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Pre-submission Draft

The Interpretation of 'Precaution' in the European Community Common Fisheries Policy

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1. Introduction

The aim of this paper is to consider how the European Community Environment Policy has been interpreted in relation to the harvesting of living natural resources. It is suggested that the Policy entails certain preconceptions as to the character of the environmental problems that it is intended to address and the way in which those problems should be addressed. Whilst these preconceptions may not be especially problematic in contexts where pollution-related impacts are involved, they raise especial difficulties where sustainable management of ecological resources is at issue.

The need for integration of environment requirements across all sectors of Community activity entails that they should be implemented in the Community's Common Fisheries Policy (CFP) and discussion is provided of the ways in which environmental concerns have been accommodated within that Policy. Specifically, this involves an examination of the way in which the precautionary principle has been interpreted in the fishery management context and the application of an ecosystem approach to fisheries. This investigation is conducted against a background of reforms of the CFP, instigated from 2002 onwards, and the evaluation of those reforms in respect of subsequent actions and indications as to their ecological effectiveness.

Under the influence of various international initiatives, requiring precautionary reference points to be used to activate management actions to maintain or restore fish stocks, it is evident that 'precaution' has been interpreted in a peculiar sense within the reformed CFP. Comparisons are drawn with an interpretation of 'precaution' that has been adopted in relation to nature conservation and discussion is provided as to the potential relevance of alternative interpretations in fishery contexts. It is suggested that there is no reason why a stricter form of precaution should not be applied to fisheries management, involving the burden of showing the absence of harm being placed upon those seeking authorisation, or to engage, in the activity. However, the socio-economic costs of precautionary action must be balanced against the gravity of the environmental problem being addressed.

Whilst the reforms of the CFP are broadly welcomed, concerns are expressed that the rhetoric of the revised policy may not be matched by the realities of the actions that are taken in the challenge of securing sustainably managed Community fisheries. In summary, depending on the effectiveness of the existing measures, there may still be a need for a more precautionary approach to be applied.

2. The European Community Environment Policy

Perhaps the greatest achievement of the European Community in relation to the environment is the establishment of an explicit basis for action under its Environment Policy.¹ The European Community Treaty clearly sets out the objectives of the Policy, the environmental action principles upon which it is based and the factors that are to be taken into account in its application.² The systematic articulation of these matters is a triumph when contrasted with the *ad hoc* approach that previously prevailed in national environmental legislation, but the elements of the Policy also raise fundamental questions. Whilst much of the academic literature has tended to concentrate upon the problematic issue of the extent to which the environmental action principles are legally binding in character,³ the initial focus here is upon the character of the environmental challenge that is envisaged by those principles. Specifically, do the stated objectives, principles and factors which are set out in the Policy entail certain preconceptions as to the *kinds* of 'environmental problems' that need to be addressed and/or the *manner* in which they need to be addressed?

Amongst other things, the Environment Policy recognises the distinct objectives of 'preserving, protecting and improving the quality of the environment' and the 'prudent and rational utilisation of natural resources'.⁴ However, the general aim of securing a 'high level of protection' is to be based upon application of environmental action principles, encompassing the precautionary principle, the preventative principle and the polluter pays

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¹ Under Art.174 European Community Treaty.

² For general discussion of the role of environmental action principles in EC Environmental Policy see, N. de Sadeleer, *Environmental Principles* (2002); G. Winter, 'Environmental Principles in Community Law' in J. H. Jans, Ed. *The European Convention and the Future of European Environmental Law* (2003) p.3; L. Kramer, *EC Environmental Law* (5th ed. 2003) p.7; and R. Macrory, Ed., *Principles of European Environmental Law* (2004).

³ See, for example, O. McIntyre, 'The Guiding Principles of European Community Environmental Law-Making' (1994) *European Environment* 23; S. Tromans, 'High Talk and Low Cunning: Putting Environmental Principles into Legal Practice' [1995] *Journal of Planning and Environment Law* 779; J. Holder, 'Safe Science? The precautionary principle in UK environmental law', in J. Holder, Ed., *The Impact of EC Environmental Law in the United Kingdom* (1997); M. Doherty, 'The Judicial Use of the Principles of EC Environmental Policy' [2000] *Environmental Law Review* 251; E. Fisher, 'Is the Precautionary Principle Justiciable?' [2001] *Journal of Environmental Law* 315; R. Lee, '(Pre)cautionary Tales: Risk, Regulation and the Precautionary Principle' in J. Boswell and R. Lee, Eds., *Economics Ethics & the Environment* (2002) p.87; M. Doherty, 'Hard Cases and Environmental Principles: An Aid to Interpretation?' (2003) 3 *Yearbook of European Environmental Law* 57; J. Scott, 'The Precautionary Principle before the European Courts' in R. Macrory, Ed., *Principles of European Environmental Law* (2004) at p.51; and A. Epiney, 'Environmental Principles' in R. Macrory, Ed. *Reflections on 30 Years of EU Environmental Law* (2006) at p.17.

⁴ Art.174(1) EC Treaty.

principle.⁵ Most naturally, the principles seem to envisage situations where a contaminant is to be transmitted into the environmental media, of water, air or land, and some kind of pollution impact needs to be addressed.⁶ Where the objective of securing sustainable utilisation of a natural resource is at issue, however, the scope for application of the principles is less clear. Indeed, the language of ‘protection’ of a resource which is actually *exploited* seems inherently contradictory. Certainly, the objective for natural resources suggests that a distinction should be drawn between sustainable exploitation and unsustainable overexploitation, but how the environmental action principles assist in drawing this distinction is obscure.

The problem is particularly acute where it is suggested that a ‘precautionary’ approach should be taken to the conservation of a natural resource. The most commonly cited international definition of the precautionary principle is that stated as Principle 15 in the Rio Declaration of 1992.⁷ This states that the principle is to be applied by states according to their capabilities so that “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as reason for postponing cost-effective measures to prevent environmental degradation”. At the Community level, essentially this conception of the principle has been endorsed by a Commission Communication⁸ that seeks to articulate the circumstances in which precautionary action is justified. This specifies that such action should be proportionate, non-discriminatory, consistent, and subject to cost-benefit analysis and periodic review.

The meaning of ‘scientific uncertainty’ within the principle seems open-ended, but typically has been seen as relevant to situations where a new activity or product is at issue, where the environmental impacts of scientific or technical innovation are unknown but there is some evidence of the potential for harm. Paradigm examples are in applications of biotechnology or the marketing of a new chemical, where the environmental and human health impacts are unknown but potentially serious.⁹ Accordingly, Community legislation reflects the need for precaution in these circumstances by the application of appropriate kinds of risk assessment as a precursor to authorisation.¹⁰ Where, however, an activity is not the result of any radical scientific or technical innovation and does not involve the transmission of a new kind of

⁵ Art.174(2) EC Treaty. To this list, might also be added the ‘rectification at source principle’, though this might alternatively be seen as an aspect of prevention which is of particular relevance to ‘end of pipe’ discharges of polluting substances.

⁶ The role of the action principles in addressing pollution-related environmental problems was clearly an influential factor in the early development of the principles: see L. Kramer, ‘The Genesis of EC Environmental Principles’, in R. Macrory, Ed., *Principles of European Environmental Law* (2004).

⁷ The text of the Rio Declaration on Environment and Development (A/CONF.151/26) is available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>.

⁸ European Commission, *on the precautionary principle*, COM(2000) 1.

⁹ See, for example, N. de Sadeleer, *Environmental Principles* (2002) at ss.2.2.3.1 and 2.2.3.2 and R. Lee, ‘(Pre)cautionary Tales: Risk, Regulation and the Precautionary Principle’ in J. Boswell and R. Lee, Eds., *Economics Ethics & the Environment* (2002) at p.87.

¹⁰ See, for examples, Directive 2001/18/EC 2001/18/EC on the deliberate release into the environment of genetically modified organisms and Reg.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

substance into the environment, the scope for application of precaution is less clear. Perhaps because of this uncertainty, there was significant early opposition to the application of the precautionary principle beyond pollution-control contexts.¹¹ On that view, action, if needed, should be based upon the need for *prevention* of environmental harm, rather than precaution.

The boundaries between preventative and precautionary action, under the environmental action principles, may be broadly drawn between those situations where the character and extent of an impact is known and must be *prevented*, and situations where the impact is unknown but there is a threat of damage and *precautionary* action is needed. In essence, precaution is required in the face of scientific uncertainty. However, scientific uncertainty comes in many different forms¹² and there is an increasing willingness to broaden the kinds of uncertainty in relation to which the precautionary principle should apply.¹³

Where harvesting of a natural resource is at issue, the harm of overexploitation is generally well appreciated, but the point at which exploitation becomes overexploitation is a matter of considerable scientific uncertainty. The uncertainty is not so much about the *character* of the impact involved as the *extent* of that impact and the point at which it constitutes environmental 'damage'. Determining this requires an assessment of the abundance of the harvested species, the capacity of that species for replenishment and the effects of the harvesting activity upon the harvested species and the wider ecosystem of which it forms a part. Removal of one species from an ecosystem in significant numbers is capable of having serious effects upon the balance of that ecosystem, particularly the interrelations between predator and prey species, and the activity of harvesting itself is capable of damaging the ecosystem by impacts upon non-target species. The situation is compounded by the uncertainties that arise due to surrounding natural and anthropogenic factors. Any wild species may

¹¹ See G. J. Hewison, 'The Precautionary Approach to Fisheries Management: An Environmental Perspective' (1996) 11 *International Journal of Marine and Coastal Law* 301, where it is noted that the Food and Agriculture Organization of the United Nations argued (in 1992) that the practical application of precaution "raises serious socio-economic concerns and technical difficulties, particularly in the complex marine ecosystems" (at p.308) and the European Community maintained (in 1993) that precautionary approaches should be limited to addressing ocean pollution (at p.310). Although these antithetical views were eventually subsumed (in 1994) under a consensus on the general need for a 'precautionary approach' to high seas fisheries, as a precursor to the agreement of the United Nations Straddling Stocks Agreement (see section 8 below on this Agreement) uncertainties remain as to precisely what the 'precautionary approach' entails in this context. The case for extending the application of the precautionary principle beyond marine pollution control contexts is made by J. S. Gray and J. M. Brewster, 'Towards a Scientific Definition of the Precautionary Principle' (1996) 32 *Marine Pollution Bulletin* 768. An early discussion of the implications of the precautionary principle for biodiversity conservation is N. Myers, 'Biodiversity and the Precautionary Principle' (1993) 22 *AMBIO* 74, which stressed the significance of uncertainty in this context and the role of irreversibility in relation to mass extinctions of species.

¹² R. Lee, '(Pre)cautionary Tales: Risk, Regulation and the Precautionary Principle' in J. Boswell and R. Lee, Eds., *Economics Ethics & the Environment* (2002) p.87, at p.90.

¹³ E. R. Stokes, 'Liberalising the Threshold of Precaution – Cockle Fishing, the Habitats Directive, and Evidence of a New Understanding of Scientific Uncertainty' [2005] *Environmental Law Review* 206, at p.210.

demonstrate unpredictable and dynamic population fluctuations due to natural factors such as disease, or favourable, or unfavourable, environmental conditions in particular years. Replenishment of a population may also be greatly influenced by human impacts such as pollution and habitat deterioration arising from activities other than harvesting.

Because of these factors, in the context of fishery science at least, it has been suggested that lack of predictability is endemic, to the extent that no amount of scientific research will ever resolve the kinds of uncertainty that have been referred to.¹⁴ If this is correct, the problem goes beyond that of uncertainty into that the realm of *indeterminacy*, where the answers are not only unknown but are *incapable of being known* with any amount of scientific endeavour. The difference between what is unknown and unknowable in science is an absorbing issue, with potentially wide-ranging implications for nature conservation and natural resource management generally, but need not be dwelt upon here. The point is sufficiently made that harvesting of natural resources involves ample scientific uncertainty to justify a precautionary, rather than preventative, approach.

Recognising that scientific uncertainty may activate the need for precaution in the prudent and rational utilisation of natural resources, a major difficulty in applying this arises because of the tension between precaution and the need for environmental action to be based upon scientific information. Whilst the Community Environment Policy requires account to be taken of 'available scientific and technical data',¹⁵ the absence of such information should not be a reason for postponing precautionary action. The clash of these two considerations seems capable of collapsing the distinction between prevention and precaution, and to provide a basis for either action or inaction where scientific information about a potential environmental problem is inadequate. Given the uncertainties that have been referred to, information deficit is likely to be the norm rather than the exception where the management of natural resources is at issue. A key difficulty, therefore, is whether precaution or scientific information should prevail as a basis for decision-making.

In essence, these are the theoretical issues to be investigated in this paper. The focus is upon the objective of 'prudent and rational utilisation of natural resources', in accordance with the need to apply the 'precautionary principle' and the need to take account of 'available scientific and technical data'. As will be appreciated, the interrelation of these three elements involves some especially problematic tensions and ambiguities in the specific context of natural resource management that is taken for consideration.

3. The Integration of Environmental Policy

¹⁴ D. S. Butterworth 'Taking stock: science and fisheries management entering the new millennium, Inaugural lecture, University of Cape Town (1999) discussed by S. M. Garcia, 'The Precautionary Approach to Fisheries 1995-2000: Progress Review and Main Issues', Appendix to ICES Advisory Committee on Fisheries Management Report ICES CM2000/ACFM:17, at p.40, available at www.ices.dk/reports/acfm/2000/cwp/cwp00.pdf.

¹⁵ Art.174(3) EC Treaty.

If the greatest achievement of the Community in relation to the environment is the establishment of an explicit Environment Policy, a close running second greatest achievement must be the recognition that environmental protection requirements must be integrated across sectoral Community policies and activities with a view to promoting sustainable development.¹⁶ The irrational converse of this would be an acceptance that environmental legislation could be compromised or nullified by harms inflicted under sectoral legislation. Again, whilst integration has to be seen as vitally important, the integration obligation may be perceived as having more direct implications for some sectors of activity than others. Given the most natural application of the environmental action principles to situations where pollution impacts are at issue, the precise meaning of the 'environmental protection requirements' that need to be integrated outside pollution control contexts is far from clear. Moreover, the wide discretion afforded to Community institutions in interpreting and applying the integration requirement has the consequence that its legal enforceability is doubtful. As with challenges to Community actions on the basis of failure to adhere to the Environment Policy, it is likely that failure to have regard to the integration requirement could only provide a basis for review if a 'manifest error of appraisal' could be shown in respect of its application or non-application.¹⁷ The upshot of this is that the scope for judicial challenge to an alleged failure to apply the integration requirement in non-environmental sectors is extremely limited,¹⁸ and there is little scope for the European Court of Justice to offer insights into the precise meaning and scope of the integration obligation.

Despite past calls for greater efforts in respect of implementation, progress seems to have been patchy and uncertain, perhaps reflecting the relative difficulties of incorporating environmental concerns in some sectors. The Commission communication, *Partnership for Integration*,¹⁹ provided general guidelines for integration as a basis for the 'Cardiff Process' which has involved sectoral Councils formulating their own implementation strategies and obligations to monitor progress on implementation.²⁰ However, concerns have been expressed that the impact of the Process may have been limited or

¹⁶ Art.6 EC Treaty. The sectoral policies at issue are listed in Art.3(1) and encompass, under (e), the Community's Common Policy in the sphere of agriculture and fisheries.

¹⁷ Case C-341/95 *Bettati v Saftey Hi-Tech* [1998] ECR-I 4355; N. Dhondt, *Integration of Environmental Protection into other EC Policies* (2003) at p.165; and see the literature on justiciability of the environmental principles cited in footnote 3 above.

¹⁸ See D. Grimeaud, 'The Integration of environmental Concerns into EC Policies: A Genuine Policy Development' (2000) *European Environmental Law Review* 207, at p.215.

¹⁹ European Commission, *Partnership for integration – a strategy for integrating environment into EU policies*, COM(98) 333.

²⁰ See L. Kramer, 'The Genesis of EC Environmental Principles', in R. Macrory, Ed., *Principles of European Environmental Law* (2004) at p.37.

In the context of integration of environmental requirements in the fisheries sector, it has been suggested that progress has lagged behind other sectors, House of Lords Select Committee on the European Union, *Unsustainable Fishing: What is to be done with the Common Fisheries Policy?* (2000) Third Report Session 2000-01, HL13, para.88. Subsequently, see European Commission, *Elements of a Strategy for the Integration of Environmental Protection Requirements into the Common Fisheries Policy*, COM(2001) 143 final, which served as a basis for aspects of the 2002 reform of the CFP (discussed at section 9 below).

illusory. This has been attributed to unwillingness, on the part of the European Council, to embrace an explicit means of implementing environmental integration on the basis of specific timetables and indicators.²¹

Any attempt to assess the substantial effects of the implementation requirement must involve looking at particular non-environmental sectors and making an evaluation of the extent to which Environmental Policy has actually been assimilated in those sectors. A good example of a study of this kind evaluates the integration of Environment Policy into the Common Agricultural Policy, the Common Transport Policy and the EC Energy Policy.²² However, the literature on integration of Environmental Policy into other areas, particularly where natural resource management is involved, is apparently less well developed. Hence, a further purpose of this paper is to review the progress of integration into a sector that is outside those that have been the subject of detailed scrutiny from this perspective.

4. *Environmental Management of Living Natural Resources*

The particular area of natural resources management that is taken for consideration is the management of marine fisheries in Community waters. Fish are clearly an important food resource for the Community, but fishery activities have the potential to cause serious ecological harm, in respect of the overexploitation of targeted fish stocks, impacts upon non-target species and in respect of harms to the wider marine environment. The focus of attention must, therefore, be placed upon the extent to which integration of environmental requirements into Community fishery policy and regulation has enabled exploitation activities to be contained within acceptable ecological limits.

The integration of environmental requirements into the Community's Common Fisheries Policy has been particularly problematic. Arguably, this is because the management of fisheries stands significantly apart from other sectors of activity in which environmental requirements need to be incorporated. The activity of fishing needs to be regulated, not so much because of its pollution impacts, but because of the ecological damage that it inflicts upon targeted fish stocks and the marine environment. Beyond that, integration may have been problematic because of the need for regulation to ensure the proper *management* of stocks of a wild and renewable living resource and the curtailment of ecological impacts of fishery activities within acceptable limits. The term 'management' used here stresses the longstanding, historically benign and beneficial nature of fishing activity, but the increasing potential for that activity to be conducted in a manner that is ecologically unacceptable if not restrained within specified limits.

²¹ See D. Grimeaud, 'The Integration of environmental Concerns into EC Policies: A Genuine Policy Development' (2000) *European Environmental Law Review* 207.

²² N. Dhondt, *Integration of Environmental Protection into other EC Policies* (2003). See also, V. Heyvaert, 'Guidance Without Constraint: Assessing the Impact of the Precautionary Principle on the European Community's Chemicals Policy' (2006) 6 *Yearbook of European Environmental Law* 27, which examines the sectoral impact of a particular environmental action principle.

The need for management of an activity involving the harvesting of a wild and renewable living natural resource sets fishery regulation apart from industrial environmental regulation, and even the regulation of most kinds of agriculture that fall under the Community's Common Agriculture Policy. The peculiar status of fisheries, therefore, illustrates marked contrasts with other resources, activities and environmental impacts to which environment requirements need to be applied. As has been noted, the language of the Environment Policy, which aims at a "high level of protection", seems particularly inappropriate where proper levels of *exploitation* rather than *protection* are at issue, as in fishing. Hence, ecological objectives for harvested living resources are particularly difficult to formulate and apply compared to environmental quality objectives relating to the contamination of the environmental media of. In addition, the absence of property rights in wild fish and the need for the Community to manage fishery exploitation within most of its marine waters in a co-ordinated and sustainable manner, raise issues which lack clear counterparts in other sectors. Perhaps for these reasons, amongst others, the failures of the Community effectively to address the ecological challenges inherent in fishery management may be seen as an extreme case of sectoral environmental mismanagement.²³

5. *The Initial Problems of the CFP*

To some extent, the lack of success that the Community has experienced in managing its fishery resources in an ecologically sound manner is due to the continuing under-application of regulatory powers over a many years. In other respects, the failings of the CFP can be traced back to constitutional problems that have been present since the commencement of the Policy.²⁴ In respect of the latter, the need for Community coordination of fisheries activities was recognised in the establishment of the CFP in 1983.²⁵ Since its inception, the policy has been beset by the ambiguities and interrelationships of its objectives and the means of achieving these.

The foundations of the policy, which lie in the Agriculture Title of the EC Treaty,²⁶ have involved an agricultural production model being incongruously imposed upon fishery activities. The objectives of the Common Agriculture Policy are stated to encompass:

increasing agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the

²³ It is beyond the scope of this paper draw comparisons with the environmental damage resulting from the Community's Common Agriculture Policy, which must also be a strong contender for this dubious distinction.

²⁴ For discussion of the origins and early development of the CFP see M. Wise, *The Common Fisheries Policy of the European Community* (1984); J. Farnell and J. Elles, *In Search of a Common Fisheries Policy* (1984); R. R. Churchill, *EEC Fisheries Law* (1987); and M. Holden, *The Common Fisheries Policy* (1994).

²⁵ The first Basic CFP Regulation establishing the CFP and setting its objectives was Reg.170/83 though earlier provision had been made under Reg.2141/70 laying down a common structural policy for the fishing industry.

²⁶ Arts.32 to 38 EC Treaty, previously Arts.38 to 46. The Treaty contains no article specifically concerned with fisheries.

optimum utilisation of the factors of production, in particular labour; ensuring a fair standard of living for the agricultural community; stabilisation of markets; assuring the availability of supplies; and ensuring that supplies reach consumers at reasonable prices.²⁷

These objectives seem significantly more appropriate to *cultivation* rather than *harvesting* activities,²⁸ since the availability of the harvested product is subject to natural population dynamics and environmental variations that may be largely outside human control. Put another way, providing Community support for the production of a greater quantity of a desired agricultural crop may well be a means of increasing the yield of that crop where that yield is primarily determined by farming effort and expertise. However, it is far from clear that putting more resources into the gathering of a naturally occurring resource will necessarily result in an increase in the yield. It is even less likely that an increased yield will be sustained where abundance of the resource is determined as much by nature as by human agency. To some extent therefore, the constitutional problems of the CFP may be seen to arise from the Policy being founded in a model which fails to recognise the distinctive dependency of fisheries upon ecological factors to an extent that is not found in agricultural activities.

In addition, the imposition of an agriculture model upon fisheries is problematic because of the prominent role of social and economic factors such as the need to secure a fair standard of living for those engaged in the activity and to ensure that fishery products are available to consumers at fair prices. In the context of the CFP the respective roles of the ecological, social and economic dimensions of the Policy have never been satisfactorily articulated. This ambiguity has allowed excessive ecological harm to be inflicted where social and economic benefits of overfishing have been regarded as justifying this.²⁹ The need to reconcile the three dimensions may be seen as illustrative of the more general balancing exercise inherent in the advancement of sustainable development.³⁰ Nonetheless, the lack of specificity, as to the respective weight to be given to the different elements in the CFP, 'which sometimes may seem contradictory or incompatible'³¹ has had serious ecological consequences. Over many years, priority has effectively been given to economic and social conditions considerations,

²⁷ Art.33(1) EC Treaty.

²⁸ House of Lords, Select Committee on the European Communities, *Review of the Common Fisheries Policy*, (1992) 2nd Report, Session 1992-93, HL Paper 9, para.39 and House of Commons, Agriculture Committee, *The Effects of Conservation measures on the UK Sea Fishing Industry*, (1993) 6th Report, Session 1992-93, HC 620, para.6.

²⁹ See the discussion of this at section 11 below.

³⁰ See *Johannesburg Declaration on Sustainable Development* (2002) para.5, which identifies the 'interdependent and mutually reinforcing pillars' of sustainable development as 'economic development, social development and environmental protection', available at http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POI_PD.htm. On the implications of the 'three-pronged' approach to sustainable development, see A Ross-Robertson, 'Is the Environment Getting Squeezed Out of Sustainable Development?' [2003] *Public Law* 249. There is a vast literature on sustainable development, but a good recent introduction to the issues is J. Holder and M. Lee, *Environmental Protection, Law and Policy: Text and Materials* (2007 2nd Ed.) Ch.6.

³¹ European Commission, Green Paper, *The future of the common fisheries policy* COM(2001) 135 final, at p.6.

because of the need to minimise economic disruption for fishing communities, with conservation of marine resources being allocated a 'secondary' status.³²

Despite these constitutional difficulties and ambiguities in its objectives, the CFP provided the basis for a complete transition of responsibility for fisheries from the member states to Community.³³ However, a peculiarity of the CFP is the division between regulatory and enforcement responsibilities. Whilst regulation is undertaken at a Community level, it is left to member states to ensure the enforcement of this legislation within their jurisdictions. Although the discretion given to member states with regard to enforcement might be seen as a desirable element of subsidiarity,³⁴ the absence of competence of the Commission on enforcement might equally be seen as an inherent defect in the system of control.³⁵ Certainly, the initial experience of the CFP demonstrated 'a catalogue of failings' in relation to enforcement matters, with apparently little attempt by some member states to ensure adequate fishery surveillance.³⁶ Hopefully, the longstanding difficulties arising from the division of competences between the Community and the member states will be addressed by the establishment of the European Union Fisheries Control Agency, which, from the 1 January 2007, has had the task of strengthening inspection and control of fisheries measures and coordinating the enforcement activities of member states to secure greater uniformity.³⁷ Whilst it is not possible to pursue these issues in detail here, it must be noted that the context of longstanding inadequacies in monitoring and enforcement mechanisms has significant implications for the practical operation of the CFP.

6. *The Continuing Problems of the CFP*

Since 1983, over its initial two decades at least, the CFP has been widely regarded by commentators as a failure in all its ecological, social and

³² House of Commons, Agriculture Committee, *The Effects of Conservation measures on the UK Sea Fishing Industry*, (1993) 6th Report, Session 1992-93, HC 620 (1993) para.35.

³³ Confirmed by a Declaration of the Commission, 27 July 1981, OJ C 224 p.1, 3 September 1981, which states that the competence to adopt measures relating to the conservation of the resources of the sea belongs 'fully and definitively' to the Community. See also *Commission v United Kingdom*, Case 804/79 [1981] ECR 1279 at para.17.

³⁴ Under Art.5 EC Treaty.

³⁵ See M. Holden, *The Common Fisheries Policy* (1994) p.159.

³⁶ House of Commons Agriculture Committee, *The Effects of Conservation Measures on the UK Sea Fishing Industry*, 6th Report, Session 1992-93, HC 620 (1993) para.99 and see European Commission, *Report on monitoring implementation of the Common Fisheries Policy*, SEC(92) 394 final. For a more recent illustration of the continuing failure to enforce CFP regulations see Case C-304/02 *Commission v France* and discussion of this by A. Schrauwen, 'Fishery, Waste Management and Persistent and General Failure to Fulfil Control Obligations' [2006] *Journal of Environmental Law* 289.

³⁷ See European Commission, Press Release 30 October 2006, *EU Fisheries Control Agency adopts first work programme for 2007*. See Reg.768/2005 establishing a Community Fisheries Control Agency and amending Regulation (EEC) No 2847/93 establishing a control system applicable to the common fisheries policy. On the new arrangements for enforcement more generally, see House of Lords, Select Committee on the European Community, *Progress of Reform of the Common Fisheries Policy*, 25th Report Session 2002-03, HL Paper 109 (2003) paras.36 to 44.

economic dimensions.³⁸ Indeed, it might not be too cynical to regard it as a classic case study in how *not* to progress towards sustainable development. From an ecological perspective, the application of the policy has facilitated the excessive exploitation of fish stocks to the point where the most commercially valuable stocks have reached dangerously low levels.³⁹ As the Commission itself has acknowledged,

‘many stocks are at present [in 2001] outside safe biological limits. They are too heavily exploited or have low quantities of mature fish or both. The situation is particularly serious for demersal fish stocks such as cod, hake and whiting. If current trends continue, many stocks will collapse. At the same time the available fishing capacity of the Community fleets far exceeds that required to harvest fish in a sustainable manner.’⁴⁰

The catastrophic state of fisheries has since been confirmed by the European Environment Agency, in stating that, of the assessed commercial fish stocks in the north-east Atlantic, up to 53% are now considered to be outside safe biological limits.⁴¹

Intensification of fishing activities has also brought about major destruction of non-target marine species and unacceptable ecosystem damage. This is due to the high proportion of undesired or undersized species that are captured in mixed species fisheries, and ‘discarded’,⁴² usually dead, back into the sea. Also, many species of mammals and birds are destroyed by fishing activities or by entanglement in nets that have been lost or abandoned but continue to destroy wildlife in ‘ghost’ fishing. At a national level, the position was admirably summarised by the Royal Commission on Environmental Pollution in the observation that the impact of fishing on the marine environment as ‘the greatest individual threat to that environment in the seas around the UK’.⁴³

Moreover, the excessively destructive levels of fishing activity allowed under the CFP has not brought the economic or social benefits that were envisaged, with over-capitalisation and diminishing returns giving rise to ‘economic

³⁸ See Y-H. Song, ‘The EC’s Common Fisheries Policy in the 1990s’ (1995) 26 *Ocean Development and International Law* 31; T. S. Gray, ‘The Tragedy of the Common Fisheries Policy: UK Fisheries Policy in the 1990s’, in T. S. Grey, Ed., *UK Environmental Policy in the 1990s* (1995) p.263; and C. Coffey, ‘Introduction to the Common Fisheries Policy: an Environmental Perspective’ [1996] *International Environmental Affairs* 287.

³⁹ See Council Decision No.97/413/EC of 26 June 1997, concerning the objectives and detailed rules for restructuring the Common fisheries sector for period from 1 January 1997 to 31 December 2001 with a view to achieving a balance on a sustainable basis between resources and their exploitation, which classifies the state of fish stocks under four categories, ‘under-exploited’, ‘fully exploited’, ‘over-exploited’ and ‘depleted (since amended by Council Decision 2002/70/EC).

⁴⁰ European Commission, Green Paper, *The future of the common fisheries policy* COM(2001) 135 final, at p.4.

⁴¹ European Environment Agency, *The European Environment - State and Outlook* (2005) p.380.

⁴² For a recent discussion of the means of addressing these problems see European Commission, *A policy to reduce unwanted by-catches and eliminate discards in European Fisheries*, COM(2007) 136 final.

⁴³ Royal Commission on Environmental Pollution, *Turning the tide: addressing the impact of fisheries on the marine environment*, 25th Report, Cm 6392 (2004) para.1.9.

fragility' in the fishery sector. This situation is accepted to be the result of over-investment, rapidly rising costs and a shrinking resource base, with the consequences of poor profitability and declining employment.⁴⁴

7. *The Regulatory Approaches*

In short, the central problem of the CFP may be seen as that of allowing too many boats to exploit too few fish with too few restrictions upon their activities.⁴⁵ This has set the Policy upon a 'downward spiral' involving increasingly intensified fishing activities, facilitated by enormous technical development of fishing fleets, to expend increased fishery capacity in capturing an increasing proportion of a dangerously diminishing natural resource. If any social and economic gains have been secured by allowing this progression, they are short-term benefits that have been made at unacceptable ecological expense.

If this crude characterisation of the problem is sufficient at least to serve as a working hypothesis, attention must be turned to the regulatory response. On this, the complexity of Community fishery law needs no announcement: it is a field of law which is of bewildering intricacy and baffling technicality to all but specialists in the area. Hence, it is necessary to offer some broad generalisations if any progress is to be made in the elaboration of the central issues that are taken up for discussion in this paper.

In a nutshell, therefore, there are six main kinds of regulatory approaches that may be used to address the problem of overexploitation of Community fishery resources. Broadly, these regulatory approaches involve:

- (1) restricting total allowable catches (TACs) of particular fish stocks;
 - (2) reducing the capacity of the Community fishing fleet by decommissioning vessels;
 - (3) reducing fishing effort by restricting the duration of fishing activities;
 - (4) applying 'technical' conservation measures such as prohibiting kinds of fishing gear that are unacceptably destructive of fish stocks or the marine ecosystem;
 - (5) restricting access to particular areas to allow stock recovery or ecological protection; and/or
 - (6) introducing rules restricting the marketing of undersized or immature fish.⁴⁶
- These six mechanisms, by which fishery activities can be brought into balance with stock replenishment, each have respective strengths and weaknesses, which it is not possible to consider in the detail that they deserve within the

⁴⁴ European Commission, Green Paper, *The future of the common fisheries policy* COM(2001) 135 final, at p.4.

⁴⁵ Compare, House of Lords, Select Committee on the European Communities, *Review of the Common Fisheries Policy*, (1992) 2nd Report, Session 1992-93, HL Paper 9, para.44: "there are quite simply too many boats chasing too few fish".

⁴⁶ The potential oversimplification involved in this six-fold classification is fully recognised. Contrast Art.4(2) Basic CFP Reg. 2371/2002, which lists ten kinds of measures which may be established to achieve the objectives of the Policy. Compare Department for Environment, Food and Rural Affairs, *Review of Marine Fisheries and Environmental Enforcement* (The 'Bradley' Report) (2004) Annex 7 para.A7.5, which classifies CFP regulations under seven enforcement areas.

scope of this paper. Nonetheless, each of the mechanisms has a significant part to play in addressing the overall problem of overfishing, and the critical issues are about the balance which needs to be drawn between the respective uses of the different mechanisms.

Although recognising the important contribution that can be made by each and all of the mechanisms in the regulatory 'tool-box',⁴⁷ the discussion that follows places greatest emphasis upon the role of TACs in Community fishery management. This is not intended to devalue the other approaches, but rather to emphasise that TACs may be seen as the keystone of fishery regulation in determining the quantities of commercial species of fish that may be harvested from Community waters within any particular year. Overall TACs determine the maximum amounts of the most commercially important fish that may be taken by the national fleets of member states under their 'national quota allocation'. Determination of TACs makes it possible to calculate the corresponding level of overall fishing effort that will ensure that the limit upon catch is not exceeded. To some extent, therefore, the other mechanisms for regulating fishery activity may be seen as a *means to the end* of ensuring that TACs are not exceeded, hence the reason for the priority given to TACs in the discussion that follows. In essence, a central problem of the CFP is the failure to establish and enforce TACs at a level which is stringent enough to ensure ecological sustainability of fishery resources.⁴⁸

The focus upon TACs as a central mechanism for attaining sustainable Community fisheries is not intended to suggest that they are a faultless means of achieving this objective. TACs are a measure of the maximum permitted levels of landings of particular species of fish by the Community fleets, but not a measure of the actual level of fish mortality resulting from fishing activity or its overall ecological impact. TACs do not reflect the massive quantities of fish that are discarded because they are undersized, not of a species or size desired by the fisher or because they are caught in excess of quota. Moreover, TACs do not reflect misreported or illegally landed catches. Perhaps most problematically, in the mixed-species fisheries commonly found in Community waters, fishing for a particular species X must cease where the national quota for that species has been met, but this will not necessarily prevent fishing for another species Y, even where species X continues to be caught as a bycatch. The setting of TACs for individual species, therefore, is problematic in taking account of the interrelationships between species, particularly where a predator-prey relationship exists between them, or where different species have different capacities for replenishment, and in taking account of impacts upon the wider marine environment.⁴⁹

⁴⁷ See House of Commons, Environment, Food and Rural Affairs, *Reform of the Common Fisheries Policy*, 1st Report, Session 2002-03 (2002) para.27.

⁴⁸ Contrast, House of Lords, Select Committee on the European Community, *Progress of Reform of the Common Fisheries Policy*, 25th Report Session 2002-03, HL Paper 109 (2003) para.28, where it is suggested that management based on effort control, rather than TACs, would be a preferable approach.

⁴⁹ The limitations of the TAC approach to fisheries management are well covered in House of Commons, Agriculture Committee, *The Effects of Conservation Measures on the UK Sea Fishing Industry*, (1993) 6th Report, Session 1992-93, HC 620 paras.40 and 43 and House of

Despite all these reservations, TACs have two redeeming features. The first is their practical advantage as a means for determining national allocations of fish quota in a manner that is less controversial than any readily available alternative. After lengthy and controversial debate, the initial legislation establishing the CFP established a mechanism for distributing proportions of the TACs for each species to the member states in a manner that allows each state 'relative stability' of fishing activities for each of the stocks concerned.⁵⁰ The use of TACs as the basis for an annual share-out of national quota allows member states to be assured of fishery opportunities that are seen to reflect relatively fixed proportions of an overall Community limit.⁵¹

Secondly, and perhaps most pertinent here, TACs contrast with the other approaches to fishery regulation listed above insofar as they are a measure of fishery *output* rather than fishery *input*. Restricting fishing methods, durations, areas etc. may serve to reduce the impacts of fishing activities, but do not necessarily guarantee this. Area restrictions, for example, have the potential to simply displace fishery impacts from one stock to another, without any overall reduction in impact. If the aim of securing sustainable exploitation is the overall objective of fishery management, then a measure of the acceptable level of exploitation needs to be specified as a mandatory requirement. This is not to defend TACs against the criticisms that have been voiced, but to maintain their unavoidably important regulatory function. Neither is this any defence of the way in which the TACs system has operated in practice.⁵² Frequent misuse of TACs to allow excessive exploitation does not demonstrate their inadequacy as a fishery management mechanism, but merely that that mechanism has been misused in practice.

8. The International Context

The difficulties that have beset the European Community in setting and enforcing TACs at a level which secures the sustainable exploitation of fishery resources are not a unique feature in the seascape of international fisheries management. The Food and Agriculture Organization of the United Nations produces bi-annual surveys of the state of global fishery resources. These surveys have shown a consistent downward trend in the proportion of marine fish stocks with potential for expanded production, coupled with an increase in the proportion classified as overexploited or depleted. Only 3% of marine stocks are classified as underexploited, 20% are moderately exploited, 52% are fully exploited, which means they are being fished at their maximum biological productivity. Increased fishing of these stocks would not produce any additional sustainable harvests and would reduce reproduction to

Lords, Select Committee on the European Communities, *Review of the Common Fisheries Policy*, (1992) 2nd Report, Session 1992-93, HL Paper 9, paras.48 to 52.

⁵⁰ Art.4(1) Basic CFP Reg.170/83.

⁵¹ See House of Commons, Agriculture Committee, *The Effects of Conservation Measures on the UK Sea Fishing Industry*, (1993) 6th Report, Session 1992-93, HC 620 paras.40 to 53 and House of Lords, Select Committee on the European Communities, *Review of the Common Fisheries Policy*, (1992) 2nd Report, Session 1992-93, HL Paper 9, para.62.

⁵² See section 11 below on the practical operation of TACs.

dangerously low levels. The remaining 25% are classified as over exploited (17%) depleted (7%) or recovering from depletion (1%).⁵³

The global failure to manage fisheries sustainably may be seen as illustrative of Garret Hardin's 'tragedy of the commons' hypothesis.⁵⁴ This suggests that, in the absence of property rights in the resource or regulatory control, there is no incentive for restraint in the exploitation of common resources and 'the inherent logic of the commons remorselessly generates tragedy'. This model seems particularly apposite to marine fisheries contexts, where the element of 'rivalry' is present and the capture of fish by one fisher entails a lesser catch for others harvesting within the same waters.⁵⁵ Hence,

'when many fishermen have access to the same fish stock, each has every reason to grab as large a share of the potential yield as possible lest the other fishermen reap all the benefit. Prudent harvesting by one fisherman, in order to maintain the stocks, will mostly only benefit other more aggressive fishermen. Thus, an individual fisherman's best course of action is to try to grab his share as quickly as possible while the resource is large enough to yield some profit. As a result, the fishery expands to an excessive level of fishing effort, leading to reduced or even collapsed fish stocks, and little or not net economic benefit.'⁵⁶

In addition, fisheries illustrate an international dimension to the hypothesis insofar as fishing states may be unwilling to take the lead on fisheries conservation if this is seen to benefit other states, with the result that international legislation is destined to reflect the lowest common denominator so far as conservation is concerned.⁵⁷ In the past, it has been observed that 'the concept of the 'global commons' and its abuse is nowhere better illustrated than by European Community fisheries policy'.⁵⁸ The statistical

⁵³ FAO, *The State of World Fisheries and Aquaculture 2006* (2007) at <http://www.fao.org>. Contrast C. Clover, *The End of the Line* (2004) at p.34 to 35, which suggests that global fishery productivity is significantly less than FAO figures suggests due to greatly inflated misreporting. For a discussion of the situation in the North Atlantic, see D. Pauly and J. Maclean, *In A Perfect Ocean* (2003) Ch.2.

⁵⁴ G. Hardin, 'The Tragedy of the Commons' (1968) 162 *Science* 1243.

⁵⁵ Indeed, precursors of Hardin's seminal article on commons considered the issues specifically in the context of fishery exploitation. See H. S. Gordon, 'The Economic Theory of a Common-Property Resource: The Fishery' (1954) 62 *Journal of Political Economy* 124 (on the divergence between individual and collective rationality in exploitation) and A. D. Scott, 'The Fishery: The Objectives of Sole Ownership' (1955) 63 *Journal of Political Economy* 116 (on the impacts of fishing in one period in reducing the stocks available for reproduction and fishing in later periods). Generally, see D. Feeny, S. Hanna and A. F. McEvoy, 'Questioning the Assumptions of the "Tragedy of the Commons" Model of Fisheries', (1996) 72 *Land Economics* 187. The consequences of inappropriate incentives in fisheries can be traced back even further in the literature to 1911: see P. Anderson, 'On rent of fishing grounds: a translation of Jens Warming's 1911 article, with an introduction' (1983) 15 *History of Political Economy* 391, discussed in H. Frost and P. Anderson, 'The Common Fisheries Policy of the European Union and fisheries economics' (2006) 30 *Marine Policy* 737 at p.738.

⁵⁶ House of Lords, Select Committee on the European Community, *Progress of Reform of the Common Fisheries Policy*, 25th Report Session 2002-03, HL Paper 109 (2003) para.55.

⁵⁷ T. Daw and T. Gray, 'Fisheries Science and sustainability in international policy: a study of failure in the European Union's Common Fisheries Policy' (2004) 29 *Marine Policy* 189, s.3.2.

⁵⁸ C. Coffey, 'Introduction to the Common Fisheries Policy: An Environmental Perspective' [1996] *International Environmental Affairs* p.227, at p.288.

information on fisheries provided by the FAO, however, suggests that this abuse is actually quite widespread.

The role of international law in tackling the problem has, until fairly recently, been quite limited, but the implementation of measures adopted in the last few years carries considerable potential to address the over-exploitation of global fishery commons.⁵⁹ The foundation of international fisheries regulation lies in the Law of the Sea Convention of 1982,⁶⁰ which places emphasis on the need for 'optimum utilization' of living resources by coastal states and the need to maintain stocks at a level that will produce the 'maximum sustainable yield' for high seas fishery resources.⁶¹ To some extent, TACs under the CFP may be seen as a regional counterpart of these requirements.⁶² However, there are inherent difficulties with the formulation and application of the concept of 'maximum sustainable yield' on the basis of the 'best scientific evidence available', particularly where information on fish stocks is inadequate or non-existent.

The global problem of unsustainable fishery management reflects these difficulties, particularly when read alongside the general freedom of high seas fishing, affirmed in the Convention.⁶³ Moreover, the duty to ensure maximum sustainable yields is not tempered by any explicit requirement to have regard to precaution in determining those yields. Whilst conservation measures are provided for,⁶⁴ these should be based upon the 'best scientific evidence available' to the states concerned, to maintain or restore populations of harvested species to levels which can produce the maximum sustainable yield. This suggests a close relationship between conservation measures and scientific information, but is uninformative as to what is required where that information is deficient.⁶⁵ Given the uncertainties involved, it has been suggested that, to meet the long-term objective of maintaining fish populations at the desired level,

'it will usually be necessary to limit catches to considerably less than the *theoretical* maximum sustainable yield . . . A strategy aimed at a target yield substantially lower than the theoretical maximum may be better able to provide a reasonably constant level of yield with less risk of

⁵⁹ D. Nelson, 'The Development of the Legal Regime of High Seas Fisheries' and D. Freestone, 'International Fisheries Law Since Rio: The Continued Rise of the Precautionary Principle', in A. Boyle and D. Freestone, Eds., *International Law and Sustainable Development: Past Achievements and Future Challenges* (1999) at pp.135 and 165 respectively.

⁶⁰ The United Nations Convention on the Law of the Sea, hereafter 'UNCLOS', is available at <http://www.un.org/Depts/los/index.htm>.

⁶¹ Arts.62 and 119 UNCLOS.

⁶² Although the limitations of this comparison are evident from European Commission, *Implementing sustainability in EU fisheries through maximum sustainable yield*, SEC(2006) 868, which acknowledges that the use of TACs and other kinds of fishery measures has failed to maintain Community fishery exploitation with maximum sustainable yields.

⁶³ Art.116 UNCLOS.

⁶⁴ Arts.61 and 118 UNCLOS.

⁶⁵ S. M. Garcia, 'The Precautionary Principle: its Implications in Capture Fishery Management' (1994) 22 *Ocean & Coastal Management* 99, at p.105 and G. J. Hewitson, 'The Precautionary Approach to Fisheries Management: An Environmental Perspective' [1996] *International Journal of Marine and Coastal Law* 301, at p.321.

collapse, less demanding requirements for monitoring of stock level, lower unit costs of fishing and less disturbance to the environment.⁶⁶

A debate on the extent to which the Law of the Sea Convention allows a precautionary approach to fishery management, and whether the principle has attained the status of customary international law, reached a climax in the deliberations leading up to the adoption of the United Nations Fish Stocks Agreement of 1995.⁶⁷ Curiously, the Fish Stocks Agreement, has done little explicitly to resolve the dispute because it introduces some important precautionary approaches to fisheries management whilst, at the same time, affirming that it not intended to prejudice anything under the Law of the Sea Convention (which does not seem to envisage the application of precaution to fisheries management).⁶⁸

Despite the ambiguities that lie at its foundations, the Fish Stocks Agreement has introduced major innovations in respect of the need for precautionary conservation measures in respect of fish stocks that migrate between different jurisdictions. In turn, the need to secure sustainable fisheries which underlies this measure has influenced changes of approach in the CFP. Most notably, the Fish Stocks Agreement advocates the use of management strategies that aim to maintain or restore populations of harvested 'straddling' stocks at levels consistent with a precautionary approach. This involves the use of 'conservation or limit reference points' which, if exceeded, activate prompt conservation and management action, and 'target reference points' requiring more general management strategies to ensure that these are not generally exceeded.⁶⁹

Alongside the Fish Stocks Agreement, the Food and Agriculture Organisation of the United Nations has been active in securing international agreements on various non-mandatory measures which support progress towards greater sustainability in fisheries management.⁷⁰ Most significantly the Organization has produced a non-mandatory *Code of Conduct for Responsible Fisheries*⁷¹ and a detailed set of guidelines for implementing a precautionary approach to

⁶⁶ J. Cooke and M. Earle, 'Towards a Precautionary Approach to Fisheries Management' (1993) *RECIEL* 252, at p.255, emphasis added.

⁶⁷ Agreement on the Implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995) A/CONF.164/37, available at <http://www.un.org/Depts/los/index.htm>. Hereafter referred to as the 'Fish Stocks Agreement'.

⁶⁸ Art.4 Fish Stocks Agreement states that "nothing in this Agreement shall prejudice the rights, jurisdiction and duties of States under the [Law of the Sea] Convention. This Agreement shall be interpreted and applied in the context of an in a manner consistent with the provisions of the Convention."

⁶⁹ Art.6 and Annex II Fish Stocks Agreement.

⁷⁰ See, FAO, *Fisheries*, (author, B. Kuemlangan) Chapter 7 in *Law and Sustainable Development Since Rio: Legal Trends in Agriculture and Natural Resource Management* (2002) (FAO Legislative Study 73) for a discussion of various FAO initiatives in relation to fisheries management.

⁷¹ The FAO Code of Conduct for Responsible Fisheries (1995) is available at <http://www.fao.org/DOCREP/005/v9878e/v9878e00.htm>.

fisheries management,⁷² which again heavily emphasises the need for management action to be determined by biological reference points.

The international evolution of a consensus that a precautionary approach to fisheries management requires the formulation of precautionary reference points to be established, to activate management action, has also been influential upon the International Council for the Exploration of the Sea (ICES) in formulating its fisheries advice to the Community in terms of 'safe biological limits' for stocks. ICES is an intergovernmental organisation that coordinates scientific advice on fisheries management in the Northeast Atlantic. The Organisation was founded in 1902⁷³ and has developed expertise and procedures for providing advice to governments and the European Community about fish stocks in the region. Although this advice is not legally binding on governments, the high reputation of ICES for scientific excellence and neutrality has the consequence that this advice must be given considerable weight in fishery management decision-making.

Notably, ICES has been active in the scientific development of biological reference points and has developed forms for advice that are consistent with the precautionary approach to fisheries elaborated under the global fisheries regimes. Under this framework, advice is based on an estimate of current stock status and usually sets out catch options that should maintain the stock status within 'safe biological limits'. This term refers to the level of the spawning stock below which there is an unacceptable probability that recruitment will be impaired. From this, a precautionary management strategy is determined by adding a buffer which generates a very low probability of reaching a stock level at which recruitment will be impaired. The magnitude of the buffer depends on the natural variability of the stock, the precision of the assessment, and the risk that the management agencies are willing to accept. The methodology for biological reference points seeks to articulate and specify the level of acceptable impairment risk, which for most stocks is set as low as 5%.⁷⁴

These developments must also be seen against a background of the broad but important commitments to sustainable development of fisheries made at the United Nations Conference on Environment and Development in 1992. Under Chapter 17 of Agenda 21, new approaches to marine and coastal management are required that are precautionary and anticipatory in ambit. The parties commit themselves to integrated management and sustainable development of the marine environment; to the conservation and sustainable

⁷² FAO, *Precautionary Approach to Capture Fisheries and Species Introductions* (1996) (FAO Technical Guidelines for Responsible Fisheries 2).

⁷³ Under the Convention for the International Council for the Exploration of the Sea, amended in 1964, available at <http://www.ices.dk/aboutus/convention.asp>.

⁷⁴ See O.S Stokke and C. Coffey, 'Precaution, ICES and the common fisheries policy: a study of regime interplay' (2004) 28 *Marine Policy* 117, at p.119. The authors draw upon information provided in reports of the ICES Advisory Committee on Fisheries Management. See particularly, H. Lassen and H. Sparholt, *ICES Framework for the Implementation of the Precautionary Approach* (2000) an appendix to ICES Advisory Committee on Fisheries Management Report ICES CM2000/ACFM:17 available at www.ices.dk/reports/acfm/2000/cwp/cwp00.pdf.

use of the marine living resources of the high seas; and to maintaining or restoring populations of marine species at levels that can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors, and taking into consideration relationships among species.⁷⁵ The commitment to sustainable fisheries was reaffirmed at the Johannesburg Earth Summit in 2002 and was one of the few areas in which concrete environmental commitments were undertaken.⁷⁶ Chapter IV the Johannesburg Plan of Implementation, required action to 'maintain or restore stocks to levels that can produce the maximum sustainable yield with the aim of achieving these goals for depleted stocks on an urgent basis and where possible not later than 2015'. Alongside this, more general exhortations were made for the encouragement of an ecosystem approach to the marine environment, to implement the FAO initiatives referred to above and to develop programmes to halt the loss of marine biodiversity.⁷⁷

9. *The Reform of the CFP*

Given that the CFP was initially established for a 20-year period, it was necessary to establish a new basis for the policy at the end of 2002, and the international initiatives noted above were strongly influential in the reform process. Following a 2001 Green Paper, *The Future of the Common Fisheries Policy*⁷⁸ and a raft of communication documents on the need for reform of its component parts,⁷⁹ new regulations for the 'reformed' policy were put in place from the end of 2002 onwards. The major significance of these reforms reflects the seriousness of criticisms of previous operation of the CFP and the need for radical change. As the Commission put it,

'the CFP has reached a turning point. The challenges are urgent and serious. The current poor sustainability performance of the CFP proves that many of the instruments applied over the last twenty years have reached their limits. In this *state of crisis* there is a need for major change. Reform of the objectives, principles, priorities and instruments of the CFP is more than ever necessary to deliver sustainable

⁷⁵ Agenda 21, Chapter 17, paras.17.1, 17.5(d) and 17.46(b). Chapter 17 is concerned with the protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources. The text of Agenda 21 is available at

<http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm>.

⁷⁶ See L. Rajamani, 'From Stockholm to Johannesburg: The Anatomy of Dissonance in the International Environmental Dialogue' (2003) 12 *RECIEL* 23, at p.31.

⁷⁷ See Johannesburg Plan of Implementation, Ch.IV, on 'protecting and managing the natural resource base of economic and social development', paras.31(a), 30(d), 31(c) and 32(d), available at http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIToc.htm.

⁷⁸ European Commission, Green Paper, *The future of the common fisheries policy* COM(2001) 135 final.

⁷⁹ Most notable, in relation to the general conservation aspects of the CFP, are European Commission, *On a Community Action Plan to reduce discards of fish*, COM(2002) 656; *Setting out a Community Action Plan to integrate environmental protection requirements in the Common Fisheries Policy*, COM(2002) 186; and *On the reform of the Common Fisheries Policy* (the 'Roadmap' Communication) COM(2002) 181.

development and to ensure that the European fishing industry has a secure future.’⁸⁰

In legislative terms, the CFP has always hinged around a ‘Basic CFP Regulation’, which, following the 2002 reform, is now Reg.2371/2002.⁸¹ This sets out the objectives of the reformed Policy and the range of regulatory measures that may be adopted in furtherance of that policy. The present Regulation states that the CFP ‘shall ensure exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions’. For that purpose, the Community is bound to apply the precautionary approach in taking measures designed to protect and conserve living aquatic resources, to provide for their sustainable exploitation and to minimise the impact of fishing activities on marine eco-systems. The policy must aim at a progressive implementation of an ecosystem-based approach to fisheries management.⁸² The policy must also aim to contribute to efficient fishing activities within an economically viable and competitive fishing industry, providing a fair standard of living for those who depend on fishing activities and taking into account the interests of consumers.⁸³ It is notable that this latest statement of objectives incorporates the same balancing of environmental, social and economic aims that has always proved problematic for the CFP. However, the wording emphasises some new environmental management themes which suggest far-reaching changes of approach. Whilst the new wording is to be welcomed, the substantive effects of this, in securing sustainable management of Community fishery resources, need careful consideration.

10. The Emphasis on Precautionary Approach

The emphasis upon a precautionary approach to sustainable exploitation in the reformed CFP raises the issue of *how* precaution is to be interpreted and applied in this context. As has been noted, the application of the principle to fisheries management has previously been controversial. Not least problematic is the fact that the principle seems to envisage ‘damage’ of a kind which seems more relevant to pollution-control contexts than natural resource management. The identification of what levels of ‘serious or irreversible’ impacts are sufficient to activate the need for precaution in the fisheries context has been a central topic of debate.

Progressively, however, the circumstances and manner of application of precaution to fisheries have gathered a consensus, particularly in the light of the international influences. The immediate harm at issue is not the extinction of any particular species, but rather the threat that stock levels will be

⁸⁰ European Commission, *on the reform of the Common Fisheries Policy* (the ‘Roadmap’ Communication) COM(2002) 181 final, at s.4, emphasis added. For more trenchant criticism of the failings of the CFP see, WWF, *Fishing Madness: 101 reasons why the CFP needs radical reform* (2002).

⁸¹ Council Regulation (EC) No 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy.

⁸² See section 14 below on the ecosystem approach.

⁸³ Art.2(1) Basic CFP Reg.2371/2002.

depressed below a level at which recovery is significantly impaired. Precaution, in a fisheries management context, therefore, involves identifying this level of stocks in precise quantitative terms with appropriate allowance for the uncertainties involved. It seems to be generally accepted that reduction in fishing pressure will eventually result in the restoration of depleted stocks, though this may take some time for some species.⁸⁴ Nonetheless, the harm of serious stock depletion is 'serious', though probably not 'irreversible', as with other kinds of environmental impacts where precaution may be relevant.⁸⁵ Precaution also involves consideration of the extent to which fishing activities need to be restricted to reduce impacts upon non-target species and to prevent damage to the wider marine environment. These themes are explored through consideration of the way that the reformed CFP has sought to achieve greater sustainability in specification of total allowable catches and how it has provided for 'emergency measures' to be adopted for conservation reasons.

11. The Criticisms of TAC Determinations

One key area in which a precautionary approach will operate under the reformed CFP is in relation to determinations of TACs. The theoretical difficulties with TACs have been noted,⁸⁶ but attention must now be turned to the difficulties that have arisen in their practical operation. Previously, annual TACs have been set for the most commercially important stocks of fish by the Fisheries Council, but it has often declined to follow scientific advice on fish stocks in making these determinations, with serious ecological consequences. The Council is bound to consider the independent scientific advice provided by the International Council for Exploration of the Sea, but also bound to consider the social and economic impacts of reducing catches upon those dependent upon the fishing industry. A widely held view is that the Fisheries Council consistently failed in its task of balancing the different factors and 'the annual pattern of decision-making has resulted in a dilatory policy of stock management that has failed to safeguard or restore stocks'.⁸⁷

The reason for this failing was because Fisheries Council deliberations were strongly charged by political considerations. As it has been put,

⁸⁴ See House of Lords, Select Committee on the European Community, *Progress of Reform of the Common Fisheries Policy*, 25th Report Session 2002-03, HL Paper 109 (2003) Box 7 (The Canadian Experience) and para.77, and Royal Commission on Environmental Pollution, 25th Report, *Turning the Tide: Addressing the Impact of Fisheries on the Marine Environment* (2004) Cm6392 para.5.43 and Box 5B on 'Cod Collapse on Grand Banks' (Newfoundland).

⁸⁵ Although concerns have also been addressed about the unknown effects of fishing upon the genetic variability of fish stocks reducing the long-term stability of ecosystems, see European Commission, *Biodiversity Action Plan for Fisheries* COM(2001) 162 and Royal Commission on Environmental Pollution, 25th Report, *Turning the Tide: Addressing the Impact of Fisheries on the Marine Environment* (2004) Cm6392 para.5.58.

⁸⁶ See the discussion of TACs at section 7 above.

⁸⁷ European Commission, *Application of the precautionary principle and multiannual arrangements for setting TACs*, COM(2000) 803 final, at p.3. Alongside this, it must be noted that fishers have a longstanding distrust for scientific information on fish stocks, see House of Commons, Environment, Food and Rural Affairs, *Reform of the Common Fisheries Policy*, 1st Report, Session 2002-03 (2002) para.19.

‘economic hardship and unemployment caused by [fishing] cut backs are high profile issues, eagerly reported by the press and easily blamed on the actions of a fisheries minister. In contrast, the blame for hardship borne of resource over-exploitation is unlikely to fall as directly at the feet of a government when alternative scapegoats are available in the form of unsustainable practices of foreign fleets, mismanagement by previous governments or climatic variability’.⁸⁸

Hence, individual fishery ministers were placed under heavy pressure to be seen to secure the best deal for their national fishing fleets, and uncertainty and ignorance about important bio-ecological alongside the weighty socio-economic implications of fisheries decision-making served to devalue scientific advice.⁸⁹ As a former UK fisheries minister candidly observed on the proceedings in Fisheries Council debates,

‘if you are a fisheries minister you sit around the table arguing about fishermen – not about fish. You’re there to represent your fishermen. You’re there to ensure that if there are ten fish you get your share and if possible a bit more. The arguments aren’t about conservation, unless of course you are arguing about another country’.⁹⁰

Under lobbying pressure from the fishing industry, therefore, the Fisheries Council consistently declined to take politically unpopular decisions, of imposing drastic cuts in TACs or the total closure of some fisheries, even where these were emphatically indicated by the scientific advice offered by ICES.⁹¹ Hence, even when many of the most important commercial stocks, such as North Sea Cod, had suffered such serious declines that they are threatened with collapse, scientific advice was rarely implemented in full. For example, in 2002, ICES expressed serious concern over the status of Cod stocks and recommended a complete moratorium on all catching, whether targeted or as a bycatch. The Commission’s Scientific, Technical and Economic Committee on Fisheries accepted this advice, but the Commission opted to propose an 80% reduction in the TAC for North Sea Cod. The

⁸⁸ T. Daw and T. Gray, ‘Fisheries Science and sustainability in international policy: a study of the failure in the European Union’s Common Fisheries Policy’ (2004) 29 *Marine Policy* 189, s.3.2.

⁸⁹ O.S Stokke and C. Coffey, ‘Precaution, ICES and the common fisheries policy: a study of regime interplay’ (2004) 28 *Marine Policy* 117 at p.122.

⁹⁰ The Rt Hon John Gummer MP, Chairman of the Marine Stewardship Council and Formerly Minister of Agriculture, Fisheries and Food (1989-93) and Secretary of State for the Environment (1993-97), speaking at a WWF conference in 1998, quoted by House of Lords Select Committee on the European Union, *Unsustainable Fishing: What is to be done with the Common Fisheries Policy?*, (2000) Third Report, Session 2000-01, HL Paper 13, at para.121. For an analysis of how national rivalries have contributed to the failure of the CFP, see D. C. Payne, ‘Policy Making in Nested Institutions: Explaining the Conservation Failure of the EU’s Common Fisheries Policy’ [2000] *Journal of Common Market Studies* 303.

⁹¹ G. Biais, ‘An evaluation of the policy of fishery resources management by TACs in European Community waters from 1983 to 1992’, (1995) 8 *Aquatic Living Resources* 241 and A. Karagiannakos, ‘Total Allowable Catch (TAC) and quota management system in the European Union’ (1996) 20 *Marine Policy* 235.

Council of Ministers eventually agreed on only a 45% reduction in conjunction with effort limitations.⁹²

12. *The Application of Precaution in TAC Determinations*

In the view of the Commission, the solution to the problem of the unsatisfactory TAC determination process was to impose mandatory multi-annual recovery plans where stocks are outside safe biological limits.⁹³ Recovery plans are to be based on 'conservation reference points' with targets against which recovery of stocks to safe biological limits are to be assessed, based on population size, long term yields, fishing mortality rate and/or stability of catches. Recovery plans must also take account of reference points recommended by relevant scientific bodies and to ensure the sustainable exploitation of stocks, and that impacts on marine ecosystems are kept at sustainable levels. Perhaps most significantly, these plans are to be multi-annual and must indicate the expected time frame for reaching their targets. It is envisaged that the specified targets will be reached by the application of 'harvesting rules which are based upon a pre-determined set of biological parameters governing catch limits.'⁹⁴

The significance of the facility for establishment of multi-annual recovery plans is potentially immense,⁹⁵ both in the adoption of a more strategic longer-term view of catch limits and in taking the determination of year-upon-year TACs out of the arena of annual deliberations at Fishery Council meetings. Although the Council is bound to have regard to the economic impact of measures that are provided for under recovery plans,⁹⁶ the legal duty to take a long-term strategic approach to the determination of allowable catches, 'as a priority', arguably, appears to give the need for conservation action a special status above socio-economic considerations where biological advice indicates stocks are below safe limits. Insofar as progress towards sustainable development is conceived of as an exercise of balancing environmental, social and economic considerations against one another, the solution that has been adopted in this context may be seen as recognition that ecological concerns can justifiably be afforded precedence over other factors where precautionary biological limits are exceeded.

13. *Illustration in the Cod Recovery Plan*

⁹² T. Daw and T. Gray, 'Fisheries Science and sustainability in international policy: a study of the failure in the European Union's Common Fisheries Policy' (2004) 29 *Marine Policy* 189, s.2.

⁹³ European Commission, *Application of the precautionary principle and multiannual arrangements for setting TACs*, COM(2000) 803 final and Commission Green Paper, *The future of fisheries policy*, COM(2001) 135 final para.5.1.1.

⁹⁴ See Art.5 Basic CFP Reg.2371/2002.

⁹⁵ See House of Lords, Select Committee on the European Community, *Progress of Reform of the Common Fisheries Policy*, 25th Report Session 2002-03, HL Paper 109 (2003) paras.13 to 20, though critical comment was made on the delays in putting recovery and management plans into place.

⁹⁶ Art.5(4)(d) Basic CFP Reg.2371/2002.

The first practical test of the recovery plan provisions under the new Basic CFP Regulation came with the Fisheries Council meeting of December 2003.⁹⁷ At this meeting a Commission proposal for a Cod Recovery Plan⁹⁸ was endorsed by the Council and introduced measures aiming to ensure safe recovery of stocks to sustainable levels within a time frame of five to ten years.⁹⁹ The recovery plan applied to stocks that were recognised to be in danger of collapse and included a combination of low catch limits, fishing effort limitations and specific control and monitoring rules to ensure implementation. In accordance with advice from ICES, in consultation with the Community's Scientific, Technical and Economic Committee for Fisheries, target stock sizes are based on precautionary levels, incorporating an additional safety margin. Perhaps most significantly, guidelines for setting TACs and corresponding fishing effort limits are set out to ensure that the greatest annual change in TAC will not be more than 15%. If the scientific advice is that the stock is below safe biological limits, more stringent limits may be imposed, such as very low fishing opportunities. In effect, the horse-trading involved in annual setting of TACs is removed by these being pre-determined, within limits, for the duration of the plan.

The model provided by the Cod Recovery Plan has been followed in a succession of other multi-annual plans, including plans for northern hake stocks (2003) southern hake, Norway lobster and Baltic cod (2005) and plaice and sole in the North Sea (2006).¹⁰⁰ These plans may be seen as a welcome application of a precautionary approach to fisheries management, though some years will be needed before their ecological effectiveness becomes clear, and initial pessimism about their prospects of success may turn out to be unfounded.¹⁰¹ Nonetheless, they raise questions as to what single-species plans can achieve within mixed species fisheries. Notably, the Cod plan does not take account of impacts upon other species, or the possible displacement effects of fishing being directed to other areas or species.¹⁰² Hence, the limitations of existing recovery plans may be seen as their species-specific character and the lack of a broader ecosystem dimension.

Even within the scope of protecting the named species under the various recovery plans, there is little indication so far that they have been successful in practical terms. Given the duration of the recovery plans, it is premature to draw any firm conclusions, nonetheless, recent information on fish stocks

⁹⁷ European Commission, Fisheries, Press Release 22 December 2003, *Outcome of the Fisheries Council of 17-19 December 2003*.

⁹⁸ Commission Communications, *Proposals for Council Regulations establishing measures for the recovery of cod and Northern hake stocks*, COM(2003) 237 and COM(2003) 374.

⁹⁹ See Reg.423/2004 establishing measures for the recovery of cod stocks.

¹⁰⁰ See European Commission, Fisheries, Press Release, *European Commission's proposal on fishing possibilities: why and how?* 30 November 2005; *Joe Borg: Council agreement on fishing possibilities for 2006 confirms gradual but sustained approach to stocks recovery*, 22 December 2005; and *Plaice and sole in the North Sea: a long-term plan for healthier stocks and economic returns*, 10 January 2006. Most recently, see European Commission, *Proposal for a Council Regulation Establishing a multi-annual plan for the cod stocks of the Baltic Sea and the fisheries exploiting those stocks*, COM(2006) 411 final.

¹⁰¹ House of Lords, Select Committee on the European Community, *Progress of Reform of the Common Fisheries Policy*, 25th Report Session 2002-03, HL Paper 109 (2003) Box 1.

¹⁰² Institute for European Environmental Policy, *CFP Developments*, IEEP Briefing 12 (2003).

suggests that progress since they have been put in place, if any, has been patchy. The Commission's statement of *Fishing Opportunities for 2008* recognises that, although some stocks have recovered and returned within safe biological limits, the overall number of stocks at risk appears neither to be decreasing nor increasing, with four-fifths of commercial stocks remaining outside safe biological limits. Specifically, it is acknowledged that 'the recovery measures and recovery plan for cod have not brought the improvements that were expected' and that for some cod stocks a 15% reduction in TAC will be insufficient to secure significant improvement.¹⁰³

14. The Ecosystem Approach

At this point, it is convenient to refer back to the element in the reformed CFP that requires the Policy to 'aim at a progressive implementation of an ecosystem-based approach to fisheries management.'¹⁰⁴ As with the development of precaution in fisheries, this innovation reflects international influences, particularly work undertaken under the 1992 Convention on Biological Diversity¹⁰⁵ and the 1992 OSPAR Convention¹⁰⁶ in this respect. Specifically, the Fifth Meeting of the Parties to the Biodiversity Convention in 2000 produced a call for the general application of the ecosystem approach by governments and international organisations, an important attempt to define the key elements of the approach and guidance for its implementation.¹⁰⁷ In 1998, the previous focus upon pollution control in the OSPAR Convention was extended by the adoption of Annex V, on the Protection of the Ecosystems and Biological Diversity of the North East Atlantic, which makes reference to an 'integrated ecosystem approach' that the Commission is bound to apply. In 2003, following the first joint Ministerial meeting of the Helsinki Commission¹⁰⁸ and the OSPAR Commission, the parties issued the *Bremen Statement* which incorporated a further commitment of the parties to apply the ecosystem approach¹⁰⁹ and reaffirmed its Strategy on the Protection and Conservation of Ecosystems and Biological Diversity.¹¹⁰ At a global level, the 2002 Johannesburg Plan of Implementation encourages the application of the ecosystem approach by 2010.¹¹¹

Although the need for an 'ecosystem approach' to ecological management has gained increasing momentum, precisely what this requires in particular

¹⁰³ European Commission, *Fishing Opportunities for 2008 Policy Statement from the European Commission*, COM(2007) 295 final pp.4 and 10.

¹⁰⁴ Under Art.2(1) Basic CFP Reg.2371/2002.

¹⁰⁵ The 1992 Convention on Biological Diversity, available at www.biodiv.org.

¹⁰⁶ The 1992 OSPAR Convention on the Protection of the North East Atlantic see <http://www.ospar.org>

¹⁰⁷ See Decision V/6 of the Fifth Meeting of the Parties (2000) at www.biodiv.org/decisions/default.asp?lg=O&m-cop-05&d=06.

¹⁰⁸ 1974 Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area, available at http://www.helcom.fi/Convention/en_GB/convention/.

¹⁰⁹ For the Bremen Statement, see www.northseaconference.no.

¹¹⁰ See OSPAR Agreement 2003-21, accessible at <http://www.ospar.org/eng/html/welcome.html>.

¹¹¹ Johannesburg Plan of Implementation (2002) para.30(d).

contexts had been the subject of much debate.¹¹² Perhaps for that reason, the rather tentative commitment of the reformed CFP towards its 'progressive' implementation reflects the uncertainties that are involved. The concise definition of 'ecosystem approach' adopted under the Biodiversity Convention is 'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way'.¹¹³ Specifically in relation to fisheries, the Royal Commission on Environmental Pollution has suggest that the 'more holistic' perspective that is the essence of the ecosystem approach,

'stands in sharp contrast to previous philosophies for managing the marine environment that were fragmented, sectoral and focused on short-term economic gain. Within fisheries management, this change in mind-set is illustrated by attempts to move away from managing individual fish populations for maximum economic gain towards more precautionary controls on fishing that recognise the interdependence of predator and prey species within the food chain. Realising this concept will require managers to reconcile a range of issues such as genetic and species diversity, species rarity, habitats, food web properties and the ecology of marine mammals in a balanced and credible way when managing the marine environment. This will involve incorporating a wider range of scientific advice into the management framework.'¹¹⁴

The implications of all this for the CFP are clearly momentous, but likely to be implemented on an incremental way, in an evolutionary rather than a revolutionary manner.¹¹⁵ Hence, the emphasis upon 'progressive' implementation in the reformed CFP may be seen as pragmatic or realistic.

Nonetheless, the question may fairly be raised, to what extent do the new provisions for fish stock recovery plans illustrate progress in the holistic direction that has been indicated? The answer seems to be, very little at all. The emphasis upon single species management, with no wider ecosystem considerations being explicitly incorporated, seems to show a 'business as usual' approach to fisheries management under the CFP.

Another aspect of the ecosystem approach that seems to be unacknowledged in the fish stock recovery plans is the need for 'adaptive management' as an

¹¹² House of Lords, Select Committee on the European Community, *Progress of Reform of the Common Fisheries Policy*, 25th Report Session 2002-03, HL Paper 109 (2003) para.11. There is an extensive literature on 'ecosystem management' approach to natural resources management, particularly from a United States' perspective. A good general survey of the issues is provided in R. O. Brooks, R. Jones and R. A. Virginia, *Law and Ecology: The Rise of the Ecosystem Regime* (2002). For international guidelines on the application of the ecosystem approach to fisheries see FAO, *Fisheries Management: 2. The ecosystem approach to fisheries* (2003) (FAO Technical Guidelines for Responsible Fisheries 4, Supplement 2). For a more specific discussion of the application of an ecosystem approach to the CFP see, J. G. Pope and D. Symes, *An Ecosystem Based Approach to the Common Fisheries Policy: Defining the Goals* (2000) English Nature.

¹¹³ Para.1 Decision V/6 of the Fifth Meeting of the Parties (2000).

¹¹⁴ Royal Commission on Environmental Pollution, 25th Report, *Turning the Tide: Addressing the Impact of Fisheries on the Marine Environment* (2004) Cm6392 para.7.38.

¹¹⁵ Royal Commission on Environmental Pollution, 25th Report, *Turning the Tide: Addressing the Impact of Fisheries on the Marine Environment* (2004) Cm6392 para.7.47.

element of the approach.¹¹⁶ Under the Biodiversity Convention, the ecosystem approach is seen to require adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning. Given the non-linear character of ecosystem processes, management must be able to respond to such uncertainties and contain elements of 'learning-by-doing' or a research 'feedback loop'.¹¹⁷ Measures may need to be taken even when some cause-and-effect relationships are not yet fully established scientifically.¹¹⁸

These features of adaptive management seem admirably relevant to the setting of TACs under a fish stock recovery plan which is put in place to run over a number of years, and where continuing information about levels of the stock may necessitate rethinking of whether the plan is on course to achieve its objectives or not. Despite the potential of adaptive management as a tool for determining variation in TACs in the light of subsequent information, it does not seem to have featured explicitly in the determination of limits for TACs in the duration of recovery plans. Possibly, on a generous interpretation, the mechanisms for determining TACs within limits might, in effect, be seen as an *implicit* application of a kind of adaptive management. Nonetheless, the extent to which the measures have been purposefully introduced to meet the adaptive management element of the ecosystem approach, and whether and how they meet it, is obscure.

15. Nature Conservation under the CFP

The most prominent application of a precautionary and ecosystem-orientated approach under the reformed CFP may be seen in the provision for emergency measures for nature conservation.¹¹⁹ Alongside the emergency powers given to the Commission,¹²⁰ new powers are given to member states to take emergency measures within their jurisdiction. These measures may be introduced in the event of fishing activities giving rise to a 'serious and unforeseen' threat to the conservation of living aquatic resources or the marine ecosystem, requiring action where 'undue delay would result in damage that would be difficult to repair'. However, the exercise of the emergency powers is for a maximum of three months and is subject to a requirement to notify the Commission of an intention to introduce measures, and a power of the Commission to confirm, cancel or amend measures.¹²¹

¹¹⁶ For discussion of the regulatory difficulties in applying adaptive management see J. B. Rhul, 'Regulation by Adaptive Management – is it Possible?' (2005) 7 *Minnesota Journal of Law, Science and Technology* 21 and B. C. Kirkkainen, 'Panarchy and Adaptive Change: Around the Loop and Back Again' (2005) 7 *Minnesota Journal of Law, Science and Technology* 59.

¹¹⁷ On the feedback loop and other 'decision rules' relating to adaptive management, see J. Cooke and M. Earle, 'Towards a Precautionary Approach to Fisheries Management' (1993) *RECIEL* 252, at p.256.

¹¹⁸ Para.4 Decision V/6 of the Fifth Meeting of the Parties (2000).

¹¹⁹ For a more general discussion of the issues, see D. Symes, *The integration of fisheries management and marine wildlife conservation* (1998) (published by the Joint Nature Conservation Committee, JNCC Report No.287).

¹²⁰ Art.7 Basic CFP Reg.2371/2002.

¹²¹ Art.8 Basic CFP Reg.2371/2002.

Other powers of member states to take conservation action arise in relation to measures with the 12 nautical mile coastal zone¹²² and in respect of measures applicable solely to fishing vessels flying the flag of the member state.¹²³

16. Application of the Emergency Powers for Conservation

Although the powers of the Commission and member states to limit fishing for conservation reasons is a welcome development in the progression towards ecosystem management, the critical issues are about *when* the Commission will use, or sanction the use of, these powers. On this, the initial indications are ambivalent.¹²⁴

The discovery of cold water coral populations in the Darwin mounds, an area of 100 square km located 1 km below the surface in an area 185 km north-west of Cape Wrath, was the first test of the emergency powers. As a habitat categorised as a 'reef' under Habitats Directive,¹²⁵ the area was recognised to be of considerable conservation importance, whilst having been damaged by benthic trawling activities and under threat of further destruction by these activities. Following a campaign by the WWF,¹²⁶ the European Commission responded to the UK's request that the Commission's emergency powers should be used to ban the use of damaging kinds of fishing gear within the area. The Commission recognised that a precautionary approach must be taken to minimise the impact of fishing activities on important and sensitive ecosystems. In the first instance, the Commission response took the form of an emergency measure applicable for a six-month period.¹²⁷ This was followed by a permanent measure¹²⁸ which prohibited fishing vessels from using bottom trawls or similar towed nets, operating in contact with the bottom of the sea, in an area bounded by coordinates encompassing the Darwin Mounds. This outcome represents an important departure in illustrating the first use of powers under the CFP being used to conserve ecosystems rather than, as previously, to limit exploitation of fish stocks.

¹²² Art.9 Basic CFP Reg.2371/2002.

¹²³ Art.10 Basic CFP Reg.2371/2002. Generally, see D. Owen, *Interaction between EU Common Fisheries Policy and the Habitats and Birds Directive* (2004) (Institute for European Environmental Policy).

¹²⁴ See E. M. De Santo and P. J. S. Jones, 'Offshore marine conservation policies in the North East Atlantic: Emerging tensions and opportunities', (2007) *Marine Policy* 336 at section 5.

¹²⁵ Notably, in *R v. Secretary of State for Trade and Industry, ex parte Greenpeace (No.2)* ([2000] Env LR 221) it was resolved that the Habitats Directive applied to the whole of the UK continental shelf and superjacent waters, up to the 200 nautical mile limit, with consequent responsibilities to protect specified habitats with that area. A similar view on the applicability of the Directive had been expressed in European Commission, *Fisheries Management and Nature Conservation in the Marine Environment*, COM(1999) 363 final, at para.5.2.2.

¹²⁶ See World Wildlife Fund United Kingdom, *The Darwin Mounds: Out of Sight and Still Under Threat* (2001).

¹²⁷ Commission Reg.1475/2003 on the protection of deep-water coral reefs from the effects of trawling in an area north west of Scotland. This was followed by Reg.263/2004 which extended the operation of the earlier measure for a further six-month period.

¹²⁸ Commission Reg.602/2004 amending Regulation EC No.850/98 as regards the protection of deep-water coral reefs from the effects of trawling in an area north west of Scotland.

On the other hand, the response of the Commission to requests by the UK to ban pair-trawling for bass in the English Channel may be seen as less encouraging. The practice of pair trawling, involving the use of a pelagic net towed between two vessels, was seen as problematic by the UK because of the high level of cetacean bycatch, particularly dolphins, reported to arise from this method of fishing.¹²⁹ The UK sought a ban on pair-trawling to fulfil obligations to protect cetaceans under Habitats Directive in respect of measures ensuring that incidental killing does not have a negative impact on such species.¹³⁰ In 2004, the UK's request that the Commission impose an emergency closure of the English Channel pair-trawl fishery¹³¹ was rejected. This was because, in the view of the Commission, the need for immediate action was not shown, because the bycatch information did not provide any radically new evidence on the level of threat to cetaceans. Moreover, a ban on pair trawling in this area might result in a redistribution of fishing effort elsewhere without necessarily reducing the overall bycatch of cetaceans. In 2005, the Commission also rejected a request to extend closure of the pair trawl fishery to vessels of all member states¹³² for similar reasons.¹³³

The result of the Commission's responses to the requests was that the problem could only be partially addressed by UK national legislation¹³⁴ prohibiting UK fishing vessels from pair-trawling both within UK and EC waters. This might be seen as an unsatisfactorily unilateral response insofar as the activity of pair-trawling in the English Channel was predominantly undertaken by French vessels, and these vessels would not be subject to the UK Order. The effectiveness of the Order in respect of its impact upon cetacean conservation was also disputable. Nonetheless, in an unsuccessful legal challenge to the Order, it was observed that it was not unreasonable to introduce a UK measure for the purpose of demonstrating national commitment on the issue and as a means of pressing for action at Community level.¹³⁵

The contrast between the uses of emergency measures for conservation purpose in the Darwin Mounds and the Pair-trawling situations perhaps illustrates the differences in the evidence that is needed to justify their use in relation to geographically limited and static habitats, in the first case, and in

¹²⁹ For a critical account of the ecological impacts of pair trawling on dolphin populations see C. Clover, *The End of the Line: How overfishing is changing the world and what we eat* (2004) particularly Ch.1.

¹³⁰ Under Art.12 Habitats Directive 92/43/EEC. All species of cetaceans are listed under Annex IV to the Directive. Also the UK is a party to the 1991 Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS), adopted under the Bonn Convention on Migratory Species, available at <http://www.ascobans.org/index0101.html>.

¹³¹ Under Art.7 Basic CFP Reg.2371/2002.

¹³² Under Art.9 Basic CFP Reg.2371/2002.

¹³³ Commission Decision on the request presented by the United Kingdom pursuant to Article 9 of Council Regulation (EC) No.2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy.

¹³⁴ South-west Territorial Waters (Prohibition of Pair Trawling) Order 2004 SI2004/3397, made under s.5A Sea Fish (Conservation) Act 1967.

¹³⁵ See *Greenpeace Ltd v Secretary of State for the Environment, Food and Rural Affairs* [2005] EWHC 2144 (QBD Admin) at para.66 and [2005] EWCA Civ 1656 (CA Civ Div).

relation to mobile species that range over a wide area, in the second.¹³⁶ Equally, the certainty of future damage to the coral reefs in the first case may be seen to contrast with the uncertain ecological benefit of restrictions in the second. In the balance between taking a precautionary approach and acting on the basis of the 'sound scientific advice',¹³⁷ the Darwin Mounds response shows a preference for the former, whilst the Pair-trawling decisions take their justification from the latter. Arguably, both cases were resolved in accordance with the requirements that the emergency powers should be exercised only where there is evidence of a 'serious threat'¹³⁸ to the conservation of living aquatic resources. However, the apparent need for compelling evidence of this, as illustrated in the latter case, suggests that less weight is given to precaution in the exercise of the emergency powers that might be envisaged, given the general emphasis upon precaution in the stated objectives of the Basic CFP Regulation.

17. A Conservation-based Interpretation of 'Precaution'

Stepping temporarily outside the context of the CFP, it is possible to see a significantly different approach to 'precaution' being adopted in a comparable nature conservation context.¹³⁹ The '*Wadden Sea Shellfishery*' case¹⁴⁰ involved referral proceedings from the Netherlands before the European Court of Justice on the interpretation of the Habitats Directive.¹⁴¹ The Court found that granting annual licences for mechanical cockle fishing constituted a 'plan'

¹³⁶ See E. M. De Santo and P. J. S. Jones, 'Offshore marine conservation policies in the North East Atlantic: Emerging tensions and opportunities', (2007) *Marine Policy* 336 at sections 5.2 and 5.3.

¹³⁷ See Art.2(1) Basic CFP Reg.2371/2002 (requiring application of the precautionary approach) and Art.2(2) (requiring decision-making to be based on sound scientific advice). The counterparts of these provisions in the Community Environment Policy are to be found in Art.174(2) and 174(3) of the EC Treaty, though the latter refers to 'available', rather than 'sound', scientific advice.

¹³⁸ Art.7(1) Basic CFP Reg.2371/2002 requires a 'serious threat' to be shown, Art.8(1) requires a 'serious and unforeseen' threat to be shown and that undue delay would result in damage that would be difficult to repair.

¹³⁹ On the close interrelationship between the CFP and nature conservation, see European Commission, *Action Plan on Fisheries and Biodiversity* COM(2001) 162 final, (which proposed management objectives and measures in relation to the conservation and sustainable use of biodiversity in fisheries); European Commission, *Thematic Strategy on the Protection and Conservation of the Marine Environment*, COM(2005) 504 final (which seeks to protect and restore Europe's oceans and seas to ensure that human activities are conducted in a sustainable manner); the *Proposal for a Directive establishing a framework for Community action in the field of marine environmental policy*, SEC(2005) 1290 (which will require marine waters to achieve 'good ecological status'); and the Green Paper on Maritime Policy, *Towards a future Maritime Policy for the Union: a European vision of the oceans and seas*, COM(2006) 275 final (which generally considers the new tools and modes of maritime governance that need to be adopted for sustainable maritime industries).

¹⁴⁰ Case C-127/02 *Landelijke Vereniging tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels v Staatssecretaris van Landbouw, Natuurbeheer en Visserij*, ECJ 7 September 2004. For commentary on this, see J. Verschuuren, 'Shellfish for Fishermen or for Birds? Article 6 Habitats Directive and the Precautionary Principle' [2005] *Journal of Environmental Law* 265 and E. R. Stokes, 'Liberalising the Threshold of Precaution – Cockle Fishing, the Habitats Directive, and Evidence of a New Understanding of Scientific Uncertainty' [2005] *Environmental Law Review* 206.

¹⁴¹ Directive 92/43/EEC on the conservation of natural habitats of wild fauna and flora.

or 'project' under the Directive, which needed an 'appropriate assessment' of its significant effects upon a special protection area designated for the protection of shellfish-eating birds.¹⁴² Moreover, appropriate assessment was needed if any reasonable scientific doubt remained as to the adverse effects of shellfish harvesting on the food supply of the protected birds. Although determined in the context of habitat conservation legislation, the need for precaution in fishery licensing within the protected area may be seen as uncompromising in requiring that significant conservation risks are shown to be excluded on the basis of objective information. This illustrates a particularly strong interpretation of 'precaution', which requires the use of ecological information positively to exclude any probability of risk to the conservation objectives of a designated site. In effect, the burden of showing no significant harm is placed upon the party seeking to undertake an activity, or at least to grant a licence to allow the activity to be undertaken.

It may fairly be noted that conservation and fisheries are governed by separate Community legislation and the transference of this strict approach to precaution from the former area to the latter may not always be justified. However, the apparent rationale for the application of precaution in the *Wadden Sea Shellfishery Case* was that,

'the precautionary principle is one of the foundations of the high level of protection pursued by Community policy on the environment . . . and by reference to which the Habitats Directive must be interpreted'.¹⁴³

By the same reasoning, it might be contended that *all* Community secondary legislation, including that based upon non-environmental Articles of the EC Treaty, such as the CFP,¹⁴⁴ should be interpreted so as to apply precaution in an analogous way.

To some extent, this issue takes the discussion back to the precise meaning of the integration requirement and the interpretation of whether 'integration' requires that environmental principles,

'must be put into effect in connection with every single measure enacted or to be enacted by the Community, or whether the environmental policy or policies in other areas respectively are to be considered as points of reference in the sense that the entirety of Community measures should meet the requirements of the action principles from a global point of view'.¹⁴⁵

Because of the uncertainty of the relevant EC Treaty provisions,¹⁴⁶ and particularly the ambiguity of the phrase 'environmental protection requirements' in the integration obligation,¹⁴⁷ the answer to this fundamental question is far from clear. One perceptive suggestion is that the ambiguity

¹⁴² Under Art.6(3) Habitats Directive 92/43/EEC.

¹⁴³ Case C-127/03, at para.44.

¹⁴⁴ The present Basic CFP Regulation, Reg.2371/2002, is founded upon Art.37 of the EC Treaty, under Title III on Agriculture, though recital 3, concerned with the need for sustainable exploitation is stated to be based on the same considerations as the precautionary principle referred to in Art.174, under Title XIX, Environment, of the Treaty.

¹⁴⁵ A. Epiney, 'Environmental Principles' in R. Macrory, Ed. *Reflections on 30 Years of EU Environmental Law* (2006) p.17 at p.31.

¹⁴⁶ Particularly, Art.174(2)(2) and Art.6 EC Treaty.

¹⁴⁷ N. Dhondt, *Integration of Environmental Protection into other EC Policies* (2003) p.15.

might be resolved through an appreciation that 'integration' might be conceived of in either procedural or substantive terms, whereas the actual integration requirement that has been provided for in the EC Treaty is of the former but not the latter kind.

'Hence, 'it is one thing to consider environmental concerns in the context of a sectoral policy (the procedural requirement for integration), but it is another matter to define the degree to which such integration should take place in practice (the substantive requirement of integration) and to declare an EC act void on those grounds'.¹⁴⁸

Given the wide discretion given to Community institutions in respect of application of the integration requirement, there is some cogency to the suggestion that adherence to substantive integration requirements is not required. Arguably, the 'manifest error of appraisal' test¹⁴⁹ would be more readily satisfied where an institution denied the need for integration *per se* rather than where it misinterpreted what it required in a particular context. All this may seem rather discouraging from an environmental perspective. On the other hand, expectations may have been raised higher than a careful analysis of the wording of the integration obligation would have deserved.

18. *Strict Precaution and Fisheries*

Perhaps the most remarkable aspect of the *Wadden Sea Shellfishery Case* is the strictness of the interpretation of 'precaution' that was adopted. This involved showing that the activity involved would not harm the conservation objectives of the designated site and placed the burden of showing this, beyond reasonable scientific doubt, upon those entrusted with the authorisation of the activity. On this strict interpretation of 'precaution', suspicion alone justifies the actor being presumed to be guilty until innocence is shown.¹⁵⁰ Not only does uncertainty as to ecological harm serve as a ground for the prohibition of an activity, but the absence of uncertainty must be conclusively established before the activity can be allowed. In a fishery context, this might be interpreted as requiring that all fishing activity should be prohibited unless those seeking to authorise or engage in it are able to establish beyond doubt that no ecological harm will ensue as a consequence.

Clearly, the version of the precaution found in the reformed CFP falls significantly short of what would be required by this kind of strict precaution. For example, a recent statement from the Commission reads as follows.

'For a number of stocks no biological advice or information is available from STECF [the Commission's Scientific, Technical and Economic Committee on Fisheries]. In these cases, the precautionary approach, as incorporated in the CFP, can be applied without reference to scientific advice. In these cases, the guiding principle can be that no expansion of the fishery should be foreseen because there are no scientific data showing that such an expansion could be sustainable.

¹⁴⁸ D. Grimeaud, 'The Integration of environmental Concerns into EC Policies: A Genuine Policy Development' (2000) *European Environmental Law Review* 207, at p.216.

¹⁴⁹ See section 3 above on 'manifest error of appraisal'.

¹⁵⁰ See J. Holder, 'Safe Science? The precautionary principle in UK environmental law', in J. Holder, Ed., *The Impact of EC Environmental Law in the United Kingdom* (1997) at p.125

Where current TACs are substantially higher than the real recent catches, they would be adapted towards the real catches at a rate of 15% per year.¹⁵¹

In this version of 'precaution', it seems that there is no incompatibility between the continuation of fishing activity and a total absence of information on impacts on fish stocks or the marine environment, albeit 'precaution' serves to prevent any *expansion* of the fishery and may allow for a gradual reduction of TACs where these are 'substantially higher' than recent catches. On the scale of strictness of precaution, this approach must stand somewhere near the opposite end of the spectrum from that adopted in the *Wadden Sea Shellfishery Case*.

Nevertheless, the question is justifiably raised, whether strict precaution has any place in fisheries management. Historically at least, the answer to this seems to be in the affirmative. An early illustration of the application of this kind of precaution to fisheries is to be seen in United Nations General Assembly resolutions¹⁵² concerning the prohibition of driftnet fishing on the high seas.¹⁵³ Resolution 44/255 of 1989 recommended a global moratorium on high seas driftnets, to be implemented unless nations have taken effective conservation and management measures based on statistically sound analysis to prevent the unacceptable impacts of the practice. This Resolution recognised the uncertainty that existed in the information regarding high seas drift-net fishing, but provided for a moratorium based on *concerns* about over-exploitation of target stocks and an unacceptable by-catch of non-target species. It has been suggested that this resolution reversed the normal burden of proof in that it required measures to be taken first, with their subsequent relaxation allowed for only where scientific research demonstrates convincingly that they are not necessary. In effect, the continuation of drift-net fishing is dependent on evidence showing that effective conservation and management measures are in place to prevent unacceptable impacts and to secure conservation. Showing this involves the provision of a statistically sound analysis jointly made by those with an interest in the fishery.¹⁵⁴

¹⁵¹ European Commission, *Fishing Opportunities for 2008 Policy Statement from the European Commission*, COM(2007) 295 final p.10.

¹⁵² See United Nations General Assembly Resolution 44/255 (of 22 December 1989) concerning high seas driftnet fishing: Large-Scale Pelagic Fishing and Its Impacts on the on the Living Resources of the World's oceans and Seas' (operative from 30 June 1992) ((1990) 29 ILM 1556 and www.un.org/documents/resga.htm). Subsequently, see Resolutions 45/197 of 1990, 46/215 of 1991, 47/443 of 1992 and 48/445 of 1993 and for discussion of these see G. J. Hewison, 'The Precautionary Approach to Fisheries Management: An Environmental Perspective' (1996) 11 *International Journal of Marine and Coastal Law* 301, at p.305.

¹⁵³ For a discussion of contrasting views on the issues, see D. Hunter, J. Salzman and D. Zaelke, *International Environmental Law and Policy* (2nd ed. 2002) pp.699 to 707. For discussion of the driftnet ban and other examples of precaution in international fisheries law, see D. Freestone, 'International Fisheries Law Since Rio: the Continued Rise of Precaution' and W. Edson, 'Towards Long-term Sustainable Use: Some Recent Developments in the Legal Regime for Fisheries' in A. Boyle and D. Freestone eds., *International Law and Sustainable Development: Past Achievements and Future Challenges* (1999) at pp.135 and 165 respectively.

¹⁵⁴ S. M. Garcia, 'The Precautionary Principle: its Implications in Capture Fishery Management' (1994) 22 *Ocean & Coastal Management* 99, at p.103.

Within the CFP, a close counterpart of this approach is to be seen in Community measures restricting the use of driftnets. The controversy over application of strict precaution at a global level was paralleled by a challenge to a Community Regulation banning driftnets longer than 2.5 kilometres.¹⁵⁵ In the *Mondiet Case*,¹⁵⁶ the validity of the Regulation was disputed on the basis that it was not justified on scientific grounds, since the Council had not taken into account scientific advice on the threats to fish stocks when adopting the measure. In effect, the argument was that strict precaution was reviewable where there was insufficient evidence of ecological harm to justify its application. However, the European Court of Justice held that conservation measures need not be in precise conformity with scientific advice and the absence of such information should not prevent the Council from adopting measures that are deemed essential for the attainment of the objectives of the CFP. In effect, the discretion of the Council could not be challenged because of the lack of scientific certainty as to the need for the Regulation. The precautionary principle, interpreted strictly, was recognised as having a role to play in respect of actions that are taken in circumstances of scientific uncertainty. This ruling is particularly remarkable because the Regulation at issue was adopted outside the Environment Title of the EC Treaty¹⁵⁷ and demonstrates the use of environmental action principles as a basis for review and interpretation of non-environmental legislation.¹⁵⁸

19. *The Revival of Strict Precaution?*

Since the measures concerning driftnets, the application of strict precaution to fisheries seems to have fallen into abeyance. However, arguments for its revival have resurfaced from time to time. Fairly recently, for example, the Royal Commission on Environmental Pollution recommended an uncompromising strict interpretation of precaution in suggesting,

‘the presumption in favour of fishing should be reversed. Applicants for fishing rights . . . should have to demonstrate that the effects of their activity would not harm the seas’ long-term environmental sustainability.¹⁵⁹

¹⁵⁵ Reg. 345/92, amending Regulation 3094/86 laying down certain technical measures for the conservation of fishery resources, made reference to United Nations General Assembly Resolution 44/255 (see 14th recital). Notably, Art.9a of the Regulation provided for a time-limited derogation that could only be extended where the Council was satisfied, in the light of scientific evidence, that there was no ecological risk involved. Again, this may be seen as showing a reversal of the usual burden of proof. For more recent developments in EC legislation concerning regulation of drift nets see, European Commission, *Proposal for a Council Regulation amending Regulations (EC) No 894/97, (EC) No 812/2004 and (EC) No 2187/2005 as concerns drift nets*, COM(2006) 511 final and Council Reg.809/2007 giving effect to this proposal.

¹⁵⁶ Case C-405/92 *Etablissements A. Mondiet SA v Armement Islais SARL* [1993] ECR-I 6133.

¹⁵⁷ Reg.345/92 amended Reg.3094/86 which makes reference to Reg.170/83, initially establishing the CFP. Reg.170/83 was adopted under the Agriculture Title of the EC Treaty, then Art.43 now Art.37. See discussion of this at 5 above.

¹⁵⁸ N. Dhondt, *Integration of Environmental Protection into other EC Policies* (2003) at p.169.

¹⁵⁹ Royal Commission on Environmental Pollution, *Turning the Tide*, 25th Report Cm6392 (2004) para.7.59.

This interpretation of 'precaution' is not radically new in relation to fisheries management. A strong emphasis upon information requirements as a prerequisite to fishing activity has been advocated by environmental non-governmental organisations over many years. Hence, it has been suggested that,

'no new fishery should be established or existing fishery expanded until a scientifically-based management plan has been drawn up that has been shown, by simulation or otherwise, to be capable of ensuring sustainability with high probability under a wide range of possible scenarios with respect to the dynamics of the stocks and ecological interactions.'¹⁶⁰

From an ecological perspective, strict precaution is seen as a justification for the reversal of the burden of proof in recognition of the considerable scientific uncertainties that are involved. At the very least, the absence of information about a fishery should be seen as a reason for cautious exploitation and the greater the uncertainty the greater the need for caution. Most notably however, this approach places the burden of proof of showing that fishery impacts will be acceptable upon the management system or, in the most extreme interpretation, upon those who seek to be engaged in fishing.¹⁶¹ Given that fisheries research is generally recognised to be 'very expensive',¹⁶² the economic cost of discharging that burden is likely to be considerable.

The ecologists' argument is founded upon a premise that marine ecosystems should be preserved in a condition that is close to their unexploited state. Stock levels should not be exploited below their natural range of variation in abundance so that average biomass should remain at a level that is high in comparison with the average biomass that would exist if fishing did not take place. Hence, it is advocated that intensity of fishing 'should not substantially distort the character of the ecosystem' and,

'that each management plan should be able to demonstrate high statistical probability that catches do not reduce the average biomass of either target or non-target species by more than 20% compared to the expected average biomass in the absence of fishing, unless a greater removal can be shown not to have a detrimental effect on the ecosystem.'¹⁶³

This is perhaps the most extreme formulation of 'precaution' that has ever been suggested in a fishery management context, in combining the reversal of the burden of proof with a challengingly specific and stringent specification of what needs to be proved. It is not clear why a 20% departure of fish stocks from a pristine (unfished) state should be chosen as a benchmark for

¹⁶⁰ J. Cooke and M. Earle, 'Towards a Precautionary Approach to Fisheries Management' (1993) *RECIEL* 252, at p.258. Similarly, see Greenpeace International, *A Precautionary Approach to Fisheries* (1994). For a more detailed discussion of the implications of the approach that is advocated, see G. J. Hewitson, 'The Precautionary Approach to Fisheries Management: An Environmental Perspective' [1996] *International Journal of Marine and Coastal Law* 301, pp.318 to 329.

¹⁶¹ S. M. Garcia, 'The Precautionary Principle: its Implications in Capture Fishery Management' (1994) 22 *Ocean & Coastal Management* 99, at p.107.

¹⁶² European Commission, *Biodiversity Action Plan for Fisheries* COM(2001) 162, para.66.

¹⁶³ J. Cooke and M. Earle, 'Towards a Precautionary Approach to Fisheries Management' (1993) *RECIEL* 252, at p.258.

sustainability, but it is evident that showing this, and the absence of 'distortion' in the ecosystem, would constitute a formidable scientific challenge for those seeking to authorise, or engage in, fishing activities.

Is this a model for the kind of 'precaution' that needs to be adopted in the CFP? The 'manager's dilemma', shared by those entrusted with the regulation of fisheries, is that

'by always leaning backwards in regulation, *giving to the resources the benefit of the doubt*, he might come up with reasonable assurance of protecting the resource, except that the economic survival of thousands of individuals, hundreds of communities and dozens of countries may be affected by the administrative action taken.¹⁶⁴

In short, whilst the precautionary principle is capable of providing an opportunity to ensure sustainable fisheries development, 'its careless generalisation to fisheries could, however, lead to economic and social chaos in the fishing industry'¹⁶⁵ and depriving consumers of a valuable product. The important point here is that precautionary action needs to be cost-effective or proportionate to the gravity of the problem that it is seeking to address. Precautionary measures in fisheries have a socio-economic cost which may be excessive if measures exceed what is needed to ensure the sustainability of a fishery. Moreover, given the uncertainties involved, there is no way of knowing in advance whether any particular measure is more precautionary than is needed to achieve social, economic and environmental sustainability of fishing activities. There are, therefore, good reasons to be cautious about over-precaution in fisheries. The challenge is that of reducing ecological risks to acceptable levels, rather than totally excluding those risks, and doing this in a way that reflects the benefits of fish harvesting to consumers, communities and fishers.¹⁶⁶

On the question of whether the approach to 'precaution' that has been adopted in the reformed CFP has achieved this balance or not, the jury is still out. More time is needed to assess the ecological effectiveness of the recovery plans that have been put in place and to ascertain whether the powers to adopt emergency measures for conservation area being sufficiently widely applied. What seems clear is that 'precaution' in fisheries is a matter of degree and, if the present version is not sufficient, there are other markedly more stringent variants waiting in the wings to address and continuing problems of ecological unsustainability in the CFP.

20. Concluding Observations

¹⁶⁴ S. M. Garcia, 'The Precautionary Principle: its Implications in Capture Fishery Management' (1994) 22 *Ocean & Coastal Management* 99, at p.103, quoting, with added emphasis, M. C. James, 'Fishery Administrators' Problems', *Proceedings of the Gulf of Caribbean Fisheries Institute*, Third Annual Session (November 1950) 13.

¹⁶⁵ S. M. Garcia, 'The Precautionary Principle: its Implications in Capture Fishery Management' (1994) 22 *Ocean & Coastal Management* 99, at p.100.

¹⁶⁶ More generally on the potentially 'paralysing' effect of precaution and the danger of lost 'opportunity costs' to which it gives rise see C. R. Sustain, 'Beyond the Precautionary Principle' (2003) 151 *University of Pennsylvania Law Review* 1003 and, for a range of critical views, see J. Morris, Ed., *Rethinking Risk and the Precautionary Principle* (2000).

In reviewing the application of the precautionary principle in the CFP, it has been apparent that securing sustainable management of harvested natural resources raises significantly different issues from those arising in other environmental contexts where precaution has been called into play. The need for a precautionary approach is activated by scientific uncertainty as to serious or irreversible impacts of an activity. Fisheries management abounds with scientific uncertainties, but these uncertainties are of a different kind to those that arise in other environmental contexts. The general character of ecological impacts of fishing are fairly well appreciated, but precaution needs to be applied in determining the *extent*, rather than the nature, of those impacts. This exercise needs to be undertaken against a background of value judgments as to the bounds of ecological acceptability and the socio-economic costs that are justifiably incurred in securing an ecologically acceptable level of exploitation.

Although the Community's Environment Policy and the integration obligation have provided good starting points for the discussion, they are less helpful in relation to challenge of securing sustainable fishery management than they might be in other environmental contexts. The need to apply the precautionary principle to the 'prudent and rational utilisation of natural resources' stands in direct opposition to the need to take account of 'available scientific data', particularly where that data is incomplete or uncertain. Essentially the same underlying tension is reflected in the CFP which seeks to take a precautionary approach to fisheries management and yet requires a decision-making process based on 'sound scientific advice'.¹⁶⁷ Information deficit seems equally capable of being used as a justification for action or inaction.

Within the CFP, regulatory and management mechanisms have previously been catastrophically unsuccessful in reconciling the environmental, social and economic objectives of the policy. The wording of the reformed CFP gives prominence to a precautionary approach and the need to reduce ecosystem impacts, but it may take some time for the substantial impact of these developments to become apparent. In practical terms, the methodology of determining TACs according to multiannual plans based upon biological reference points, including sufficient safety margins, has the attraction of shielding these determinations from undue political interference. Nonetheless, some time will be needed to ascertain whether multiannual recovery plans are sufficient to bring stocks back to sustainable levels and whether they are adequate to address broader ecosystem impacts. Similarly, whilst the provisions for emergency measures to be taken for conservation purposes under the reformed CFP are welcome, the stringency of the scientific evidence that is required to activate such actions will be a test of how 'precautionary' these provisions really are. Again, the initial indications seem to suggest that actions will be based on 'sound science' rather than making allowances for scientific uncertainty. The problems of disentangling rhetoric and reality in the CFP are as great as ever.

¹⁶⁷ Contrast, Art.2(1) with Art.2(2)(b) in the Basic CFP Reg.2371/2002.

Given the alarmingly over-exploited state of Community fish stocks and the serious damage inflicted upon marine ecosystems by fishing activities, the developments in the CFP have considerable potential to secure greater sustainability. Whether sustainability will actually be achieved or not is an open question, answerable only in the light of the experience gained by some years of operation of the reformed Policy. By some comparisons that have been drawn, the interpretation of 'precaution' that has been adopted in the reformed CFP is relatively moderate. There may be good reasons for that moderation given the unwarranted socio-economic costs of taking an over-precautionary approach. Whether a sufficient degree of stringency towards precaution has been adopted in the reformed CAP must depend upon whether it actually succeeds in bringing stocks back to safe levels and preventing unacceptable levels of ecosystem damage. As has been seen, 'precaution' is a matter of degree in fisheries management. In the event of the reformed CFP failing to achieve its objectives, a stricter kind of precaution will be needed.