target groups	CWSS, trilateral groups, QSR Authors	yes	yes	yes	yes	yes
Target groups	Scientists	no	limited	yes	yes	yes
Target groups	Schools, public	no	limited	limited	yes	yes

Figure 1: The upper part of the schematic visualizes the necessary decision-making process towards a suitable data handling scenario. The table below displays the features possible under each scenario.

Data Handling Scenarios – Consequences

Table 1: Expected consequences of the different TMAP data handling scenarios.

*Status quo	
<ul style="list-style-type: none"> • constantly high costs for QSR authors • no control on data sources as well as quality/consistency of data processing (harmonization) • limited outreach potential beyond QSR 	
Scenario 1	Scenario 3
<ul style="list-style-type: none"> • constantly high costs for QSR authors • control on data source; no control on quality/consistency of data processing (harmonization) • central data access point • limited outreach potential beyond QSR 	<ul style="list-style-type: none"> • implementation costs for data harmonization & simple visualization • control on data source and quality/consistency of harmonization • central data access point • simple data visualization (Geoviewer can also serve as a data portal) • increased outreach potential beyond QSR
Scenario 2	Scenario 4
<ul style="list-style-type: none"> • implementation costs for data harmonization • control on data source and quality/consistency of harmonization • central data access point • limited outreach potential beyond QSR 	<ul style="list-style-type: none"> • high implementation costs & low maintenance costs • control on data source and quality/consistency of harmonization • central data access point • extended data visualization • maximized outreach potential (trilateral community, scientists, public)

TMAP data handling – background document

The Trilateral Monitoring and Assessment Programme



Background

The Trilateral Monitoring and Assessment Programme (TMAP) is the joint monitoring programme of the Wadden Sea states and considered as one of the cornerstones of the Trilateral Cooperation on the Protection of the Wadden Sea. Launched in 1997 ([Stade Declaration](#)), the programme spans over a broad range of topics, such as morphology, ecological processes, wildlife and human activities. TMAP covers the entire Wadden Sea Area including islands and offshore areas.

The vision of TMAP is a harmonized and effective monitoring and assessment programme, where the assessment of the ecosystem and its components are based on sound scientific evidence. It serves the needs of policy making at all levels, the commitments ensuing from relevant EU legislation and instruments of international law, as well as the [World Heritage](#) status and the management of the Wadden Sea as an ecological entity. The programme will be continuously further developed to fulfil the needs of, but also to use synergies with (if applicable), various national and international reporting obligations, in particular current EU Directives such as the Habitats Directive (HD), Birds Directive (BD), Water Framework Directive (WFD) and Marine Strategy Framework Directive (MSFD).

During the German presidency (2018-22), TWSC aims to foster the adjustment of the TMAP to today's obligations and to guarantee a future proof approach with the necessary synergies with existing monitoring programmes. Focus is also on increasing the visibility and outreach of TMAP and the advantage as a sound basis for reporting through the QSRs.

From the **Leeuwarden Declaration** (18 May 2018):

Para 19: *“Agree to increase the value of the Trilateral Monitoring and Assessment Programme to users and to a wider range of stakeholders, including the availability of data and presentation of information resulting from those data;”*

TMAP strategy

The [TMAP strategy](#) is the current regulatory framework of the programme, finally adopted by the ministers during the 12th Trilateral Governmental Conference (TGC) in Tønder: :

Para 59.: *“Reconfirm the central importance of the Trilateral Monitoring and Assessment Programme (TMAP), as the indispensable basis for joint quality status assessments, the Wadden Sea Plan and the successful management of the Wadden Sea within the European Natura 2000 network and as a World Heritage property.”*

Para 60.: *“Adopt the long-term common TMAP strategy as in Annex 6 as the basis for the further development of the TMAP, in close connection with the scientific community, with the aim to further increase its value in implementing EU Directives, and providing information for a wider range of stakeholders, also through the further development of the information system to allow for a better access of the data.”*

TMAP provides significant added value for the Trilateral Wadden Sea Cooperation as it

- provides an important and scientifically sound evidence base for decision making and policy development at all levels;
- provides essential contextual information to support the management of the Wadden Sea as a single ecological entity;
- supports reporting against directives and the World Heritage status;
- enables integrated assessment to be undertaken, which is an essential prerequisite for the application of the ecosystem approach;
- provides information about progress towards Trilateral Targets and facilitates the discussion about the priorities for the period ahead.

TMAP Data Management

Common data handling is an essential component of the TMAP, making monitoring data available for trilateral assessment. For this purpose, the TMAP data strategy foresees identical TMAP data units in each country. These data units are currently not fully functional as the data delivery has been suspended in large parts as the efforts considered as inappropriate by some regions. Instead, the TMAP data is stored in various locations and can only be accessed on an ad-hoc basis with no common technology and limited quality control. As a result, a significant part of the TMAP data is difficult to assess even for CWSS when aiming to answer requests from outside but also for supporting the QSR authors. While a number of the QSR Thematic Reports traditionally rely on external data sets, e.g. from the authors and their networks, the agreed TMAP data sets currently underly similar limitations.

A sophisticated TMAP data handling system aims to exchange monitoring data in a common format so that it can be used directly in the trilateral assessment work for the following tasks:

- preparation of [Quality Status Reports](#) entailing most recent data and developments,
- preparation of trilateral reports on specific topics (thematic reports, like breeding birds, migratory birds, seals, contaminants),
- preparation of reports on unforeseeable events (e.g. eider mass mortality),
- safeguarding long-term storage of relevant Wadden Sea data,
- use of trilateral data for national and international programmes,
- support science and research and corresponding studies and publications
- provide information on key species and habitats for the public and therefore strengthen the scientific community.

Former evaluation

An evaluation of TMAP data handling was undertaken in 2004 by the Orbis Institute, Canada. The evaluation concluded that TMAP has been developed with a clear top-down approach from broad objectives, through issues of concern to generally specified targets. Also that it is

“an enormously valuable data repository which is just beginning to show its worth” and which “for the full benefits to be realized, resources must be stabilized and increased, organizational arrangements strengthened and value added uses pursued.”

Following this evaluation, the TWSC has stabilized and increased resources for TMAP and the system developed further to deliver the requirements of the parties in relation mainly to the key EU Directives. It is in daily operational use by the parties.