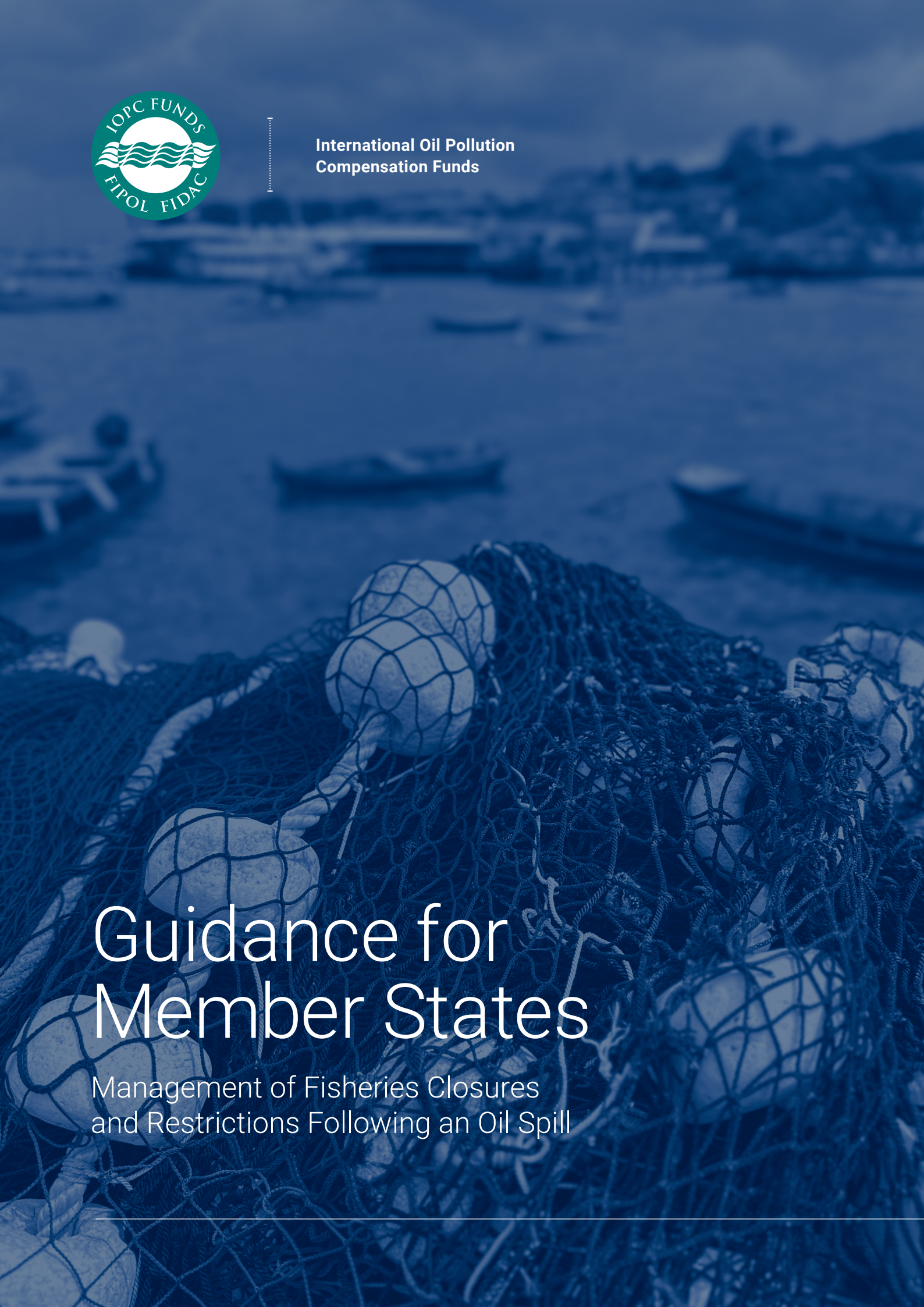

International Oil Pollution Compensation Funds

Guidance for Member States

Management of Fisheries Closures and Restrictions Following an Oil Spill

Published by the International Oil Pollution Compensation Funds

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As experts in the field of pollution response, ITOPF work regularly with the IOPC Funds and provide a wide range of technical services to shipowners and their insurers as well as governments.

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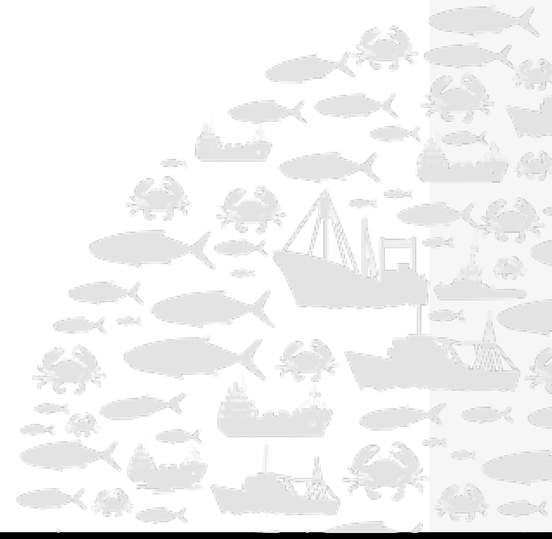
International Oil Pollution Compensation Funds

Guidance for Member States

Management of Fisheries Closures and Restrictions Following an Oil Spill

2016 Edition



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Preface

This booklet provides a general guide to the management of fisheries closures and restrictions following an oil pollution incident. It is written specifically to assist governments and their agencies with responsibilities for the management of fisheries resources and safeguarding public health. It sets out the issues that Member States may wish to consider when planning or implementing fisheries closures or restrictions as a result of an oil spill. The text was adopted in April 2016 by the 1992 Fund Administrative Council, acting on behalf of the 1992 Fund Assembly, at its 15th session and the Supplementary Fund Assembly at its 12th session.

Experience shows that the use of fisheries closures as a means for protecting the public from consuming contaminated fishery products can be very variable from spill to spill. In some cases where there is potential risk of seafood contamination there has been almost no management of the situation, while in others closure zones have been applied excessively in time and space, far beyond a reasonable interpretation of a risk to public health or of contaminated produce reaching the market.

These guidelines are intended to assist Member States achieve a degree of preparedness for monitoring contamination in fishery products and managing closures, before a spill takes place in their waters. They also aim to explain how the way those measures are imposed can have an impact on the shipowner's insurer's and/or the 1992 Fund's assessment of the resulting claims from the fisheries sector.

For the shipowner's insurer and/or the 1992 Fund to settle claims for loss of profit derived from being unable to fish or harvest marine products due to a fishing ban or other restriction, the interruption must be considered reasonable. Such decisions are reached after a thorough review of the circumstances of the spill and of information used to justify the interruption to fishing. However, since the 1992 Fund will only pay what it considers to be fair, the Fund also recognises that in situations where fisheries closures are viewed by the Fund as unreasonably extended in time and space, the fisherfolk/fish farmers are put in a potentially difficult position. The fisherfolk cannot fish, and consequently cannot gain an income, without breaking the laws which established the closure. It is therefore essential that, when imposing a ban or other restrictions, the criteria for lifting them are also clear.

Please note that following these Guidelines does not guarantee that any claims for compensation arising from the imposition of fisheries closures or restrictions following an oil spill will be successful. This booklet does not address legal issues or claim admissibility in detail and should not be seen as an authoritative interpretation of the relevant international Conventions.

A number of other publications to assist both States and Claimants, including the 1992 Fund Claims Manual, are available via the publications page of the IOPC Funds' website at www.iopcfunds.org.

1. Introduction

What are the IOPC Funds?

The International Oil Pollution Compensation Funds (IOPC Funds) are two intergovernmental organisations (the 1992 Fund and the Supplementary Fund) established by States for the purpose of providing compensation for victims of oil pollution damage resulting from spills of persistent oil from tankers.

The current international compensation regime is based on two Conventions: the International Convention on Civil Liability for Oil Pollution Damage, 1992 (1992 Civil Liability Convention) and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (1992 Fund Convention), together with the Protocol of 2003 to the 1992 Fund Convention (Supplementary Fund Protocol).

Who can claim compensation and how?

Anyone who has suffered pollution damage in a State party to the Conventions may make a claim against the shipowner or the IOPC Funds for compensation. Information on the States which are currently Members of the IOPC Funds is available at www.iopcfunds.org. Compensation is only available in respect of claims that fulfil specific criteria, which are set out in the 1992 Fund's Claims Manual.

Who are the guidelines for?

These guidelines are intended primarily as a reference tool for governments and relevant authorities charged with management of locally produced seafood and the implementation of emergency management measures in the event of an oil spill. This booklet may also provide a useful reference for individuals, fisheries associations, the fisheries and mariculture industries, local claims offices and advisers to claimants operating within the fisheries sector to better understand the purpose and potential consequences of fisheries closures and restrictions following oil spills.

2. Implementing emergency measures in the event of an oil spill

Background

The fisheries sector in many countries comprises a wide variety of commercial activities that are often economically important for coastal communities and, for some countries, are of national economic importance. Seafood is commonly an important component of the diet. While in most countries and regions the population is not wholly dependent on seafood, this may not be the case for coastal communities that rely on small-scale or subsistence fisheries (commonly referred to as artisanal fisheries). Small-scale fisheries tend to be characterised by low levels of mechanisation, relatively simple supply chains, and a high degree of dependence on the constant daily supply of fish by the communities involved; the seafood caught or produced can sometimes represent the sole source of protein and employment for individuals.

Regardless of the nature of fisheries activities and their level of development, many people are directly or indirectly influenced by them, including the following groups:

- Those involved directly with the fisheries sector activities (fisherfolk, mariculture farmers, seafood traders, processors etc.)
- The dependants of those involved directly with fisheries sector activities (fishing/mariculture households and communities)
- Those who buy seafood for consumption (consumers)
- Those who benefit from fisheries-related income and employment through multiplier effects (seafood restaurants, seafood retailers, etc.)

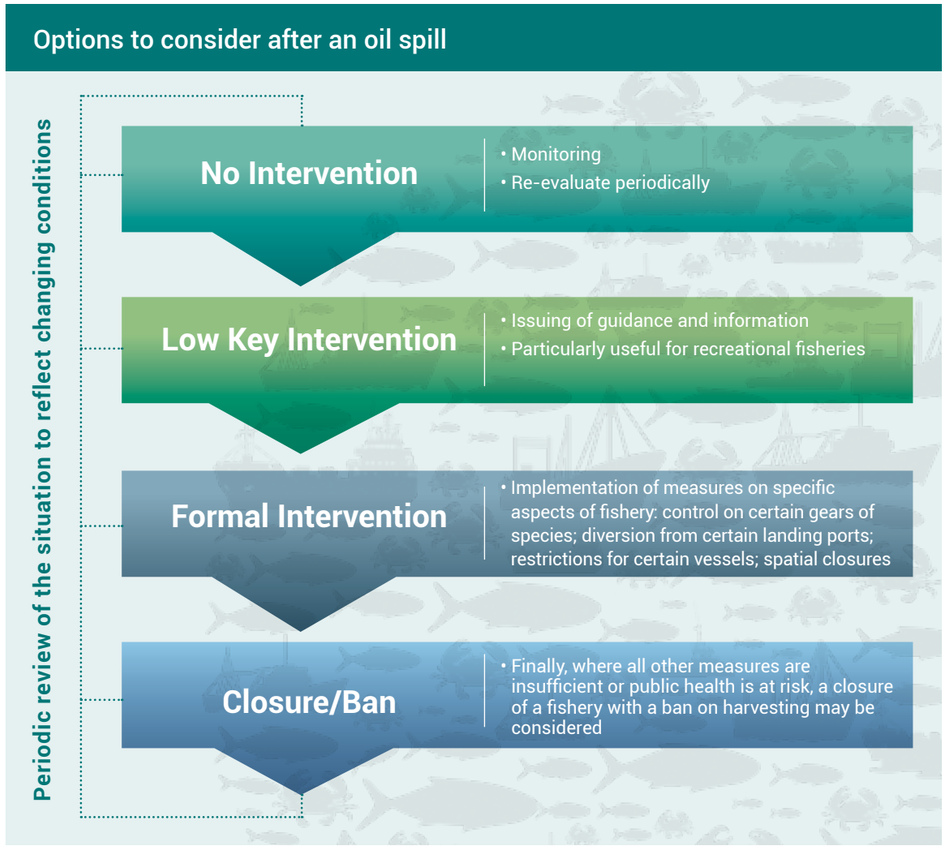
There has been a notable downward trend in the number of major oil spill incidents in recent years, but the high reliance on fisheries and mariculture products in many regions of the world, together with improving food safety standards globally, means that even relatively small-scale and localised oil spills have the potential to cause significant disruption to the fisheries sector. The exact level of disruption caused by an oil spill to fisheries activities in the area of impact will depend on a number of factors including:

- Amount of oil spilled
- Physical and chemical characteristics of the spilled oil
- Location and timing of the spill relative to fisheries sector activities
- Spill response strategies adopted
- Scale and nature of fishing and mariculture activities
- Specific physiology and behaviour of the captured or cultured marine organisms
- Other factors such as water currents, weather conditions and distance of the fishery activity from land
- Duration, nature and geographical extent of any restrictions imposed

Why are fisheries sector closures and restrictions implemented during an oil spill?

There are several reasons why fisheries sector closures or restrictions might be imposed following an oil spill. These include a precautionary approach to protect public health, the detection of unacceptable levels of hydrocarbon contamination in seafood products, the potential for fisheries activities to disrupt on-going spill response operations, and the prevention of contaminated products reaching markets in order to maintain public confidence in seafood. Whilst most existing literature and guidance focusses on the technical criteria for managing seafood safety following an oil spill, social, economic and even political considerations are often taken into account by governments when deciding to implement fisheries closures and restrictions.

The management strategies that are available after an oil spill are essentially extensions of measures and mechanisms governing day-to-day fisheries sector management in order to protect public health. The level of intervention depends on the severity of the incident, but all measures will need to be evaluated on the basis of the information available at the time and will need to be periodically reviewed over time to reflect any change to the situation. For eventual effects on stocks, reference can be made to section 3 of the Guidelines for presenting claims in the fisheries, mariculture and fish processing sector.



Precautionary approach to protection of public health

A government's primary concern during any oil spill incident will, understandably, be to safeguard public health. During the initial stages of a spill, the Government and the authorities responsible for fisheries management may decide that a precautionary closure or restriction of fisheries activities is required. This could be within the area already impacted, or threatened with being impacted, as the oil moves under the influence of wind and currents, on the assumption that contamination of seafood has occurred or is likely to occur. Normally such closures would be supported by an appropriate risk assessment of the likelihood of a spill actually reaching the area under threat with sampling and testing undertaken without delay.

Even in situations where a well-developed seafood safety management plan exists, there inevitably will be a delay in obtaining field data on the levels of oil contamination of marine organisms. Precautionary fisheries closures for restrictions may be considered reasonable in these circumstances.

Contamination of seafood products by hydrocarbons

During an oil spill incident, seafood sampling and analyses might confirm the presence of oil contamination which can lead to public health concerns. Attention would normally focus on the concentrations of Polycyclic Aromatic Hydrocarbons (PAH), compounds known to be carcinogenic, within seafood.

PAH are present in the marine environment under normal conditions from many sources including the burning of fossil fuels and rainwater run-off from coastal areas of urban development. Consequently background levels >

of PAH in water, sediments and living tissues are subject to a high degree of variability from one location to another. Human intake of PAH will depend on factors such as quantity of seafood consumed, body fat content and body weight and background inputs depending on location. As a result, the normal intake of PAH by humans through eating seafood varies considerably.

Given this variability, it may not be practical to define an internationally accepted standard PAH concentration threshold that represents a risk-free intake for humans. 'Acceptable' levels of PAH in seafood, and therefore the risk to communities from potentially enhanced exposure following an oil spill, should be assessed within the context of overall exposure (based on local patterns of fish consumption and background concentrations) under normal conditions. When that is not possible, local background levels may have to be used.

However, baseline PAH concentration data are often lacking at the time of an oil spill. As a consequence, fisheries sector activities are rarely closed in the early stages of a pollution incident due solely to measurable seafood contamination, though they may be closed due to a reasonable risk of contamination or observed tainting (an unpleasant flavour or odour imparted to marine products due to low levels of hydrocarbon contamination).

All marine organisms are able to process hydrocarbons so that over time the contamination will decrease towards background levels. The rate at which contaminants are eliminated through the process of depuration depends on a number of factors including the initial exposure (duration and concentration) and the metabolic rate of the species affected. Monitoring levels of PAH or taint as the hydrocarbons are depurated from the animal's tissue allows the authorities to determine when the produce is safe to eat and can be allowed back onto the market.

Disruption of fisheries activities by oil spill response operations

As previously noted, fisheries closures or restrictions can be considered as a measure to help ensure oil spill response operations are not hindered by fisheries sector activities but may also be used to mitigate damage to property, e.g. oiling of fishing vessels or floating mariculture facilities. Decisions made by the fisheries management authorities may consequently result in disruption of fisheries activities whereby individuals are unable to conduct their normal business, for instance, in the case of the deployment of booms across the entrance of a fishing port to avoid oil entering the port. In order to ensure that the shipowner's insurer and the 1992 Fund compensate costs arising from the restrictions or closures, such decisions must be reasonable and based on accurate and up to date information.

Maintenance of market confidence

Hydrocarbons can sometimes be detected in seafood at levels lower than those considered safe to eat but markets will reject tainted produce and the unpalatable nature of tainted seafood may also make it unacceptable in subsistence fisheries. Public confidence would quickly erode if contaminated produce were to be sold and so fisheries closures are therefore sometimes imposed to prevent tainted produce reaching the market.

Public perception and the subjective opinions of those who trade in seafood relating to the scale and extent of seafood contamination, even where none exists, may often have a greater influence on the economic viability of a fishery than the true situation based on seafood analyses. This is particularly true for highly publicised incidents, regardless of the volume spilled, or whether tainting of seafood has been detected. In these situations, a decision to suspend fisheries sector activities might be taken on a voluntary basis by individuals and industry rather than by the authorities.

The closure or restriction of fisheries by authorities in response to concerns raised by the public and media, without relevant supporting evidence, are measures which the shipowner's insurer and the Fund are unlikely to consider reasonable.
If the criteria for imposing fisheries closures or restrictions are appropriately defined and well managed for health protection (or risk of it until the facts are known) then it is *de facto* well managed to protect the markets. If, based on reasonable sampling and analysis, there is no public health risk or any evidence of taint then as soon as the information has been disseminated that seafood is clear of contamination, fishing/harvesting should re-start to avoid unnecessary hardship to the fisherfolk.

3. Closing or restricting fisheries activities

Contingency arrangements

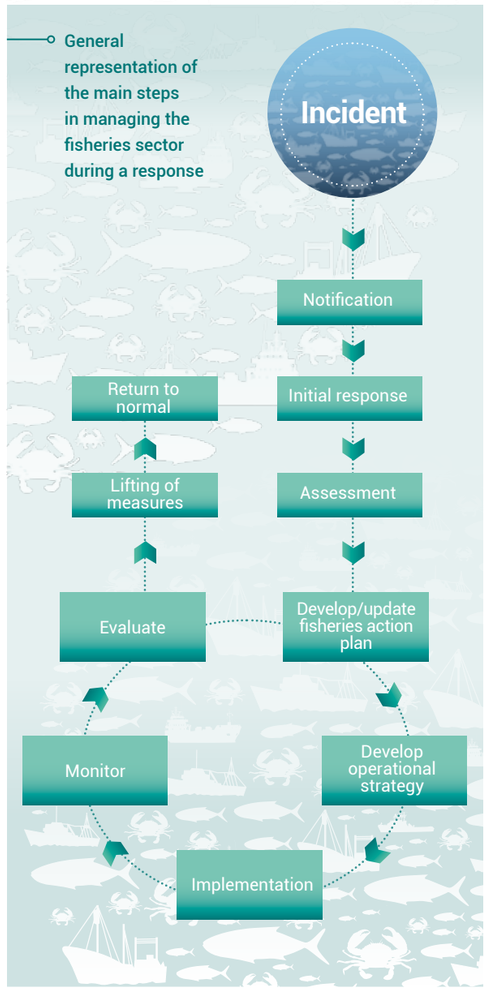
Contingency arrangements for the management of fisheries are not obligatory and it is up to Member States to define their own procedures. However, one of the most effective ways to manage fisheries closures after a spill is to develop, in advance of an incident, a strategy, set of procedures, or any appropriate national measure, to manage such contingencies. These measures should examine the range of circumstances that would result in fishing bans being imposed, together with the criteria which would allow the restrictions to be lifted. The agency which has overall authority over the management of a closure should be identified as well as the key agencies involved in the monitoring and evaluation process. The range of measures to be taken and standard operating procedures to be implemented in the event of a spill should be clearly set out.

The principles, objectives and operational information set out in a fisheries policy and/or contingency arrangements should form the basis for the criteria and procedures for the implementation, maintenance and prompt lifting of fisheries closures or restrictions. It is recommended that this information be publicly available. The specific circumstances of an oil spill incident may mean that the decisions taken by the management authority may differ from those detailed in existing contingency arrangements. However, transparency in the decision process and adherence to those arrangements, where possible, will help to ensure stakeholder and public confidence in the management of the fisheries closures and restrictions. Clear communication of the relevant information to stakeholders and the general public throughout the entire process of managing the fisheries sector response is paramount for this endeavour.

Further details on contingency arrangements and planning for fisheries closures and restrictions can be found in the Annex to this publication.

Implementation of fisheries closures and restrictions

The management of fisheries sector closures and restrictions is a dynamic process, involving active management from the initial implementation, through the process of monitoring and evaluation to the adjustment and final lifting of the closures and restrictions put in place.



General representation of the main steps in managing the fisheries sector during a response

After receipt of the initial notification of an incident, the authorities responsible for fisheries management may implement an initial response to ensure public safety. Once reports are available indicating the severity of the incident and preliminary data start to become available, an assessment of the situation can be made, enabling tailored and appropriate measures to be applied to the fisheries sector. It is recommended that the measures adopted be reviewed periodically and adjustments made if necessary, as the realities of the situation change over time. Throughout the entire management process, clear communication of the relevant information to stakeholders and the general public should be maintained.

The decision to impose closures and restrictions on the seafood sector during a spill is often a difficult one, as it commonly results in social impacts and economic costs. Such decisions should be carefully considered and justified with appropriate data. This is true for artisanal or subsistence enterprises, where a large number of people may be dependent on the immediate and constant availability of seafood and public health would be of more concern than economic issues. It is also true on the other end of the scale, where, in view of the large operating costs associated with highly industrialised fisheries, a fisheries restriction can result in significant financial losses should vessels be prevented from catching and, just as importantly, landing catches according to a normal schedule.

Depending on the size of the spill and the extent of the contamination, it may be possible to put restrictions in place that allow a continuation of some fisheries sector activities. Restrictions can be spatial (geographic), fishing gear/activity-based or species-specific in nature.

Geographic restrictions: Normally, following an oil spill, it may be necessary to restrict fisheries activities within the affected area only, whilst permitting normal fisheries activities in the surrounding waters. Commonly, fisherfolk will favour one area over another due to its proximity, productivity or other preference. For example, if the area becomes impacted by an oil spill and authorities restrict activities in this fishing ground, fisherfolk may have to travel to uncontaminated fishing grounds.

Once oil no longer presents a threat of contaminating seafood and stocks are confirmed as safe for consumption, authorities should facilitate a return to normal fisheries activities as quickly as possible.

Gear/activity restrictions: The presence of oil within a general area does not necessarily mean that all fishing or mariculture activities will need to be restricted. If oil is unlikely to or has yet to reach the shoreline, it may be possible for shore-based fisheries and mariculture activities to continue whilst restrictions are considered for activities further offshore. Conversely, an oiled shoreline may not require restrictions to coastal fisheries if oil is not being remobilised from the shore.

Species restrictions: Not all marine species are likely to be impacted by an oil spill to a similar extent. The part of the marine environment a species inhabits, its behaviour or its physiological susceptibility to becoming contaminated by oil may mean that it is considered safe to harvest whilst restrictions are necessary for other species in the same area. Similarly, seafood monitoring may indicate that only one or two species in an area have been affected, and consequently there is no need to ban the capture of all species from the area (as long as monitoring continues).

Temporal restrictions: Any form of closure should only be held in place for the time necessary to ensure that there is no longer a risk of contaminated seafood being consumed by the public. For fisheries that are subject to controlled seasonal openings and closures, regular closures should not in themselves give rise to compensation even if fish are contaminated during the period of regular closure. If required, the impacts should be assessed at the next scheduled opening period.

The scale and extent of the oil spill, the nature of the fisheries and mariculture activities impacted and the marine species harvested and cultured will ultimately determine the most appropriate closure or restriction to be implemented. In considering >

the decisions to be made, the responsible authorities should take note that in order for the shipowner's insurer/1992 Fund to accept the merit of such actions as a basis for compensation, the closures and restrictions implemented will have to be supported by sufficient evidence that this was the most technically reasonable action to take.

It is therefore of paramount importance that the government or managing authority informs the Fund as soon as a decision is taken to implement a fishing ban or restriction, and that the data resulting from that action are shared as promptly as possible. This will enable the 1992 Fund to be in a better position to review the scope of fishing bans as soon as possible after they are imposed, thus avoiding delays in assessing their effect on the fisheries activities in the areas affected and allowing timely advice to be offered on how this may affect subsequent claims for compensation.

Monitoring and evaluation

Accurate and regular information on the status of the oil pollution incident and its impact on the fisheries and mariculture activities is vital in order for the management authority to make timely decisions on the appropriate fisheries closures and restrictions. The government authority or private sector organisation managing the oil pollution response should be able to provide daily updates as to the progress being made with the response and the scale and extent of floating oil at sea and shoreline contamination. This information should be combined with technical data on the oil contamination levels within the marine environment (e.g. hydrocarbon concentrations in water samples) and, where appropriate, within the tissues of marine seafood species. These technical data are generally collected from a specifically designed monitoring programme. The information, received by the management authority from a broad range of sources, should be evaluated and used to guide decisions on whether the current closures and restrictions remain appropriate, whether they require modification, or whether they can be lifted. These decisions should be seen by all interested parties to be both authoritative and prompt.

When selecting the seafood samples to be taken, the expected fate and behaviour of the oil spilled should be taken into account together with the prevailing hydrography and weather conditions and the sample collection methods. It is also important to consider the nature of the capture fisheries or mariculture activities (commercial, artisanal or recreational) within the sampling area.

In many coastal areas, an oil spill will not be the sole source of hydrocarbons in seawater or marine organisms and therefore the pattern of background contamination of seafood will need to be established. A key aspect of all monitoring programmes is the selection of suitable reference sites for the collection of seafood and water samples. It is important that the initial seafood samples are taken before exposure to the spilled oil. In many cases this will be impractical and therefore samples should be taken of seafood from a suitable reference area outside the spill area.

Case History: *SEA EMPRESS*

An example of a well-managed fisheries restriction

On the evening of 15 February 1996, the tanker *Sea Empress* grounded in the entrance to Milford Haven, United Kingdom, resulting in the release of 72 000 tonnes of crude oil and 370 tonnes of heavy fuel oil. The oil spread to affect approximately 200 km of the coast of south-west Wales.

Local fishing operators voluntarily suspended commercial fishing soon after the incident (precautionary closure). Subsequent monitoring of oil contamination to finfish and shellfish from the area affected by the spill indicated elevated levels of oil in shellfish. Oil contamination within finfish was only slightly higher than background levels but sufficient to raise concerns over the potential for tissue tainting. On 28 February 1996, the voluntary suspension was formalised and the harvesting of all finfish, shellfish, edible plants and seaweed was prohibited (fisheries closure) over an area of 2 100 km2, on a precautionary basis. A separate species restriction was made on 20 March to include migratory fish (wild salmon and trout) in all rivers and streams discharging into the area of the initial restrictions order.

Continued seafood and environmental monitoring established that further geographic extension of the restrictions was not necessary. Furthermore, this constant review (evaluation) ensured that the status of the restrictions was kept under control, which allowed them to be lifted gradually as oil concentrations within different species returned to background levels.

The measured concentrations of wild salmon and trout were found to be below background levels found in finfish from outside the exclusion area very shortly after the incident and restrictions on these species were lifted at the beginning of May 1996, and on all species of finfish at the end of that month.

High PAH concentrations were found in crab and lobster samples in the initial two months after the incident. Monitoring of these species involved taking samples from the closed fishing areas fortnightly initially, later monthly, and measuring total PAH concentrations in comparison to local background levels. The monitoring indicated that there was a gradual decrease in PAH concentrations, allowing the resumption of fishing in August 1996 for fishing areas outside Milford Haven and approximately two months later for fishing areas within Milford Haven. The lag between samples being taken and decisions on altering or lifting the restriction took 2-4 weeks. Extensive areas of mussel beds were heavily contaminated by the oil spill and many were subjected to re-oiling for an extended period. Depuration of mussels consequently took place over an extended period with the final fisheries restriction being lifted in September 1997. Edible plants and seaweed in some locations were extensively coated with oil. Oil concentrations within their tissues reduced sufficiently to be considered safe for consumption only after new growth in the following year, allowing restrictions on their harvest to be lifted in June 1997.

An issue which arose with the fisheries closures and restrictions was the importance of clearly communicating the details of any management measures put in place and the reasons for these. During the period of the precautionary closure, local fisherfolk were unclear as to the scale and extent of the oil contamination of seafood and feared it was much more severe than it actually was, giving rise to fears for their livelihood and the risks of serious harm if any seafood was eaten.

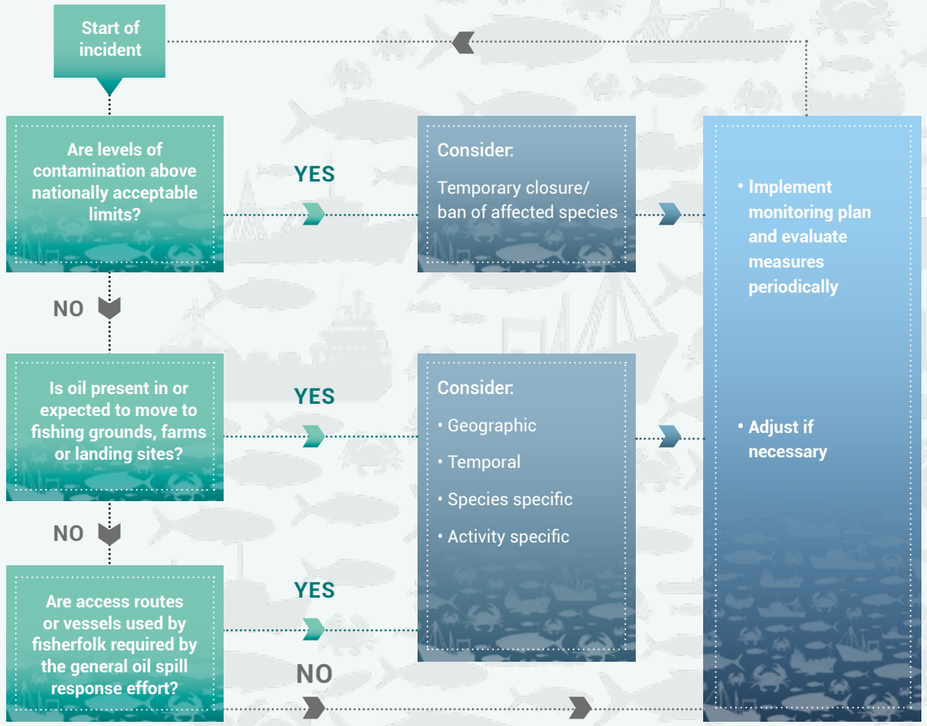
In assessing the technical reasonableness of the fisheries closures and restrictions imposed by the British Government, the P&I Club and the IOPC Fund 1971 (1971 Fund) considered the information available on the way the restrictions were implemented and lifted and, on the basis of the available information, the measures taken were found to be reasonable. As a result, the P&I Club and the IOPC Fund 1971 Fund (1971 Fund) assessed the claims for compensation submitted by the fisherfolk, mariculture operators and other individuals impacted by the oil spill and fisheries restrictions, taking into account the period of the restrictions.

Samples of reference seafood should be taken throughout the monitoring programme.

Once collected, the samples should be analysed according to pre-determined protocols that conform to nationally mandated standards by accredited laboratories. The capacity of available laboratories to analyse samples should be considered during the planning phase of monitoring to ensure that the laboratories can analyse the samples promptly.

In most cases, the monitoring programme should continue until contamination levels in the environment reach background levels, when tainting of marine produce can no longer be detected or when seafood contamination reaches pre-determined levels that are considered to no longer pose a risk to public health if consumed. The frequency of sampling will depend on the seafood species being monitored and the levels of hydrocarbon pollution remaining in the environment. The sampling frequency should therefore ensure that the data on seafood contamination is updated on a regular basis so that any closures and restrictions in place can be managed in a timely manner and fisheries reopened at the earliest opportunity. Claims for the costs of such monitoring programmes may be considered admissible by the 1992 Fund, provided the necessary supporting information is submitted.

Decision pathway for designing a suitable response and considering fisheries closures or restrictions.



The key role that the evaluation of information plays in the management of fisheries closures or restrictions is illustrated below left.

The information on the progress of the response and data from the seafood monitoring programme may generate a large quantity of material that will require continuous evaluation throughout the response to the incident. In large pollution events, it may be advantageous to establish a committee to deal specifically with the evaluation of data relating to fisheries closures and restrictions and to provide recommendations to the managing authority. The committee would comprise national and local representatives of the fisheries authorities, scientists and relevant government agencies with technical expertise and knowledge of applicable fisheries and food health regulations, fisheries science and oil pollution issues. The 1992 Fund may assist by providing advice to the committee. The Fund can also assist in ensuring that appropriate techniques and experts are employed.

It is important to emphasise that the assistance of the 1992 Fund does not necessarily mean that any restrictions later proposed or undertaken will be considered as technically reasonable.

4. Lifting fisheries closures and restrictions

How and when to decide

At some point during the pollution incident, the available data will indicate that there is no longer a threat to public health from eating seafood or of contaminated food reaching the markets and that therefore some, or all, fisheries sector activities can resume. Whilst this is a relatively straightforward concept, in most cases, the situation can be complex in practice.

Dependent on the specifics of the pollution incident, the progress of the response and the fisheries sector activities disrupted, it is likely that the point at which certain seafood species can be consumed or specific capture fisheries or mariculture activities can be resumed, will vary significantly within the overall geographic area impacted by a spill. For example, floating oil may be dispersed or recovered well before oil from the shoreline has been cleaned up. In these circumstances, capture fisheries in offshore and coastal waters may be able to resume before shoreline seafood gathering or onshore mariculture activities can be resumed. Similarly, a pollution event in which the oil sank to the seabed may require prolonged restrictions of capture fisheries using bottom gear, whilst mid-water and surface fishing gear could be deployed without risk of oil contamination.

It is therefore important during the management of the incident that evaluation of information and decision-making on the maintenance and lifting of fisheries closures and restrictions be considered in terms of specific seafood species, marine habitat, and capture fishery or mariculture activity.

During incidents where fisheries closures and restrictions have been imposed, the pressure on governments from political representatives, media, and the general public to influence decision making during an oil spill should not be underestimated.

In a given incident, the management authority may be faced with fisherfolk who are keen to resume fishing activities as soon as possible so that they can obtain vital food or earn much needed revenues, whilst other fisherfolk may be employed within the oil spill response operations or may benefit financially from an extension of closures or restrictions.

Lifting fisheries closures and restrictions will therefore require a combination of clear criteria within the contingency plan, accurate and timely information on the status of the oil spill response and oil contamination of the marine environment and seafood species, and appropriate evaluation and decision making by the management authority. The final stage in the lifting of the closures and restrictions will be the communication of the decision to relevant stakeholders and the general public.

Communication with relevant stakeholders and public

An oil pollution incident and any resulting fisheries sector closures and restrictions may result in business interruption, financial losses, and public health concerns for many people within the coastal communities in the vicinity of the oil spill.

In order to maintain the confidence of those people potentially impacted by fisheries sector closures and restrictions, it is important that there is a clear communication plan included within the overall management plan. In some cases, it can be difficult for the public to accept that seafood resources may be safe to consume whilst the response to an oil pollution event is ongoing. Experience from previous spill incidents has shown that clearly communicating the criteria and processes for imposing and lifting fisheries sector closures and restrictions to the public and relevant stakeholders can greatly assist in alleviating public anxiety, maintaining confidence in seafood products and reducing the financial impact of the pollution incident.

A proactive approach to public communications is recommended, to ensure that accurate and reliable information about the status of restrictions and re-openings is provided in a timely manner, for example in the form of 'Notices to Fisherfolk.' The communications platforms used will vary according to the scale and circumstances of the incident. In some incidents, local media may be a more appropriate channel for communications, or even face-to-face communication between a liaison officer and affected parties for very localised closures.

In a major incident not only local markets but also national and export markets may be affected, particularly by adverse media reporting. In order to counteract such negative publicity and communicate that the product has been found free of contamination, a marketing campaign may be justified. However, claims for the costs of marketing campaigns or similar activities are accepted only if the activities undertaken are additional to measures normally carried out for this purpose. In other words, compensation is granted only for additional costs resulting from the need to counteract the negative effects of the pollution. Marketing campaigns of too general a nature are not accepted. If several public bodies undertake campaigns relating to the same negative effects, these campaigns should be properly co-ordinated to ensure that there is no duplication of effort. In the case of marketing campaigns, the measures should relate to actual targeted markets (for example, measures to counteract the negative effects on fisheries in a particular area should normally be focused on the normal customer base for the products). Further information on the admissibility of claims for costs of marketing campaigns can be found in the 1992 Fund Claims Manual.

Case History: *ERIKA*

An example of successful site-by-site management of fisheries restrictions

On 12 December 1999, after experiencing difficulties in rough weather, the tanker *Erika* broke up 30 nautical miles off the southern coast of Brittany, France, spilling 19 800 tonnes of heavy fuel oil. After drifting in the Bay of Biscay for nearly two weeks, slicks of viscous emulsified oil affected 400 km of shoreline.

The coastline affected by the oil spill produced 50 000 tonnes of shellfish annually, with late December representing the main sales period in relation to Christmas and New Year festivities. In response to the shoreline oiling, government authorities rapidly imposed a precautionary ban on the harvesting and sale of shellfish from the affected areas.

Following initial investigations of the feasibility of transporting oiled shellfish to areas not impacted by the spill in order to speed up the depuration of oil or destroying heavily affected shellfish stocks, it was decided that the shellfish fishery should be managed based on a comprehensive monitoring programme and testing for oil contamination. At the time of the spill, specific guidelines for oil contamination in seafood did not exist in France. As a result, the French food safety authority used the shellfish collected as part of an existing marine water quality and seafood safety (toxic plankton and bacteria) monitoring programme to test for polycyclic aromatic hydrocarbons (PAH) contamination levels, and to determine seafood safety standards for oil.

In the areas where shellfish stocks were less impacted by oil, the fishery was re-opened as early as mid-January 2000. As the fishery restrictions were managed on a site-by-site basis (geographic restriction), more than 95% of the sites were re-opened by March 2000. However, in those areas where the shellfish were heavily impacted, very high levels of PAH contamination were observed and these remained high for several months after the initial spillage. This was particularly evident in areas where buried and sunken oil was found. In these areas, the restrictions remained in place for an extended period with the last one lifted in September 2001.

The *Erika* incident highlighted the usefulness of a pre-existing seafood quality monitoring programme even though oil contamination was not part of the original analytical targets. Specifically, the availability of pre-spill seafood samples made it possible to quickly determine background PAH contamination levels and their normal fluctuations. This in turn made it possible to rapidly develop seafood safety guidelines for PAH contamination and to expand the geographical and analytical scope of the monitoring programme to address the specific requirements of the oil spill.

In assessing the technical reasonableness of the fisheries closures and restrictions imposed by the French Government, the P&I Club and the 1992 Fund considered the information available on the preparation and analysis of the monitoring samples, as well as the collation, interpretation and dissemination of results, subsequent decision-making and the communication and implementation thereof. On the basis of the available information, the duration of the fisheries restrictions were found to be technically reasonable and, as a result, they were taken into consideration when assessing the admissible period for compensation for the claims for fisherfolk, mariculture operators and other individuals impacted by the oil spill and fisheries restrictions.

5. Claims arising from fisheries closures and restrictions

Recovery of losses

The imposition of fisheries sector closures and restrictions does, in almost all cases, result in an economic loss to the businesses of individuals, companies and associations engaged in fisheries. Governments and fisheries authorities may also incur costs for the implementation, management and monitoring of fisheries closures and restrictions.

Financial losses and costs associated with fisheries closures and restrictions may be admissible for compensation under the 1992 Civil Liability Convention (1992 CLC) and the 1992 Fund Convention. Further information on the admissibility of claims in general is provided in the 1992 Fund Claims Manual and, more specifically for fisheries, in the associated Guidelines for Presenting Claims in the Fisheries, Mariculture and Fish Processing Sector. As such, much of the information on compiling and presenting a claim for losses or costs incurred and the process for payment is covered in these two publications.

The decisions made by the management authority throughout this process are likely to be crucial in determining the degree to which the fisheries closures and restrictions serve their purpose, the scale and extent of the operations, and consequent financial impacts on fisheries and mariculture operators. It is therefore very important that the management authority is fully aware of the potential implications of their management decisions for fisheries sector operations. The availability of compensation should not be material to any decision and application of the chosen fisheries management measures should be the same whether or not compensation is available.

It is important to note that losses due to government imposition of fisheries restrictions will not be paid automatically. For example, prolonged fisheries closures with little or no technical basis may cause the 1992 Fund to decide a part of the closure period is not justified. A consequence of such a decision may be that a part of a claim for business interruption or costs incurred may not be eligible for compensation. The existence of agreed national contingency arrangements for the management of fisheries closures and of defined criteria for imposing and lifting fisheries restrictions may prove invaluable to any relevant management authority when faced with an oil spill. However, it should be noted that the absence of contingency arrangements would not prejudice any assessment by the 1992 Fund of claims for compensation for losses which may have resulted from the imposition of a fishing ban or closure. The 1992 Fund will always assess claims for losses in the fisheries sector arising from fisheries restrictions on the basis of whether any such bans or restrictions were reasonable.

Case History: *HEBEI SPIRIT*

An example of the development of fishery closure guidelines during an oil spill incident

On 7 December 2007, the tanker *Hebei Spirit* was struck by a crane barge while at anchor about five nautical miles off Taean on the west coast of the Republic of Korea. The collision resulted in a release of approximately 10,900 tonnes of crude oil. In the weeks following the incident, the Korean Government established a variety of fisheries restrictions within the inshore waters and along the shore for approximately 375 km of coastline.

Immediately after the spill, the Government instructed two leading scientific organisations in Korea to carry out environmental and seafood monitoring, including the sampling of water, sediment and marine organisms in the months following the incident. A comprehensive list of sampling locations was chosen and samples were taken at either monthly or quarterly intervals.

Until the *Hebei Spirit* incident, the Republic of Korea had not established seafood safety regulations with regards to an oil spill incident and therefore in February 2008, a meeting was organised among the agencies involved to discuss the results of the initial monitoring work and to establish a seafood safety standard for the Republic of Korea. As a result of the meeting, a Korean seafood safety standard for PAH applicable to the *Hebei Spirit* incident was determined. The Korean Government decided to adopt a methodology commonly used in the EU and USA, whereby the toxicity of a number of key PAHs is assessed and standardised so as to allow a direct comparison between different seafood samples. Due to the higher consumption of seafood in the Republic of Korea and lower average body weights, the safe level of PAH contamination was established at a level lower than the EU and USA, introducing an additional safety margin.

In April 2008, in a meeting attended by Korean scientists and central and local governments, the results of the monitoring programs were presented to the authorities and a plan was drawn up for the lifting of the restrictions on fisheries. Following the meeting, the Korean Government announced the lifting of the restrictions on a number of fisheries for areas where clean-up operations had been completed, with the lifting implemented a few days later. The remainder of the restrictions were lifted after consultation with the local authorities and the fishing communities, and once all parties reached an agreement as to whether to lift the restrictions in a particular area.

Whilst a monitoring plan was initiated very quickly following the incident, the absence of a national contingency plan for the management of fisheries closures and the criteria for imposing and lifting fisheries restrictions proved a significant challenge. The development of a management plan, establishment of seafood safety guidelines, discussions with the fishing communities and industry, and development of an effective communication procedure to relevant parties all had to be developed in the aftermath of the initial incident. This led to delays in the evaluation of the monitoring results and therefore decisions on the lifting of fisheries restrictions could not be made in a timely manner.

In assessing the technical reasonableness of the fisheries closures and restrictions imposed by the Korean Government, the P&I Club and the 1992 Fund and their experts made allowances for the time required for preparation and analysis of the monitoring samples, as well as the collation, interpretation and dissemination of results, subsequent decision making and the communication and implementation thereof. However, the P&I Club and the Fund considered that the duration of many of the fisheries restrictions were technically unreasonable and, as a result, there were difficulties in assessing and accepting a significant proportion of the claims for compensation from fisherfolk, mariculture operators and other individuals impacted by the oil spill and fisheries restrictions. Following meetings between the Korean Government and the 1992 Fund in 2010, a mutual understanding on the reasonable dates for lifting the fisheries restrictions with regard to the treatment of claims was reached.

The shipowner's insurer and the 1992 Fund will consider all aspects of the restrictions, and with the assistance of experts, will determine whether the imposition was justified and whether associated claims submitted by individuals and organisations affected by the fisheries closures and restrictions can be compensated. The processes and the decisions made should be comprehensively documented so that the relevant information, including minutes of the meetings where the decisions were taken, is available to support claims. This documentation will provide evidence to support why certain fisheries management actions were, or were not, taken and the reasoning behind these actions. It should be recalled that the 1992 Fund acknowledges claims for losses resulting from fishing or harvesting bans only if and to the extent that such bans were reasonable.

Costs for monitoring and establishment of documentation to support closure of fisheries can be considered to be admissible for compensation from the 1992 Fund. Such monitoring and investigation must be reasonable and proportionate in time and space relative to the oil spill and the observed effects. The methodology must be based on sound scientific approaches and be restricted in its scope to the fisheries subject to closure or restrictions.

Documentation of a comprehensive monitoring and evaluation process and the results of sample analyses can provide key evidence that a decision to restrict or close fishing was taken based on the best available information at the time and was therefore a reasonable action to take. If the restrictions imposed can be justified in this way, the availability of comprehensive supporting documentation that provides a full explanation for the closures or restrictions, will facilitate the payment of fisheries claims in a more timely and effective manner. A sample list of documentation and data which should be made available to explain the closures or restrictions is provided in the table opposite:

Types of documentation and information used during fisheries restrictions to determine their impact on claims submitted by the fisheries sector:

DOCUMENTATION	
Official communications, notices, memos and gazettes issued by fisheries/ health authority	Records of decisions that were made public throughout a spill, and advice provided by the government, as well as official communications issued by the relevant authorities at the time, provide insight on the best knowledge that was available.
Photographs / Annotated maps	It may be useful, where relevant, for photographs to accompany a justification for fisheries closures. These will be most valuable where a closure is implemented to avoid disrupting response operations or risking further contamination, or as justification for implementing a precautionary closure should sampling reveal stocks to be unaffected by oil. GIS maps used during the actual response are useful for showing the locations of economic activities, sensitive habitats and fisheries closure areas in relation to the oil on any given day.
Oil trajectory modelling outputs	When closures are imposed on a precautionary basis, the decision to do so occurs during the reactive phase of a response and will often be guided by the outputs of oil trajectory models that assist decision makers in predicting the future movement of oil in relation to fishing activity. Submitting these outputs to justify that a closure was warranted can be extremely helpful.
Fisheries/ mariculture licences	In some cases, fisheries licences show temporal or spatial restrictions in place for vessels and mariculture installations. If an area that was oiled or under threat of oiling falls within limits dictated by a licence, submitting sample licences along with a claim that involved a closure may help in its justification.
Catch/harvest statistics access	Data on catch/production volumes, unit prices and natural variability in production may determine whether a closure would be more disruptive than beneficial, or vice versa.
Hydrocarbon monitoring plan and results	When a precautionary fishing and harvest closure has been imposed over health concerns, chemical monitoring should be undertaken as soon as possible to confirm whether these concerns are justified. If oil-attributable PAH concentrations in seafood tissue are below established limits for consumption, the closure could be lifted. If results show concentrations above established limits, continued sampling and analysis is required until concentrations return to acceptable limits.
Sensory testing plan and results	In some cases, authorities may suspend harvesting due to concerns over the quality of their product, solely because of oil having been in the vicinity. Sensory testing could be a useful tool to reliably and quickly determine the requirement for a fisheries closure. Details of how this was undertaken and the results provide useful supporting evidence. Where fish or seafood is found to be tainted, a plan for frequent sensory testing should be maintained and the closure removed once the taint is no longer detectable.
Correspondence	Correspondence between government agencies and other entities discussing potential closures may add weight to decisions where closures have been implemented on a precautionary basis. Access to the correspondence would aid the 1992 Fund to understand the rationale for the restrictions.
Narrative accompanying the documents	Whilst insufficient to justify a closure on its own, a narrative, detailing events and rationales, and linking various supporting documentation can greatly facilitate the interpretation of fisheries and mariculture management decisions made during and following an oil spill.

Annex

Contingency planning for fisheries closures and restrictions

Oil spill contingency planning and general preparedness for oil spill response is a requirement for States Party to the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC). It provides a framework for managing response operations and States are encouraged to ensure they have oil spill contingency arrangements in place. Increasingly, the need for sector specific contingency planning for all types of unforeseen events is becoming recognised. As pertains to fisheries, the United Nations Food and Agricultural Organisation (FAO) recommends that at both national and local levels, contingency arrangements for all types of incidents should specifically address fisheries management measures.

To maximise their utility, contingency arrangements to deal with the potential impacts of an oil spill on fisheries sector activities should be comprised of four key components, as presented in Figure 1 below. Steps 2 to 4 can be recorded in either a stand-alone document to be managed and updated by the fisheries authority, or be integrated into the wider national or regional oil spill response contingency plan.

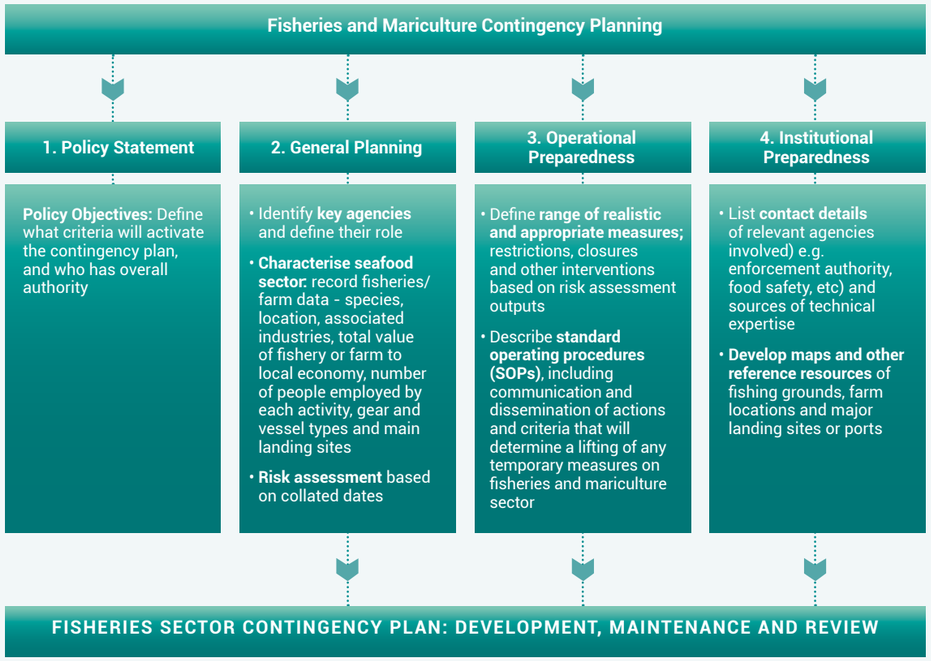


Figure 1. Steps required to develop fisheries specific emergency contingency arrangements

Policy statement

Before planning the details of fisheries sector management measures in the event of an incident, a policy outlining the framework should be determined by the relevant public authorities with input from relevant stakeholders and technical experts. Currently, defining policy regarding fisheries management measures following an oil spill is not widely practiced worldwide, although this is slowly changing.

The large variability in oil spill scenarios and environmental impacts means that no two spill events will be the same, and that, although many national authorities have adopted PAH threshold values which are used to assess seafood safety and these are, by and large, very similar, there are currently no internationally applicable guidelines. Even in the absence of such policies, contingency arrangements should seek to identify and answer broad, overarching questions.

For example:

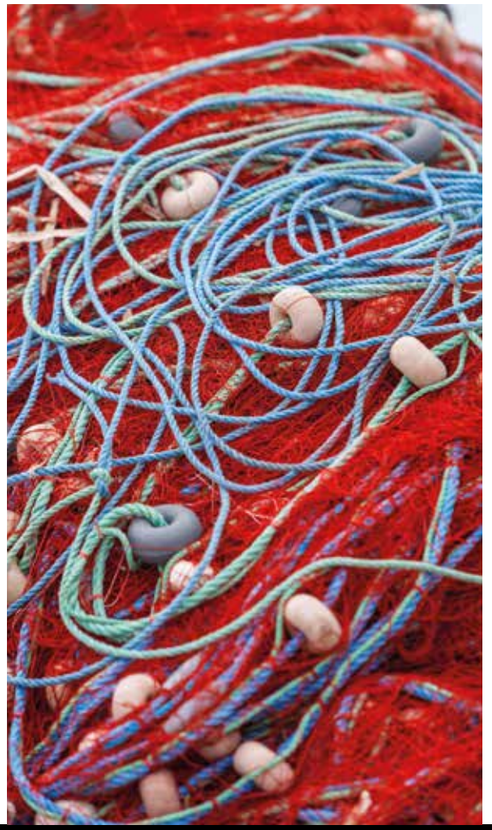
- What constitutes a spill event that threatens seafood resources?
- Who has overriding authority to declare and implement *ad hoc* fisheries control measures?
- Whether restrictions to specific fisheries sector activities rather than complete closures may be an appropriate option
- How long will fisheries management contingency measures remain in place (i.e. what criteria are required to activate and deactivate the management contingency policy)?

General planning

Although the policy will have determined the overriding authority with regards to fisheries sector management during an incident, the expertise and resources of multiple agencies will often be required, and therefore consideration should be given to the roles and responsibilities of various agencies at every response level. To aid the development of appropriate standard operating procedures (SOPs), it is essential that potential scenarios are considered and subjected to detailed risk and impact assessments, supported by as many data as possible. This should help ensure that the decision making process is transparent and justifiable. The following are examples of the types of data that could be considered by the public authorities and included in any fisheries sector management plan:

Characterisation of the fisheries sector: It is important to build as comprehensive a knowledge base as possible on the fisheries sector within the area of concern. This will include the regular data and information on capture fisheries, mariculture and associated activities that would be used to manage the national or regional fisheries sector under normal circumstances. This will include biological and ecological information on relevant marine species, the commercial value and other socio-economic information on each of the different fisheries sector activities.

Institutional organisation and outline of responsibilities: The public authorities responsible for implementing, monitoring, and managing fisheries sector activities during a pollution incident need to be identified at both a national level and a local level. The responsibilities of each should be made explicit in any plan that is developed. It may be that there will be several public agencies involved with co-ordinating efforts, but there should be one overall lead authority identified. Any contingency arrangements should acknowledge that there may be public authorities involved in an oil spill who may not be familiar with fisheries issues or oil spill response.



Operational preparedness

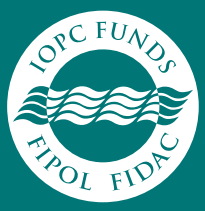
SOPs based on data collated and assessed in the general planning stage should be documented, including provisions for training and drills. SOPs addressing the following aspects should be developed:

- Definition and measurement of criteria that will be used to decide when and how fisheries will be restricted or closed;
- Definition and measurement of criteria that will be used to remove these restrictions or closures;
- Notification, internal communication and external dissemination procedures for providing information as to the status of fisheries restrictions and closures;
- Procedures for monitoring and evaluation of monitoring data against criteria for reopening fisheries or lifting restrictions;
- Procedures for updating training, guidance and contingency arrangements. Due to the number of public authorities that may be involved with limited emergency or fisheries management experience, fisheries sector contingency arrangements should be updated on a regular basis through exercises and relevant personnel should be trained in their individual roles and responsibilities.

Institutional preparedness

As with general oil spill response contingency plans, the arrangements developed for the fisheries sector should be as comprehensive as possible and minimise the need to refer to other documentation. Important, but often overlooked details include key contact information for all agencies and other bodies likely to be involved in the implementation of contingency measures, and maps of installations, key fishing grounds and jurisdictions (if relevant).

Fisheries sector contingency arrangements should be considered as dynamic documents and, as such, routinely updated. It should be noted that such arrangements require commitment of equipment and personnel which may be additional to everyday budget items for a public authority. Resources may be employed most efficiently if contingency arrangements are integrated within existing fisheries management mechanisms, procedures, and chains of command.



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