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الجمعية البرلمانية للبحر الأبيض المتوسط

**2nd Standing Committee on Economic, Social and
Environmental Cooperation**

Special Task Force on Environment

Rapporteur: Hon. Nikolaos Nikolopoulos (Greece)

**Natural disaster prevention and management
in the Mediterranean marine space caused by oil or gas leakage**

Report unanimously adopted on 29 October 2011, during the VI Plenary Session, Palermo

1. The enormous ecologic, as well as economic disaster in Mexico Gulf is what must be avoided by all means in the Mediterranean space. Our efforts are oriented towards acquiring knowledge and drawing conclusions from this tragic experience, taking into account the Mediterranean basin's particularities and specific features, which, in the unfortunate event of a similar destruction, shall suffer much graver impact, both in terms of quality and quantity, directly affecting the life of tens of millions of people. The permanently residing population of the Mediterranean coastline rises to 150 million of people and its water wets 21 countries and the Palestinian Authority. This population may double during the summer period, since the Mediterranean is one of the most popular vacation destinations in the world. The accident experience at the Deepwater Horizon platform must raise Europe's and the rest of the Mediterranean countries' awareness and concern as to the adequacy of today's regulatory frame and practices-at the levels of security, response preparedness and addressing emergencies.

OUTLINE

1. DESCRIPTION

- The Mediterranean as a geophysical space, as oil and natural gas distribution channel, as storing and processing space, as production area
- Refineries, ports of loading/unloading, transfer stations
- Coastal and submarine drilling sites in the Mediterranean
- Oil and Natural Gas Transport Pipelines ending up in the Mediterranean
- Geological and climatologic features affecting the possibility of disaster (seismic activity, volcanoes)

2. The Mediterranean Sea is a semi-closed sea basin intersecting between North Africa, the Middle East and Southern Europe. Russia, the Black Sea countries and the Eastern and Central European countries are linked through the Black Sea, the sea of Marmara and the Bosphorus strait, and the network of the Danube river channels. Moreover, the Suez channel is the gate to the Arabian Sea and the Persian Gulf, as well as the seas and oceans of the Orient, whereas Gibraltar links it to the Atlantic Ocean. 90% of transports between the EU and the rest of the world and about 40% of intra-European transports are conducted via the sea.

3. Its core role results to the daily passing-through of thousands of vessels having as destination the Mediterranean countries or the linking gates to other seas and oceans. The fact that the Mediterranean itself is an oil and natural gas production area, as well as its neighbourliness to the most important North hemisphere and the world's oil-producing countries results to the daily trafficking of –among other goods, millions of tons of mineral oils/hydrocarbons and/or their products, via tankers of any age, type, operational capacity, safe or not.

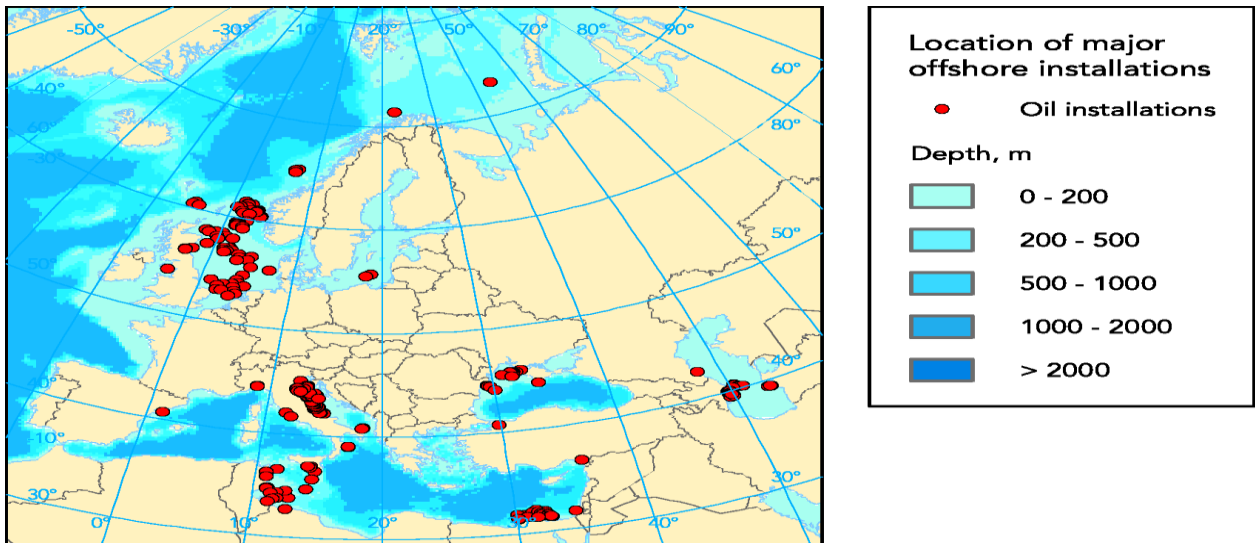
4. More specifically, each year over 400 millions of tons of oil are transported through the Mediterranean, which is about 30% of the total amount of oil products transported by sea. According to the official data of the European Environment Agency (2000 and 2006) the main transport axis for oil in the Mediterranean, reaching 90% of the fluxes, goes along the coasts of Egypt towards Gibraltar passing through the coasts of Sicily, Malta and Morocco. According to annual data provided by the Lloyds Casualty report shows that the annual marine accident average in the Mediterranean is of around 25 incidents. Half of these accidents lead to an oil spill and 15 % of a spill exceeding 700 tons. The geographical distribution of hot spots (marine areas presenting intense problems of pollution) is directly associated to the frequency of the most travelled maritime routes and to the areas around the large ports where oil and gas terminals are located. The Mediterranean hosts close to 500 harbours. In order to prevent and limit pollution, the Mediterranean coastline hosts a number of reception facilities, as well as facilities for storage, trans-shipment and processing of any kind of goods.

5. It is mentioned indicatively that in the Mediterranean only, there are 60 oil refineries. Further to the above, the rapidly increasing demand for mineral oils/hydrocarbons, the gradual exhaustion of “easy-to-access” natural gas and oil deposits, have led to research into extraction in more complex environments characterized by high pressure/temperature deposits, greater depths and/or extreme climate conditions which may complicate both the management of undersea facilities, and response to incidents. In other words, many of the future drilling works could be carried out in conditions similar to those of the Deepwater Horizon.

6. As shown at the table below, in the Mediterranean, there are many oil and natural gas offshore installations and facilities. Besides that, while the number of installations in the Black Sea and the Baltic Sea is still limited to one-digit numbers, there are more than 100 installations operating in EU waters in the Mediterranean¹including 30 oil rigs (cf. Annex I);

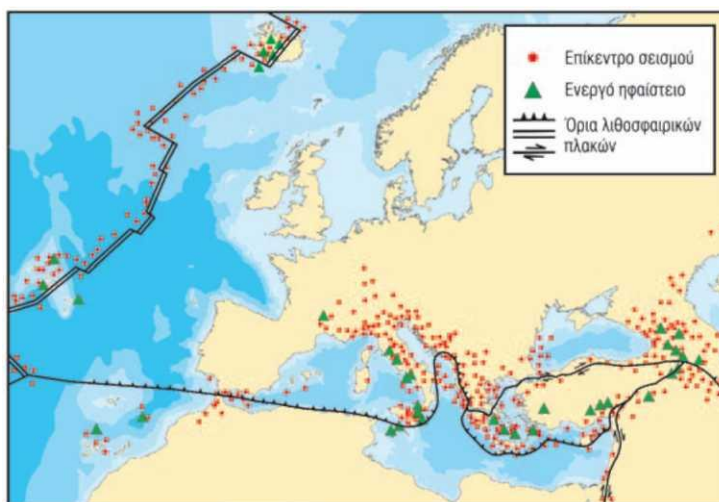
¹ The data includes both, oil and gas installations. Referring to the Italian continental shelf, according to the Italian Ministry of Mineral Resources and Energy website, among platforms only 10% are producing oil (<http://unmig.sviluppoeconomico.gov.it/unmig/strutturemarine/completo.asp>). It is also important to stress that risks related to gas and oil offshore installations are not comparable and that it should be taken into consideration when defining safety standards for these two types of activities.

moreover, plans have been mentioned for new searches to begin at the zones of Cyprus and Malta. Furthermore, the search for oil and natural gas or relevant production is being conducted off the Algerian, Croatian, Egyptian, Israeli, Libyan, Tunisian, Turkish coastlines.



Source: European Environment Agency

The Mediterranean's seismic activity is a key factor that potentially could cause major disaster due to oil leakage in the region. The seismic activity originates from tectonic plates' movement and volcanic activity. As shown in the map below, the Central and Eastern Mediterranean exhibit intense and constant signs of seismic activity, especially at the northern section.



- earthquake epicenters
- active volcano
- limits of lithosphere plates

Map of volcanoes & seismic zones in Europe

Specifically, in Greece

- every 18 days- on the average- there is an incident of an earthquake sized 5R
- every 6 years- on the average- there is an incident of an earthquake sized 7R

-every year there is a possibility for one major earthquake sized 6,3 R

The North Anatolian Fault in the Marmara Sea, which has not been active since 1766 may produce an earthquake up to 7,4 R , activating at the same time its branches at the Greek space. There is similar danger for earthquakes of comparable magnitudes in other areas of the Mediterranean basin as well.

There are 16 active volcanoes in the Mediterranean basin, situated in Greece and Italy.

7. The Mediterranean is a semi-closed sea. Each natural phenomenon of a large scale and intensity occurring in this area is directly being felt almost throughout the whole coastline of the Mediterranean basin. Moreover, seismic activity also entails the danger of tsunamis, the tragic impact of which we recently witnessed in Japan. Planned developments in the eastern Mediterranean region, due to the existence of strong winds, marine currents and earthquake hazards, could worsen the impact of possible disasters, not only in the event of a powerful earthquake, but also in case of a nuclear accident.

8. Earthquakes are the main cause generating tsunamis. However, tsunamis may occur also during the course of a volcano eruption when the cutting-off and resulting collapse all of a volcano part into the sea may produce such waves. It has been estimated that a possible landslide from the Aetna volcano will cause a tsunami that will reach the height of about 40 meters close to Calabria and waves of 9 to 13 meters high alongside the coasts of Greece and Libya and 2 to 4 meters high in the areas of Egypt and Syria. This is not the first time that such a phenomenon has occurred and that is why such a scenario is considered as feasible. Before 8000 years, an enormous volcano landslide far off the Aetna volcano in Sicily generated a tsunami that totally destroyed the Mediterranean Eastern coast.

2. FACTORS AFFECTING THE MEDITERRANEAN COUNTRIES COOPERATION

- Geopolitical conditions, interstate relations and agreements, interstate cooperation schemes, participation of Mediterranean countries in international organizations and/or coalitions
- International Environmental Organizations
- Various political, social, economic, cultural, technological aspects

9. The Mediterranean, in the course of history has played a linking, but also separating role for peoples and cultures. At its coastline, various religions, political regimes, cultures and peoples have flourished. For long periods in history, it has been a unified political space. In our times, important steps have been made towards a voluntary rapprochement of countries and for political cooperation as well. Mediterranean countries are directly interlinked through many bilateral and multilateral interstate agreements, but also indirectly through their participation in international organizations. This Assembly constitutes an excellent example and practical proof of our common will for closer and more substantial cooperation of our peoples. Of course, all obstacles have not yet been defeated, but we have the will to overcome them and we are working towards this end.

10. Therefore, I consider our good will and willingness for cooperation as granted, what is more considering that this cooperation is aimed at safeguarding the quality of our life, which is directly associated to this land where we have the privilege of living. I believe that

in our endeavour for cooperation we will enjoy the help of reliable and responsible citizens' organizations, such as environmental ones, having technological expertise concerning environmental issues and acting dynamically for the protection of the environment.

11. It is true that there are differences between our countries concerning religious, social, cultural and technological issues. However, our close cooperation, triggered by such a crucial and vital issue, will help towards the better understanding of cultures and for bridging differences in technology and technological know-how.

3. LEGAL FRAMEWORK ON SAFETY (drilling, operation, storage and transport)

- National legislation
- EU Directives
- International legislation
- The 1975 Barcelona Convention
- ICZM protocol
- The 2002 Protocol Concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (Prevention and Emergency Protocol)
- The 1994 Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (Off-shore Protocol)
- Project PEGASO

4. COMPARISON of legal, geopolitical, geophysical and climatologic factors of the Mexican Gulf with respective Mediterranean.

12. It is important to identify at all levels similarities and differences between the Mediterranean and the Mexico Gulf, so as to be able to foresee precisely and effectively every possible scenario of disaster and approach every possible preventive action.

On one side the Mediterranean is better known from a geological point of view compared to the Gulf of Mexico. This allows companies operating in the Mediterranean to know in advance what kind of risks, related to the geological conditions of the field, will have to be faced. Differences in the amount of deep water activities and in the hypothetical discharge rates during a blow out should also be taken into account. However, on the other side, the Mexico Gulf presents much less seismic activity than the Mediterranean sea and fewer active volcanoes.

Mexico, Cuba and the USA have coasts at the Mexico Gulf. Given these countries' differences in power, means and technology, as well as their small number, it is clear that Authorities-especially USA- are furnished with the possibility of immediate action, with numerous personnel and means, without wasting time in diplomatic contacts, negotiations and arrangements. Moreover, the drilling company itself was in direct contact with the competent authorities for better response coordination.

13. We, in the Mediterranean, should seek an answer on the rapidity to react to a similar accident as well as on the technological tools available to the countries of the region. The coordination of response actions would not be easy given that groups of a different

nationality, culture and language would have to cooperate. Another difficulty would be the cooperation with the company-proprietor of the installation/facility would be difficult, since multilateral contacts with representatives of interested parties would have to be carried out.

14. Despite the seeming advantages in Deepwater Horizon's case, as compared to the Mediterranean scenario, the disaster was great after all. A decisive factor concerning the magnitude of the disaster was the time elapsed since the beginning of the leakage until its sealing. The great depth in which drilling was conducted played a major role in this, as proven by the investigation. According to the BP report, the causes of the disaster were a combination of failing materials, human errors, but also omissions on part of the contracting company.

5. SCENARIOS-DESCRIPTION OF DANGERS DUE TO LEAKAGE

- **Sources of possible leakage**

15. There are many possible causes of an ecological disaster due to oils leakage in the Mediterranean. Due to the basin's morphology and size, the possible effects in case of accident of a similar magnitude, will be suffered by all countries wetted by it.

The most possible causes for leakage are listed below:

Leakage from land/on shore installations/facilities: it is estimated that only by accidents occurring during loading and unloading operations of the 60 Petroleum refineries situated in its coasts, there is an annual average of 20.000 tonnes of oils leakage.

16. Shipping/maritime accidents and rejection of waste from ships: there is an annual average of about 25 shipping/maritime accidents occurring annually in the Mediterranean, 15 of which concern ships creating oil spills and chemical spots. The more accident-prone areas- due to intense maritime traffic – are the Gibraltar and the Messina Straits , the Sicily Strait and the access routes to the Dardanelles Straits , as well as many ports and routes for its approaching, especially Genoa, Livorno, Tsivitaveka, Venice, Trieste, Piraeus, Nicosia, Larnaca, Beirut and Alexandria. The geographical distribution of the most common pollution points is associated to the density of the shipping traffic in the various routes of the Mediterranean. These accidents can take several forms: vessels' collision, ship-wrecking, intentional rejection of oil waste, oil leakage from shipwrecks.

- **Miscellaneous accidents in offshore oil extraction facilities**

17. No similar major accident has been reported so far in the Mediterranean, despite the large number of facilities/installations. Nevertheless, the possibilities to happen are increasing and due, on the one hand, to the exhaustion of the "easy -to-access" reserves and the resulting orientation to greater depths under harder extraction conditions , and on the other hand to the expected increase of number through intensive search for new resources/deposits, from countries that had not so far been activated. An illustrative example is the floating platform under construction off the coast of Libya. The constructing company, BP, has started work since summer 2010 after three years of negotiations with the Government of Libya. The extraction shall take place from a depth of 1700 to 1900 meters and, apparently, a similar technology to that in Mexico Gulf will be used, where the same company conducted

extraction works from a depth of 1700 meters. In such depths, due to the enormous hydrostatic pressure, any fault repair or sealing a crack from where oil leaks is technically very difficult. In case of accident occurring in the specific facility (the one off the Libyan coast), we can wonder what would be the real impact on the coasts of the countries of the region. According to Italian newspaper “24 Ore”, the Greek coastline - specifically the Southern Peloponnesian coasts (640 km) and the Cretan coasts (644 km) -would fall into the impact range. Given their close proximity, the coasts of Tunisia, Malta and Italy, much closer, would also be exposed to the threat.

18. The estimated surface that the oil spill would cover in the case of such a grave ecologic incident, such as the one in the Mexico Gulf, is up to 20% of the total extent of the Mediterranean Sea, which is practically a closed sea. In terms of numbers and given that the Mediterranean sea surface is 2,5 millions of square kilometres, theoretically the volume of crude oil could cover 500.000 square kilometres in the basin’s central area, causing immeasurable impact in the whole ecosystem. It would also be opportune to calculate the risk, based on the number of platforms operating in the region. According to professor of marine ecology Nickolas Secci of the University of Sassari, warns that a crude oil leakage into the Mediterranean shall have a multiplying effect, because of the existing currents in the Mediterranean and the fact that it is a semi-closed sea, in comparison to the Gulf of Mexico and it would affect the coastlines where 150 millions of people reside.

6. Prevention, preparedness to the fight, fight against the potential pollution risks

- Existence of National Plans
- Interstate cooperation
- Infrastructure, Personnel, Means

19. Undoubtedly, it is to the interest of all countries to maintain their home production of oil and natural gas, for reasons of energy sufficiency and security, as well as for maintaining related job posts and business opportunities in the field of economy. Even though it is not possible to eliminate all dangers form man made activities, including the branch of the offshore extraction from hydrocarbon reserves, it is essential to guarantee the safety and integrity of works, as well as the maximum protection of citizens and the environment.

20. Each country has its own National Plan for crisis management and has taken care for providing the appropriate means to this end - or should agree on a plan if it has not yet done so - (cf. Annex II - Existence of national emergency plans). Several sub-regional agreements for mutual assistance have been drafted but only 2 are already in force (cf. Annex III - Sub-regional agreements). However, the recent incident’s magnitude and severity has made clear that no country can cope with such a disaster on an individual basis and by its own means. Therefore, the initial reviewing of all existing plans is dictated, together with the multilateral cooperation of the Mediterranean countries, in order to be able to expect effective management of a similar incident. In this spirit, the European Commission in an effort to establish the conditions for member-states’ better coordination and effective intervention, has reviewed the applicable European legislation, and, following consultations with member-states’ competent authorities and field experts in July 2010, it identified five major fields calling for action in order to maintain unflinching safety and environmental protection levels in the EU:

- Thorough licensing processes
- Enhanced controls by state authorities
- Addressing applicable legislation gaps
- Enhanced disaster management on the part of the EU
- International cooperation for promoting security and safety in the open sea and response capacities throughout the planet

21. Most EU member-states and the field stakeholders are master the most recent technologies concerning safety, readiness and management. However, the danger of major offshore accidents dictates the need for applying modern and latest technology throughout the EU as a rule. The use of dispersants to enable large quantities of oil to be absorbed by sea water quicker was allowed during the Gulf of Mexico crisis. However controversy regarding the impact of dispersants on the environment has led several Mediterranean countries to strictly control or to ban their use while more scientific research is conducted (cf. Annex IV - National positions on the use of dispersants). The establishment of a uniform high level of security will gain citizens' full trust and may support efforts towards guaranteeing high levels of safety, readiness and response extending further to the European borders, to territorial waters of other countries and to international waters. We actively participate in this effort, which has been already recognized as of utmost importance by the Mediterranean countries.

7. PROPOSALS-RECOMMENDATIONS

- Adaptation-supplementation of existing Directives and Safety Rules
- Interstate Cooperation Agreements
- Coordination of controls, supervision, action
- Organizational proposals
- Ensure further ratification of the 2002 Prevention–Emergency Protocol and of the 1994 Off-shore Protocol.

22. We consider citizens' safety and the protection of the environment as social rights that cannot be left exclusively at the field's contracting enterprises' discretion or to self regulation. On the contrary, we believe that operators shall be subjected to a goal-setting regime, constantly monitored by an Independent Verification Party. We are convinced that prevention should be the first step towards effective policy design. Moreover, the existence of substantial differences in national legislations and regulatory frameworks concerning the oil production-distribution- processing circuit's function, actually cancels any attempt whatsoever oriented to the right direction.

23. International regimes concerning the offshore oil and natural gas extraction activities are either not fully developed or lacking mechanisms for their effective implementation, while, even at the European level, the situation is shaped to a large extent by national legislation provisions on an individual member state basis, as community legislation either does not cover various relevant issues of the field, or stipulates only minimum performance levels. What is more, provisions on offshore activities are often scattered around miscellaneous EU legislative measures.

24. Therefore, regimes on licensing, operational security and environmental protection vary from one member-state to another. Each member-state issues licenses and other

approval documents required for the search for and extraction of hydrocarbon/mineral oil resources in its territory and territorial waters, setting its own terms. However, approvals granted by individual member-states for drilling off their coasts may cause severe impact to other states. The environmental, economic and social impact caused by major oil leakage, affect sea and coastal areas regardless of national borders. Thus, licensing processes at a national level must be reviewed and shared with all member states so as to reflect recognized best practices and include common obligations on safety, health and environmental performance, danger management/incident response and independent confirmation.

25. Another important factor is that the absence of homogeneity entails the danger of delaying the coordinated management of accidents and incident response, affecting more than one state, as technical models, data formats and management and response processes vary throughout Europe and within the same sea basin. Common licensing regime must be supported by a clear liability regime, which must include adequate means of financial security for covering major incidents. The existing financial security means must be evaluated in relation to maximum economic ceilings and, possibly, it would be advisable to supplement them with other means for addressing dangers, such as funds, insurance contracts, guarantees etc.

26. Further to the unification of criteria and processes, the unification of controlling requirements and procedures, both preventive and penal, as well as implementation of common rules, is dictated. In this context Port Authorities' inspections and controls over vessels entering Mediterranean ports should be intensified. Such regular inspections should take place as well over offshore drilling installations/facilities. Obviously, these controls must be carried out according to an agreed upon Pan-Mediterranean Protocol on Controlling Procedures and Spots. Part of these controls' cost should burden shipping companies or extraction/drilling contracting companies in cases of problems or faults identified calling for immediate repair and re-inspection of the vessel or facilities/installations.

27. In order to ensure that oil field stakeholders will consistently follow –throughout its whole range of activities- good and safe practices, it would be advisable to establish binding obligations for all enterprises seated within the EU and the rest of the Mediterranean countries, in order for them to apply uniform standards concerning offshore and environmental safety during their global activity. In case of non-compliance, regulatory authorities could be vested with the right to revoke operating or special licenses granted.

28. Such cooperation and coordination must also extend to the field of dealing with pollution incidents. Re-activating the implementation process of the protocol on combating pollution caused by offshore activity in the Mediterranean would be an important step towards that direction. Thus, the participation of the existing Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) will be enabled in the field of emergency prevention and response in the open sea. An important role can be played by the Monitoring and Information Center (MIC), managed by the European Commission, operating on 24 hour basis, 7 days a week. If necessary, the MIC is furnished with the authority to mobilize rapidly the European Maritime Safety Agency's (EMSA) assets for retrieving oil. Although EMSA's scope focuses on sea pollution by vessels and relevant readiness activities for tackling emergencies, it would be advisable to intervene as well in incidents of oil leakage from offshore facilities, since assets in its disposal-vessel oil recovery services, and CleanSEaNet Satellite images- are appropriate for oil leakage response, regardless of origin. The European Commission has already proceeded to EMSA Charter

amendments, so as to allow for its response activity in cases of marine pollution of any origin, including offshore oil and natural gas facilities. In this context, it would be useful to carry out periodic intervention drills and exercises with EMSA on offshore platforms with private pollution control companies and contracting companies as participating parties. These drills/exercises, further to their educational character shall further support related research and acquisition of technical know-how and expertise, keeping active, at the same time the private field branch involved in the field.

29. Works for the further strengthening of the overall disaster prevention and readiness for response are in progress on EU part, including support provided by MIC. These efforts are targeted to synergies with actions already undertaken in the field, aiming at developing rapid response mechanisms and activities in drilling sites and for tackling oil leakage. In such a situation, key coordination services will also be provided by the situation room of OCHA, as well as UNOSAT.

30. Several PAM member States have not yet ratified the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), nor the 2002 Protocol Concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (Prevention and Emergency Protocol) nor the 1994 Offshore Protocol which as a result has not yet entered into force (cf. Annex V).

8. FUNDING

31. The EU applies the “polluter pays» principle. It has been estimated that this principle, combined to clear provisions on contractors’ obligation for cleaning pollution and damage liability discourage their underestimating dangers or safety measures, This deterring effect is helpful towards limiting dangers and threats for environmental damage. . Field legislation must ensure beyond doubt that offshore contractors are liable not only for damage inflicted upon protected species, ecosystems and waters covered by the framework directive on waters, but also for all marine areas in member-states’ jurisdiction.

32. Obtaining additional financial security, primary or complementary in the event of insurance institutions or international funds establishing compensation limits, is an important parameter, functioning not only as deterrent against danger of environmental damage, but also punitively, providing guarantee that compensation paid will be proportional to the real cost of the possible environmental disaster . This is extremely important, on the one hand in cases of polluters appearing or claiming to have limited financial resources and, on the other hand because financial liability against pollution caused by offshore oil and natural gas extraction/drilling facilities is not covered by any international convention or treaty.

33. The PAM should play an important role in promoting the spread of voluntary compensatory schemes to EU and non-EU countries. Indeed, concerning compensation or remedial claims for property and environmental damage in case of an accident, voluntary compensatory schemes like the Offshore Pollution Liability Association Limited (OPOL) could be taken as a model. This tool is one of the best ways to guarantee that compensation and remedial costs are paid even when they exceed the financial capacity of the responsible party. In particular, OPOL, which was created on a voluntary basis, guarantees cases where the operator is not able to cover the compensation costs through a system in which other operators (part of OPOL) agree to contribute, up to an established limit, in order to cover the rest of the costs.