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**Elements of a Strategy for the Integration
of Environmental Protection Requirements
into the Common Fisheries Policy**

1. Introduction.....	3
2. The requirements of integration and the Main environmental concerns.....	4
3. Towards a strategy for integration. Community Objectives and their context.....	6
4. Elements to implement the integration strategy. Rationale and topics to be covered.....	8
4.1. Cross-cutting topics:.....	10
4.2. Conservation of marine ecosystems.....	12
4.3. Research.....	13
4.4. Structural policy.....	14
4.5. Post-harvesting practices. Market and trade policy.....	15
4.6. International fisheries context.....	17
4.7. Aquaculture.....	18
4.8. Effects of environment changes on fisheries.....	19
5. Calendar of activities.....	19
6. Monitoring. Performance indicators and periodic reporting.....	20
7. Revision procedure.....	21
8. Conclusions.....	21

Elements of a strategy for the integration of environmental protection requirements into the Common Fisheries Policy

Summary

This Communication intends to set the basis of a strategy for enhancing the integration of environmental protection requirements into the Common Fisheries Policy. The strategy is to be adopted by the Council in the context of the Cardiff process to achieve the objectives of Article 6 of the Treaty. Furthermore, the Communication will contribute to the forthcoming debate about the reform of the Common Fisheries Policy.

The document describes the current situation and underlines that, although environmental integration is to a large extent inherent in any policy concerning use of marine resources, more attention should be paid, beyond the conservation of fisheries resources of commercial importance, to the consideration of a broader context where the whole marine ecosystem(s) should be safeguarded. In order to define the main actions to be taken, this Communication reviews the environmental concerns which need to be addressed, including Community commitments in the internal and international contexts. Subsequently, the objective of integration is defined as achieving a contribution from the Common Fisheries Policy towards the attainment of environmental objectives in the aquatic environment. A series of actions is proposed, classified by topics, complementing the action suggested in other Commission documents, such as the Biodiversity Action Plan for Fisheries, and followed by a suggested timetable. Finally, it is proposed to adopt performance indicators and a revision process in order to monitor and report on the effectiveness of the strategy and, as appropriate, reinforce implementation and enforcement or review the strategy.

1. INTRODUCTION

Integration of environmental protection requirements into Community policies emanates from Article 6 of the Treaty establishing the European Community:

“Article 6

Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development.”

The European Council has, since its meeting in Cardiff (June 1998), committed itself to achieving this integration in a progressive manner. The Commission has intervened in the process by producing the main elements for debate. Following the calendar foreseen in the Cologne (June 1999) and Helsinki (December 1999) summits, the Fisheries Council has adopted a report on integration¹ which was presented to the European Council of Santa

¹ Reference to the report of Santa Maria da Feira.

Maria da Feira (June 2000) and shall adopt, before June 2001, a strategy to achieve integration into the Common Fisheries Policy, to be presented to the European Council of Göteborg.

This communication is intended to constitute the basis for the adoption of an integration strategy for the Common Fisheries Policy.

2. THE REQUIREMENTS OF INTEGRATION AND THE MAIN ENVIRONMENTAL CONCERNS

Fishing activities, including aquaculture, interact with the marine environment in various ways:

- directly, by removing both target and by-catch species, which may lead to unfavourable conservation status of some of them, possibly leading to their extinction or local extirpation;
- indirectly, by modifying the energy flow through the food web, which may affect the conservation status of other species of the ecosystem (e.g. the removal of prey items may pose conservation problems to predatory species);
- directly (e.g. bottom trawling) or indirectly (e. g., sediments or waste from some aquaculture installations) by modifying the physical environment and threatening the diversity of habitats which may in turn have an effect on their potential to host both commercial and non-commercial species;
- environmental changes, either due to natural causes or to human intervention, in turn affect the productivity of marine ecosystems and hence fisheries.

Many examples of these effects illustrate why there is a need for full integration of environmental considerations into fisheries management. Beyond the legal obligation derived from the Treaty, there is an ethical obligation to ensure that these effects do not become large, unmanageable or irreversible. The Fisheries Council's report on integration outlines the extent to which environmental issues are already integrated into the provisions of the CFP. As fisheries resources are at the core of all fishing activities, and considering that the availability of such resources is linked to favourable environmental conditions, one might expect that protection of ecosystems are already integrated to a large extent into the policy of conservation of such resources. This is however only partially true, despite important achievements to protect non-target organisms (such as by-catch regulations or the driftnet ban), the food web (North Sea sandeel box) or sensitive habitats (*Posidonia* beds, corals).

In the first place, some aspects of the CFP have not performed adequately:

- (a) Overexploitation of major commercial stocks is still a problem. Although it is recognised that the conservation policy has achieved important goals in some areas, the fact is that at present the most valuable stocks continue to be over-exploited. As a result, the output expected from fisheries is reduced and some fish populations are at risk of collapse.
- (b) Some non-target organisms and the physical environment are also suffering from this excessive fishing activity. This may put populations and habitats in danger, reduce biodiversity and affect the productivity of ecosystems.
- (c) The capacity of the European fleets is excessive, despite the efforts to reduce it through structural policy action. Moreover, it can be argued that parts of the structural policy, such as Community financial support for investment in new fishing capacity or modernisation, has contributed to excess capacity. Excess capacity leads inevitably to an excessive deployed fishing effort, the ultimate cause of problems a) and b) mentioned above, difficulties in monitoring and enforcement and over-capitalisation, which reduces the economic efficiency of the fleet as a whole.
- (d) Despite important achievements of aquaculture in the field of environmental protection, some threats still exist in respect of the quality of water, dissemination of diseases and parasites and introduction of alien species.
- (e) Some of the policy instruments foreseen in the basic fisheries Regulation of 1992 have worked unsatisfactorily or have simply not been implemented.

Secondly, the Common Fisheries Policy has traditionally dealt with environmental matters in a reactive way, when they become a major problem, rather than integrating environmental concerns into all management considerations in a proactive manner. A lack of scientific knowledge about the functioning of marine ecosystems and the side-effects of fishing is one reason for this situation, but there has also been, more importantly, insufficient acknowledgement of the need for an environmental approach to deal with the broad spectrum of fisheries issues. This has occurred at all levels, from decision-makers to fishermen, and including associated industries and consumers.

The situation has, however, started to change. Fishery managers all over the world are progressively incorporating environmental concerns into their decisions. Increasingly, the fishing industry is realising that the current state of affairs is not only unsustainable in the long term but is also generating a loss of profitability and, equally important, a loss of public support. More enlightened fishermen are beginning to understand that adapting to fishing practices which incorporate environmental protection is not only inevitable

but, as for other forms of industry, can also become a source of greater prosperity.

Finally, fishermen consider that the environment is a cause of concern for their own activities and that this fact is often neglected by fisheries managers. Pollution and habitat changes may be a cause of stock decline; climate change may significantly alter existing oceanographic features, modifying the species distribution and abundance and hence the availability of certain stocks in certain areas; harmful algal blooms or dioxine concentrations may be a threat to human health and therefore can adversely affect the marketing of catch; the presence of algae may disturb fishing operations. To be fair to the fishing industry, a policy of environmental integration should also take into account these aspects.

3. TOWARDS A STRATEGY FOR INTEGRATION. COMMUNITY OBJECTIVES AND THEIR CONTEXT

The ultimate objective of the integration strategy must be to achieve a real contribution from fisheries policy towards the attainment of environmental objectives in the aquatic environment within a broader context of sustainable development. Environmental objectives are set out in Article 174 of the Treaty as follows:

- preserving, protecting and improving the quality of the environment;
- protecting human health;
- prudent and rational utilisation of natural resources;
- promoting measures at international level to deal with regional or world-wide environmental problems.

Reciprocally, the environmental policy should contribute to attaining the objectives of the common fisheries policy, in particular the sustainable use of natural resources under appropriate economic and social conditions for the sector. Integration should also mean that the fisheries policy should assume the principles of the environmental policy referred to in Article 174 of the Treaty, such as the precautionary principle, the precedence of preventive action, the need to rectify environmental damage at source and the responsibility of the authors of environmental damage.

The fisheries context offers an opportunity for environmental objectives to be attained more successfully than on other areas if the appropriate action is taken. In the first place, there is a reasonable amount of technical knowledge to base action upon. Secondly, there is a broad consensus that the long-term cost of no action would be unaffordable and therefore something should be done. Thirdly, if short-term difficulties may arise, these will be largely compensated by long-term benefits. And finally, the CFP is currently being reviewed, which increases the possibility to accommodate integration requirements within Community rules.

Environmental obligations have been acquired at both the Community and international level:

EC policy

- Art. 6 of Treaty; as already stated in the introductory chapter, this sets out the will of the Community to integrate environmental concerns within fisheries policy with a view to promoting sustainable development.
- Art. 174 of the Treaty defines the objectives of the Community policy on the environment and certain basic principles and guidelines which are to be assumed by the Common Fisheries Policy
- For the Common Fisheries Policy, the appropriate legal text is Council Regulation (EEC) No 3760/92 of 20 December 1992². This Regulation stipulates (Article 2) that the CFP shall take account of its implications for the marine ecosystem.
- Operative environmental obligations are clearly defined in Council Directive 79/409/EEC on the conservation of wild birds (“Birds” Directive) and in Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (“Habitats” Directive). Both legal instruments build on Article 174 of the Treaty and define management requirements which fall mostly within the responsibility of Member States. However, whenever these requirements imply the regulation of fishing activities, then it is for the Community, on the basis of Article 37 of the Treaty, to adopt the necessary measures.

International obligations

- The Community has ratified the UN Convention on the Law of the Sea (UNCLOS), which sets out obligations concerning the exploitation of marine resources for both the Exclusive Economic Zones (EEZ) and the high seas, as well as obligations related to the protection of the marine environment. The Community is also in the process of ratification of the New York agreement on conservation and management of straddling stocks and highly migratory fish. Both legal frameworks advocate the taking into consideration of the impact of fishing on the marine environment.
- The Community is a party to several Regional Fisheries Organisations (RFO) which include among their objectives the protection of the marine environment or which adopt an ecosystem-based approach to fisheries management.
- Member States have adopted the FAO Code of Conduct for Responsible Fishing. The Code gives an ecosystem perspective to fishing activities which encompasses the effects of fishing on marine

² OJ L 389, 31.12.1992, p. 1.

ecosystems, a need for transparent management based on the precautionary approach and involving stakeholders and requirements in the field of trade, international cooperation and research.

- The Community has ratified or signed a number of conventions and agreements on Nature conservation whose objectives have direct or indirect bearing on fisheries management. Examples of these are the Convention on Biological Diversity (CBD), the Convention on the conservation of migratory species of wild animals (Bonn Convention), the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). Several conventions on the protection of the marine environment, such as the Convention for the protection of the marine environment of the Baltic Sea area (HELCOM), the Convention for the protection of the north-east Atlantic (OSPAR) and the Convention for the protection of the Mediterranean Sea against pollution (Barcelona Convention) do the same. Most of these agreements require to various degrees the use of fishery management instruments to achieve their conservation goals.
- It is important to note that the Community and its Member States have also signed the Århus Convention on access to information, public participation in decision-making and access to justice in environmental matters.
- Finally, the recommendations of a number of conventions and agreements of which some Member States or national institutions are members, such as the Agreement on the conservation of small cetaceans of the Baltic and North seas (ASCOBANS), the Agreement on the Conservation of Cetaceans of the Mediterranean and Black Seas (ACCOMABS), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), have a bearing on fishing activities.

All the preceding commitments share the same ultimate objective, which is to find a compromise between the necessity to make use of natural marine resources in an efficient and sustainable manner and the need to preserve the structural and functional integrity of the marine ecosystem.

4. ELEMENTS TO IMPLEMENT THE INTEGRATION STRATEGY. RATIONALE AND TOPICS TO BE COVERED

The existing CFP provides a sufficient legal basis to develop appropriate regulatory action in order to address the objectives of integration. It would be appropriate to take advantage of the forthcoming reform of the CFP to embed in it both the integration objectives and the strategic management elements required to achieve them.

A first and uppermost strategic step would be a change in attitude: any management action should be performed taking into account that it may have important effects on the marine ecosystem, even if their fine details are not totally understood. This is equivalent to, or will result in, **adopting an ecosystem-based approach to fisheries management**³.

The extent to which this approach will succeed in contributing to environmental objectives will depend largely on the state of scientific knowledge, in particular on the structure and functioning of marine ecosystems. Although there is still much to be achieved, existing knowledge already permits steps in the right direction, on the basis of a judicious application of the precautionary principle.

Within the context of an ecosystem-based approach, management decisions will subsequently be based on environmental considerations together with social and economic needs, and it will be for policy makers to make the best use of the existing knowledge to establish a balance between ecosystem conservation and socio-economic needs, as well as a balance, in terms of gains or losses, between the consequences in the short and in the long term. In establishing the required balance, three types of situations may occur:

The win-win situation:

Management action may support simultaneously both environmental and socio-economic needs. This is the case, for example, where temporary restrictions in fishing may increase the economic results of fishing while providing protection to the ecosystems. If the socio-economic benefits appear only after a period of short-term losses, these may be legitimately justified and well accepted if the longer term gains compensate generously. The win-win situation is clearly the preferred one.

The win-neutral situation:

An example of this would be the creation of an undisturbed area in conditions where the fishing fleet can shift to adjacent areas without major loss. In this circumstance it is likely that in the long term a situation of win-win will occur, due to the beneficial effect of an improved marine ecosystem. Management action leading to this situation may constitute a second ranking priority. It is very unlikely that management action have positive socio-economic effects while being neutral to the environment.

³ An extensive literature is available on this topic. See, for example, Pope, J.G. and D. Symes (2000): "An Ecosystem Based Approach to the Common Fisheries Policy: Defining the Goals".

The win- lose situation:

Unfortunately, this type of situation appears more frequently than is desirable. An example could be a prohibition on using a fishing gear that is very efficient for catching the target species but has an unsustainable by-catch of other sensitive species. Here managers should make use of all possible scientific, technical and statistical information and their best common sense to strike a balance.

A second element of the strategy will be the acceptance of the environmental principles set out under Article 174 of the Treaty (the precautionary principle and the principles that preventive action should be taken, that environmental damage should be rectified at source and that those responsible for the damage should pay) and acknowledgement of their implications for fisheries management. General views by the Commission on these principles can be found in several official documents⁴ but, with the exception of application of the precautionary principle to management of single fish stocks, little work has been carried out to ascertain the implications of the application of these principles to fisheries management. Work should progress in this field.

A third step in the definition of the integration strategy is the definition of specific management actions to serve these objectives, associated with a management plan including adequate monitoring, reporting and revision schemes. The actions envisaged in the Communications of the Commission on Fisheries Management and Nature Conservation in the Marine Environment⁵ and on Biodiversity Action Plan for Fisheries⁶ constitute minimum requirements and can be complemented or reinforced by further management activities, described below by topics or policy areas.

4.1. Cross-cutting topics:

Overall fishing pressure. This is the most important problem for the Community. Excessive fishing pressure touches upon all aspects of the CFP, beyond pure fish stock conservation. It adversely affects the economics of fishing and threatens the sustainability of employment in the sector. A substantial reduction of overall fishing pressure in a reasonably short time frame should be the priority action.

Integrated Coastal Zone Management (ICZM). The coastal zone is of strategic importance for the Community as a source of wealth and health. However, coastal zones are threatened by habitat destruction, pollution and mismanagement of renewable and non-renewable resources. The solution to these problems must be sought in the framework of an integrated management system, able to take into account the interrelationships between all coastal zone uses (both on land and at sea) and allowing for the informed

⁴ See, as an example, COM(2000) 1 on the precautionary principle, COM(2000) 66 on environmental liability, and COM(2000) 803 on the application of the precautionary principle and multi-annual arrangements for setting TACs.

⁵ COM(1999) 363.

⁶ In progress.

participation of all the relevant stakeholders. The recent Communication from the Commission to the Council and the Parliament on an European strategy for Integrated Coastal Zone Management⁷ summarises the main conclusions and recommendations of the EU Demonstration Programme on ICZM and outlines the actions necessary at EU level to promote ICZM. On the basis of these conclusions, the Commission has presented a proposal for a European Parliament and Council Recommendation concerning the implementation of ICZM in Europe⁸ with the aim of ensuring that Member States provide a legal and regulatory framework by developing national ICZM Strategies.

Control and enforcement. Although most directly related to fisheries conservation, the control policy covers all other areas of the CFP. The integration process will necessarily imply that control be extended to cover the enforcement of measures taken in the framework of the integration strategy. The development of appropriate indicators will also be necessary to facilitate monitoring and enforcement.

Raising awareness. There is an increased awareness of the need to adopt an ecosystem vision of the problems associated with fishing. NGOs have undoubtedly played an important role in disseminating this awareness. However, there is still a clear requirement to take advantage of the current trend and improve understanding and hence collaboration by all stakeholders. It is also of fundamental importance to transmit the right message to all stakeholders, and more particularly to the fishing industry, which is that integration does not necessarily mean giving priority to protection of biodiversity over fish exploitation, but rather to conciliate both needs with a view of attaining a sustainable exploitation.

Economic and social consequences. There is no doubt that integration will have economic and social consequences. Understanding these in order to minimise their possible negative impacts or deal with their consequences is a major requirement and involves further analysis of the economic structure of the fishing industry, including governmental transfers and their effects.

Good governance. Good governance is a general issue affecting all Community policy area. Improved governance can be taken as an institutional and functional change in the decision-making process to increase management efficiency. This implies i) a closer involvement of stakeholders in the process, including regional or local authorities, the sectoral social partners and all groups of the society interested in the marine ecosystem, ii) within the limits established by the Treaty, a de-centralisation of fisheries and environment management in favour of a regional approach, iii) structural and functional adaptations to ensure closer collaboration between environment and fishery expertise at all stages of the decision-taking process. Furthermore, improved governance requires transparent policy-making. All stakeholders should have available the information required to properly play

⁷ COM(2000) 547.

⁸ COM(2000) 545.

their role in the decision-taking process, and in particular, on the performance of environmental integration as described by the system of indicators outlined in section 6 below. This issue is more extensively dealt with in the Green Paper on the future Common Fisheries Policy⁹, with an emphasis on the possibilities and consequences of de-centralisation.

Institutional and functional aspects. Parallel to the Council's integration process, the Commission is currently reflecting on environmental integration in the Commission decision-making. The basic idea is the adoption of a Code of Good Environmental Integration covering important issues such as transparency, accountability, environmental impact assessment, early involvement of stakeholders and follow-up. Similar processes in other Community institutions would contribute very much to a full achievement of integration in the decision-making process within the CFP.

4.2. Conservation of marine ecosystems

Conservation of marine ecosystems should be central to an environment-integrated policy of fisheries. Action should be taken to conserve and, where possible, rebuild commercial fish stocks and non-commercial biota and habitats, but also with due attention to the consequences on the whole ecosystem, in order to restore their functionality and productivity when these have been damaged. Similarly, and on an equal footing, where non-commercial biota or habitats are threatened, action to remove threats should take account of its implications for fisheries and the wider productivity of the ecosystem.

Analysis of the effects of fisheries on the marine ecosystem has been presented in the previous communication COM(1999)363 on fisheries and nature conservation and in the coming Biodiversity Action Plans on various policy sectors, including the CFP. The latter also summarises the management action required. Implementation of the Biodiversity Action Plan for Fisheries is the fundamental requirement to achieve integration in the field of ecosystem conservation. Furthermore, a full implementation of the FAO Code of Conduct for Responsible Fishing will also be a significant contribution to that end.

Beyond these actions, and in the context of the FAO Code of Conduct, it would be necessary to implement the International Plan of Action for the Management of Fishing Capacity, the International Plan of Action for the Conservation and Management of Sharks and the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries.

Some Community instruments for nature protection already foresee the strict protection of certain marine resources and of certain habitats essential to the maintenance of a good conservation status of threatened species (the "Habitats" and "Birds" Directives). Designation and management of marine zones forming part of the Natura 2000 network present a unique opportunity

⁹ COM(2000) xxx. Document in preparation.

to show how commercial fishing can be continued within protected areas provided it is made compatible with conservation requirements. In the context of protection of marine biota other than commercial fish stocks, the case of sea mammals, and in particular dolphins and harbour porpoises, deserves special attention. All studies point to the risk that by-catch of these species is attaining levels that might make some populations unsustainable, although the relative contribution of different fishing methods to this by-catch and the spatial and temporal extent of the phenomenon are still to be fully quantified. It is necessary to obtain further collaboration from fishermen in order to improve these fields of knowledge.

Moreover, some habitats not specifically mentioned in the Habitats Directive may deserve special consideration due to recent threats from fishing activities, such as certain deep water habitats.

The Community has the competence and therefore the obligation to implement the required measures when these involve the regulation of fishing activities. Where a choice can be made between voluntary and legally-binding instruments, the latter should be preferred when there is a risk for sensitive species.

4.3. Research

Fisheries science has traditionally been highly specialised, in particular in the field of stock assessment, but lacking the broader view required by the complexity of problems faced by managers. By contrast, ecosystem knowledge has frequently given broad pictures of the problems but has not shown the required degree of specialisation, in particular in the field of numerical evaluation. There is clearly a need to reduce the gap between these disciplines, and most marine-related fisheries bodies (e.g., ICES¹⁰) are nowadays undertaking steps in this sense.

On the one hand, fisheries science should not only undertake more complex, multi-stock assessments corresponding with the complexity of the fishing activities but also of a multi-disciplinary approach including in particular social and economic studies. On the other hand, marine ecology should focus on the operational aspects, in particular the development of indicators as guides to complex processes that are usually difficult to understand and monitor. Indicators of the functioning and productivity of ecosystems will be especially useful to formulate objectives for ecosystem restoration.

These two aspects of marine science also have to be brought closer together in the advice-giving process. Obtaining adequate scientific advice on the economic utilisation of marine ecosystems and on its consequences will require good fisheries/ecosystem expertise in the advisory bodies and a permanent dialogue between these and the managers, in particular for the precise formulation of the questions and for ensuring operational answers.

¹⁰ International Council for the Exploration of the Sea, which constitutes a major source of scientific advice for fishery managers in the Northeast Atlantic.

A combination of fishery and ecosystem expertise has already been foreseen by ICES and similar fishery research bodies, such as the Commission's Scientific, Technical and Economic Committee for Fisheries (STECF), the NAFO Scientific Council or the Standing Committee for Research and Statistics (SCRS) of the International Commission for the Conservation of Atlantic Tunas (ICCAT). The Community should give institutional and financial support to scientists in order to guarantee that the basic research, which is to be done in national research centres, is performed adequately.

Regulation (EC) No 1543/2000 establishing a Community framework for the collection and management of the data needed to conduct the common fisheries policy¹¹ and associated secondary legislation sets out the framework to collect fisheries-related data useful for fisheries research. Environmental data are foreseen to be included in the system by 2003. This implies that, in the meantime, minimum requirements for the collection of basic environmental data should be given a legal and financial support. Simultaneously, the Community should re-direct current studies towards a better understanding of such currently controversial issues as the impact of fishing gear on non-target biota and on the seabed. There is a large amount of work to be done on the development of an operational framework to apply the precautionary principle to conservation of all biota likely to be affected by human activities such as fishing. This will require the funding of studies on this issue and the setting up of a legal framework facilitating and rewarding, where possible, collaboration by the fishing industry.

4.4. Structural policy

Role of structural incentives. Several analyses have been conducted recently within international organisations such as OECD, FAO, WTO and UNEP of subsidies to the fishing sector and their likely impact on the level of exploitation. While they have not yet provided a comprehensive and definitive diagnosis, and while there are still disagreements as to how various subsidies should be classified, it is possible now to distinguish some types of subsidies clearly incompatible with a sustainable exploitation from those contributing to positive conservation effects. In the short term, the “perverse” subsidies should be removed and converted progressively into funds to finance positive actions.

Adaptation of fleets to the marine ecosystem. Within the aim of an overall reduction in fishing pressure, fleets should be adapted in order that their fishing capacity is in accordance with a sustainable use of the marine ecosystem. Fleets, beyond the objectives of economic efficiency and source of employment, should be structured so as to reduce their impact on ecosystems. As a guideline, the following features might be considered:

- activities that are easily controllable;
- a limited number of fish species to be targeted;

¹¹ OJ L 176, 15.07.2000, p. 1.

- within the target species, discrimination by size;
- little or no mortality on other biota, including animals and plants of no commercial value;
- little or no damage to the physical environment;
- little or no waste, such as uneaten bait;
- gear and attachments not easily lost at sea;
- energy-efficiency in terms of fuel consumption.

Other structural actions financed under FIG¹². Regulation (EC) No 2792/1999 gives indications on how funds can be invested in practices adding value to environmental integration, such as:

- capital investment in fixed or movable facilities aimed at the protection and development of aquatic resources, except restocking (Article 13),
- promotion of products obtained using environmentally friendly methods (Article 14)
- short-term operations of collective interest serving to attaining the objectives of the CFP (Article 15)
- studies, pilot projects, demonstration projects, training measures, experimental fishing, etc (Article 17)

It is suggested that both Member States and the Commission collaborate in the framework of the partnership envisaged in Article 8 of Regulation (EC) No 1260/99 laying down general provisions on the Structural Funds¹³ in order give special support and encourage this type of activities.

4.5. Post-harvesting practices. Market and trade policy.

As the interface between the consumer and the resource, the market can play a significant role in encouraging responsible production practices. Maximising the economic benefit of the fishing activity through market management policies has a direct impact on yields, and therefore on production. In other words, market behaviour and policies on trade have an effect on supply. Market management should be further developed in order to stimulate better fishing practices.

¹² Financial Instrument for Fisheries Guidance.

¹³ OJ L 161, 26.06.1999, p. 1.

In 1999 the Council of Ministers agreed on a major revision of the common organisation of the market in fisheries products which has created incentives to minimise waste of resources, to improve the balance between supply and demand and to provide more information about the fisheries products for sale. Financial support is directed to stimulating better planning of fishing activities, the search for new markets and the constitution of new types of Producer Organisations (POs) which are better matched to a more integrated Community market.

The reformed market organisation encourages fishermen to take a more proactive, preventative role in managing supply to the market rather than simply intervening “after the event” by the withdrawal of unsold products. The role of POs has been strengthened and in particular they are assuming a greater responsibility to achieve a more effective management of resources by increasing financial returns while decreasing the “race for fish”. The new obligatory “operational programmes” are designed to encourage these organisations to manage the landings of their members and to take measures to avoid withdrawals.

The common market organisation provides for intervention mechanisms to correct extreme effects of imbalances between supply and demand. The reformed market organisation has changed the emphasis of policy, by reducing support for definitive withdrawals and increasing aid for stabilising and storing the products for later sale. This will also increase returns and simultaneously reduce the incentive to fish for quantity.

In the annual price-fixing Regulations, less intervention support is provided for smaller sized fish compared to larger categories in order to discourage their capture. Similarly, aid has not been granted for lower quality products (“B” freshness category) since January 2000. These two measures support the market for larger, better quality fish and thus may promote better handling and conservation methods.

A major element in the reformed common market organisation is the new labelling requirement at the point of retail sale, which, from 1 January 2002, will improve product traceability and thereby reduce fraud concerning the origin and nature of the product sold. The commercial designation, the production method (aquaculture or wild) and the area of capture will be marked on all products on sale to the final consumer. This will increase the transparency of market transactions and, by an increased awareness of retailers and consumers, may improve the quality of fish products.

Eco-labelling, or the issuing of certificates for products derived from sustainably managed fisheries or caught and processed with ecologically-sound methods, is intended to create a demand-led incentive to influence managers' and producers' behaviour. Although the effect of eco-labelling in promoting ecologically-friendly fishing and processing is not well established, it can complement management action by public authorities and so can contribute to improved efficiency. The role of public authorities on eco-labelling should be to ensure fair competition and objective information for the consumer. To this end, the Commission is in the process of producing

a Communication on the potential benefits and difficulties of eco-labels for fisheries products and on the appropriate role of the public authorities in relation to them. The Commission will tentatively examine the need for a legal framework for voluntary eco-labelling to ensure appropriate assessment criteria, independent control of compliance and accurate information for the consumer. The implications of setting the assessment criteria to be used by eco-labelling schemes will also be considered.

Finally, trade measures in support of the environment, such as restriction on the import of fishery products not in accordance with international rules aimed at their protection, are increasingly used at international level. As a rule, these measures are implemented by the Community within the framework of multilateral organisations dealing with the environment (e.g. CITES) or the sustainable exploitation of fishery resources (e.g. bluefin tuna under ICCAT). As far as the latter are concerned, it is believed that these trade measures contribute to securing sustainable fishing practices, especially those carried out by vessels flying flags of convenience. They also promote greater commitment to legislation by Community fishermen, who may feel that they alone carry the burden of compliance with conservation rules.

The WTO rules allow member countries to adopt and enforce trade measures designed for the protection of exhaustible natural resources. The measures, however, must not be applied in a manner that constitutes "a means of arbitrary and unjustifiable discrimination (...) or a disguised restriction in international trade".

The Community consistently favours co-operation among interested parties and multilateral approaches in the inception and application of trade measures in support of environmental objectives in the area of fisheries. Work in this field is being carried out within the Committee on Trade and Environment (CTE) of WTO. The Community should play a leading role, justified by its important participation in international trade, in promoting the use of trade instruments to encourage sustainable fishing practice.

4.6. International fisheries context.

Protection and sustainable use of marine ecosystems can only be fully achieved if autonomous decisions are complemented with international cooperation, in which integration of environmental concerns also occurs. While some regional fisheries organisations (RFO) have achieved a high degree of integration, others still need to develop an ecosystem-based attitude. Rather than lagging behind initiatives taken by other parties to these agreements, the Community should adopt a leading role in promoting environmental integration. Where possible, the objectives and principles adopted for the CFP should be transferred to international fora. Similarly, where cooperation is established in the framework of bilateral or multi-lateral agreements (e.g. management of North Sea fisheries), it should be a responsibility of the Community to be in the lead in introducing environmental objectives.

Where only Member States are parties of multilateral organisations which promote measures to protect the environment that may have a bearing on fishing activities, the Commission should coordinate Member State participation and take the steps necessary to implement those recommendations at the Community level.

It is argued that the Community fleet is partly responsible for over-exploitation of the fishing grounds of some third countries. While the ultimate causes for the mismanagement of many of these fisheries may be beyond the control of the Community, it is clear that the Community should endeavour to ensure that its fleets do not contribute to overexploitation of marine ecosystems anywhere in the world. Work to achieve this objective forms part of the integration strategy for economic and development cooperation policy advocated by the Commission in its recent communication to the Council and the European Parliament¹⁴. It is clear that there is a commitment to develop coherence between fisheries agreements and the economic and development cooperation policy. But more should be done. Fisheries agreements should be conditional on a healthy state of the fish resources, determined on the basis of relevant scientific information, and on the use of environmentally friendly fishing techniques (see 4.2 above), as well as on the existence of management capacity by the third country to enforce its protective legislation.

A strategy in the field of fisheries agreements should also contemplate actions such as directing compensation for fishing rights to foster third countries' capacity to develop an ecosystem-oriented fisheries management which takes into account their economic and social needs.

4.7. Aquaculture

The Biodiversity Action Plan for Fisheries sets out specific actions to ensure integration of the environment in this field, in particular in the field of protection against pollution (including genetic pollution), dissemination of diseases and parasites, eutrophication and research studies on a number of specific topics. An efficient method to ensure implementation of these actions would be to promote and encourage, including by financial means, application of the Code of Conduct for European Aquaculture, adopted by the Federation of European Aquaculture Producers in July 2000.

Since the marketable size of farmed fish is not based on conservation requirements, as is the case for wild fish, there is room for conflict whenever farmed and wild fish of the same species appear simultaneously in the market. If farmed fish is sold below the landing size adopted for wild fish, this may stimulate the demand for this product and hinder the enforcement of the rules on minimum landing size of wild fish. For this reason, Community rules under the common market organisation for fisheries and aquaculture products now provide for specific labelling of fish products indicating their origin and type of production (farmed or wild fish) together with a system to

¹⁴ COM(2000) 264.

guarantee the traceability of the fish products all through the process from the origin to the consumer.

4.8. Effects of environment changes on fisheries

Besides the known or suspected effects of fishing in the marine ecosystem, it is accepted that changes in the marine ecosystem driven by pollution and climate change, eutrophication, introduction of alien species, and so on, may have a significant impact on fisheries, not to mention the importance of water quality for aquaculture. Where these anthropogenic changes in ecosystems produce a decrease in fishing possibilities, it seems legitimate that the fishing industry should demand a better environmental policy in the field of water protection. The effects of these changes on fish stocks range from a reduction of fecundity and larval survival rates to increased adult mortality rates due to toxic effects. Indirect effects are observed following habitat destruction (e.g. damming of salmon rivers and oxygen depletion near the bottom due to eutrophication).

Furthermore, some kinds of pollution may have significant effects on the quality of fish as food, both for direct human consumption and for livestock, poultry or fish farms. In all cases, this can constitute a threat to human health and, subsequently, to the fishing industry itself, which will not be allowed to land fish for health reasons.

It is difficult to assess the medium to long term effects of pollutants or climatic change on the productivity of ecosystem, and in these conditions it is nearly impossible to establish any liability. There is clearly a need for expanding research in this field.

5. CALENDAR OF ACTIVITIES

On the basis of the ideas outlined in this document, it is expected that the Fisheries Council will adopt an integration strategy during the spring of 2001 for its presentation to the Göteborg summit.

Any integration strategy based on the ideas outlined in this document could be largely implemented within the current CFP framework, in particular through the application of the precautionary principle. However, to be fully effective, it may have to wait for the reform of the CFP due for the end of 2002, which may provide an enhanced legal basis, especially as far as certain horizontal aspects of the strategy are concerned, such as decentralisation, integrated coastal zone management and improved control and enforcement. Until then implementation of the suggested management action on other areas can be progressive carried out. It is expected that by the end of 2003 all the main regulatory elements will be fully operative.

6. MONITORING. PERFORMANCE INDICATORS AND PERIODIC REPORTING

In order to monitor progress of the integration strategy, indicators are needed. Indicators are a tool by which to represent complex processes in a simple manner and may be used to monitor and assess the performance of the integration strategy. To be useful, they should be embedded in a conceptual framework allowing the understanding of their individual value within the context of the whole system. Extensive work has been carried out in the field of evaluation and indicators within several international management-related bodies, such as FAO, OECD and the European Environmental Agency (EEA). These bodies suggest frameworks where the pressure forces, the impact and the response are clearly identified. Among these, the DPSIR¹⁵ framework is becoming widely accepted. Work in this field should be pursued in order to define an operative framework adapted to the sphere of fisheries and the environment.

As an indication of the type of work which might be produced, the framework could consist of a two-dimensional array in which driving forces, pressure, state, impact and responses are presented for certain major elements of the system, such as the ecosystem, the fishing sector (including associated upstream and downstream industries), consumers, fisheries science and managers. The table in the annex indicates how the set of indicators should be structured. When choosing indicators, it is also possible –and generally advisable– to add a third, geographical dimension to the framework. As an example, an indicator of impact on consumers in Northern Europe may not function equally well for a Mediterranean country.

Appropriate bodies to be involved in the work on indicators are the EEA, ICES, the Joint Research Centre (JRC) and Eurostat. The Commission intends to contact these institutions and explore a working method to ensure that appropriate responses can be given within a reasonable time frame and at a reasonable cost. Where appropriate, the Commission will also approach national research agencies to ensure that the basic work is undertaken.

Monitoring implies the collection of basic data relative to the indicators, the production of values attached to them, and the elaboration of periodic reports for managers, to be made available to all interested parties. Periodic reporting, possibly starting by the end of 2003, constitutes a strategic element of the integration process. Much of first stages of monitoring can be organised by Member States, in particular the gathering of basic data, but when it comes to integrating information at the level of fisheries, ecosystems, societal groups, etc, then *ad hoc* multi-national fora should be created. Regional organisations, as outlined in section 3, could help.

¹⁵ Driving forces, Pressure, State, Impact and Response. See, for example, “Environmental Indicators: Typology and Overview”. EEA Technical Report No 25.

As far as periodic reporting is concerned, it would be conceivable that, starting by the end of 2003, the Commission reports regularly to the Council on the progress of application of the strategy, based on the above-mentioned or other indicators and on any other useful appreciation. These reports should be made available to all stakeholders.

Finally, each of the above-mentioned indicators may be subject to further analysis by establishing targets, thresholds or trigger values to be used as a reference. Comparison of actual values with the reference values would help to determine management action. A typical example is the use of precautionary reference points for management, as described in the recent Communication from the Commission to the Council on the application of the precautionary principle and multiannual arrangements for setting TACs¹⁶.

7. REVISION PROCEDURE

Good indicators within a monitoring system should lead to a good understanding of progress. As substantial results are not expected until the end of 2005, the yearly evaluation may serve as a guide to modulate implementation and enforcement of relevant actions but not necessarily lead to changes in the strategy itself, unless events requiring urgent action occur. In any case, it would be wise to foresee a wide-ranging evaluation of progress in the mid term, say, by the end of 2005. By this time, the Commission might propose the Council to adapt the strategy, if required.

8. CONCLUSIONS

The objectives of the integration strategy should be to achieve a positive contribution from the Common Fisheries Policy towards the attainment of environmental objectives in the aquatic milieu within a broader context of sustainable development.

Reciprocally, it is intended that the environmental policy should contribute to attaining the objectives of the common fisheries policy, in particular the sustainable use of natural resources in appropriate economic and social conditions for the sector.

Integration should also mean that the Common Fisheries Policy takes over the principles of the environmental policy, namely the precautionary principle, the precedence of preventive action, the need to rectify environmental damage at source and the economic responsibility of the authors of environmental damage.

A first and fundamental element of the environmental integration in fisheries is a change in attitude of management by **the adoption of an ecosystem-based approach to fisheries management**. As a first step, while scientific knowledge does not permit a perfect understanding of the aquatic ecosystems

¹⁶ COM(2000) 803.

and how these are modulated by human activities, management measures should be adopted on the basis of a judicious application of the precautionary principle. Further development of the ecosystem approach will be achieved by improving knowledge of the structure and functioning of marine ecosystems. This should constitute a long-term priority of marine research.

In adopting the ecosystem-based approach, managers should endeavour to adopt measures yielding simultaneously or within a reasonable time frame both ecosystem and socio-economic benefits or at least, producing the least possible negative effects for both the environment and the fisheries sector following a transparent decision process.

Adopting the principles of the environmental policy will imply extensive consultation in order to ascertain the implications of the complete application of these principles to fisheries management.

Specific management action to achieve environmental integration should cover all aspects of fisheries management. The forthcoming reform of the CFP provides an opportunity to reinforce the legal framework to facilitate specific management action. The basic set of management measures is to be found in the Communication of the Commission on Fisheries Management and Natura Conservation in the Marine Environment (COM (1999) 803) and in the incoming Biodiversity Action Plan for Fisheries, and this should be reinforced and complemented by specific action on all fields of the CFP as described under section 4 of this Communication.

In order to monitor the performance of the integration process, a system of indicators should be developed within a DPSIR framework. Indicators should be used for a system of periodic reporting, starting by the end of 2003, open to all interested parties. A revision of the strategy might possibly take place as appropriate by the end of 2005.

Besides the effects of fishing on the marine ecosystems, it is recognised that fisheries may also be affected by other anthropogenic activities, which may have side-effects on the economic success of fishing as well as implications for human health. Research work should be promoted in this field.

ANNEX
Outline of possible performance indicators

ITEM	DRIVING FORCES IN ITEM	PRESSURE BY ITEM	STATE OF ITEM	IMPACT ON ITEM	RESPONSE BY ITEM
ECOSYSTEM (HABITATS)	<ul style="list-style-type: none"> - Long-term trends of key physical parameters - Eutrophication, pollution - Upwelling indices - 	<ul style="list-style-type: none"> - Climate change - Nutrients - Circulation patterns - 	<ul style="list-style-type: none"> - Hydrographic regime - Chemical composition of water - Habitat extent and condition - 	<ul style="list-style-type: none"> - Sea warming - Physical damage to seabed - Water pollution transmitted through food web - 	<ul style="list-style-type: none"> - Changes in water dynamics - Changes in productivity - Changes in fish availability -
ECOSYSTEM (BIOCOENOSIS eg relation between living organisms)	<ul style="list-style-type: none"> - Intrinsic population growth rate* - Individual growth rate* - Individual fecundity* - Structure of trophic webs - 	<ul style="list-style-type: none"> - Natural mortality of populations* - Productivity at various trophic levels - Energy flow in food webs - 	<ul style="list-style-type: none"> - Biodiversity indices by area and by major taxa groups - Energy flow in key links of food web - Biomass* - 	<ul style="list-style-type: none"> - Changes in geographical distribution * - Changes in fish mortality* - Additional sources of food (discards) - 	<ul style="list-style-type: none"> - Changes in geographical distribution and migration* - Changes in growth, fecundity and age at first maturity* -
FISHING INDUSTRY	<ul style="list-style-type: none"> - Fishing tradition - Alternative employment - Fishing capacity - Market demand - Loans, subsidies - 	<ul style="list-style-type: none"> - Deployed fishing effort by region and by fishing gear - Gear loss - Waste - Economic needs - 	<ul style="list-style-type: none"> - Fishing capacity (potential fishing effort) - Employment - Production (catch) in weight and in value - 	<ul style="list-style-type: none"> - Fleet size adaptations - Change in fishing behaviour: effort, gear, zones - Changes in economic results - 	<ul style="list-style-type: none"> - Social unrest - Adaptation of fishing effort - Highgrading of catch - Change of gear - Withdrawal from industry -
AQUACULTURE	<ul style="list-style-type: none"> - Market demand - Technological improvement - Need of water resources - 	<ul style="list-style-type: none"> - Need of good environmental conditions of farm sites - Need of food stuff of marine origin - 	<ul style="list-style-type: none"> - Fish production - Use of water - Food needs - Quality of effluent water - 	<ul style="list-style-type: none"> - Water quality (effluents) - Use of territory - Supply of food stuff - Supply of fry - 	<ul style="list-style-type: none"> - Adaptation of farming methods - Promotion of research - Diversification of supply -
CONSUMERS AND PUBLIC OPINION	<ul style="list-style-type: none"> - Market supply - Feeding behaviour - Buying power - Need of health protection - 	<ul style="list-style-type: none"> - Demand for supply at reasonable prices - Demand for ecological and sanitary standards - Political pressure - 	<ul style="list-style-type: none"> - Opinion (polls results) - Fish consumption indices - Consumption preferences - 	<ul style="list-style-type: none"> - Changes in market supply and demand - Public awareness of marine problems - 	<ul style="list-style-type: none"> - Adaptation of consumption habits - Reactions against poor quality or high prices -
SCIENCE	<ul style="list-style-type: none"> - Need of scientific support - Intellectual challenge - Research facilities (personnel, installations) - 	<ul style="list-style-type: none"> - Need of basic research data - Need of research funds - Research results - 	<ul style="list-style-type: none"> - Budget allocated to research - Number of research projects - Inventory of research facilities - 	<ul style="list-style-type: none"> - Changes in budget actually used in research - Changes in geographical and thematic scope of research - 	<ul style="list-style-type: none"> - Research enhancement - Adaptation of research programmes - ...
DECISION MAKING	<ul style="list-style-type: none"> - International and internal commitments - Dissatisfaction with current producers - Public opinion - 	<ul style="list-style-type: none"> - Regulatory instruments - Information campaigns - Enforcement - Subsidies - 	<ul style="list-style-type: none"> - Number of actions subject to impact assessment - Number of species covered by management - 	<ul style="list-style-type: none"> - Increased understanding of the problems - Political pressure - Social pressure 	<ul style="list-style-type: none"> - Improved measures - Improved enforcement - Improved governance - ...

(*) For key biota