MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN SEA (REMPEC)

Twelfth Meeting of the Focal Points of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)

REMPEC/WG.41/9/Corr.1
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Agenda Item 9

DATA SHARING, MONITORING AND REPORTING

Note by the Secretariat

Corrigendum
Document REMPEC/WG.41/9, Annex II

Annex II should read as follows:

Annex II

Draft IMAP Indicator Guidance Factsheet for EO9 CI19

Common Indicator 19 (EO9): Occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances) and their impact on biota affected by this pollution

Indicator Title	19. Occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances) and their impact on biota affected by this pollution (EO9)	
Relevant GES definition	**Related Operational Objective**	**Proposed Target(s)**
Occurrence of acute pollution events is reduced to the minimum.	Acute pollution events are prevented and their impacts are minimized.	1. Decreasing trend in the occurrences of acute pollution events.

Rational

Justification for indicator selection

Oil and Hazardous and Noxious Substances (HNS) products released at sea may impact an environment as follows:

- physical smothering with an impact on physiological functions;
- chemical toxicity giving rise to lethal or sub-lethal effects or causing impairment of cellular functions;
- ecological changes, primarily the loss of key organisms from a community and the takeover of habitats by opportunistic species; and
- indirect effects, such as the loss of habitat or shelter and the consequent elimination of ecologically important species.

In addition, pollution by oil and HNS has socio-economic impact (recreational activities; fisheries, maricultures as well as other activities such as power plants, shipping, salt production or seawater desalination). Occurrence of acute pollution events involving oil or HNS needs to be measured and possible impacts monitored.

Scientific References

ITOPF. “Effect of oil pollution on the marine environment”. ITOPF, Technical Information Paper 13.

GESAMP. Report n° 75: “Estimates of Oil Entering the Marine Environment from Sea-Based Activities”, IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (2007).

Zeina G. Kassaify, Rana H. El Hajj, Shady K. Hamadeh, Rami Zurayk and Elie K. Barbour. “Impact of Oil Spill in the Mediterranean Sea on Biodiversified Bacteria in Oysters”, Journal of Coastal Research, Vol. 25, No. 2 (2009), pp. 469-473. Published by: Coastal Education & Research Foundation, Inc.

Peterson CH, Rice SD, Short JW, Esler D, Bodkin JL, Ballachey BE, Irons DB. “Longterm ecosystem response to the Exxon Valdez oil spill”. Science 302:2082–2086(2003).

Policy Context and targets

Policy context description

Acute pollution from oil and other hazardous substances, resulting either from maritime casualties or from ships’ routine operations, is addressed in a number of international conventions under the aegis of the International Maritime Organization (IMO), the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships, some of which provide for stricter regimes in the Mediterranean Sea, including discharges of oil and oily mixtures. At the regional level, the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (“the Barcelona Convention”) and the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (“the 2002 Prevention and Emergency Protocol”) thereto are crucial

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instruments enabling cooperation and joint action to support all Mediterranean coastal States implementing and enforcing IMO Conventions on pollution prevention and preparedness and response to oil and HNS spills.

The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), administered by the IMO in cooperation with the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UN Environment), also referred to as UN Environment/MAP, is responsible for the implementation of the 2002 Prevention and Emergency Protocol. The Centre has maintained a database on alerts and accidents causing or likely to cause pollution of the sea by oil (since 1977) and by other harmful substances (since 1989) in the Mediterranean Sea. Furthermore, following the adoption by the Contracting Parties to the Barcelona Convention of the Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil ("the Offshore Protocol"), Contracting Parties thereto should endeavour to ratify the said Protocol as well as develop and adopt monitoring procedures and programmes for offshore activities, which is envisaged to take place building on the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) of the Ecosystem Approach (EcAp).

Targets

To measure the trend of occurrence of oil and HNS accidental pollution events, the following indicator can be used: number of pollution events (of 50 cubic metres or more) per year in the marine waters of each Contracting Party to the Barcelona Convention. A target could be a maximum of 1 occurrence per year per Contracting Party to the Barcelona Convention.

Regarding illicit discharges of oil and oily waters (Annex I to the International Convention for the Prevention of Pollution from Ships (MARPOL)), minimum tolerance (near to 0 events) could be considered.

Policy documents

General Policy documents

i. 19th COP to the Barcelona Convention, Athens, Greece, 2016. Decision IG.22/7 - Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (UNEP(DEPI)/MED IG.22/28)
ii. 19th COP to the Barcelona Convention, Athens, Greece, 2016. Integrated Monitoring and Assessment Guidance (UNEP(DEPI)/MED IG.22/Inf.7)
iii. 18th COP to the Barcelona Convention, Istanbul, Turkey, 2013. Decision IG.21/3 - Ecosystems Approach including adopting definitions of Good Environmental Status (GES) and Targets (UNEP(DEPI)/MED IG.21/9)

Related Policy documents

iv. 18th COP to the Barcelona Convention, Istanbul, Turkey, 2013. Decision IG.21/9 - Establishment of a Mediterranean Network of Law Enforcement Officials relating to MARPOL within the framework of the Barcelona Convention (UNEP(DEPI)/MED IG.21/9)
v. 2002 Prevention and Emergency Protocol
vi. Offshore Protocol
vii. MARPOL, specifically its Annex I (Regulations for the prevention of pollution by oil), Annex II (Regulations for the control of pollution by noxious liquid substances in bulk) and Annex III (Regulations for the prevention of pollution by harmful substances carried by sea in packaged form)
viii. International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC Convention) and Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol)

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Indicator analysis methods

Indicator Definition

In the case of oil and HNS acute pollution events, the indicator will be obtained from the information of oil and HNS pollution events recorded and submitted in the Mediterranean Sea each year.

Methodology for indicator calculation

Under the 2002 Prevention and Emergency Protocol, Contracting Parties thereto established a reporting procedure (Article 9) whereby the following information (see the format below) should be reported by masters or other persons having charge of ships flying their flags and to the pilots of aircraft registered in their territories:

(1) all incidents which result or may result in a discharge of oil or hazardous and noxious substances; and

(2) the presence, characteristics and extent of spillages of oil or hazardous and noxious substances, including hazardous and noxious substances in packaged form, observed at sea which pose or are likely to pose a threat to the marine environment or to the coast or related interests of one or more of the Contracting Parties.

Moreover, in accordance with Article 10 (Operational Measures) of the said Protocol, any Contracting Party thereto faced with a pollution incident shall, amongst others:

(1) immediately inform all Contracting Parties thereto likely to be affected by the pollution incident of their assessments and of any action which it has taken or intends to take, and simultaneously provide the same information to REMPEC, which shall communicate it to all other Contracting Parties thereto; and

(2) continue to observe the situation for as long as possible and report thereon in accordance with Article 9.

BCRS (Barcelona Convention Reporting System) format:

(a) accident location (latitude and longitude or closest shore location);
(b) accident type* (*cargo transfer failure, contact, collision, engine breakdown, fire/explosion, grounding, foundering/weather, hull structural failure, machinery breakdown, other);
(c) vessel IMO number or vessel name;
(d) vessel flag;
(e) whether any product has been released or not. If yes, the type of product released (Oil/Hazardous and Noxious Substances) should be specified; and
(f) whether any actions have been taken or not. If yes, the actions taken should be specified.

In addition to monitoring pollution events occurrences against the target (incidents involving oil or hazardous substances that are < or = 1 event per year in the waters of each Contracting Party to the Barcelona Convention), it is recommended to carry out a trend analysis in order to measure performance against the target. Data on actual pollution events from ships would be collected every year and compared to the data for the previous year, to calculate a % increase or a % decrease in occurrences yearly frequency.

Indicator units

The Guidelines for Co-operation in Combating Marine Oil Pollution in the Mediterranean (UNEP/IG.74/5, UNEP/MAP, 1987) recommended Contracting Parties to the Barcelona Convention to report to REMPEC all spillages or discharges of oil in excess of 100 cubic metres. To align with the revised reporting formats for a mandatory reporting system under MARPOL ("one-line" entry format) adopted by IMO in 1996 (see MEPC/Circ.318), the Joint Session of MED POL and REMPEC Focal Points Meetings, which was held in Attard, Malta on 17 June 2015, discussed the appropriate threshold and concluded that spills of 50 cubic metres should be reported, whereas countries could also opt to report on spillages of lower amounts.

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List of guidance documents and protocols available

i. ITOPF. "*Aerial Observation of Marine Oil Spills*", Technical Information Paper 1.
ii. ITOPF. "*Recognition of Oil on Shorelines*", Technical Information Paper 6.
iii. ITOPF. "*Fate of Marine Oil Spills*", Technical Information Paper 2.
iv. ITOPF. "*Response to Marine Chemical Incidents*", Technical Information Paper 17.
v. Bonn Agreement. "*Bonn Agreement Oil Appearance Code*".
vi. IPIECA/IMO/IOGP/CEDRE. "*Aerial Observation of Oil Spills at Sea: Good practice guidelines for incident management and emergency response personnel*" (February 2015).
vii. CEDRE. "*Surveying Sites Polluted by Oil: An Operational Guide for Conducting an Assessment of Coastal Pollution*" (March 2006).
viii. REMPEC. "*Mediterranean Guidelines on Oiled Shorelines Assessment*" (September 2009).
ix. GESAMP. "*Revised GESAMP Hazard Evaluation Procedure for Chemical Substances Carried by Ships"* (2014).
x. IMO Codes:
- For packaged goods: International Maritime Dangerous Goods (IMDG) Code.
- For Bulk liquids: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code).
- For Gases: International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code).
- For solids in bulk: International Maritime Solid Bulk Cargoes (IMSBC Code).

Data confidence and uncertainties

Although characterisation of impact of oil and oily products at sea and on shore is well documented and response strategies well defined, there has been much less investment in research for HNS spills. Chemical spills occur at a much lower frequency than spills of oil and involve a very large variety of products with different physical and toxicity properties. Therefore, the characterisation of impacts from HNS pollution due to maritime casualties is more complex and response strategies and indicators will vary according to the specific chemical product involved.

Methodology for monitoring, temporal and spatial scope

Available methodologies for monitoring and monitoring protocols

As oil and HNS accidental spills and discharges from ships take the form of acute pollution events, there are no specific pollution methodologies for systematic oil and HNS pollution surveillance in IMO Conventions and guidance documents, where monitoring is essentially addressed from the perspective of ships' compliance monitoring (flag State surveys; coastal State and port State controls) or in the context of pollution response operations. In this latter case, a monitoring protocol was developed to detect and survey pollution events.

Pollution events are monitored using the following methods/protocols:

- **Oil:**

- Expert human eye observation;
- Aerial observation (human eye observation and/or remote sensing equipment);
- Satellite imagery analysis; and
- Sampling and analysis.

Monitoring at sea will provide the following information:
- Volume of oil: use ITOPF guidance based on oil type and appearance to assess thickness (mm) and volume of oil (m^3/km^2) at sea, or the guidance of the Bonn Agreement Oil Appearance Code (BAOAC) identifying the following relations between oil appearances and oil volume:
    1. sheen, 0.15-0.3 m^3/km^2;
    2. rainbow, 0.3-5 m^3/km^2;
    3. metallic, 5-50 m^3/km^2;
    4. discontinuous true colour, 50-200 m^3/km^2; and

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5. continuous true colour, > 200 m^3/km^2.

- Location and coverage of slick at sea (latitude and longitude - GPS);
- Oil characteristics (persistent vs. non persistent / viscosity); and
- Origin of slick (if visible, ship name and IMO number, offshore installations ID number).

On-shore monitoring will be used to assess the extent of impacted shorelines, type and degree of contamination as well as impact on habitats and wildlife casualties.

- **HNS:**

Detection of HNS pollution events and assessment of impacts are primarily achieved on site by expert human eye observation, complemented with real time monitoring, sampling and analysis, as well as the use of modelling tools. Conclusions of any risk assessment for HNS will be based on a number of information including identification of incident circumstances and location; identification of the involved chemical, its properties/toxicity, and its form (packaged/bulk) as well as identification of sensitive neighbouring areas and environment conditions.

Furthermore, Article 18 (Mutual Assistance in cases of Emergency) of the Offshore Protocol states that in cases of emergency, a Contracting Party thereto, which is also a Contracting Party to the Protocol Concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and other Harmful Substances in Cases of Emergency ("the 1976 Emergency Protocol"), shall apply the pertinent provisions of the said Protocol.

Available data sources

Because pollution events originating from ships must lead to response operations and investigations, there are a number of reporting obligations and reporting protocols that are useful for the purpose of determining the frequency of occurrences and assess trends:

(1) Contents and forms of reports that ships must send following maritime casualties involving oil and other hazardous substances are detailed in MARPOL Annex I. In addition, IMO developed the "General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants", containing recommendations on reporting requirements (when to report, information required, whom to report to).
(2) At regional level, the standard pollution accidents reporting format (POLREP) and related procedures provided under MARPOL are used between Contracting Parties to the 2002 Prevention and Emergency Protocol and between these Contracting Parties and REMPEC for exchanging information when pollution of the sea has occurred or when a threat of such is present.
(3) With respect to illegal discharges of oil from ships, REMPEC organised pilot projects on surveillance and monitoring of oil discharges at sea in the past. These initiatives led to the establishment of the Mediterranean Network of Law Enforcement Officials relating to MARPOL within the framework of the Barcelona Convention (MENELAS). This network works as a forum where information is exchanged and it is expected that data on pollution incidents (as well as on investigation and prosecution as the case may be) will be collected. REMPEC acts as the MENELAS Secretariat and the possible development of a MENELAS database on illicit ship pollution discharges in the Mediterranean and related reporting format are being looked into.
(4) The BCRS also requests information on spill incidents that occurred during a biennium.

Databases available:

- Mediterranean Alerts and Accidents Database maintained by REMPEC, available in the following versions:

- On-line database (accidents can be sorted by: date; accident location (country); vessel type; release quantity and type);
- Report containing the data and statistical analysis; and
- A Geographical Information System (GIS).

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- Mediterranean Integrated Geographical Information System on Marine Pollution Risk Assessment and Response (MEDGIS-MAR) 2012-2015 (http://medgismar.rempec.org/) provides data (private access) on offshore, marine incidents, oil handling facilities, and response equipment. **- Global Integrated Shipping Information System (GISIS)** (http://gisis.imo.org) maintained by IMO, with a module on marine casualties and incidents.	
Spatial scope guidance and selection of monitoring stations REMPEC will continue to be the central organisation coordinating and maintaining data on oil and HNS acute events and pollution surveillance in the Mediterranean Sea. REMPEC has implemented pilot projects involving aerial surveillance exercises and satellite imagery analysis jointly with Mediterranean coastal States and this effort should be strengthened.	
Temporal Scope guidance As oil and HNS pollution incidents from ships occurs unexpectedly (as a consequence of maritime casualties) or are not systematic (MARPOL illicit discharges), it is expected that pollution monitoring will continue to essentially take place “in real time” when pollution incidents actually happen or are detected.	
Data analysis and assessment outputs	
Statistical analysis and basis for aggregation Frequencies and quantitative statistical analysis. The basis for aggregation would be a “nested approach” over a geographical scale. Trend analysis to calculate the percentage of occurrences for oil and HNS incidents over a period of time (yearly) in the Mediterranean Sea.	
Expected assessments outputs Temporal trends analysis and distribution maps. If possible, this trend should be related to the maritime traffic crossing the Mediterranean Sea.	
Known gaps and uncertainties in the Mediterranean While Contracting Parties to the Barcelona Convention and to the 2002 Prevention and Emergency Protocol have a pollution monitoring and reporting obligation, data submitted to REMPEC are still scarce. Thus the main aim during the initial phase of the IMAP will be to strengthen monitoring efforts towards this already existing obligation.	
Contacts and version Date	
http://www.rempec.org	

Version No	**Date**	**Author**
V.2	28.04.17	MED POL/REMPEC

MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN SEA (REMPEC)

Twelfth Meeting of the Focal Points of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)

REMPEC/WG.41/9
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Agenda Item 9

DATA SHARING, MONITORING AND REPORTING

Note by the Secretariat

SUMMARY

Executive Summary: This document sets out an outline of progress made on data sharing, monitoring and reporting since the last Meeting of the Focal Points of REMPEC held in Malta in June 2015, to streamline and rationalise the reporting obligations of the Contracting Parties to the Barcelona Convention, especially in the context of MEDGIS-MAR, RIS, BCRS, and to assess possible synergies to interconnect RIS with CECIS. This document also addresses the issue of visualisation rights on national data and provides information on the development of a quality assurance programme for data reporting and collection, in accordance with Article 5 of the 2002 Prevention and Emergency Protocol, as well as the development of the QSR2017 for the Mediterranean.

Action to be taken: Paragraph 50

Related documents: UNEP(DEPI)/MED IG.17/10, UNEP(DEPI)/MED IG.21/9, UNEP(DEPI)/MED IG.22/28, UNEP(DEPI)/MED WG.427/6, UNEP(DEPI)/MED CC.12/6, UNEP(DEPI)/MED CC.12/Inf.4, REMPEC/WG.37/10, REMPEC/WG.41/INF.3, REMPEC/WG.41/INF.11, REMPEC/WG.41/INF.12

Background

1 The Eleventh Meeting of the Focal Points of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) held in Attard, Malta from 15 to 17 June 2015, considered document REMPEC/WG.37/10 that provided information on the challenges and opportunities related to data sharing, monitoring and reporting.

2 Further to discussions on the Regional Information System (RIS), the Centre's website and, in particular, REMPEC's Country Profiles and the collection of the data gathered through the Mediterranean Technical Working Group (MTWG) (i.e. response means, marine incidents, oil and gas offshore installations, oil handling facilities) and through Plan Bleu, the Regional Activity Centre for Specially Protected Areas (SPA/RAC) and Eni S.p.A (socio-economic, environmental and coastal morphology maps), which was integrated in the Mediterranean Integrated Geographical Information System on Marine Pollution Risk Assessment and Response (MEDGIS-MAR), the Meeting agreed to:

.1 endorse MEDGIS-MAR;

.2 remove from REMPEC's Country Profiles the sections on Risk assessment and Resources once MEDGIS-MAR is made operational;

.3 discontinue the database on alerts and accidents in the Mediterranean Sea, which would be replaced by MEDGIS-MAR;

.4 encourage all Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean ("the Barcelona Convention") to report all accidents causing or likely to cause pollution of the sea by oil and other harmful substances; and

.5 ask the Secretariat to send an official letter requesting each Mediterranean coastal State to confirm its position with regard to the visualisation rights on national data (i.e. response means, marine incidents, oil and gas offshore installations, oil handling facilities), whilst noting that the remaining data was publically available.

3 Taking into account the information provided by the Secretariat on the Barcelona Convention Reporting System (BCRS), the said Meeting noted the information given in the Annex to document REMPEC/WG.37/10, which compared the information requested under REMPEC's Country Profiles and that under the current BCRS, and noted that the BCRS would be revised with a view to making it more operational and simple.

4 The Meeting also recognised the importance that all existing reporting procedures were taken into account within the context of the development of the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP), eventually adopted by the Nineteenth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (COP 19), which was convened in Athens, Greece, from 9 to 12 February 2016 (UNEP(DEPI)/MED IG.22/28, Decision IG.22/7), and encouraged the Focal Points of REMPEC to contribute to the development and implementation of the said Programme through their respective Focal Points of the Mediterranean Pollution Assessment and Control Programme (MED POL) as well as Focal Points of the Mediterranean Action Plan (MAP) of the United Nations Environment Programme (UN Environment), also referred to as UN Environment/MAP.

5 Further to the consideration of the various elements presented, the Meeting requested the Secretariat to prepare a proposal on data sharing, monitoring and reporting, including the revision of REMPEC's Country Profiles, to be submitted to the present Meeting for its review, with a view to facilitating the reporting obligations of the Contracting Parties to the Barcelona Convention, taking into consideration information contained in REMPEC's Country Profiles, MEDGIS-MAR, developments within the context of the Mediterranean Network of Law Enforcement Officials relating to the International Convention for the Prevention of Pollution from Ships (MARPOL) within the framework of the Barcelona Convention (MENELAS), and the revision of the BCRS as well as the IMAP.

6 Finally, the Meeting further agreed to explore the possible interconnection between the current REMPEC reporting system (i.e. Country Profiles and MEDGIS-MAR) with the Common Emergency Communication and Information System (CECIS) and to report to the present Meeting.

MEDGIS-MAR and visualisation rights on national data

7 Whilst the sections on Risk assessment and Resources were removed from REMPEC's Country Profiles and the database on alerts and accidents in the Mediterranean Sea was discontinued, once MEDGIS-MAR was made operational, it should be noted that only few Contracting Parties to the Barcelona Convention reported accidents causing or likely to cause pollution of the sea by oil and other harmful substances, though MEDGIS-MAR.

8 From its end, the Centre continued to populate the database to ensure continuity between the former database on alerts and accidents in the Mediterranean Sea and MEDGIS-MAR.

9 As requested by the Eleventh Meeting of the Focal Points of REMPEC, on 15 July 2015, the Secretariat sent an official letter (*vide* REMPEC Circular Letter No. 13/2015) requesting each Mediterranean coastal State to confirm its position with regard to the visualisation rights on national data. The access right level were defined as follows:

.1 **Public access**: the data can be accessed online by any users of the service without restriction;

.2 **Partially public access**: the national data is made available to all or selected Contracting Parties to the Barcelona Convention, but cannot be accessed by the public; and

.3 **National access**: only the country user has access to the data and can visualise it.

10 Unfortunately, despite several reminders sent by the Centre, only nine (9) Contracting Parties to the Barcelona Convention (representing 41%) replied to the request, as summarised in the table below:

	Accidents	Oil Handling Facilities	Recovery equipment
Public	44.44%	11.11%	11.11%
Partially public	33.33%	33.33%	33.33%
National	22.22%	33.33%	56.56%
N/A	-	22.22%	-

11 In this context, the Secretariat proposes to identify in consultation with the Contracting Parties to the Barcelona Convention any improvement of the system and its operability to facilitate the regular reporting of all accidents causing or likely to cause pollution of the sea by oil and other harmful substances, as agreed at the Eleventh Meeting of the Focal Points of REMPEC.

12 Furthermore, it should be recalled that Principle 10 of the Rio Declaration on Environment and Development, which was adopted at the 1992 United Nations "Conference on Environment and Development" (UNCED), seeks to ensure that every person has access to information, can participate in the decision-making process and has access to justice in environmental matters with the aim of safeguarding the right to a healthy and sustainable environment for present and future generations.

13 It is further noted that the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, hereinafter referred to as the Aarhus Convention, and the Protocol on Pollutant Release and Transfer Registers, hereinafter referred to as the Protocol on PRTRs, which were adopted within the framework of the United Nations Economic Commission for Europe[1] (UNECE), are the only legally binding international instruments on environmental democracy that put Principle 10 of the Rio Declaration on Environment and Development in practice.

14 The Aarhus Convention is about government accountability, transparency and responsiveness. It grants the public rights and imposes obligations regarding access to information and public participation and access to justice on Parties thereto and public authorities. It is open to accession by any State that is a Member of the United Nations, subject to approval of the Meeting of the Parties thereto.

15 The objective of the Protocol on PRTRs is to enhance public access to information through the establishment of coherent, nationwide pollutant release and transfer registers (PRTRs). Although regulating information on pollution, rather than pollution directly, the Protocol on PRTRs is expected to exert a significant downward pressure on levels of pollution, as no company will want to be identified as among the biggest polluters. All States that are Members of the United Nations can join the Protocol on PRTRs, including those which have not ratified the Aarhus Convention and those which are not Members of the UNECE. It is by design an 'open' global treaty.

[1] UNECE was set up in 1947 by the United Nations Economic and Social Council (ECOSOC), is one of five regional commissions of the United Nations, which includes also the Economic Commission for Africa (ECA), the Economic and Social Commission for Asia and the Pacific (ESCAP), the Economic Commission for Latin America and the Caribbean (ECLAC), as well as the Economic and Social Commission for Western Asia (ESCWA).

16 In light of the above and, noting that a majority of the Contracting Parties to the Barcelona Convention are either Signatories and/or Parties to the Aarhus Convention and/or to the Protocol on PRTR, as shown in **Annex I** to the present document, the Secretariat proposes to continue to explore the best way forward to reach a consensus on the access right of national data, to meet Specific Objective 19 of the Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021) UNEP(DEPI)/MED IG.22/28, Decision IG.22/4), hereinafter referred to as the Regional Strategy (2016-2021), which is presented in the Annex to document REMPEC/WG.41/INF.3 and aims at improving the quality, speed and effectiveness of decision-making process in case of marine pollution incidents through the development and introduction of technical and decision support tools.

Streamlining and rationalising the reporting obligations of the Contracting Parties to the Barcelona Convention

17 In its Decision IG.21/2 on the reporting format to comply with the Barcelona Convention and its Protocols and the new reporting format for the Protocol on Integrated Coastal Zone Management in the Mediterranean ("the ICZM Protocol"), the Eighteenth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (COP 18), which was held in Istanbul, Turkey from 3 to 6 December 2013 (UNEP(DEPI)/MED IG.21/9), asked the UN Environment/MAP-Barcelona Convention Secretariat to prepare, in consultation with the Compliance Committee of the Barcelona Convention and its Protocols, a simplified and practical draft of the reporting format for the implementation of the Barcelona Convention and its Protocols, hereinafter referred to as the reporting format, adopted by the Fifteenth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (COP 15), convened in Almeria, Spain, from 15 to 18 January 2008 (UNEP(DEPI)/MED IG.17/10, Decision IG 17/3).

18 Furthermore, COP 19 requested REMPEC to streamline and rationalise the reporting obligations of the Contracting Parties to the Barcelona Convention, taking into consideration current reporting mechanisms, such as REMPEC's Country Profile, MEDGIS-MAR, MENELAS, the BCRS and the Ecosystem Approach (EcAp) (UNEP(DEPI)/MED IG.22/28, Decision IG.22/20).

19 In taking this work forward, the UN Environment/MAP-Barcelona Convention Secretariat, in consultation with the UN Environment/MAP Components, has simplified and streamlined the reporting format in order to facilitate reporting by Contracting Parties to the Barcelona Convention. The revised reporting format submitted in document UNEP(DEPI)/MED CC.12/6 to the Twelfth Meeting of the Compliance Committee of the Barcelona Convention and its Protocols, which was held in Athens, Greece, from 24 to 25 January 2017, was built on existing datasets at Regional Activity Centres (RACs) level, including REMPEC's Country Profiles, and the MEDGIS-MAR databases, with a view to avoiding duplication. The compilation of comments provided on the draft revised reporting format by the UN Environment/MAP Components is available in the document UNEP(DEPI)/MED CC.12/Inf.4.

20 For that purpose, the relevant sections of the report have been either re-structured by providing Contracting Parties to the Barcelona Convention with the flexibility to upload information from RACs via clickable links (i.e. website/URL link/other reference) or further aligned with RACs datasets, thus avoiding duplication from several data sources.

21 To illustrate this point, for instance, the submission of the technical details to populate the table on "*Pollution Preparedness and Response: Operational Measures*" under the Protocol Concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and other Harmful Substances in Cases of Emergency ("the 1976 Emergency Protocol") could be done by either inserting a web link to REMPEC's Country Profiles or national datasets. Another example under the same Protocol is the table on "*Pollution Incidents*", which follows the layout of the MEDGIS-MAR database. The intention behind this exercise is to ensure as much as possible the complementarity of the BCRS and RACs datasets.

22 In an effort to further refine the draft revised reporting format and facilitate its adoption by the Twentieth Ordinary Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (COP 20) to be convened in Tirana, Albania from 17 to 20 December 2017, the UN Environment/MAP-Barcelona Convention Secretariat invited UN Environment/MAP Focal Points on 3 May 2017 to test the revised reporting format and return it to them with suggestions by 2 June 2017. The section of the revised reporting format related to the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea ("the 2002 Prevention and Emergency Protocol") is reproduced in the Appendix to document REMPEC/WG.41/INF.11.

23 In this context, the Secretariat proposes that Contracting Parties to the Barcelona Convention:

.1 consider any additional measures to further streamline and rationalise their reporting obligations, as appropriate;

.2 liaise with the respective UN Environment/MAP Focal Points to contribute to the testing of the revised reporting format reproduced in the Appendix to document REMPEC/WG.41/INF.11; and

.3 are encouraged to update their Country Profile, MEDGIS-MAR, MENELAS and the BCRS on a regular basis.

Assessing possible synergies to interconnect RIS with CECIS

24 As part of the UN Environment/MAP Programme of Work and Budget 2016-2017 adopted by COP 19 (UNEP(DEPI)/MED IG.22/28, Decision IG.22/20), the assessment of the possible synergies to interconnect RIS with CECIS was envisaged through the implementation of the Western Mediterranean Region Marine Oil & HNS Pollution Cooperation (West MOPoCo) Project which was submitted to the 2016 Call for Proposals for prevention and preparedness projects in the field of civil protection and marine pollution. Due to the unsuccessful selection process of the Project proposal, this activity could not be completed and is considered in the West MOPoCo Project proposal to be submitted to the 2017 Call for Proposals.

25 Nevertheless, progress was made on this topic in the context of the annual Inter-Secretariat Meetings between Regional Agreements Secretariats, Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) and the European Maritime Safety Agency (EMSA).

26 At the Twelfth Inter-Secretariat Meeting between Regional Agreements Secretariats, DG ECHO and EMSA, hosted by the Secretariat of the Agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances, 1983 ("the Bonn Agreement") on 17 February 2016 in London, United Kingdom, the inter-connection of inventories of equipment/pollution response resources in the European Union (EU) was considered as a topic of common interest for the relevant Regional Agreements, in an effort to optimise the single input of data to update such inventories at national, regional and EU/CECIS levels.

27 The said Meeting was informed that the CECIS resources database (DB) was being jointly reviewed by DG ECHO and EMSA and that, with the input provided by the Regional Agreements in 2015, the DB structure would be revised. It was proposed that the CECIS DB could be used as the central database at EU level for the pollution response resources in Europe, and this data could then feed into the regional or national databases. However, it was noted that there was a need to agree on the nomenclature of the equipment and on what would be included in the database (i.e. all national resources, or only those that are available to be offered internationally). DG ECHO agreed to inform all the members of the Inter-Secretariat group once the CECIS DB main structure was revised with a view to enabling the group to provide final input on the said structure, its content categories and equipment nomenclature, taking into account their regional inventories.

28 At the Thirteenth Inter-Secretariat Meeting between Regional Agreement Secretariats, DG ECHO and EMSA, hosted by EMSA in Lisbon, Portugal on 16 February 2017, DG ECHO informed the said Meeting that, further to the input of the Regional Agreements on their regional inventories (e.g. MEDGIS-MAR and RIS for the Mediterranean region) provided in 2016, the revision of the CECIS Marine Pollution (MP) Resources Database structure had been completed. It was further recalled that Regional Agreement Secretariats were granted access to the CECIS MP application, upon request.

29 The said Meeting acknowledged that further work was required to enable any possible interaction between the CECIS DB and the regional databases. In this regard, the representative of DG ECHO noted that the opening of CECIS MP to third countries sharing a sea basin with the EU was a slower process still in progress. The Head of Office of REMPEC stressed that, although technical aspects could be overcome with the required means, the terms and conditions of the interconnection between CECIS MP and MEDGIS-MAR as well as RIS, including the related data access rights, would eventually need to be discussed by the various stakeholders and agreed upon by the Contracting Parties to the Barcelona Convention.

30 Following the Working Party on Civil Protection (PROCIV) Workshop: Civil Protection Maritime Challenges, which was organised in St. Julian's, Malta, from 19 to 20 January 2017, within the framework of the programme of events of the 2017 Maltese Presidency of the Council of the European Union, REMPEC delivered a presentation on the Centre's activities in the Mediterranean with particular emphasis on topics of interests for the Civil Protection community. On that occasion, Mr Alfonso de la Fuente Garrigosa, acting Head of Unit, Civil Protection Policy, DG ECHO, also acting as REMPEC OPRC Focal Point for the EU, together with Ms Biljana Zuber Programme Manager, DG ECHO and Mr Franz Josef Molitor from the Ministry of Interior of Germany, visited REMPEC Offices to discuss areas of cooperation, including the possible interconnection between the Mediterranean and European systems referred above.

31 In this context, the Secretariat proposes to continue moving towards an integrated system in consultation with Contracting Parties to the Barcelona Convention, in particular in terms of data access rights, including information related to accidents and response means and any other requirements.

Development of a quality assurance programme for data reporting and collection, in accordance with Article 5 of the 2002 Prevention and Emergency Protocol

32 The IMAP lays down the principles for an integrated monitoring, which will, for the first time, monitor biodiversity and non-indigenous species, pollution and marine litter as well as coast and hydrography in an integrated manner. It aims at facilitating the implementation of Article 12 (Monitoring) of the Barcelona Convention and several monitoring-related provisions under different Protocols thereto with the main objective to assess Good Environmental Status (GES). Its backbone is the eleven (11) Ecological Objectives (EOs) and their twenty-seven (27) common indicators as presented in the said decision.

33 In accordance with Article 5 of the 2002 Prevention and Emergency Protocol, the Parties thereto shall develop and apply, either individually or through bilateral or multilateral cooperation, monitoring activities covering the Mediterranean Sea Area in order to prevent, detect and combat pollution, and to ensure compliance with the applicable international regulations.

34 According to Specific Objective 19 of the Regional Strategy (2016-2021) – *To improve the quality, speed and effectiveness of decision-making process in case of marine pollution incidents through the development and introduction of technical and decision support tools*, the Contracting Parties to the Barcelona Convention are expected to contribute to the development of a quality assurance programme for data reporting and collection in line with the EcAp Monitoring Programme, hence the IMAP, with support from the Secretariat (REMPEC).

35 Therefore, the development of a quality assurance programme for data reporting and collection, in accordance with Article 5 of the 2002 Prevention and Emergency Protocol, should be aimed at complementing the IMAP with elements corresponding to the shipping-related monitoring at regional level to implement the 2002 Prevention and Emergency Protocol and the Regional Strategy (2016-2021).

36 Considering that Contracting Parties to the Barcelona Convention should be efficiently and timely supported to develop a quality assurance programme for data reporting and collection, in accordance with Article 5 of the 2002 Prevention and Emergency Protocol, with a view, thereafter, to enabling them to develop their national monitoring programmes and to produce their monitoring reports on a regular basis, it is necessary to build upon the relevant work that has been undertaken in the Correspondence Group on Monitoring (COR MON) within the EcAp process in line with Decision IG.21/3 on the Ecosystems Approach including adopting definitions of GES and targets, as adopted by COP 18 (UNEP(DEPI)/MED IG.21/9).

37 With a view to complementing the IMAP with elements corresponding to the shipping-related monitoring at regional level and pursuant to the UN Environment/MAP Programme of Work and Budget 2016-2017 adopted by COP 19 (UNEP(DEPI)/MED IG.22/28, Decision IG.22/20), the Centre provided technical support to MED POL who coordinated this activity within the framework of the "*Mediterranean Implementation of the Ecosystem Approach, in coherence with the European Union (EU) Marine Strategy Framework Directive (MSFD)*" – EcAp-MED II Project. In particular, REMPEC prepared the necessary Terms of References (ToRs) for the provision of consultancy services for the development of the above-mentioned quality assurance programme.

38 A consultant was recruited and a kick-off meeting was held at the UN Environment/MAP-Barcelona Convention Secretariat Offices in Athens, Greece, from 20 to 21 September 2016 to discuss the content of the reference documents to be analysed, the scope of the assignment, as well as to agree on the method of work and communication channel. The Centre also prepared a meeting document (UNEP(DEPI)/MED WG.427/6) and delivered the related PowerPoint presentation aimed at providing detailed information on the timetable and the expected outcomes of this activity during the Meeting of the EcAp Correspondence Group on Pollution Monitoring, which was convened in Marseille, France, from 19 to 21 October 2016.

39 In accordance with the ToRs, the following outputs, which are set out in the Consultancy Report, as presented in document REMPEC/WG.41/INF.12, were delivered through the above-mentioned consultancy services:

.1 detailed work plan and inception report;

.2 list of monitoring obligations under applicable international regulations;

.3 list of pollutants and parameters monitored in the context of the monitoring obligations referred to above;

.4 list of existing reporting procedures at international and regional level related to pollutants and parameters referred to above;

.5 matrix linking the above-mentioned to the relevant IMAP qualitative indicators and, where required, related IMAP Indicator Guidance Factsheets based on the agreed template; and

.6 final report.

40 More specifically, with regard to Ecological Objective 9 (Pollution), a draft IMAP Indicator Guidance Factsheet was prepared, pursuant to the UN Environment/MAP Programme of Work and Budget 2016-2017, for Common Indicator 19: Occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances), and their impact on biota affected by this pollution, hereinafter referred to as EO9 CI19, which is set out in **Annex II** to the present document.

41 The main purpose of the draft IMAP Indicator Guidance Factsheet for EO9 CI19 is to provide concrete guidance and references to Contracting Parties to the Barcelona Convention to design and support implementation of their national monitoring programme towards the overall goal of implementing EcAp in the Mediterranean Sea and achieving GES.

42 Finally, the Consultancy Report, as presented in document REMPEC/WG.41/INF.12, also provides insights on a gap analysis as well as conclusions and recommendations for the development of a quality assurance programme for data reporting and collection, in accordance with Article 5 of the 2002 Prevention and Emergency Protocol.

43 In this context, the Secretariat proposes that Contracting Parties to the Barcelona Convention contribute to the development of the said quality assurance programme, especially by:

.1 reviewing the draft IMAP Indicator Guidance Factsheet for EO9 CI19, which is set out in **Annex II** to the present document, providing comments as well as suggestions for its revision and finalisation for submission to the next Meeting of the UN Environment/MAP Focal Points to be held in Athens, Greece, from 12 to 15 September 2017; and

.2 providing views on the gap analysis as well as the conclusions and recommendations set out in the Consultancy Report, as presented in document REMPEC/WG.41/INF.12.

Development of the 2017 Quality Status Report (QSR2017) for the Mediterranean

44 The principal approach for the development of Quality Status Reports (QSRs) for the Mediterranean should be based on common indicators assessment factsheets to be submitted to the UN Environment/MAP-Barcelona Convention Secretariat by individual Contracting Parties to the Barcelona Convention in line with IMAP. The UN Environment/MAP-Barcelona Convention Secretariat will complete the assessments as need be and prepare the final QSRs that will deliver regional and sub-regional assessments on the progress and achievements made towards GES in the Mediterranean Sea. This approach will allow assessments to be linked to the underlying datasets, metadata, methods, authors, increasing transparency, traceability and repeatability. Furthermore, it will be linked and published on the UN Environment/MAP-Barcelona Convention Integrated Data and Information System as well as the UN Environment/MAP website.

45 Given that the IMAP implementation is still at an early phase, the approach for the 2017 Quality Status Report (QSR2017), which will be the first report on the IMAP-based EOs and related common indicators, accommodates the short time available for the preparation of this report and data gaps on some of the IMAP indicators, and also considers the approach taken by other Regional Seas such as the North-East Atlantic and the Commission of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Commission), as well as global work such as the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects (Regular Process) and the process on implementing the 2030 Agenda for Sustainable Development, especially in relation to the ocean-related Sustainable Development Goals (SDGs). As countries are still in the process of revising their national monitoring programmes, it will not be possible to compile a full set of data for all IMAP indicators for the QSR2017. Therefore the approach for the QSR2017 is to use all indicator data available and to complement and address gaps with inputs from numerous sources. In the initial steps, additional sources of information are identified and mapped, from other partners, etc.

46 The QSR2017 will be prepared as an online interactive report so that it can be made widely available, be visually appealing, include graphics and animations (such as time series), and in addition to the main section, can have links to case studies from Contracting Parties to the Barcelona Convention and also partners, or links to other databases and information sources. A Summary Report will also be prepared and published. The QSR2017 will be presented to COP 20, with a recommendation for future assessments.

47 Therefore, with a view to providing information relevant to pollution from ships for the development of the QSR2017, the consultancy services referred to in Paragraph 37 above were extended and a draft QSR2017 Assessment Factsheet for EO9 CI19 was prepared, as set out in **Annex III** to the present document.

48 As explained in the Consultancy Report, as presented in document REMPEC/WG.41/INF.12, the draft QSR2017 Assessment Factsheet for EO9 CI19 is the result of thorough research and literature review undertaken by the Consultant on the various aspects listed in the QSR2017 Assessment Factsheet template provided by MED POL. Some statistical documents provided by the Centre were also used as well as direct contacts with representatives from the International Maritime Organization (IMO), the International Tanker Owners Pollution Federation Limited (ITOPF) and EMSA to get the latest status of technical and scientific knowledge related to monitoring and impact issues.

49 In this context, the Secretariat proposes that Contracting Parties to the Barcelona Convention contribute to the development of the QSR2017, especially by:

.1 reviewing the draft QSR2017 Assessment Factsheet for EO9 CI19, which is set out in **Annex III** to the present document, providing comments as well as suggestions for its revision and finalisation for submission to the next Meeting of the UN Environment/MAP Focal Points to be convened in Athens, Greece, from 12 to 15 September 2017;

.2 providing to the Secretariat national data and information, which could be included in the revision of the draft QSR2017 Assessment Factsheet for EO9 CI19; and

.3 proposing potential case studies at the local, national, sub-regional or regional level with regard to EO9 CI19, which could also be included in the QSR2017, with a view to demonstrating efforts and challenges towards achieving GES in the Mediterranean Sea.

Actions requested by the Meeting

50 **The Meeting is invited to**:

.1 **take note** of the information provided in the present document; and

.2 **consider** the proposals put forward by the Secretariat, as laid down in paragraphs 11, 16, 23, 31, 43 and 49.

Annex I

Contracting Parties to the Barcelona Convention that are also Signatories and/or Parties to the Aarhus Convention and/or to the Protocol on PRTRs

Participant	Aarhus Convention		Protocol on PRTRs	
	Signature, Succession to signature (d)	Ratification, Acceptance (A), Approval (AA), Accession (a)	Signature, Succession to signature (d)	Ratification, Acceptance (A), Approval (AA), Accession (a)
Albania	25 Jun 1998	27 Jun 2001		16 Jun 2009 a
Bosnia and Herzegovina		1 Oct 2008 a	21 May 2003	
Croatia	25 Jun 1998	27 Mar 2007	23 May 2003	14 Jul 2008
Cyprus	25 Jun 1998	19 Sep 2003	21 May 2003	5 Nov 2012
European Union	25 Jun 1998	17 Feb 2005 AA	21 May 2003	21 Feb 2006 AA
France	25 Jun 1998	8 Jul 2002 AA	21 May 2003	10 Jul 2009 AA
Greece	25 Jun 199	27 Jan 2006	21 May 2003	
Israel				14 Jan 2013 a
Italy	25 Jun 1998	13 Jun 2001	21 May 2003	
Malta	18 Dec 1998	23 Apr 2002		20 May 2016 a
Monaco	25 Jun 1998			
Montenegro		2 Nov 2009 a	23 Oct 2006 d	
Slovenia	25 Jun 1998	29 Jul 2004	22 May 2003	23 Apr 2010
Spain	25 Jun 1998	29 Dec 2004	21 May 2003	24 Sep 2009

Annex II

Draft IMAP Indicator Guidance Factsheet for EO9 CI19

(empty)

Annex III

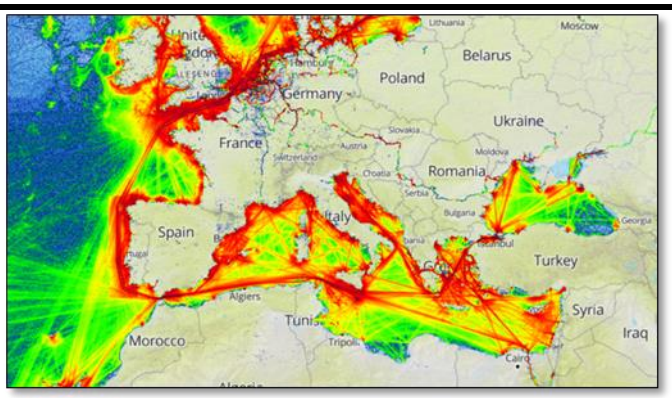
Draft QSR2017 Assessment Factsheet for EO9 CI19

Content	Actions	Guidance
General		
Reporter	Underline appropriate	UN Environment/MAP-MED POL SPA/RAC **REMPEC** PAP/RAC Plan Bleu (BP)
Geographical scale of the assessment	Select as appropriate	**Regional:** **Mediterranean Sea**
Contributing countries	Text	Mediterranean assessment based on existing regional surveys, research and publications.
Core Theme	Select as appropriate	**Land and Sea Based Pollution**
Ecological Objective	Write the exact text, number	Ecological Objective 9 (EO9) – Pollution: Contaminants cause no significant impact on coastal and marine ecosystems and human health.
IMAP Common Indicator	Write the exact text, number	Common Indicator 19: Occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances), and their impact on biota affected by this pollution (EO9).
Indicator Assessment Factsheet Code	Text	EO9CI19
Rationale/Methods		
Background (short)	Text (250 words)	Pollution from ships was one of the first issues addressed by the Mediterranean coastal States when they decided to act collaboratively to protect the Mediterranean Sea area in 1975. The 1967 Torrey Canyon oil spill accident, which resulted in massive oil pollution, raised the public awareness on pollution from shipping activities. Concern was expressed regarding possible oil and other harmful substances that may be released in the Mediterranean Sea, a semi-closed marine area. This led to the establishment of the Mediterranean Action Plan (MAP)'s first regional activity centre (ROCC – Regional Oil Combating Centre, now REMPEC – Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea) and to the adoption, under the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean ("the Barcelona Convention"), of the Protocol Concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and other Harmful Substances in Cases of Emergency ("the 1976 Emergency Protocol"). This Protocol was revised in 2002 to include prevention of pollution from ships to emergency situations and is today referred to as the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea ("the 2002 Prevention and Emergency Protocol"). The Protocol addresses pollution incidents, which includes both accidental pollution and illicit discharges. Pollution from oil and other hazardous substances were also addressed internationally in a number of conventions

		adopted under the aegis of the International Maritime Organization (IMO), some of which provides for stricter regime in the Mediterranean Sea. Although action at regional and international level has resulted in a significant decrease of massive oil pollutions from ships, incidents and illegal discharges are still responsible for the release of oil, oily mixtures and other Hazardous and Noxious Substances (HNS) at sea. It is on these grounds that the Contracting Parties to the Barcelona Convention included a Common Indicator (CI 19) on "*occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances), and their impact on biota affected by this pollution*" under Ecological Objective 9.
Assessment methods	Text (200-300 words), images, formulae, URLs	**Assessment of accidents:** In the Mediterranean region, under the 2002 Prevention and Emergency Protocol, assessment of occurrences, origins and extents of oil and HNS pollution from ships is carried out on the basis of pollution reports (POLREP) sent by the Contracting Parties to the Barcelona Convention to REMPEC and other affected States to notify a pollution or an event that could result in a pollution. These reports provide details on the incidents, including position, extent of pollution, characteristics of pollution, sources and cause of pollution, trajectory of pollution, forecast and likely impacts, as well as sea state and meteorological information. The reports sent to REMPEC are also used to feed the database on alerts and accidents in Mediterranean Sea (the Mediterranean Alerts and Accidents Database) maintained by the Centre. Records of oil spills and accidents likely to cause spillages of oil in the Mediterranean started in 1977, while accidents involving other HNS are reported since 1988. Another main source of information used to populate the Alert and Accident Database is the Lloyd's Casualty Reporting Services (LCRS). Accidents recorded in this database are accidents that caused or were likely to cause pollution by oil or other HNS in the Mediterranean Sea area. Accidents included are: - accidents happening in the Mediterranean Sea as defined in the Barcelona Convention; - accidents involving any type of ship, which actually resulted in an oil spill, a spill or release of a HNS, or in a loss or damage to a container containing HNS; - accidents on land (terminals, storage tanks, pipelines, industries, power plants, etc.) that resulted in entry into the sea of oil or HNS; - accident involving one or more oil tankers or chemical tankers (either laden or not); - collisions, groundings or other accidents causing serious damage to the ships involved, in particular if these carried or could carry significant quantities of fuel oil as bunkers; - accidents involving sinking of vessels that had on

		board any quantity of oil as bunkers; and - accidents involving sinking of vessels that carried HNS as cargo (either in bulk or in packaged form). **Assessment of illicit discharges:** Monitoring of illicit discharges is conducted to detect violations of requirements of the International Convention for the Prevention of Pollution from Ships (MARPOL) and collect evidence for prosecuting ships offenders. The POLREP can also be used by a Contracting Party to the Barcelona Convention to report a deliberate discharge to REMPEC. Methods: The following methods are used to detect a pollution and assess its origin and extent: • **Oil:** - expert human eye observation; - aerial observation (human eye observation and/or remote sensing equipment); - satellite imagery analysis to assess the extent and fate of an oil slick; and - sampling and analysis to determine the nature of the substance at sea, on shore and on board vessels. The Agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances, 1983 ("the Bonn Agreement") developed an internationally recognised procedure for sampling at sea, analysis and interpretation of results. The following can be identified: - volume of oil: internationally recognised guidance is used based on oil type and appearance to assess thickness (mm) and volume of oil (m^3/km^2) at sea (Bonn Agreement Oil Appearance Code – BAOAC); - location and coverage of slick at sea (latitude and longitude – GPS); - characteristics of oil (persistent vs. non persistent / viscosity); and - origin of slick (if visible ship name and IMO number, offshore installations identification number). Backtracking oil using trajectory modelling methods help to identify ship source. On-shore monitoring will be used to assess the extent of impacted shorelines, type and degree of contamination as well as impact on habitats and wildlife casualties. • **HNS:** Detection of HNS pollution events and assessment of impacts are primarily achieved on site by expert human eye observation, complemented with real time monitoring, sampling and analysis, as well as the use of modelling tools. Conclusions of any risk assessment for HNS will be based on a number of information including identification of incident circumstances and location, identification of the involved chemical, its properties / toxicity, and its form

		(packaged / bulk) as well as identification of sensitive neighbouring areas and environment conditions.
Background (*extended)*	Text (no limit), images, tables, references	Increasing shipping and maritime activities are important drivers for anthropogenic pressure on the marine environment in the Mediterranean Sea. Pressure from maritime transport includes potential chemical pollution from oil and HNS, dumping of garbage at sea, release of sewage, biofouling and non-indigenous species introduction. As documented in a great number of scientific researches, chemical pollution by oil and other harmful substances has impacts on water, seabed, fauna and flora. The level of risk of an accident occurring in the Mediterranean Sea is driven by two factors: traffic density as well as routes for oil and chemical tankers. In addition, illicit discharges of oil from ships remain a concern. • **Risk of accidents:** The Mediterranean is a major shipping lane. It is estimated that around 80% of global trade by volume and over 70% of global trade by value are carried by sea (UNCTAD, 2015), with approximately 15% of global shipping activity by number of calls and 10% by vessel deadweight tonnes (dwt) (REMPEC, 2008) taking place in the Mediterranean. The area is an important transit route for shipping, with two of the narrowest and busiest straits in the world: the Strait of Gibraltar and the Bosphorus Strait. The Mediterranean is a major transit route. In 2006, around 10,000, mainly large, vessels transited the area en-route between non-Mediterranean ports. In addition to hosting an important transit lane for international shipping, the Mediterranean Sea is also a busy traffic area due to Mediterranean Sea born traffic (movement between a Mediterranean port and a port outside the Mediterranean), and short sea shipping activities. It is estimated that around 18% of the shipping traffic in the Mediterranean Sea takes place between two Mediterranean ports (REMPEC, 2008). Figure 1 is a representation of the maritime traffic in the Mediterranean Sea. Although several factors contribute to maritime casualties, the correlation between traffic density and accidents causing a pollution is confirmed by the fact that “collisions / allisions” represent the first cause of accidents (26%) resulting in an oil spill as recorded by the International Tankers Oil Pollution Federation (ITOPF) between 1970 and 2016. In the Mediterranean, the “collision/contact” category accounts for 17% of accidents reported to REMPEC, after “grounding” (21%). The contribution of other accident types are as follows: “fire/explosion”: 14%, “cargo transfer failure”: 11%, “sinking”: 9%, and “other accidents”: 28%. Several studies, based on the daily traffic crossing the Istanbul Strait and the Bosphorus, identified the east Mediterranean / Black Sea area as one of the top areas presenting the greatest probability of a shipping accident occurring. **Figure 1: Density of maritime traffic in the Mediterranean Sea**



Source: marinetraffic.com.

The Mediterranean is an important route for oil tankers' shipments. The Mediterranean Sea is also a major route for tankers. The REMPEC study mentioned above shows that the Mediterranean is both a major load and discharge centre for crude oil. Approximately 18%, or 421 million tonnes, of global seaborne crude oil shipments which in 2006 amounted to approximately 2.3 billion tonnes, take place within or through the Mediterranean. The following figures (Figure 2, Figure 3 and Figure 4) show the oil export areas and overseas destinations through the Mediterranean Sea.

Figure 2: Oil export source and destinations (North Africa)

Source: Tankers International website.

Figure 3: Oil export source and destinations (Middle East)

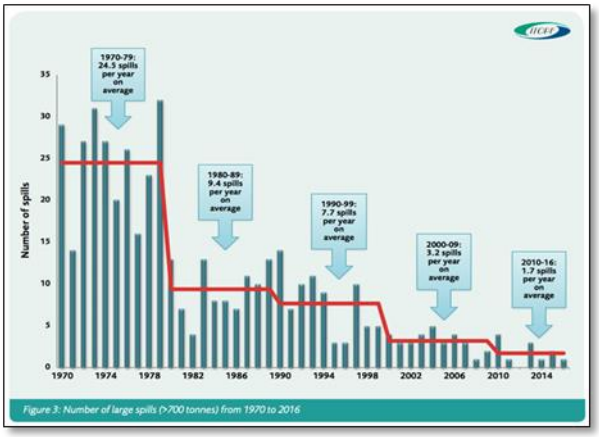
Source: Tankers International website.

Figure 4: Oil export source and destinations (Black Sea)

		 **Source: Tankers International website.** Figures 3 and 4 above emphasise that the East Mediterranean area is at risk: in addition to being an area where traffic is dense, it is also a hot spot because of tanker routes from the Black Sea and the Middle East. • **Deliberate discharges at sea:** It was demonstrated, with the use of satellite imagery and other observation tools, that deliberate oil pollution occurrences are high along busy traffic lanes. In the Mediterranean, there is evidence that the distribution of oil spills is correlated with the major shipping routes, along the major west-east axis connecting the Strait of Gibraltar through the Sicily Channel and the Ionian Sea with the different distribution branches of the Eastern Mediterranean, and along the routes towards the major discharge ports on the northern shore of the Adriatic Sea, east of Corsica, the Ligurian Sea and the Gulf of Lion (UNEP/MAP, 2012).
Results		NOTE: If the assessment has been performed at different geographical scales, include the results and conclusions accordingly.
Results and Status, including trends (brief)	Text (500 words), images	On the one hand, statistical data analyses indicate a significant downward trend in accidental pollution from ships, for both oil and HNS. This decrease can also be seen both in the number of accidents causing these pollutions and in the volumes of pollutants discharged at sea. On the other hand, the same observation cannot be made with regard to illicit discharges from ships. There is no sufficient data to identify an upward or downward trend, but based on 2016 data provided by the European Maritime Safety Agency (EMSA), it can be argued that a significant number of illegal releases are still occurring.
Results and Status, including trends (extended)	Text (no limit), figures, tables	**Key findings for accidents:** **Decrease in the number of major oil spills worldwide** Maritime casualties involving oil have decreased substantially over the years, despite a growth in the volume of oil moved by ships. Today, according to ITOPF statistics, 99.99% of crude oil transported by sea arrives safely at its destination. As shown in Figure 5 below, the average number of large oil spills from tankers, i.e. greater than 700 tonnes, has progressively diminished over the years, to an average of 1.7 spills per year between 2010

and 2016.

Figure 5: Number of Oil Spills Greater than 700 Tonnes Between 1970 and 2016



Decrease in the frequency of accidents causing a pollution in the Mediterranean

- **Oil:**

The statistical analytical study prepared by REMPEC on the basis of its Mediterranean Alerts and Accidents Database shows that major oil spills occurred frequently between 1977 and 1981 but have become rare events since then, with the last major accident being the MT "HAVEN" accident off Genoa in April 1991, with 144,000 tonnes of crude oil spilled.

In terms of volume of oil released at sea, the 2014 REMPEC Study indicates that between 1 January 1994 and 31 December 2013, approximately 32,000 tonnes of oil entered into the Mediterranean Sea as a result of accidents.

This includes approximately 15,000 tonnes originating from the 2006 Eastern Mediterranean incident which occurred in the power plant of Jieh, Lebanon, between the 13th and 15th of July 2006. The fuel which did not burn was released in the marine environment. The exact quantity of the burnt fuel remains unknown but, according to the estimate communicated by the Lebanese authorities, between 13,000 and 15,000 tonnes were released as a consequence of the spill. The Lebanese spill is the fifth biggest spill reported since 1977 in the Mediterranean Sea, the largest spill being the spill related to the explosion of the MT HAVEN in 1991, which sunk with its cargo of 144,000 tonnes of crude oil in the Italian waters.

In terms of accidents causing pollution, the number of accidents resulting in an oil spill dropped from 56% of the total number of accidents for the period 1977 – 1993, to 40% for the period 1994 – 2013. 61% of the incidents resulted in a spillage inferior to 1 tonne.

- **HNS:**

In the Mediterranean, the quantities of HNS accidentally spilled considerably decreased during the period 1994 – 2013. Since 2003, the release of HNS has become insignificant compared to the period 1994 – 2002.

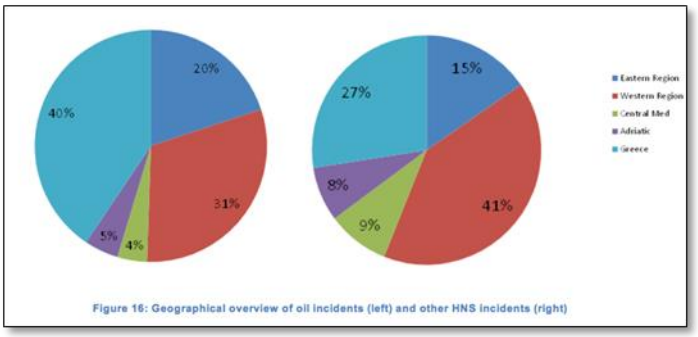
The last two major accidents occurred in 1996 namely:

- the sinking of Kaptan Manolis I in Tunisia, with 5,000 tonnes of phosphates on board; and
- the sinking of Kira off Greece, releasing 7,600 tonnes of phosphoric acid.

The worst HNS spill in the Mediterranean was the sinking of the Continental Lotus in 1991 in the Eastern Mediterranean, with 51,600 tonnes of iron on board.

REMPEC's statistical analysis related to geographical location of accidents indicates that the majority of accidents occur in the Eastern Mediterranean area (Cyprus, Egypt, Israel, Lebanon, Syrian Arab Republic, Turkey) if Greece, which is treated separately in REMPEC's findings, is included, showing as Figure 6.

Figure 6: Geographical distribution of accidents



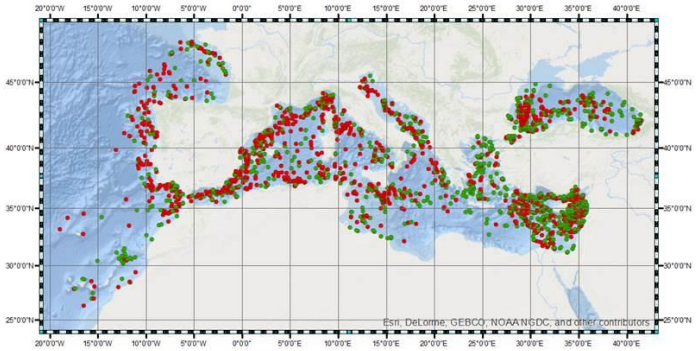
Source: REMPEC, 2014.

Key Findings for Illicit Discharges:

REMPEC's Mediterranean Alerts and Accidents Database contains a category for "Illicit Discharges". Only 5 cases were reported (1 in 2012, 1 in 2013 and 3 in 2015). By nature, as they are illegal, illicit discharges of oil are not voluntarily reported by the ship source. The use of satellite imagery can be a useful tool to provide a better picture of the number of oil spills from ships, however, unless evidence is provided that a detected illicit discharge originates from a specific ship, no definite conclusion can be made as to whether or not the spill is caused by any ship, and therefore it is difficult to precisely assess the number of illicit discharges actually happening.

Trends: oil pollution occurrences still an issue in the Mediterranean.

In 2016, the CleanSeaNet platform of EMSA recorded a total of 1,073 detections of probable pollution occurrences, and a total of 1,060 detections of possible pollution occurrences in the area covering the

		Mediterranean Sea and the Atlantic Ocean coasts of Morocco, Portugal, Spain and France (Figure 7 below). Although there is no judicial evidence that all occurrences characterised as probably or possibly oil spills are actually discharges from ships, the map provides a clear indication that oil pollution incidents from ships is still of concern. **Figure 7: Number of spills detected in 2016 by satellite imagery.** **Class A** (red dots on the map) – the detected spill is most probably oil (mineral or vegetable/fish oil) or a chemical product. **Class B** (green dots on the map) – the detected spill is possibly oil (mineral/vegetable/fish oil) or a chemical product.  **Source: CleanSeaNet, EMSA.**
Conclusions		
Conclusions (brief)	Text (200 words)	Accidents rates have gone down globally and regionally despite the increase in shipping transportation and it can be concluded that the impact of the international regulatory framework adopted through the IMO as well as technical cooperation activities undertaken at regional level is very positive, especially as far as prevention of accidental pollution is concerned. However, risks associated with the transport by ships of oil and HNS with possible harmful consequences on biota and ecosystems cannot be completely eliminated, especially in vulnerable areas such as the Mediterranean Sea. In addition, efforts have to be made to strengthen monitoring and reporting of illicit discharges from ships.
Conclusions (extended)	Text (no limit)	**Decrease of pollution occurrences globally:** accidents rates have gone down globally and regionally despite the increase in shipping transportation. Accidental pollution from both oil and HNS has decreased which can be related to the adoption and implementation of environmental maritime conventions addressing oil and HNS pollution prevention, preparedness and response. Indeed, statistical analysis indicates that there is a correlation between the period where the IMO regulatory framework was put in place (in the 70') and the years when this downward trend started to happen (in the 80'). It can therefore be concluded that the impact of the international regulatory framework adopted through the IMO as well as technical cooperation activities undertaken at regional level is very positive, especially as far as prevention of accidental pollution is concerned. However, the issue of illicit discharges from ships remains of

		concern, especially in semi-enclosed areas where the ability of the marine environment to regenerate is less likely to happen. **Oil pollution long-term effects:** it is also important to keep in mind that recovery of habitats following an oil spill can take place from between a few seasonal cycles (plankton) to several years (within one to three years for sand beaches and exposed rocky shores; between 1 and 5 years for sheltered rocky shores; between 3 and 5 years for saltmarshes; and up to 10 years or greater for mangrove). According to ITOPF, while considerable debate exists over the definition of recovery and the point at which an ecosystem can be said to have recovered, there is broad acceptance that natural variability in ecosystems makes a return to the exact pre-spill conditions unlikely. Most definitions of recovery instead focus on the re-establishment of a community of fora and fauna that is characteristic of the habitat and functions normally in terms of biodiversity and productivity. Therefore, despite the progress achieved in mitigating oil spill incidents from ships, it is clear that continuous monitoring of illicit discharges occurrences as well as cumulative effects and impacts, and continuous monitoring of accidental post-spill consequences on biota and ecosystems are needed.
Key messages	Text (2-3 sentences or maximum 50 words)	Chronic sources (illicit discharges) of pollution into the marine environment from ships are the principal target for pollution reduction, as the trends for acute pollution (accidents) are controlled and decreasing.
Knowledge gaps	Text (200-300 words)	• The information collected via pollution reports is related to specific pollution events and not always useful or compatible with the information needed to assess the status of the marine environment. • Maintaining the Mediterranean Alerts and Accidents Database is a prerequisite and the condition for being able to measure Common Indicator CI19. • There is no obligation for countries to carry out environmental surveys of sea and shorelines affected by a spill. Systematic environmental shorelines assessment post spill is today recognised as a “must do” practice and can provide information on biota on a case by case basis. • Very little data is available regarding illegal discharges from ships. **Environmental monitoring and reporting:** the focus of IMO conventions and guidelines relating to prevention of marine pollution is on ships’ compliance monitoring rather than on monitoring or measuring the state of the marine and coastal environment. The same can be noted with respect to reporting obligations. Reporting is required in the case of an accident causing pollution or in case of an illegal pollution is discovered (operational discharges). This perspective is reflected in the 2002 Prevention and

		Emergency Protocol. Therefore, the information collected is related to specific pollution events and not always useful or compatible with the information needed to assess the status of the marine environment. **Accidents monitoring and reporting:** there is an increase in the number of accidents reported to REMPEC, which is most likely due to a better compliance by the Contracting Parties to the Barcelona Convention to report casualties, as required by Article 9 of the 2002 Prevention and Emergency Protocol. It is of utmost importance that the Contracting Parties to the Barcelona Convention continue to report on accidents as accurately as possible, as it is paramount that REMPEC continues to maintain the Mediterranean Alerts and Accidents Database to keep track of pollution events. This is a prerequisite and the condition for being able to measure Common Indicator CI19. **Impact on biota affected by pollution:** for the reason explained above, there is little information on the impact of pollution events caused by shipping on biota. Ship generated pollution impact is usually considered from a response perspective (protection of sensitive areas and facilities). There is no obligation for countries to carry out environmental surveys of sea and shorelines affected by a spill. However, systematic environmental shorelines assessment post spill is today recognised as a "must do" practice in terms of assessing the level of cleanliness of the affected area, as well as from a remediation perspective. **Illicit discharges from ships:** very little data is available regarding discharges from ships. As these are illegal operations by nature (when not within the limits set by MARPOL), it is extremely difficult to get information on occurrences and extent of spills. Marine surveillance requires aerial means and equipment (planes, airborne radars and sampling sets) or special technology such as the use of satellite images. There is no regionally centralised system for surveying the Mediterranean waters as defined in the Barcelona Convention. The CleanSeaNet platform, the European satellite-based oil spill monitoring and vessel detection service, is a good resource, but only available in principle to countries that are Members States of the European Union.
List of references	Text (10 pt, Cambria style)	Allianz Global Corporate & Specialty: Safety and Shipping Review 2016 - An annual review of trends and developments in shipping losses and safety, 2016. EMSA: Addressing Illegal Discharges in the Marine Environment, 2012. IMO/UNEP: Regional Information System; Part C2, Statistical Analysis - Alerts and Accidents Database, REMPEC, December 2014. IMO/UNEP: Regional Information System; Part C2, Statistical Analysis - Alerts and Accidents Database, REMPEC, February 2011. ITOPF: Oil Spill Statistics, February 2017. ITOPF: Effect of Oil Pollution on the Marine Environment, Technical Information Paper 13, 2014. Ömer Faruk Görçün, Selmin Z. Burak: Formal Safety

		Assessment for Ship Traffic in the Istanbul Straits. Published by Elsevier, 2015. Study of Maritime Traffic Flows in the Mediterranean Sea, Final Report - Unrestricted Version, July 2008. UNCTAD: Review of Maritime Transport 2015. UNEP/MAP: State of the Mediterranean Marine and Coastal Environment, UNEP/MAP – Barcelona Convention, Athens, 2012. WWF: Accident at Sea, Summary, 2013.