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CRITERIA FOR THE ADMISSIBILITY OF CLAIMS FOR COMPENSATION

2. ECONOMIC LOSS

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This paper is one of a series of three notes submitted by The International Tanker Owners Pollution Federation Limited. Whilst each note addresses, with the minimum of duplication, a specific subject area in relation to the Intersessional Working Group's mandate, many of the categories of claims are inter-related and so the notes should be considered together.

The emphasis in all three notes is on the technical issues which the Federation strongly believes should be the basis for the objective assessment of the admissibility of claims for compensation under the Civil Liability and Fund Conventions, notwithstanding that legal and other issues may influence the actual settlement decisions.

1 Introduction

1.1 In the Civil Liability and Fund Conventions, "Pollution Damage" means loss or damage caused outside the ship carrying oil by contamination resulting from the escape or discharge of oil from the ship, wherever such escape or discharge may occur, and includes the costs of preventive measures and further loss or damage caused by preventive measures. The definition of "Pollution Damage" in the 1992 Protocols is not significantly different, in the context of this paper which discusses economic loss.

1.2 Oil spills can result in economic loss to those involved in the exploitation of coastal marine resources, for example by preventing fishing or reducing income from tourism. By definition, compensation for such losses should be restricted to cases where oil 'contamination' or 'preventive measures' can be proven to be the cause. There are occasions

when the interpretation of the definitions of "Pollution Damage" and "Preventive Measures" raises questions of principle, but in reality, the admissibility of claims is as much a matter of proof as of principle. The nature of the evidence for economic loss generally takes the form of previous records of income which aim to show what the income would have been, had the incident not occurred. This may be difficult to achieve where there are no reliable records, or where the records may vary considerably due to changing levels of effort and fluctuations in economic and other factors. A secondary, and often complementary, approach is to examine the earnings of comparable enterprises outside the area affected by the incident.

1.3 A basic requirement in the assessment of economic loss is to take into account any economic gains or savings made by the claimant as a direct result of the incident. For example, it is common in some countries for fishing communities to supply casual labour for shoreline clean-up. A fisherman claiming for loss of earnings must allow a reduction for any clean-up wages which contribute to his livelihood and offset his loss of earnings from fishing. Equally, any savings in crew or fuel costs should be taken into account in establishing the net economic loss sustained.

1.4 Subsistence fishing loss potentially represents a special case of economic loss in the sense that catches may provide the basic food of the community, with any trade being dominated by barter transactions rather than money. Although it is unlikely that the economies of any coastal communities are based purely on bartering, it may be impractical to apply standard principles, as described in the preceding paragraphs. In extreme cases where subsistence fisheries are affected there may be an urgent need to supplement or replace lost catches with alternative sources of food to prevent hardship.

2 Fisheries

2.1 General considerations

2.1.1 The most common form of claims relate to the interference with fishing of wild stocks of fish and shellfish. Fishermen whose boats, nets or other gear are oiled may well be prevented from fishing and thereby suffer an economic loss until their equipment is cleaned, repaired or replaced. Their loss of profit for the period may qualify for compensation, subject to mitigation, if appropriate, and to the provision of satisfactory evidence as to their expected level of earnings and normal costs. If, on the other hand, the fishermen prudently remain in harbour and suffer no physical damage to their property, they may still qualify for compensation providing the deliberate act of staying in port is a reasonable preventive measure.

2.1.2 In the event of a temporary inability to fish, the question arises as to whether full compensation for lost catches is justified since in most cases the fish and shellfish will not be harmed and will remain to be caught at some later date. This is particularly significant if the fishermen are subject to maximum quotas in a season. In such cases the annual profit will be based on the quota and is unlikely to be affected by a short term interruption caused by an oil spill (or bad weather). The interruption will be more significant if there is no restriction on catches or if there is a limited fishing season which coincides with the spill. All such cases require detailed knowledge and careful investigation of the particular fisheries to ensure that compensation is fair.

2.1.3 Mariculture is rapidly increasing world-wide with the cultivation and maintenance of a wide variety of aquatic plants and animals, usually in sheltered coastal waters, but occasionally involving the use of onshore tanks which are supplied with clean sea water drawn through intakes located below low water mark. Cultivation facilities can usually be cleaned, but mortalities, tainting or impaired growth may occur, leading to economic loss.

2.1.4 Quantifying economic loss resulting from mortality of cultivated organisms is often simply a question of counting and weighing the casualties, followed by calculating financial losses from projected harvest weights and price at first point of sale. Claimants should bring potential claims to the attention of surveyors acting on behalf of the compensatory bodies as soon as possible following the incident in order to verify and quantify the damage through a joint survey. Account has to be taken of normal losses during the course of cultivation or maintenance, as well as the saved expense of feed, staff costs and other items of deductible expenditure normally included in the price of the marketed commodity or the service provided.

2.1.5 Where external physical contamination of, for example, clam shells or the appendages of crabs or lobsters occurs, even though there may be no mortality or tainting of tissues, it is evident that the crop cannot be sold until the contamination is removed. Otherwise there is the risk of the contamination being spread during the handling of such seafood products, or tainting arising as a result of batch cooking.

2.1.6 Growth rates may on occasion be reduced as a result of the consequences of an oil spill, or because of a suspension in the normal feeding regime imposed in order to prevent or reduce tainting. Lost growth potential can often be recovered through subsequent weight gain, but sometimes the normally expected weights may not be achieved by the time harvesting is due. Occasionally, seafood cultivation is intended for a specific seasonal market, leaving little flexibility in the timing of the harvest.

2.2 Long-term effects

2.2.1 Whereas the implications of oil pollution damage to mariculture are readily quantified, claims for future losses in the fisheries sector tend by their very nature to be speculative, since it is rarely possible to demonstrate that such losses will definitely occur. Natural recolonisation of polluted areas by planktonic life stages is usually rapid, and recovery is further accelerated by a vast reproductive surplus for most species. It is therefore rarely possible to identify any long-term effects induced by mortalities caused by oil pollution, because such effects are quickly overtaken by other forms of natural mortality, and by man-made influences such as fishing mortality. Rather than wait to see whether alleged future losses actually materialise, it has usually been possible to dismiss such speculative claims on the basis of past experience and fishery management models. It has normally transpired that there are no apparent long-term effects of oil spills on biological communities that would justify a claim for future economic loss.

2.2.2 There are some potential exceptions to the above conclusion. Oil spill effects on fisheries are usually short-lived, mainly because commercially important stocks rarely come into direct contact with floating or stranded oil. The situation can be different on the rare occasions when oil sinks to the sea bed, particularly in areas where trawling is the prevalent

fishing method. Even small quantities of oil may spoil a catch and contaminate fishing gear as well as the decks and holds of fishing boats. It is also possible that the impact of oil sunk in deeper waters will be prolonged because of its comparatively high persistence at greater depths, particularly if the oil in question is very viscous and therefore resistant to physical and biological degradation. In these circumstances long-term impact on trawl fishing is possible.

2.2.3 Salmon ranching is a commercial enterprise that exploits the homing instincts of this migratory fish. The operation is strictly managed and closely monitored. Large numbers of juvenile salmon are cultivated and released to the wild to augment natural stocks. After a number of years growth and maturation the salmon return to their home waters and can then be caught in greater numbers than would otherwise have been possible. Notwithstanding mortality fluctuations during their period at sea, the strength of a particular year class can be predicted one or two years before the salmon return. If there was clear evidence of an oil spill killing significant numbers of artificially reared juvenile salmon at the time of their release, it is possible that catches of that particular year class could be affected several years later.

2.2.4 A similar example of strict management is provided by some lobster fisheries, in which predictions can be made of future catch potentials based on estimates of the abundance of juveniles. Fine-tuning of such predictions is possible when the juveniles are one or two years short of the minimum legal catch size. Thus, the economic repercussions of any significant oil impact on the juvenile element of the lobster population can be estimated in terms of future losses. Conversely, there is also the possibility of allaying unfounded fears of future loss, using such reliable monitoring data.

2.2.5 In many countries of the Far East mariculture practices are well-established and varied. For some shallow-water species of high commercial value, like cockles, abalone and sea cucumber, there is a procedure of artificially cultivating larvae and juveniles which are then transferred to the sea bed to supplement wild stocks. It is believed that this method enhances the harvest, which may be up to four years later. Although no quantitative data appears to be available, it seems unlikely that such a costly and labour-intensive activity would persist unless there was a substantial dividend. Similar practices are followed in the maintenance of intertidal shellfish beds in many European countries. In general, bottom-living animals are unlikely to be affected by floating oil, whereas intertidal organisms are at greater risk. It could therefore be argued that mortality in populations attributable to oil pollution might lead to predictable future economic loss, although quantification in advance is likely to be difficult.

2.2.6 It must be recognised that there are many stresses on fishery resources, from both natural and man-made causes, which lead to damage similar to that caused by oil spills. Examples include unusually severe weather conditions, industrial effluents, and excessive turbidity and siltation created by erosion. So-called red tides generated by an overabundance of naturally occurring planktonic organisms will poison animals and plants in surface waters. Cultivated animals and plants are particularly prone to diseases, often because of overcrowding. All of these factors may cause mortality or impaired growth. Only with expert knowledge of the local circumstances, careful investigation and comparisons with nearby unpolluted areas can the true causes of observed damage be determined.

2.3 Tainting and health issues

2.3.1 Where the edible parts of fish and shellfish become contaminated or tainted, either in mariculture facilities or, more rarely, in wild stocks, the question of whether such seafood is suitable for sale or for human consumption inevitably arises. The process of contamination of tissues and the development of taint is not precisely understood, but in broad terms some hydrocarbon components can be taken up from oil dispersed in sea water, usually through the gills, and are retained within the flesh. When water quality returns to normal, the hydrocarbon components are also progressively lost by a process known as depuration, returning in due course to background levels. Animals with high fat contents in their flesh seem to absorb and retain taint to a greater extent. In all cases, however, scientific evidence shows natural depuration to occur, and is usually complete within periods of weeks or months, depending on the degree of taint and the species.

2.3.2 There are no regulations containing criteria for judging whether the presence of oil contamination presents any threat to public health. Although polynuclear aromatic hydrocarbons (PAHs) have been a focus of attention because they are known carcinogens, scientific studies have shown that levels of such compounds found in fish and shellfish after oil spills are unlikely to be a health hazard, especially when compared to levels found in other common foodstuffs (e.g. smoked fish, meats and cabbage). However, there is little incentive for closer investigation of health effects because oil contaminated food is in any event unpalatable due to an oily taste.

2.3.3 The concentrations of hydrocarbons at which tainting occurs are very low. It has not been possible to identify precisely which compounds cause the oily taste, and even the most elaborate analytical techniques have not been able to reproduce the complexity of the human sense of taste. Nevertheless, a simple taste test, conducted with proper controls to eliminate subjective effects, can establish the presence of taint conclusively and rapidly. In the case of hydrocarbon contamination, the health concerns are always overshadowed by the tainting issue. In other words, the taste test for oil taint has proved to be the most reliable indicator of whether seafood is fit for human consumption. If the taste of the seafood is acceptable, it is safe to eat.

2.3.4 It should be appreciated that, aside from contamination by oil spills, many sea food products would constitute a potential health hazard if they were sold without any control. In many parts of the world mussels are subject to strict cleaning regimes prior to being sold. In some cases their sale is banned at certain times of the year because it is known that they contain potentially lethal toxins generated by a natural marine organism. In such an event, screening programmes on a limited number of samples are carried out to ascertain when the mussels are free of contamination and their sale can be resumed. The purpose of this example is to dispel any notion that, once having been contaminated, a fish or shellfish product can never be offered for sale. Government authorities around the world recognise as a matter of course that, after a period of self-cleaning, products that were once unsuitable for sale can be perfectly fit to eat. There is no reason why the same procedure should not apply to oil spills. Applying special rules in the case of oil spills simply because of the existence of compensation schemes does not seem justified.

2.4 Fishing bans and exclusion zones

2.4.1 Although oil can have toxic effects, or can taint a seafood product so that it becomes unpalatable for a period of time, evidence collected after previous spills indicates such effects to be rare in wild stocks. Consequently, in most cases, economic loss for fishermen would be limited to the period whilst oil is present on the water surface in sufficient quantities to risk the direct contamination of fishing gear.

2.4.2 The presence of floating oil, the risk of contamination of gear, or the confirmed presence of taint can make it necessary to impose fishing or harvesting bans restricting the sale of fish and shellfish. The purpose of the restrictions is to reduce contamination of fishing gear and prevent any potentially contaminated seafood products from reaching the consumer. When properly applied, fishing and harvesting bans serve an important function, but they can rapidly outlive their purpose. Hence rigorous monitoring is vital to ensure that such restrictions continue to meet their original aims. There is no merit in imposing or maintaining restrictions without proper justification.

2.4.3 Fishing bans can generally be lifted as soon as the sea surface is free of oil. Restrictions imposed on the basis of proven tainting are likely to be more prolonged and require careful monitoring. Very different conditions apply to the characteristics and probability of tainting in a population of free-swimming fish, as compared with a shellfish bed composed of stationary individuals. A sampling programme with defined objectives will be necessary to determine the degree, spatial extent and duration of the problem.

2.4.4 In principle, a relatively small number of samples is adequate to confirm the initial presence of taint in order to impose a restriction. Monitoring the progressive loss of taint by sampling at appropriate intervals thereafter, allows the point at which taint disappears to be determined with some confidence. Once two or three successive sample sets over a short period of time remain clear, restrictions can be removed or the scope of the ban adjusted as a distinct area or species is shown to be free of taint. This type of approach has been successful in managing bans on sales in instances where serious health hazards arise from contamination, for example, by natural algal blooms responsible for the incidence of shellfish poisoning.

2.4.5 There are some fundamental assumptions to be considered when examining the statistical basis for lifting a fishing or harvesting restriction. As numbers of contaminated and tainted organisms decrease, they are encountered progressively less often in samples. A small sample from a large population will, in statistical terms, give a lesser degree of certainty that fish are clean than a larger sample. Absolute certainty of cleanliness would only come from sampling every fish, which is clearly absurd.

2.4.6 The recommended approach is to establish at what point a representative number of samples from the polluted area are no more tainted than an *equal number* of samples from a *nearby* commercial outlet *outside* the spill area. This recognises that tainted samples (not necessarily due to oil spills) can occur in any population. The confidence in accepting that the fish or shellfish are clean and safe comes from an adequate time-series of monitoring data showing the progressive reduction in taint, and not from 'proof' that every fish is clean.

3 Tourism and other industries

3.1 Should oil arrive on beaches in resort towns during the holiday season, there may be direct effects on tourism. Guests at beach-side hotels might curtail or cancel their reservations, with or without good cause. Such losses can usually be substantiated by letters of cancellation, or similar evidence. Short-term benefits of increased custom to restaurants and hoteliers, from clean-up teams and the media must be taken into account in any subsequent claims for compensation.

3.2 There is little evidence for longer term local impacts on the tourist trade from spills. Once beaches are clean, normal trade should resume, although the effects of exaggerated media reporting are a significant factor influencing a public perception, which may persist beyond the duration of overt shoreline contamination. Where hoteliers, restaurants and other small business which depend on beach trade or tourists for income claim for longer term losses, evidence will be required, for example by a comparison with the results of trade in previous years. General trends in nearby areas unaffected by the spill should be considered in assessing any claimed loss, as well as fluctuations in trade unconnected with effects of oil pollution, for example, unfavourable economic conditions or unusually bad weather. Given the complexity of the tourist trade, it cannot be considered reasonable to accept claims for future loss based on speculation or abstract quantification.

3.3 In the event of oil spill contamination threatening an industrial plant abstracting sea water, it is sometimes suggested that the plant should be shut down as a precautionary measure so as to avoid entrainment of oil in the water intakes. This action would lead to a potential loss of income. Whether such an action is reasonable would have to be judged against the likelihood and extent of loss occurring, the specific design of the plant under threat, the design of the water intake and its depth below the water surface, the type of oil spilled, the sea conditions and the adequacy of any protective measures available.

4 Loss from preventive measures, and pure economic loss

4.1 Some measures to protect sensitive resources may subsequently prove not to be reasonable but may be seen to have been taken in good faith and should be judged in the light of information available at the time. Examples are the temporary closure of sluice gates or water intakes to prevent oil from entering mariculture facilities. Unforeseen repercussions on water quality and the health of cultivated organisms could develop as a result.

4.2 If, on the other hand, the preventive measure was imposed on the claimant without good reason, for example in the form of an inappropriate fishing ban, the loss should, in fairness, be laid at the door of the party responsible for imposing and maintaining such a ban. This is an important point since the economic repercussions of an incorrectly imposed ban can be severe.

4.3 A similar situation can arise as the result of dispersant usage in mariculture areas. In some past oil spills insufficient concern has been shown for the known damaging effects of improperly applied dispersants, with the result that cultivated fish and shellfish stocks in the area have become tainted. In such circumstances, not only might the costs of the unreasonable dispersant usage be disallowed but, in addition, any claims for the

consequential loss might logically be viewed as the responsibility of the party which instigated the dispersant usage.

4.4 When boats and fishing gear have become oiled, fishermen have usually qualified for compensation for lost catches. If, as in the example quoted in paragraph 2.1.1, they prudently remain in harbour and suffer no physical damage to their property, they would be considered in some jurisdictions to have suffered so-called 'pure' economic loss and thereby not be eligible for compensation. This would seem to be both illogical and unfair. An alternative interpretation is to regard the decision not to risk gear and catch contamination as a preventive measure. Such a measure would not be subject to a test of 'contamination' and a claim for lost catch could therefore be admitted, provided the preventive measure was judged reasonable.

4.5 Whilst there is merit in applying strict rules in respect of all so-called 'pure' economic loss claims, it appears unjust simply to state that such claims should not be met as a matter of principle. Artificial exclusions imposed to the detriment of claimants with a genuine loss as a result of an oil spill would seem to be at odds with the fundamental purpose of the compensation schemes. This argues for giving due weight to the provision of adequate proof verifying alleged loss and its cause, rather than over-emphasising matters of legal principle.

4.6 Assuming the principle is accepted that 'pure' economic loss claims can be paid, the problem arises of where the line should be drawn between those claims which should be admitted for compensation and those that should be dismissed as too remote. It is unlikely that precise criteria can be developed which anticipate every eventuality, and each case will, to some extent, have to be judged on its merits. A key criterion should be the degree of *dependence* of the person suffering loss on the exploitation of the affected marine environment for their livelihood. Where a claimant, such as a fish packer, is predominantly dependent for his business on a local fishery, it is clear that he could suffer genuine and appreciable loss if the local fish or shellfish became tainted by oil and he was unable to obtain alternative supplies. Conversely, a claimant more remotely linked both in terms of business and geographical location would incur little or no loss, partly through being able to mitigate his loss by turning to alternative sources of supply. To some extent, the process of providing proof that the loss was a direct consequence of the oil spill has a self-regulating effect of weeding out speculative claims. Those claimants in closer proximity to the oil spill and its impact will be better able to substantiate their loss, whereas those further removed will have greater difficulty in establishing their dependence on the affected coastal zone and their link with the spill.

4.7 As with the fisheries sector, there is a tendency for the merit of claims for loss of income from tourism to be related to the proximity of the loss to the incident, and to the level of dependence of the claimant on the area affected by the oil spill. It is unlikely that tour operators in areas remote from the spill, for example operators selling packages in various foreign resorts, would sustain an overall loss. Even where customers indicate their unwillingness to visit a particular location because of a spill, their business is usually directed to an alternative location and no net loss should be incurred by the operator. In addition, the more remote the claim, the greater are the opportunities for the claimant to mitigate his loss.

4.8 In exceptional circumstances, some limited and carefully targeted 'marketing' effort may be justified, on the grounds of a high likelihood of success in preventing or minimising

short term losses. A good example would be where, as a result of news coverage of the spill, buyers cancel orders for fish farmed in that area, even though the fish have not been affected. A limited campaign targeted at those buyers (e.g. a site visit to show that oil has not affected the fish) is a simple and practical way to allay unfounded fears and thereby mitigate loss. In any event, the costs of any such campaign should never be disproportionate to the likely economic benefit which could result.

4.9 Market studies and advertising campaigns are recognised methods of analysing and influencing public opinion. In theory, they can serve as a means of preventing economic loss generated by public perceptions. The criteria accepted by the IOPC Fund Executive Committee at its 35th meeting for admitting preventive measures of this kind are the following:

- The costs of the proposed measures should be reasonable.
- The costs of the measures should not be disproportionate to the further damage or loss they are intended to mitigate.
- The measures should be appropriate and offer a reasonable prospect of being successful.
- In the case of a marketing campaign, the measures should relate to actual targeted markets.

In practice, problems arise in assessing the merits of such measures because their benefits are difficult or impossible to forecast, or verify. This may not be considered reason enough to reject categorically such measures in the context of compensation, but it begs the question as to whether it can ever be demonstrated that marketing campaigns actually fulfil the above criteria since it would never be known if loss, and what magnitude of loss, would have occurred in the absence of a campaign.

5 Conclusions

5.1 In the fisheries and mariculture sector the complexities of biological systems and business interactions make it difficult to identify the actual impact of an oil spill. Only with expert knowledge of local circumstances, careful investigation and comparisons with nearby unpolluted areas can the true causes of observed damage be determined.

5.2 Scientific evidence demonstrates that natural depuration can render a once-tainted food organism fit to eat. In practice, a properly conducted taste test has proven to be the most reliable indicator of whether sea food is fit for human consumption.

5.3 The recovery from tainting can be defined as that point at which a representative number of samples from the polluted area are no more tainted than an *equal number* of samples from a *nearby* commercial outlet *outside* the spill area. Confidence in accepting that the product is clean and safe also comes from an adequate time-series of monitoring data showing the progressive reduction in taint.

5.4 Inappropriate clean-up techniques and fishing bans can have severe economic repercussions in the fisheries and mariculture sector. Where damage or economic loss is

caused by preventive measures that are not reasonable, the party which instigated the measures should, in fairness, be responsible for any resulting claims.

5.5 Whilst there is merit in applying strict rules in respect of all so-called 'pure' economic loss claims, it appears unjust simply to state that such claims should not be met as a matter of principle. Rather, the emphasis when screening claims should be on: requiring proof:

- of the alleged loss;
- that the loss was caused by 'pollution damage';
- that the loss arose as a direct consequence of a significant *dependence* on exploitation of the affected marine environment for the claimant's livelihood; and,
- that mitigation of the loss was not possible.

5.6 In theory, market studies and advertising campaigns can serve as a means of preventing economic loss generated by public perceptions. In practice, problems arise in assessing the merits of such measures because their benefits are difficult or impossible to forecast, or verify.
