

FINAL DRAFT

ACTION PLAN

**FOR THE DEVELOPMENT OF NATIONAL SYSTEMS AND
REGIONAL MECHANISMS
FOR PREPAREDNESS AND RESPONSE TO
MAJOR MARINE OIL SPILLS IN
THE RED SEA AND GULF OF ADEN**

June 2005



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The Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) is executing a Strategic Action Programme (SAP) which includes a number of Components designed to strengthen Regional capacity to protect and conserve the Marine Environment. Component 2 of the SAP has focused on the Reduction of Navigation Risk and of Marine Pollution.

Under Component 2, and with the contribution of the International Maritime Organization (IMO), PERSGA organized a regional workshop in Djibouti on hydrographic surveying, contingency planning and a study of pollution response centres. The workshop, held in July 2001, recommended that Component 2 should focus on the preparation of a draft Action Plan and a Project Document to support the development of National Systems and a Regional Contingency Plan for the Red Sea and Gulf of Aden. The purpose of the Project Document is to seek donor support for those aspects of the Action Plan which require external funding.

In recognition of its mandate to ensure 'Safe, secure, and efficient shipping on clean oceans', and in particular to assist States in the implementation of the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC), IMO has acted as the lead agency in the preparation of this Action Plan.

The draft Action Plan was prepared by Peter Hayward Associates under contract to IMO in 2002. A Workshop was then held by the PERSGA Navigation Working Group in Hurghada in October 2003, at which the Draft Action Plan and Draft Project Document were reviewed and certain amendments to these were agreed. IMO was asked to arrange for the amendments to be incorporated into revised documents. Captain Roy Facey, Navigation Safety Adviser to PERSGA, was contracted by IMO to carry out the revision, as presented in this amended Action Plan and its associated Project Document.

PERSGA wishes to express its appreciation to IMO for the support given to the development of the Action Plan on Contingency Planning and the Project Document and for supporting Workshops at which these have been reviewed. In particular it wishes to thank IMO for contracting Peter Hayward Associates to prepare these documents, and Captain Facey to incorporate the agreed amendments into the Action Plan and the Project Document. It recognizes that the contribution of Working Group members from the PERSGA States, by offering constructive criticism and comments, has been invaluable.

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TABLE OF CONTENTS

1.	INTRODUCTION	4
1.1	The Red Sea and Gulf of Aden	4
1.2	Shipping Traffic	5
1.3	Oil and Gas Production	6
1.4	Rationale for the Action Plan.....	7
2.	INSTITUTIONAL AND LEGAL BASIS	8
2.1	The Jeddah Convention.....	8
2.2	PERSGA	10
2.3	The OPRC Convention	10
3.	COUNTRY PROFILES.....	13
3.1	Djibouti	14
3.2	Egypt.....	15
3.3	Eritrea.....	16
3.4	Jordan.....	16
3.5	Saudi Arabia.....	17
3.6	Somalia	18
3.7	Sudan.....	18
3.8	Yemen	19
3.9	Summary of Status of National Systems for Oil Spill Preparedness and Response....	21
4.	LONG-TERM OBJECTIVES	22
4.1	National Systems for Oil Spill Response.....	22
4.2	Regional Contingency Plan and Related Activities	23
4.3	Support for the MEMAC	24
4.4	Action Plan Activities	24
5.	DEVELOPMENT OF NATIONAL SYSTEMS FOR OIL SPILL RESPONSE	25
5.1	Training.....	25
5.1.1	High Level Seminars for Government Administrators and Senior Managers	25
5.1.2	Regional Workshop on Contingency Planning.....	25
5.1.3	National Training Courses for Supervisors and On Scene Commanders	26
5.2	National Systems for Oil Spill Response.....	26
5.2.1	Enhancement or Development of National Contingency Plans.....	26
5.2.2	Assessment of Equipment Needs.....	28
5.2.3	Establishment of National Legal Frameworks.....	30
5.3	Implementation of Relevant IMO and Other International Conventions	30
5.3.1	MARPOL 73/78.....	32
5.3.2	Liability and Compensation.....	32
6.	DEVELOPMENT OF REGIONAL CONTINGENCY PLAN AND RELATED ACTIVITIES	34
6.1	Assistance for Eritrea	34
6.2	Development of a Regional Contingency Plan.....	35
6.3	Sub-Division of the Red Sea and Gulf of Aden for Exercises.....	39
6.3.1	The Need for Exercises	40
6.3.2	Communications Exercises.....	40
6.3.3	Equipment Deployment Exercises	40
6.4	Regional Training Programme.....	41
6.4.1	High Level Seminar for Government Administrators and Senior Managers	41
6.4.2	Regional Training Course for Supervisors and On Scene Commanders	42

6.4.3	Regional “Train the Trainers” Course	42
6.4.4	Regional Workshop on the Use of Dispersants	42
6.4.5	Regional Workshop on Sensitivity Mapping	43
6.4.6	Regional Workshop on Risk Assessment Analysis	43
6.4.7	Regional Workshop on Oil Spill Modelling	44
7.	SUPPORT FOR THE MARINE EMERGENCY MUTUAL AID CENTRE (MEMAC) ..	45
	
7.1	Background	45
7.2	Present Situation	45
8.	CONCLUSIONS.....	46
ANNEX 1	ACTION PLAN ACTIVITIES	47
ANNEX 2	PROJECT IMPLEMENTATION PLAN	51
ANNEX 3	OUTLINE PROGRAMME FOR HIGH LEVEL SEMINARS FOR GOVERN- MENT ADMINISTRATORS AND SENIOR MANAGERS	53
ANNEX 4	OUTLINE PROGRAMME FOR REGIONAL WORKSHOP ON CONTIN- GENCY PLANNING	54
ANNEX 5	OUTLINE PROGRAMME FOR NATIONAL TRAINING COURSES FOR SUPERVISORS AND ON-SCENE COMMANDERS.....	55
ANNEX 6	SUGGESTED OUTLINE OF A NATIONAL CONTINGENCY PLAN.....	56
ANNEX 7	SUGGESTED OUTLINE OF A NATIONAL LEGAL FRAMEWORK.....	58
ANNEX 8	SUGGESTED OUTLINE FOR THE REGIONAL CONTINGENCY PLAN....	59
ANNEX 9	OUTLINE PROGRAMME FOR THE “TRAIN THE TRAINERS” COURSE.	61
ANNEX 10	OUTLINE PROGRAMME FOR THE REGIONAL WORKSHOP ON THE USE OF DISPERSANTS	62
ANNEX 11	OUTLINE PROGRAMME FOR THE REGIONAL WORKSHOP ON SENSITIVITY MAPPING	63
ANNEX 12	OUTLINE PROGRAMME FOR THE REGIONAL WORKSHOP ON RISK ASSESSMENT ANALYSIS	65
ANNEX 13	OUTLINE PROGRAMME FOR THE REGIONAL WORKSHOP ON OIL SPILL MODELLING	66
ANNEX 14	OUTLINES OF EQUIPMENT DEPLOYMENT EXERCISES	68
ANNEX 15	OBJECTIVES OF THE MEMAC	69

DRAFT ACTION PLAN

FOR THE DEVELOPMENT OF NATIONAL SYSTEMS AND REGIONAL AND REGIONAL MECHANISMS FOR PREPAREDNESS AND RESPONSE TO MAJOR MARINE OIL SPILLS IN THE RED SEA AND GULF OF ADEN

1. INTRODUCTION

1.1 The Red Sea and Gulf of Aden

The Red Sea is a narrow elongated body of water running NNW-SSE between the land masses of Africa and Arabia. At its northern end it forks to form the Gulfs of Suez and Aqaba while, in the south, it meets the Gulf of Aden and the Indian Ocean through a narrow strip of water 26 km wide and 200 m deep, known as Bab El Mandeb, separating Djibouti in Africa from Yemen in Arabia. The Gulf of Aden is closely associated with the Indian Ocean and lies on the north western edge of this water body.

The Red Sea is approximately 360 km across at its widest point and is about 1,932 km in length. It has a total surface area of 438,000 sq km and a maximum depth of 2,246 m. The Gulf of Aden, as defined by the Protocol relating to the Jeddah Convention (see below), is bounded by the following rhumb lines: from Ras Dharbat Ali (16° 39' 00" N, 53° 03' 05" E), to a point (16° 00' 00" N, 53° 25' 00" E), thence to a point (12° 40' 00" N, 55° 00' 00" E) lying ENE of Socotra Island, thence to Ras Hafun (10° 26' 00" N, 51° 25' 00"E).¹

Nine countries border the Red Sea and Gulf of Aden: Djibouti, Egypt, Eritrea, Israel, Jordan, Saudi Arabia, Somalia, Sudan and the Yemen. Israel is not a member of the Jeddah Convention, but has well developed facilities and mechanisms for combating oil spills in its narrow coastal area at the northern end of the Gulf of Aqaba; it has also developed co-operation arrangements with its neighbours Egypt and Jordan in the framework of the Upper Gulf of Aqaba contingency planning project. Israel is not featured in this Action Plan. Eritrea is also not a member of the Jeddah Convention and PERSGA although, because of its extensive Red Sea coastline, it is suggested that Eritrea should fall within and benefit from the scope of this Action Plan.

The Red Sea and Gulf of Aden are typically bounded by a narrow (150 km) coastal strip, backed by high hills or mountains which rise to 3,000 m in some regions. The sea bed can be visualised as three-tiered, with a central trough reaching to depths of more than 2,000 m. This trough is absent from the Gulf of Suez and in the vicinity of Bab El Mandeb. From this trough, the sea bed rises, abruptly, to a terrace at a depth of between 1,000 m and 600 m; this terrace rises again to a continental shelf which is rarely deeper than 300-400 m, and is often much shallower. The width of this continental shelf varies considerably down the Red Sea and in the Gulf of Aden and is of major significance in determining the nature and distribution of shallow water marine habitats. It is on this shelf that almost all the offshore

¹ PERSGA 1981

coral reefs and islands are located, generally occurring where faulting within the shelf floor has lifted parts of the sea bed close to, or above, the water's edge.

Prevailing wind direction and rainfall tend to be determined by the north-east monsoon in winter and the south-west monsoon in the summer. The prevailing wind direction is NNW throughout the year in the northern Red Sea except for occasional southerly winds that blow during the winter months. In the south (south of 20°N) the prevailing wind direction in the summer is northerly, whilst in the winter it is SSE. An intermediate situation holds in the central Red Sea between these northerly and southerly influences and this area is characterised by relatively low pressure calms. In addition, in the coastal zone, there is a diurnal change of wind direction from offshore during the day to onshore at night driven by differential heating and cooling of the land and sea. In the Gulf of Aden the high surrounding mountains reduce the influence of the south-west monsoon so that the prevailing wind direction is north-west in the summer. During the rest of the year the north-east monsoon gives rise to easterly winds over the Gulf which veer to the south east towards Bab El Mandeb.

The Red Sea and Gulf of Aden are linked through the Bab El Mandeb. This acts as a shallow sill which physically limits the influence of the Indian Ocean on the Red Sea. Tidal range in the Red Sea is low. The average spring range is about 0.5 m but decreases from both ends towards the centre where, near Port Sudan and Jeddah, there is no appreciable diurnal tide. Another nodal zone with negligible tide occurs just to the north of Bab El Mandeb. Tidal range in the Gulf of Aden is greater than in the Red Sea, reflecting the unrestricted influence of tides within the Indian Ocean. The average Spring range at the Port of Aden is 1.7 m.

Many water currents in the Red Sea are driven by wind, which in turn reflect the influence of the Indian Ocean monsoons as well as the daily and seasonal differential heating of the land and sea. Surface water currents tend to be anti-clockwise with low salinity water travelling north up the east coast of the Red Sea, becoming more saline as it crosses to the west, and then travelling south down the west coast of the Red Sea. This general pattern does not necessarily hold locally, due to deflection and eddying caused by the shape of the coastline and the presence of offshore reef complexes. The currents tend to be slow moving and ill-defined.²

1.2 Shipping Traffic

The Red Sea and Gulf of Aden form part of the major east-west shipping route passing through the Suez Canal, which carries around 7% of global seaborne trade. Some 14,000 deep sea vessels totalling 380 million net registered tonnage (NRT) pass through the Suez Canal each year. The great majority of these vessels also pass through the Straits of Bab El Mandeb at the southern entrance to the Red Sea, entering and leaving the Gulf of Aden via this narrow passage.

² "Management and Conservation of Renewable Marine Resources in the Red Sea and Gulf of Aden Region", UNEP Regional Seas Reports and Studies Number 64, 1985. See also British Admiralty "Red Sea and Gulf of Aden Pilot", NP64, 2003.

Of the annual trade in crude oil and petroleum products which passes through Egypt from the Red Sea to the Mediterranean (and vice versa), some 30% (around 50 million tonnes of crude oil) is carried through the Suez Canal and 70% (around 120 million tonnes of crude oil) are shipped through the SUMED pipeline. The southward Suez Canal traffic amounts to about 250 tankers carrying 2 million tonnes of crude oil and 8 million tonnes of refined products. The northwards traffic amounts to about 1,250 tankers transporting 20 million tonnes of crude oil and 20 million tonnes of refined products. This oil traffic represents approximately 14% of the total traffic passing through the Canal. Since oil/petroleum/chemical tankers are commonly dedicated to certain types of trades and laden trips, there are corresponding return trips in ballast. About 12,000 large commercial general/container/dry bulk vessels transit the Canal with more than half being southbound.³ The Suez Canal is presently being prepared to accommodate the transit of loaded tankers up to 350,000 dwt that otherwise would need to pass from the Persian Gulf via South Africa. Therefore it can be expected that the amount of oil transiting through the Red Sea and the Gulf of Aden will increase in future years.

In addition, experience shows that spills of heavy fuel oils, whether resulting from cargo carried on tankers or bunker fuels used by ships in general, are amongst the most problematical because of their highly persistent nature when spilled. Such oil used by ships in general makes all merchant ships high risk factors because they have the potential to cause widespread contamination of coastlines should they be involved in a collision or grounding. The sheer volume of ship traffic in the region, with approximately 25,000-30,000 transit of merchant ships⁴, makes the Red Sea and Gulf of Aden region particularly vulnerable to damage from shipping activities.

Recognising the risks imposed by this volume of shipping traffic, an early activity of the Strategic Action Programme (SAP) for the Red Sea and Gulf of Aden was the funding of a navigational risk assessment by the consultants Det Norske Veritas (DNV). The DNV report identified five main "hot spots". Based on this study, current activities include the designation of Traffic Separation Schemes, other routing measures and other navigation aids. DNV has estimated that if the routing measures are fully implemented, an 80% reduction in the risk of navigation accidents in the region will follow.⁵

1.3 Oil and Gas Production

Although shipping traffic may pose the greatest risk of major oil pollution incidents in the region and possibly accounts for a major part of the tar balls and oily residues washed up on Red Sea coasts, activities concerned with the exploration and production of oil and gas also constitute a significant potential source of marine oil pollution. The Middle East as a whole accounts for more than half of the world's proven oil reserves. The largest oil producer in the region is Saudi Arabia with total exports amounting to 175 million tonnes per annum (mta) of crude oil exports and 97 mta of exported refined petroleum products.

³ Study on the Institutional Framework for the MEMAC and oil spill response centres in the region, including Djibouti, prepared by Cdr Trygve Meyer and Capt Mahmoud Ismael Mohamed, 2001.

⁴ Lintner and Others, 1995.

⁵ Major new routing measures for the Southern Red Sea were surveyed under a contract let by PERSGA, submitted to IMO, adopted and came into force in July 2003. Further routing measures for the Red Sea are planned, intended to separate marine through traffic along the international Red Sea route.

The Gulf of Suez field in Egypt produces 36 million tonnes of oil and gas annually. Yemen has reserves of both crude oil and liquefied gas, producing approximately 25 mta.

There are extensive oil reserves in southern Sudan and pipelines have been constructed to transport the crude oil 1,500 km from the Heglig and Adariel oil fields to the Sudanese coast where the Bashayer crude oil export terminal, 24 km south of Port Sudan, is expected to eventually reach an export capacity of 25 mta.

There has been exploration for offshore petroleum and natural gas reserves off the coast of Eritrea.

1.4 Rationale for the Action Plan

It is this combination of a regional sea which is a fragile ecosystem in need of protection, on the one hand, and the powerful intervention of man's activities through shipping traffic and oil and gas production and exploration, on the other hand, which pose significant risks to that ecosystem, that underlies the basis for this Action Plan. The need for the conservation and protection of the Red Sea environment has long been recognised by the riparian States, as is evidenced by their united action in the framework of the Jeddah Convention. The risks to the Red Sea and Gulf of Aden environment have increased since the signing of the Convention in 1984. In addition to the increase in shipping traffic and oil and gas production activity referred to above, the marine environment has come under increasing threat from the development of coastal tourism developments, increased port activities, and more intensified fishing activities; all of which have placed added stress on the fauna and flora of the marine ecosystem. In particular, the sensitive coral reefs which are such an important feature of the health of the Red Sea environment have come under increasing stress due to all these anthropogenic activities.

For the reasons described in sections 1.2 and 1.3, oil pollution remains an ever present and increasing threat to the marine environment of the Red Sea and Gulf of Aden. It is, however, a threat whose impact can be reduced to some extent by adequate measures for preparedness taken at the national level and increased co-operation in response at the regional level between the States whose mutual interests may be affected. It is for this reason that the Action Plan has been prepared for PERSGA and focuses on:

- the development of national systems for oil spill preparedness and response;
- the development of a regional framework of co-operation between neighbouring States;
- the provision of support for a Marine Emergency Mutual Aid Centre (MEMAC) to co-ordinate activities and assist Parties in their preparedness and response plans.

2. INSTITUTIONAL AND LEGAL BASIS

2.1 The Jeddah Convention

The legal and institutional framework for environmental co-operation amongst the countries surrounding the Red Sea and Gulf of Aden is based on the Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment, 1982, known as the Jeddah Convention. The Convention includes a Protocol concerning Regional Co-operation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency.

Under this Protocol, the Contracting Parties agree to co-operate in taking necessary and effective measures to protect the coastline and related interests of one or more of the Parties from the threat and effects of pollution due to the presence of oil or other harmful substances in the marine environment resulting from marine emergencies (Article II (1)).

The Contracting Parties also endeavour to maintain and promote, either individually or through bilateral or multilateral co-operation, their contingency plans and means for combating pollution in the Red Sea and Gulf of Aden by oil and other harmful substances. These means shall include, in particular, available equipment, ships, aircraft and manpower prepared for operations in cases of emergency (Article II (2)).

Obligation to inform

There is also an obligation (Article V) on each Contracting Party to provide the Marine Emergency Mutual Aid Centre (the Centre, currently being established) and the other Contracting Parties with information concerning:

- a) its appropriate authority (or authorities) responsible for:
 - combating or otherwise operationally responding to marine emergencies;
 - receiving and coordinating information on marine emergencies;
 - coordinating available national capabilities for dealing with marine emergencies in general within its own Government and with other Contracting Parties.
- b) its laws, regulations and other legal instruments relating generally to matters addressed in the Protocol, including those concerning the structure and operation of the designated “appropriate authority” referred to above.
- c) its national marine emergency contingency plans.

Furthermore, the Contracting Parties have agreed (Article VI) to provide each other with information concerning:

- existing and new methods, techniques, materials and procedures relating to marine emergency response,
- existing and planned research, their results and development in the above-mentioned areas.

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Reporting obligations

Article VII places an obligation on each Contracting Party to direct its appropriate officials to require masters of ships, pilots of aircraft and persons in charge of offshore platforms and other similar structures operating in the marine environment and under its jurisdiction to report the existence of any marine emergency to the appropriate national authority (and to the Centre). This includes the substantial pollution of the marine environment by oil or other harmful substances, and the imminent threat of such pollution.

Any Contracting Party receiving such a report should promptly inform the following authorities:

1. the Marine Emergency Mutual Aid Centre (when it is fully established);
2. all other Contracting Parties;
3. the flag State of any foreign ship involved in the marine emergency concerned.

It is open to any Contracting Party which transmits information to the Centre or other Contracting Parties to specify that the information should not be divulged to any other person, government, public or private organisation without the specific authorisation of the former Contracting Party (Article IX).

Obligation to respond

Article X requires that any Contracting Party faced with a marine emergency situation shall:

- a) take every appropriate measure to combat pollution and/or rectify the situation;
- b) immediately inform all other Contracting Parties (either directly or through the Centre) of any action which it has taken or intends to take to combat the pollution;
- c) make an assessment of the nature and extent of the marine emergency (either directly or with the assistance of the Centre);
- d) determine the necessary and appropriate action to be taken with respect to the marine emergency in consultation with other Contracting Parties, affected States and the Centre.

Assistance between Contracting Parties

Any Contracting Party requiring assistance in a marine emergency response may call for assistance directly from any other Contracting Party (or through the Centre). The Contracting Parties to whom a request is made shall use their best endeavours within their capabilities to render the assistance requested (Article XI).

The assistance may include:

- personnel, material and equipment, including facilities or methods for the disposal of the recovered pollutant;
- surveillance and monitoring capacity;
- facilitation of the transfer of personnel, material and equipment into, out of and through the territories of the Contracting Parties.

Obligations on Contracting Parties to cooperate and coordinate activities

Each Contracting Party has an obligation to establish and maintain an appropriate authority to carry out fully its obligations under the Emergencies Protocol and to co-operate and coordinate its activities with counterparts in the other Contracting Parties (Article XII). The Protocol defines the following as matters to which co-operation and coordination should be directed:

- distribution and allocation of stocks of materials and equipment;
- training of personnel for marine emergency responses;
- marine pollution surveillance and monitoring activities;
- methods of communication in respect of marine emergencies;
- facilitation of the transfer of personnel, equipment and materials involved in marine emergency responses into, out of and through the territories of the Contracting Parties;
- other matters to which the Protocol applies.

2.2 PERSGA

In September 1995, the Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) was established with its headquarters in Jeddah. PERSGA acts as the secretariat for the Jeddah Convention and is the implementing agency for the Strategic Action Programme for the Red Sea and Gulf of Aden. The PERSGA Council is the institution responsible for the approval of this Action Plan.

2.3 The OPRC Convention

The International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC) provides the international legal framework for establishing national and multinational response systems to oil pollution incidents. By a Protocol adopted in 2000, the provisions of the OPRC Convention are extended to other hazardous and noxious substances.

The OPRC Convention was the response of the international community to the severity of oil pollution incidents in the 1980s, notably the Exxon Valdez spill. The aim of the Convention is to provide the framework for international co-operation for combating major oil

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pollution incidents. It recognises, *inter alia*, the importance of effective preparation for combating oil pollution incidents, including the preparation of oil pollution contingency plans.

Article 6 of the Convention places a number of specific obligations on Contracting Parties as follows:

"Each Party shall establish a national system for responding promptly and effectively to oil pollution incidents. The system shall include as a minimum:

- a) the designation of:
 - (i) the competent national authority or authorities with responsibility for oil pollution preparedness and response;
 - (ii) the national contact point or points, which shall be responsible for the receipt and transmission of oil pollution reports as referred to in article 4;
 - (iii) an authority which is entitled to act on behalf of the State to request assistance or to decide to render the assistance requested;
- (b) a national contingency plan for preparedness and response which includes the organisational relationship of the various bodies involved, whether public or private, taking into account guidelines developed by the Organization."

(The Organization referred to is the International Maritime Organization (IMO)).

In addition Article 6(2) imposes the following obligations:

"In addition, each Party, within its capability either individually or through bilateral or multi-lateral co-operation and, as appropriate, in co-operation with the oil and shipping industries, port authorities and other relevant entities, shall establish:

- (a) a minimum level of pre-positioned oil spill combating equipment, commensurate with the risk involved, and programmed for its use;
- (b) a programme of exercises for oil pollution response organisations and training of relevant personnel;
- (c) detailed plans and communication capabilities for responding to an oil pollution incident. Such capabilities should be continuously available; and:
- (d) a mechanism or arrangement to co-ordinate the response to an oil pollution incident with, if appropriate, the capabilities to mobilize the necessary resources."

There is a requirement that information concerning, *inter alia*, the designation of the competent authorities and contact points, the pollution response equipment and the national contingency plan should be provided to IMO (Article 6(3)).

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The 2000 Protocol effectively extends the above provisions to other hazardous and noxious substances.

In addition to the comprehensive obligations to establish national systems for preparedness and response, as set out in Article 6, Article 3 identifies a number of potential pollution sources all of which are required to have "local" oil pollution emergency plans which are to be co-ordinated with the national system. These are:

- ships flying the flag of the Contracting Party, which are required to have on board a shipboard oil pollution emergency plan as required by and in accordance with the provisions adopted by IMO for this purpose (this refers to regulation 26 of Annex 1 of MARPOL 73/78, as amended);
- operators of offshore units. This means any fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation or production activities, or loading or unloading of oil;
- port authorities (where the competent authorities deem it appropriate);
- operators in charge of oil handling facilities, which includes oil terminals and pipelines (where the competent authorities deem it appropriate).

Furthermore, Article 4 of the Convention specifies the procedures which shall be established for reporting without delay any event involving a discharge or probable discharge of oil from ships, offshore units, seaports and oil handling facilities to "the competent national authority". These reporting obligations are to be placed on the masters of vessels or those persons in charge of the offshore units, seaports and oil handling facilities regarding discharges or probable discharges from their *own* activities.

In addition, the masters of vessels and persons in charge of offshore units are required to report without delay *any observed event* at sea involving a discharge of oil or the presence of oil. The Contracting Party's maritime inspection vessels and aircraft, or other appropriate services, are also required to report such incidents and the pilots of civil aircraft should be requested to report any such observed events.

The OPRC Convention recognises the importance of mutual assistance and international co-operation in responding to oil pollution incidents. Consequently Article 5 stipulates that whenever a Contracting Party receives an oil pollution report, it shall assess the nature, extent and possible consequences of the incident and, without delay, inform all States whose interests are affected or likely to be affected by such an incident.

The Convention (Article 10) also encourages Contracting Parties to conclude bilateral or multilateral agreements for oil pollution preparedness.

In conclusion, therefore, the OPRC Convention and its related Protocol provide a comprehensive framework to prepare for and respond to marine pollution incidents by oil or other hazardous and noxious substances. At present, only Djibouti and Egypt are Parties to the OPRC. It is one of the intended objectives of this Action Plan that other Red Sea States will take the necessary action nationally to enable them to ratify the OPRC Convention.

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3. COUNTRY PROFILES

A summary of the principal geographic features of the eight countries is shown in Table 3.1

Table 3.1: Geographic Information

Country	Area (km ²)	Population	Length of coastline (km)	Main ports in Red Sea and Gulf of Aden	Oil and gas activities
DJIBOUTI	23,300	0.5 million	372	Djibouti	No oil production. Significant imports of petroleum products, ship bunkering services
EGYPT	995,500	72 million	Total Red Sea coastline 1,700 Gulf of Suez 700 Gulf of Aqaba 220	Suez-Adabia Ain Sukhna Nuweiba Safaga	37 mta production of oil and gas in Gulf of Suez. 120 mta oil transported through SUMED pipeline. 50 mta oil via Suez Canal.
ERITREA	101,000	4.5 million	970 (+ islands of Dhalak Archipelago)	Aseb Massawa	Exploration for offshore petroleum and natural gas reserves.
JORDAN	88,930	5.6 million	28	Aqaba	
SAUDI ARABIA	2,150,000	25.8 million	Red Sea and Gulf of Aqaba: 1,850	Jeddah King Fahd Industrial Port Yanbu	World's largest oil producer. 175 mta crude exported via Red Sea ports, plus 97 mta refined products.
SOMALIA	627,300	8.3 million	Total: 3,000 Gulf of Aden: 1,000	Bosasso Berbera	40,000 t petroleum products handled +450,000 t crude oil imports Continental shelf may have oil and gas reserves.
SUDAN	2,376,000	30 million	750	Port Sudan Suakin	Oilfields in southern Sudan, >25 mta crude exports anticipated, 0.8 mta trade in refined products (gas oil, mogas, naptha, LPG, Avtur etc.)
YEMEN	528,000	20 million	Total: 2,100 Red Sea: 700 Gulf of Aden: 1,400	Hodeida Aden Mukalla	23 mta crude oil trade, liquefied gas production anticipated. 4.7 mta products, LPG etc. handled at Aden Oil Harbour and other ports.

Note: mta = million tonnes per annum

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A summary of the principal characteristics of each of the eight countries is profiled in the following paragraphs. These focus both on environmental aspects and, in particular, on the current arrangements for oil spill preparedness and response⁶.

3.1 Djibouti

The coastline of Djibouti is about 372 km long. One third faces the narrow Strait of Bab El Mandeb. The remainder of the coastline of Djibouti lies along the narrow Gulf of Tadjoura where a vast reef plateau forms the base of the islands of Musha and Maskali surrounded by extensive coral reefs. Marine tourism is still at an early stage of development and mainly involves diving at the Sept Frères islands, south of Bab el Mandeb.

The port of Djibouti is expanding and contributes significantly to the national economy, serving as a trans-shipment harbour for imports and exports including petroleum products. Djibouti is linked to Addis Ababa by a road network and a 780 km railway link, being at present the major means of access for goods to and from Ethiopia by sea.

The Maritime Affairs Authority is the governmental body responsible for combating all marine oil pollution which occurs outside the port boundaries or which requires response on a national level. The Authority is also charged with managing all regulatory aspects of marine oil pollution. The Djibouti Port Authority is responsible for responding to marine oil spills that occur within the port area, but has no oil spill combating equipment of its own.

A National Contingency Plan (POLMER), based on the French model of crisis management, was prepared in 1990 but not fully implemented. It is said to be in need of updating and completion. Under the NCP an On Scene Commander would be appointed at the time of an incident based on the location of the spill. A Workshop on Contingency Planning was organized by the Ministries of Agriculture, Environment and PERSGA in July 2001 to update the NCP. Subsequently a National Workshop was held in May 2002 with the support of IMO to further examine the NCP. After the 2002 Workshop the Authorities were expected to submit a revised draft of the NCP to IMO for review by IMO experts, following which IMO will convene another Workshop to validate the plan. IMO has not yet received the revised draft NCP to review.

The petroleum companies Mobil, Total and Shell provide ship bunkering services at Djibouti and operate oil storage facilities. Each have their own contingency plans in place to respond to small operational spills originating from their own shared facilities. These plans also allow for a joint industry response to larger spills and co-operation with the designated national authorities should the need arise. It is reported that staff training has been conducted by the oil companies, using the services of OSRL.

The Maritime Affairs Authority operates a large ocean-going tugboat especially equipped for fire fighting, salvage and for combating oil spills offshore. However, the Company plans have not been submitted to the National Authorities, as the NCP has not yet been implemented.

Following a meeting of experts in 1987, an oil spill stockpile centre was established in Djibouti in 1990 and, under the auspices of IMO, was intended to be a sub-regional stockpile

⁶ Sources: the Meyer/Mahmoud study on the MEMAC (2001) and ITOPF country profiles.

servicing the governments of Djibouti, Somalia and Yemen. However, following various political events in the region, the joint stockpile venture has never been activated and the centre is currently managed by the government of Djibouti. The future management and operation of this stockpile, which need some of the equipment to be updated, is one of the questions which will need to be addressed in fulfilment of this Action Plan, particularly in the context of the Regional Contingency Plan as it affects the Gulf of Aden and Southern Red Sea⁷.

3.2 Egypt

Egypt's Red Sea coastline falls into three distinct sections. At the north-western end of the Red Sea the Gulf of Suez is relatively shallow, with water depths of around 50 metres. The coast is mainly sandy with occasional rocky formations. The Gulf of Suez has for many decades been Egypt's main oil production area with over 100 offshore facilities⁸. It is also one of the world's most heavily used sea routes, with vessels passing through the Suez Canal or delivering crude oil to the terminal at Ain Sukhna for transport through the SUMED pipeline.

At the north-eastern end of the Red Sea lies the Gulf of Aqaba, which is flanked on the west by Egypt and on the right by Saudi Arabia, with Jordan and Israel at its northern limit. The Gulf of Aqaba is a continuation of the Rift Valley system and forms a deep trench with depths of over 1,500 metres. Along the Egyptian coastline in the Gulf of Aqaba are many coral reef systems which have spawned huge diving and tourist developments.

The Red Sea Proper is fringed with numerous coral reefs. It is an area of increasing tourism development as the industry gradually moves southwards into new territory and is also an area subject to oil and gas exploration.

The Egyptian Environmental Affairs Agency (EEAA) is the designated competent national authority for oil spill response under the Law for the Environment of 1994. A revised national contingency plan was finalised in 1998 and EEAA also has a Central Operations Room from which to co-ordinate the response to major spills. EEAA is also responsible for the management of the oil spill response centre at Sharm el Sheikh which has been extensively equipped with a combating vessel and booms and skimmers with EU financial support. Similar support from the EU has been provided to equip the port of Nuweiba on the Gulf of Aqaba coastline.

Egypt has four Tier Two oil spill combating centres in the Red Sea: one operated by the Government in the Gulf of Aqaba (at Sharm el Sheikh⁹) and three in the Gulf of Suez operated by petroleum companies. The industry centres are managed by PESCO, a joint venture between the Egyptian company, PETROSAFE and the British company, Briggs Marine. The 10 oil terminals in the Gulf of Suez each have a Tier One response capability. In addition, the Suez Canal Authority has an extensive stockpile of equipment and support vessels for combating spills in the Canal itself or in the approaches to the Canal.

⁷ PERSGA arranged for a further inspection of the Djibouti Stockpile in September 2004 and the preparation of a report on the potential future utilization of this facility.

⁸ Egypt has 26 oilfields in the Gulf of Suez, with 136 oil platforms. It operates 10 oil terminals in this area.

⁹ A second Government operated oil combating centre at Nuweiba is planned

The majority of the oil spill combating equipment is therefore located in the Gulf of Suez and Sharm el Sheikh. The Tier Two centre at Hurghada is primarily concerned with a limited quantity of shoreline protection and beach cleaning equipment. The extensive coastline that extends south of Hurghada to the Sudanese border has little in the way of oil spill response equipment.

3.3 Eritrea

In addition to the mainland coast of almost 1,000 km Eritrea also includes the islands of the Dhalak archipelago, where some exploration for offshore petroleum and natural gas reserves has been reported.

A draft national contingency plan (NCP) was prepared in 1995 under the Department of Maritime Transport, which is the agency responsible for responding to marine oil pollution. The draft NCP has yet to be implemented and there has been little development of the necessary organisational framework and infrastructure. There is no statutory requirement for oil handling facilities or for ports to maintain their own contingency plans or equipment.

The primary method of response in the NCP is the use of dispersants and several dispersant products have been approved for use in Eritrean waters.

Neither the oil industry nor the designated governmental authorities possess significant stocks of equipment.

3.4 Jordan

Jordan's coastline is only 28 km long and is situated at the northern tip of the Gulf of Aqaba. There is major tourism development at Aqaba, the country's only port, which handles oil, containers, bulk, general cargo, livestock and passengers and which is the main centre for economic activity in Jordan. Aqaba and an area around the town have been declared the Aqaba Special Economic Zone Authority (ASEZA).

The Ports Corporation is responsible for implementing the National Oil Spill Contingency Plan in co-ordination with ASEZA. ASEZA's Commissioner for Environment, Regulation and Enforcement is designated as the National On-scene Commander in the country's NOSCP.

Jordan's Maritime Authority (JMA) has been established under the Jordan Maritime Authority Law No. 47 for 2002 and its amendments for 2003. It is to be the driving force for guiding and co-ordinating development of Jordan's maritime sector and for enhancing international co-operation. JMA and ASEZA are working together to jointly establish ship reception facilities at Aqaba in preparation for ratifying MARPOL 73/78.

Through the "Upper Gulf of Aqaba Oil Spill Contingency Project", significant steps have been taken to prepare for small to moderate oil spills of up to 200 tonnes of oil. In Aqaba, the Ports Corporation has established the Prince Hamzah Oil Spill Combating Centre in co-operation with the Government of Japan, which has financed the equipment stockpile and provided two oil spill combating vessels. Jordan's primary method of response focuses

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on the containment and recovery of any spilled oil and on the defensive booming of important sites identified in the contingency plan. The sensitivity of the local coastal ecosystem has discouraged the use of dispersants, although such may be used under certain conditions subject to the approval of ASEZA.

3.5 Saudi Arabia

Much of the Red Sea coastal area of Saudi Arabia is dominated by a flat-lying desert which separates the mountains from the sea. This plain ends abruptly and becomes a narrow gently sloping beach. There are spectacular coral reefs situated along the coast and surrounding offshore islands, which are important sanctuaries for a variety of marine life, sea birds and turtles. The Tiran Island area (which marks the southern limit of the Gulf of Aqaba), the Wajh Bank, the area north of Yanbu, the coastline between Obhur and Tuwwal north of Jeddah, and the outer Farsasan Bank are noted for their extensive coral reefs.

The prevailing winds for most of the year along the Red Sea coast are from the north-northwest and blow pollutants originating from the numerous transits of ships of the Red Sea towards and onto the Saudi coastline. Oil pollution also comes from the refineries and oil terminals located on the Red Sea coast at Jeddah, Yanbu and Rabigh. The Red Sea coastal zone is experiencing a major expansion of activities, mainly associated with oil production and the chemical industry.

The Presidency of Meteorology and Environment (PME) of the Ministry of Defence and Aviation is responsible for all environmental matters in the kingdom, including planning for the conservation of natural, marine and coastal resources. PME also ensures that reporting, surveillance and response capabilities are available to deal with spills in Saudi Arabian waters. These are outlined in the National Contingency Plan, which among other things established two Environmental Protection Co-ordinating Committees, one for the Red Sea coast and one for the Gulf coast, both of which are chaired by PME.

Dispersants are used offshore in accordance with a code of practice which prohibits their use near to the intakes of desalination plants and areas used for aquaculture. The extensive shallow coastal waters limit on-water recovery methods and most plans place emphasis on defensive booming strategies to protect key resources.

The Government (PME) holds stocks of equipment in Dhahran and Jeddah for responding to spills from shipping accidents. The Saudi Ports Authority holds sizeable amounts of equipment in all Saudi ports on the Red Sea and Arabian Gulf.

Considerable reliance is placed on industry resources. The Arabian Oil Company (Saudi Aramco) holds the largest stock of oil pollution control and clean-up equipment in the country, including an offshore aerial spraying and mechanical recovery capability. Saudi Aramco is unique amongst the oil companies in the region in having a full-time oil spill clean-up group dedicated to the task of pollution control in and around the company's oil exporting terminals. Saudi Aramco is a member of the Gulf Area Oil Companies Mutual Aid Organisation, called the Regional Clean Sea Organization (RESCO), and may request assistance from other member companies outside Saudi Arabia in the event of a major spill.

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3.6 Somalia

Somalia has a coastline of approximately 3,000 km of which 1,000 km stretches along the Gulf of Aden from Ras Casey to the border with Djibouti. The western part of the coast between Saylac and Berbera is shallow with exposed sandy beaches. The central portion between Berbera and Bosasso consists of mainly shallow sandy shorelines broken rarely by rocky outcrops and cliffs that may extend into shallow water. The area between Bosasso and Ras Casey is characterised by high mountains reaching the sea, with rocky shores often interspersed with short segments of narrow sandy beaches. East of Xabo the coast again becomes shallow. The coastline has four areas with coral reefs.

Surveys have shown that the continental shelf of Somalia may have oil and gas reserves.

Due to recent political unrest in the country, there is no legal framework or organisational capability for dealing with marine pollution or the response to oil spills. There is no known oil spill combating equipment in the country.

3.7 Sudan

Typical features of the Sudanese Red Sea are coastal lagoons and sheltered bays that form natural harbours and fish-landing places. Extensive coral reefs are found the length of the Sudanese coast, extending almost 100 km from the coast in some parts. The dominant reef type is the fringing reef extending almost continuously along the coast, which acts as a breakwater. Most of the fringing reefs are 1-3 km wide, separated by deep channels forming a barrier reef 1-14 km wide along much of the coast. The outer barrier drops steeply to a depth of several hundred metres.

An FAO study carried out in 1995 identified a total of 13 mangrove areas along the Sudanese Red Sea coast. Mangroves are highly productive ecosystems providing food and shelter for a large number of species (over 30 different fish species are reported, several of them of commercial importance) and mangroves are also essential habitats for numerous birds.

The new Bashayer oil terminal at Gezirat Abd Alla stores and loads crude oil delivered by the pipeline from the Heglig and Adariel oilfields in southern Sudan. The new (2004) single berth products terminal at El Khair, close to Port Sudan, has replaced berths in Port Sudan harbour that formerly handled these products.

A draft National Oil Spill Contingency Plan was prepared in 1998 with financial and administrative support from PERSGA. The NOSCP has been developed by the Marine Environment Protection Administration (MEPA) which has been responsible, with PERSGA, for producing the NOSCP in its final form. This was approved by the Federal Government Council of Ministers on 04 April 2004. A Workshop on the operation of the NOSCP was held in Khartoum on 27 September 2004, attended by the Minister of the Environment and Physical Development and senior PERSGA representatives. The purpose of the Workshop was to establish the administration body for the NOSCP and an operational Trust Fund.

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As a general principle, the draft NOSCP prescribes that mechanical containment and recovery of oil at sea should be the most favoured response action on the grounds that it causes the least damage to the environment. However, dispersants may be used subject to the approval of SPC, but not generally in water depths less than 10 m and within one nautical mile of the coastline.

In early 2005, the final draft of the law establishing a National Trust Fund for oil spill combating was prepared and sent to the Cabinet of Ministers for approval. Adoption of the draft law will be subject to time being made available by the Government of Sudan.

Sudan has some national capability for responding to oil spills at the Tier 1 level. Bashayer oil terminal at Gezirat Abd Alla has a Tier One response capability that includes booms, one skimmer, a tug, launch, inflatable and stockpiles of dispersant. At Port Sudan SPC has 400m of boom in 25 sections on an hydraulic reel, a skimmer, dispersant pump and 2 marine pumps. Bashayer and Port Sudan are planning to establish a Tier 2 Centre where operations and costs will be shared between the two entities.

3.8 Yemen

Yemen's coastline extends for approximately 2,100 km, of which 1,400 km fronts the Gulf of Aden, with the remaining 700 km bordering the Red Sea. Most of the coast consists of cliffs or sandy beaches with some gravel or soft sediment shorelines. Some sea grass beds and mangroves are found along Yemen's shorelines.

The climatic and meteorological conditions in the Gulf of Aden during SW Monsoon months in summer result in up-wellings of colder water from the deeper layers of the Indian Ocean, which replace the warm surface waters. These up-wellings limit the growth of coral reefs in the Gulf of Aden, but trigger high primary production of pelagic fish. Yemen's coral reefs are mainly concentrated in the Red Sea north of the Straits of Bab El Mandeb.

The Socotra Archipelago lies 400 km south of Yemen and has many unique features. Declared as a special natural area, the largest of the four islands, Socotra, measures 125 by 42 km. Most of the coastline of the Archipelago consists of cliffs, sand or gravel beaches.

The nutrient rich water above Yemen's wide continental shelf makes fishing the traditional occupation for thousands of Yemenis. They operate from bases and landing sites spread along the mainland coast and from a number of islands.

Industrial areas along the coastline of the Gulf of Aden have been developed. The Port of Aden is expanding, with new bulk berths being built and other planned. In the Mukalla-Balhaf-Bir Ali area there marine and coastal tourism developments have either been completed, or are planned. A very large tourism development is planned in the southern Red Sea, based on the ancient port of Mokha. New or expanded fishing ports are being built, or are planned, at various points along the coast, close to Mukalla and to the border with Saudi Arabia.

Under national law, the Maritime Affairs Authority (MAA) is responsible for protection of the marine environment and, in particular, for the detection of and response to marine pollution. However, there is no national contingency plan and no statutory

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requirement for ports or oil handling facilities to have such plans in place, although some voluntary plans have been produced by the oil terminals at Ash Shihr and Ras Isa.

The government response equipment is owned by the MAA, which has 2 pollution combating vessels equipped with booms, skimmers, dispersant spraying capability and recovered oil storage tanks. One of these vessels, delivered in 1999, is based in Aden, the second, delivered in 2005, in Hodeidah. Some pollution combating equipment is operated by the two resident oil companies at the oil terminals: the Nexen petroleum Company at Ash Shihr and the Yemen Hunt Oil Company at Ras Isa. The large oil refinery in Aden is operated by the Aden Refinery Company, a Government entity, while a new refinery is planned for Ras Isa, to be built by a private company.

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3.9 Summary of Status of National Systems for Oil Spill Preparedness and Response

As a basis for considering the outputs of the Action Plan, in particular those connected with the development of national systems, table 3.2 summarises the present status of national systems for oil spill preparedness and response.

Table 3.2 Summary of Status of National Systems for Oil Spill Preparedness & Response

Country	National Contingency Plan	Designated Competent Authority	National legal framework	National/industry equipment stockpile
DJIBOUTI	POLMER Plan prepared in 1990; since revised, needs updating and implementing.	Maritime Affairs Authority	?	International (IMO) stockpile requires upgrading and logistical support to become operational. Some industry equipment available.
EGYPT	Yes	Egyptian Environmental Affairs Agency (EEAA)	Framework law in place: regulations in draft	Government centre at Sharm El Sheikh plus extensive private sector equipment
ERITREA	In draft: needs updating and completion.	Department of Maritime Transport	No	None
JORDAN	Yes	Aqaba Ports Corporation with Aqaba Special Economic Zone Authority (ASEZA)	No	Government centre at Aqaba (200t spill)
SAUDI ARABIA	Yes	Meteorology and Environmental Protection Administration (MEPA)	Under the National Environmental Law	Saudi Aramco oil company has major stockpiles plus PME stocks in Dhahran and Jeddah
SOMALIA	No	No	No	None
SUDAN	Yes, needs to be fully implemented	Marine Environment Protection Administration (MEPA)	New maritime law has been drafted but further work on this is required	Tier 1 capacity only, at Bashayer Oil Export Terminal and at Port Sudan. Tier 2 capability planned by Bashayer and Port Sudan jointly.
YEMEN	No	Maritime Affairs Authority	No	Two MAA-operated pollution combating craft. Equipment stocks operated by oil companies at a Red Sea export terminal and a Gulf of Aden export terminal.

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4. LONG-TERM OBJECTIVES

The previous chapters have attempted to describe some of the special characteristics of the marine environment of the Red Sea and Gulf of Aden and the threat to which they are exposed to international shipping, especially large tankers, and the existing and future exploration and exploitation of oil and gas reserves in the region. The legal basis for taking action is already in place. In particular, Article IX(3) of the Jeddah Convention states that “The Contracting Parties shall co-ordinate their national plans for combating pollution in the marine environment by oil and other harmful substances in a manner that facilitates full co-operation in dealing with pollution emergencies.” This general principle is further elaborated in the Protocol to the Convention concerning Regional Co-operation in Combating Pollution by Oil and other Harmful Substances in Cases of Emergency, as described in chapter 2.1.

However, it is clear from the country profiles in chapter 3 that the capacities for response to marine oil spills varies considerably throughout the region. These disparities in the establishment of national frameworks, adoption of National Contingency Plans etc., are matched by similar disparities in the availability of equipment for combating pollution incidents in the different parts of the region.

The long-term objective of the Action Plan is therefore to redress this imbalance and to establish a framework for oil spill preparedness and response which is more consistent throughout the region. It is inevitable that there will still be differences in equipment capability. This is both rational and justifiable and will reflect the different exposure of the Red Sea and Gulf of Aden States to pollution risk.

Thus the long-term objective of the Action Plan is to strengthen both national capabilities and regional co-operation. It is envisaged that these objectives will be achieved by focusing on activities designed to achieve the following short-term objectives:

- the development of national systems for oil spill preparedness and response;
- the enhancement of co-operation between neighbouring States through the development of a regional contingency plan and related activities;
- the provision of support for the MEMAC.

The activities intended to be carried out to meet these objectives are summarised below and defined in more detail in chapters 5-7.

4.1 National Systems for Oil Spill Response

Table 3.2 above shows that there is a discrepancy in the Red Sea and Gulf of Aden region between the States in the development of their national systems for oil spill response. The focus of the Action Plan will therefore be on assisting those States that have priority needs in this respect: namely, Djibouti, Eritrea, Somalia, Sudan and Yemen.

The activities will focus on three primary areas:

- training;

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- assistance in developing the national systems for oil spill response (institutional capacity building);
- assistance in implementing relevant IMO and other Conventions that deal with marine pollution matters.

It is proposed that the following training activities should be carried out:

1. A combined high level seminar government administrators and senior managers for all PERSGA countries and Eritrea.
2. Five high level seminars for government administrators and senior managers to be held in each of the five priority countries.
3. A regional workshop on contingency planning for PERSGA countries and Eritrea¹⁰.
4. National training courses in each of the five priority countries for supervisors/On-Scene Commanders (IMO Level 2).

For the second component, the following activities are proposed:

1. Assistance with the development (revision or completion) of National Contingency Plans in each of the five priority countries plus Jordan.
2. Assessment of the needs for oil spill combating equipment in each of the five priority countries.
3. Assistance in the preparation of appropriate national legal frameworks¹¹. It is suggested that this should focus on two components:
 - a) measures to give authority to the provisions of the NCP and to place appropriate obligations for contingency planning, reporting and provision of combating equipment on all ports and oil handling facilities;
 - b) a proposal for an equipment procurement fund.

The third component for enhancing national capability is the provision of assistance in implementing relevant IMO and other international conventions concerned with the prevention of marine pollution, oil spill preparedness and response, and civil liability and compensation.

4.2 Regional Contingency Plan and Related Activities

Effective regional co-operation can only be achieved if sound national systems are in place; hence the importance of the short-term objectives outlined in section 4.1. However, the whole thrust of the Emergency Protocol of the Jeddah Convention is to enhance regional co-operation. For some activities, e.g. specialised training courses, action at the regional level will be the most appropriate.

However, in many cases regional co-operation may be enhanced by the development of closer mechanisms for sub-regional co-operation between neighbouring States. This is particularly true in the matter of mutual assistance in the event of major pollution incidents,

¹⁰ Items 1 and 3 will also be beneficial in enhancing Regional understanding and co-operation

¹¹ At the October 2003 Workshop in Hurghada it was decided that Jordan will also benefit from support in implementing its National Contingency Plan and in developing its national legal framework

given the large distances in the region and the difficulties of communications (e.g. long road links for transporting equipment). The Action Plan therefore proposes the following activities to enhance regional and sub-regional links between states:

- the development of a Regional Contingency Plan for Preparedness and Response;
- the execution of a regional training programme;
- the carrying out of exercises at the sub-regional level.

The second component designed to meet the objective of enhancing regional co-operation is a regional training programme from which participants from all States should benefit. It is proposed that rather than general training courses on oil spill matters, these should focus on particular aspects:

1. A “Train the Trainers” course.
2. A regional workshop on the use of dispersants.
3. A regional workshop on sensitivity mapping.
4. A regional workshop on risk assessment analysis.
5. A regional workshop on oil spill modelling.

The third component within the framework of the Action Plan proposes that steps should be taken to conduct eight Sub-Regional exercises in the northern Red Sea, the central Red Sea, the southern Red Sea and the Gulf of Aden, as follows¹²:

1. four communications exercises;
2. four live exercises involving the mobilisation of real equipment (for each of the four sub-regions in the Red Sea and Gulf of Aden).

4.3 Support for the MEMAC

It was envisaged from the early days of the Jeddah Convention, and is stated under Article III of the Emergency Protocol, that a Marine Emergency Mutual Aid Centre (MEMAC) should be established in the region. The objectives of the MEMAC are to strengthen the capacities of the Contracting Parties, to facilitate co-operation between them in combating pollution by oil and other harmful substances when marine emergencies occur, to assist the national capabilities of the Parties to combat pollution, and to co-ordinate and facilitate information exchange, technical co-operation and training.

The Action Plan therefore proposes to give practical support to the PERSGA Council to enable the MEMAC to realize these objectives, as described in chapter 7.

4.4 Action Plan Activities

The various activities designed to achieve the long-term objectives of the Action Plan have been described above. They are set out in tabular form in Annex 1, together with additional information on the inputs involved. Annex 2 proposes a timetable for the Action Plan in a Project Implementation Plan within a time frame of 36 months.

¹² See also requirements for defining these sub-regions discussed in Chapter 6

5. DEVELOPMENT OF NATIONAL SYSTEMS FOR OIL SPILL RESPONSE

This chapter describes in more detail the activities outlined above which the Action Plan envisages should be taken to develop and enhance the systems for oil spill preparedness and response at the national level, especially in the five priority countries.

5.1 Training

5.1.1 High Level Seminars for Government Administrators and Senior Managers

The Action Plan envisages that, early in the implementation process, there will be High Level Seminars for Government Administrators and Senior Managers for each of the priority countries, one held in each of these countries.

Administrators and senior managers from both government and industry need to be aware of their respective roles and responsibilities in the management of spills of national significance. They also need to confront the many – and often competing – challenges presented during a major spill event.

The seminars will therefore focus on:

- the policy role of the administrator/senior manager;
- the global implications of oil pollution;
- the problems caused by oil pollution and its effect on the marine environment; and
- the need for rapid decision making and the interface with other countries and the international community.

An outline programme for the High Level Seminars is given in Annex 3.

Holding these events at an early stage in the Action Plan is intended to achieve the endorsement of the national government officials and senior management in the private sector and reinforce the importance of the subsequent activities needed to fulfil the Action Plan.

5.1.2 Regional Workshop on Contingency Planning

A major activity of the Action Plan is the development of National Contingency Plans in those five countries which have not yet prepared or finalised their NCPs. Other States in the Red Sea region would also benefit from participation in a regional workshop in order to check whether their own NCPs are comprehensive and up to date. It is therefore proposed that a regional workshop should be held at a regional training centre that can provide the facilities needed. It is also proposed that the regional workshop should take place before work commences in the five priority countries on developing the national systems for oil spill preparedness and response. The advantages of a regional workshop will include the opportunity of bringing together officials and representatives from all States in the region who will have responsibility for national contingency planning.

An outline programme for the Regional Workshop on Contingency Planning is given in Annex 4.

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5.1.3 National Training Courses for Supervisors and On Scene Commanders

It is proposed that there should be five national training courses for supervisors and potential On Scene Commanders in each of the five priority countries. The training course programme will be based on the IMO Level Two model course. It is suggested that the training courses should also include appropriate sessions on the response to chemical spills.

The objective of the national training courses will be to instruct those who may become actively involved in the response to marine pollution incidents in the practical elements of contingency planning and response techniques. The training courses should also cover important related topics, such as dealing with the media, liability and compensation, record keeping and reporting requirements, and international co-operation. It is intended that the training courses should be attended by officials in the public administration and managers in the ports and petroleum sector who could be expected to play an important role in preparing for, assisting or responding to marine pollution incidents in each country as On Scene Commanders or as team leaders/supervisors.

An outline programme for the National Training Courses for Supervisors and On Scene Commanders is given in Annex 5.

5.2 National Systems for Oil Spill Response

The development of national systems for oil spill response is one of the key components of the Action Plan. It is envisaged that by the end of the project, all States in the Red Sea and Gulf of Aden will have comprehensive and up-to-date National Contingency Plans. It is also intended that these NCPs should be strengthened by the backing of appropriate legal systems in each of the States. It is also hoped that appropriate stockpiles of pre-positioned equipment will be in place by the end of the project period or, at least, that the mechanisms for acquiring such equipment will have been approved. The whole Action Plan is essentially an act of institutional capacity building. It is therefore envisaged that appropriate experts from outside the Red Sea region will work alongside designated officials in each of the priority countries in order to bring their know-how and expertise to bear in the preparation of appropriate national systems.

5.2.1 Enhancement or Development of National Contingency Plans

The purpose of preparing national contingency plans is to establish the national framework for preparing for and responding to marine pollution by oil within the waters under the jurisdiction of each member state of the Red Sea and Gulf of Aden region. It is suggested that, although oil spills are likely to be the most common source of marine pollution, the NCPs should also cover preparedness and response to spills of other hazardous and noxious substances, in accordance with the Jeddah Convention and the 2000 Protocol to the OPRC Convention.

The NCP should describe the policies and operational procedures for the response to marine pollution incidents. In particular it should:

- designate the competent national authority with overall responsibility for preparedness and response to oil and chemical pollution incidents at sea;

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- designate the competent national authority entitled to act on behalf of the State and request assistance or decide to render assistance;
- designate the national operational authority for taking overall operational command when combating marine pollution incidents at sea, or in co-ordinating oil spill clean up on shore;
- designate the national contact point (to be operational 24 hours a day) responsible for transmitting and receiving reports on pollution incidents;
- designate an Emergency Response Centre, equipped with appropriate communications equipment, which will serve as the Operations Room of the National On Scene Commander whenever the NCP is activated;
- designate the National On Scene Commander, being the officer designated to have operational control of all national pollution response resources and to exercise operational command during an incident response.

It is suggested that each NCP should be divided into four parts:

- Part A: National Strategy
- Part B: Operational Procedures and Technical Guidelines
- Part C: Data Directory
- Annexes.

Part A of the NCP should describe the institutional framework for marine pollution preparedness and response in each country, including the role and responsibilities of the competent national authority (or authorities) and all support agencies. It should also contain all the national policies (e.g. combat strategy; policy on the use of dispersants; etc) which should be nationally approved. All local (Tier One) marine pollution emergency plans should be compatible with the policies described in Part A of the NCP.

Part B of the NCP should be of an operational and technical character. As well as containing technical guidelines on different aspects of combating pollution and clean up activities, it should also describe the procedures for reporting pollution incidents. It will therefore be of particular interest to terminal operators, port authorities, all oil handling facilities, Governorates and those who will take command of response actions at the scene of an incident, including shore line clean up and waste disposal operations.

Part C of the NCP should be a data directory containing lists (e.g. contact points; equipment lists) and summaries of key data (e.g. specification of oil types; summaries of wind statistics and current data). It should also contain sensitivity maps where these are available.

The Annexes should contain supplementary information which it may not be necessary to refer to in a marine pollution incident but which nevertheless contain important information for reference purposes (e.g. a summary of the national and international legal framework; the framework for liability and compensation; the principles of the Jeddah Convention).

A suggested outline of a National Contingency Plan is given in Annex 6.

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5.2.2 *Assessment of Equipment Needs*

In addition to an effective National Contingency Plan for responding to marine oil spills, which defines the national policy and procedures and sets out the institutional arrangements and especially the responsibilities of different government departments, it is also essential to have “a minimum level of pre-positioned oil spill combating equipment, commensurate with the risk involved, and programmes for its use” (Article 6(2)(a) of the OPRC Convention). Before considering equipment needs both nationally and within the Red Sea region, it is necessary to define and agree upon an appropriate equipment policy. The following paragraphs suggest an approach to this problem which could be endorsed by PERSGA as a basis for further elaboration under the Action Plan.

PERSGA may wish to endorse the following principles:

1. That the primary obligation to provide an appropriate level of equipment must rest with the port authorities and operators of oil handling facilities at the Tier One level, to ensure that adequate equipment is available at their facilities commensurate with the likely level of damage that would follow a spill.
2. That the role of the national authorities should be primarily to co-ordinate the response to major oil spills (Tier Two) where, by definition, the response requires resources additional to those available at the Tier One facility and/or where the spill is likely to impact the shoreline beyond the jurisdiction of the oil handling facility or port authority where the incident originates. In addition, the national authorities may be required to respond to a spill of unknown origin in offshore waters, e.g. illegal discharges from a passing tanker or other vessel. In such cases, it is evident that the national operational authority should be provided with access to Tier Two, and Tier Three capabilities, to be drawn upon under circumstances stated in the NCP.
3. In the case of a major marine pollution incident, such as damage to an oil tanker and the discharge of hundreds or even thousands of tonnes of oil (or other pollutant), all available national resources may require to be mobilized by the competent operational authority, and regional and international assistance may be called for. This may be within the framework of mutual co-operation under the Jeddah Convention, but may also be by drawing upon the oil industry’s stockpiles of equipment, such as that based at Southampton, UK, which has already been used by States in the region for exercises.

The rationale for these principles is as follows. Although only three of the States in the Red Sea region are Contracting Parties to the 1990 OPRC Convention, the provisions of that Convention are relevant to the purposes of this Action Plan. In particular, Article 3 requires that all operators of offshore installations and all coastal oil handling facilities and sea ports which the State considers appropriate should have site-specific emergency response plans to deal with oil pollution. It follows that such plans are worthless without an obligation on the operators of these facilities to acquire and maintain an adequate level of oil spill combating equipment “commensurate with the risk”. Therefore the amount of equipment available will necessarily vary from site to site, depending upon the oil spill risk arising from the activities concerned. It is worth recalling that the vast majority of oil spill incidents will originate from the activities of offshore petroleum exploration and exploitation (where these exist) and in handling oil in terminals, refineries and ports, especially from ship bunkering operations.

Hence the principle that obligations should be imposed upon these facilities to acquire and maintain an adequate level of oil spill combating equipment. Large spills from tankers are fortunately rare.

The second principle concerns the position of the competent national authorities. As indicated above, their role is likely to become critical in the case of major pollution incidents, either when an incident larger than would normally be expected occurs at a Tier One location, or in the case of a major shipping accident. It is unrealistic for States in the Red Sea and Gulf of Aden region to expect international donors to provide the finance necessary to purchase large quantities of equipment. It is therefore necessary to seek a solution which is also sustainable in the long term. On the basis of the well-established “polluter pays principle”, as well as taking account of the equally established “precautionary principle”, it is suggested that each regional State which has a need to build up its own national resources to supplement its Tier One capability should establish an Oil Pollution Equipment Fund. This fund would be established by imposing a small levy (an “oil pollution protection charge”) on all imports and exports of crude oil and, possibly, petroleum products. It is suggested that the levy should not impose too large a financial burden but should be sufficient to ensure that a phased programme of equipment purchase is made viable. The fund should be administered by appropriate government departments and the finances raised should be set aside for the specific purposes of equipment purchase and for maintaining the national oil spill response capability, including staffing and buildings.

If these principles are accepted by PERSGA or, alternatively, if it is decided that the question of an oil pollution protection charge should be a matter for each State concerned, then it is feasible to consider an activity within the framework of the Action Plan to assess equipment needs. It is therefore proposed that there should be a needs assessment mission carried out by an external expert to each of the five priority countries to evaluate existing equipment stockpiles and, in particular, to identify equipment needs for the future.

It is proposed that in each State, the international expert should be accompanied by a local expert from the national administration. It is also suggested that the equipment assessments should take into account not only national needs at the Tier Two/Three level, but should also advise local port authorities and the petroleum sector on appropriate Tier One capabilities. The purpose of this is to ensure that the operators of Tier One facilities do indeed acquire and maintain an adequate level of equipment commensurate with the spill risk at the site concerned.

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5.2.3 *Establishment of National Legal Frameworks*

Although the development of the National Contingency Plans will be a major step forward in clarifying responsibilities and approaches to dealing with marine oil spills, the NCPs should enjoy full political and legal backing in each State. The most appropriate method of achieving this is to draw up a draft law for implementation of the NCP. In particular, this law should spell out the responsibilities of the competent national authority and of all government support agencies.

It should also specify the obligations on the oil industry (terminal operators, coastal refineries and offshore production facilities) and on port authorities to establish marine pollution response emergency plans at the Tier One level. The law should also impose reporting obligations and a requirement to provide an adequate level of oil spill combating equipment commensurate with the spill risk.

Although most Red Sea States are not yet Parties to the OPRC Convention, the proposed legal framework for implementing NCPs should also cover all the organisational and reporting procedures of the OPRC, as well as implementing current obligations under the Jeddah Convention.

A suggested outline for national legal frameworks is given in Annex 7. It is suggested that a draft law should be prepared for each of the five priority countries. If the national authorities in those countries considered that it would be appropriate to establish a legal mechanism for building up an oil pollution equipment fund, as suggested above, the legal framework could reflect this, or a separate draft law could be prepared.

5.3 **Implementation of Relevant IMO and Other International Conventions**

As noted above, the OPRC Convention is the primary international treaty concerned with oil spill preparedness, response and co-operation. However, this does not cover the complete picture. In order to reduce the likelihood of accidents occurring and to provide the legal basis for national measures to prosecute offenders who deliberately discharge oil or other hazardous substances into the marine environment, it is also desirable for regional States to ratify, implement in their national legislation and enforce other international conventions, notably MARPOL 73/78 and its Annexes¹³.

In addition, liability and compensation for pollution damage caused by oil spills from tankers is governed by two international Conventions: the 1969 Civil Liability Convention (CLC) and the 1971 Fund Convention, both of which have been amended by protocols adopted in 1992.

An overview showing the status of ratification by regional States of these international conventions, which are the primary IMO Conventions relating to the prevention of marine pollution, is given in table 5.1.

¹³ Other IMO Conventions, such as the LLMC 1976, the HNS Convention 1996 and the Bunker Convention 2001 are also important to pollution combating and compensation following pollution by ships other than tankers, and should be considered when work under the Action Plan to ratify and implement IMO Conventions in the region is undertaken. Most pollution incidents come from non-oil tanker sources.

Table 5.1: Overview of Ratification of International Conventions Concerning Marine Pollution

Country	Prevention & Safety					Oil Spill Response		Compensation					
	MARPOL Annexes					OPRC		CLC			IOPC Fund ¹⁴		
	73/78	III	IV	V	VI	'90	2000	'69	'76	'92	'71	'76	'92
DJIBOUTI	✓					✓		✓ ¹		✓ ²	✓ ¹		✓ ²
EGYPT	✓	✓	✓	✓		✓		✓	✓	✓			
ERITREA													
JORDAN						✓		✓					
SAUDI ARABIA	✓	✓	✓	✓				✓	✓				
SOMALIA													
SUDAN													
YEMEN								✓	✓				

National footnotes

- 1 denunciation effective from 17/05/02
 2 in force from 8/01/02

Notes

MARPOL 73/78 is the International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978. There are six Annexes with their Associated Regulations, two of which are compulsory (Annexes I and II) whereas the others are optional. Annex VI came into force on 19 May 2005. Annex IV on 27 September 2003. Annex VI is not yet in force. The Annexes cover:

- Annex I: Regulations for the Prevention of Pollution by Oil, containing 26 Regulations.
- Annex II: Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk, containing 14 Regulations.
- Annex III: Regulations for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (optional), containing 7 Regulations.
- Annex IV: Regulations for the Prevention of Pollution by Sewage from Ships (optional), containing 11 Regulations.
- Annex V: Regulations for the Prevention of Pollution by Garbage from Ships (optional), containing 7 Regulations.
- Annex VI: Regulations for the Prevention of Air Pollution.

OPRC is the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 and its Protocol on Other Hazardous and Noxious Substances, 2000.

CLC is the International Convention on Civil Liability for Oil Pollution Damage, 1969 and its subsequent amending Protocols of 1976 and 1992.

The IOPC Fund is the Fund established by the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 and its Protocols of 1976, 1992 and 2003.

¹⁴ Due to denunciations of the 1971 Fund Convention, this Convention ceased to be in force on 24 May 2002 (see IMO Web Site)

Table 5.1 shows that many States in the region need assistance in ratifying, implementing and enforcing the main marine pollution conventions. It is suggested that the focus should be on Eritrea, Somalia and Sudan. Jordan, Saudi Arabia and Yemen may wish to receive support through this activity, but all have made good progress in recent years with ratifications, or have plans for the early ratification of additional conventions.

5.3.1 MARPOL 73/78

The Action Plan proposes that there should be an external evaluation by an independent expert of the obligations of MARPOL 73/78, as laid down in the Articles and Annexes of the Convention, followed by an assessment of the measures which are either currently in place (even though the Convention may not have been ratified) or which could be implemented in national law. In particular, it is suggested that these assessments should focus on:

- a review of the reporting procedures for breaching the discharge regulations from oil exploration and exploitation platforms, from oil-handling facilities and from ships;
- a review of the procedures for the enforcement of MARPOL 73/78, which would need to be undertaken in close co-operation with national Ministries of Maritime Transport (or Maritime Affairs Authority or other appropriate entity) and local port authorities;
- a review of the existing port reception facilities for ship-generated wastes.

Implementation of the MARPOL Convention is a major task. It is therefore suggested that within the current time frame of the Action Plan, it may only be possible to prepare technical reports identifying the current situation and defining what needs to be done to enable regional States to be in a position to implement the Convention. Further institutional capacity building (e.g. assistance to maritime administrations; establishment of the appropriate legal framework; a programme for the establishment of reception facilities; etc.) could be the subject of an extension of the current Action Plan.

5.3.2 Liability and Compensation

The Civil Liability Convention establishes a system of “strict liability” for tanker owners and introduces compulsory liability insurance. The Fund Convention creates a system of supplementary compensation administered by an inter-governmental organisation, the International Oil Pollution Compensation Fund (IOPC Fund). The IOPC Fund pays compensation to victims of oil pollution in Member States when the compensation from the shipowner and the insurer is insufficient to meet eligible claims.

The chief advantages of the 1992 Protocols to these two conventions are the higher limits of compensation which would be payable in the event of an oil spill from tankers. Under the 1992 Protocol to the CLC, the limit of shipowners’ liability was increased, depending on the tonnage of the vessel, from US\$4 million to a maximum US\$76 million. The limit of compensation payable under the 1992 Fund Convention was raised to US\$174 million. These limits were further increased on 1 November 2003 with the result that the combined CLC and FUND provisions, for one incident, now amount to 750 million Special Drawing Rights (about US\$1.145 billion). These benefits are, however, only available to States which have acceded to the 1992 Protocol.

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There are, in effect, two IOPC Funds. When States accede to the 1992 Fund they denounce their membership of the 1971 Fund. When Italy left the 1971 Fund in October 2000 in order to join the 1992 Fund, the total quantity of contributing oil received in all Fund Member States fell from 250 million tonnes to 110 million tonnes.

As a result, contributors in remaining 1971 Fund Member States would have been required to pay a much greater share of the compensation in any incident in a 1971 Fund Member State.

As more States left the 1971 Fund, the situation became worse for those left behind. Indeed, some countries feared a scenario in which an incident would occur and the 1971 Fund had an obligation to pay compensation to victims – but where there were no contributors in the remaining Member States.

Consequently, a new Protocol to the Fund Convention was adopted in September 2000 under which the 1971 Fund Convention ceased to be in force either when the number of Member States falls below 25 or when the total quantity of contributing oil had fallen below 100 million tonnes, whichever is the earlier. Due to denunciations of the 1971 Fund Convention, this Convention ceased to be in force on 24 May 2002 (see IMO Web Site).

The practical benefits of membership of the CLC and the Fund Conventions are generally clear. The benefits are greater for Member States which are essentially oil exporting rather than oil importing nations. It is therefore important for all Red Sea and Gulf of Aden States, with the exception of Egypt, to accede to the 1992 Protocols to the CLC and the Fund Convention as soon as possible¹⁵.

The Action Plan therefore envisages that assistance would be given to States which request it to prepare model instruments of accession to the 1992 Protocols to the CLC and Fund Conventions for submission to the Secretary-General of IMO.

¹⁵ Egypt is a Party to the 1992 CLC Protocol but would not be advised to accede to the 1992 IOPC Fund so long as the present definition of “contributing oil” receipts applies to the throughput of oil through the SUMED pipeline from the Red Sea to the Mediterranean.

6. DEVELOPMENT OF A REGIONAL CONTINGENCY PLAN AND RELATED ACTIVITIES

The development and enhancement of national systems for oil spill response, as described in Chapter 5, must be the first priority of the Action Plan. Without effective and working national systems it is not feasible to consider the development of practical regional contingency planning arrangements. A regional plan would be an effective means of enhancing co-operation within the Red Sea and Gulf of Aden region as envisaged in the Jeddah Convention, and would contribute directly to the activation of the Protocol to the Convention concerning Regional Co-operation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency.

The following paragraphs therefore describe the activities in the Action Plan which are designed to achieve the second long-term objective of enhancing regional co-operation, through the development of a Regional Contingency Plan and implementation of sub-regional communication and equipment mobilization exercises.

The advantages of regional co-operation to enhance the capabilities of national systems are well recognised. Article 10 of the OPRC Convention states that “Parties shall endeavour to conclude bilateral or multilateral agreements for oil pollution preparedness and response.”

The example of closer bilateral or trilateral connections between neighbouring States at the sub-regional level, developed within the framework of a larger regional agreement, has precedents in other parts of the world. For example, the North Sea States, which are all parties to the Bonn Agreement, have also negotiated a number of bilateral agreements, e.g. the MANCHEPLAN between the UK and France, the DANGERPLAN between Denmark and Germany, and the NORBRIT PLAN between Norway and the UK.

The advantages of bilateral or sub-regional arrangements of this kind are that they create the framework for closer co-operation between neighbouring States whose interests are most likely to be affected by a major pollution incident in the vicinity. For example, a major incident in the Straits of Bab El Mandeb could impact the environment of the southern Red Sea States (e.g. Djibouti and Yemen in particular) but would be unlikely to affect States in the north of the region. Therefore the development of a Regional Contingency Plan within the framework of the Jeddah Convention, and the implementation of sub-regional exercises, is a practical means of enhancing mutual assistance and co-operation in the area.

6.1 Assistance to Eritrea

It is fundamental to the objectives of this Action Plan that Eritrea, with its Red Sea coastline of almost 1,000 kilometres, should benefit from the measures for institutional capacity building. In particular, Chapter 5 proposes that Eritrea should receive assistance in the development of its National Contingency Plan and related national legal framework, as well as benefiting its officials through national and regional training activities. Although Eritrea itself will be the principal beneficiary of these activities, the whole region will be enhanced by having an effective and efficient working system for oil spill preparedness and response in Eritrea. It makes no sense to develop national and regional systems within the

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Red Sea and Gulf of Aden generally and yet ignore one country in the region with a significant coastline.

Although Eritrea is not a Contracting Party to the Jeddah Convention, nor a member of PERSGA, Eritrea has, since 2000, been involved in the Strategic Action Programme executed by PERSGA for the Red Sea and Gulf of Aden, particularly in the matter of the conduct of hydrographic surveys in the southern Red Sea and the introduction of new routing measures for ships in this area.

It is proposed that, under this Action Plan, Eritrea would continue to be involved with the PERSGA States in the enhancement of regional capacity to combat pollution through the measures outlined above. Co-operation between PERSGA and Eritrea should continue via communications between PERSGA and the appropriate ministry (or ministries) in Eritrea to enable Eritrea to benefit from the activities proposed under this Plan.

6.2 Development of a Regional Contingency Plan

Objectives of Regional Co-operation

Preparedness for the response to an oil spill is, first and foremost, a national responsibility. However, in the event of a major spill, it is unlikely that national resources alone will be sufficient to respond effectively. On such occasions it can be useful to be able to draw upon the resources (both manpower and equipment) of neighbouring States in order to mount an effective response.

Regional co-operation can also be important as a mechanism for warning neighbouring States about a spill which may ultimately threaten the coastline or national resources of that neighbouring State. A regional arrangement can therefore provide the forum for a means of communication between neighbouring States.

Thirdly, regional co-operation can be a mechanism for the exchange of information about technical innovations, equipment sharing, joint training and exercises.

Information provided for the Regional Contingency Plan

Before regional co-operation can be developed, it is essential that each participating government first develops and implements a national oil spill response system and plan. On the basis of the National Contingency Plans, each Government should provide the following information to the regional contingency plan:

1. Identification of the competent national authority and national operational contact point responsible for oil spill matters.
2. Description of the national oil spill response organisation and, if available, for reference purposes, the National Contingency Plan.
3. The oil spill response resources available (equipment; strike teams), if any, and the proper method to request their assistance.
4. Identification of logistic support facilities within each country.
5. Identification of storage facilities for recovered oil and disposal methods.

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It is essential that the information contained in the National Contingency Plan is consistent with the information submitted to the regional plan.

It is also advisable that a summary of the possible sources of oil spills, resources at risk and priorities for protection are prepared for the geographic area covered by the regional contingency plan. This information will be drawn from the information provided in the national plans. The purpose is to enable States to familiarise themselves with the regional situation and especially the objectives and capabilities of their close, and more distant, neighbours.

Scope of Co-operation between Participating Governments

A regional oil spill plan is intended to establish a framework within which two or more Governments can co-operate to facilitate the operational aspects of oil spill surveillance and response. Such co-operation can include, but is not limited to:

- information exchange;
- the use of vessels, aircraft and oil spill response equipment in joint combating operations;
- arrangements for the assumption of the lead role by the State in whose waters a pollution incident occurs;
- clear definition of command structure and liaison for joint response operations;
- identification of priority coastal and sea areas within the geographic region;
- arrangements for transboundary activities. These should include arrangements for the movement of personnel, prior customs clearance for the movement of oil spill response equipment, vessel operations, over flying of the territory of neighbouring States, etc.;
- the conduct of paper and live exercises to test the adequacy of the regional plan;
- agreement on the financial arrangements for requesting and providing assistance;
- arrangements for advisory and technical support.

Definition of Geographical Area and Division of Responsibility

The geographical area covered by a regional contingency plan should be clearly defined, together with responsibility zones for which individual States may be responsible for taking actions such as surveillance, reporting, alerting and response activities. In some cases it may be appropriate to define zones of joint responsibility.

The geographical areas may be identified by use of suitably annotated maps attached to the regional plan, or by defining the latitude and longitude co-ordinates, or both.

Typically, the State in whose responsibility zone the spill occurs assumes the lead role and is initially responsible for all the actions taken related to both tracking the spill and any necessary response. The basis on which responsibility is transferred from one State to another must be clearly laid down in the regional plan.

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Reporting, Alerting and Communications

Each State should provide information on the competent national authority (or authorities) with responsibility for oil pollution preparedness and response, and on the national operational contact point (or contact points). These should be the organisations or agencies responsible for the receipt and transmission of oil pollution reports. They may or may not be the same agency as the competent national authority. The contact points must be available on a 24-hour basis and the regional plan should contain the telephone, fax and/or telex numbers of the contact points of each participating State.

In order to enhance regional co-operation, the regional contingency plan (or an appropriate legal arrangement) should specify as a minimum obligation that a State in whose responsibility zone a spill occurs, or the serious threat of a spill, should immediately inform any neighbouring States if it appears likely that the spill may affect their sea areas and shorelines. The information should provide as much detail as possible about the incident using standardised alert notification formats.

In the event that a spill has occurred, that information should include the source of the spill, date, time, position, type and amount of oil spilled, likelihood of further spillage, the prevailing and forecast weather conditions, and the actions proposed to be taken by the State in whose responsibility zone the spill has occurred. As the situation develops, information to neighbouring States should be updated continually and a regular synopsis provided to keep them informed of developments. The transmission of such reports should not be delayed simply because complete information is not immediately available.

The State in whose responsibility zone a spill occurs should analyse all available meteorological and hydrographic data, as well as available information about the type of oil, in order to give rough early predictions of general spill movement. More sophisticated spill movement prediction methods may be subsequently used as more information becomes available. Visual observation of any spill is essential and the competent authority under the appropriate national contingency plan should use those resources already identified (e.g. charter, military or commercial aircraft) for such surveillance. It is essential that the results of such observation and prediction of spill movement be transmitted to other States which may be affected by the spilled oil until there is no longer a threat to any of the States in the geographic area covered by the regional contingency plan.

To facilitate on-scene radio communications in a joint combating operation, it is essential that prior agreement is established between the designated national authorities on the assignment of specific operating frequencies and on the working language to be used for operational response to an oil spill.

Logistics, Administration and Funding

It is essential that clear procedures should be developed for requesting, offering and accepting assistance in the event of a spill incident.

The regional contingency plan should contain information on the contact points to whom requests for response equipment and specialist personnel can be addressed. Where possible, the equipment which may be made available to a neighbouring State should be listed in the regional contingency plan, together with the relevant charges for supplying such

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equipment on request. In the event of a joint combating operation, where a neighbouring State has been requested to provide assistance and this request has been agreed, the assisting State would maintain control over their national spill response resources, i.e. over their strike teams and the operation of their equipment. A National On-Scene Commander would be responsible for the national team and would in turn be subordinate to the Supreme On-Scene Commander.

It is vital for the successful implementation of regional oil spill plans to be able to move equipment, materials and personnel to the places where they are needed without undue delay or the need for restricting formalities. It is therefore essential that each State participating in a regional contingency plan make administrative arrangements in advance to expedite customs clearance for equipment and immigration procedures for personnel whenever such equipment and personnel enter and leave the territory of neighbouring States for the purposes of combating oil pollution. Details of such arrangements should be included in the regional contingency plan. It should be the responsibility of each participating Government to ensure that the necessary arrangements for swift transfer of equipment and personnel are promulgated to their respective national agencies. In particular, advance arrangements should be made for:

- the rapid granting of entry visas for assisting personnel;
- the temporary importation of oil spill clean-up equipment and material, free of duty or import taxes.

The regional contingency plan (or the appropriate legal agreement) should contain specific agreements for the funding of joint response operations and for the loan of resources. As a general rule, the following principles apply (and are laid down as an Annex to the OPRC Convention) unless the parties concerned have made prior arrangements for an alternative system. The normal rules for reimbursement of costs are:

1. If the action is taken by one Party at the express request of another Party, the requesting Party shall reimburse to the assisting Party the cost of the latter's action. The requesting Party may cancel its request at any time, but in that case it shall bear the costs already incurred or committed by the assisting Party.
2. If the action is taken by a Party on its own initiative, this Party shall bear the costs of its own action.

The costs of assistance shall be fairly calculated according to the law and current practice of the *assisting* Party concerning the reimbursement of such costs.

These arrangements should not be interpreted as prejudicing the rights of a State to recover from third parties the costs of actions to deal with pollution (or the threat of pollution). In order that compensation can be claimed under the relevant international conventions, each State should maintain individual records of actions taken and equipment and other resources used to respond to the incident. These records can be used for the dual purpose of supporting claims for compensation and for subsequent analysis of actions taken during the spill incident which may lead to amendments of the regional contingency plan.

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Review and Update of the Regional Contingency Plan

Secretariat support for the regional co-operation arrangements will be essential. In particular, arrangements should be made to provide to a central focal point information on national changes (e.g. contact points, equipment lists) which should then be disseminated by the focal point to all parties¹⁶. The content of the regional contingency plan and, in general, the arrangements for regional co-operation should be reviewed periodically in the light of experience, especially experience of actual pollution incidents.

If such information is not kept up to date, the response to a pollution incident will lead to confusion rather than co-operation.

A suggested outline for the Regional Contingency Plan is set out in Annex 8.

6.3 Sub-Division of the Red Sea and Gulf of Aden for Exercises

A second important principle which will have to be decided between States is the division of the Red Sea and Gulf of Aden into “responsibility zones”. These are not the limits of the territorial sea, nor of any national Exclusive Economic Zones established in the Red Sea and Gulf of Aden. They will be based on Article II of the Protocol to the Jeddah Convention.

The aim is to divide the whole of the Red Sea and Gulf of Aden into eight ‘zones of responsibility’ within which each littoral State shall undertake certain tasks, such as make the necessary assessments of a pollution incident; take practicable measures to combat the pollution incident if appropriate; immediately inform neighbouring States likely to be affected by the pollution incident; and keep the substances under observation for so long as they are present in their responsibility zone. The purpose of this division into zones of responsibility is for no other reason than to prepare for and respond to pollution incidents¹⁷.

The Action Plan envisages four exercises on communications, and four that in which equipment is mobilized. It is proposed that these exercises should cover four sub-regions in the Red Sea and Gulf of Aden and that PERSGA should co-ordinate with regional States in order to define and agree upon the appropriate boundaries for these sub-regions in:

The Northern Red Sea (Egypt, Jordan and Saudi Arabia).

The Central Red Sea (Egypt, Saudi Arabia and Sudan).

The Southern Red Sea (Djibouti, Eritrea and Yemen).

The Gulf of Aden (Djibouti, Somalia and Yemen).

¹⁶ One of the functions of the MEMAC is to facilitate co-operation between the States. It is anticipated that the MEMAC would be the central focal point for receipt and dissemination of information on national changes etc., and to take responsibility for updating the Regional Contingency Plan as necessary.

¹⁷ It may be convenient for the same zones of responsibility to also be applicable for Search and Rescue purposes.

6.3.1 *The Need for Exercises*

The ultimate test of any contingency plan is measured by its performance in a real marine pollution incident. However, it is unwise to wait for a real incident to occur before testing a contingency plan and consequently it is vital that a contingency plan's procedures should be tested so far as possible by realistic and regular exercises. At the Tier One level, those responsible for local marine pollution emergency plans should regularly conduct exercises for ensuring that personnel understand their responsibilities and that the operational procedures of the plan are effective and workable in a real emergency.

At the national level, it is the responsibility of the competent national authority to regularly test the provisions of the NCP and ensure that the interface with the Tier One marine pollution emergency plans is working effectively.

The same principle applies to testing a Regional Contingency Plan. In this case, the provisions of the RCP will be tested to ensure that the interface between the participating States is well understood and is working effectively.

It is envisaged that regular exercises at the regional level should be co-ordinated by the MEMAC when it becomes fully operational.

6.3.2 *Communications Exercises*

Communications exercises in the context of a Regional Contingency Plan test the procedures of the Plan to alert and call out the national response teams. They are conducted through telephone, fax and other means of communication. They can be used to test communications systems, to check the availability of personnel and the agreed emergency (24 hour) notification arrangements and assess the ability to transmit information quickly and accurately in accordance with the agreed RCP procedures. A communications exercise will typically last for 2-4 hours and may be held at any time, day or night, and either announced in advance or held unannounced. No equipment is mobilized.

The Action Plan includes four communications exercises; one exercise to test the procedures of each of the agreed sub-regions in the Red Sea and Gulf of Aden.

6.3.3 *Equipment Deployment Exercises*

Equipment deployment exercises involve the deployment of oil spill response equipment at particular locations in response to an exercise scenario. Among other things, the aim is to test the response strategies in the contingency plan for a particular oil spill scenario. The exercises in the framework of a RCP will test the capability of national teams to respond to a request for assistance from a neighbouring State by mobilising a representative quantity of real equipment.

An equipment deployment exercise at the RCP level will also test the command structures agreed under the RCP and, in particular, the ability of the Supreme On-Scene Commander to exercise overall command over the incident. Such an exercise also tests the provisions of each country's NCP and, in particular, the abilities of the National On-Scene Commander to assist the SOSOC in a joint combating exercise.

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The Action Plan includes four equipment deployment exercises; one exercise to test the procedures of each of the agreed sub-regions in the Red Sea and Gulf of Aden.

6.4 Regional Training Programme

The third component designed to meet the objective of enhancing regional co-operation is a regional training programme from which participants from all Red Sea States should benefit. It is intended that each State should send three participants to each training activity. It is considered that it is not necessary to organize general training courses at the regional level on oil spill matters within this component. Rather, it is proposed that the regional training programme should focus on specific topics, to be conducted at a regional training centre, or centres, that can provide the facilities and equipment needed. The regional high level seminar for government administrators and senior managers (see Section 5.1.1) and regional workshop on contingency planning (see Section 5.1.2) are intended to support this regional training programme, together with the following specific courses:

- a regional high level seminar for government administrators and senior managers
- a regional course for On Scene Commanders;
- a regional “train the trainers” course;
- a regional workshop on the use of dispersants;
- a regional workshop on sensitivity mapping;
- a regional workshop on risk assessment analysis;
- a regional workshop on oil spill modelling.

6.4.1 High Level Seminar for Government Administrators and Senior Managers

The Action Plan envisages that, early in the implementation process, there will be a High Level Seminar for Government Administrators and Senior Managers from the PERSGA countries and Eritrea, held at a regional training centre that can provide the facilities needed.

Administrators and senior managers from both government and industry need to be aware of their respective roles and responsibilities in the management of spills of national significance. They also need to confront the many – and often competing – challenges presented during a major spill event.

The seminar will therefore focus on:

- the policy role of the administrator/senior manager;
- the global implications of oil pollution;
- the problems caused by oil pollution and its effect on the marine environment; and
- the need for rapid decision making and the interface with other countries and the international community.

An outline programme for the High Level Seminars is given in Annex 3.

An added advantage of having a high level seminar for regional representatives at an early stage is that it will prepare the ground for implementation of the Action Plan by bringing together senior officials who could be called upon to work together and to co-

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operate in combating a major oil spill in their country, or in the region. The seminar should also result in these officials concerned being convinced of the need to take action at both the regional and national levels to prepare for, and combat where necessary, major oil spills.

Holding this event at the start of the Action Plan is intended to achieve the endorsement of the government officials and senior management in the private sector and reinforce the importance of the subsequent activities needed to fulfil the Action Plan.

6.4.2 Regional Training Course for Supervisors and On Scene Commanders

It is proposed that there should be a regional training course for supervisors and potential On Scene Commanders, based on the IMO Level Two model course, and it is suggested that the training course should include appropriate sessions on the response to chemical spills.

Experience in other regions has shown the benefit of exchanging experience between different countries and strengthens co-operation between States and their respective national OSCs in the event of joint combating operations. It will be conducted during the first year of execution of the Action Plan to prepare the personnel involved for their responsibilities under the proposed Regional Contingency Plan.

The objective of the regional training course will be to instruct those who may become actively involved in the response to marine pollution incidents in the practical elements of contingency planning and response techniques. The training courses should also cover important related topics, such as dealing with the media, liability and compensation, record keeping and reporting requirements, and international co-operation. It is intended that the training courses should be attended by officials in the public administration and managers in the ports and petroleum sector who could be expected to play an important role in preparing for, assisting or responding to marine pollution incidents as On Scene Commanders or as team leaders/supervisors.

An outline programme for the National Training Courses for Supervisors and On Scene Commanders is given in Annex 5.

6.4.3 Regional “Train the Trainers” Course

The objectives of the “train the trainer” course are to improve the performance of those responsible for training staff members at local response centres, thereby enhancing the sustainability of the training component of the Action Plan. The emphasis of the course will be on the more practical aspects of oil spill response and, in particular, training on specific items of equipment, e.g. the deployment of booms; the operation of skimmers; etc. For this reason, it is proposed that the “train the trainers” course should take place at a regional training centre that can provide the facilities needed.

An outline programme for the “train the trainers” course is given in Annex 9.

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6.4.4 Regional Workshop on the Use of Dispersants

Policy on the use of dispersants is a matter for a decision by each regional State. Many countries adopt, as a general principle, mechanical containment and recovery of oil at sea as the most favoured response action on the grounds that it causes the least damage to the environment. However, it is also the response option most limited by wind, current and sea conditions. In some cases, therefore, the application of dispersants may be a viable response option. The purpose of the regional workshop on the use of dispersants is therefore to enable participants to review all aspects of dispersant use, including the environmental consequences, but also the practicalities of dispersant application. It is intended that such an overview of the dispersant option will assist Red Sea and Gulf of Aden States in formulating (or reviewing) their policies on dispersant use.

An outline programme for the regional workshop on the use of dispersants is given in Annex 10.

6.4.5 Regional Workshop on Sensitivity Mapping

The making of sensitivity maps – and keeping them up to date – is a key activity in the contingency planning process. The maps should be based on surveys of the coastline and should be designed to achieve two principal aims. First, the maps should identify, and ideally place in order of priority, environmentally sensitive areas, which would have priorities for protection in the event of a major spill. Secondly, the maps should classify the coastline according to the type of beach (e.g. sandy, pebbles, rocks, cliffs, etc.) since the clean up methods will vary depending upon the type of shoreline that needs to be cleaned.

Sensitivity maps can either be on paper or the data can be contained within a Geographic Information System (GIS). The results of the sensitivity mapping process should either be contained in, or linked to, the National Contingency Plans.

An outline programme for the regional workshop on sensitivity mapping is given in Annex 11.

6.4.6 Regional Workshop on Risk Assessment Analysis

Risk can be defined as the product of probability and consequence. It therefore comprises two basic elements: the probability for an incident/event to happen and the consequence of such an incident/event (environmental, economic or injuries/loss of life). High risk areas are therefore those with a high probability of a spill occurring (e.g. oil loading/unloading facilities and bunkering facilities); and/or where there would be severe consequences if an oil spill occurred (e.g. ecological damage to sensitive ecosystems such as coral reefs, water intakes or areas of high recreational/tourist value). Low risk areas are those where there is a low probability of an incident occurring and/or where the consequences would be minor if there were to be an oil spill.

It follows, therefore, that risk assessments can only be made after other activities have been carried out, e.g. a review of meteorological, current and oil type data and the assessment of oil spill movement; the identification and mapping of sensitive areas; etc. The aim of the

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workshop on risk assessment will therefore be to explore in greater detail the steps which need to be taken to realistically calculate oil spill risks.

An outline programme for the regional workshop on risk assessment analysis is given in Annex 12.

6.4.7 Regional Workshop on Oil Spill Modelling

The development of mathematical models to assist contingency planners in predicting the likely trajectory of an oil slick is a science which has developed rapidly in recent years. Although oil spill models are not a substitute for aerial observation of an actual spill, they have their role to play in assisting the national response organisation to determine the likely areas of shoreline that would be impacted by a spill, and to prepare shoreline protection and beach clean-up plans accordingly.

An outline programme for the regional workshop on oil spill modelling is given in Annex 13.

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7. SUPPORT FOR THE MARINE EMERGENCY MUTUAL AID CENTRE (MEMAC)

7.1 Background

It was anticipated from the earliest days of the Jeddah Convention that a Marine Emergency Mutual Aid Centre (MEMAC) should be established with the basic objectives of strengthening the capacities of the Contracting Parties to the Convention and facilitating co-operating between them. Article III of the Jeddah Convention's Protocol concerning Regional Co-operation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency (the Emergency Protocol) prescribes in detail the objectives and functions of the Centre. A copy of this Protocol is given in Annex 14.

One of the decisions made at the PERSGA Technical Experts Meeting on Oil Pollution, held in Alexandria in 1989, was that the regional MEMAC for the Red Sea and Gulf of Aden should be established in Hurghada, Egypt.

One of the long-term objectives of the Action Plan is that the MEMAC should be supported during the three year time frame of the Plan.

Between 1989 and 2003 little progress was evident. However, in 2003 PERSGA convened a meeting of the regional Navigation Working Group in Hurghada. During this meeting participants were able to inspect the building intended to provide premises for the MEMAC under construction. This building provides a regional office for the Egyptian Environmental Agency EEAA on land allocated by the Governor of the Red Sea Governorate. One floor of this building was allocated for the MEMAC and was ready for occupation in 2004. The building also contains a large EEAA laboratory able carry out oil analysis and 'finger-printing', plus other environment-related investigations.

Participants were informed that the budget for the MEMAC would be part of the PERSGA budget as the governments of the region are, in effect, managing the Centre through nominees from their Focal Points. The PERSGA budget includes provision for the salaries of two personnel and all planned activities. Funding for equipment for the Centre through the SAP was being sought in co-operation with the Funding Agencies.

7.2 Present Situation

The EEAA building is ready for occupation. Equipment for the MEMAC has been purchased and is being installed. The MEMAC is being equipped with transport facilities, furniture, a communications system (telephone lines with international capabilities) and a computer system that can run the regional database. A list of books for the MEMAC library was prepared and the books purchased and delivered to PERSGA.

As the MEMAC will function as a co-ordination centre and not as an operational response centre, there is no need for oil spill combating equipment to be provided.

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Terms of Reference for the Director and Deputy Director of the MEMAC have been prepared and the two key positions advertised by PERSGA. Since the MEMAC has a regional focus, it is desirable that the staff are drawn from various States within the region. It was proposed¹⁸ that the MEMAC should eventually have a minimum staff of four. It was also recommended that the Deputy Director should have an information technology background to equip him to take responsibility for co-ordinating the Red Sea database. The MEMAC staff will be self sufficient on a daily basis, with the Director reporting to the Secretary General of PERSGA.

One of the immediate tasks of the Director and his staff will be to produce a Work Plan for the MEMAC, which will include active contributions to be made by the MEMAC to the Action Plan, particularly in the areas of training, exercises, development and maintenance/updating of the database, and the development and updating of the Regional Contingency Plan.

The MEMAC will be expected to play an important co-ordinating role in enhancing the national and regional capability of Red Sea States to prepare for and combat oil pollution incidents, as envisaged by the Emergency Protocol of the Jeddah Convention.

In view of the importance of the MEMAC to the Region, it will receive direct support under this Action Plan as described in the Project Document and its budget.

8. CONCLUSIONS

This Action Plan has been developed in order to meet the wishes of the Component 2 Navigation Working Group that such a Plan should be prepared in order to help to develop national and regional systems for oil spill preparation and response, and a Regional Contingency Plan, for the Red Sea and Gulf of Aden. The Action Plan is submitted for consideration and approval by the PERSGA Council.

In addition, a separate Project Document has been prepared in order to seek international donor support for those aspects of the Action Plan which require external funding.

¹⁸ Study on the institutional framework for the MEMAC: Meyer & Mahmoud, 2001

ANNEX 1: ACTION PLAN ACTIVITIES

Objective 1: Development of National Systems for Oil Spill Preparedness and Response				
Output	Activity	Participating Countries etc.	Month	Inputs
Training	High Level Seminars for Government Administrators and Senior Managers (National Activity) x 5	Priority countries ¹ (one seminar in each country)	2-6	1. External trainers 2. Travel & DSA for trainers 3. Travel & DSA for participants (15 x 5) 4. Venues provided by recipient countries
	Regional Workshop on Contingency Planning (Regional Activity)	All PERSGA countries & Eritrea	2	1. External trainers 2. Travel & DSA for participants (24) 3. Travel & DSA for external trainers 1. Venue to be determined ³
	National Training Courses for Managers/On Scene Commanders (IMO level 2) x 5	Priority countries (one course in each country)	4-8	1. External trainers (including trainers from AASTMT) 2. Travel/DSA for trainers 3. Accommodation for participants (24 x 5) 4. Venues provided by recipient countries
National systems for oil spill response	Development (revision or completion) of National Contingency Plans	Priority countries plus Jordan	5-20	1. National Contingency Planning Committees 2. National focal points 3. External expert on contingency planning 4. Travel & DSA for expert
	Equipment needs assessment missions	Priority countries	6-9	1. National focal points 2. External expert on oil spill combating equipment 3. Travel & DSA for external expert
	Preparation of national legal frameworks	Priority countries plus Jordan	10-18	1. National legal experts 2. External legal expert 3. Travel & DSA for external expert
Implementation of relevant international conventions	Assistance (capacity building) to national governments	Priority countries and other States which request assistance	9-17	1. External expert in international conventions 2. National counterparts in each participating country ⁴

Notes

- 1 The "priority countries" are Djibouti, Eritrea, Somalia, Sudan and Yemen
- 2 DSA = daily subsistence allowance followed by the UN system
- 3 A regional training centre that can provide the facilities and equipment needed
- 4 A Regional Workshop on International Conventions may be required as an additional Activity

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Objective 2: Enhancement of co-operation between neighbouring States				
Output	Activity	Participating countries etc.	Months	Inputs
Support for Eritrea from the Action Plan	Communications between PERSGA and the Government of Eritrea	PERSGA and Eritrea	1-3	1. PERSGA Secretariat 2. Eritrea: Appropriate Ministries and Department of Maritime Transport
Regional Contingency Plan (RCP)	Development of a RCP for the Red Sea and Gulf of Aden, four Workshops, decisions on four sets of sub-regional boundaries for exercises, conduct of 4 Workshops for RCP development	All PERSGA countries & Eritrea	19-33	1. Three representatives from each country at each of four Workshops 2. IMO + consultant for each Workshop 3. Travel & DSA for all participants 4. Host country or Countries (to be determined)
Exercises	Communications exercises (x4)	For each sub-region within the Red Sea and Gulf of Aden	27-28	1. MEMAC to organize the exercises 2. External expert to assist 3. Emergency response centre staff in each country
	Equipment deployment exercises (x 4)	For each sub-region within the Red Sea and Gulf of Aden	28-32	1. MEMAC to organize the exercises 2. External expert to assist 3. Responders in each country

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Objective 2 Continued: Regional Training Programme				
Output	Activity	Participating countries etc.	Months	Inputs
Regional training programme	High Level Seminar for Government Administrators and Senior Managers (3 days)	All PERSGA countries & Eritrea	1	1. External trainers 2. Travel & DSA for trainers 3. Travel & DSA for participants (3 from each country) 4. Host country (to be determined)
	Regional Training Workshop for On Scene Commanders (5 days)	All PERSGA countries & Eritrea	10	1. Three representatives of each country + MEMAC 2. External Trainers 3. Travel & DSA for all participants 4. Host country (to be determined)
	Regional “Train the Trainers” course (5 days)	All PERSGA States plus Eritrea	12	1. Venue to be determined 2. External trainers 3. Travel & DSA for participants (26) 4. Travel & DSA for external trainers
	Regional Workshop on the use of dispersants (3 days)	All PERSGA States plus Eritrea	17	1. Venue to be determined 2. External trainers 3. Travel & DSA for participants (26) 4. Travel & DSA for external trainers
	Regional Workshop on sensitivity mapping (3 days)	All PERSGA States plus Eritrea	22	1. Venue to be determined 2. External trainers 3. Travel & DSA for participants (26) 4. Travel & DSA for external trainers
	Regional Workshop on risk assessment analysis (3 days)	All PERSGA States plus Eritrea	27	1. Venue to be determined 2. External trainers 3. Travel & DSA for participants (26) 4. Travel & DSA for external trainers
	Regional Workshop on oil spill modelling (3 days)	All PERSGA States plus Eritrea	32	1. Venue to be determined 2. External trainers 3. Travel & DSA for participants (26) 4. Travel & DSA for external trainers

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Objective 3: Support for the Marine Emergency Mutual Aid Centre (MEMAC)

Output	Activity	Participating countries etc.	Months	Inputs
MEMAC operating	Completion of any outstanding work on the EEAA Regional Centre and MEMAC Accommodation	Egypt	1-2	Government of Egypt
	Appointment of full complement of staff including support staff	All PERSGA States	1-3	PERSGA Secretariat to coordinate recruitment and selection procedures
	Procurement of additional equipment for MEMAC (radio communications equipment etc.)	MEMAC	2-4	1. Procurement budget for additional equipment approved and provided through PERSGA 2. Equipment to be selected and purchased by PERSGA
	Maintenance and updating of MEMAC database	All PERSGA States plus Eritrea	6-36 ongoing	1. Data to be provided by all States 2. Information to be compiled by MEMAC
	Participation in regional training programme	All PERSGA States & Eritrea plus MEMEC staff	10 12 17 22 27 32	Attendance (2 staff members) at Courses: <ul style="list-style-type: none"> ▪ On-Scene Commanders ▪ “train the trainers” ▪ the use of dispersants ▪ sensitivity mapping ▪ risk assessment analysis ▪ oil spill modelling
	Participation in development of Regional Contingency Plan	All PERSGA States & Eritrea plus MEMEC staff	19-33	Attendance at Workshops to develop the RCP and to determine boundaries for the purposes of exercises for areas in: <ul style="list-style-type: none"> ▪ the northern Red Sea ▪ the central Red Sea ▪ the southern Red Sea ▪ the Gulf of Aden
	Organisation of 4 communications exercises	For each sub-region within the Red Sea and Gulf of Aden	27-29	1. MEMAC staff to organize 2. External expert to assist 3. Emergency response centre staff in each country
	Organisation of 4 equipment deployment exercises	For each sub-region within the Red Sea and Gulf of Aden	28-32	1. MEMAC staff to organize 2. External expert to assist 3. Responders and equipment providers in each country

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ANNEX 2 PROJECT IMPLEMENTATION PLAN

Objective 1: The Development of National Systems for Oil Spill Preparedness and Response																												
Output 1: Training																												
1.1 High Level Seminars for Senior Personnel																												
1.2 Workshop on Contingency Planning																												
1.3 5 National OSC Training Courses (Level 2)																												
Output 2: National Systems for Oil Spill Response																												
2.1 Devt of National Contingency Plans																												
2.2 Equipment Needs Assessment Missions																												
2.3 Preparation of national legal frameworks																												
Output 3: Implementation of relevant international Conventions																												
3.1 Assistance to national governments																												
Objective 2: Enhancement of Regional Co-operation																												
Output 1: Support for Eritrea from the Action Plan																												
1.1 Communications - PERSGA & Eritrea																												
Output 2: Development of Regional Contingency Plan (RCP)																												
2.1 Devt of RCP Workshop 1																												
2.2 Devt of RCP Workshop 2																												
2.3 Devt of RCP Workshop 3																												
2.4 Devt of RCP Workshop 4																												
Output 3: Regional Exercises																												
3.1 Communications Exercises (4)																												
3.2 Equipment Deployment Exercises																												
Output 4: Regional Training Programme																												
4.1 High Level Seminar for Senior Personnel																												
4.2 Training Course for OnScene Commanders																												
4.3 "Train the Trainers" Course																												
4.4 Workshop on the use of dispersants																												
4.5 Workshop on sensitivity mapping																												
4.6 Workshop on risk assessment analysis																												
4.7 Workshop on oil spill modelling																												

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Objective 3: Support for the Marine Emergency Mutual Aid Centre (MEMAC)																												
Output 1: MEMAC Operational																												
1.1 Handover of MEMAC premises by EEAA	■	■																										
1.2 Appointment of full complement of staff	■	■	■	■																								
1.3 Procurement of additional equipment		■	■	■	■																							
1.4 Development and updating of database																												■
1.5 Participation in training programme																												
1.6 Participation in development of RCP																												
1.7 Organisation of communications exercises																												
1.8 Org'n of equipment deployment exercises																												
Project Management Activities																												
Project Review Meetings																												

Notes: A solid line indicates a major period of activity or a culmination of that activity.
A grey line indicates preparatory or ongoing work.

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ANNEX 3 OUTLINE PROGRAMME FOR HIGH LEVEL SEMINARS FOR GOVERNMENT ADMINISTRATORS AND SENIOR MANAGERS

The following is a suggested outline programme for the High Level Seminars. It should be taken as a guide for the seminars and can be modified as required to match the capacities and requirements of the Region, and the individual countries.

1. Video: “Working Together”.
2. Causes, fate and effects of spilled oil.
3. Oil spill response strategies.
4. Contingency planning.
5. Spill management: roles and responsibilities in HQ and in the field.
6. International co-operation and the legal framework.
7. Chemical spills: key features.
8. Response to chemical spills.
9. Spill response objectives: measurement and control.
10. Publicity and relations with the media.
11. Liability and compensation.
12. Termination of clean up: how clean is clean?
13. Discussion: status of contingency planning and oil spill response in each participating state.
14. Development of action list/future strategy.

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ANNEX 4 OUTLINE PROGRAMME FOR REGIONAL WORKSHOP ON CONTINGENCY PLANNING

The following is a suggested outline programme for the Regional Workshop on Contingency Planning. It should be taken as a guide for the workshop and can be modified as required.

1. The legal framework.
2. Probable oil spill movement in the Red Sea and Gulf of Aden.
3. Identification of areas of high spill risk.
4. Containment and recovery at sea – part 1: booms.
5. Containment and recovery at sea – part 2: skimmers and recovery devices.
6. Oil types and dispersant effectiveness.
7. Proposed combat strategy for the Red Sea and Gulf of Aden.
8. Shoreline clean up.
9. Compensation and preparation of claims.
10. Transport, storage and disposal of recovered oil and oily debris.
11. Publicity and relations with the media.
12. Sensitive areas and sensitivity mapping.
13. Contingency planning – part 1: the National Contingency Plan.
14. Reporting and alerting systems.
15. Contingency planning – part 2: the Local (Tier One) Contingency Plan.
16. Practical management of oil spill response.
17. Enhancing regional co-operation.

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ANNEX 5 OUTLINE PROGRAMME FOR NATIONAL TRAINING COURSES FOR SUPERVISORS AND ON-SCENE COMMANDERS

The following is a suggested outline programme for national training courses for supervisors and on-scene commanders. It should be taken as a guide for the training courses and can be modified as required.

1. Origins and sources of marine oil pollution.
2. Types of properties of oils.
3. Fate and behaviour of oil and its impact.
4. Introduction to accidental oil pollution.
5. Contingency planning.
6. Oil spill response strategies.
7. Sensitivity mapping for oil spill response.
8. Containment of spilled oil.
9. Recovery of oil at sea.
10. Use of dispersants.
11. New strategies for oil spill response.
12. Shoreline protection and clean-up activities.
13. Deactivation of response.
14. Storage, transportation and disposal of oily waste material.
15. Assessing chemical hazards.
16. Classifying chemicals.
17. Ecotoxicology and assessing impact of chemicals on the environment.
18. Safety at a spill site.
19. Communications and reporting.
20. Compensation for oil pollution damage.
21. Pooling resources and international co-operation.
22. Record keeping for compensation claims.
23. Public relations and the media.
24. Status of the national system for preparedness and response to marine spills of oil and other harmful substances.
25. Table top exercise.

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ANNEX 6 SUGGESTED OUTLINE OF A NATIONAL CONTINGENCY PLAN

The following is a suggested outline for a National Contingency Plan. It should be taken as a guide for the plan and can be modified as required.

PART A: NATIONAL STRATEGY

A.1 INTRODUCTION

- A.1.1 Purpose and objectives of the NCP
- A.1.2 Scope and content of the NCP.
- A.1.3 Definitions.
- A.1.4 Distribution of the NCP.
- A.1.5 Plan revision.

A.2 INSTITUTIONAL ARRANGEMENTS

- A.2.1 Legal requirements
- A.2.2 Responsibilities of the lead agency
- A.2.3 National Contingency Planning Committee
- A.2.4 Emergency Response Committee
- A.2.5 Responsibilities of support agencies

A.3 THE NATIONAL SYSTEM FOR RESPONSE TO MARINE OIL AND CHEMICAL SPILLS

- A.3.1 The tiered response concept
- A.3.2 Tier One marine pollution emergency plans
- A.3.3 Tier Two contingency plans
- A.3.4 Tier Three: the National Contingency Plan

A.4 INCIDENT COMMAND PROCEDURES

- A.4.1 Definitions
- A.4.2 Tier One incident command
- A.4.3 Tier Two incident command
- A.4.4 Tier Three incident command
- A.4.5 International co-operation and access to the oil industry's international Tier Three Centres

A.5 RESOURCES AT RISK

- A.5.1 Shoreline sensitivity maps
- A.5.2 Shoreline resources: priority for protection
- A.5.3 "Sacrificial areas"

A.6 NATIONAL COMBAT STRATEGY

- A.6.1 The fate of oil spilled at sea
- A.6.2 Combat strategy
- A.6.3 Response times

A.7 POLICY ON THE USE OF DISPERSANTS

- A.7.1 National combat strategy
- A.7.2 Net environmental benefit

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A.7.3 Prior approval for the use of dispersants

A.8 MEDIA RELATIONS PLAN

A.8.1 Objectives for relations with the media

A.8.2 Appointment of a media liaison officer

A.9 TRAINING AND EXERCISES

A.9.1 Training

A.9.2 Exercises

A.10 LIABILITY AND COMPENSATION

PART B: OPERATIONAL PROCEDURES AND TECHNICAL GUIDELINES

B.1 Notification and reporting procedures

B.2 Spill assessment and surveillance

B.3 Oil spill prediction guidelines

B.4 Dispersant application guidelines

B.5 Collection and handling of oil samples

B.6 Techniques for shoreline clean up

B.7 Transport and disposal of recovered oil and oily debris

B.8 Restoration of affected areas and post-spill monitoring

B.9 Communications plan

B.10 Guidelines for publicity and relations with the media

B.11 Management of an oil spill response

B.12 Guidelines for making claims for compensation

PART C: DATA DIRECTORY

C.1 Operational contact points

C.2 List of recipients of national contingency plan

C.3 Sensitivity maps

C.4 Summary of oil spill combating equipment

C.5 Crude oil database

C.6 Beaufort scale of wind force

C.7 Meteorological characteristics of the coastline

C.8 List of approved dispersants

C.9 P&I Club representatives

C.10 Membership of the National Contingency Planning Committee

ANNEXES

Annex A The legal framework

Annex B Liability and compensation

Annex C International co-operation: Jeddah Convention

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ANNEX 7 SUGGESTED OUTLINE OF A NATIONAL LEGAL FRAMEWORK

The following is a suggested outline of a national legal framework. It should be taken as a guide for the legal framework and can be modified as required.

- Article 1: Interpretation
- Article 2: Application
- Article 3: Responsibilities of the lead government department and support agencies
- Article 4: National Contingency Plan
- Article 5: Marine pollution emergency plans
- Article 6: Shipboard oil pollution emergency plans
- Article 7: Reporting of marine pollution incidents: ships
- Article 8: Reporting of marine pollution incidents: oil handling facilities
- Article 9: Reporting of marine pollution incidents: sea ports
- Article 10: Reporting of marine pollution incidents: Governorates
- Article 11: Reporting formats
- Article 12: Offences and penalties
- Article 13: Commencement
- Schedule: Detailed description of the responsibilities of the lead department and support agencies as defined in the NCP

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ANNEX 8 SUGGESTED OUTLINE FOR THE REGIONAL CONTINGENCY PLAN

The following is a suggested outline for a Regional Contingency Plan, to be taken as a guide and can be modified as required.

1. INTRODUCTION
 - 1.2 Purpose and objective
 - 1.3 Scope and geographical coverage
 - 1.4 Definitions, acronyms and abbreviations

2. POLICY AND RESPONSIBILITIES
 - 2.1 Basis for the plan
 - 2.2 Exchange of information
 - 2.3 Meetings of operational authorities responsible for the implementation of the plan
 - 2.4 Joint training and exercises
 - 2.5 Revision and amendment of the plan

3. RESPONSE ELEMENTS AND PLANNING
 - 3.1 Mechanism for activating the plan
 - 3.2 Assumption of the role of the lead State
 - 3.3 National On-Scene Commander (NOSC)/Supreme On-Scene Commander (SOSC)
 - 3.4 Emergency response centres/joint emergency response centre
 - 3.5 Support teams
 - 3.6 Command structure
 - 3.7 Communications arrangements
 - 3.8 Response planning
 - 3.9 Response strategy

4. RESPONSE OPERATIONS
 - 4.1 Response phases
 - 4.2 Spill surveillance
 - 4.3 Requests for assistance within the framework of the plan
 - 4.4 Joint response operations
 - 4.5 Use of dispersants
 - 4.6 Request for additional assistance from other parties
 - 4.7 Termination of joint response operations and deactivation of plan

5. COMMUNICATIONS AND REPORTING
 - 5.1 Communications system
 - 5.2 Pollution reporting system (POLREP)
 - 5.3 Situation reports (SITREPs)
 - 5.4 Post incident reports

6. ADMINISTRATION, LOGISTICS AND FUNDING

6.1 Logistics

6.2 Financial procedures

6.3 Transboundary movement of response personnel, equipment, products and self-contained units

6.4 Medical insurance and medical assistance

6.5 Responsibility for injury and damage

6.6 Documentation of response operations and related costs

7. PUBLIC INFORMATION

7.1 Public relations officer

7.2 Press releases

7.3 Press conferences.

Annex I: Geographical coverage and areas of responsibility

Annex II: Directory of competent national authorities, contact points, emergency response centres, national on-scene commanders and other relevant addresses

Annex III: Extracts of relevant sections of the National Contingency Plans

Annex IV: Directory of response personnel and inventory of response equipment, products and other means which each party might offer as assistance in the event of activation of the plan.

Annex V: Communications system

Annex VI: National maps

Annex VII: POLREP (pollution reporting system)

[Annex VIII: Guidelines for spill assessment and aerial surveillance]

[Annex IX: Claims manual]

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ANNEX 9 OUTLINE PROGRAMME FOR THE “TRAIN THE TRAINERS” COURSE

The following is a suggested outline programme (5 days) for the “Train the Trainers” course. It should be taken as a guide for the course and can be modified as required.

1. Effective oral communication
2. Lesson planning
3. Training aids
4. Demonstration 1: physical properties of oil and emulsions
5. Properties and behaviour of oil
6. Fate of oil
7. Demonstration 2: forecast of slick trajectory using prediction models
8. Exercise 1: presentations by trainees
9. Response organisation and control strategies: management aspects
10. Response organisation and control strategies: technical aspects
11. Boom selection
12. Boom deployment and configurations
13. Demonstration 3: practical deployment of offshore booms
14. Skimmers and their characteristics
15. Demonstration 4: effectiveness of skimmers on different oil/emulsion conditions
16. Demonstration 5: practical deployment of skimmers and recovery systems at sea
17. Use of dispersants 1
18. Use of dispersants 2
19. Demonstration 6: dispersant application
20. Exercises: working of physical properties of oil/emulsions
21. Exercises: demonstration of skimmer systems
22. Exercises: boom deployment offshore
23. Shoreline protection strategies
24. Demonstration 7: shoreline protection equipment
25. Exercises: deployment of small shore protection boom
26. Exercises: deployment of sorbent boom
27. Exercises: deployment of small inter-tidal boom
28. Exercises: deployment of shore protection carpet
29. Maintenance and cleaning of equipment
30. Shoreline types and their sensitivity
31. Planning for shoreline clean up
32. Transport and disposal of oily wastes
33. National oil spill contingency plan.

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ANNEX 10 OUTLINE PROGRAMME FOR THE REGIONAL WORKSHOP ON THE USE OF DISPERSANTS

The following is a suggested outline programme (3 days) for the Regional Workshop on the Use of Dispersants. It should be taken as a guide for the workshop and can be modified as required.

1. Oil pollution and the behaviour of spilled oil
4. The effects of oil pollution
5. Oil spill response strategies
6. Oil spill dispersants: purpose, function and composition
7. Advantages and disadvantages of using oil spill dispersants
8. Approval of oil spill dispersants
9. The use of surfactants on shorelines
10. Considering oil spill dispersants during contingency planning
11. Capabilities and limitations of oil spill dispersants
12. Putting dispersants to work: application technology
13. Table top exercise

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ANNEX 11 OUTLINE PROGRAMME FOR THE REGIONAL WORKSHOP ON SENSITIVITY MAPPING

The following is a suggested outline programme (3 days) for the Regional Workshop on Sensitivity Mapping. It should be taken as a guide for the workshop and can be modified as required.

1. Introduction to sensitivity mapping: value and uses
2. Designing maps for particular uses
3. Inventory maps: resource categories and information sources
4. Strategy planning and response maps: features and information sources
5. Information: collection and collation
6. Simple mapping exercise
7. Formatting maps for ease of use
8. Using aerial photography
9. Linking sensitivity maps with contingency plans
10. Sensitivity and vulnerability of resources to oil spills
11. Categorising and prioritising resources
12. Vulnerability indices and the ESI method
13. Mapping exercise
14. Formatting maps for ease of use
15. Additional information linked to maps
16. GIS sensitivity mapping
17. Principles of GIS construction and use in oil spill applications
18. Planning an oil spill sensitivity GIS programme
19. Introduction to MAPEDIT or other mapping system
20. Demonstration: GIS map manipulation
21. Hands-on exercise 1
22. Overview of oceanographic approach to oil spill modelling
23. Strategy for oceanographic database establishment
24. Demonstration: basic GIS map editing
25. Hands-on exercise 2
26. Introduction to GIS construction
27. Defining layers and creation of objects/symbols
28. Digitising new objects
29. Hands-on exercise 3

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30. Importing digital data
31. Object properties
32. Object attributes
33. Single point operations
34. Course summary
35. Question and answer session

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ANNEX 12 OUTLINE PROGRAMME FOR THE REGIONAL WORKSHOP ON RISK ASSESSMENT ANALYSIS

The following is a suggested outline programme (3 days) for the Regional Workshop on Risk Assessment Analysis. It should be taken as a guide for the workshop and can be modified as required.

1. Introduction
2. Past Spills
3. Operations contributing to the likelihood of a spill:
 - Offshore platforms
 - Pipelines
 - Oil terminals/vessel visits
4. Vessel traffic:
 - Number of tankers
 - Risks to navigation
 - Frequency of accidents
 - Spill sizes and correlation with vessel characteristics
5. Standardizing risk assessment:
 - Plan the risk assessment
 - Analyse hazards
 - Analyse the probabilities
 - Analyse the consequences
 - Characterize the risks
 - Manage the risk
6. Checklists
7. Spill trajectory models
8. Identifying high risk areas

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ANNEX 13 OUTLINE PROGRAMME FOR THE REGIONAL WORKSHOP ON OIL SPILL MODELLING

The following is a suggested outline programme (three days) for the Regional Workshop on Oil Spill Modelling. It should be taken as a guide for the workshop and can be modified as required.

1. Oil spill models – development, calibration, validation and use:
 - Why predict the fate of an oil spill?
 - Emergency response, contingency planning, risk assessment, training;
 - Physical processes affecting oil fate.
2. What features a good oil spill model should have:
 - Required data output;
 - Required data input;
 - Limitation of models.
3. An example of modelling (e.g. the Sea Empress).
4. Developing databases for oil spill preparedness and response:
 - Oil characteristics;
 - Laboratory assessment of oil properties and weathering.
5. Oceanography data requirements:
 - Survey data and hydrographic modelling;
 - Data sources.
6. Meteorology data requirement:
 - Modelling;
 - Data sources.
7. Coastal resources:
 - Sensitivities;
 - Response resources.
8. Exercise: spill scenario/data gathering and processing exercise.
9. Oil spill modelling in emergency response:
 - Summary of data requirements and objects.

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10. Oil spill incident – data management:
 - Data types;
 - Who needs data?
 - Managing data – an IT approach.
11. Use of oil spill model in emergency response:
 - Use of model in emergency response centre and in the field.
12. Operational links between emergency room and salvage and clean-up teams.
13. Prediction of impacts and modelling scenario:
 - Used to predict estimated known releases;
 - To provide information for a number of potential spill scenarios to aid strategic response planning.
14. Oil spill modelling in planning and running oil spill exercises.
15. Oil spill modelling exercise.
16. Real case studies.
17. Oil spill modelling in contingency planning and impact assessment:
 - Contingency planning systems;
 - Deterministic vs stochastic modelling;
 - Modelling for regulatory approval;
 - Uses and application of models in risk assessment studies.
18. Hindcasting:
 - Consequence analysis modelling of response actions;
 - Operational or training tool?
19. Use of models in impact assessment:
 - Natural resource damage assessment;
 - Uses and level of acceptance within the oil spill community.
20. Technology in action and developing technologies:
 - What is the future going to be?
 - Real-time modelling systems;
 - Complex mainframe/supercomputer models;
 - Use of satellite imagery;
 - Oil spill response data collection, collation, archiving.

ANNEX 14 OUTLINE OF EQUIPMENT DEPLOYMENT EXERCISES

Equipment deployment exercises will be developed at an early stage in the implementation of the Action Plan, in co-ordination with representatives of national authorities who are responsible for the oversight of pollution combating equipment and who are able to commit resources under their control to the exercises.

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ANNEX 15 OBJECTIVES OF THE MEMAC

The following objectives of the Marine Emergency Mutual Aid Centre (MEMAC) were laid down in Article III of the Protocol to the Jeddah Convention concerning Regional Co-operation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency.

Article III

1. The Contracting Parties hereby establish the Marine Emergency Mutual Aid Centre.
2. The objectives of the Centre shall be:
 - a. To strengthen the capacities of the Contracting Parties and to facilitate co-operation among them in order to combat pollution by oil and other harmful substances in cases of marine emergencies;
 - b. To assist Contracting Parties, which so request, in the development of their own national capabilities to combat pollution by oil and other harmful substances and to co-ordinate and facilitate information exchange, technological co-operation and training;
 - c. A later objective, namely, the possibility of initiating operations to combat pollution by oil and other harmful substances at the regional level, may be considered. This possibility should be submitted for approval by the Council after evaluating the results achieved in the fulfilment of the previous objectives and in the light of financial resources which could be made available for this purpose.
3. The functions of the Centre shall be:
 - a. To collect and disseminate to the Contracting Parties information concerning matters covered by this Protocol, including:
 - i. Laws, regulations and information concerning appropriate authorities of the Contracting Parties and marine emergency contingency plans referred to in article V of this proposal.
 - ii. Information available to the Contracting Parties concerning methods, techniques and research relating to marine emergency responses referred to in article VI of this Protocol and
 - iii. List of experts, equipment and materials available for marine emergency responses by the Contracting Parties;
 - b. To assist the Contracting Parties, as requested:
 - i. In the preparation of laws and regulations concerning matters covered by this Protocol and in the establishment of appropriate authorities;
 - ii. In the preparation of marine emergency contingency plans;
 - iii. In the establishment of procedures under which personnel, equipment and materials involved in marine emergency responses may be expeditiously transported into, out of, and through the territories of the Contracting Parties;

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- iv. In the transmission to the Contracting Parties of reports concerning marine emergencies; and
- v. In promoting and developing training programmes for combating pollution;
- c. To co-ordinate training programmes for combating pollution and prepare comprehensive anti-pollution manuals;
- d. To develop and maintain a communication/information system appropriate to the needs of the Contracting Parties and the Centre for the prompt exchange of information concerning marine emergencies required by this Protocol;
- e. To prepare inventories of the available personnel, materials, vessels, aircraft, and other specialized equipment for marine emergency responses;
- f. To establish and maintain liaison with competent regional and international organizations, particularly the International Maritime Organization, for the purposes of obtaining and exchanging scientific and technological information and data, particularly with regard to any new technology which may assist the Centre in the performance of its functions;
- g. To prepare periodic reports on marine emergencies for submission to the Council; and
- h. To perform any other functions assigned to it either by this Protocol or by the Council.

4. The Centre may fulfil additional functions necessary for initiating operations to combat pollution by oil and other harmful substances on a regional level, when authorized by the Council, in accordance with paragraph 2(c) above.

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