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Agenda item 3: State of Play of Integrated Monitoring and Assessment Programme (IMAP) Implementation with regards to EO5 and EO9, MED POL Monitoring Programme and Way Forward

Status of the Implementation of the Integrated Monitoring and Assessment Programme (IMAP) with regards to EO5 and EO9 and MED POL Monitoring Programme

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Note by the Secretariat

At their 19th Ordinary Meeting (COP 19, Athens, Greece, 9-12 February 2016), the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) adopted a novel and ambitious Integrated Monitoring and Assessment Programme and related Assessment Criteria (IMAP).

The IMAP foresees in its initial phase (2016-2019) of implementation, the following:

- Existing national monitoring and assessment programmes of Contracting Parties to be updated and integrated, in line with the IMAP structure, principles and common indicators;
- Good environmental status (GES) definitions to be updated and the assessment criteria to be further refined;
- Scale of reporting units to be defined, taking into account both ecological considerations and management purposes, following a nested approach;
- An updated and integrated data and information system for UN Environment/Mediterranean Action Plan (MAP)-Barcelona Convention with clearly set roles for data handling and assessment for the various components and with a user-friendly reporting platform for Contracting Parties to be developed.

In line with their commitment and UN Environment/MAP Programme of Work for 2018-2019, the Contracting Parties with the support of various projects, have progressed on national implementation of IMAP. Draft national monitoring programmes based on IMAP structure and objectives are close to be finalized or at the initial stage of implementation.

Decision IG. 23/6 on the 2017 MED QSR (COP 20, Tirana, Albania, 17-20 December 2017) has underlined the gaps of the pioneering 2017 MED QSR and requested the Secretariat to make all possible efforts to overcome them and recommended as general directions towards a successful 2023 Mediterranean Quality Status Report (2023 MED QSR) the following: (i) harmonization and standardization of monitoring and assessment methods; (ii) the improvement of availability and ensuring of long time series of quality assured data to monitor the trends in the status of the marine environment; (iii) the improvement of availability of the synchronized datasets for marine environment state assessment, including use of data stored in other databases where some of the Mediterranean countries regularly contribute; (iv) the improvement of data accessibility with the view to improving knowledge on the Mediterranean marine environment and ensuring that Info-MAP System is operational and continuously upgraded, to accommodate data submissions for all the IMAP Common Indicators.

Acknowledging achievements, lessons learned, and challenges faced during the current initial phase of IMAP implementation related to EO5 and EO9 and the MED POL IV marine pollution monitoring programme, the present Status report covers the MED POL activities and outputs carried out in the period from January 2018 to February 2019. It is aimed at presenting the following issues for consideration by the present Meeting of CorMon on Pollution Monitoring:

- a) State of play of IMAP implementation (Pollution Cluster) focusing on best practices and challenges faced;
- b) Several cross-cutting issues and region-wide challenges related to Pollution Cluster of IMAP implementation (i.e. main gaps identified for the spatial and temporal coverage of the Mediterranean; risk-based monitoring and assessment approaches; scales of monitoring and assessment; assessment criteria; geographical aggregation of assessments and monitoring scaling up to sub-regional and regional levels);
- c) IMAP (Pilot) Information System along with the schemes for Quality Assurance and Control of Data;
- d) MED POL online database considering current reporting through the MED POL Metadata Templates (up-to-2018 monitoring data), Results of the data Quality Assurance Programme

organized in cooperation with the Marine Environmental Studies Laboratory (MESL) of the IAEA Environment Laboratories in Monaco (MESL, IAEA-EL).

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List of Abbreviations / Acronyms

BACs	Background Assessment Criteria
BCs	Background Concentrations
CI	Common Indicator
COP	Conference of the Parties
CORMON	Correspondence Group on Monitoring
DD	Data Dictionaries
DG NEAR	Directorate General for the Neighborhood and Enlargement Negotiations of the European Commission
DG ENV	Directorate General for the Environment of the European Commission
DPSIR	Driving Forces-Pressures-State-Impacts-Responses
DS	Data Standards
EACs	Environmental Assessment Criteria
EC	European Commission
EcAp	Ecosystem Approach
EO	Ecological Objective
ERL	Effects Range Low
EU	European Union
GEF	Global Environment Facility
GES	Good Environmental Status
IAEA	International Atomic Energy Agency
ICZM	Integrated Coastal Zone Management
IMAP	Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria
IMELS	Italian Ministry for Environment, Land and Sea Protection
INFO/RAC	Regional Activity Centre for Information and Communication
MAP	Mediterranean Action Plan
MED POL	Programme for the Assessment and Control of Marine Pollution in the Mediterranean Sea
MED QSR	Mediterranean Quality Status Report
MESL	Marine Environmental Studies Laboratory of the IAEA
MSFD	Marine Strategy Framework Directive
MSP	Marine Spatial Planning
MTF	Mediterranean Trust Fund
NIS	Non-Indigenous Species
OCs	Organochlorinated compounds (group of compounds including PCBs and Pesticides)
OCP	Organochlorine pesticides
PCB	Polychlorinated biphenyls
PHs	Petroleum hydrocarbons
PoW	Programme of Work
PTs	Proficiency Tests
QA	Quality Assurance
QC	Quality Control
SPI	Science-Policy Interface
SPA/RAC	Regional Activity Centre for Specially Protected Areas
SSFA	Small-Scale Funding Agreement
TCs	Training Courses
TDA	Transboundary Diagnostic Analysis
TEs	Trace Elements
UN	United Nations

1. INTRODUCTION

1. The present Report on “the status of the implementation of the Integrated Monitoring and Assessment Programme (IMAP) with regards to EO5 and EO9 and the MED POL Monitoring Programme” covers the activities and outputs carried out in the period from January 2018 to February 2019. It highlights the results and progress achieved under relevant themes¹ of the UN Environment/ MAP Programme of Work for 2018-2019 by MED POL in line with Decision IG.22/7 on IMAP (COP 19, Athens, Greece, 9-12 February 2016) and Decision IG. 23/6 on the 2017 Mediterranean Quality Status Report – 2017 MED QSR (COP 20, Tirana, Albania, 17-20 December 2017).

2. OVERVIEW OF IMPLEMENTATION OF IMAP WITH REGARDS TO EO5 AND EO9

2.1 Progress in IMAP implementation at national level

2. In accordance with IMAP, Article 12 of the Barcelona Convention which stipulates that all Contracting Parties shall establish pollution monitoring programmes and designate the competent authorities responsible for pollution monitoring, and Article 8 of the Land-Based Sources Protocol; the Secretariat/ MED POL continues to support the Contracting Parties to the Barcelona Convention in implementing their respective national marine pollution monitoring programmes. Small-Scale Funding Agreements (SSFAs) were therefore concluded with Egypt, Israel, Lebanon (pending), Libya and Morocco, and most recently with Tunisia. They are financed through the Mediterranean Trust Fund (MTF), including a support of the EcAp-MEDII and Marine Litter MED Projects, with the aim to: i) support ongoing implementation of the MED POL IV Monitoring Programme, avoiding any discontinuity in submitting and assessing data related to marine pollution; ii) ensure gradual transition to new IMAP-based monitoring programmes of marine environment; as well as iii) support implementation of some pilot projects which include marine litter monitoring.

3. The development of respective national integrated monitoring and assessment programmes (national IMAPs) has progressed in Albania, Bosnia and Herzegovina, Egypt, Israel, Montenegro, Libya, Morocco and Turkey.

4. The Contracting Parties, which are EU Member States are in an advanced phase of implementation of their national integrated monitoring programmes. In that regard, the instrumental role of the EU Marine Strategy Framework Directive (MSFD) is noted as national monitoring programmes established in line with the EU MSFD provide a guarantee for implementation of IMAP requirements, considering also its specificities.

5. Capacity building workshops to support national implementation of IMAP and related criteria for pollution and marine litter were organized in Egypt (Alexandria, 26 – 28 February 2018), Morocco (Rabat, 19-20 February 2018) and Libya (Tunis, Tunisia, 12-15 March 2018). The workshops addressed the methodological and practical aspects related to monitoring and assessment of marine environment with regards to pollution and marine litter clusters of IMAP Common Indicators: 13, 14, 22 and 23. The IMAP monitoring protocols and assessment methods, sample processing, metadata reporting templates, as well as the examples of existing national monitoring schemes and capacities compared to IMAP requirements and the guidance factsheets have been presented and extensively discussed. Another set of capacity building programmes to support completion of respective national

¹ Governance: Strategic Outcome 1.4: Knowledge and understanding of the state of the Mediterranean Sea and coast enhanced through mandated assessments for informed policy-making; Strategic Outcome 1.5: MAP knowledge and MAP information system enhanced and accessible for policy-making, increased awareness and understanding; Strategic Outcome 1.6: Raised awareness and outreach; and Pollution - Strategic Outcome 2.4: Marine Pollution Monitoring and Assessment and Pollution; Strategic Outcome 2.5: Enhanced capacity at regional, sub-regional and national levels including technical assistance and capacity building and Strategic Outcome 2.7: Identifying and tackling new and emerging issues, as appropriate.

IMAP-based monitoring programmes preparation has been initiated in March 2019 and is expected to continue till May 2019.

6. Important exchanges between the Contracting Parties took place in the Regional Meeting on IMAP Implementation: Best Practices, Gaps and Common Challenges, held in Rome, Italy from 10 to 12 July 2018; herein after referred to as IMAP Best Practices Meeting. The meeting addressed (i) lessons learnt on IMAP national integration; (ii) best practices on integration; (iii) resource needs and potential funding options (with the presentation of the EcAp Funding Strategy, developed by the project, as well as key donor priorities, such as those to be supported through GEF and EU); as well as (iv) common challenges and needs to be addressed towards the development of the 2023 Quality Status Report.

7. This meeting gave a good picture on the state of play of national IMAP implementation, showcasing progress at national, sub-regional and regional levels.

2.2 Cross-Cutting issues and common challenges

8. With the view to preparing the CorMon meetings in 2019, the Secretariat used the IMAP Best Practices Meeting to reopen discussions at MAP level on several cross-cutting issues related to GES integrated assessment; assessment criteria; and scale of assessments, which are addressed in document UNEP/MED WG. 450/3.

9. Following its outcome, the Secretariat was requested inter alia to: i) present better interlinkages between activities/pressure/impacts; ii) provide clarifications of definitions of integration and aggregation rules; iii) give priority at this stage of IMAP implementation to the work on geographical aggregation and assessment scaling rather than integration.

10. In this regard, the Secretariat prepared document UNEP/MED WG.463/5 in an effort to capture the recommendations of the Best Practices Meeting addressing interaction of pressures, impacts and state elements in assessing GES and the interrelation to the extent possible among different relevant Ecological Objectives of the coastal and marine environment in the Mediterranean Sea, within methodological approaches for integrated marine assessments, for the consideration by the present Meeting of CorMon on Pollution Monitoring.

2.2.1 Integrated GES assessment: scales of monitoring and assessment for Common Indicators related to EO5 and EO9

11. The definition of the scales of monitoring and assessment are both key and essential steps within initial phase of IMAP implementation (2016-2019). The geographical and temporal scales for monitoring and assessment have been considered since the adoption of IMAP. They remain a cross-cutting issue since the holistic and integrated assessments between Ecological Objectives and Common Indicators requires properly defined fit-for-purpose scales with the possibility of the aggregation from national to regional level (i.e. nested approach).

12. The achievement of the targets and objectives for each Ecological Objective depends on its characteristics, its available monitoring and assessment methodologies, as well as the scales of monitoring and assessment. It is therefore necessary, at this stage of IMAP implementation, to further identify the best approaches for scales of monitoring and assessment for some of the Ecological Objectives and Common Indicators.

13. An initial proposal for assignment to appropriate scales of elements' to be assessed, as well as assessment scales for IMAP Common Indicators is provided in document UNEP/MED WG.450/3 that was discussed by the IMAP Best Practices Regional Meeting. Following its outcome and recommendations, the Secretariat developed two documents on cross-cutting issues (UNEP/MED WG.463/5) and approaches of scales of monitoring (UNEP/MED WG.463/8), for consideration by the

present Meeting of CorMon on Pollution Monitoring. These documents are aimed to present concrete guidance and propose the steps forward in the selection of the scales of monitoring and assessment under IMAP in relation to current practices.

2.2.2 Application/validation of updated/new assessment criteria

14. The IMAP Best Practices Meeting pointed out added value of continuing the application of trends as an important tool to assess GES; and therefore, recommended the application of both trends and new/updated thresholds as appropriate tools for GES assessment. Potential different methodologies and options to develop thresholds were presented along with the recommendations on the most suitable options per IMAP Common Indicators. The use of these methodologies for calculation/regular update of the thresholds for EO5 and EO9 is presented in document UNEP/MED WG.463/5 for consideration by the present Meeting of CorMon on Pollution Monitoring.

15. During the current reporting period, 24 new/updated pollution assessment criteria were approved in Decision IG.23/6 related to 2017 MED QSR adopted at COP 20 (Tirana, Albania, December 2017) with the aim to encourage the Contracting Parties and the Secretariat to test them for indicative purposes in the different contexts that exist in the Mediterranean. Therefore, updated assessments related to EO5 and EO9 provided in document UNEP/MED WG.463/Inf.6 are based on further estimated sub-regional Mediterranean background assessment concentrations (Med BACs) calculated from the background concentrations (BCs) recommended at sub-regional scale for heavy metals in biota, whilst the sub-regional Med BACs in sediment have been estimated but not applied.

2.3 2023 MED QSR Roadmap

16. In line with the findings of the 2017 MED QSR and Decision IG.23/6, as well the recommendations of the IMAP Best Practices Meeting laid out in UNEP/MED WG.450/3, the Secretariat has prepared the 2023 MED QSR Roadmap and Needs Assessment. It provides for a vision of a better integrated and DPSIR-based GES assessment of the 2023 MED QSR along with a short list of key priority needs, main processes and milestones and related outputs.

17. 87th Meeting of the Bureau considered and welcomed the 2023 MED QSR Roadmap and Needs Assessment that was thereafter presented to members of the EcAp Coordination Group for written consultation, and consequently concluded by the end of 2018, as requested by COP 20.

18. To that effect, the 2023 MED QSR Roadmap and Needs Assessment, which is being integrated into the proposal of the UN Environment/MAP Programme of Work for 2020-2021 currently under development, is included in Annex I of this Report for information purposes.

2.4 IMAP (Pilot) Information System

19. With the support of the EcAp-MEDII Project, INFO-RAC is developing a fully operative IMAP (Pilot) Info System for the implementation of IMAP, connected to MAP Components' information systems and other relevant regional knowledge platforms, laying down the basis for building a fully operational IMAP Info System by the end of the initial phase of IMAP, as provided for by Decision IG.22/7. This would allow the Contracting Parties to upload their monitoring data according to the proposed Data Standards and Data Dictionaries (DSs and DDs).

20. The updated proposal of DSs and DDs Dictionaries presented in document UNEP/MED WG.463/9, for consideration by the present Meeting of CorMon on Pollution Monitoring set the basic information on data reporting and their specifications within the IMAP (Pilot) Info System (in Excel file spreadsheets format). They are aimed at guiding the data providers into filling the future Metadata Templates; the formats to be developed in accordance with this basic information on data reporting.

21. The updated proposal of DSs and DDs for IMAP Common Indicators 13, 14 and 17 related to eutrophication (EO5) and contaminants (EO9) were developed considering related IMAP Guidance Fact Sheets and existing MED POL Metadata Templates approved by the Meeting of the MED POL Focal Points, Rome, Italy, 29-31 May 2017 (UNEP(DEPI)/MED WG.439/20). Additionally, DSs and DDs for Common Indicator 21 have been prepared with the support of ENPI NEI SEIS Project.

22. It should be noted that proposed DSs and DDs also build upon the respective relevant experience of INFO/RAC, as well as the experience gained in building other relevant data bases such as EMODnet Chemistry platform, SeaDataNet and WISE Data Dictionary maintained by EEA and available in EIONET. In such a way, the IMAP (Pilot) Info System is interrelated with other regional marine databases (e.g. SeaDataNet, SeaDataCloud, EMODNET, etc.) which might contain or require a different number of metadata entries. Therefore, the updated proposal of DSs and DDs provides broader data sets and associated dictionaries with regards to the mandatory items stipulated in the related IMAP Guidance Fact Sheets and present MED POL Metadata Templates.

23. A testing phase of the IMAP Pilot Info System will be realized with the voluntary participation of interested countries which will be invited to start providing data flow for the selected Common Indicators as of May 2019. Based on feedback and suggestions coming from the testing exercise, the IMAP Pilot Info System will be updated with the aim of becoming fully operational to upload data for 10 selected IMAP Common Indicators.

2.5 Updated Thematic Assessments of the eutrophication and contaminants status in the Mediterranean marine environment

24. During the period 2016-2018, the MED POL database has been updated with new datasets submitted by several Contracting Parties (as presented below in section 3.1) that are related to Common Indicators 13, 14 and 17. Consequently, an update of the spatial regional assessments performed during the elaboration of the Med QSR 2017, as the first holistic assessment of the marine environment based on IMAP Common Indicators, is provided for EO5 and EO9 in document UNEP/MED WG.463/Inf.6. This is aimed at updating the findings on the status of marine environment in the Mediterranean Sea, as well as contributing to the preparation of the State of Environment and Development Report 2019 (SoED) in line with the UNEP/MAP Programme of Work for 2018-2019 and further guiding the needs to balance the environment and development in the Mediterranean region.

25. Such updated assessments confirm that GES is maintained in part of the Mediterranean where assessment was possible (France, Slovenia, Croatia, Montenegro and Cyprus) as already stated in the 2017 MED QSR for Eutrophication and Contaminants, despite the fact that known hotspot coastal areas continue to exist.

2.6 Monitoring protocols for Common Indicators related to pollution

26. The harmonization and wider knowledge of the current practices in use in terms of monitoring protocols are key to allow standardized and comparable reporting datasets through the Mediterranean region, as well as to optimize and deliver cost-effective monitoring programmes. Furthermore, the update of monitoring methodologies will support the alignment of the existing national marine monitoring programmes with requirements of IMAP. To this regard, document UNEP/MED WG 463/6, presents a summary of the main monitoring methodologies in use by the Contracting Parties in the marine environment, along with the traditional methods which are still valid; overall, to offer wider information and guidance on current monitoring practices which could be implemented.

2.7 Schemes for quality assurance and control of data related to pollution

27. The MED POL Monitoring Database (i.e. Microsoft Access SQL database software) structured around several components and modules, such as plotting and mapping, trend analysis, a remote access module, in an all-in-one approach, has been the reference within MED POL monitoring programme. However, given the fact that information and communication technologies have changed very rapidly, and a number of data flaws have been also observed after almost 20 years, the Secretariat has initiated the development of a new data management system for an improved data management fit-for-purpose to the requirements of the IMAP, as explained above.

28. The proposed schemes for Quality Assurance and Control of Data for MED POL Monitoring Database and IMAP (Pilot) Info System stipulate that these are organized at two levels: i) Data Quality Assurance and Data Control for each IMAP Common Indicator; and ii) Database Quality Assurance, Reporting Schemes and Validation, as provided in document UNEP/MED WG. 463/10 for the consideration by the present Meeting of CorMon on Pollution Monitoring.

29. The proposed QA schemes foresee the three organizational levels (national laboratories, MED POL Focal Points and the Secretariat) to be considered to re-establish the responsibilities in terms of 'data quality' management and data flows, providing the basis for a common understanding of the 'data quality' framework.

30. The achievement of the basic attributes, namely completeness, accuracy, consistency, timeliness, accessibility and validity, is also envisioned to obtain the 'data quality' required under IMAP. These attributes will be considered during all planning processes of data generation, from data collection and reporting, through data storage, up to data usage by interested parties. By ensuring data quality, the next steps both in terms of monitoring and assessments will be based on robust information and demonstrable environmental facts (i.e. defensible and reproducible).

2.8 Resource mobilization, project proposals recently approved or submitted for approval of importance for IMAP implementation with regards to EO5 and EO9

31. UNEP/MAP and the co-executing partners of the MedProgramme have focused efforts on drafting the project documents of the Child projects following validation of the activities by the GEF Operational Focal Points. Transboundary Diagnostics Analysis (TDA) update is envisaged as a part of the MedProgramme Component 1 – *Reduction of land-based pollution in priority coastal hot spots, and measuring progress to impacts*, representing the key element of International Waters (IW) component of Child 1.1 Project, with a budget of USD 3 million.

32. Realization of IW component of Child 1.1 Project will result in the following outputs: i) Updated TDA including gender assessment; ii) Report on progress to impacts; iii) Offshore monitoring strategy and identification of 20 locations for the offshore monitoring stations, including piloting IMAP implementation for selected indicators at up to 5 offshore stations; and iv) Data sharing policy for the Mediterranean. Updating the TDA after 10 years from the previous assessment is an opportunity to take into account significant changes in the policy and cooperation frameworks in the region going back to 2005; to address areas not sufficiently covered under the so far and forthcoming Mediterranean assessments (such as gender, climate change impacts on ecosystem services and socio-economic activities, impact of pollution on marine biodiversity and similar); as well as to capture the most recent available data and assess trends.

33. UNEP/MAP is negotiating with DG NEAR to support the third phase of the MPA action with a complementary action on IMAP implementation, to be supported under the Green Med III Strategy. Accordingly, UNEP/MAP and SPA/RAC developed, in full coordination with DG NEAR and DG ENV a proposal for a project document with a budget of EUR 4 million.

34. This new project aims to address IMAP implementation needs in terms of monitoring environmental parameters not yet systematically assessed, including IMAP Common Indicators on biodiversity, NIS, pollution and marine litter and MPA management challenges. It will also ensure these parameters to be monitored in coherence with the findings of the 2017 Mediterranean Quality Status Report (2017 MED QSR) and the EcAp Funding Strategy.

35. In the framework of the Cooperation Agreement between UNEP and the Italian Ministry of Environment, Land and Sea (IMELS), a voluntary contribution of EUR 2,015,000 has been provided by Italy in support of the activities included in the UNEP/MAP Programme of Work for 2018-2019. Several activities have been undertaken in current period, including the development of the fully-fledged activity fiches, one of which is related to comparative analysis between IMAP and the GES Decision 2017/848/EU and to that related assessment of necessary actions, as appropriate, towards further harmonization between the two systems for all three IMAP clusters (biodiversity and non-indigenous species, pollution and marine litter and coast and hydrography). All these actions will be performed with the view to contribute to filling the gaps raised by the 2017 MED QSR.

3. STATE OF PLAY OF MED POL MONITORING

36. The Secretariat/MED POL is in close dialogue with INFO/RAC to ensure that the MED POL online database, which was developed in 2012, is accessible to all the Contracting Parties to report their monitoring data and view their past reports. Microsoft Access database with data received till second half of 2016 has been uploaded in MED POL online database, whilst current reporting through the MED POL Metadata Templates as revised by the Meeting of the MED POL Focal Points, Rome, Italy, 29-31 May 2017, will remain operative until the reporting process within IMAP (Pilot) Info System will be launched by INFO/RAC.

37. In this reporting period work has been undertaken to provide training to appointed MED POL designated national laboratories and experts included in the implementation of the data Quality Assurance Programme, by organizing two Proficiency Tests for trace elements and organic contaminants in marine samples, and two Training Courses on good laboratory practices for the sampling, sample preparation and analysis of trace elements and organic contaminants, using different instrumental techniques. This exercise contributes to the improvement of the national capacities to meet IMAP requirements. The state of play with regards to implementation of the Proficiency Tests and Training Courses is provided below in Section 3.2 and in UNEP/MED WG.463/7 document for consideration by the present Meeting of CorMon on Pollution Monitoring.

3.1 Status of provision of MED POL monitoring database

38. Since 2000, MED POL data are in the process of being re-uploaded by INFO-RAC into the system with the aim to ensuring MED POL online database availability for inclusion into IMAP (Pilot) Info System. Concurrently, the MED POL online database is undergoing some revisions to ensure ease of accessibility and uploading of some of existing and new data that are expected to be reported by the Contracting Parties in the near future before the IMAP (Pilot) Info System is completed.

39. To that effect, the testing phase of present MED POL online database has been launched over last quarter of 2018 with participation of Croatia and Montenegro. However, several problems have been recorded indicating that MED POL's online database may still not be ready for uploading online of monitoring data.

40. The preparation of the 2017 MED QSR had an instrumental role in reporting of new data series related to marine pollution by several Contracting Parties. Accordingly, during the period 2016-2018, MED POL database has been updated with new datasets related to eutrophication [Egypt (2012, 2015), France (2013-2016), Israel (2013, 2015), Montenegro (2016-2017), Morocco (2013-2015), Tunisia (2015), Turkey (2014-2015)] and contaminants [France (2015-2016), Israel (2015),

Montenegro (2016-2017), Morocco (2016-2018), Slovenia (2016), Turkey (2014 -2015)]. These datasets will be uploaded into MED POL's online database further to quality checking, as appropriate, and therefore prepared for transfer along with present MED POL online database to IMAP (Pilot) Info System.

41. Annex II illustrates the status of total data submission from the implementation of the MED POL IV marine pollution monitoring programme by the Contracting Parties in line with Article 12 of the Barcelona Convention; Articles 8 and 13 of the LBS Protocol; and IMAP Decision (IG.22/7).

42. Considering the problems occurred in the course of MED POL's online database testing, a new call will be sent out to the Contracting Parties over the second quarter of 2019 for an offline reporting of all pending and 2018 monitoring data sets in present Metadata Templates, as approved by the Meeting of the MED POL Focal Points, Rome, Italy, 29-31 May 2017 (UNEP(DEPI)/MED WG.439/20).

3.2 Data quality assurance

43. With a view of providing the recommendations to improve the quality and quantity of monitoring data in the decade to come, current state of play is presented in document UNEP/MED WG.463/7 as a basis for a discussion on a number of needs of the national laboratories and their staff participating in national marine environment monitoring programmes within the implementation of MED POL IV/IMAP. Final reports of the 2017 and 2018 Proficiency Tests on trace metals and organic contaminants in sediment are presented in UNEP/MED WG.463/Inf.8 for information of the present Meeting of CorMon on Pollution Monitoring.

44. Although data generation in the Mediterranean basin has been greatly improved in quantity and quality since the early stages of MED POL, partially due to the cooperation of MED POL and the Marine Environmental Studies Laboratory (MESL) of the IAEA, it has to be recognized that the situation still needs to be improved. Namely, the Proficiency Tests (PTs) results for trace elements (TE) analysis in marine samples are showing that the quality of analysis has improved significantly over the last 10 years, and most of the laboratories that participate in the Proficiency Tests for TE perform well. However, in the last three years respectively 2016-2018, up to 44% of nominated laboratories that received PT samples, did not return PT results. Concurrently, it can be observed that the apparent quality of the results of the Proficiency Tests for organic contaminants had significantly worsened. Any improvement of analysis quality cannot be observed, and the lack of reporting uncertainties (and appropriate QA/QC systems) is representing a large part of the problem.

45. In parallel with implementation of the PTs, each year, two "training courses on good laboratory practices for the sampling, sample preparation and analysis of trace elements and the organic contaminants" are organized, using different instrumental techniques for two weeks in the premises of MESL in Monaco. The courses are aimed for laboratory practitioners that are already actively involved or will soon be involved in the analysis of marine samples that are part of the MED POL monitoring programme.

46. Participants are very satisfied with the knowledge acquired from the training courses. In period 2016-2018, approximately 87 % of the participants of the training courses for trace elements rated them as excellent, while 100% of the participants of the training courses for organic contaminants thought the courses were above expectation or excellent. All participants of the training courses for trace elements in the period 2016-2018 indicated that their learning skills to undertake the required tests improved after attending this course; while for training course for organic contaminants; only 80% thought their skills were improved.

47. Considering present state of play, the following activities are foreseen in the coming biennium (2020-2021) in the framework of cooperation between UN Environment/MAP and IAEA/MESL:

- i) Continuing the quality assurance measures in place since 1986, i.e. to organize proficiency tests and training courses for the analysis of trace elements and organic contaminants consisting of organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), and petroleum hydrocarbons (PHs) in marine matrices;
- ii) Addressing needs of national laboratories participating in national marine environment monitoring programmes within the implementation of MED POL IV/IMAP, with a particular focus on their most relevant technical needs (e.g. acquisition of laboratory equipment) and knowledge gaps;
- iii) Providing recommendations in line with the results of the Proficiency Tests for improving the performance of national counterparts to apply the analytical methods and good laboratory practices in line with IMAP requirements; and
- iv) Supporting the use of certified reference material (CRM) for trace elements and organic contaminants in matrices relevant to IMAP (marine, biota and sediment samples).

Annex I
Roadmap and Needs Assessment for the 2023 Mediterranean Quality Status Report

Roadmap and Needs Assessment for the 2023 Mediterranean Quality Status Report

I From the 2017 MED QSR to the 2023 MED QSR

In the context of implementing the Ecosystem Approach Roadmap adopted by the Contracting Parties to the Barcelona Convention and its Protocols in 2008 (Decision IG.17/6), the UNEP/MAP system delivered during the last biennium 2016-2017, the first ever Quality Status Report for the Mediterranean (hereinafter referred to as 2017 MED QSR, <https://www.medqsr.org/>). This is an assessment product based on region-wide Ecological Objectives and Common Indicators that is built upon existing data and complemented with inputs from numerous diverse sources.

Underlining the importance of this major and innovative MAP achievement, Decision IG. 23/6 on the 2017 MED QSR (COP 20, Tirana, Albania, 17-20 December 2017) pointed out several gaps (as laid out in Chapter II of this document) and requested the Secretariat “to prepare in cooperation with the Contracting Parties through the Ecosystem Approach governance structure, in the first year of the biennium 2018-2019, a Roadmap accompanied with a Needs Assessment on how to improve data collection to address knowledge gaps and strengthen the capacities of the system (the QSR 2023 Roadmap). To this aim, priority activities needed to successfully deliver the 2023 Mediterranean Quality Status Report shall be identified for inclusion in the Programme of Work”.

Following up on Decision IG.23/6, the Bureau at its 85th meeting (Athens, Greece, 18-19 April 2018) requested “that the roadmap and Needs Assessment for the 2023 MED QSR, prepared in close collaboration with the EcAp Coordination Group, is presented at its 86th meeting”.

The present paper describes the Secretariat’s approach for the development of the 2023 MED QSR Roadmap in line with the above-mentioned COP 20 mandate and represents the first draft of the Roadmap. As such, it is detailing the main processes and milestones and related outputs and timelines, the implementation of which would allow the MAP system to fill the identified knowledge gaps and deliver, to the extent possible, a fully-fledged, quality-assured, region-wide and data-based 2023 MED QSR (First Draft).

The First Draft contains a narrative section describing findings of the initial assessment of key needs and the proposed milestones and steps needed to address such identified needs. Details are then contained in tabular form of the initial 2023 MED QSR Roadmap with Vision, Main Processes and Milestones and related Outputs (with proposed timelines), including the necessary involvement of the Ecosystem Approach governance mechanism.

This draft of the 2023 MED QSR Roadmap will be further elaborated and discussed, in line with Decision IG.23/6, in close cooperation with the Contracting Parties through the Ecosystem Approach Governance Structure.

II. Assessment of key needs to address knowledge gaps and strengthen the capacities of the system

Decision IG. 23/6 on the 2017 MED QSR pointed out several gaps and recommended the following general directions in order of successfully deliver the 2023 MED QSR:

- (i) harmonization and standardization of monitoring and assessment methods;
- (ii) improvement of availability and ensuring of long time series of quality assured data to monitor the trends in the status of the marine environment;
- (iii) improvement of availability of the synchronized datasets for marine environment state assessment, including use of data stored in other databases where some of the Mediterranean countries regularly contribute;

(iv) improvement of data accessibility with the view to improving knowledge on the Mediterranean marine environment and ensuring that Info-MAP System is operational and continuously upgraded, to accommodate data submissions for all the Integrated Monitoring and Assessment Programme (IMAP) Common Indicators.

To specifically address the above-mentioned main directions in the development of the 2023 MED QSR, the Secretariat and MAP Components have reviewed the state of play of national implementation of IMAP, focusing on best practices and challenges faced with regards to different aspects of its implementation at national level, and initiated a discussion on a number of cross-cutting issues and region-wide challenges, that are crucial for ensuring the effective integrated GES assessment. An initial need assessment on how to improve data collection to address knowledge gaps and strengthen the capacities of the system was developed in the “Progress Report on the implementation of Decision IG.22/7 on the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria” (UNEP/MED WG.450/3). This document was presented at the Regional Meeting on IMAP Implementation: Best Practices, Gaps and Common Challenges (10-12 July, Rome, the Rome Meeting) which resulted in valuable lessons learned, conclusions and recommendations. They are guiding the work of the Secretariat towards the more detailed needs assessment to be provided cluster by cluster and discussed in the upcoming CORMON meetings and within respective Ecosystem Approach Governance Structure.

The following issues will be presented for review and in-depth discussion in the upcoming CORMON meetings:

- a) Better interlinkages between Activities/Pressure/Impacts and clarification of definition of impacts noting that such a definition should primarily focus on biodiversity;
- b) Clarifications of definitions of integration and aggregation rules. In this respect the Rome Meeting requested the Secretariat to make the necessary changes in document UNEP/MED WG. 450/3 opting for giving the priority at this stage of IMAP implementation to the work on geographical aggregation and assessment scaling rather than integration.

Consistent with the outcome of the Rome meeting, and acknowledging the achievements, lessons learned, and challenges faced during the current initial phase of IMAP implementation at national level, the following elements will be submitted for discussion at the upcoming CORMON meetings:

- a) Efforts for coordinated national IMAP implementation should be enhanced, notably through technical proposals;
- b) Tailored capacity-building activities should be established to fill the gaps clearly identified during IMAP national trainings, including on technical capacities, software, monitoring protocols, human resources needed, etc.;
- c) Further efforts are necessary by the Contracting Parties to generate more synchronized datasets for assessments (collection of quality assured data in a coherent manner and format and availability of long-time data series to monitor trends);
- d) IMAP compatible Pilot Info-system needs to be finalized to accommodate reporting of IMAP compatible data by the Contracting Parties, with clear distinction between mandatory and optional data;
- e) Monitoring protocols and assessment methods have to be harmonized and standardized, including region-wide harmonized criteria for reference conditions and threshold/ boundary values per assessment area, as appropriate and feasible;
- f) Further development of the risk-based approaches, analytical testing and assessment methodologies, assessment criteria for integrated chemical and biological assessment methods and testing of new research-proved tools for monitoring the toxic effects, as well as improvement of knowledge on emerging chemicals, are needed;

- g) Testing of the Background Assessment Criteria (BACs) and Environmental Assessment Criteria (EACs) and thresholds application should be undertaken on a trial basis and at regional and sub-regional levels;
- h) Identification and evaluation of marine litter accumulation (stranding fluxes, loads and linkage with specific sources) and hotspots using GIS and mapping systems and modelling tools should be enhanced, including better understanding of transport dynamics and accumulation zones;
- i) Science-Policy Interface should be strengthened, structured and sustained, by supporting the national monitoring programmes, to ensure that ongoing scientific projects can address IMAP national implementation needs;
- j) Cooperation at sub-regional level for Common Indicators, as appropriate, to share best practices and addressing specific gaps within national monitoring programmes should be strengthened;
- k) A continual exchange of best practices should be encouraged and established among thematic experts possibly through on-line communication tools for all three IMAP clusters.

Based on the findings of the 2017 MED QSR and related Decision IG.23/6, as well the recommendations of the Rome Meeting, the Secretariat has concluded a coordinated analysis with the involvement of all relevant components on major achievements and gaps of the 2017 MED QSR, priority needs and specific issues to address for each IMAP cluster. Specific recommendations were also coordinated on procedural (including meetings and coordination) needs, based on lessons learnt from the 2017 QSR process, in order to find realistic ways and means for addressing and filling the 2017 MED QSR identified gaps.

The outcome of this specific mapping resulted in:

- (a) A vision of a better integrated and DPSIR-based Good Environmental Status (GES) assessment of the 2023 MED QSR and
- (b) A short list of key priority needs which need to be addressed in order to achieve this vision, accompanied with the necessary main processes and milestones and related outputs.

Based on the outcomes of above steps undertaken by the Secretariat, key priority needs to be addressed towards a DPSIR-based GES assessment of the 2023 MED QSR are as follows:

1. Scale(s) of monitoring, assessment and reporting to be agreed on, to enable comparable data sets assessment;
2. Necessary methodological tools and assessment criteria to be agreed on to allow and promote integrated assessment of GES;
3. Full implementation of IMAP to be achieved, with data generation throughout the Mediterranean;
4. Fully operational SEIS-based IMAP Info System to be put in place to enable timely reporting of the Contracting Parties;
5. Monitoring Protocols and Data Quality Assurance and Quality Control for IMAP Common Indicators are to be made available to guide Contracting Parties;
6. National capacity and knowledge gaps are to be addressed to ensure region-wide coherence and data availability;
7. Regional partners, projects to be able to input process in a coordinate manner;
8. Regular, effective (and more frequent) regional coordination with the Contracting Parties to be put in place.

III. Vision and Milestones to be achieved for a successful delivery of the 2023 MED QSR

Vision: An integrated DPSIR-based GES assessment, developed on consolidated and quality-assured monitoring data sets, reported and processed through an effective IMAP Info System that is interoperable with national and other regional monitoring and reporting networks.

The 2023 MED QSR Roadmap is built around the following phases and processes:

1. Timely negotiation and agreement of Contracting Parties through the Ecosystem Approach Governance Structure at regional (and as appropriate at sub-regional) level on the scale(s) of monitoring, assessment and reporting;
2. Development and agreement of Contracting Parties through the Ecosystem Approach Governance Structure on necessary methodological tools and assessment criteria to allow and promote integrated assessment of GES at the level of Ecological Objectives and to the extent possible, across relevant Ecological Objectives;
3. Full implementation of IMAP-based national monitoring programmes throughout the Mediterranean to enable the region to generate quality assured and real time data during 2020-2022 (at least delivery of two sets of data for each IMAP cluster²);
4. Delivery and operationalisation of a user-friendly and SEIS-based IMAP Info System to collect and process data produced by IMAP-based national monitoring programmes;
5. Development and implementation of Monitoring Protocols and Data Quality Assurance and Quality Control for IMAP Common Indicators (depending on the nature of Common Indicators, to be developed on regional/sub-regional or national level and discussed, agreed on by the Contracting Parties through the relevant level of the Ecosystem Approach Governance Structure);
6. Continuous support and technical assistance to the Contracting Parties in relation to all the above areas;
7. Outreach to regional partners to provide inputs to the 2023 MED QSR, establishment of solid partnerships and development of a communication and visibility strategy for the 2023 MED QSR;
8. Regular and effective regional cooperation and coordination with the Contracting Parties, through CORMONs, under the guidance of the Ecosystem Approach Coordination Group.

Table 1 below details each of the above main processes and milestones of the roadmap, with main outputs and delivery timelines.

Once reviewed by the Bureau at its 87th Meeting in November 2018, this First Draft will be further elaborated in close coordination with the Contracting Parties through the Ecosystem Approach Governance Structure. In particular, the Ecosystem Approach Coordination Group Members will be requested to comment on the First Draft, including the reflections of the Bureau. The CORMON Meetings will follow the recommendations of the Ecosystem Approach Coordination Group in order to further address specific needs and necessary priority actions to deliver the outputs presented in Table 1, specific to their clusters, as provided for by Decision IG.23/6 on the 2017 MED QSR.

²Noting that in line with consultations throughout the UNEP/MAP system, it is most likely feasible to have at least two data sets in areas of pollution and marine litter and coast and hydrography, while only one data set can be assured for biodiversity and NIS throughout the Mediterranean

2023 MED QSR Vision:				
An integrated DSPIR-based GES assessment, developed on consolidated and quality-assured monitoring data sets, reported and processed through a fully operational IMAP Info System that is interoperable with national and other regional monitoring and reporting networks				
2017 MED QSR features (starting point)				
<p>This first regional assessment product, based on 23 IMAP common indicators, includes clear findings, conclusions and key messages related to each indicator. Data sources of the assessment include Contracting Parties’ data sets as part of the MED POL data base, other relevant data provided by MAP components and MAP implemented project, and GFCM and other regional sources of data, including projects.</p> <p>Data sets are provided to the extent possible for all common indicators but are incomplete and data availability is limited for the whole region. The assessment is limited in relation to integrated GES assessment (provided, if any, only across Common Indicators of specific Ecological Objectives). The assessment recognizes the need to address interlinkages between pressures/impacts and state of marine environment, but it cannot provide it in detail.</p>				
<p>Decision IG. 23/6 of COP 20 on 2023 MED QSR preparation provides for:</p> <ul style="list-style-type: none"> (i) harmonization and standardization of monitoring and assessment methods; (ii) improvement of availability and ensuring of long time series of quality assured data to monitor the trends in the status of the marine environment; (iii) improvement of availability of the synchronized datasets for marine environment state assessment, including use of data stored in other databases where some of the Mediterranean countries regularly contribute; (iv) improvement of data accessibility with the view to improving knowledge on the Mediterranean marine environment and ensuring that IMAP Info System is operational and continuously upgraded, to accommodate data submissions for all the IMAP Common Indicators. 				
MAIN PROCESSES AND MILESTONES				
1. Scales of Monitoring, Assessment and Reporting	2. Integrated assessment of GES	3. Implementation of national IMAPs throughout the Mediterranean	4. IMAP Info System	7. Outreach and visibility
		6. Technical assistance and support	5. Monitoring Protocols and Data Quality Assurance and Quality Control	

OUTPUTS				
<p>Analysis for each IMAP cluster on knowledge gaps, with focus on scales of monitoring prepared (mid 2019 - end 2020);</p> <p>Approaches on scales of monitoring for IMAP Common Indicators included in the IMAP Pilot Info System defined (2019);</p> <p>Scales of monitoring for all IMAP Common Indicators agreed (2021);</p> <p>Scales of assessment products for all IMAP Common Indicators clustered per Ecological Objectives proposed (2021-2022);</p> <p>Assessment criteria/thresholds/baseline values proposed/updated for IMAP Common Indicators included in the IMAP Pilot Info System (2020-2021);</p> <p>Assessment criteria/thresholds/</p>	<p>Analysis of interrelations between sectors, activities, pressures, impacts and state of marine environment for each Common Indicators included in the IMAP Pilot Info System prepared (2018-2019);</p> <p>Approaches for mapping the pressures/impacts/status of marine environment for the above IMAP Common Indicators defined (Rome Meeting); (2019-2020);</p> <p>Methodological concept developed and proposed to assess the interrelation of pressures/impacts/status of marine environment (2020);</p> <p>Methodological concept to support better integration of thematic assessment products related to IMAP Common i.e. integration between Ecological Objectives (at national, sub-regional and regional scale) is agreed and tested (2020-2021);</p> <p>Thematic assessment products are prepared (2021-2022);</p> <p>2023 MED QSR delivered (2023);</p>	<p>State of the national implementation of IMAP reported by the Contracting Parties (2018/2019, 2020/2021, 2021/2022);</p> <p>Minimum 3 sets of data on IMAP Common Indicators (EO5, EO9, EO10) reported by the Contracting Parties (2019, 2020, 2021/2022);</p> <p>Minimum 1 set of data (EO1 and EO2) reported by Contracting Parties (2021/2022);</p> <p>Minimum 2 sets of data (EO7, EO8) reported by the Contracting Parties (2020, 2021/22);</p> <p>Country capacity building trainings organized in line with their needs (2019-2021);</p> <p>Sub-regional/regional workshops and trainings, in areas of common capacity needs and knowledge gaps, organized (minimum 2 per sub-region), (2019-2021);</p>	<p>IMAP information and data sharing policy developed (2019);</p> <p>IMAP Pilot Info system ready to upload monitoring data (end of 2019);</p> <p>Data dictionaries and data standards finalized for all IMAP Common Indicators (mid 2021);</p> <p>IMAP Pilot Info System updated to cover all IMAP Common Indicators (mid-2022);</p> <p>IMAP Info System fully operational enabling the Contracting Parties to report their monitoring data in 2020, 2021 and 2022.</p> <p>Monitoring Protocols drafted for IMAP Common Indicators included in the IMAP pilot Info System; (2018/2019);</p> <p>Quality Assurance and Quality Control schemes in place for IMAP Common Indicators included in the</p>	<p>Timeline for data-sharing with regional partners defined (2019-2021);</p> <p>Agreements reached with Regional Partners (2020);</p> <p>Communication and visibility strategy for the 2023 MED QSR developed and agreed (2021);</p> <p>Outreach to key partners is undertaken and relevant meetings held (2019-2020);</p> <p>Communication and visibility strategy for the 2023 MED QSR is implemented (2021-2023);</p> <p>2023 MED QSR published in 2 languages and on line available and presented at COP 23.</p>

<p>baseline values initiated for all IMAP Common Indicators (2021-2022);</p> <p>Reporting formats adjusted to agreed scales of monitoring and scales of assessment products (2021-2022).</p>		<p>Joint monitoring pilots designed and implemented (minimum 2 in participating countries), (2019-2021).</p>	<p>IMAP Pilot Info System (2019-2020);</p> <p>Quality Assurance and Quality Control schemes expanded to cover all IMAP Common Indicators (2021-2022);</p>	
<p>8. Effective Regional Collaboration</p>				
<ul style="list-style-type: none"> • CORMON meetings are held (minimum 1/year/cluster between 2019-2022); • Integrated CORMON meetings are held (minimum 1/biennium 2020, 2022); • Ecosystem Approach Coordination Group meetings are held (minimum 1/year between 2019-2023); • Sub-regional expert groups to address monitoring and assessment sub-regional specifics, including scales of assessment products and their integration, are held (minimum 1/biennium for all 4 sub-regions in integrated manner, for all clusters); • Online expert groups are held for each cluster, to ensure continuous work between CORMON meetings (to be re-established in CORMONs in 2019); • Bilateral meetings on MoU implementation are held, new MoUs are considered and partnerships with key partners are further strengthened; • Progress reports are submitted to the meetings of the Bureau of the Contracting Parties, the meetings of the MAP Focal Points and the COPs (2019-2023) for guidance and approval as appropriate. 				

Annex II
Status of data submission on marine pollution monitoring by the Contracting Parties in line with
Article 12 of the Barcelona Convention, and Articles 8 and 13 of the LBS Protocol and IMAP
Decision (IG 22/7)

Status of data submission on marine pollution monitoring by the Contracting Parties in line with Article 12 of the Barcelona Convention, and Articles 8 and 13 of the LBS Protocol and IMAP Decision (IG 22/7)

<i>Country</i>	<i>Nutrients</i>	<i>Chl-a</i>	<i>Biota - TM</i>	<i>Biota - OC</i>	<i>Sediment TM</i>	<i>Sediments OC</i>	<i>Rivers - Nutrients</i>	<i>Oceanographic parameters (Temp., etc.)</i>
Albania			2001					
			2002					
			2003	2003				
			2004	2004				
	2005		2005					
	2006		2006					
			2007					
Algeria	2012*	2012	2012	2012	2012	2012		
Bosnia-Herzegovina	2006	2006					2006	
	2007	2007					2007	
	2008	2008					2008	
							2009	
							2010	
Croatia				1999				
				2000			2000	
							2001	
					2002		2002	
				2003	2003		2003	
				2004	2004		2004	
				2005	2005		2005	
				2006				
	2009	2009	2009	2009	2009	2009	2009	
	2011	2011	2011	2011	2011			
	2012	2012	2012	2012				
	2013	2013	2013	2013	2013			

<i>Country</i>	<i>Nutrients</i>	<i>Chl-a</i>	<i>Biota - TM</i>	<i>Biota - OC</i>	<i>Sediment TM</i>	<i>Sediments OC</i>	<i>Rivers - Nutrients</i>	<i>Oceanographic parameters (Temp., etc.)</i>
	2014	2014	2014	2014				
Cyprus	2001		1999 2001	2000 2001 2002 2003				2001 2002 2003 2004
	2004	2004	2004	2004				2004
	2005	2005	2005	2005				2005
	2006	2006	2006	2006				2006
	2007	2007	2007	2007				2007
	2008	2008	2008	2008				
	2009	2009	2009	2009				
	2010	2010	2010					
	2011	2011	2011	2011				
	2012	2012	2012	2012				
	2013	2013	2013	2013				
	2014	2014	2014	2014				
	2015	2015	2015	2015				
	2016	2016	2016	2016				
Egypt	2009	2009	2006 2009	2006 2009	2006 2009	2006 2009		
	2010	2010	2010	2010	2010	2010		
	2012	2012	2012	2012				
	2014	2014						
	2015	2015						
France			1997	1997				
			1998					
			1999	1999				

<i>Country</i>	<i>Nutrients</i>	<i>Chl-a</i>	<i>Biota - TM</i>	<i>Biota - OC</i>	<i>Sediment TM</i>	<i>Sediments OC</i>	<i>Rivers - Nutrients</i>	<i>Oceanographic parameters (Temp., etc.)</i>
	2009	2009	2000 2001 2002 2003 2004 2005 2006 2009	2000 2001 2002 2003 2004 2005 2006 2009	2006 2009 2010 2011	2006 2009 2010 2011		
	2012	2012 2013 2014 2015	2012 2015	2012 2015	2016	2016		
Greece	1999 2000 (few) 2004 2005	1999 2000 (few) 2004 2005	1999 2004 2005	1999 2004 2005	1999 2000 (few) 2004 2005			
Israel		2001	1999 2000 2001		1999 2000 2001			
	2002 2003 2004	2002 2003 2004	2002 2003 2004		2002 2003 2004			2003 2004
	2005 2006	2005 2006	2005 2006		2005 2006			2005 2006

<i>Country</i>	<i>Nutrients</i>	<i>Chl-a</i>	<i>Biota - TM</i>	<i>Biota - OC</i>	<i>Sediment TM</i>	<i>Sediments OC</i>	<i>Rivers - Nutrients</i>	<i>Oceanographic parameters (Temp., etc.)</i>
	2007 2008 2009 2010 2011 2012 2013 2015	2007 2008 2009 2010 2011 2012 2013 2015	2007 2008 2009 2010 2011 2012 2013 2015		2007 2008 2009 2010 2011 2012 2013 2015			2007 2010 2011 2012 2013 2015
Italy			2001 2002 2003 2004 2005 2006 2009	2001 2002 2003 2004 2005 2006 2009	2001 2002 2003 2004 2005 2006 2009	2001 2002 2003 2004 2005 2006 2009		
Lebanon								
Libya								
Malta								
Monaco								
Montenegro	2008 2009	2008 2009	2008 2009	2008 2009	2008 2009	2008 2009		
	2010 2011 2012 2014 2015	2010 2011 2012 2014 2015	2010 2011	2010 2011	2010 2011 2014	2010 2011		
	2016 2017	2016 2017			2016 2017	2016 2017		

<i>Country</i>	<i>Nutrients</i>	<i>Chl-a</i>	<i>Biota - TM</i>	<i>Biota - OC</i>	<i>Sediment TM</i>	<i>Sediments OC</i>	<i>Rivers - Nutrients</i>	<i>Oceanographic parameters (Temp., etc.)</i>
Morocco			1998					
			2000					
			2001					
			2002					
			2003					
			2004					
			2005					
		2006		2006	2006	2006		2006
		2006		2006	2006	2006		2006
		2007		2007	2007	2007		2007
		2008		2008				
				2009	2009			2009
				2011	2011			
				2012	2012			
		2013	2013	2013	2013	2013		
		2014	2014	2014	2014	2014		
		2015	2015	2015	2015	2015		
			2016	2016	2016			
			2017	2017	2017			
			2018	2018	2018			
Slovenia	1999	1999	1999			1999		
	2000	2000	2000	2000		2000		
	2001	2001	2001	2001		2001		
	2002	2002	2002	2002		2002		
	2003	2003	2003	2003		2003		
	2004	2004	2004	2004		2004	2003	
	2005	2005	2005	2005		2005	2004	
	2006		2006	2006		2006	2005	

<i>Country</i>	<i>Nutrients</i>	<i>Chl-a</i>	<i>Biota - TM</i>	<i>Biota - OC</i>	<i>Sediment TM</i>	<i>Sediments OC</i>	<i>Rivers - Nutrients</i>	<i>Oceanographic parameters (Temp., etc.)</i>
	2007	2007	2007	2007		2007	2007	
	2008	2008	2008	2008		2008	2008	
	2009	2009	2009	2009		2009	2009	
	2010	2010	2010	2010		2010	2010	
	2011	2011	2011	2011		2011	2011	
	2012	2012	2012	2012		2012	2012	2012
	2013	2013	2013	2013		2013	2013	
	2014	2014	2014	2014		2014	2014	
	2015	2015	2015	2015		2015	2015	
	2016	2016	2016	2016		2016	2016	
Syria	2007		2007		2007	2007		
Tunisia			2001		2001	2001		
	2002	2002	2002			2002		
	2003	2003	2003		2003			
	2004	2004	2004		2004	2004		
	2005	2005	2005		2005	2005		2005
	2006	2006	2006		2006	2006		2006
	2007	2007	2007	2007	2007	2007		2007
	2008	2008	2008	2008	2008	2008		2008
	2009	2009	2009	2009	2009	2009		2009
	2010	2010	2010	2010	2010	2010		2010
			2011					2011
					2012	2012		2012
	2013	2013	2013	2013	2013	2013		
	2014*	2014	2014	2014	2014	2014		
Spain			2004	2004				
			2005	2005				

<i>Country</i>	<i>Nutrients</i>	<i>Chl-a</i>	<i>Biota - TM</i>	<i>Biota - OC</i>	<i>Sediment TM</i>	<i>Sediments OC</i>	<i>Rivers - Nutrients</i>	<i>Oceanographic parameters (Temp., etc.)</i>
			2006	2006				
			2007	2007	2007	2007		
			2008	2008	2008	2008		
			2009	2009				
			2010	2010				
			2011	2011	2011	2011		
Turkey			1998					
			1999		1999			
			2000		2000			
			2001		2001		2001	
			2002		2002			
			2003	2003	2003			
	2005	2005	2005	2005	2005	2005		
	2006	2006	2006	2006	2006	2006	2006	2006
	2007	2007	2007	2007	2007	2007	2007	2007
	2008	2008	2008	2008	2008	2008	2008	2008
	2009	2009	2009	2009	2009	2009	2009	2009
	2010	2010	2010	2010			2010	2010
		2011	2011	2011	2011	2011		
	2013	2013	2013	2013	2013	2013		
	2014	2014	2014	2014	2014	2014		
	2015	2015	2015	2015	2015	2015		

*Data highlighted in yellow have not been uploaded to the database due to the format issues (data fails in some important parameters, coordinates, units, etc), despite have been used, as possible and appropriate