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TMAP Parameter Proposal

Guidance document

Version v1-09.06.2026

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WADDEN SEA WORLD HERITAGE

Common Wadden Sea Secretariat

Introduction

The Trilateral Monitoring and Assessment Programme (TMAP) is the joint monitoring framework of the Trilateral Wadden Sea Cooperation (TWSC), established in 1997 under the Stade Declaration. It covers the entire Wadden Sea area including islands and part of the offshore zones and addresses a broad range of topics such as geomorphology & climate, habitats & ecological communities, species, human activities and pollution. By delivering sound scientific evidence, TMAP provides the basis for the management of the Wadden Sea as a single ecological entity and supports policy-decision at different levels. However, in the context of ongoing environmental changes, emerging pressures, and advances in scientific understanding and monitoring technologies, there is an increasing need to revise the existing parameter catalogue. The introduction of new parameters, especially those linked to existing international reporting obligations, will further strengthen TMAP's future capacity to detect trends, improve the assessment of the Wadden Sea ecosystem status, and ensure that the programme continues to effectively support adaptive conservation and management of the Wadden Sea.

To ensure that new monitoring parameters effectively support the objectives of the TMAP, proposals must meet a number of key requirements. These include alignment with the guiding principle of the Trilateral Wadden Sea Cooperation and the Outstanding Universal Value (OUV) of the Wadden Sea World Heritage site, clear scientific relevance, and trilateral applicability through harmonised monitoring approaches. Proposals should present a realistic and feasible methodology and implementation strategy, be submitted by a trilateral team and demonstrate the involvement of trilateral stakeholders, be consistent with existing trilateral strategies and reference links with national and international obligations.

Submission of proposals does not guarantee funding for new monitoring parameters. This will depend on the successful evaluation of the proposal and final decision by the national delegations.

OBJECTIVES OF THE GUIDANCE DOCUMENT

The guidance document aims to establish a consistent and transparent framework for proposing, reviewing, and approving new TMAP parameters. Its key objectives are:

- To provide a standardised structure for developing TMAP parameter proposals.
- To provide a consistent and transparent workflow for submitting, reviewing, and approving TMAP parameter proposals.
- To outline the necessary steps for the implementation of new TMAP parameters, including the development of the TMAP handbook.
- To clearly define the roles and responsibilities of all stakeholders involved in the process.

TMAP parameter proposals

The template in Annex 1 outlines the required structure, content, and expectations for proposals introducing new monitoring parameters within the Trilateral Monitoring and Assessment Programme. It ensures that all submissions are consistent, comparable, and aligned with scientific, policy, and management needs.

Each proposal shall briefly explain what is being monitored, why it matters, and how monitoring is expected to be carried out. More specifically, the proposal highlights the relevant policy or legal context that supports the need for monitoring. The background section outlines the ecological relevance of the parameter and its importance for Wadden Sea management. This is followed by a description of the suggested monitoring approach, including practical considerations, data requirements and assessments.

Where necessary, a pilot study may be proposed to 1) test and refine the feasibility of monitoring methods suggested for new TMAP parameters that are not yet part of existing monitoring schemes, or 2) to align and standardize existing methodologies, ensuring comparability for integrated trilateral analyses. Pilot studies will be an exception and submitter(s) will be asked for clear justification for the need of pilot studies (Annex 2).

Proposals for new TMAP parameters can be submitted by all trilateral expert groups or initiated by the Expert Group Monitoring and Assessment (EG-MA). Scientists, consultants, or other stakeholders are advised to develop and submit TMAP parameter proposals in collaboration with trilateral groups to ensure high relevance to the TWSC. Parameter proposals must align with TWSC strategies and plans to avoid creating unnecessary workload. Particularly relevant in this context are the targets of the Wadden Sea Plan, the objectives of the Integrated Management Plan, the criteria of the Wadden Sea's Outstanding Universal Value.

SUBMISSION AND REVISION OF TMAP PARAMETER PROPOSALS

Trilateral proposals will be submitted to the TMAP officer at the Common Wadden Sea Secretariat (CWSS), using the official TMAP parameter proposal template (Annex 1). The TMAP officer will make a first assessment to check that the proposal meets the basic criteria regarding information requirements and length.

After the initial quality check, the proposal will be passed on to members of the EG-MA and Expert Group Data (EG-Data). During the first review, EG-MA will check the proposal for consistency, added value, feasibility (also based on cost estimates) and the alignment with TWSC strategies. EG-Data will support the assessment regarding the data structure, quality assurance processes, data storage and management, and the possible integration of new parameters into existing data handling solutions to ensure accessibility. As part of the review process, members of EG-MA and EG-Data may consult regional agencies or national park authorities involved in monitoring

activities in the Wadden Sea to gather expert opinions on the relevance and feasibility of the proposal. The trilateral working group responsible for management/management issues will be consulted if parameters are related to sensitive policy issues linked to human usage (e.g. the current Task Group Coordination and Management (TG-CM) – abbreviation used throughout this version of the document).

After the initial review, which is expected within 6 months of submission, feedback will be provided to the submitter(s), and a revision of the proposal may be requested. Several review loops between EG-MA, EG-Data and the submitter(s) may be required to ensure the proposal meets TMAP standards.

If a pilot study was deemed necessary, a concept note will be developed by the submitter(s) in collaboration with EG-MA, EG-Data, and, where relevant, the TG-CM (in case of pilot studies related to human uses). The concept note shall outline the specific objectives, timeframe and financial needs for the pilot study. The request for financial support will be submitted to relevant trilateral bodies. In case the pilot study indicates major issues with the suggested methodologies, a revision of the original proposal needs to be submitted, highlighting solutions and their financial implications, but also possible consequences of not continuing with the implementation of the suggested parameter.

Once the review is completed, EG-MA will prepare a short summary document of the TMAP parameter proposal for submission to the TG-CM whose members will bring the proposal into national consultations on first-stage approval. Final approval for future implementation and long-term funding will be taken by the WSB. For parameters with reporting obligations that fall under ministries and agencies not represented in WSB, an additional round of national consultations may be required before final approval, initiated by the national focal points.

Documents will be reviewed and decided upon by EG-MA once per year, ideally in the first half to allow uptake of successful parameters in national consultations on the implementation of new monitoring parameters (e.g. in the Netherlands). For details on the estimated timeline, please see Figure 1.

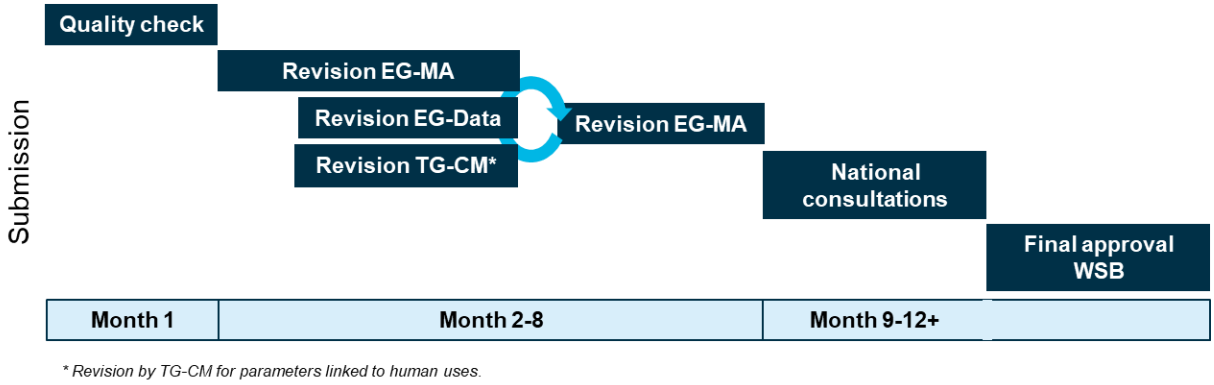

Figure 1: Estimated timeline for submission of TMAP parameter proposals until approval by the WSB. Specific times will depend on the rounds of revisions required and are therefore subject to change.

After approval and secured funding, the parameter will move into the implementation phase.

IMPLEMENTATION OF NEW TMAP PARAMETERS

Once a parameter proposal is approved by the WSB, the submitter(s) prepare a chapter for the TMAP Handbook, with clear description of methods, standards, and procedures to align and standardise regional data for trilateral analyses. This includes aligning the metadata with the TWSC data policy. As soon as first data become available, EG-Data incorporates the parameter into the TMAP Data Catalogue and coordinates the integration of the new parameter into the trilateral data handling solution.

Implementation will start with an initial trial period, supported by national agencies, national park authorities, EG-MA, and EG-Data. After a predefined period - determined by the sampling cycle of the parameter - a first evaluation of the collected data will be conducted to assess its contribution in determining the ecological status of the Wadden Sea. Efficient monitoring parameters will enter long-term implementation by being integrated into the national monitoring programmes.

Responsibilities

The development, assessment and implementation of new TMAP parameters depends on clearly defined responsibilities among the groups involved in the TWSC. Each body contributes specific expertise to ensure that proposals are scientifically sound, feasible, and aligned with trilateral policies and data requirements. Clear division of roles support a transparent and efficient workflow throughout the review and implementation phases. Figure 2 outlines these responsibilities and illustrates how the different actors interact within the process.

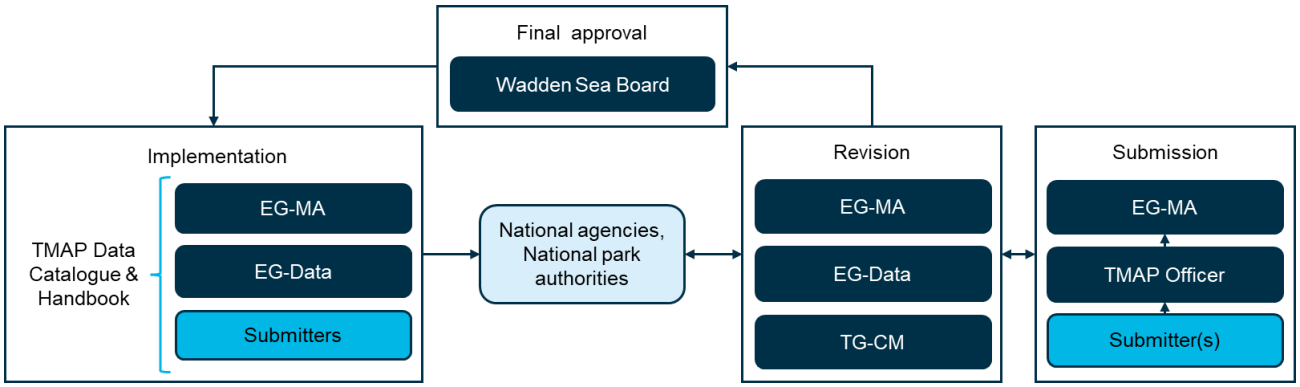

Figure 2: Organigram of trilateral groups involved in the revision and implementation of new TMAP parameters.

Note: This document will be revised after the first proposals have been processed to address any issues identified during the submission and revision process.

Annex 1: Template for TMAP Parameter Proposals

This document defines the structure and content of proposals for new parameters for the Trilateral Monitoring and Assessment Programme (TMAP) of the Trilateral Wadden Sea Cooperation. It complements the general guidance document, which authors are strongly advised to read before preparing and submitting a proposal. Together, these documents provide a concise framework for developing TMAP parameter proposals, including responsibilities and the processes for reviewing, approving, and implementing new TMAP parameters.

By providing important trilateral monitoring data, TMAP plays a central role in assessing the ecological status of the Wadden Sea, and thereby in evaluating the targets of the Wadden Sea Plan (WSP), addressing the requirements of the Integrated Management Plan as well as safeguarding the Outstanding Universal Value (OUV) of the Wadden Sea World Heritage Site. Considering the diversity of pressures acting on the Wadden Sea and the complexity of the ecosystem, submission of parameters from different scientific fields, including ecological, geological, climate-related, and socioeconomic parameters, are explicitly encouraged.

However, proposals must clearly demonstrate how the suggested parameter contributes to these priorities. Only, proposals that strongly support monitoring of WSP targets, management needs, and/or OUV attributes will be given consideration.

Submitters are required to adhere to the specified word counts. For parameters that require additional explanation due to their complexity or novelty, longer proposals may be accepted. Early contact with members of the Expert Group Monitoring and Assessment (EG-MA) is recommended for advice and support during drafting.

Note: This template will be revised based on feedback and experience gained during the initial rounds of proposal submissions.

EXPECTED STRUCTURE OF TMAP PARAMETER PROPOSALS

All proposals are expected to follow the same outline to guarantee a certain level of comparability and facilitate review and evaluation of proposals by the Expert Group Monitoring and Assessment (EG-MA).

If you apply for an extension of an existing TMAP parameter, please also fill in all sections, but make reference to the existing TMAP handbooks as much as possible.

Field name	Description
Title	Self-explanatory title of the new parameter (or existing parameter)
Submitting parties	Please name all organisations involved in the submission. At least one partner from each Wadden Sea country is expected to support a proposal for a new TMAP parameter.
Concept (max. 150 words)	The concept shall introduce the overall purpose of the initiative. This should be a non-technical, non-scientific description for a general or policy audience. • *Briefly describe the parameter and outline how it contributes to a comprehensive understanding and the protection of the Wadden Sea as a World Heritage Site.*
Background (max. 500 words)	The background shall outline the scientific rationale for the parameter and its relevance for monitoring the ecological status and trends of the Wadden Sea. • *Briefly describe the parameter and explain how it contributes to understanding and monitoring the ecological status and trends in the Wadden Sea.* • *Describe its significance in relation to species, habitats, ecological and geological processes and/or its link with human pressures on the ecosystem (e.g. pollution, energy transition, shipping, fisheries).* • *Summarise major historical developments, current trends, and remaining knowledge gaps.* • *Explain the link with specific Wadden Sea plans targets, objectives of the Integrated Management Plan, OUV criteria and other trilateral strategies.* • *Outline how implementing the parameter improves monitoring, management decisions, and alignment with policy frameworks.* Provide max. two figures or pictures if necessary for general understanding.
Policy framework (max. 150 words)	This section should describe the legal and policy context supporting or requiring the monitoring of the proposed parameter.

	• *Summarise the international, national, and regional commitments, policy declarations, and laws that require or support monitoring of the parameter.* • *Explain why monitoring this parameter is necessary for assessing policy effectiveness, fulfilling obligations, and addressing emerging needs or urgency in the Wadden Sea context.*
Existing monitoring efforts (max. 300 words)	This section provides an overview of current and past monitoring efforts relevant to the proposed parameter, highlighting opportunities for alignment and identifying gaps that the new parameter could address. • *Briefly describe relevant monitoring initiatives, their objectives, duration, and geographic scope, noting where they overlap with the proposed work.* • *Highlight major insights derived from previous monitoring efforts (if they exist) and identify key strengths and critical limitations, uncertainties, or spatial/temporal gaps that justify further work.* • *Highlight connections to existing TMAP parameters and describe how synergies can provide a better understanding of processes in the Wadden Sea ecosystem, necessary for the fulfilment of the conservation targets*.
Proposed monitoring methodology (no word limit, but should be concise)	This section describes the proposed methodology for monitoring the parameter, highlighting technical, logistical, and organisational benefits and challenges compared to other methodologies (*consider structure of TMAP handbooks here*). Include an assessment of cost-benefit ratios. • *Provide a detailed description of the proposed parameter, possible subcategories and core variables.* • *Summarise available measurement and sampling methods, including key technical requirements and their main advantages/limitations.* • *Justify the proposed monitoring methodology, based on reliability, feasibility (including costs), comparability, and alignment with Wadden Sea monitoring needs.* • *Specify required measuring or sampling devices and essential technical specifications.* • *Define the minimum temporal resolution (time, cycle, frequency) and spatial resolution (locations, areas, coverage), considering sensitivity and detection limits for trends relative to expected variability.* • *Specify requirements for coherent analysis across countries.* • *Provide up to four figures or graphs necessary for general understanding.*
Data handling (max. 300 words)	This section describes how data will be stored, validated, and made accessible to ensure long-term integrity and compliance with shared standards.

	• *Describe clear QA/QC protocols to ensure consistency and reliability of data.* • *Outline how a consistent dataset for trilateral analysis will be generated.* • *Outline responsibilities for data storage and archiving and describe compatibility with national data systems.* • *Define licenses, ownership, and any legal or ethical restrictions regarding data usage.* • *Explain how the availability of data for internal and external use will be ensured.*
Process of implementation (max. 300 words)	This section outlines what is needed to successfully implement, maintain, and further develop the parameter within TMAP. • *Define immediate actions and phased measures required to implement the proposed parameter (timeline).* • *Specify training needs, technical skills, and institutional support necessary for consistent monitoring and data handling.* • *Estimate yearly expenses for monitoring, data processing, data storage, data disclosure and overall data management per region.*
Assessment and reporting (max. 200 words)	This section describes how data collected for the new parameter will be processed, analysed, shared, and integrated into Wadden Sea assessment and reporting frameworks. • *Provide a simple workflow (collection → QC → analysis → reporting), a shared data template, and recommended analytical methods/tools, considering differences in data collection, management and delivery across regions.* • *Define how data will be used for QSR contributions, reports, and visual outputs (figures, tables, infographics).* • *Explain how the new parameter helps in assessing key pressures and cumulative effects.*

Annex 2: Pilot project proposal

A pilot project may be required when a new or experimental TMAP parameter needs additional testing or refinement before it can be applied consistently across the Wadden Sea. Pilot projects are exceptions and will only be granted if instrumental to demonstrate feasibility, improve methodological clarity, and support the development of a monitoring approach that can be applied across all regions.

A pilot project proposal may be submitted when:

- the method requires additional testing for intercalibration and local validation,
- the sampling design needs refinement to ensure applicability across the Wadden Sea,
- technical or logistical feasibility must be demonstrated at a suitable site.

Your pilot proposal should provide a concise but complete overview of the scope, methods, budgets, and expected outcomes of the study. It should demonstrate alignment of the parameter with the TMAP structure (e.g. handbook, data policies, data handling).

WHAT TO INCLUDE IN THE PILOT PROJECT PROPOSAL

- Describe in detail what the pilot aims to demonstrate (e.g., feasibility, sensitivity, detection limits, comparability between methodologies).
- Describe the specific method(s) to be tested, including sampling design, workflows, or interventions.
- Clarify how the expected outcomes will inform the monitoring of the proposed parameter at TMAP level.
- List measuring devices, sensors, platforms, and supporting data sources (e.g., remote sensing, existing monitoring datasets).
- Identify the proposed pilot site(s) and explain the suitability (e.g., accessibility, ecological relevance, representativeness).
- Identify risks that may prevent further use of project outcomes in relation to the development of a new TMAP parameter.
- Provide a detailed budget overview and a realistic timeline.