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The Precautionary Approach in International and EU Fisheries Law

by

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1. Introduction

The dire condition of fisheries is the legacy of poor decisions taken by fisheries authorities in the face of great uncertainty. Our knowledge and understanding of the marine environment is quite fragmentary. In addition, an array of complex factors generate uncertainty, stemming from the scientific data being gathered and processed (measurement, estimation, and modelling uncertainty) to the socio-economic factors affecting regulatory decision-making (decision and implementation uncertainty). In particular, the state of many fish stocks is poorly understood, especially in the high seas. Likewise, scientists are unable to forecast the abundance of stocks far into the future (unpredictability of their abundance). Fisheries are prone to variable catch rates, and environmental variations that influence the state of the stocks are themselves unpredictable. By the same token, high levels of uncertainty extend to bycatch and by-product species, and the impact of fishing on the wider marine environment in many fisheries. This situation is aggravated by illegal, unreported and unregulated fishing, in particular on the high seas, that constitute not only a serious threat to fish stocks but also increase the risk of errors. The main challenge is not the one of proper legal regime but of implementation.[1]

Of most relevance is that fisheries authorities have always faced a dilemma when attempting to strike a balance between short-term economic gains and long-term conservation of stocks. In juggling precautionary attitudes, ecosystem resilience, and socio-economic risks and benefits, decision-makers are called on to reconcile the irreconcilable. Whereas too precautionary an approach entails a loss of earnings, the absence of precaution increases the risk of long-term loss in production and of stock collapse if it is over-harvested.

The numerous uncertainties compound the risk of errors.[2] On the one hand, where the stocks are overestimated, they face the risk of being over-fished since there will be some time before the information on the adverse effects of fishing occurs and action to correct the mistakes may

[1] When Illegal, unreported and unregulated (IUU) fishing goes unchecked, the system upon which fisheries management decisions are based becomes flawed. See Council Regulation 1005/2008 establishing a Community system to prevent, deter and eliminate IUU.

[2] T Henriksen, 'The Precautionary Approach and Fisheries: A Nordic Perspective' in N de Sadeleer (ed) *Implementing the Precautionary Principle: Approaches from Nordic Countries and the EU* (Earthscan, 2007) 155.

be taken. On the other hand, where conservation measures are delayed on the grounds that the information to assess at what level the fish stock may be harvested sustainably is lacking, the stocks are likely to be over-exploited.[3] Though stocks following their collapse are likely to recover, that recovery can be extremely slow. In contrast, when stocks are underestimated, socio-economic problems may arise.

Given the reluctance of several states to commit themselves to the precautionary principle, the concept of 'approach' finally prevailed on the grounds that it involves less stringent obligations.[4] The precautionary approach has been proposed in response to the difficulties faced by experts and decision-makers alike. In effect, the approach recognises the inability of science to provide full certainty concerning impacts on the fish stocks and their ecosystems. However, whilst the underlying rationale of precaution is similar for fisheries and pollutants, its implementation in fisheries is not the same as for pollutants and other environmental risks.

Following the 1992 Rio Conference on Environment and Development, the precautionary approach was introduced to fisheries conservation and management both in treaties and in non-binding documents. Since the mid-1990s the approach has been widely applied in fisheries.[5] The questions that shall be asked in this section concern how fisheries authorities have implemented the PA. In answering this question, focus shall be placed on the following issues: firstly, the status of precaution in international treaties and EU law, and its implementation in decision-making processes shall be discussed; secondly, the review by courts of precautionary decisions in several legal systems.

2. International Law

The 1995 UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA) was the first fisheries agreement to apply a PA to conservation, management and

[3] According to the FAO, in 2013 58.1 % were fully fished and 31.4 % of fish stocks were overfished. The percentage of stocks fished at biologically unsustainable levels is still increasing. FAO, *The State of World Fisheries and Aquaculture* (FAO, 2009) 50.

[4] See the Report of the ICES Study Group on The Precautionary Approach to Fisheries Management, ICES CM 1997. That being said, the concepts of 'principle' and 'approach' are entangled in fisheries law. For instance, the precautionary approach is paradoxically listed as one of the 'general principles' to be applied by states to ensure the achievement of long-term conservation and sustainable use of straddling and highly migratory fish stocks (Art 5 (e) UNFSA). With respect to the EU Common Fisheries Policy, the precautionary approach 'derives from the precautionary principle' referred to in Art 191(2) TFEU (preamble, para 10 Regulation (EU) 1380/2013).

[5] F Orrego-Vicuna, *The Changing International Law of High Seas Fisheries* (CUP, 1999) 157–64; D. Freestone, 'International Fisheries since Rio: The Continued Rise of the Precautionary Principle' in A Boyle and D Freestone (eds.), *International Law and Sustainable Development* (OUP, 1999) 135–64; S Kaye, *International Fisheries Management* (Kluwer Law Int'l, 2001) 163–265.

exploitation measures.[6] Subsequently, as precautionary obligations have been incorporated into the conventions of several Regional Fisheries Management Organisations (RFMOs),[7] though few of these regional conventions expressly refer to the approach. Moreover, express references to the precautionary approach don't necessary mean that it is effectively applied.[8]

UNFSA applies only to straddling and highly migratory fish stocks that occur within and outside the Exclusive Economic Zones (EEZs). In other words, these stocks occur both on the high seas and in areas under national jurisdiction.[9] This agreement introduced into the law of the sea several concepts (among which are sustainable development, the utilization of high seas fisheries in harmony with environmental requirements, and the precautionary approach) that are directly related to environmental law. Though UNCLOS embodies the principle of preventive action, UNFSA moves one step further in embracing precaution. Articles 5 (c) and 6 as well as Annex II to the Agreement apply the precautionary approach to the conservation and management of fish stocks. Deemed to be the most innovative provisions of UNFSA, these provisions call into question the unrestricted freedom of fishing on high seas.[10]

UNFSA defines the precautionary approach as follows:

> States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.[11]

It must be noted that in contrast to other international instruments, where the precautionary principle is to be applied where certainty thresholds are exceeded, the precautionary approach must be applied under all circumstances in fisheries management.[12] Although that definition focuses on the 'absence of adequate scientific information', uncertainties about the stock in

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[6] Art 6(2) embodies this approach: 'States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.' E.g. D Nelson, 'The Development of the Legal Regime of High Seas Fisheries' in A Boyle and D Freestone, *International Fisheries Law since Rio: The Continued Rise of the Precautionary Principle* (OUP) 128. See also J Cooke and M Earle, 'Towards a Precautionary Approach to Fisheries Management' (1993) 3 *RECIEL* 252-9; S M Garcia, 'The Precautionary Principle: its Implications in Capture Fisheries Management' (1994) *Ocean and Coastal Management* 99-125 ; G Hewison, 'The Precautionary Approach to Fisheries Management : an Environmental Perspective' 3(1996) *Int'l J Marine & Coastal L* 301-32.

[7] Convention on the Conservation and Management of High Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC), Art 5(c) and 6; Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean (SPRFMO), Art 3(1)(b) and (2).

[8] P De Bruyn, H Murua, and M Aranda, 'The Precautionary Approach to Fisheries Management: How is taken into account by Tuna RFMOs' (2013) *Marine Policy* 397.

[9] Art 3(1). Whereas, under UNFSA, the precautionary approach is not applicable to fish stocks exclusively confined within areas of the high seas or to areas within the jurisdiction of coastal states, under the Code of Conduct, the approach applies to all fisheries irrespective of the jurisdiction of the coastal states (Art 1(3)).

[10] F Orrego Vicuna, 'International Law of High Seas Fisheries' in O Schram Stokke (ed), *Governing High Seas Fisheries* (OUP, 2001) 24.

[11] Art 6(3)(c).

[12] Henriksen, 'Fisheries', above n 2, 157.

question encompass also broader environmental conditions and socio-economic issues.[13]

Furthermore, the precautionary approach is deemed to be an integral part of an ecosystem approach to fisheries management. Accordingly, its scope is wider than the fisheries to be conserved; it applies to the living marine resources as well as the marine environment.[14]

The precautionary approach is both of a procedural and a substantive nature.

Firstly, conservation measures were postponed until there was adequate information on which to base conservation measures. The UNFSA reflects a significant departure from that traditional approach. It requires that a minimum level of information must be available before a fishery is established. Therefore, managers must reckon upon the best scientific evidence available when designing their management regimes. States shall thus collect and make available 'complete and accurate data concerning fisheries activities'.[15] Moreover, the UNFSA makes a significant contribution to precaution in requiring States to implement 'improved techniques for dealing with risks and uncertainties'.[16] In this connection, whenever the data are deemed to be insufficient or incomplete, the authorities are obligated to carry out more research (data collection, collection of and new types of scientific data, monitoring the status of the stocks, etc.).[17] Moreover, data collection and research programmes to assess the impact of fishing on non-target species must be improved.[18] Until research on the specific stock provides relevant information, a precautionary approach should ensure that the management authorities set conservative limits taking into account the level of uncertainty.[19]

Secondly, in achieving the objectives of long-term conservation and sustainable use of fish stocks, States are called on to set 'precautionary reference points' for the conservation and the management of these stocks. As instruments implementing the approach, two types of points have to be used: limit and target reference points.[20]

On the one hand, the limit reference points set the lowest acceptable stock size. They correspond to levels where the stock is maintained within what is described as safe biological limits in order to produce maximum sustainable yield (MSY).[21] The difficulty faced in setting these reference points is that many stocks are already depleted beyond MSY. For overfished stocks 'the biomass which would produce MSY can serve as a rebuilding target'.[22]

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[13] Art 6 (3)(c). Regarding the broad scope of the concept of uncertainty, see also Art 7(5) of the FAO Code of Conduct.
[14] Art 6(1). Likewise, States are required to protect biodiversity of the marine environment (Art 5 (g)).
[15] Art 5(j).
[16] Art 6(3)(a).
[17] Art 6(3)(d).
[18] Art 6(3)(d).
[19] Department of the Environment and Water Resources, *Guidelines for the ecologically sustainable management of fisheries* (Commonwealth of Australia, 2007) 1.

[20] Art 6 (3)(b) and (4); Annex II, para 2.
[21] Annex II, para 2.
[22] Ibid, para 7.

On the other hand, the target reference points aim at the optimum stock size 'intended to meet management objectives'[23]. Acting as buffer zone, they have to be fixed at a higher biomass and a lower mortality rate. Accordingly, they are more risk-adverse than the previous ones.

In substance, the precautionary approach entails the obligation to adopt management strategies with a view to maintaining or restoring stocks 'at levels consistent with previously agreed precautionary reference points'. The stocks have to be maintained within these limits and the risk of exceeding these points must be very low.[24] Two scenarios must be differentiated. When these points are 'approached', states are called on to implement conservation and management measures.[25] In the event they are exceeded, they have to take measures to ensure immediately that the stock is restored.[26]

However, the management authorities are endowed with much discretion. At the outset, in setting the reference points they decide at what level the stock is to be maintained. According to Herinksen, 'the size of the margin will depend on the quality of the scientific information available and the risk the states are willing to take'.[27] Where these thresholds are 'approached' or exceeded they decide the timeframe for and the type of management measures aimed at restoring the fish stocks. The decision to apply moratoria or bans on fishing is left to the state. For instance, the authorities may, depending on the status of the stock, decide to rebuild it over a longer period of time, thereby permitting a continued fishery.[28] Nevertheless, in cases of new or exploratory fisheries, States are required by UNFSA to take 'as soon as possible cautious conservation and management measures'.[29]

To conclude, UNFSA signals a significant departure from UNCLOS. As a management tool, MSY as embodied in UNCLOS is closely related to socio-economic costs,[30] whereas under UNFSA economic objectives cannot be given higher weighing than environmental objectives. In particular, UNFSA signals a shift in the burden of proof, by creating a presumption in favour of conservation.[31]

That being said, UNFSA leaves many questions unanswered. What is the meaning of the terms 'being more cautious'? At what level is a stock outside safe biological limits? Does the level of caution endorsed by the decision-maker correlate with the scientific information available? To what extent do fisheries experts take into consideration uncertainties relating to socio-economic conditions,[32] ecosystems and biodiversity?

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[23] Ibid, para 2.
[24] Ibid, para 5.
[25] Ibid, para 4.
[26] Art 6(4).
[27] Henriksen, 'Fisheries', above n 2, 160.
[28] Ibid.
[29] Art 6(6).
[30] UNCLOS, Art 61(3) and 119(1)a). The scope of Article 61(1) UNCLOS according to which the coastal State shall determine the allowable catch of the living resources in its EEZ has elaborated by ITLOS in its advisory opinion of 2015. Request for an Advisory Opinion Submitted by the Sub-Regional fisheries Commission, AO, 2 April 2015, ITLOS Case No 21.
[31] Boyle and Freestone (n 147) 158; Henriksen, 'Fisheries', above n , 157.
[32] Art 6(3)(c).

3. EU Law

Under EU Treaty law, 'the conservation of marine biological resources' under the Common Fisheries Policy (CFP) is subject to an exclusive central competence.[33] Such a competence is justified by the fact that fish stocks straddle the national waters of the different coastal Member States. Starting in the 1970s, the CFP has gradually been embracing new conservation and environmental considerations granting the precautionary approach a prominent role. Given that the EU is party to UNFSA,[34] the CFP is required to flesh out the precautionary approach requirements encapsulated in this treaty.[35]

The allocation of the substantive competences regarding the CFP is somewhat complex. Whilst the European Parliament and the Council establish, in accordance with the ordinary legislative procedure, the 'provisions necessary for the pursuit of the objectives of … the CFP', the Council of Ministers adopts measures specifically 'on the fixing and allocation of fishing opportunities'.[36] These measures are likely to regulate both access to (e.g. how many vessels may fish) and utilization (e.g. how the fish stocks are to be harvested and quantities to be caught) of the living marine resources and their allocation. Last, the European Commission adopts the implementing measures. Regarding the scientific assessment underpinning the exploitation and conservation measures, the European Commission consults the Scientific, Technical and Economic Committee for Fisheries (STECF).[37] The International Council of the Exploration of the Sea (ICES) provides the STECF with scientific advice on the conservation and management of marine living resources. Accordingly, the EU draws a clear-cut dividing line between ICES and the EU institutions regulatory tasks: whilst the former is responsible for assessing the risks, the setting of acceptable levels of risk would be a matter for the Council of Ministers.

So far, the CFP has fallen short of stopping the overfishing of stocks.[38] In particular, the annual pattern of negotiations in the Council to set the Total Allowable Catches (TACs) for the year ahead has resulted de facto in a dilatory policy of stock management that has failed to safeguard or restore stocks. Negotiations in the Council have regularly resulted in the postponement, mainly on grounds of scientific uncertainty, of the stringent measures that

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[33] Under the terms of Art 3(1)(d) TFEU, 'the conservation of marine biological resources under the common fisheries policy' falls under exclusive EU competence whilst the environment – which includes the conservation of natural resources and biodiversity – is included within the shared competences, alongside agriculture. It must be noted that the nature conservation measures are linked to the environmental policy that is listed among the areas of shared competence (Art 4(2)(e) TFEU). CFP measures prevail over domestic nature conservation measures. See Case C-683/16 *Deutscher Naturschutzring* [2018] C:2018:433

[34] Council Decision 98/414/EC of 8 June 1998 on the ratification by the European Community of the Agreement for the implementing of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the conservation and management of straddling stocks and highly migratory fish stocks, OJ L 189, 3 July 1998, p. 14.

[35] Article 216 (2) TFEU.

[36] TFEU, Art 43(3).

[37] Regulation (EU) No 1380/2013 of 11 December 2013 on the Common Fisheries Policy, OJ L 354, p. 22, Art 23 (hereafter CFP Fr Reg).

[38] S Khalilian and al, 'Designed for failure: A critique of the Common Fisheries Policy of the European Union' (2010) 34(6) *Marine Policy* 1178.

were needed if stocks were to recover. As a result, the CFP has been a far cry from the overfishing reality: TACs are set higher than the ones recommended by ICES, fishing mortality exceeds the stocks' reproductive potential, and the fixing of TACs on an annual basis eschews the implementation of even a medium-term perspective.[39]

In adopting in 2013 the Framework Fisheries Regulation 1380/2013, the European Parliament and the Council overhauled the CFP, enhancing its sustainability dimension. The precautionary approach has become the cornerstone of this new policy.[40] The approach is defined in accordance with Article 6 of the UNFSA: 'the absence of adequate scientific information should not justify postponing or failing to take management measures to conserve target species, associated or dependent species and non-target species and their environment'.[41]

Regarding the risk assessment, it is important to stress the role of ICES, which advises several RFMOs, the EU, and different States for over 135 separate fish and shellfish stocks.[42] Though its scientific advices are not binding under EU law,[43] they underpin the proposals of the Commission to the Council.

Of importance to note is that the use of reference points is identified by Regulation 1380/2013 as tools in implementing the precautionary approach.[44] The two parameters that are taken into consideration by ICES in formulating its advice are stated in terms of:

- the level of fishing mortality rate (also known as F),
- and the total biomass of the spawning part of the stock or the availability of breeding stock (also known as B).

ICES reference points include Limit Reference Points (LRPs) as well as Precautionary Reference Points (PRPs), whilst the determination of the Target Reference Points (TRPs) is left to the management authorities. This calls for further explanation.

The LRPs set boundaries which are intended to constrain harvesting within safe biological limits. Above these limits, the state of a fishery is not considered desirable. If a LRP is

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[39] Communication on the application of the precautionary principle and multiannual arrangements for setting TACs, COM/2000/0803 final (below Communication on the application of the PP). Lately, in the Northern Atlantic and adjacent areas, the number of stocks within safe biological limits has increased. See Communication on the State of Play of the Common Fisheries Policy and Consultation on the Fishing Opportunities for 2020 ((2019) 205 final).

[40] 'The CFP shall apply the precautionary approach to fisheries management, and shall aim to ensure that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield.' (CFP Fr Reg, Art 2(1)).

[41] CFP Fr Reg, Art 4(3).

[42] Helsinki Commission - Baltic Marine Environment Protection Commission (HELCOM), the North East Atlantic Fisheries Commission (NEAFC), the North Atlantic Salmon Conservation Organization (NASCO), Norway, Iceland, Russia, and the European Commission (EC).

[43] 'The Commission must take into account recommendations … during the legislative process leading to the adoption of the TACs. However, that does not impose on the institutions an obligation to implement proposals made in those recommendations' (Case C-255/08P *WWF-UK v Council* [2009] C:2009:286, para 45).

[44] UNFSA, Art 6(3)(b) and (4); CFP Fr Reg, Art 10(1)(e). A 'reference point' is a value derived through scientific analysis, expressed e.g. in terms of mortality rates or biomass of the spawning part of a stock (UNFSA, Annex II, para 1).

inadvertently reached, corrective action should be taken.[45] LRPs include both « Blim » and « Flim » (i.e. B and F limit reference points).

Regarding this first parameter (B), Blim identifies the minimum spawning biomass of the stock below which ICES considers there is a high risk of a serious decline of the stock and from where recovery would be slow. Since 1998, ICES advices frequently refer to a more precautionary biomass value, known as the Bpa (precautionary biomass), which is higher than the first in order to establish a safety margin. Accordingly, Bpa is set on a higher catch harvesting level than the Blim.

For the second parameter (F), Flim aims at reducing the risk of fishing mortality exceeding the level that can produce MSY. In particular, it indicates the upper limit of the fishing mortality rate if maintained, will take the stock down to the biomass limit. The more intensive the level of fishing, and the higher the level of fishing mortality, the lower the "residual" potential fertility rate.[46] Given that it is not possible to quantify a direct risk of collapse, ICES advices refer to a "precautionary" value, known as Fpa, that is providing an additional safety margin. As a result, Fpa is set on a lower catch harvesting level than the corresponding Flim.

In providing a safety margin or a buffer zone, the two additional precautionary reference points (Bpa and Fpa) take into account the uncertainties and ensure that the risk that the stock falls under the LRM is low.[47] These precautionary points are not fixed but will vary with the level of uncertainty and the willingness to take risk.[48] On the account that they include any socio-economic consideration, Bpa and Fpa are not deemed to be genuinely scientific.

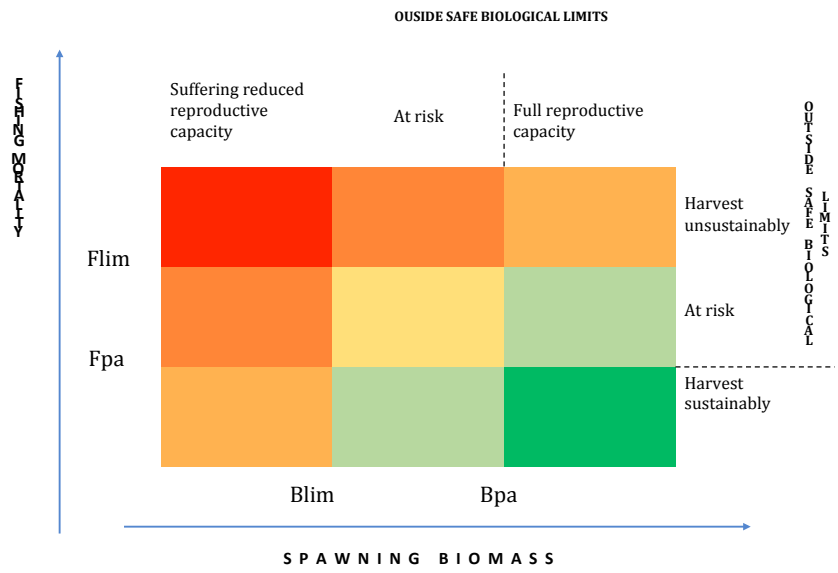
[45] Art 6(4).

[46] Communication from the Commission on the precautionary principle (COM/2000/0001 final).

[47] CFP Fr Reg, Art 4(18).

[48] T Henriksen 'Fisheries', above n 2, 162.

Table 1. Precautionary Reference Points



Last, the determination of the CFP target reference points is left to the Council of Ministers. In effect, these target reference points are not scientific and were never intended to be scientific.[49] They should aim at keeping the spawning biomass at higher levels than and the fishing mortality rate below the precautionary reference points. Within this safety margin there is room for different exploitation strategies. The Council of Ministers must therefore define what it 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.[50] Therefore, the task of the manager is to identify the level of acceptable risk, a task more complex than calculating reference points: the uncertainty concerning scientific evidence is compounded by the uncertainty related to societal factors.

Regarding risk management, the CFP must ensure that 'within a reasonable time-frame' populations of fish stocks can be restored or maintained 'above biomass levels capable of producing MSY'.[51] In that connection, the adoption of multiannual plans (MAP) is seen as a 'priority'.[52] These plans are the most effective means of achieving the objective of sustainable exploitation because they foster long-term approaches. In particular, they contain conservation measures to restore and maintain fish stocks above levels capable of producing MSY in accordance with the obligation to apply the precautionary approach.[53] In addition, in

[49] M MacGarvin, 'Fisheries: taking stock' in EEA, *Late Lessons from Early Warnings: The precautionary principle 1896–2000* (Environmental Issues Report No. 22, 2001) 24.
[50] Communication on the application of the PP, III.
[51] CFP Fr Reg, Preamble, para 7 and Art 2(2).
[52] Ibid, Art 9 and 10. These plans are proposed by the European Commission to the Council which then adopts them.
[53] Art 9(1).

contrast to former plans, they are not stock-specific. This evolution is welcome as stocks cannot be treated in isolation from one another, because they are interdependent on each other.[54]

The MAP set two reference points. Firstly, they establish 'quantifiable targets such as fishing mortality rates and/or spawning stock biomass' and clear time-frames for achieving these targets.[55] 'Where targets relating to the MSY … cannot be determined, owing to insufficient data, the multiannual plans shall provide for measures based on the precautionary approach, ensuring at least a comparable degree of conservation of the relevant stocks.'[56] Secondly, their 'conservation reference points' aim at restoring the stocks when they fall below safe biological limits. Set in accordance with 'an acceptable level of biological risk or a desired level of yield'[57], these points must be consistent with the precautionary approach.[58] However, their conservation measures are not entirely risk-adverse given that they are subjected to a proportionality test.[59] The Council of Ministers is also endowed with much discretion as to which measures to adopt and their design. When is the risk unacceptable? How cautious? In case the reference points are exceeded, there is some discretion regarding the obligation to rebuild the depleted stock. However, the Council is not called on to adopt a moratorium.

4. Distribution of responsibility between the scientists and management agencies

Is precaution restricted to risk management or does it have to be taken into consideration by scientific experts? In fisheries, the traditional dividing line between the scientific risk assessors and the decision-makers seems to be blurred. Whilst LRMs should be defined by biologists, the more precautionary PRPs should be worked out jointly by scientists and decision-makers alike.[60] Given that the quantifiable targets are set by the managers, ultimately the decision is political. As a matter of course, the greater the uncertainty, the more cautious should be the management. The following table illustrate the extent to which their respective tasks are entangled.

Table 2. Distribution of responsibility between the scientists and management agencies

Scientific bodies	Fisheries commissions
Carry out risk assessments. Describe and characterize uncertainty associated with the stock status with respect to limit reference points that are merely scientific.	Ensure that stocks are harvested within safe biological limits. Determine management strategies for biomass and fishing mortality based on target reference points that include socio-economic considerations. Specify time frames for stock rebuilding and for fishing mortality adjustments. Enactment of emergency measures.

[54] M MacGarvin, 'Fisheries', above n 49, 25.
[55] CFP Fr Reg, Art 10(1)(c) (d).
[56] Ibid, Art 9(2).
[57] Ibid, Art 4 (16).
[58] Ibid, Art10 (e).
[59] By virtue of Art 9(4)), 'account shall be taken of their likely economic and social impact'.
[60] Communication on the Application of the PP, I.2.2.

5. Judicial review of fisheries management decisions

The question we face, in this section, is whether international and domestic courts are willing to reckon on the PP/PA as a benchmark for the judicial review of fisheries decisions.

The ITLOS order of 27 August 1999 in the *Southern Bluefin Tuna* cases seems to view precaution in a much more favourable light than decisions by other international courts. In those cases, there was disagreement between Australia and New Zealand on the one hand and Japan on the other concerning an experimental fishing program for southern bluefin tuna being carried out by the Japanese authorities.[61] The complainants alleged that Japan, by unilaterally undertaking experimental fishing, had failed to comply with its obligation to cooperate in conserving southern bluefin tuna stock. The provisional measures requested by New Zealand were, *inter alia*, that the parties' fishing practices be consistent with the precautionary principle pending a final settlement of the dispute. Although ITLOS could not conclusively assess the scientific evidence presented by the parties, since there was scientific uncertainty regarding the conservation measures to be taken,[62] it found that action should be taken as a matter of urgency to avert further deterioration of southern bluefish tuna stock. Even though the precautionary principle is not invoked as such, ITLOS does, in fact, acknowledge it[63]:

> 'Considering that the conservation of living resources of the sea is an element in the protection and preservation of the environment,
> (...)
> Considering that, in the view of the Tribunal, the parties should in the circumstances act with prudence and caution to ensure that effective conservation measures are taken to prevent serious harm to the stock of southern bluefin tuna'.[64]

Judge Laing observed that the Tribunal adopted 'the precautionary approach rather than the 'precautionary principle'; he concluded that '...adopting an approach, rather than a principle, appropriately imports a certain degree of flexibility and tends, though not dispositively, to underscore reticence about making premature pronouncements about desirable normative structures'.[65]

As a result, ITLOS prescribed a limitation on Japanese experimental fishing in order to prevent further damage to the tuna stock. While it is true that ITLOS urged caution rather than precaution, the fact remains that it prescribes *de facto* precautionary measures.[66] The Tribunal's recommendation indicated an awareness of the environmental rights and duties of States in modern international law, based on the standard of preventing 'serious harm to the marine environment' set forth in Article 290(1) UNCLOS. This standard broadens the grounds on which provisional measures may be ordered so as to prevent serious harm to the marine

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[61] *Southern Bluefin Tuna Cases* (*New Zealand v. Japan; Australia v. Japan*), *Provisional Measures* [1999] ITLOS Rep 3 and 4, 528-9. [hereinafter '*Southern Bluefin*']. E.g. H S Schiffman, 'The Southern Bluefin Tuna Case: ITLOS Hears Its First Fishery Dispute' 3 (1999) J Int'l Wildlife L & Pol'y 318; B Kwiatkowska (2000) 24 AJIL 150; K Leggett, 'The Southern Bluefin Tuna Cases: ITLOS Order on Provisional Measures' 9 (2000) RECIEL 75.
[62] *Southern Bluefin*, paras 73 and 74.
[63] A Fabra, 'The LOSC and the Implementation of the Precautionary Principle' 10 (1999) YbIEL 17.
[64] *Southern Bluefin*, paras 70, 77.
[65] Separate opinion of Judge Laing at paras 13 & 19.
[66] D Freestone, 'Caution or Precaution: "A Rose By Any Other Name… " ?' 10 (1999) YbIEL 29.

environment. Accordingly, the parties were required to refrain from conducting experimental programs that involved catching bluefin tuna.

Regarding the case law of the CJEU, the judgment in *Armand Mondiet* of 24 November 1993 provides a further illustration of the role that the PP can play in decisions taken in a context of scientific uncertainty. Following up on the UNGA Resolution 44/225 of 22 December 1989, the Council adopted Regulation 345/92 limiting to 2.5 kilometers the length of the driftnets authorized. A ship owner challenged that restriction, on the grounds that no scientific data justified this measure. In addition, it took the view that the measure did not conform to the only information available, although the Regulation provided that conservation measures should be drawn up 'in view of the information that was available'. AG Gulmann concurred with the Commission's argument that 'it is sometimes necessary to adopt measures as a precaution'.[67] The CJEU followed that opinion by ruling that, in the exercise of its powers, the Council of Ministers could not be forced to follow particular scientific opinions.[68] That is, the fact that the benefit to be derived from a ban on drift nets longer than 2.5 km was uncertain did not alter the effect of EU legislation. Along the same lines, the absence of adequate scientific information that is required in order to adopt management measures, does not prevent the EU legislature from adopting in accordance with a PA conservation measures for both target and non-target species, and their environment.[69] The PA thus reinforces the Council power to endorse a conservative approach while adopting a common TAC.

Along the same lines, the Greek prohibition of the use of certain types of fishing net to avoid the destruction of aquatic resources, leading to a reduction in sardine stocks that was going beyond the minimum requirements of the EU CFP framework regulation was deemed to be consistent with the PA. In order for that prohibition to be compatible with the CFP, it had nonetheless to comply with the principles of proportionality and non-discrimination, which are general principles of EU law.[70]

Jean-François Giordano is another case in point. It concerned the non-contractual liability of the EU for Commission emergency measures limiting the fishing of tuna in the Mediterranean Sea. On the account that these measures were nullified by the General Court, the claimant sought damages for the harm he allegedly suffered. In particular, he argued that the legislation required the Commission to produce proof of a prior quota set actually being exceeded.[71] However the CJEU dismissed that argument, holding that the Commission may adopt emergency measures 'as soon as there is evidence of a 'serious threat to the conservation of living aquatic resources' … without having to wait for an allocated quota to be exceeded.[72]

6. Conclusion

Six observations flow from the above analysis.

[67] Opinion of AG M Gulmann, ECR I-6159, para 28.
[68] Case C-405/92 *Armand Mondiet* [1993] ECR I-6176, paras 31 to 36.
[69] Case C-128/15 *Spain v Council* [2017] C:2017:3, paras 48-9.
[70] Case C-453/08 *Panagiotis I. Karanikolas* [2010] C:2010:482, paras 48-9.
[71] Case C-611/12 P *Jean-François Giordano* [2014] C:2014:2282, para 46.
[72] Ibid., para 46. See also Case C-221/09 *AJD Tuna* [2011] C:2011:153.

Firstly, the precautionary approach introduced in the 1995 UNFSA, in the 1993 non-binding Code of Conduct for Responsible Fisheries and several RFMOs,[73] has been applied widely by experts as well as fisheries agencies, and has been acknowledged by international courts as well as domestic jurisdictions. Given the ample State practice, as well as a constant *opinio juris*, precaution can be considered as a norm of customary international law in the area of fisheries.

Secondly, although the enshrinement of the precautionary approach in fisheries law is testament to the integration of environmental requirements into a policy related to the exploitation of natural resources, three differences between the precautionary approach and the precautionary principle in other areas of environmental law have to be highlighted. In contrast to other sectors of environmental law, the precautionary approach is not restricted to the risk assessment phase; it is widely applied also to management, and enforcement.[74] Moreover, as fisheries are characterized by high levels of scientific uncertainty, it is possible to mitigate the impact of uncertainty, but impossible to exclude it altogether.[75] Therefore, in contrast to other policies, the PA cannot be set aside when the data would become more reliable. In addition, the fact that it is difficult to draw a dividing line between uncertainties and ignorance explains why the PA plays a central role in fisheries. Last, attention should also be drawn to the key difference between the implementation of the PP in the area of pollution control and the PA in fisheries. Whereas the implementation of the PP in pollution control doesn't command any particular action, the PA triggers actions whenever the buffer zone precautionary thresholds are exceeded.

Thirdly, it is fair to say that the impact of the precautionary approach in fisheries has been less dramatic than previously thought in the 1990s. For instance, whereas precaution led to significant restrictions in the use of large-scale pelagic driftnets, its implementation in the management of fisheries rarely leads to the enactment of bans. Moreover, nothing in the different agreements and various legislations indicates that the PA has priority over competing objectives, such as optimal resource exploitation. Economic efficiency can therefore trump sustainability goals and the precautionary approach. Nonetheless, the precautionary approach is not 'business as usual'. In accordance with the approach, the fisheries management agencies tend to restrict fishing mortality within safe biological limits by using forth buffer settings thanks to the enactment of PRPs and TRPs. Any non-compliance with these thresholds should trigger ameliorative action. Accordingly, the new generation of fisheries instruments, beginning with UNFSA, endorse a more proactive and ecosystemic approach to decision-making.[76] In contrast to a swathe of MEAs, this is a significant step forward.[77]

All in all, the precautionary approach has also obliged risk assessors and decision makers alike to pay heed to uncertainties. The more uncertain the stock is, the more restrictions the management authority should impose on harvest of the fish stock concerned. In contrast, the

[73] Even if they are more elaborate the provisions on the precautionary approach correspond to a high degree with Art 7(5) of the Code of Conduct for Responsible Fisheries.
[74] UNGA Resolution 61/105 on sustainable fisheries, 8 December 2006, Art I(5).
[75] Communication on the application of the precautionary principle, III.1.1.

[76] A Al Arif, 'Exploring the legal status and key features of ecosystem-based fisheries management in international fisheries law' 27(2) (2018) RECIEL 12.

[77] R Barnes, 'Fisheries and marine biodiversity' in M Fitzmaurice et al (ed), *Research Handbook on International Environmental Law* (Edgar Elgar, 2010) 547.

more reliable the data is, the less significant is the buffer zone.

At EU level, the precautionary approach has called into question the conventional way of determining TACs. Indeed, the approach has paved the way to a multi-annual management programing that is more compatible with a cautious approach than stock-specific plans.[78] Moreover, thanks to the implementation of precautionary reference points, the scientific assessments provided by ICES offer a wider safety margin and reduce the risk of stock collapse.

Fourthly, the above analysis confirms that the precautionary approach could entail a shift of burden of proof from the administration to the proponent of new technology. As illustrated in the case *Jean-François Giordano,* the burden of proof can shift from the European Commission having to determine the recovery measures to be taken when reference points are exceeded, to the operators opposing these measures.[79] It follows that the managers are not obliged to prove the negative outcomes in case the thresholds are exceeded. It follows that they are endowed with a wide margin of appreciation.

Fifthly, the precautionary approach is not isolated in fisheries law. It goes hand in hand with other concepts. It is complementary to MSY. Indeed, to achieve MSY, populations need to be maintained within safe biological limits according to a precautionary approach. On the other hand, given that overfishing remains the most significant threat to biodiversity,[80] there is a close link between the PA and the ecosystem approach.[81]

Last, though the precautionary approach represents 'a major change in the traditional approach of fisheries management, which has tended to react to management problems only after they arrive at crisis levels',[82] its implementation performance has hitherto been rather mixed.[83] Whether the precautionary approach weighs powerfully in the trade-off between competing objectives such as the sustainable maximisation of the yield and the long-term conservation of the stocks remains to be seen.

[78] Conclusions, Communication on the application of the PP.
[79] Henriksen 'Fisheries', above n 2, 157
[80] Barnes, 'Fisheries', above n 77, 542-563.
[81] Arrangements predating the 1995 UNFSA ignore the ecosystemic dimension and biodiversity issues. However, the new arrangements focus more on these issues: Art 2(2)(3); 9(2)(5) Regulation 2013; Art II CCAMLR; Art 3 (2) SPRFMO; Art I (5) and (7), UNGA Resolution 61/105 on sustainable fisheries, 8 December 2006; Art 7(e) Regulation 1380/2013. Among the different EU environmental legislations, the Marine Strategy Framework Directive (Directive 2008/56/EC) endorses an ecosystem approach in obliging the Member States to achieve a good environmental status of the EU's marine waters by 2020. That status is determined by a range of 'qualitative descriptors', among which to maintain the exploitation of fish and shellfish stocks within safe biological limits (Annex I, 3). The threshold values have to be set on the basis of the precautionary principle, reflecting the potential risks to the marine environment (Art 4 Commission Decision (EU) 2017/848).
[82] D Freestone, 'Caution or Precaution: "A Rose By Any Other Name?' , above n , 30.
[83] O Schram Stokke, 'Conclusions' in O Schram Stokke , above n 83, 337-338.