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A GLOBAL CHALLENGE: IMPLEMENTING THE ECOSYSTEM-BASED APPROACH TO FISHERIES MANAGEMENT

Credit: FAO

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An ecosystem approach to fisheries (EAF), also commonly known as ecosystem based fisheries management (EBFM), is now widely accepted as the essential framework for fisheries. EAF was first formally endorsed by the sector when 45 countries participating in the Reykjavik Conference on Responsible Fisheries in the Marine Ecosystem (October, 2001) released the Reykjavik Declaration which included the commitment "that, in an effort to reinforce responsible and sustainable fisheries in the marine ecosystem, we will individually and collectively work on incorporating ecosystem considerations into that management". The Declaration was subsequently endorsed in the Plan of Implementation of the World Summit for Sustainable Development, Johannesburg, 2002 where it was agreed to "Encourage the application by 2010 of the ecosystem approach"(Paragraph 29d).

Australia has been one of the leading nations moving forward on implementing EAF. Through this process, the nation has developed a flexible and effective model for identifying and prioritizing the key EAF issues in a fishery and formulating a management response to address the higher priority issues. FAO adopted this broad approach in the Technical Guidelines to assist countries in their own efforts (FAO, 2003)[1] and has also been working with a number of countries, including Angola, Brazil, Namibia, Papua New Guinea and South Africa in implementation of EAF either at national level or in particular fisheries. Of these projects, the work with the three southern African coastal states of the Benguela Large Marine Ecosystem has advanced the most and good progress has been made within a three-year cooperative project involving Angola, Namibia and South Africa, with support from the Global Environmental Facility (GEF) and FAO. At the end of the project, the countries have identified the major issues or gaps in their current management approaches when considered from the perspective of EAF, prioritised those issues and considered the costs and benefits of alternative approaches to addressing them. While work still needs to be done to review and refine the results, the countries now have a much clearer vision of where management action is required to ensure sustainable fisheries within the Benguela ecosystem and what this will entail.

The European Commission too is working towards implementation of EAF through a number of instruments. The reformed Common Fisheries Policy aims for responsible and sustainable fisheries and aquaculture that 'contribute to healthy marine ecosystems' and promote progress towards an ecosystem-based approach to fisheries (Roadmap 181, 2002). Complementing this, the Marine Strategy Directive recognised climate change and fisheries as two of the most important pressures on European Seas and recognises that "The marine environment is a precious heritage that must be protected, restored and treated as such with the ultimate aim of providing biologically diverse and dynamic oceans and seas that are safe, clean, healthy and productive." (Proposal for establishing a Framework for Community Action in the field of Marine Environmental Policy, COM(2005) 505 final).

Despite the progress being made, many countries and agencies are still grappling with interpreting just what is intended by the term EAF. In fact, EAF is nothing revolutionary or new, it is simply the explicit and active recognition that fish and fisheries do not exist in isolation but both influence and are influenced by events and processes in the ecosystem in which they occur. These wider interactions include, for example, bycatches of non-target species which may include species of conservation concern, or ecological significance. Impacts of other human activities on critical habitats, as well as climate change, may also impact on the long-term productivity and diversity of an ecosystem. These and other influences and interactions must be recognised and managed, or adapted too when unavoidable, in ways that do not jeopardize the options for future generations.

While simple in concept, the conflicts and the decisions on trade-offs that will be necessary for implementation of EAF are likely to be complex and far-reaching, requiring time, full consultation and participation, and the best available scientific and stakeholder knowledge to resolve satisfactorily. The alternative, to ignore the realities of significant interactions and their implications and to continue to pursue narrow sectoral goals in isolation can only lead to a downward spiral in the quality of our marine ecosystems and the goods and services we want and need from them.

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1 FAO 2003. Fisheries Management 2. The ecosystem approach to fisheries. FAO Technical Guidelines for Responsible Fisheries. 4 (Suppl. 2): 112 pp.

Issue 19 of this Newsletter will be produced in November 2007. If you have material to send or comments, please contact the editor: Indrani Lutchman, Institute for European Environmental Policy (IEEP), 28 Queen Anne's Gate, London, SW1H 9AB, UK. Tel +44 (0)20 7799 2244; Fax +44 (0)20 7799 2600; email ilutchman@ieep.eu

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Edited by Indrani Lutchman of IEEP

The IEEP wishes to acknowledge the financial support of the Oak Foundation for this special edition of El Anzuelo on the ecosystem-based approach to fisheries management.

Contributions from: Kevern Cochrane (FAO); Dr Tony Hawkins (Loughine Ltd); ; Simon Jennings (CEFAS); Charles Berkow (Green Party, Sweden); Didier Gascuel (Agrocampus Rennes); Chris Grieve (Meridian Prime); Katherine Short (WWF INternational); Indrani Lutchman and Thomas Binet (IEEP).

'Taking stock' - five years from the CFP 2002 reform, what has been achieved?

Faisons le point: cinq ans après la réforme de la PCP de 2002, où en sommes-nous?

Indrani Lutchman, Editor, IEEP

Since 2002, the EU institutions have developed a raft of new legislation, developed new institutions and worked to implement the new framework (Regulation 2371/2002) with a view to meeting its obligations. 2007 is an important year for the CFP since it marks the mid-point between the reform of the CFP in 2002 and the next official review in 2012. No official review is planned for this year. However, the Commission plans to review the functioning of the Regional Advisory Councils (RACs) and report on the environmental performance of the CFP, as set out in its 2002 CFP environmental action plan (COM(2002)186). While these reports are still pending, recent developments provide an opportunity for reflection on achievements and further comment on the challenges that the Commission, Member States and stakeholders face in achieving the CFP objectives by 2012.

Where have we got: 2002-2007

In the annual fisheries policy statement for 2008[1], the Commission highlights three major achievements since 2002 – the creation of the Regional Advisory Councils (RACs); improvements made to the EU control and enforcement systems; and the establishment of long term management plans for key fish stocks.

Stakeholders involvement: has it made a difference?

One of the pillars of the CFP reform was the establishment of RACs to increase stakeholder involvement in the CFP. To date six out of the planned seven RACs have been established, with the Mediterranean RAC outstanding.

In some ways, it is too early to judge the effectiveness of the existing RACs but the Commission has already indicated that its experience with the RACs so far has been positive, or at least has a strong faith that they will be effective. On this basis, the Commission proposed a new financial arrangement to assist the RACs to fulfil their duties. This additional support, subsequently adopted by the Council, increases the level of EU funding to the RACs to cover up to 90 per cent of operating costs. The increase in funds is a positive signal to the RACs that they have an important role to play in further implementation of the CFP, especially on critical issues such as the future of the recovery plans and achievement of the MSY target. It may be argued however that such an increase in funding is perhaps premature when the first evaluation report has not yet been undertaken.

Long term management and recovery plans

The new basic Regulation strengthened the case for moving towards more strategic management through multi-annual or long term management plans and an explicit requirement that 'the Council should adopt, as a priority, recovery plans for fisheries exploiting stocks which are outside safe biological limits'. In this respect, the Council has largely acted on this point and adopted a series of management plans and species recovery plans since 2004: North Sea cod recovery plan (2004); northern hake recovery plan (2004); southern hake

1 **http://ec.europa.eu/fisheries/publications/factsheets/legal_texts/com_07_295_en.pdf**

Depuis 2002, les corps institutionnels de l'Union Européenne ont développé plusieurs nouvelles législations, elles ont mis sur pied de nouvelles institutions et ont aussi travaillé à la mise en place d'un nouveau cadre réglementaire (Règlement 2371/2002) avec la ferme intention de tenir les engagements fixés. Même si aucune révision de la PCP n'est à l'ordre du jour cette année, 2007 s'annonce comme une année importante pour la PCP car elle est à mi-chemin entre la réforme de l'ancienne PCP de 2002 et la prochaine révision en 2012. Cette année cependant, la Commission doit réviser le fonctionnement des Conseils Consultatifs Régionaux (CCR) et faire le bilan sur les performances environnementales de la PCP, comme cela a été prévu dans le plan d'action environnemental de la PCP de 2002 (COM(2002)186). Il est difficile à l'heure actuelle de faire des commentaires là-dessus car ces rapports ne sont pas encore disponibles. Mais un certain nombre d'avancées faites au cours des six derniers mois fournissent une matière à réflexion et autorisent des commentaires sur les défis auxquels la Commission, les Etats-membres et les acteurs doivent faire face pour atteindre les objectifs de la PCP à l'horizon 2012.

La situation actuelle: 2002-2007

Dans sa déclaration annuelle sur la politique des pêches pour 2008[1] , la Commission a rappelé trois réalisations majeures depuis 2002: la création des CCR, des améliorations dans les systèmes de contrôle et d'exécution de l'activité de pêche au sein de l'UE et l'établissement de plans de gestion à long-terme pour plusieurs stocks halieutiques d'importance.

Implication et participation des acteurs: a-t-on observé des différences ?

Un des piliers de la réforme de la PCP a été la mise en place des CCR permettant une participation accrue des acteurs dans la PCP. A ce jour, six parmi sept CCR prévus ont vu le jour, seul le CCR de Mer Méditerranée reste à être mis sur pied.

Par bien des aspects, il est encore trop tôt pour juger de l'efficacité des CCR. Mais la Commission a d'ores et déjà indiqué que l'expérience des CCR a été positive jusqu'à présent et croit fermement en l'efficacité de ceux-ci. En conséquence, la Commission a proposé d'aider financièrement les CCR dans la réalisation de leurs objectifs. Cette aide supplémentaire de l'UE, adoptée par le Conseil, permettra de financer à hauteur de 90% les coûts opérationnels des CCR. Cette augmentation du soutien de l'UE apparait ainsi comme la preuve que les CCR ont un rôle important à jouer dans les développements futurs de la PCP, notamment sur des sujets sensibles comme les plans de reconstitution ou la transition vers des pêcheries exploitées au MSY. Un tel soutien de la part de la Commission est encourageant, pourtant, l'augmentation des financements en faveur des CCR peut paraitre un peu prématurée alors que le premier rapport d'évaluation n'a pas encore vu le jour.

Gestion à long-terme et plan de reconstitution

La nouvelle Règlementation de base a insisté sur le fait de disposer d'une gestion plus stratégique grâce à des plans multiannuels ou des plans de gestion à long-terme. Elle a aussi rappelé que «le Conseil devrait adopter en priorité des plans de reconstitution pour les pêcheries exploitant des stocks en-deca des niveaux de sûreté biologique ». Pour cela, le Conseil a adopté une série de plans de gestion et de plans de reconstitutions par espèce dès 2004: le plan de reconstitution de la morue de Mer de Nord (2004), du merlu du nord (2004), du merlu du sud et de la langoustine (2005), ainsi que le plan multiannuel de gestion pour la sole du Golfe de Gascogne (2006). Plus récemment, le Conseil a donné son accord sur un Règlement établissant les mesures pour des plans de reconstitution du stock d'anguilles européennes et de la morue de la mer Baltique. Ces plans entreront en vigueur en 2008.

1 **http://ec.europa.eu/fisheries/publications/factsheets/legal_texts/com_07_295_en.pdf**

and Norway lobster stocks recovery plan (2005) Bay of Biscay sole multi-annual plan (2006); and more recently at the July 2007 Council reached agreement on a Regulation establishing measures for the recovery of the stock of European eel and a recovery plan for the Baltic Sea cod which will enter force in 2008.

It is too early to comment on the effectiveness of these plans but there are concerns that the contribution of the days-at-sea limits to stock recovery is lacking and the plans themselves has been criticised as overcomplicated and difficult to monitor and enforce. The newly established Community Fisheries Control Agency (CFCA) may assist with better enforcement. In July 2007, the CFCA adopted its first joint deployment plan (JDP) on the North Sea cod fisheries which will coordinate the enforcement capabilities of seven EU Member States,: Belgium, France, Denmark, Germany, the Netherlands, Sweden and the UK to monitor the North Sea, Kattegat, Skagerrak and the Eastern Channel and ensure compliance with the monitoring programme for the cod recovery plan, which was established in 2005. This level of cooperation under the EU umbrella marks a new era towards improving monitoring, control and surveillance, even if it is currently limited to specific stocks which meet the JDP criteria i.e. that stocks must have a long term recovery plan and a specific control and enforcement plan adopted by the Commission. The CFCA also intends to put in place two other plans in 2008, one for cod in the Baltic Sea and the other in support of the recovery plan for bluefin tuna in the Mediterranean which adopted by the International Commission of the Conservation of Atlantic Tuna (ICCAT) in 2006 and which was transposed into EU law in 2007. .

Despite these improvements, the Commission concluded that 'the number of stocks at risk appears neither to be decreasing nor increasing and about four-fifths of stocks remain outside known safe biological limits.' In addition, only three stocks under TACs (North Sea haddock, North Sea saithe and megrims in the Bay of Biscay) are exploited consistently with the commitments made at the UN World Summit on Sustainable Development in Johannesburg in 2002 about MSY, a target which the Commission, Member States and stakeholders are committed to achieve by 2015.

Furthermore, whilst the latest economic data suggest that productivity is recovering in some EU fleets, economic performance of the trawl fleet for example has deteriorated in recent years due to the higher fuel costs.

Time to take the 'fish by the fins'

The CFP has come a long way since the original 'basic' conservation Regulation of 1992. As was the case under the former framework however, all the achievements in the last five years are in the face of the key management challenge – how to address fishing capacity and effort. The European Fisheries Fund (EFF) adopted in 2006 (Regulation 1198/2006) offers new opportunities to ensure 'a sustainable balance between fish stocks and the Community fishing fleet' (Article 4), against the principle that 'operations financed by the EFF shall not increase fishing effort' (Article 6(5)). As national strategic plans (NSP) and operational programmes (OP) are only now being finalised it is difficult to predict what the impact of the EFF will be on tackling overcapacity and fishing effort. But the reality is that actual reductions in fishing capacity and effort hinge on the provision and uptake of public aid to permanently cease fishing and for Member States to resist pressure to support engine replacement.

Looking ahead, the Commission faces a number of challenges in meeting its targets before 2012, not least how to ensure the new Member States buy into the CFP principles, how to operate within the expanded 'EU marine territory' and the problems associated with new political demands and economic pressures to address increasing fuel prices. The EU must not lose sight of their commitments to furthering implementation of the CFP and must keep its eye on the environmental agenda as competing political drivers are also set to further influence EU fisheries policy and broader maritime policy in the next five years.

Il est encore trop tôt pour conclure quant à l'efficacité de tels plans mais il apparait cependant que la limitation de l'effort de pêche (par une restriction du nombre de jours de mer) est insuffisante. Pour beaucoup le plan présente aussi une complexité excessive, ce qui rend le suivi et le contrôle des activités difficile. L'Agence de Contrôle des Pêches de la Communauté (ACPC) récemment mise en place a adopté en juillet 2007 le premier plan de déploiement conjoint (PDC) qui aura comme tâche d'offrir une coordination des capacités de contrôle de sept Etats-Membres : la Belgique, la France, le Danemark, l'Allemagne, les Pays-Bas, la Suède et le Royaume-Uni. Cette surveillance s'effectuera sur la Mer du Nord, le Kattegat, le Skagerrak et la Manche-est, en accord avec le programme de suivi du plan de reconstitution de la morue de Mer du Nord, mis en place en 2005. Cette coopération entre pays sous l'égide de l'UE marque une nouvelle étape vers une amélioration du suivi, du contrôle et de la surveillance, même s'il ne s'agit là que de stocks particuliers qui entrent dans les critères du PDC, c'est-à-dire que les stocks sont dotés d'un plan de reconstitution à long-terme et d'un plan de contrôle et d'exécution spécifique adopté par la Commission. L'ACPC prévoit en outre de mettre en place deux autres plans en 2008, un pour la morue de la Mer Baltique et un autre pour le thon rouge de Méditerranée. Ce dernier a été adopté par la Commission Internationale pour la Conservation des Thonidés de l'Atlantique (CICTA) en 2006 et a été transposé en une loi européenne en 2007.

En dépit de ces améliorations, la Commission a déclaré que « le nombre de stocks courant un risque ne semble ni diminuer ni augmenter et environ quatre-cinquième des stocks restent encore au-dela des niveaux de sûreté biologique ». En outre, seulement trois stocks sous TAC (eglefin de Mer du Nord, lieu noir de Mer du Nord, cardine du Golfe de Gascogne) sont exploités conformément aux engagements passés à propos du MSY dans le cadre du Sommet Mondial du développement Durable des Nations Unies à Johannesburg en 2002; objectifs de MSY que la Commission, les Etats-Membres et les acteurs s'emploieront à atteindre d'ici l'horizon 2015.

D'autre part, alors que les dernières données économiques suggèrent que la rentabilité de quelques flottilles présente une sensible amélioration, les performances économiques de la flotte chalutière par exemple n'ont cessé de chuter ces dernières années, notamment à cause de la hausse du prix du carburant.

Il est temps de passer à l'action

La PCP a énormément progressé depuis le premier Règlement de 1992. Cependant, comme c'était le cas pour le précédent cadre réglementaire, toutes les actions entreprises au cours des cinq dernières années sont encore confrontées à des défis majeurs en matière de gestion des pêches, par exemple, comment limiter la capacité ou l'effort de pêche ? Le fonds Européen pour la Pêche (FEP) adopté en 2006 (Règlement 1198/2006) offre de nouvelles opportunités pour assurer « un équilibre durable entre les stocks halieutiques et la flotte de pêche communautaire » (Article 4), en tenant compte du principe selon lequel « les opérations financées par le FEP ne doivent pas accroitre l'effort de pêche » (Article 6(5)). Alors que les Plans Stratégiques Nationaux (PSN) et les Programmes Opérationnels (PO) en sont à leur stade de finalisation, il parait difficile de prévoir quels seront les effets du FEP sur la limitation de la surcapacité et de l'effort de pêche. En réalité, les réductions actuelles de capacité et d'effort se basent essentiellement sur l'utilisation des aides publiques pour réduire de manière durable la pêche. Il s'agit aussi pour les Etats-Membres de résister à la pression de la part des pêcheurs pour l'aide au remplacement des moteurs.

La Commission doit dès lors faire face à de nombreux défis pour atteindre ses objectifs avant 2012, dont celui de s'assurer que les nouveaux Etats-Membres rentrent dans les principes de la PCP. Elle doit aussi faire en sorte d'exercer son autorité au sein d'un «mer» européenne élargie et présentant ainsi des besoins nouveaux en terme de politique mais aussi des pressions économiques engendrées par la hausse du prix du carburant. L'UE ne doit pas oublier la mission qu'elle s'est fixée d'améliorer la PCP mais doit aussi garder à l'esprit ses engagements en matière d'environnement alors que la mise en place de politiques en conflit avec ces objectifs risque d'influencer la politique des pêches de l'UE et la politique maritime désormais élargie au cours des cinq prochaines années.

Are RACs achieving their aim of attaining more sustainable fisheries?

Dr Tony Hawkins provides an update of some of the North Sea Regional Advisory Council deliberation of EBA concept and principles and his perspective on the role of RACs in furthering implementation.

Regional Advisory Councils (RACs) were established by the European Commission to promote better governance of fisheries. The first Regional Advisory Council, for the North Sea, began its work in November 2004. From the outset, the North Sea RAC proposed to provide advice 'within the general aim of attaining sustainable fisheries, incorporating an ecosystem based approach and based on the precautionary principle'. The Pelagic RAC, the North West Waters RAC and the Baltic RAC have all followed that lead.

At the Køge Conference, where the Commission began the development of its new strategy to protect and conserve the marine environment, the approach was defined as "the comprehensive integrated management of human activities based on best available scientific knowledge about the ecosystem and its dynamics, in order to identify and take action on influences which are critical to the health of the marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity". This definition may be clear to scientists but it not easily understood by stakeholders and non-specialists and this may be one of the reasons for slow progress in its implementation. To those working within the RACs, it is not always clear how the approach can be translated into specific regional goals.

Can the new RACs help by introducing a pragmatic version of the ecosystem approach? The North Sea RAC made a good start by introducing its own 'Environmental Protocol'. The protocol accepts that fisheries modify ecosystems through their impacts. It is also inevitable that all fisheries management measures – whether they are catch quotas, effort restrictions, spatial measures or technical regulations – will have implications for ecosystems. The protocol stresses that the fisheries sector is especially dependent upon a healthy ecosystem for its own survival. The protocol commits the North Sea RAC and its working groups to consider the impacts of their policy proposals or advice on the marine environment as well as on the fishing industry and local communities.

The RACs have not just pledged themselves to consider ecosystems in preparing their advice but they have also taken firm steps to ensure that a more rounded and holistic approach is taken in managing fisheries. In its first year of operation the North Sea RAC brought together a focus group of scientists, fishers and environmental interests to examine ways of achieving more sustainable fisheries. The group concluded that in most of the North Sea fisheries lower fishing mortalities (F) would generally bring higher yields. It was agreed that persuading fishers of the benefits of moving towards low F, high yield fisheries was an important task. However, the group was unhappy with the emphasis on single fish stocks which was implicit in the MSY approach which they viewed as too simplistic a target for practical use.

Credit: CRTB

Fishers have an important role to play through RACS in EBA implementation

An alternative strategy would be to bring all stocks above safe biological limits, with higher biomasses, by controlling effort within the fishery. The focus group suggested that the RACS, with the European Commission and advice from technical experts, should commence by identifying the main fisheries and fleet segments and then choose targets based on harvest control rules that were robust to uncertainty, rather than through fixed definitions of reference points. The aim should be to move in the direction of more sustainable fisheries at a rate to be discussed and agreed by all interested parties.

In 2006, the North Sea and North West Waters RACs joined in a workshop to take forward discussions on long term management plans for the main fisheries. The workshop concluded that management of large volume demersal fisheries had largely failed in the North Atlantic. The CFP had been a particular failure largely due its short term single-species approach. Strengthening co-management through the RACs was the obvious first step towards better management, the fishing industry joining with fishery managers to develop long term management plans for defined fisheries.

A set of key principles for long-term management planning were put forward during the workshop including the need for "adaptive management", which makes incremental changes and then considers whether the fishery has responded as predicted. Subsequently the North Sea and North West Waters RACs have combined to set up a series of development groups and area working groups, aimed at agreeing long term management plans for different fisheries in the eastern part of the North Atlantic. At the same time the Pelagic RAC is working on its own management plans for the main pelagic fisheries. In all cases, advice and assistance is being sought from a range of scientists and technical experts, including economists and social scientists. The first long term management plans will begin to emerge from the RACs later this year.

The RACs were introduced to improve governance within the CFP. Their overall objective is to work towards integrated and sustainable fisheries based on the ecosystem approach. The RACs have made good progress in routinely providing advice to the Commission on this basis. Most significantly, however, they have taken their own initiative to adopt a more holistic approach to fisheries management. In particular, they have independently set out to achieve more sustainable fisheries by focusing on the preparation of their own long term fishery management plans. The RACs are now providing fishers with the opportunity to take responsibility for their own future, by seeking more sustainable yields from their fisheries. To achieve this aim, the RACs are working side by side with experts from Member States. Progress already made by the RACs is impressive, and creates optimism for the future. The wider role of the RACs within the new European Marine Strategy remains to be discussed but it is evident that they can play a key role in promoting sustainable management on a regional scale.

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Towards an ecosystem approach to fisheries

Simon Jennings is a UK scientist with long standing experience of the the science behind the EU fisheries management. He provides his perspective on the challenges ahead for the EU.

Credit: www.timmckenna.com

Political commitment to adopting an ecosystem approach to fisheries (EAF) is near universal. In Europe, the CFP Council Regulation commits to the 'progressive implementation' of EAF[1] . According to the FAO, the broad purpose of an EAF 'is to plan, develop and manage fisheries in a manner that addresses the multiplicity of societal needs and desires, without jeopardizing the options for future generations to benefit from a full range of goods and services provided by marine ecosystems'. Thus EAF requires that issues of environmental sustainability, formerly dealt with on an ad-hoc basis, are treated as a central issue in management.

The objectives of EAF formalize political and societal expectations about the state of the environment, usually reflecting the outcome of complex negotiations that take account of short and long-term economic, social and environmental interests. To support implementation, it is essential that high level objectives (e.g. 'to minimise the impact of fishing activities on marine ecosystems') can be translated into operational objectives that provide a specific and visible statement of intent against which all stakeholders can judge the performance of management. When developing and agreeing upon operational objectives for EAF it would be helpful to base this process on an understanding of the tradeoffs among objectives and an assessment the tractability of management actions that might be needed to meet them.

To implement EAF, short-term needs for catches need to be reconciled with the long-term need for sustainability of target species and other ecosystem components, especially vulnerable non-target species and habitats. For this reason, operational objectives are likely to be more varied than those supporting single-species management and the scientific advice provided in support of an EAF is likely to be broadly consistent with existing scientific advice in support of single-species management: that in many cases significant capacity reductions will be needed to meet the operational objectives.

To date, and globally, there has been limited political commitment to bear the high short-term costs associated with moving towards sustainable fisheries. Whether this changes with the progressive implementation of EAF is likely to depend on how society perceives fisheries and how markets and regulators change the incentives that influence the behaviour of the fishing industry. Changes in single-species management such as the development of long-term management plans and action to meet the WSSD MSY targets will help support progressive implementation of EAF, since sustainable fisheries for target stocks are associated with levels of fishing effort that will have less impact on the marine environment. At present, the main issues to be addressed when moving towards an EAF are the needs to develop compatible operational objectives based on a prioritization of fishing impacts (an assessment of what matters), to remove excessive fishing capacity where objectives are compromised and to develop technical mitigation measures and incentives to reduce the environmental impact of the fishing industry.

Within Europe, some groups are starting to consider practical approaches to the incremental implementation of EAF. For example, in the Celtic Sea and western Channel, the UK Department of Environment, Food and Rural Affairs are funding a pilot study of EAF. The project team will work with stakeholders to identify management objectives for the region and to develop and test indicators that allow fisheries managers and stakeholders to assess the relative impacts of fishing on the ecosystem. The project will also give managers and stakeholders 'decision tables' letting them see the effects of different management options.

European attempts to improve the environmental performance of fisheries are timely. Both EU Maritime Policy and the Marine Strategy Directive may encourage direct comparisons between the environmental performance of fisheries and other human uses of the marine environment. The EAF provides a framework within which the environmental performance of fisheries can be monitored, assessed, reported and managed; and attempts to develop and implement an EAF will provide the experience needed to support any future requirements for Environmental Impact Assessment and Strategic Environmental Assessment of fisheries.

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1 The CFP Council Regulation uses the term 'an eco-system based approach to fisheries management' which we treat as synonymous with EAF

Apart from acting as a source of independent information on fisheries. and the environment, El Anzuelo aims to present different perspectives on the issues, and thereby encourage discussion and debate among the various player. If you wish to respond to material included in this or the previous issue, we would be happy to hear from you.

Long-term management plan for Baltic Cod

In June this year, EU ministers finally agreed on a new long term management plan for the Baltic cod. Unfortunately, it dooms the cod to continued crisis. Further, it does not even meet the requirements set down in the Basic Regulation, the foundation of the EU Common Fisheries Policy.

A cornerstone of the reform of the EU's Common Fisheries Policy 2002 was an increased emphasis on long-term management plans. Articles 5 and 6 of the Basic Regulation specify under what conditions recovery or management plants should be adopted, and what they should contain.

Article 5 states that recovery plans should be adopted when fishing stocks are in serious crisis, i.e. spawning stock biomass (SSB) is below safe biological limits (Blim). This is clearly the case for the eastern stock of the Baltic cod. ICES defines Blim as 160 000 tonnes, SSB has been below it for a decade, two years ago around 70 000 tonnes. According to Article 5, a recovery plan should include reference points suggested by the relevant scientific body, targets, and a time frame for when these should be expected to be achieved.

The Commission proposal for a new plan for Baltic cod, published in July, 2005, did not contain these key elements. In consequence, it was also not called a recovery plan. The official explanation was that the proposed plan covered two stocks, the eastern and western. The western stock, in better shape, qualified for a management plan. So the Commission called the joint plan a 'Long Term' plan.

This ignored the fact that ICES had long emphasized the need for separate management of the two stocks, something finally decided in 2004 on the eve of the accession of Poland, Estonia, Latvia and Lithuania to the EU. On the other hand, the long term management plan had separate regulating articles for the eastern and western stocks.

Credit: Thomas Binet

The new long-term management plan brings even more uncertainty than former management plans for the Baltic Sea.

The recently launched long-term management plan for Baltic Sea cod presents lots of uncertainty about its reference points and targets. Charles Berkow, Environmental Policy Advisor from the Green Party in Sweden, gives details about those weaknesses and limitations of this plan.

A more obvious flaw was that the proposed plan contained no time frame for when targets were expected to be met. Such a time-frame would have been embarrassing, as the plan is so weak it would take a long time to meet the targets. On the adoption of the plan, a Swedish press report quoted a Commission official as admitting it would take about 9 years, maybe, to reach the target.

Perhaps a more serious weakness is that the plan does not contain adequate reference points. There is no target expressed in terms of SSB or Blim. Instead, the target is fishing mortality (F). This probably does not fulfil the letter of the Basic Regulation. Clearly, though, it is much more difficult for the media and politicians to actually understand what fishing mortality is.

Indeed, even the experts are unclear as to what the plan actually means. Shortly before the plan was adopted by the Council, ICES pointed out that it was uncertain what definition of F was. ICES also stated that the plan would result an increase of total allowable catches (TAC) for the eastern stock of 15 per cent, at the same time as ICES was recommending a closure of fishery.

The new EU plan is both weaker and less clear than the management plan adopted by the International Baltic Sea Fisheries Commission (IBSFC) in 2003. Swedish Green MP's pointed this out to the Commission in a letter last year, and asked that the Commission submit a new proposal that at least met the requirements of the Basic Regulation. In a new version, submitted just before the Council meeting in June, the Commission added new language stating that the plan was to be considered a recovery plan under Article 5. This was purely cosmetic, as there were no changes to ensure that the plan would actually meet the specified criteria.

In substance, the plan sets limits on how much the TAC's should increase or decrease per year, that is, 15 per cent, and fishing effort (another unclear term), by 10 per cent.

What the plan clearly does do is give the Commission and the Council liberty to continue to ignore scientific advice.

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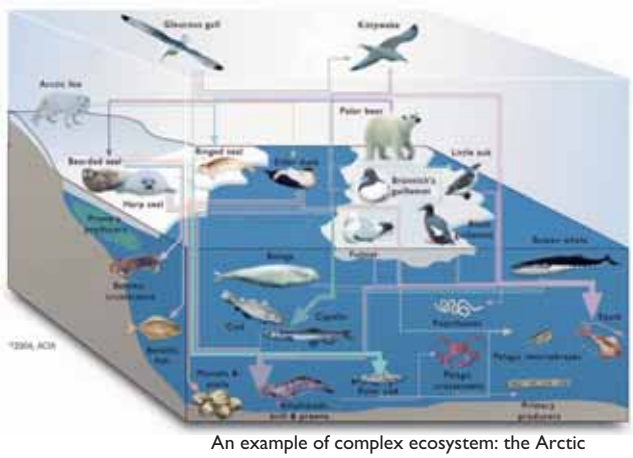
IEEP FISHERIES PROGRAMME DEVELOPMENTS

Thomas Binet joined IEEP in May 2007 as a Policy Analyst with the Fisheries Programme. Thomas comes to us from the OECD Fisheries Policy Division with experience on fisheries economics, policy and management as well as practical experience of fisheries and the environment.

Implementing the ecosystem approach to fisheries: a very slow revolution in Europe

Didier Gascuel is Professor and Director of the Fisheries and Aquatic Sciences Center of Rennes (France). From a scientist's point of view, he raises the point that the ecosystem-based approach to fisheries management is a "required revolution" but stresses the limits of such a tool, especially in the context of European fisheries.



Credit: ACIA, 2004

An example of complex ecosystem: the Arctic

The EU fisheries Policy, is largely based on the scientific advice formulated by committees of the International Council for the Exploration of the Sea (ICES). Their advice is supposed to ensure long term sustainability of exploited stocks and marine ecosystems. However, for a long time, the advice from ICES has overwhelmingly related to 'the single species' approach, leading to the adoption of annual Total Acceptable Catches (TACs) for the main target stocks. More recently, the need to implement of the Ecosystem Approach to Fisheries (EAF) is recognized to be a priority by scientists and managers as well. Notably, in Europe, this approach was identified in the Green paper on the future of the Common Fisheries Policy (European Commission, 2001) as a strategic choice. Unfortunately, despite numerous legal interventions and declarations, the evolution of the concept has been very slow and some of its key objectives will likely not be achieved in the defined time limits.

Following the adoption of the "Precautionary Principle in Environmental Management" (UNCED, 1992) and of the "Code of Conduct for Responsible Fisheries" (FAO, 1995), the ICES procedure for the production of scientific advice has been significantly modified, with adoption in 1998 of the so called "precautionary approach", sometimes presented inappropriately as a first step for the implementation of EAF. This approach is still the key for determining scientific TACs recommendations. Undoubtedly, it has had positive effects for some severely depleted stocks, usually leading to more restrictive access to allow stock recovery. Nevertheless, the overall state of European fishes stocks remains grim with the situation deteriorating for some species.

In addition, the approach is nearly always used in assessing stocks close to the edge of the abyss by determining the minimal spawning biomass and the maximal fishing effort that can be applied to ensure, theoretically, stock regeneration and bringing stocks back within safe biological limits. Even with safety margins, depending on estimated uncertainty, this approach tends to maintain low abundances, with stocks above critical limits. This critical situation is fairly considered as risky since any sharp change in the fishery (e.g. climate, pollution) is able to rapidly induce a severe decline in abundance. Additionally, such stocks provide low catches and therefore lead to unprofitable fisheries. And neither the 2002 reform of the CFP, nor more recent changes have altered this approach.

Conversely, EAF should imply two major changes regarding conservation measures for resources management. First, single-species assessments and management must be maintained, but policy targets should be changed to provide maximal stock biomass which allows sustainable high catches. In other words, an eco-system approach must deal with the minimization of the fishing impact on the major exploited stocks. This would be the first step to reducing ecosystems impacts and preserving ecosystem integrity, function and should lead to higher catches in the longer term and economic profitability.

The first change required from an EAF perspective is the need to shift from a minimum target to a maximum target. Therefore, the 2002 Johannesburg decision (endorsed by the European Commission) to restore stocks to levels that permit the maximum sustainable yield (MSY) "as much as possible not later than 2015" is a step in the right direction. Its main purpose of aiming for this target is not to maximize catches but to enforce the idea that biomass reductions, due to increasing fishing pressures, are unacceptable when they lead to decreasing catches. Such a decision should imply enormous changes, as current levels of overcapacity are over 50% for the majority of major European stocks. It would also lead to a re-definition of management measures, by combining TACs, fishing effort limitations and the implementation of technical measures. Currently, time is being spent on declarations of intent, whereas quantifiable targets and timelines should be under negotiation, with the engagement of all stakeholders. However, the MSY target usually leads to a 2.5 to 3 times reduction in fish stocks abundance compared to unexploited state. This is probably not sufficient from the EAF perspective, as the same amount of catch may result from more conservative exploitation patterns, especially using larger mesh size, which would lead to stronger reductions of impact on marine ecosystems.

The second change required from an EAF perspective is of course to add more holistic and eco-system parameters to single-species management. Research in the field of ecosystem modeling should be strongly encouraged, notably using standard software such as Ecopath with Ecosim (which is less often used in Europe than in other parts of the world). It may also be useful to set up scientific working groups to develop ecosystem models for all areas covered by the recently created Regional Advisory Councils.

Finally, ecosystem-based analyses are still largely under development. It will be a long time before they will be able to replace usual stock assessment methods and to provide advice for short term management. But they need to be developed to provide a strategic and better understanding of ecosystem changes and fisheries dynamics. Simultaneously, new management tools, such as Marine Protected Areas should be developed, especially to address biodiversity concerns. Currently, Europe is lagging behind other regions in the world and speeding up implementation of EAF would be critical.

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Implementing Ecosystem-Based Management in Marine Capture Fisheries – Case Studies from WWF's Marine Ecoregions

In 2002, WWF published comprehensive policy proposals for ecosystem-based management (EBM) in marine capture fisheries[1]. EBM is a highly integrated approach, considering complex ecosystem dynamics and the social and economic needs of human communities. The policy framework guides WWF's fisheries-related EBM work around the world.

The principles of EBM focus on: maintaining the natural structure, function and productivity of ecosystems; incorporating human use and values when managing resources; recognising that ecosystems are dynamic and constantly changing; developing a shared vision by stakeholders; and making decisions based on scientific knowledge, adapted by continual learning and monitoring.

WWF's framework translates the principles into practical actions, identifying twelve operational components for implementation. These steps inspired twelve case studies, published by WWF in February 2007, examining global examples where WWF considers EBM to have traction in a diverse array of initiatives around the world.

While the policy framework suggests the operational steps should be guided by and nested within EBM principles, the research revealed following them rigidly nor sequentially is not essential. Fisheries stakeholders rarely have the luxury of beginning with a blank canvas, nor following a neat twelve step process. Making EBM operational is best characterised as evolutionary rather than revolutionary, negotiated incrementally through existing political, economic and socio-cultural realities, with the right elements in place for some EBM steps and more work to do on others. Thus the EBM framework was adapted uniquely and activity was determined by the reality confronting people working on the ground.

The case studies show how stakeholders implemented some operational elements, trying to create an enabling environment for EBM activity. Others demonstrate the use of a more holistic approach. Three case studies highlight aspirations and achievements relevant to the European Union.

The Baltic study focuses on the challenging socio-political context within which stakeholder relationships are evolving via the Baltic Sea Regional Advisory Council. While the jury is still out on whether the forum will be a positive force in the management of Baltic Sea fisheries, some stakeholders sound a note of optimism. If cross sectoral stakeholders can form productive relationships, gradually positive action may achieve sustainable outcomes for the Baltic Sea ecoregion.

Meanwhile, the Northwest Atlantic Fisheries Organisation (NAFO), of which Denmark, France and the EU are members, is confronting severely overfished stocks, with high levels of bycatch for several moratoria stocks. WWF-Canada's independent scientific report High Seas Reform: Actions to Reduce Bycatch and Implement Ecosystem-Based Management for the Northwest Atlantic Fisheries Organisation provides a scientific basis for WWF-Canada's work in this forum. WWF-Canada became the first environmental NGO granted observer status at NAFO which enables staff to strengthen relations with decision-makers, engaging them on the need to reduce cod bycatch and implement EBM.

Finally, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is pioneering and leading the way for EBM in marine capture fisheries internationally, especially when it comes to assessing fishery performance and reviewing fishery management outcomes against ecosystem-based objectives. Many players, including delegation members, environmental NGOs, industry and scientific advisers, agree work is needed to refine the management system, especially when it comes to krill. However, EBM is nothing if it is not adaptive, based on scientific knowledge, embedded monitoring processes and continual learning which CCAMLR showcases in action.

For more information: Chris Grieve, Meridian Prime UK, chris@meridianprime.co.uk or Katherine Short, WWF International, kshort@wwfint.org Download the report: http://assets.panda.org/downloads/wwf_ebm_toolkit_2007.pdf

1 Ward, T. and D. Tarte, E. Hergerl and K. Short (2002) Policy Proposals and Operational Guidance for Ecosystem-based Management of Marine Capture Fisheries. WWF-Australia, Sydney. 80pp

The Institute for European Environmental Policy (IEEP) is an independent body for the analysis and advancement of environmental policies in Europe. While a major focus of work is on the development, implementation and evaluation of the EU's environmental policy, IEEP has also been at the forefront of research and policy development in relation to the integration of environmental considerations into other policy sectors.
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