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

Regional Workshop on Oil Spill Risk Assessment in the Mediterranean Sea (MEDEXPOL 2011)

Barcelona, Spain, 29 November – 1 December 2011

REPORT

December 2011

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EXECUTIVE SUMMARY

REMPEC in cooperation with MOIG and with the participation of the International Petroleum Industry Environmental Conservation Association (IPIECA) organized the Workshop on Oil Spill Risk Assessment in the Mediterranean Sea (MEDEXPOL 2011), in Barcelona between the 29 November and 1 December 2011.

Contracting Parties to the Barcelona Convention, represented by 19 participants attended the Workshop with representatives from the Mediterranean oil industry, United Nations organizations (UNEP/MAP, IMO), MAP Partners, non-governmental and other regional organizations.
The Workshop aiming at discussing with the Government and Industry Representatives the existing approach to oil spill risk assessment, concluded with the following set of recommendations for development of an oil spill risk assessment methodology for the Mediterranean Sea during the next biennium (2012-2013):

- To identify the sources and characteristics (age, type, accuracy) of data used to assess the risk.
- To try and integrate all forecasting models in a single reliable end-user one, under the framework of the MOON, with high resolution data provided.
- To investigate centralized data and models initiatives on sensitivity mapping, in order to define a harmonized approach.
- To define common concepts and terminology and integrate specific aspects of the risk in the Mediterranean (e.g. water column and sea bottom, offshore and high seas risks), for the harmonization of the risk assessment approach across Mediterranean countries.
- To encourage and agree on sharing the results and data of risk assessments and response capacity.
- To improve data inventory on response capacity.
- To define and improve the procedures to seek for international assistance.

1. INTRODUCTION

The Regional Workshop on Oil Spill Risk Assessment in the Mediterranean Sea (MEDEXPOL 2011) was convened in Barcelona, between the 29 November and 1 December 2011.

The event was organized by REMPEC in cooperation with the Mediterranean Oil Industry Group (MOIG), and with the participation of the International Petroleum Industry Environmental Conservation Association (IPIECA).

This Workshop on Oil Spill Risk Assessment in the Mediterranean Sea followed the regional MEDEXPOL 2009 held in Marseille, which aimed at assessing industrial and Government capabilities on Cooperation, Preparedness for, and Response to Oil Spills in the Mediterranean Sea. Country profiles were implemented subsequently providing a basic knowledge of countries' legal frameworks and capabilities. As a follow-up to this Workshop, the Mediterranean Government Industry Cooperation Action Plan (MGICAP) was prepared by REMPEC and MOIG to define the short, medium and long term programme to increase the preparedness and response capacity level and the cooperation between Government and the oil industry in the Mediterranean region. MEDEXPOL 2011 on Risk Assessment is the results of the MGICAP and the recommendations of the Tenth Meeting of the Focal Points of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), Malta, 3 and 5 May 2011. .

2. ORGANIZATION OF THE WORKSHOP

The main objectives of this Workshop were:

- To present and discuss with Governments and Industry Representatives the existing approach to oil spill risk assessment; and
- To provide recommendations for the development of an oil spill risk assessment methodology for the Mediterranean Sea during the next biennium (2012-2013).

2.1. Lecturers

In order to achieve the objectives outlined above, the Workshop programme was developed by REMPEC in collaboration with MOIG and IPIECA. A total of twenty (20) lecturers from United Nations organizations, other regional initiatives, Oil Industry Groups, Governments and Partners representatives provided specific knowledge related to their field of expertise.

The list of lecturers is included in the list of participants in **Annex I** to the present report.

2.2. Participants

A total of forty-three (43) participants representing 19 Mediterranean coastal States, United Nations organizations (UNEP/MAP, IMO) and representatives from the Oil Industry, MAP Partners, non-governmental and other regional organizations participated in the Workshop. Participants included officials of maritime administrations or transport ministries, officials of environmental ministries/agencies as well as scientists. The final list of participants is reproduced in **Annex I** to the present report.

2.3 Material

The preparation of the content of the Workshop was coordinated by REMPEC and MOIG. The Workshop was divided into five segments, which constituted the backbone of the workshop programme:

- Segment 1: Sources of Risk
- Segment 2: Prevent the Risk
- Segment 3: Evaluate the Impact
- Segment 4: Examples of Risk Assessment
- Segment 5: Discussion

The final programme of the Workshop as delivered may be found in **Annex II** to the present report.

The following material was distributed to the participants:

- a questionnaire was sent to each country to collect information on the above mentioned segments and to facilitate the record keeping of the discussions and further analysis of the information provided during the Group Discussion sessions. A copy of the questionnaire may be found in **Annex III** to the present report;
- a copy of IPIECA Oil Spill Preparedness and Response Report Series Summary (1990-2008) providing a complete overview of issues that can referenced in the preparation for, and response to, oil spills at sea;
- the final programme of the Workshop in French and English;
- informative leaflet summarizing the purpose and objectives of the Mediterranean Oil Industry Group (MOIG);
- a CD-ROM containing all the presentations given during the Workshop, the list of participants and the final programme in French and English, was distributed on the last day of the Workshop.

3. PROCEEDINGS OF THE WORKSHOP

The Regional Workshop on Oil Spill Risk Assessment in the Mediterranean Sea (MEDEXPOL 2011) was held in Barcelona from 29 November to 1 December 2011 in the Conference room of the AC SANT Hotel, Barcelona, Spain, where most of the participants were also accommodated.

REMPEC, with the collaboration of MOIG, issued the invitation letters. REMPEC financed the Workshop through the Mediterranean Trust Funds and coordinated all the logistical arrangement of the Workshop, whilst MOIG covered the logistic of the Workshop.

REMPEC was represented during the Workshop by Mr. Gabino Gonzalez, OPRC Programme Officer, Mr. Joseph Zerafa , Senior SAFEMED Project Officer, and Ms. Souade Nasseri, Junior Programme Officer, whilst MOIG was represented by its Director, Mr. Ridha Dhaoui.

The Workshop was delivered in English and French and simultaneous interpretation from one language to the other was provided.

3.1 Opening of the Workshop and introduction

Mr. Gabino Gonzalez, on behalf of the Director of REMPEC, welcomed the participants to the Workshop and thanked MOIG and IPIECA for their assistance in the organization of the event, the participants for their presence and interest demonstrated by the replies to the questionnaire received prior to the Workshop and the lecturers for having responded positively to the invitation to share their experience in the different fields dealt within the programme. He recalled the framework of the Workshop.

Mr. Ridha Dhaoui, Director of the Mediterranean Oil Industry Group (MOIG) took the floor to thank REMPEC and all participants and speakers for their involvement in this Workshop.

Mr. Gonzalez gave an overview of the legal framework in the maritime protection field including the Barcelona Convention and its seven protocols. He stressed the importance of assessing the risks and effects of pollutions from oil spill to the marine environment in view of establishing the adequate response capacity. Beside maritime traffic and oil transportation, offshore activities are, as recent incidents have shown, sources of high level risks. The entry into force of the Offshore protocol in March 2011 put in evidence the awareness of that risk. Mr. Gonzalez pointed out the potential role of REMPEC in the implementation of the protocol.

Mr. Romain Chancerel, GI WACAF Project Manager, representing IMO, presented the Global Initiative (GI), aimed at assisting in the implementation of the OPRC Convention and at improving the

cooperation between Governments and Industry. After introducing the roles and parties involved, he introduced the main elements of GI implementation.

Mr. Dhaoui focused his presentation on the recent ratification of the Offshore protocol, which « aims at protecting the Mediterranean from pollution of the continental shelf, the seabed and its subsoil and response to accidents ».

Mr. Andrew Nicoll, Advocacy Manager at the Oil Spill Response Limited (OSRL), provided an overview of the concept of risk, pointing out the subjectivity of the topic. He first detailed the terminology and definitions related to the risk, and then defined it as a combination of likelihood and consequence. Thus, the aim of a good prevention is to reduce the likelihood of the event, while the preparedness aims at reducing the consequences.

Mr. Gabino Gonzalez recalled the objectives of the Workshop, highlighting that the outcome of the Workshop would be followed through the implementation of the Mediterranean Technical Working Group (MTWG) work programme for 2012-2013 and through the implementation of the Mediterranean Decision Support System for Marine Safety, (MEDESS-4MS) Project.

3.2 Presentations

Day 1

SEGMENT 1 – Sources of Risk

Potential risk to shipping, refining, production, exploration in the Mediterranean

Ms. Francesca Polla Matiot, Technical Specialist of the Emergency Response Team at ENI, presented an approach to identify the sources of risk. She referred to satellite identification of vessels and the SAFEMED project GIS both used to obtain an overview of the traffic density and major tanker routes in the Mediterranean. Concerning facilities data, she pointed out the numerous existing databases and inventories. MOIG's inventory of facilities was used for the Geographical Information System implemented by ENI. She recalled important factors to take into account when studying the sources of pollution (e.g. distinction between deep water and shallow water, and between oil and gas)

Shipping evolution : High level update of 2008 REMPEC study

A study from TOTAL, with new data providing an update of REMPEC's study in 2008, was presented by Mr. Dan Lascar. The new study gives and assesses an overview of maritime traffic in the Mediterranean Sea for the past five years. M. Lascar pointed out that comparing to 2006, a significant

decrease of traffic flow was observed in the three most active areas (Gibraltar, Suez and Bosphorus) due to the great recession in 2008, which implied a decrease of the transit traffic. However the oil traffic within the Mediterranean Sea is stable, and the total volume in the Mediterranean ports slightly recovered in 2010. He also noted that the average age of crude oil tankers reduced as compared to 2006.

SEGMENT 2 – Prevent The Risk

International recommendations on well incident prevention

Mr. Georges Franklin, of Shell International Trading and Shipping Ltd and chair of the Global Industry Response Group (GIRG) of the International Association of Oil & Gas Producers (OGP), gave some recommendations on well incident prevention. He emphasized the fact that the Montara and Macondo incidents changed the perception of the risk of offshore activities. Mr. Franklin gave an overview of GIRG Projects following three main topics: Well Design, Capping and Containment, and Oil Spill Preparedness and Response.

Marine Terminal Information System (MTIS) Project

Captain Bernard Lesegretain Senior Technical Advisor at the Oil Companies International Marine Forum (OCIMF) presented the Marine Terminal Information System (MTIS) developed by the OCIMF. After introducing the association and its objectives, Mr. Lesegretain focused on the MTIS Project, which aims at ensuring “that all marine terminals worldwide reach common high standards of safety and environmental protection”. The MTIS follows a four steps approach, from the collection of data through the Marine Terminal Particulars Questionnaire, to the training and accreditation of the staff involved in terminals.

International Conventions on Prevention of pollution from ships

Captain Joseph Zerafa from REMPEC gave an overview of the international legal framework on Prevention of pollution from ships. He detailed the MARPOL Convention and introduced the STCW Convention which carries the “human element” of the prevention, by prescribing minimum requirements to training and certification of seafarers, on an international level.

SEGMENT 3 – Evaluate The Impact

The Mediterranean Operational Oceanography Network

Mr. Giovanni Coppini, Technologist at the Geophysics and Vulcanology National Institute (INGV, Italy), presented the Mediterranean Operational Oceanography Network (MOON) and its forecasting system. He pointed out the importance of forecasting model to assess the potential impact of oil spills and the benefits of the cooperation between REMPEC and MOON, which has been proved during the Lebanon crisis in 2006 and many other occasions since then.

IMO/IPIECA guidance on sensitivity mapping for oil spill response

Mr. Peter Taylor, Manager at the Oil Spill Response Initiative (OSPRI) presented the IMO/IPIECA Guidelines on sensitivity mapping for oil spill response. Building a sensitivity map provides a synthetic overview of the shoreline types and the biological and human resources that could be impacted by an oil spill. Three types of maps, based on scale (strategic, tactical or operational mapping) can be implemented, whilst the layers obtained can be superimposed intoto risk assessing maps for their integration in likelihood maps.

Sensitivity Maps in West and Central Africa

Mr Romain Chancerel focused on the development of sensitivity mapping from a technical point of view, presenting the GI West, Central, and Southern African (WACAF) projects. Sensitivity maps projects implementation in the region is aimed at promoting and harmonizing approaches using the GI WACAF geographical information system. The tool also encourages information sharing in a centralized geographical information. To achieve those objectives, four main steps are followed: collecting the data from the different stakeholders, harmonizing the information providing a technical guideline for the use of the tool, compiling the data into a GIS and publishing the data in the website.

Outlook on data for sensitivity assessment of Mediterranean coastlines to pollution from ships

Mr. Didier Sauzade Project Manager at the Blue Plan first introduced the Mediterranean Action Plan (MAP) context in which the sensitivity assessment is done through the Blue Plan. The role and place of the REMPEC as one of the Regional Centre of the MAP was highlighted. Regarding the methodology, he coincided with Mr. Chancerel's and Mr. Taylor's interventions, and recalled the factors taken into account when assessing the sensitivity of an area.

Day 2

SEGMENT 4 – Examples of Risk Assessment

Local assessment

Methodology for drafting an oil spill contingency plan

Mr. Laurent Routisseau, Environment and Pollution Response Manager at TOTAL introduced the standard guidelines for drafting oil spill contingency plan aimed at having coherent emergency response procedures in case of oil spill throughout TOTAL installations. The guidelines developed are based on the IPIECA report on Oil spill preparedness and response.

Mr. Jean Marie Libre presented then an environmental risk assessment. He stressed the importance of the use of simulation and sensitivity mapping in support of environmental risk analysis for offshore installations.

Emergency response and risk assessment plan for coastal facilities

Mr. Bahadir Ekizer Environmental Protection Manager at the Turkish Petroleum presented the national legal framework integrating international regulations and the risk assessment in Turkey. He introduced the types of emergency plans developed in Turkey as well as the *Rules and Recommendation on navigation in Turkish straits*.

Ms. Fatma Telli Karacoć, Senior Researcher at the TÜBİTAK MAM Environment Institute detailed the headlines of the methodology used in Turkey from the risk assessment to its implementation in contingency plans.

Risk assessment in the Mediterranean

Assessing the environmental risk on the coastline and marine environment generated by oil spills in open water

Mr. Peverieri from SAIPEM provided an overview of the methodology ENI developed at a regional scale to assess the environmental risk exposure of the coastline and marine environment in the Mediterranean and Black Sea basins to oil spills. He detailed the variables and factors taken into account to build sensitivity maps and the output maps such as sea crossing, cost impacts, and marine risk for the fishing maps provided by risk assessment simulations. REMPEC suggested the possibility of sharing the information and the GIS tool to a regional level, whilst Mrs. Polla Matiot indicated that the way of sharing the data should be further discussed.

Mediterranean Decision Support System for Marine Safety, MEDESS-4MS - Work package 4: Improving the evaluation and the monitoring of risks

Dr. Efstratios Georgoudis, Ship Surveyor at the Department of Merchant Shipping of the Ministry of Communications and Works of Cyprus presented the Mediterranean Decision Support System for Marine Safety (MEDESS-4MS) Project. The project is funded by the Med Programme, and starts in February 2012 for three years. Mr. Georgoudis explained that an important part of the global project concerns the risk assessment. Before detailing the project, he insisted on the importance of a complete, reliable, and not altered source of data to implement a project such as the MEDESS-4MS.

The general objective of the project is to “set up an integrated real time operational oil spill forecasting service for the Mediterranean, for national response agencies, REMPEC and EMSA”. In other words, it aims at implementing an interconnected network of data repositories that will archive and provide access to all available oil spill data, and offer a “user friendly” tool on forecasting. The project has twenty-one partners from MOON, maritime administrations, universities and users of the system.

Among the work packages defined for the project, one aims at improving the evaluation and the monitoring of risks. Expertise and data from different decision makers from countries and industry being necessary, this workshop is a key event before initiating the project. He further pointed out that

the aim of the project isn't developing a new service but improving the existing ones: integrating expertise and tools already existing for a unique global service.

Risk assessment in other regions

Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea (BRISK)

Commander Peter Søberg Poulsen, Project Manager, introduced the Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea (BRISK) project. He explained that the project was similar to MEDESS-4MS Project and started three years ago in the Baltic region and should be completed by April 2012. The BRISK project is implemented within the framework of the HELCOM Baltic Sea Action Plan. The main objective was to carry out an overall risk analysis for the entire Baltic Sea with one common model.

Dr. Carsten Jürgensen, BRISK Project Consultant, completed the presentation by introducing the different modules of the model assessing the risk of damage to environment from ship traffic and other ship activities data. He pointed out the flexibility of the designed system with the possibility of running different scenarios to assess the risk of damage to environment. He presented the sensitivity map obtained and underlined the difficulty to obtain a general consensus on the sensitivity definitions and weights. Six sub-regions are defined in the Baltic Sea, and the expected oil impact depends on the sub-region. He insisted on the sub-regional approach due to their respective specificities regarding traffic flows and activities.

Cartography of Risk in Galicia

Dr. Miren Garbine Ayensa Aguirre, Head of Unit of INTECMAR, presented the cartography of Risk in the region of Galicia in Spain. She presented the components of the Preparedness and Response system of INTECMAR. A Coastal inventory allows identifying potential sources of contamination, areas of environmental and socio-economic importance, and basic infrastructure available in an emergency situation. Oceano-Meteorological data allows implementing the OGC (Open Geospatial Consortium) Web Tool, a Viewer Version Risk Analysis. The GIS Emergency Response System was implemented from those analyses. She underlined the variety of sources and formats of the data that must be georeferenced and shared in a robust accurate way.

Dynamic Risk Analysis tool

Mr Fernandez, form the Technical Superior Institute (IST) introduced the Hydrodynamic Model (MOHID). The model is applied in water, river and land, and has been used during the Prestige incident, making a real time oil spill simulation before and after the ship breaks. Within the ARCOPOL Project, a MOHID desktop spill simulator, Oil and HNS properties database, and the Dynamic Risk Mapping Tool have been implemented. He explained that the dynamic approach (using real time data) aims at answering the following question: "What is the environmental impact of a potential accident occurring with *that* ship at *that* location under *those* weather conditions?"

SEGMENT 5 – Discussion

After the set of presentations, the participants were invited to join group discussions to go through the subjects identified in the questionnaire sent to each country before the Workshop. They were divided in three groups composed of:

- a main facilitator, to lead the discussion;
- a reporter, together with a government and industry representative to note the main issues raised during the discussion to report during the debrief session; and to collect the questionnaire from the government and industry representative;
- a support team, to assist in the discussion guiding the participants through appropriate questions or raising relevant concerns on subjects dealt within the discussion.

The distribution of the government and industry representatives were based on the one used in the Workshop of Marseille in 2009. The Group Discussions distribution may be found in **Annex III** to the present report.

The questionnaire is divided in five subjects presented below corresponding to the topics developed by the speakers, and may be found in **Annex IV** to the present report.

Source of Risk

The sources of risk were discussed in terms of accuracy, accessibility and origin of relevant data. Country representatives were invited to specify the information recorded about maritime traffic, operations in terminal and exploration and production. Industry and country representatives discussed the sharing of the data.

Meteo-Oceano Data

Meteo-Oceano data sources and availability were discussed during the session. The Country representatives were invited to debate on Oil spill forecasting models and specify if they were members of the MOON network.

Sensitivity mapping

A first step was to assess the presence of sensitivity maps in each country. Then the participants discussed the content of these maps and raised comments and questions concerning the sharing of environmental and socio-economic data, the identification of priority areas for protection and places of refuges, and the format of the existing data related to sensitivity maps.

Day 3

SEGMENT 5 – Discussion

Risk assessment within the contingency planning

One of the objectives of the Workshop being providing recommendations for the development of a regional oil spill risk assessment methodology, the Country representatives were invited to point out the existing data for risk assessment at local, regional and national levels. The integration of the data in the National Contingency Plan was discussed during the session.

Response capacity

Lists of equipments at local, regional and national level, and the entities in charge of the collection of the data had to be specified by each Country. Industry and Country representatives shared their views on the use of the risk assessment for the collection of the data and there collaboration.

4 CONCLUSIONS AND RECOMMENDATIONS OF THE WORKSHOP

Following the group discussions, a common debriefing allowed the participants to review the main issues and elements to take into account when assessing the sources, the potential impact and the response capacities related to the oil spill risk, at a national and regional level. Comments and questions were raised for risk assessment at a regional level, and the actual knowledge gaps to improve oil spill risk assessment in the Mediterranean were underlined.

The plenary discussion concluded with recommendations to develop a common oil spill risk assessment methodology in the Mediterranean region. An action plan following the recommendations was defined for each subject discussed, and may be found in **Annex V** to the present report. The Workshop proposed entities, depending on their expertise, to implement the action plan developed. Recommendations and conclusions per implementation entity may be found in **Annex VI** to the present report.

MEDEXPOL 2011 on Risk Assessment is the results of the MGICAP recommendations and “short term” action plan. MGICAP’s medium and long term action plan is defined through five main objectives to be achieved. The Strategic Plan covers: The Legal and institutional framework, Strategic Planning, Operational Contingency Plan, Response resources, and (Subregional cooperation and assistance. Within the five Strategic objectives defined, recommendations and actions are strongly related to the conclusions of the Workshop. **Annex VII** to the present report presents the links between the recommendations and conclusions of MEDEXPOL 2011 and the MGICAP.

The Training Workshop was concluded at 1400hrs on the 1 December 2011 with closing remarks by Mr. Gabino Gonzalez and Mr. Ridha Dhaoui, who thanked all lecturers and participants for their active contribution to the Workshop.

ANNEX I

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ANNEX II

FINAL PROGRAMME

Day 1: Tuesday 29 November		
09:00	**Registration**	

09:30	• **Welcome and introduction**
	  • REMPEC
	  • MOIG
		G. Gonzalez (REMPEC)
		R. Dhaoui (MOIG)

09:45	• **Regional and International Framework**
	  • Barcelona Convention and regulatory development,
	  • Global Initiative (GI) – IMO/IPIECA
	  • MOIG
		G. Gonzalez (REMPEC)
		R. Chancerel (IMO)
		R. Dhaoui (MOIG)

10.30	**Break**	
11.00	• **Outlining the issue of risk assessment:** • Definition of the risk and its component • **Objectives of the workshop**	A. Nicoll (OSRL) G. Gonzalez (REMPEC)
12:00	**Lunch**	
SOURCES OF RISK		

13.00	• **Sources of risks**
	  • Potential risk to shipping, refining, production, exploration in the Mediterranean
	  • Shipping evolution : High level update of 2008 REMPEC study
		F. Polla Mattiot (MOIG)
		
		L. Routisseau (TOTAL)

PREVENT THE RISK		

14.00	• **Well incident prevention**
	  • International recommendations on well incident prevention
	• **Oil terminal incident prevention**
	  • Marine Terminal Information System (MTIS) Project
	• **Ship incident prevention**
	  • International Conventions on Prevention from ships
		R. Cox / G.Franklin (IPIECA) - (GIRG)
		
		B. Lesegretain (OCIMF)
		
		J. Zerafa (REMPEC)

15.30	**Break**	
EVALUATE THE IMPACT		
16.00	• **Meteorology and Oceanography – Forecasting models** • The Mediterranean Operational Oceanography Network	G. Coppini (MOON)

16.30	• **Socio-economical and environment potential impact**
	  • IMO/IPIECA guidance on sensitivity mapping for oil spill response (IPIECA)
	  • IMO/IPIECA GI WACAF – Sensitivity Maps
	  • Outlook on data for sensitivity assessment of Mediterranean coastlines to pollution from ships
		P. Taylor (OSPRI)
		
		R. Chancerel (IMO)
		
		D. Sauzade (Plan Bleu)

17:30	**End Day 1**	

Day 2: Wednesday 30 November
EXAMPLES OF RISK ASSESSMENTS

09:00	• **Local assessment** • Methodology for drafting oil spill contingency plan • Emergency response and risk assessment plan for coastal facilities • Oil Spill Risk Assessment Methodology and Its Integration in Decision Support System in the Turkish Coasts	L. Routisseau (TOTAL) TPAO Turkey F. Tellikarakoc
11:00	**Break**	
11:30	• **Risk assessment in the Mediterranean** • Assessing the environmental risk on the coastline and marine environment generated by oil spills in open water • Mediterranean Decision Support System for Marine Safety, MEDESS-4MS - Work package 4: Improving the evaluation and the monitoring of risks	F. Polla Mattiot (ENI) G. Peverieri (ENI) E. Georgoudis (Cyprus)
12:30	**Lunch**	
13.30	• **Risk assessments in other regions** • Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea (BRISK) • Cartography of Risk in Galicia • Dynamic Risk Analysis tool	P. Polsen (BRISK) C. Jürgensen (COWI) G. Ayensa (INTECMAR) R. Fernandes (IST)
15.00	**Break**	
15.30	• **Group Discussions on:** • Source of Risks • Meteo-Oceano Data • Sensitivity mapping	All
17:00	**End Day 2**	

Day 3: Thursday 1 December	
DISCUSSION	
09.00	• **Group Discussions on:** • Risk assessment within the contingency planning • Response capacity
10.30	**Break**
11.00	• **Group Discussion debriefing** • **Outcome of Group Discussion**
12.30	**Lunch**
13.30	• **Panel Discussion: Identifying gaps** What are the gaps in knowledge to improve risk assessment in the Mediterranean?
14.30	**Break**
15.00	• **Conclusion and recommendations** • Risk assessment methodology • Action plan • Means of implementation
17:30	**End of the Workshop**

ANNEX III

GROUP DISCUSSION ORGANIZATION

Group A: 25 persons	Group B: 20 persons	Group C: 18 persons
Main Facilitator		
G. Gonzalez (REMPEC)	P. Polsen (BRISK)	P. Taylor (OSPRI)
Reporter		
A. Rhodes (IPIECA)	R. Chancerel (IMO)	S. Nasseri (REMPEC)
Support team		
R. Dhaoui (MOIG), F. Polla Mattiot (ENI), R. Fernandes (IST) D. Sauzade (Bleu Plan) G. COPPINI (MOON) Mr. Zeyneb KALELI (UFM)	A. Nicoll (OSRL), L. Routisseau (TOTAL), R. Cox (IPIECA), M. De Dominicis (MOON) J. Zerafa (REMPEC)	G. Peverieri (ENI), Jürgensen (COWI), G. Ayensa (INTECMAR) E. Georgoudis (Cyprus) G. FRANKLIN (GIRG)
Government representatives		
Algeria (5) France Italy Monaco Morocco Spain Tunisia	Albania Croatia Israel Montenegro Turkey	Bosnia and Herzegovina Cyprus Egypt Greece Lebanon Malta
Industry representatives		
A. Zambrelli (ENI) A. Suarez G. (REPSOL) T. Naili (Lundin – Tunisia) I. M. Bellaban (NOC Libya) BG TUNISIA B. LESEGRETAIN (OCIMF)	A. Medina (RESPOL) B.Ekizer (TPAO) K. Cihan Anul (Meke Marine) H. Hennis (Shell) P. Rayner (VIKOMA) Z. Kulekeyev Kazakh Oil and Gas Institute JANAF CROATIA	Mr. J. Corbella (RESPOL) H. Selcen Kose H. Maaloul (TANKMED) R. Hill (VIKOMA) M. Kamour (NOC – Libya)

ANNEX IV

QUESTIONNAIRE

Source of Risks:

Data on	Do you keep record of data on location, quantities, type of oil produced or transported or transferred or stored?		Can the information be shared		Entity possessing the data. Please provide contact detail if available.
	Yes	No	Yes	No	
Maritime traffic data					
Operation in Terminal					
Exploration & Production					

Meteo-Oceano Data

Data on	Is the data available		Entity possessing the data. Please provide contact detail if available.
	Yes	No	
Meteorology			
Oceanography			
Oil spill forecasting model			
Member of MOON (Mediterranean Operational Oceanography Network)			

Sensitivity mapping

Data on	Are sensitivity maps available?		Can the information be shared		Entity possessing the data. Please provide contact detail if available.
	Yes	No	Yes	No	
Sensitivity maps					

	Do the maps contain information on		Specify the format of data		Entity possessing the data if different from above. Please provide contact detail if available.
	Yes	No	Hard copies	Electronic version	
Environment					
Socio-economic activities					
Priority area for protection					
Places of refuges					

Risk assessment within the contingency planning

Data on	Have you carried out risk	Can the information be	Entity possessing the data. Please provide contact detail if available.

	assessment?		shared		
	Yes	No	Yes	No	
At national level					
At regional/area level					
At local level (terminal, offshore unit, etc…)					

	Yes	No
Are risk assessments mandatory in your country prior to any activity related to oil transport, transfer, exploration, production, etc.		
Which entity is in charge of requesting risk assessments to operators if any?		
Kindly list the elements requested in the risk analysis		

National Contingency Plan

How did you integrate the notion of risk? Please details below

Response capacity

	Is there a list of equipment available		Entity in charge of collecting the data for **Government & Industry**. Please provide contact detail if available.
	Yes	No	
At national level			
At regional/area level			
At local level (terminal, offshore unit, etc…)			

	Yes	No
Did you use the risk assessment to identify the corresponding response capacity and its location?		
Do you have a contract with any response company		
What type of contract:		
Indicate the quantity corresponding to the worst case scenario in your country (tonnes):		

ANNEX V

CONCLUSIONS AND RECOMMENDATIONS PER SUBJECT

1. SOURCE OF RISK		
Issue	**Actions required**	**Proposed entity in charge**
It was recognised that the data accessibility for maritime traffic, operations and terminals as well as offshore platform will be difficult due to: - decentralised information; - reluctance of private companies to share data (Production, transit volume…) and **-** Safe Sea Net data (SSN) and AIS data inaccessibility and sharing possibility for non-EU Countries	a) To identify data source within governmental, private sector and REMPEC b) To avoid commercial issues it was suggested to collect old data (prior 2010) and to centralise data inventory from governmental, private sector and REMPEC	1.1. Countries to identify, gather and provide to REMPEC sources of data 1.2. REMPEC and MOIG with the support of IPIECA to identify other potential sources of data 1.3. REMPEC and MOIG with the support of IPIECA to prepare a template for data collection 1.4. MOIG to consult and collect from the oil industry relevant data
Unavailability of recent data	c) Collect old data (prior 2010)	1.5. To consider data prior to 2010
Variety of oil types	d) Focus on persistent oil (Bunker & cargo)	1.6. REMPEC and MOIG with the support of IPIECA to prepare a template for data collection
Traffic scope	e) Focus on tanker vessels	
Accuracy of information	f) Defining the level of accuracy needed for the risk assessment.	
Maintenance of up to date data	g) Provide a dynamic tool easy to be updated to take into account evolution of risks on the basis of the information available	1.7. REMPEC and partners to consider data maintenance under MEDESS-4MS work package 4

2. METEO-OCEANO DATA		
Issue	**Actions required**	**Proposed entity in charge**
Need to have real time data available online	a) To Encourage countries to become member of MOON b) Develop a web interface	2.1. Countries not member of MOON to promote the benefit of becoming member to the relevant national meteorological and oceanographic institute. 2.2. REMPEC and partners to consider the development of an online real time oil spill forecasting model under MEDESS-4MS work package 4
The diversity of forecasting models available in the region was considered an issue and recommendation was made to incorporate the models to obtain a single reliable tool for oil spill forecasting.	c) To integrate all existing models in a single reliable tool d) To encourage countries to integrate national models in MOON	2.3. MOON to consider under MEDESS-4MS the integration of existing models in a single reliable tool 2.4. REMPEC and MOON need to further promote the existing ERO bulletin 2.5. Countries to consider the integration of national model (see 2.1)
Further to discussions on the subject, the need for high resolution offshore and near shore oil spill forecasting model was considered necessary. However the availability of high resolution oil spill model mainly depends on meteo-oceano data availability.	e) To ensure that high resolution offshore and near shore meteorological and oceanographic data are available to run models	2.6. Countries to provide high resolution data (see 2.1).
It was recommended to consider sub-sea pollution forecast in particular for well blow-out	f) To continue effort expending the 2D forecast modelling to 3D	2.7. MOON to keep Countries informed about development through REMPEC

3. SENSITIVITY MAPPING		
Issue	**Actions required**	**Proposed entity in charge**
It was recognised that sensitivity maps should be developed by countries whilst REMPEC should facilitate a common approach. It was further acknowledged that sensitivity maps were the basis of any risk assessment and if a risk assessment had to be done on the regional scale, there would be a need to get some consistency in sensitivity maps format across the region/sub-regions. Divergences were found when considering the application of country specific mapping to a regional model. The definition of weight on each environment and socio-economical values was of particular concern.	It has been recommended to task the MTWG: a) to define harmonized sensitivity index and criteria; b) to assess BRISK,ENI any relevant approach for application to the Mediterranean region and c) to work on a sub-regional level as a first step towards a regional initiative.	3.1. REMPEC to establish the MTWG on risk assessment 3.2. Countries to nominate national expert on sensitivity mapping (covering environment and socio-economical aspects) 3.3. REMPEC to contact UNEP MAP components to involve them in the process of harmonization of sensitivity index and criteria 3.4. MOIG with the support of IPIECA to establish a similar oil industry correspondence group
At the national level it was recognised that there may be difficulties consolidating area maps. There is no central repository on socio-economic data for the Mediterranean region. This data is usually only available at national level.	d) to identify and contact existing sources on environmental and socio-economic mapping at national and regional level.	3.5. Countries to contribute through the MTWG to the inventory of existing sources of data at national level.
The possible duplication with other regional and European initiatives was highlighted.	e) to investigate European and regional centralized data initiatives (i.e. SEIS / Maritime Spatial Planning, etc).	3.6. REMPEC to liaise with UNEP MAP components (i.e. INFO RAC. SPA RAC/ Plan Bleu, PAP/RAC, etc) to avoid duplications. 3.7. REMPEC to investigate European centralized data initiatives (i.e. SEIS / Maritime Special Planning, etc) to avoid duplications.

4. RISK ASSESSMENT WITHIN THE CONTINGENCY PLANNING		
Issue	**Actions required**	**Proposed entity in charge**
The Workshop recognized that: - no common risk assessment standards is applied in Mediterranean countries - there is usually no implementation of risk assessment within the contingency plans - the expectations upon oil and gas operators vary from country to country	**The Workshop agreed on the need for harmonization of the risk assessment approach across countries.** The Workshop recommends: a) to define terminology and concepts (i.e. Sensitivity and vulnerability); b) to integrate effect on water column and sea bottom in risk assessment; c) to integrate offshore activities in the study; d) to consider EC forthcoming regulations on offshore activities; e) to carry out a gap analysis on EC, regional and national regulation; f) to integrate high seas and g) to integrate all countries in the studies.	4.1. MTWG and industry to define 4.a) through correspondence group 4.2. REMPEC and partners to consider 4.b, 4.c and 4.f in MEDESS-4MS 4.3. REMPEC to liaise with corresponding body in charge of the offshore protocol (see 4.c, 4.d and 4.e) 4.4. REMPEC and partners to consider under MEDESS-4MS work package 4 for integration of all countries in a second development stage or through other projects covering the rest of the Mediterranean countries.
The accessibility of the risk assessments among countries was raised to enable comparison of results between countries and regions	h) To encourage national decision makers and promote the benefits of sharing i) To agree between countries on sharing the results of risk assessments j) To consider giving open access to other countries risk assessment through the tool to be developed through MEDESS-4MS	4.5. Countries 4.6. Countries 4.7. REMPEC and partners to consider risk assessment accessibility (4.j) under MEDESS-4MS work package 4

5. RESPONSE CAPACITY		
Issue	**Actions required**	**Proposed entity in charge**
The Workshop discussed the need for additional tier 2 and tier 3 response equipments capacities across the Mediterranean region. The inventory of response capacity was considered insufficient in the region. MOIG suggested implementation of tier 2 in each country through mutual aid between oil companies IPIECA highlighted the need raised at international level for stockpile inventory stressing that the regional approach was considered the most viable one.	The Workshop recommended: a) to establish a forum to exchange information and assess the situation b) to carry out an inventory of response capacity c) to draft a template for equipment inventory for government and industry d) to upgrade online response capacity inventory e) to improve the chain of supply (e.g. dispersant)	5.1. REMPEC to establish the MTWG on response capacity inventory 5.2. MOIG with the support of IPIECA to establish a similar Oil industry group 5.3. All countries and the oil industry to participate in the inventory 5.4. REMPEC and MOIG (with the support of IPIECA) to draft the template 5.5. REMPEC to subsequently review the section on equipment of its country profile (website) 5.6. MOIG to develop an oil industry response capacity data 5.7. IPIECA to inform the relevant parties about any development on chain of supply
It was also recognized that regional or international assistance through the provision of equipment or of experts would be efficient only if customs clearance and immigration mechanism were in place in each country. IPIECA mentioned the work carried out at international level through the IMO OPRC-HNS Technical Group on procedures for mutual assistance.	f) To disseminate existing Mediterranean Principles and guidelines on the matter[i] g) To keep informed all parties concerned about the development of guidelines for mutual assistance procedures h) To improve the customs clearance and immigration mechanism i) To define in every national contingency plan the procedures to seek for international assistance	5.7. REMPEC to disseminate the material by email to countries, MOIG and IPIECA. 5.8. IPIECA to inform the relevant parties about the development of guidelines for mutual assistance procedures 5.9. Countries to review their national and sub-regional contingency plan if required (see 5.g and 5.h)

5. RESPONSE CAPACITY (cont.)		
Issue	**Actions required**	**Proposed entity in charge**
Countries find it difficult to assess the required response capacity based on a risk assessment.	j) to investigate methods/guidelines to assess response capacities commensurate to the risk (i.e. IMO Manual on oil spill risk evaluation and assessment of response preparedness) k) To assess the need for further guidance	5.10. REMPEC and MOIG with the support of IPIECA to disseminate available information and assess the need for further guidance
The risk assessment should be used to determine the means required to apply mutual response through REMPEC.	l) To assess/develop country response capacities on the basis of a risk assessment when the above task will be completed	N/A
Response capacity effect on reduction of risk	m) To integrate in the risk assessment tool in a second development phase when the above task will be completed	N/A
Training and exercising	n) Frequent trainings and exercises to identify the opportunities of improvement; o) Review exercise setting to be more realistic and p) Objective debriefing of exercise to review contingency plans	5.12. To be considered by countries and industry when carrying out exercises (see 5.n, 5.o and 5.p) 5.13. REMPEC to continue capacity building in the region 5.14. Industry to continue capacity building
Treatments for oil spill to be considered as parameters: - In situ burning pollution - Use of dispersants	No action was required at this stage as the tool will not consider **YET** the effects of response activities in the tool.	N/A

[i] Guidelines for co-operation in combating marine oil pollution in the Mediterranean adopted, Principles and guidelines concerning cooperation and mutual assistance which contained the following: Principles and Guidelines concerning the role and responsibilities of experts sent on mission by the Centre, following the request of a State in case of emergency, and duties and obligations of States towards them; Principles and Guidelines concerning the sending, receiving and returning of equipment in case of international assistance operation; Principles and Guidelines concerning arrangements and operational procedures which could be applied in case of a joint operation; Check-list of procedures to be followed and persons to be contacted in case of emergency; and Check-list of principal institutional provisions aimed at facilitating mutual assistance in case of a major marine pollution accident which should be included in national contingency plans; Guidelines concerning the exchange of liaison officers between the contracting parties in case of response operations involving several states", Guidelines concerning arrangements which might be made with a view to ensuring, in case of an accident, liaison between the Governmental Authorities and other interested Parties"

ANNEX VI

Recommendations and conclusions per implementation entity

Countries

SOURCE OF RISK:

- To identify, gather and provide to REMPEC sources of data (see Action 1.a, 1.b in Conclusions and Recommendations).

METEO-OCEANO DATA:

- Countries not member of MOON to promote the benefit of becoming member to the relevant national meteorological and oceanographic institute, to consider the integration of national models in MOON (2.a, 2.c, 2.d);
- to provide high resolution data (2.e).

SENSITIVITY MAPPING:

- To nominate national expert on sensitivity mapping (covering environment and socio-economical aspects) (3.a,b,c);
- to contribute through the MTWG to the inventory of existing sources of data on environmental and socio-economic mapping at national level (3.d);
- to provide REMPEC with relevant data on fishing activities in high seas (3.f).

RISK ASSESSMENT WITHIN THE CONTINGENCY PLAN:

- To promote the benefits of sharing information within the countries of the region (4.h);
- to agree on the access right of the information (4.i,j).

RESPONSE CAPACITY:

- To participate in the response capacity inventory (5.a,b);
- to review their national and sub-regional contingency plan if required, and keep informed all parties concerned about the development of guidelines for mutual assistance procedures (5.g);
- to improve the customs clearance and immigration mechanism if required (5.h);
- to assess/develop country response capacities on the basis of a risk assessment, when REMPEC and MOIG will have disseminated the available information on response capacities (5.l);
- to consider non-equipment response capacity when carrying out exercises (5.n,o,p), by:
    - frequent trainings and exercises to identify the opportunities of improvment;
    - review exercise setting to be more realistic;
    - objective debriefing of exercise to review contingency plans.

REMPEC

METEO–OCEANO DATA:

- To keep Countries informed about development of 3D forecast oil spill modelling from MOON (see 2.f in Conclusions and Recommendations).

SENSITIVITY MAPPING:

- To establish the MTWG on risk assessment (3.a, b, c);
- to contact UNEP MAP components to involve them in the process of harmonization of sensitivity index and criteria (3.a, b, c);
- to liaise with UNEP MAP components (i.e. INFO RAC. SPA RAC/ Plan Bleu, PAP/RAC, etc) to avoid duplications (3.e);
- to investigate European centralized data initiatives (i.e. SEIS / Maritime Special Planning, etc) to avoid duplications(3.e);
- to consult the relevant UNEP MAP components to investigate fishing activities in high seas (3.f).

RISK ASSESSMENT WITHIN THE CONTINGENCY PLAN:

- Through the MTWG, to define terminology and concepts (i.e. Sensitivity and vulnerability) in order to harmonize the risk assessment approach across countries, through correspondence group (4.a);
- to liaise with corresponding body in charge of the offshore protocol, to integrate offshore activities in the study, to consider EC forthcoming regulations on offshore activities and to carry out a gap analysis on EC regional and national regulation (4.c, d, e).

RESPONSE CAPACITY:

- establishment of the MTWG on response capacity inventory (5.b);
- to subsequently review the section on equipment of its country profile, on the website (5.d);
- to disseminate Mediterranean Principles and guidelines on Response Capacity by email to countries, MOIG and IPIECA (5.f);
- to continue non-equipment response capacity building in the region (5.n, o, p).

MOIG

SOURCE OF RISK:

- To consult and collect from the oil industry relevant data, to improve the data accessibility for maritime traffic, operations and terminals as well as offshore platform (see Action 1.a, b in Conclusions and Recommendations).

SENSITIVITY MAPPING:

- To establish, with the support of IPIECA, an oil industry correspondence group to involve them in the process of harmonization of sensitivity index and criteria (3.a, b, c).

RISK ASSESSMENT WITHIN THE CONTINGENCY PLAN:

- Through MTWG and industry, to define terminology and concepts (i.e. Sensitivity and vulnerability) to harmonize the risk assessment approach across countries, through correspondence group (4.a).

RESPONSE CAPACITY:

- To establish, with the support of IPIECA, an Oil industry group to exchange information and assess the situation on response capacities across the Mediterranean region (5.a);
- to develop an oil industry response capacity data (5.b).

REMPEC & MOIG (with the support of IPIECA)

SOURCE OF RISK:

- To identify potential sources of data, other than countries (see 1.a in Conclusions and Recommendations);
- to prepare, a template for collection of old data (prior to 2010) focusing on persistent oil (Bunker & cargo) and tanker vessels (1.c, d, e, f).

RESPONSE CAPACITY:

- To draft a template for equipment inventory for government and industry (5.c);
- to disseminate available information on response capacities assessment and evaluate the need for further guidance (5.j, k).

IPIECA

SOURCE OF RISK:

- To support MOIG and REMPEC in:
    - identifying potential sources of data other than countries (see 1.a in Conclusions and Recommendations);
    - to prepare a template for collection of old data (prior to 2010) focusing on persistent oil (Bunker & cargo) and tanker vessels (1.c, d, e, f).

SENSITIVITY MAPPING:

- To support MOIG in establishing an oil industry correspondence group to involve them in the process of harmonization of sensitivity index and criteria (3.a, b, c).

RESPONSE CAPACITY:

- To support MOIG in establishing an oil industry group to exchange information and assess the situation on response capacities across the Mediterranean region (5.a);
- to support MOIG and REMPEC in drafting a template for equipment inventory for government and industry (5.c);
- to inform the relevant parties about any development on chain of supply (e.g. dispersant) (5.e);
- to inform the relevant parties about the development of guidelines for mutual assistance procedures (5.f, g);
- to support REMPEC and MOIG disseminating available information on response capacities assessment and evaluating the need for further guidance (5.j, k).

MTWG and Industry joint activities

RISK ASSESSMENT WITHIN THE CONTINGENCY PLAN:

- To define terminology and concepts (i.e. Sensitivity and vulnerability) through correspondence group (4.a);

RESPONSE CAPACITY:

- Industry to consider non-equipment response capacity when carrying out exercises (5.n,o,p), by:
  - frequent trainings and exercises to identify the weaknesses;
  - review exercise setting to be more realistic;
  - objective debriefing of exercise to review contingency plans.

MOON

METEO–OCEANO DATA:

- To consider under MEDESS-4MS the integration of existing models in a single reliable tool (see 2.c in Conclusions and Recommendations);
- to keep Countries informed about development of 3D forecast oil spill modelling, through REMPEC (2.f).

MOON and REMPEC joint activities

METEO–OCEANO DATA:

- To further promote the existing ERO bulletin (2.d);
- to keep Countries informed about development of 3D forecast modelling (2.f).

REMPEC and partners joint activities

SOURCE OF RISK:

- To consider data maintenance under MEDESS-4MS work package 4 (see 1.g in Conclusions and Recommendations).

METEO–OCEANO DATA:

- To consider the development of an online real time forecasting model under MEDESS-4MS work package 4 (2.b).

RISK ASSESSMENT WITHIN THE CONTINGENCY PLAN:

- To consider in MEDESS-4MS:
  - of risk in water column and sea bottom (4.b);
  - integrating offshore activities in the study (4.c);
  - integrating high seas in the study (4.f);
- to consider under MEDESS-4MS work package 4 for integration of all countries in a second development stage or through other projects covering the rest of the Mediterranean countries (4.4);
- to consider risk assessment accessibility (4.j) under MEDESS-4MS work package 4.

ANNEX VII

Links between the recommendations and conclusions of MEDEXPOL 2011 and the MGICAP

MGICAP Recommendations and Strategic Objectives	MGICAP Actions Recommendations	Workshop Actions Recommendations (Annex IV to the present report)
STRATEGIC PLANNING		
B-1 Sensitivity Mapping p 23	Sensitivity mapping should be simple and adaptable for each country, and usable by the industry, based on international recognized sensitivity mapping methodology, (i.e. ESI): - REMPEC & MOIG to follow up the development of IMO OPRC-HNS Technical Group guidelines on sensitivity mapping - MOIG to encourage the sharing of information and resources with the countries Industry to provide to the National Authority its sensitivity maps	3.a) : To define harmonized sensitivity index and criteria. 3.d): To identify and contact existing sources on environmental and socio-economic mapping at national and regional level.
B-2 Risk Assessment p 24 - 25	Publication of a ***Regional Harmonized Risk Assessment methodology*** by REMPEC & MOIG Industry to provide all the information about their activities considered as potential sources of hazard	4: The Workshop agreed on the need for harmonization of the risk assessment approach across countries, see 4.a to 4.j.
OPERATIONAL CONTINGENCY PLAN		
C-1 Implementation of the NACP and Contingency Plans p 28 - 30	- REMPEC to provide technical and legal guidelines and information - Countries to review and improve its national response organisation - MOIG to review its website to make available relevant information on the composition of the National oil industry Preparedness and Response comittee, Oil Industry Regional Technical working groups and the contact details of the in-country oil industry focal points (Strenghtenning the role of the Industry and MOIG, p11)	5.j), k): REMPEC and MOIG with the support of IPIECA to disseminate available information and assess the need for further guidance
C-2 Adoption Publication and Update of the NAPCP p 31	Publication of updated NAPCP and dissemination to all stackholders Reception of Contingency Plans and list of the resources and emergency contact details of the industry by the National Authorities	5.a) to establish a forum to exchange information and assess the situation 5.b) to carry out an inventory of response capacity

RESPONSE RESOURCES		
D-1 Response Resources and Capabilities p 32 - 33	Countries & Industry: - All required Tier1 oil spill incident response resources in place - Arrangements in place for the mobilization of Tier 2 and 3 resources by the National Authorities - Provision to the National Authorities of the inventory of the industry in the country and arrangement in place to access Tier 2 and 3 resources REMPEC to continue re-enforce capabilities and tools of the countries, and to update the regional inventory of resources that can be used for assistance.	5.a) to establish a forum to exchange information and assess the situation 5.b) to carry out an inventory of response capacity 5.c) to draft a template for equipment inventory for government and industry 5.d) to upgrade online response capacity inventory
D-2 Training and Exercise Program p 33 - 34	REMPEC to continue to support the training and exercises in the region, disseminate training material and support documentation to the countries	5.n), o), p): REMPEC to continue capacity building in the region
(SUB-)REGIONAL COOPERATION AND ASSISTANCE		
E-2 Specific arrangements for Assistance p 36	Countries to consider within their NAPCP and within their sub-regional plan specific arrangements for trans-boundary over flight and reception / management of the assistance, particularly in case of Tier 3 spill	5.g), h): Countries to review their national and sub-regional contingency plan if required