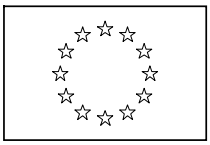

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Application of the precautionary principle and multiannual arrangements for setting TACs

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Introduction

This paper focuses on the application of the precautionary approach to a specific problem, the setting of TACs and the rate of exploitation in a single-species fishery management context. The issue could and should be explored more fully at a later date.

The scope for applying the precautionary principle extends far beyond fisheries. The subject has been reviewed in general (see COM(2000) 1). While its scope has been deliberately restricted, the analysis that follows does deal with a key problem of the CFP.

The application of 'precaution' in regional fishery organisations and in fisheries agreements, both as a principle and in the way it is implemented, tallies with the conception of the precautionary principle as reflected in the Commission's Communication COM(2000) 1.

A dominant feature of resource conservation policy under the CFP to date has been the annual pattern of the end-of-year negotiations to set the TACs for the year ahead. The inevitability of this pattern has given rise to drawbacks that have worsened over the years:

– The fixing of TACs on an annual basis means that a medium-term perspective cannot be adopted or observed. Negotiations in the Council have regularly resulted in the postponement, mainly on grounds of scientific uncertainty, of the stringent measures that are needed if stocks are to recover. Postponing the application of these measures for a year may not in itself present any major threat. However, repeating the process annually can only place the stocks in an extremely vulnerable situation.

– The fishing industry does not have the necessary oversight of the development outlook for its operations since the TACs for a given year are as a rule only known right at the end of the previous year. As well as that they can show sharp fluctuations, the need for which the industry frequently challenges.

– It is very difficult to create a link between a conservation policy dominated by a strictly annual pattern and a fleet policy requiring a medium- and long-term outlook.

The annual pattern of decision-making has resulted *de facto* in a dilatory policy of stock management that has failed to safeguard or restore stocks. Since the problem is not specific to the CFP, the precautionary principle has been developed in response to such difficulties. Implementing it is more complex, however, than setting out the principle. The first section of this paper sets out to throw light then on the debate on this topic. The second part broadens the discussion to include the introduction of multiannual management frameworks, as the multiannual dimension is necessary not alone to avert the risk of disaster but also to rationalise the management of resources. The third section focuses on the links between the precautionary approach and the multiannual decision-making mechanisms for the TACs. The final section outlines the approach required to provide the CFP with these multiannual decision-making arrangements, focusing on the precautionary approach as well as other factors, starting with the industry's concern to prevent as far as possible over-rapid fluctuations in the TACs.

I. APPLYING THE PRECAUTIONARY APPROACH TO FISHERIES

I.1. Background

As indicated above, the precautionary principle became necessary as a result of difficult decisions being rejected, delayed or watered down too frequently on grounds of uncertainty as to the need for them. A stalling tactic such as this regularly results in the necessary evidence only becoming available after an event, which it is intended to prevent, has actually taken place. The precautionary principle, which postulates that a lack of certainty is not a sufficient argument for postponing difficult decisions, meets a major need therefore.

Its application, described as "the precautionary approach", immediately encountered a dual ambiguity:

1. What kind of risk is involved, in other words, what is the event that is to be prevented by adopting the precautionary approach?

2. What is the definition of 'acceptable level of risk'?

1. Nature of the risk

In the minds of the general public the perceived threat in many cases corresponds to the risk of an irreversible development, associated more precisely with the disappearance of a species or at least of a biological population. This perception is not altogether accurate in the sense that the scientific advice given by the experts monitoring the development of stocks does not as a rule refer to this type of occurrence. The ambiguity does not end there, as (depending on the expert groups, the regulations and the fisheries management bodies) the nature of the risk that the precautionary approach is seeking to prevent varies.

– The United Nations Agreement on Straddling Stocks and Highly Migratory Species (1995) and the FAO Code of Conduct on responsible fishing refer to the concern to prevent the rate of exploitation from rising above a level that would allow maximum balanced yield (Maximum Sustainable Yield).[1] The debate in the NAFO takes the same approach. The occurrence that is to be prevented is the threat of overexploitation in terms of sustainable yield by weight.

[1] The meaning of MSY as used by international bodies also calls for clarification. The texts mentioned refer to using MSY “as qualified by relevant environmental factors, including the special requirements of developing countries”, which illustrates the variety of factors on which it is based.

– ICES advice on the other hand refers to another kind of risk: the threat of a collapse of stocks.[2] Supplies of breeding stock can indeed fall so low as to endanger subsequent generations. A moderate reduction in breeding stock (measured in terms of adult biomass or spawning biomass) has little impact on the abundance of the resulting young fish, a process known as recruitment. Biological mechanisms allow moderate declines in spawning stock to be compensated.

Too sharp a reduction in the spawning biomass can, however, lead automatically to a decline in recruitment. The stock can then decline very rapidly if nothing is done: the snowball effect sets in. This is not to say that this development is necessarily irreversible. Generally speaking, stocks protected in a fishery following their collapse have recovered. There are exceptions, however, and recovery can be very slow: nearly 50 years in the case of Atlanto-Scandian herring. Preventing the collapse of stocks is, of course, a goal with the highest priority. It is with that goal in mind that the precautionary approach will be discussed in the remainder of this document.

2. Choice of risk levels

Applying the precautionary approach must not boil down to seeking zero risk. It would be necessary to close every fishery very frequently if the risk of collapse were to be avoided altogether. It is likely that one mistake or another would be made (effective restrictions would not imposed because they are not shown to be necessary or the most stringent measures would be adopted systematically in order to reduce risk to the minimum). A balanced approach entails weighing up all the risks involved in each management measure: the biological risks of collapse for the stocks and the economic risks for the industry.

The setting of acceptable levels of risk would be a matter for the management bodies, with scientists interpreting the risks associated with the various scenarios. The latter would be responsible for risk assessment and the former for deciding on the action to be taken (risk management). If the scientific community considered that the risk management put in place by the decision-makers/managers was unreasonable, it would be up to it to make this known publicly but not to formulate the advice in a way that forces the hand of the decision-makers.

This theoretical approach could be applied in full in exceptional cases only. Quantifying the risks of collapse directly could be awkward. In many cases the best that is available is a finding that recruitment appears to have fallen since the spawning biomass fell below a certain level, without it being possible, however, to assert that this is not a coincidence. It may also be that the only basis is the fact that the spawning biomass has reached an historically low level and that consequently there is no assurance that the stock will be able to provide normal recruitments within this historically "lowest" level. Occasionally analogies are made with other stocks showing related characteristics. Generally the scientists bring together various items of data in order to identify a level of spawning biomass below which it would be dangerous to fall. They are unable, however, to quantify the risk of collapse of a stock directly. The choice of biomass threshold already represents a choice. The decision-maker is

[2] The reason ICES refers to the threat of a collapse in stocks and not to the maximising of sustainable yield is that for a number of stocks the conditions in which such maximising may take place are difficult, if not impossible to define, and also because the fishing mortality among many stocks is well above that which would correspond to the maximising of yield by weight. This has, moreover, often been the case since the CFP was introduced. The achievable medium-term objective may not be to maximise production, but simply to prevent the collapse of stocks and to reduce fishing mortality to an extent that is acceptable in social and political terms.

therefore confronted with a situation where the choices as to the risks considered unacceptable have already been partly made and the reasons for these choices are not always very clear.

This is not to say that the scientists are wrong to act in this way. They must gather the available indications where no other evidence exists in order to identify the circumstances where they consider that a serious risk of collapse exists, even if they are unable to quantify it.

The ideal approach is therefore impossible to adopt. Efforts must be made nevertheless to attempt as far as possible to apply it in order to avoid confusing the roles of the scientists and the decision-makers.

I.2. The ICES method of formulating advice

I.2.1. Basic principles

Two parameters are taken into consideration in formulating advice: first the availability of breeding stock, and second the level of fishing mortality.[3]

– Under the former scientific advice seeks to identify a threshold beyond which the risk of collapse of a stock can no longer be controlled. As indicated above this is not a quantifiable probability. However, the concept of a biomass threshold which it is necessary to avoid overshooting is essential if the precautionary approach, which seeks to prevent the collapse of stocks, is to be given practical expression. This measurement is known as Blim (minimum biomass). ICES advice frequently refers to a second biomass value, known as the Bpa (precautionary biomass), which is higher than the first in order to establish a safety margin. The risk to be prevented therefore is no longer directly that of collapse but that the spawning biomass should fall below the Blim.

– For the second parameter (mortality), the scientists assess for each level of fishing mortality the fertility rate of each age group, meaning the number of eggs it will be able to lay. By comparing this with the fertility rate that would have existed (the number of eggs that would have been laid) if fishing had not taken place, a figure is obtained for the "residual" potential fertility rate left by fishing. The more intensive the level of fishing, and the higher the level of fishing mortality, the lower the "residual" potential fertility rate (starting with the same size of stock for the age group). It is possible to link too sharp a drop in the figure for the fertility rate with the long-term risk for the stock. Here again it is not possible to quantify a direct risk of collapse. Various considerations, however, result in an extreme value, where the threat to the future survival of the stock is considered excessive. This value is known as Flim. A "precautionary" value, known as Fpa, is also associated with it, with the aim of providing an additional safety margin.

Combining the two criteria (level of spawning biomass in relation to Blim and Bpa, level of fishing mortality in relation to Flim and Fpa) identifies the different areas in terms of the safety of the stock, as shown in Figure 1.

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[3] Fishing mortality is the parameter that measures best for scientists the pressure exerted by fishing on a stock. It boils down to the proportion of a stock harvested each year, i.e. the exploitation rate.

I.2.2. Much-needed improvements in the formulation of advice

ICES has invested considerable effort in preparing advice that is satisfactory in the medium and long term, dealing with the precautionary approach, to meet the needs of managers/decision-makers. The process is fraught with difficulty as a balance has to be struck between the need for advice expressed simply, without which non-scientists would be unable to read it, and the danger of over-simplification, which can conceal essential elements and lead to incorrect interpretations.

Discussions have taken place on a number of occasions between ICES experts and representatives of "users" of advice (members of Commission staff and staff of the Member States which are ICES contracting parties and of non-member countries which also belong to ICES). These have shown that all the users welcome the progress that has been achieved but have encountered difficulties regarding the advice given in 1998 and 1999, when ICES started to include references to the precautionary approach on a regular basis:

° The arguments used to define Blim and Flim vary from stock to stock, with the result that there is very little uniformity as to the dangers associated with overshooting the thresholds. This lack of uniformity needs to be explained.

° The procedures used to define Bpa or Fpa are not always very clear, and while it has to be acknowledged that Blim and Flim should be defined by biologists, the definition of Bpa and Fpa should be worked out jointly by the managers who use the advice and the scientists.

° It is even more important to ensure that the definition of threshold values is improved as they have a considerable impact on the general public and can result in over-simplified interpretations: maintaining the level of fishing mortality slightly above the Fpa can be perceived as laxity even when examination proves the opposite (see below).

° It has not been emphasised that diagnoses of spawning biomass do not have the same immediate consequences as those of fishing mortality. If the spawning biomass is very low, action has to be taken immediately. If fishing mortality is too high, its impact on the risk of collapse may develop over time only: if at the same time the spawning biomass is adequate, a gradual response may be in line with the precautionary approach.

° Advice has been given in a way that makes it appear to the non-specialist that fishing mortality must be reduced automatically, immediately and sharply by imposing a TAC for fishing mortality no higher than the Fpa. Analyses of the likely consequences of scenarios for recovery at varying rates are not available.

° The advice has not made it possible for managers to gauge the "price" that will have to be paid to give a stock a relatively wide safety margin. Any reduction in fishing mortality entails an immediate loss of earnings but while this loss for some stocks (as a rule stocks where fish have a short lifespan) is offset only by a lower risk of collapse, for others it also results in a long-term gain in production by weight as the stock is overexploited in terms of yield per recruit.[4]

° The diagnoses appeared suddenly, at least in 1998, with no time for discussions with the industry before the resulting decisions (on TACs) had to be taken.

These comments, arising largely from the fact that application of the precautionary approach is still in its early stages, should not make one overlook the major efforts made by the ICES. As a result of discussions with the Member States, the Commission has altered the wording of its request for advice from ICES. Discussions with the scientific authorities will of course have to continue in greater depth if a clearer share-out of tasks between scientists, managers and decision-makers is to be achieved.

II. THE MULTIANNUAL APPROACH TO DETERMINING TACS

II.1. Expectations of the industry and possibilities

The industry would like the fluctuations, and especially the year-to-year TAC reductions, to be as small as possible. There are major limitations, however, on what can be done.

II.1.1. Stock variations and variations in scientific advice

There is a widespread view that the variations in TACs are solely the fault of the scientists. This view is wrong, and has to be set aside before there can be any debate on the prospects for stabilising TAC levels. The variations reflect above all the fluctuations in the abundance of the resources exploited. They are due primarily to natural causes, and above all to year-to-year variations in the number of young fish reaching the age at which they can be exploited (recruitment). These fluctuations are linked to differences in the success of reproduction and the survival of the eggs, hatchlings and the early stages of the young fish. If a stock is exploited to a moderate degree it can be made up of a set of successive age groups, and the variations in overall abundance even out those of the annual recruitments. If a stock is fished very intensively, the exploited stock will be based on a smaller number of age groups only,

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[4] Whether an age group is large or small in terms of numbers, i.e. recruitment is high or poor, the higher the level of fishing mortality, the younger the individuals taken in that age group, and consequently the lower their weight, will be. While it is true that intensive fishing increases for a given recruitment the number of individuals taken, since the proportion of deaths due to fishing increases in relation to those from "natural" causes, the average age and average weight of the fish taken falls when fishing is intensified. The product of the number of individuals taken by the average weight of catches, which gives the yield by weight from a recruitment, may paradoxically fall therefore if fishing exceeds a certain threshold. This is the outcome then of too sharp a drop in the average weight of catches. This phenomenon has been of major importance in determining the characteristics of overexploitation in terms of yield per recruit, as the above approach when applied to a given recruitment can be applied to a recruit. Fmax is defined therefore as the level of fishing mortality that allows yield per recruit to be maximised. While this concept is no longer central as it was a few decades ago, it represents an essential reference for judging whether or not fishing is so intensive as to prevent the growth potential of individuals from being put to good use.

and sometimes only on one. The year-to-year variations in the exploited stock are therefore no longer smoothed out.

Variations in TACs are to an extent therefore connected with variations in scientific advice. In addition to the "real" variability of stock abundance there is the inevitable uncertainty of scientific assessments. In addition, if the diagnosis of the need for vigorous action to restore a stock worsens, for example because the risk of collapse of the stock appears greater in the light of the most recent information, the scientific advice will be able to recommend a sharp reduction in the TAC.

By and large, however, by far the principal reason why TACs vary is that stocks fluctuate from year to year. Improvements in scientific evaluation methods, and especially in the data available, mean that it is possible to mitigate the impact of uncertainty in scientific evaluations, but not to exclude it altogether. What is more, where a scientific diagnosis reveals an impending threat, it would be highly unreasonable to give priority to avoiding a sudden cut in TACs over any other consideration.

While there is a widespread desire for greater weight to be given to preventing sudden cuts in TACs, it has to be borne in mind that it will be particularly difficult to stabilise TACs in the immediate future, particularly because too often in the past catches were not reduced quickly enough. This has led to very high exploitation rates and to stocks that now comprise a very small number of age groups, perhaps only one, which have been in a critical situation so long now, without any safety margin, that drastic emergency measures will be needed if moderate measures are not taken soon.

II.1.2. The cost of stabilising TACs

The twin sets of fundamental irreconcilables

° Since the resources available fluctuate from year to year and will continue to do so, and since catches are the result of multiplying the size of a stock by its exploitation rate, the latter cannot be stabilised without adjusting the exploitation rates, and consequently the fishing effort deployed. Any improvement in the stability of authorised catch levels will first entail an adjustment of fishing effort. This will be all the greater as, in order to limit reductions in TACs in some years, it will be necessary to avoid increasing TACs in other years by the amount "biologically" possible so a buffer stock can be established.[5] This will call for an immediate reduction in exploitation rates in the years when "buffers" are being built up, and consequently a reduction in fishing activities. Such reductions must be planned in order to prevent quotas from being used up before the end of the year and/or to avoid difficult or even insurmountable monitoring problems, or even large-scale discards if landing quotas are introduced for individual vessels.

° If there is no safety margin enabling the stock to meet the threat of biological collapse, limiting reductions in TACs may increase the risks. Stabilising the TAC in the short term would then be achieved at the cost of accepting an increased risk of collapse of the stock.

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[5] Such buffer stocks will generally be useful in two ways: (1) to provide a stock for fishing in following years even if subsequent recruitments are not as good; (2) to ensure that the spawning biomass is not too low during subsequent reproduction seasons, thus improving the biological safety of the stock and its medium- and long-term prospects.

Attempting to reconcile the irreconcilable

° The choice between stabilising TACs or effort is all the more dramatic as year-to-year variations in the size of the stock exploited are wide, and consequently the rate of exploitation is high. The other choice, i.e. between reducing the TAC sharply or accepting a greater risk of collapse of the stock, will also be all the more painful if the stock is low, reflecting very intensive use. The only way to alleviate the pain in the choice is to lower the rates of exploitation. Such a reduction may be required to safeguard the stock's future. In many cases it will also allow yield by weight to increase in the long term. However, it may be possible to reduce fishing mortality more than what is required to achieve a maximum balanced yield by accepting a certain level of under-exploitation. Generally speaking any reduction in exploitation rates has a cost. To alleviate the pain involved in the choices, something has to be given up.

– The other method of reducing the pain involves improving the scientific bases. This would make it possible first to reduce the degree of uncertainty in "real-time" diagnoses of the situation of stocks, and secondly to zero in better on the risks of collapse, thus limiting unnecessary precautions. Improvements on the scientific front are a possibility. They will not altogether rule out the need to make the choices referred to above. They will not be spontaneous, and will require an effort in terms of resources and organisation.

II.2. Decision-making/"Harvesting" rules

Scientists are unable to forecast the abundance of stocks far into the future, principally because it is not possible to predict the abundance of age groups as yet unborn, whose size depends largely on the marine environment. Such environmental variations are themselves unpredictable and the causal link with fluctuations in recruitment is also poorly understood.

However, scientists are often able to indicate how fishing mortality is likely to develop. The simplest plan involves selecting a level of fishing mortality for each target fishery. This may allow yield by weight – or any other reference level of fishing mortality – to be maximised for each recruit (see footnote to point II-2-1). Regular reductions in fishing mortality that is considered to be too high in one way or another can also be planned over several years, on the basis of current value.

An elementary decision-making rule would involve setting the TAC by applying the exploitation rate corresponding to a fishing mortality selected in advance. Combined with the estimated size of the stock, this rate would give the TAC.

This simple rule can create at least two kinds of problems, i.e. biological (risks of collapse of stock) and economic (year-to-year variations in TACs). Biologically it may involve taking excessive risks where recent recruitments have been poor and the breeding stock is so low that safeguard measures have to be taken and a lower-than-anticipated exploitation rate applied. This can be allowed for in a decision-making rule that adapts the exploitation rate to the abundance of the breeding stock. This kind of decision-making rule is illustrated in Figure 2. This "improvement" does not resolve the second drawback, however, namely the possibility of sharp year-to-year variations in TACs. It may even aggravate them. In an attempt to limit these variations, decision-making rules need to be devised that incorporate the value of the TAC over the current year. An effort can then be made to prevent variations above a predetermined threshold. By doing this the TAC ultimately selected will not correspond exactly to the "desirable" exploitation rate, and may even result in a greater risk of

collapse of the stock. This brings us back to the question of the price to be paid for stabilising TACs.

A set of decision-making rules could be devised on the basis of three figures: 1. a target fishing mortality; 2. estimated spawning biomass, to be seen in relation to critical values, and 3. the most recent TAC adopted. It would be pointless to seek a decision-making rule that eliminates conflicts between the various objectives involved (optimising yield per recruit, controlling the risk of collapse of a stock, reducing year-to-year variations in TACs). Scientists are able, however, to make simulations that allow the performances of the various decision-making rules to be assessed and compared on the basis of various criteria.

The choice of a decision-making rule would mean that a compromise could be expressly chosen, on a rational basis. It would end the practice that has resulted in priority being given too often to the wish to avoid restrictions that are unpopular in the short term, resulting in a quasi decision-making rule that can only lead to the decline of stocks by relying systematically on margins of uncertainty in scientific advice to set TACs at the highest level possible. Only an examination of the medium-term outlook will make it possible for the "dictatorship of short-termism" to be overcome.

In addition, focusing expressly on the concern to reduce year-to-year variations in TACs will show the industry that its concerns are being taken fully into account. The debate necessary for selecting the decision-making rules will demonstrate the limitations of what can be done, and the need for compromises between the various individually desirable goals.

Determining medium-term exploitation rates would make it possible to establish the link with the management of inputs, since fishing mortality is linked to fishing effort, even if lack of adequate data and studies has made quantifying that link difficult up to now.

III. LINKS WITH THE PRECAUTIONARY APPROACH

– The multiannual approach described above, involving rules for multiannual decision-making, has a direct link with the precautionary approach, at least as this is viewed within ICES. As Section II states, ICES advice determines fishing mortality in relation to the level that would seriously endanger the stock's future (Flim) and that needed for a safety margin (Fpa). It also determines spawning biomass in relation to the levels below which an immediate, significant danger exists (Blim) or to the level necessary to provide a safety margin for stock (Bpa). Accordingly, in order to follow the scientific advice for all the stocks where fishing mortality is higher than Fpa, a reduction in mortality must be planned, if necessary in stages, to bring it closer to Fpa, which would be a medium-term objective. But the decision-making rule should also involve a necessary, fast reduction in fishing mortality if the spawning biomass at a given time is too low in relation in particular to Bpa and even more so to Blim. Once more on the subject of the abovementioned decision-making rules, consideration must also be given to avoiding excessively fast reductions in the TAC, at least so long as this does not put the stock's future at an excessive risk.

– There are also resources where recruitment is in no apparent danger of collapse. A multiannual management approach should be devised for them too. The precautionary approach can only define thresholds for mortality per fishery and fertile biomass above which stocks are not likely to collapse. But within this safety margin there is room for many exploitation strategies. If such a strategy is to be implemented, its main aim must be clear once the safety of stocks is ensured. One must also define what one is seeking to maximise,

e.g. yield by weight, the economic value of the catches, the profits reaped by the fishery, certain types of jobs, or a particular combination of these different criteria. The question has never in fact been properly considered within the CFP. The strategy followed implicitly has wavered between maintaining levels of fishing mortality so long as there was no risk of collapse and maintaining the TACs.[6]

Irrespective of whether the precautionary approach is applied, a rule on multiannual decision-making must be laid down and short-sighted decisions must be discarded. A decision-making rule can be worked out for the purpose, incorporating the three points mentioned above: 1. the target fishing mortality for optimising the chosen parameter; 2. spawning biomass thresholds needed so that stocks can keep out of or be rescued from possibly dangerous ranges; 3. variations in TACs from one year to another. Compromises are called for here too. The only way to tackle the problem is to use as a basis simulations which make it possible to assess against a number of criteria the possible consequences of various management strategies, in combination with decision-making rules.

IV. THE PREVIOUS ATTEMPT, ACHIEVEMENTS TO DATE AND WHAT REMAINS TO BE DONE

IV.1. The previous attempt

For many years scientists have stressed the need to lay down medium-term objectives and strategies and have spoken of biomass and threshold mortality levels while the industry has complained of variations in TACs.

The Commission attempted to respond to these concerns by tabling two proposals as the follow-up to a Communication.[7] The first proposal sought to lay down medium-term strategies for progressively reducing fishing mortality to the levels recommended by the scientists, while attempting to increase spawning biomass so that it attains — or to prevent it from falling below — the lower limit.[8] In order to limit variations in TACs, a rule was applied that involved reducing fishing mortality preferably when there was adequate recruitment into the fishery, so making it possible to avoid reducing TACs or to reduce them only slightly. The second proposal sought to introduce flexibility into the way the current quotas are used, with a view in particular to reducing the consequences of variations in TACs.[9]

The second proposal was adopted. It was modest in scope because it involved an innovation that had caused concern, but the changes worked satisfactorily. However, there was no majority in favour of the proposal for medium-term strategies and discussions stalled in 1995.

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6 This has been a constant problem because scientists see preserving fishing mortality as maintaining the status quo while stable TACs are crucial for the industry — a poser already mentioned and never properly solved. Each yearly negotiation of the TACs throws up the same dilemma every time that maintaining fishing mortality would mean reducing the TAC. Moreover, if the TAC proposed by the Commission and implying no change in the mortality rate is endorsed by the Council provided the TAC is kept stable or rises but is increased where it is reduced, the chances gradually stack up on the side of a rise in fishing mortality and of increasing risks of collapse.

7 The new components of the common fisheries policy and their practical implementation (COM(93) 664 final).

8 Proposal for a Council Regulation fixing management objectives and strategies for certain fisheries or groups of fisheries for the period 1994 to 1997 (COM(93) 663 final).

9 Proposal for a Council Regulation introducing additional conditions for year-to-year management of TACs and quotas (COM(94) 583 final).

There are various factors explaining what must be recognised as a failure:

– at the time the scientific advice did not provide any explicit, precise bases officially approved by the authorised bodies for laying down objectives and multiannual strategies;

– the industry had the impression that the approach proposed did not pay enough attention to their concerns regarding wide variations in TACs;

– many feared that TACs were set automatically in a way that prevented the Council from taking action as the need arose.

IV.2. Multiannual strategies introduced thereafter on a case-by-case basis

While the comprehensive approach did not succeed, a number of stocks are managed in accordance with multiannual strategies and objectives. Such arrangements have been set up in particular under agreements with third countries. In the North Sea, targets were laid down in terms of fishing mortality and spawning biomass limits for five stocks (herring, cod, haddock, saithe and plaice) under the bilateral agreements with Norway. Similar arrangements involving all the coastal States were laid down for Atlantic mackerel and Atlanto-Scandian herring. The arrangements were approved by the NEAFC.

In the Baltic, long-term plans have been devised within the International Baltic Sea Fishery Commission (IBSFC) for cod, salmon and sprats. The plan falls within the general framework of the "Baltic 21" process, which seeks to lay down an overall policy for the future of the Baltic.

IV.3. The coming phase

Circumstances have changed since the previous failure, as a meeting of the High-Level Group organised by the French Presidency in September 2000 shows. The need to lay down multiannual procedures that take the precautionary approach into account is now widely accepted. Scientists have made much progress towards establishing more comprehensive bases, even if there is still room for improvement. The difficulties encountered at the time of the previous attempt have revealed the pitfalls to be avoided. The issue therefore can and should be tackled once more.

IV.3.1. Guidelines for multiannual strategies

In line with the foregoing, such management strategies should be based on "planned" development of fishing mortality per fishery in the medium term (involving, for instance, a regular, gradual reduction over five years), combined with two additional measures connected on the one hand with the need to react quickly if the spawning biomass falls too low and on the other hand with a limitation of variations in TACs from one year to the next, e.g. in order to avoid any reduction that is greater than a pre-established limit.

The major difficulty will involve a trade-off between the two latter measures (ensuring a development of biomass that is in line with the precautionary approach by limiting variations in TACs from one year to the next). The strategy must take the special characteristics of each stock into account.

The TAC for the period covered by the proposal for each stock must be set by applying the decision-making rule chosen and taking account of the scientists' updated diagnosis each time. For each stock concerned, the TAC for the following year would thus normally be known (see

below for exceptional circumstances, when the decision-making rule should not apply) as soon as the scientific assessments have been updated by the competent authorities.[10]

While medium-term strategies are needed, untoward inflexibility must be avoided. If scientific analyses indicate that a strategy needs adjusting in the course of implementation, the Commission must make timely proposals. Thanks to its prior requests for advice, it will have made sure that the scientific authorities take action immediately where they consider that a strategy needs reviewing. Furthermore, if circumstances posing a real dilemma were to arise, e.g. where only a sharp reduction in the TAC exceeding the margin of maximum variation recognised by the decision-making rule could prevent a highly dangerous development in spawning biomass, the Council would need to discuss the matter before the TAC could be fixed definitively.

In any event, on the completion of the preparatory stages outlined below, the Commission will need to table a proposal for the adoption and implementation of multiannual strategies in respect of stocks where preparatory analyses have been useful.

IV.3.2. Preparing the new initiative

A. Analysing the effectiveness of any decision-making rules

In summer 2000 the Commission issued a call for tenders covering the systematic performance of the abovementioned simulations concerning various stocks where the relevant data are available. Such simulations are to analyse the effectiveness of various decision-making rules ("harvesting rules") based on the principles described above, including the search to stabilise the TACs. The simulation findings will be put to the STECF so it can analyse them and supply the additional economic data required.

Where necessary, the Commission will have further simulations performed to extend the range of stocks covered and/or to consider decision-making rules other than those analysed, where they have subsequently proved relevant.

B. Consultations

In addition to the STECF, all partners should be consulted when the proposal is being drafted.

The matter will also be referred to the Advisory Committee on Fisheries. An initial meeting will be organised as soon as possible to discuss the general thrust on the basis of this document. Subsequent meetings will be devoted to analysing the results of the simulations referred to above and the STECF's conclusions on the subject.

The Commission will also set up groups of experts (each dealing with a specific set of stocks) to involve the Member States in discussion on the results of the simulations.

Lastly, consultations will be organised on stocks shared with third countries, in particular to bring up to date the multiannual strategies negotiated with them.

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[10] When a new timetable is drawn up for decisions, the year could also be organised in a way that is better suited to certain stocks than the calendar year (January-December); this would allow account to be taken of each stock's special biological characteristics and of the timetable for scientific assessments.

C. Subsequent updating of scientific advice

In order to set the process in motion and ensure it continues to function thereafter, advice must be scientific and must be forwarded in the proper form in accordance with the most suitable timetable. The Commission will take the necessary action *vis-à-vis* the STECF and will make the proper representations to the ICES.

Conclusions

The current short-term approach to stock management involving the yearly negotiation of TACs cannot be perpetuated. Previous attempts to introduce medium-term strategies have been successful to a very partial extent only. Nonetheless, the need for such strategies is still felt, and has indeed grown, owing to the deterioration in the situation of several essential stocks for which recovery plans are required.

At the same time the conditions are now ripe for making real progress. Initial discussions on the precautionary approach have brought about a general awareness of the dangers in the conventional way of determining TACs. Although it could be even better adapted through further consultation, the scientific advice currently available has paved the way to a multiannual approach. The difficulties encountered previously have helped identify pitfalls that can thus be avoided in the future.

A number of issues need to be considered in greater detail before a formal proposal is presented. The scientific bases must be stipulated clearly. The benefits of a multiannual approach can be gauged through wide-ranging discussions, focusing on finding a balance between different concerns ranging from protecting resources to stabilising fishing activities. But the momentum achieved must be kept up so that much broader multiannual arrangements than those set up for certain stocks can be introduced in the coming years. There is no need to wait until discussions on the reform of the CFP are concluded before putting such arrangements in place, because the matter is urgent, but also and especially because a better mechanism for determining TACs is needed in any case.

Figure 1. Diagram for precautionary approach according to ICES

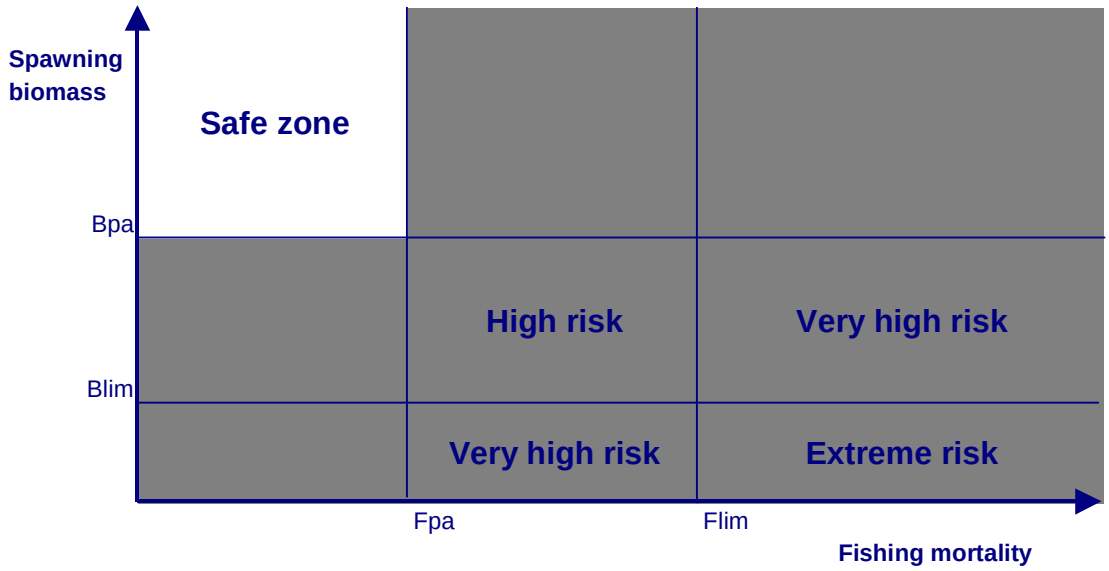

Figure 2. A simple decision-making rule (harvesting rule)