



**CONSULTATION ON THE APPLICATION OF ARTICLE 9  
OF THE FAO CODE OF CONDUCT FOR RESPONSIBLE FISHERIES  
IN THE MEDITERRANEAN REGION  
ROME, 19-23 JULY 1999**

**ELEMENTS OF AN ACTION PLAN FOR THE PROMOTION OF RESPONSIBLE  
AQUACULTURE IN THE MEDITERRANEAN**

**TEMP/RER/908/MUL**



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## 1. PREFACE

The following document, the elements of an Action Plan for the Promotion of Responsible Aquaculture in the Mediterranean region has been developed according to information and observations drawn from the synthesis of the national reports which were received as part of the Consultation on the Application of Article 9 of the FAO Code of Conduct for Responsible Fisheries in the Mediterranean Region (TEMP/RER/908/MUL). All GFCM countries were invited to participate in this project, and national reports were received for the preparation of the synthesis from the following: Bulgaria; Croatia; Cyprus; Egypt; France; Greece; Israel; Italy; Malta; Morocco; Romania; Spain; Tunisia; and Turkey.

Full details about the background to the project (TEMP/RER/908/MUL) are provided in the synthesis document, which also contains a glossary of the various terms used.

The present document, namely the elements for the action plan, was drafted by FAO staff, Mario Pedini and Cristina Lería and by the consultant Amedeo Freddi, assisted by S. Cataudella. It was **finally** edited by the team leader Michael New. This document will be submitted for discussion during the Consultation.

## 2. INTRODUCTION

### 2.1 Aquaculture in the Mediterranean

As indicated in the synthesis document, commercial freshwater aquaculture started in the GFCM area towards the end of the 19th century, although extensive practices for brackishwater aquaculture in the northern Adriatic valli were older and there is evidence of aquaculture practices from classical times. Modern mariculture is more recent and has developed rapidly in the last two decades.

For the GFCM countries bordering the Mediterranean and the Black Sea, the evolution of aquaculture production in the period in which FAO has collected statistics (1984-1997), indicates a growth from 655 000 t in 1984 to over 956 000 t in 1997. This figures include also the production from freshwater aquaculture and the French and Spanish production derived from the Atlantic coast. Freshwater aquaculture production amounted in 1984 to about 154 000 t and grew to almost 187 000 t in 1997. Marine and Brackishwater production moved in the same years from 472 500 t to over 667 000 t. If only the Mediterranean and Black Sea marine and brackishwater aquaculture production would be considered, the evolution in the period would have been from 80 000 t to almost 264 000 t. This figures show that in spite of the importance of Atlantic productions in France and Spain, the more rapid growth is being experienced in the Mediterranean basin proper. In terms of value, the sector has also shown a good growth moving from a total value of US \$ 827.1 million in 1984 to US \$ 2103.8 million in 1997. For marine and brackishwater species the increase in value went from 398.3 million to 1283.3 million in the same period. However the most spectacular growth was experienced in the Mediterranean basin for mariculture production with a progress from US \$ 88.2 million in 1984 to 766.5 million in 1997.

In terms of species volume in the period considered, the more important ones for the countries analysed were the mussels followed by the oyster with a rather static performance (from 345 000 t to 364 000 t for the mussels and from 121 000 to 141 000 for the oyster). After these two main species two freshwater finfish follow, rainbow trout and common carp with a doubling in production for the trout from 65 000 t to 135 000 t and a decrease for common carp from 65 000 t in 1984 to almost 48 000 t in 1997. The two main marine finfish species, gilthead seabream and seabass, ranked in 7<sup>th</sup> and 9<sup>th</sup> positions in 1997 but their growth was the most spectacular with gilthead seabream moving from 343 t in 1984 to 40 000 t in 1997 and seabass from 285 t in 1984 to 26 600 t in 1997.

However, if the species were ranked by their economic importance the classification would be very different. In 1997 the first species would be trout, which was worth US \$ 383.8 million (from a previous US \$ 213 million in 1984) followed by the gilthead seabream with US \$ 280 million, oyster with US \$ 240 million and seabass with US \$ 196.4 million.

In terms of enterprises, large scale industrial groups and becoming progressively dominant in marine finfish aquaculture while in the freshwater sector smaller familiar enterprises or cooperatives still are very important.

The production pattern is not equal in all the GFCM countries, where the three main countries France, Italy and Spain, showing a rather complex pattern. In terms of finfish these are countries in which salmonid culture dominates the production. These are species mainly destined to the local markets but are also exported. The prospects for growth are modest. Warmwater freshwater species represent the major aquaculture production in

Croatia, Bulgaria, Romania, Israel and Egypt and tend to be produced for domestic production. After a period in which due to the economic transition of the Eastern block production declined, it now seems that carp culture is recovering in Eastern Europe. Marine finfish production concentrates in Greece and Turkey, but it is also important in France, Italy and Spain and represents the main form of aquaculture in countries like Malta and Cyprus. Mollusc culture in the Mediterranean has produced an important growth of clam culture in recent year. Another important characteristic of Mediterranean aquaculture is the extensive practices in coastal lagoons, considerably developed in Italy but also of importance in Egypt and France and with good potential in Turkey.

## **2.2 Origin of the Consultation**

After the endorsement of the Code of Conduct for Responsible Fisheries (CCRF) by the FAO member countries in 1995, as a voluntary instrument, FAO was requested by the Conference to collaborate in the fulfilment and implementation of the objectives and principles contained in the Code,. The principles of the Code were to be implemented using the available mechanisms of FAO, such as the Regional Fisheries Bodies, that as stated in the Conference Resolution should be strengthened in order to deal more effectively with fisheries conservation and management issues in support of subregional, regional and global cooperation and coordination in fisheries. In this context the General Fisheries Commission for the Mediterranean (GFCM) had a clear role to play with its various subgroups.

The Italian Government (through the Ministry of Agricultural Policies, as the Chair of the GFCM Committee on Aquaculture and accepting the invitation of COFI) offered to assist the efforts of FAO in support of the Code, through the funding of a Consultation on the application of Article 9 of the Code in the Mediterranean region. The selection of this approach followed an agreed *modus operandi*, which consisted of the adaptation of the Code to the specificity of the fisheries and aquaculture sector in the various regions of the globe.

As has been shown in section 2.1, Mediterranean aquaculture presents clear characteristics. One is the growing predominance of the coastal aquaculture sector, in particular for the culture of high-value finfish species. In addition, the GFCM region is an area in which the international trade in aquaculture products is very important and therefore the aspects of regional co-operation acquire particular importance. Although precise figures of movements within the EU countries are not easily available, it is evident that the majority operators in the non-EU member countries base their production plans on export to the European markets. This is particularly true in case of the Italian market, which is the main consumer of high value farmed finfish species.

In addition, as a heavily populated closed sea area, the Mediterranean presents a high number of interactions and potential conflicts between resources users. In a situation in which aquaculture is still growing rapidly it will be very important to prevent mistakes leading to conflicts between resource users. These may be difficult to correct at a later stage and might jeopardise the future of the sector. It is worth remembering that when Mediterranean aquaculture began its rapid expansion in the 1970s, public opinion and NGOs were viewing the sector in a positive light as a welcome alternative to the excessive exploitation of wild resources. The rapid expansion of aquaculture in the area and the appearance of conflicts in some countries have started to modify that positive perception. Although the sector is still a small component of most national economies, it is essential to make use now of lessons learnt during the past development of other sectors, to assure the sustainability and responsible development of aquaculture.

With this in mind, the Italian government requested FAO to organise a Consultation to verify the status of understanding and application of those principles of the CCRF which deal with aquaculture development. It was decided that this Consultation would take the form of a project in which the participation of all of the sectors involved in aquaculture in the GFCM member countries would be as comprehensive as possible. The Consultation would also constitute a forum to identify what activities should be taken in the immediate future to promote the responsible development of aquaculture within the region.

## **2.3 Essential Considerations**

The Code is the first tangible product of the efforts of the international community to promote responsible fisheries but it is not an end in itself. Much remains to be done to adapt it to the different regions and sub-sectors. Although prepared by FAO on the basis of a growing consensus on issues of sustainability, which have been formulated from discussions in several important meetings including the Rio Conference, the Code is a voluntary code which is offered for adoption by individual countries. The Code therefore does not have the executive character of a supranational law.

Unless there is a political decision for adoption at national level, which is arrived at in agreement with national private, public and academic sectors, the efforts of international agencies like FAO to promote the Code will not bear fruit. An important consideration, however, is that in regions in which there is a strong exchange of fisheries commodities, as is the case with Mediterranean aquaculture products, the adoption and implementation of the principles of the Code in the form of import regulations by only a few countries could lead to the creation of trade barriers. This undesirable result would be contrary to the spirit of the Code itself.

Thus national efforts towards the adoption and adaptation of the Code by all countries would appear to be essential. International multilateral and bilateral co-operation agencies could be of assistance by establishing a common platform for discussion and providing the mechanisms (a forum for discussion, the provision of expertise, the formulation of written materials for national consideration), which may help to speed up national adoption of the principles of the Code.

#### **2.4 The Aims and Preparation of the Consultation**

A key consideration in the organisation of this Consultation has been to conceive it as an exercise in which GFCM countries could present their views on the applicability of the Code in their specific national context. It was believed that using a common reporting system would permit the reviewers to draw valid conclusions for the entire group. This necessitated a common platform of questions, which was provided by means of annotated guidelines (the "Outline for National Reports"), which FAO prepared to assist the countries to examine their situation.

In the course of the briefing missions which FAO made to the countries, it became evident that these annotated guidelines were a useful tool for further national analysis and reflection on the theme of planning sustainable aquaculture development. It was also evident that the Consultation would provide an insight into the ways in which FAO and other agencies could support the Mediterranean and other regions in the adoption of the responsible aquaculture principles set forth in the Code. It was also hoped that the Consultation would present a starting point for discussions on the topic, and for future activities in the Mediterranean.

In designing the Consultation, the key consideration was the need to ensure the fullest participation possible from all involved in the sector at the national level. The expression of national needs and views was regarded as vitally important. It was not intended that the Consultation would be means of conveying the opinion of the FAO but rather to listen to the views of the countries on the applicability of the Code. Thus the fullest involvement of participants from the administrative, academic and private sectors in each national team was sought, in order to better reflect the views of the various players in aquaculture development at the national level.

The Consultation was also designed to provide a framework for discussion of basic questions by the countries, which may assist in the definition of action plans at national and regional levels. These plans would, however, be elaborated in a second stage which would commence after the Consultation.

#### **2.5 Basic Issues and Questions to be Addressed in the Consultation**

The Consultation was conceived as a forum in which the countries, after having expressed initial views through the preparation of national reports, could address a series of basic questions. At this stage these questions remain open but, if properly discussed, the answers could pave the way for a future programme of work. Examples of the basic issues and questions that should be discussed are:

- ***How can the Code be interpreted and applied in the context of the development of the sector?***

No country objects to the principles of the Code, which are sound. However, difficulties exist in their application taking into consideration the existing realities of development in the various locations.

- ***How could the process of adoption and of understanding of the implications be promoted and activated more quickly?***

The urgency of identifying clear means of transforming the general principles of the Code into measures which have a direct relationship with the situation in each country is becoming well understood. This question addresses the mechanisms which could be put into place to accelerate the process.

- ***How could consensus and co-operation at both national and regional levels be ensured?***

Public opinion is increasingly conversant, in general terms, with concepts of sustainable development and environmental conservation. In particular, the role of NGOs in raising the profile of problems of sustainability within certain forms of development in recent years is evident and positive. However, discussions on issues of general sustainability are sometimes difficult to put into the correct perspective for new activities such as aquaculture, for which there is still relatively limited experience. The lack of forums where the future development of sustainable aquaculture could be discussed has been indicated in several cases. Although the principles of the Code are voluntary, it can be expected that they will generate pressures and that there is likely to be a progressive transformation of these voluntary principles into regulations or laws. However, there are dangers inherent in this transformation unless there is a strong degree of participation of all sectors involved in aquaculture development, to ensure that the adoption of the Code will minimise conflicts.

This reasoning has a validity for both national and international levels. At the international level, in an area like the Mediterranean where the aquaculture industry is heavily reliant on the export of its products, it is essential to achieve consensus. If consensus is not achieved, the adoption of the principles of the Code which apply to aquaculture in substantially different ways by different countries may result in the creation of trade barriers which are most undesirable. Such effects would influence the relationships between countries on the northern and southern shores of the Mediterranean. The challenge which this presents is to find a means of reducing the risk that these new and more advanced concepts would create barriers to economic development and trade. Thus the basic question on how to achieve consensus and co-operation arises.

- ***Could this preliminary exercise be a starting point for a longer-term programme?***

This Consultation on Article 9 of the Code is a preliminary exercise which is designed to address the potential for a regional approach towards the application of the principles of the Code to responsible aquaculture development programmes and plans. This action may pave the way towards a longer-term programme.

## **2.6 Existing Mechanisms to Facilitate Adoption**

The Consultation is invited to consider the various mechanisms available, at the national but also at the regional level, to work on the main areas which have been identified through the review of the national reports provided (Synthesis of National Reports). At the regional level these mechanisms include the GFCM Committee on Aquaculture and its associated networks, which is now expected to have an autonomous operational budget. However, non-FAO mechanisms, such as the MEDA programmes and others funded by the EC and other donors also need to be considered.

From the Synthesis of the National Reports which has been prepared for the Consultation, a number of major items of work have been identified and are provided within section 3 of the current document as matters for discussion. These **Elements**, which have been identified by extracting common problems and gaps amongst those which were pointed out in the national reports, may also be visualised as the main objectives for a future programme (an "**Action Plan**"), to be defined with the countries during this Consultation. These elements have associated objectives, the more important of which are also brought to the attention of the Consultation for discussion.

It is expected that the debate within the Consultation on all the above mentioned matters will indicate how the work towards the adoption of the principles of the Code, both at national level and with the co-operation of agencies like FAO, could be continued.

## **3. ELEMENTS OF A REGIONAL ACTION PLAN TO PROMOTE RESPONSIBLE AQUACULTURE IN THE MEDITERRANEAN REGION**

Five elements (or objectives) have been identified for the proposed Action Plan for the Promotion of Responsible Aquaculture in the Mediterranean.



**ELEMENT A:                    To improve comprehension and widespread capillary adoption of the Code in the Mediterranean region**

As noted in the Synthesis, the analyses made while the national reports were prepared during the preliminary phase of the Consultation highlighted the extremely limited distribution and knowledge of the Code in the region. This was also confirmed during the FAO field missions to the countries and in meetings with the national teams. This lack of knowledge implies that the principles of the Code have not yet been the subject of discussion and thought by all concerned parties; consequently little critical evaluation of their applicability had been carried out before this Consultation began.

Considerable differences in application, and even interpretation, became apparent during the review of the national reports. Despite this, some of the general principles of the Code have already been included in the legislation of some countries which concerns fisheries and aquaculture. On the other hand, there are few laws or regulations dealing with their practical application . These differences in application seem also to relate to the uneven development of aquaculture in the various GFCM countries and sub-regional areas, as well as to the relative importance that is accorded to aquaculture compared to other production sectors sharing the same resources, such as tourism, agriculture or capture fisheries. A more widespread and uniform dissemination of the principles of the CCRF has therefore been identified as a major objective of the Action Plan in order to improve knowledge of the Code and to balance its adoption in the various countries of the region.

The Code is a voluntary instrument and its principles, which refer to a global reality, are basically expressed as general recommendations or rather broad comments. Nevertheless, the Code itself (Articles 2b, 2c, and 2j) aims at becoming an instrument of reference with which to establish or improve the legal, regulatory and institutional framework required for responsible fisheries (and aquaculture). It also aims to elaborate and complement national policies for the conservation and management of resources and to provide standards of conduct for all persons involved in the fisheries (and aquaculture) sector. In order to apply the Code to a highly diversified and unequally developed sector, such as aquaculture in the Mediterranean, an accurate assessment of actual needs and expectations at the national level is the primary requisite. Strategies and limits for the application of the Code still need to be discussed and defined through participatory mechanisms, which involve representatives of the production sector, so that all producers feel that they share a common responsibility for future changes.

Important variables will influence the development of these strategies. From the analysis of the national reports, as described in the Synthesis, it has emerged that:

- lively dialogue among "colleagues" in small countries with an emerging aquaculture sector exists spontaneously; however, it needs to be nurtured in larger countries through well-planned promotion to increase information access and decrease confrontation because of differences of opinion.
- aquaculture develops at an "industrial" level as well as a small-scale traditional activity. This means that information must be made accessible, and in an understandable format, for every audience. These audiences comprise many different cultures, interests and objectives.
- linked with the above, the limited dissemination of the Code highlights the necessity to train personnel who are able to discuss and advise on the principles of the Code at all levels (from legal and technical administrators to producers, researchers and traders, and in various fields such as environmental matters, social and economic development, and resource use planning).

The Code is already available in the four official languages of the GFCM, and Italy has translated it into Italian. However, the FAO technical guidelines related to its various articles have so far only been published and distributed in English (with a few exceptions in French). However, to ensure its dissemination at every national level, it is essential that the Code must be available in all national languages in order to allow a wide involvement of all sector operators, namely public administrators, researchers, producers, suppliers, market operators and consumers. This is considered essential to achieve a capillary diffusion of the principles of the Code, and to facilitate the broadest levels of education. Continuing dialogue among the above-mentioned categories of audience is essential if the principles of the Code are to be comprehended and accepted. In fact, positive results can only be expected if all resource users become firmly convinced that a more responsible attitude is not only a matter of ethics but will bring, in the medium term, tangible economic advantages. The Code should extend aquaculture development objectives towards the achievement of social benefits, the conservation of the environment, and the balanced use of resources. Dialogue amongst potentially competitive productive sectors will consequently be encouraged, a common solution of problems will be pursued, and better cohesion of the aquaculture sector itself will be favoured.

The dissemination of the Code needs to be supported at a regional level through specific expertise, provided by international organisations. This could facilitate the dialogue amongst countries and also bring experience gained in other regions into the picture. This regional dimension will facilitate simultaneous understanding and application of the principles of the Code. Together with the creation of a regional platform (in a region like the Mediterranean, where significant commercial and technical exchanges exist), the contribution of this international expertise should limit the risk of discrimination and of the creation of trade barriers among countries, which might originate from an uneven application of the CCRF principles.

In this respect, the common adoption of the Code could be viewed as a prelude to regional and sub-regional co-operative evaluation of constraints and the common design of solutions. It would also foster aquaculture expansion and definitively establish it as a production sector that has significant positive social and economic impact. In addition, common understanding, and the enactment and acceptance of regulations would increase regional dialogue among GFCM member countries.

***Possible activities within ELEMENT A of the Action Plan, which would favour the dissemination of the Code and improve education levels, and which could also be seen as the first broad objective of national and regional plans, include:***

- ***preparing training manuals, booklets, and pamphlets in local languages***

Some of these could be prepared at the regional level and later be adapted to national characteristics and to the different production realities.

- ***organising specialised training and the provision of advice at all levels***

These would include not only specialised technical themes but also broader topics such as environmental conservation, social development, legislative matters, and market promotion and control.

- ***organising workshops and roundtables***

In these fora, common conduct strategies or the identification and adoption of regional standards could be evaluated, designed and established, for example.

- ***promoting programmes designed to favour producers associations***

These programmes could increase the emergence and flow of ideas and technologies, as well as facilitating education in the private sector.

- ***organising debates on major constraints and subjects related with Code adaptation and adoption and the monitoring of short and medium-term effects***

These debates could be implemented through temporary "ad hoc" committees and/or permanent committees and interdisciplinary commissions.

At the national level, the authorities in charge of the sector should be involved, case by case, in the promotion of the dialogue and in monitoring the growth of a more responsible attitude to aquaculture development. At the regional level, competent bodies (e.g. GFCM, EC, Arab League, bilateral aid programmes, and local, regional or international NGOs) could be involved in assessing, planning, sustaining and co-ordinating common activities with the participation of the various countries. National participants in regional meetings (starting from the present Consultation) should be nominated "Ambassadors of the Code" and they should work in favour of the Code dissemination and application in their respective countries

#### **ELEMENT B: To improve planning processes for aquaculture development and resource use**

A limited number of countries in the region have a structured aquaculture development plan and when they exist, in some cases are elaborated by the authorities in charge for the administration of the sector but without formal approval as has been noted in the Synthesis. A possible reason for this is the fact that aquaculture does not have yet a clear identity as a sector for planning purposes in most countries. In other cases its economic weight is still limited in comparison with other more traditional productive sectors. In addition, when such plans

are prepared, the degree of participation of all the sectors concerned (in particular the private sector) is limited in most cases.

Aquaculture planning is frequently included within fisheries plans but little, if any, connection with plans for other economic sectors exists. This fact often places aquaculture in a permanent situation of conflict when resource allocation has to be planned and established at national level. Aquaculture is usually granted a lower priority for access to land (in the majority of cases, the relevant legislation does not refer specifically to the use of land for aquaculture purposes), and to marine and inland waters, as well as to public financial resources in support of sector development. This weakens aquaculture potential and relegates the sector to a marginal economic role within national development strategies.

Article 9.1.3 of the Code proposes that "States should produce and regularly update aquaculture development strategies and plans ... to allow the rational use of resources shared by aquaculture and other activities." In order to achieve this objective, which assumes the inclusion of aquaculture among the sectors usually considered for the formulation of national development policies and plans, it would be necessary to evaluate and demonstrate the economic potential of aquaculture. This would enable the planning authorities to devote better balanced attention to the sector, consonant with their attitude towards competing resource users.

***ELEMENT B of the Action Plan, which aims at improving the planning of aquaculture development, could be achieved by the following activities:***

- ***gradually promoting more responsible attitudes in resource management***

At first sight, this activity may appear more relevant to Element A than to Element B of the Action Plan. However, this illustrates and emphasises the need to approach the Action Plan in a comprehensive way. This activity implies a sustained effort to educate and inform aquaculture administrators, researchers, producers, suppliers and consumers of aquaculture products, and is directly linked to the following activities. Specialised training on sustainable and responsible aquaculture techniques, which is geared to the differing requirements of industrial and small-scale producers, should be organised to promote more responsible farming practices. The basic knowledge of staff involved in the administration of aquaculture production units must be assured, as well as the availability of specialised personnel in the public and academic sectors who can act as points of reference for advice to producers. Research on responsible aquaculture techniques must be strengthened, to make the linkages between the academic and production sectors more constructive.

- ***objectively demonstrating the advantages and economic benefits which could be gained through the appropriate planning of aquaculture development, which favour the integration of aquaculture development into plans for other sectors***

The sector can contribute to a more sustainable use of resources, being complementary to fisheries, and can play an important role in reducing imports of aquatic products and to obtaining foreign currency through exports. Positive social impacts can be achieved by promoting small-scale aquaculture or culture-based fisheries programmes and also, in some cases, through an improved integration with agricultural practices. High-value species can be produced, either for the domestic market or for export. Aquaculture has a potentially high compatibility with environmental conservation because its sustainability is directly dependent on the maintenance of benign environmental conditions. It is frequently pointed out that aquaculture may be detrimental to the external environment but, given the wide choice of technology available, aquaculture development can be planned so that it is integrated with other industrial or traditional local activities in a sustainable way, thus increasing the efficiency of resource use.

This calls for an improved integration of the planning of various sectors at the national level, considering the opportunities presented by aquaculture development for possible inclusion. Similarly, the preparation of totally independent plans for aquaculture would be undesirable as it could limit the possibilities for integration. National development plans should be analysed and, where possible, appropriate coastal and inland areas which could be appropriate for aquaculture activities should be identified. Aquaculture must be suggested as an option when it gives a competitive return for its resource use. To ensure that this option is considered, consultation with other sector development authorities should be ensured to compare potential, or to identify common programmes. Two specific examples where integration could be beneficial are aquaculture in tandem with industrial development

(e.g. aquaculture which uses thermal effluents, or uses reservoirs primarily designed for the electricity industry or for storing water for irrigation), or combined with educational programmes and eco-tourism.

Linked to these major activities, the evaluation and determination of indicators aimed at assessing the competitiveness and impact of aquaculture development would be required.

- ***increasing the participation of all sectors concerned with the preparation and implementation of aquaculture development plans***

Representatives of all authorities, institutions and the private sector which compete for, or are involved in, resources use should participate in the discussion and formulation of aquaculture development plans. This process should include representatives of local communities, as well as researchers and consumer associations, where they exist. This approach would result in better consensus and provide development guarantees for the sector, as well as provide a more adequate framework for investment planning.

No matter how thorough the planning process is, conflicts in resources use or in the evaluation of environmental impact of and on aquaculture occur in practice. National committees or other fora would be useful to evaluate and resolve these conflicts. These bodies would also provide a better insight into the origin and causes of the conflicts faced by the current plans. These fora would also be useful in assessing the results and identifying the constraints faced during the implementation of each national aquaculture plan and, where necessary, assist in the re-assessment of its goals

- ***increasing the participation of all sectors concerned in the formulation of economic and legal instruments***

To promote the existence of advisory committees or councils which advise government authorities in the elaboration of water management, coastal area management and other land area management legislation.

- ***encourage the elaboration of flexible aquaculture legislation that will give clarity about the privileges and responsibilities of the aquaculture producers***

Using the legal framework as a way to avoid conflicts amongst the various authorities and interested parties involved in the sector.

Regional support for Element B of the Action Plan be given through the provision of advice from international organisations, institutions and experts. Again, mechanisms such as the GFCM Committee on Aquaculture and its associated networks could be the appropriate framework within which this task can be supported, through the organisation of workshops to compare planning and legislative processes, the evaluation and/or preparation of indicators to assess the sector, and the training of personnel.

**ELEMENT C:                    To enhance harmonisation between aquaculture development and environmental conservation**

The analysis of the national reports highlighted the progressively increasing competition (and sometimes conflicts) between the expanding aquaculture sector, alternative resources users, and the needs of environmental protection. As stated in the Synthesis, there is no specific legislation in all the reporting countries which regulates the environmental impact either on and of aquaculture. This has negative effects on the potential for further aquaculture development and its sustainability. Dialogue between the public and private sectors and, even more critically, between the public authorities involved in rural or fisheries production administration and those responsible for environment conservation, is still weak. In general, public and private institutions (whether scientific centres or NGOs) seem to be insufficiently aware of the fact that aquaculture development can be essentially compatible with sustainable resource use. There is an evident need for collaboration to effectively apply the recommendations of the Code on topics such as:

- ***the introduction of new species***

New species are also brought in by the private sector either without any effective public control or, in other cases (even when forbidden *a priori*), without sufficiently scientifically proven justification. the reduction of organic waste

These are chiefly due the use of inappropriate aquafeeds and feeding techniques or to inadequate effluent treatment.

- ***the control of disease outbreaks***

These spread in the region through the sale or exchange of live animals (breeders, fingerlings, spat) because of the absence of effective sanitary controls, or (where they are applied) because of their circumvention by producers.

- ***the minimisation of the use of dangerous chemicals, therapeutants and hormones***

Frequently, safe threshold limits are exceeded, or they are even used without any knowledge about their toxicity.

Element C of the Action Plan is thus geared to strengthening the bonds between aquaculture development and environmental conservation, which responds to the basic statement in the concept of the precautionary approach ( which takes into consideration the needs of future generations). The relationships between Element C and the previous elements of the action plan are clear. An enhanced attitude towards responsibility in aquaculture development (Element A) and improved planning of resource use (Element B) are, in fact, obligatory steps towards the development of environmentally compatible production activities. On the other hand, the future of aquaculture itself mainly depends on the preservation of healthy environmental conditions. Aquaculture administrators and producers must become fully aware of these facts, not only to minimise any negative impacts on the environment but also to exert the rights of the industry that safe external conditions should be assured by other resources users.

National will to accept and apply the principles of the Code is an essential pre-requisite to Element C of the Action Plan. Effective institutional co-operation and co-ordination on environmental management and aquaculture development is of paramount importance. As mentioned earlier (Element B), all the relevant authorities should be consulted and should provide their technical viewpoints during the general process of development planning. According to the CCRF, environmental issues have the highest importance and must be widely discussed while the possible impacts of aquaculture activities are considered. Participation in development planning must be extended to producers organisations, representatives of local communities, and, more broadly, to those who represent the interests and opinions of the general public. Involvement of the academic sector and NGOs is essential in order to reach agreement about the selection of appropriate areas where farming activities could develop with little or no impact on the environment. The possibility of using model aquaculture units which play an active role in environment conservation, while concomitantly providing significant social and economic return (see Element D), for example in reservoirs or coastal lagoons, is also worth consideration.

The heterogeneity of Mediterranean aquaculture probably means that the evaluation of its relationship with the environment must be considered on the basis of a production system approach. A number of examples can be given. Firstly, culture based fisheries or extensive aquaculture activities draw attention to potential impacts on the integrity of local fishery stocks, the introduction into the wild of competitive species, or an imbalance amongst the proportion of local species. Secondly, intensive inland aquaculture may affect water quality because of the concentration of pollutants in rivers, while intensive coastal aquaculture might cause considerable concern because of organic waste accumulation below floating cages, or the possibility of uncontrollable disease outbreaks. As a third example, mollusc rearing requires effective controls on water quality in the farming sites to prevent the sort of incidents which have been shown to have a dramatically negative impact, not only on the sales of molluscs but also on the trade of all fisheries products.

The definition of precise standards for application to production activities is urgent. This involves further technological research which is geared to the various production sectors, the identification of potential qualitative parameters and their value for environment control, and the issuance of clear national norms for the application of standards (which should include incentives and deterrents). Regional collaboration on this topic will significantly contribute to the acquisition of information from other countries, within and outside the region, as well as from non-aquaculture production sectors. For example, much of the experience in effluent treatment in other productive sectors may be adaptable to aquaculture.

The promotion of enhanced education for producers and of their direct participation in environmental control is advisable as a means of getting the most effective and durable results. Research results need to be made more readily available to producers. Producers need to be provided with training, which should be arranged

separately for (and specifically geared to match the differing characteristics of) industrial aquafarmers and small-scale artisanal producers. This training should provide simple and (preferably) cheap environmental quality control methodologies, so that producers can become:

- able to monitor external environmental conditions and maintain them safe for production activities
- appropriately skilled in their production management, in order to develop rearing units which are not only technically and economically efficient but also environmentally sound
- sufficiently prepared to assume full responsibility for production impact control

This would allow producers (with periodic public controls) to establish self-certification systems based on agreed standards for product and management responsibility.

Collaboration between producers would also contribute towards solving the commonly reported problems of shortages in public funds (and even staff), which prevent public administrations from efficiently enforcing environmental controls in some countries. In fact, producers might represent a capillary source of data which, opportunely collected and analysed, could become the basis of a national monitoring system. A high degree of mutual dependence between the public and private sectors is obviously desirable. Adequate training and advice would increase the knowledge of producers and, as already happens in some countries, assist them to accept better farming standards (e.g. limited rearing densities to reduce impact of and on production) in their own interests. However, it is worth noting that this desirable result nevertheless predicates that public institutions develop a balanced attitude towards aquaculture. The prosecution of resource users who damage the environment is necessary but it needs to be balanced with the potential benefits which aquaculture can provide. An example of value to others in the Mediterranean area is the collaboration between researchers, regulatory officials and the private sector in northern Spain to operate the mussel culture industry in a more sustainable way.

Close collaboration between public and private sectors is clearly necessary to provide practical answers to the problems which have been identified in the national reports.

***ELEMENT C of the Action Plan, which seeks to enhance harmonisation between aquaculture development and environmental conservation, could be achieved by a number of activities, including:***

- ***conducting impact studies on non-indigenous species***

New studies appear to be necessary to assess the environmental risks due to the use of non-indigenous species. These assessments of risk need to be carried out concomitantly with the evaluation of the economic and social advantages of importing better performing species. Such studies should be made with the active participation of the production sector.

- ***conducting impact studies on the use of genetically modified organisms***

Research on the use of genetically modified organisms needs strengthening. This work can be accomplished, as some countries have already demonstrated, with an enhanced involvement of private aquaculture companies.

- ***initiating research, collaboration and education programmes geared towards the use of more eco-friendly aquafeeds and feeding practices***

Collaboration between producers and suppliers could contribute towards increasing knowledge about, and promoting the use of eco-friendly aquafeeds. Information transfer on research for replacing marine ingredients in aquafeeds seems to be an urgent need. Training concerning nutritional efficiency and the cost-benefits of applying alternative feeding strategies should be carried out. However, public administrators need to remember that the high cost of aquafeeds is a major constraint to the aquaculture industry; this factor needs to be taken into consideration in designing research approaches towards improving the eco-friendliness of aquafeed use.

- *defining, testing and modifying standard responsible production methodologies*

Once defined standard responsible production methodologies and parameter values have been developed for the various types of aquaculture activities, producers could fully collaborate in testing the suggested procedures and in suggesting necessary adaptations to local conditions.

- *increasing awareness about the risks of disease transfer*

As the Synthesis shows, national reports indicated a need for enhancing the awareness of producers concerning the high risks of disease transfer throughout the region. In this respect, collaboration with the public sanitary authorities needs to be improved. The provision of free technical advice and training, the establishment of economically reasonable insurance, and the allotment of public funds to assist the private sector to overcome the general trading difficulties caused by high-profile outbreaks of disease outbreaks are three of the activities which would improve public-private sector collaboration and the acceptance of sanitary emergency measures.

- *increase awareness of the necessity of collaboration among neighbouring countries to protect the environment against irresponsible aquaculture activities or to safeguard the potential for aquaculture development against the activities of other resources users*

The existence of bilateral agreements among neighbouring countries that, should be simple and comprehensible to be implemented is an essential requisite to increase common actions to avoid negative impacts with respect to aquaculture and the spread of diseases.

- *educating producers*

The education of producers will play a major role in the achievement of this element of the Action Plan. The private sector needs to be provided with technically and economically feasible alternatives which enhance the responsibility of their management. These would include improved technical standards, lists of acceptable products, and the provision of regular monitoring services and advice.

- *increase collaboration between the authorities, public sector and NGOs to promote initiatives of responsible aquaculture practices through seeking new or amended legislation*

The Synthesis reflects a general lack of dialogue between Government authorities dealing with aquaculture, the private sector and NGOs. This dialogue should start in each country and should be reflected in new or amended legislation which will take into consideration the environmental needs of the sector.

Regional co-operation, among public authorities, research centres and producers organisations would favour the development of common actions towards a region-wide enhancement in environmental protection and the sharing of the results achieved. One specific example could be a regional programme on predation and the protection of wading birds. NGOs could significantly contribute towards promoting regional media campaigns to present aquaculture as a responsible food producing activity rather than something which is environmentally harmful. In order to gain the confidence in aquaculture as a responsible activity, which such co-operation (with NGOs and the public) would need to have, the conflicts between aquaculture producers and other resource users have to be reduced as far as possible. These conflicts result from inappropriate rearing practices, which can impair the image of the sector and constrain its future growth. The demonstrable effects of an enhanced responsibility on the behalf of the aquaculture sector would reconfirm aquaculture as a production tool with the potential to reduce the excessive exploitation of wild resources.

#### **ELEMENT D: To utilise the Code as a means of upgrading the economic value of aquaculture**

When Mediterranean aquaculture development (particularly in the coastal areas) started to accelerate some 25 years ago, public opinion and the media perceived these new technologies in a positive manner. Aquaculture was expected to reduce the fishing pressure on natural renewable resources, which in a closed sea like the Mediterranean had been under considerable pressure since historical times. It was anticipated that aquaculture would increase the supply of seafood and reduce effort from the traditional capture fishery. In practice this turned out to be a false expectation. Both sectors developed in parallel and the increased supply from aquaculture, together with an associated fall in product prices in real terms, may have led to an increase in the

fishing effort (in particular by artisanal fishermen) in order to maintain levels of revenue. At this point, and associated with the expansion of more intensive and industrialised grow-out technologies (made possible by technological advances in seed and feed production), the opinions of the public about this sector began to change. A negative perception of aquaculture gradually emerged as the conflicts with common resource users (e.g. traditional fishing communities; the tourism industry) increased. Though there are some examples where local coastal communities directly benefited from the development of aquaculture, unfortunately most did not.

From the analysis of the national reports it has clearly emerged that the CCRF has generally been voluntarily adopted by the governments who, as Member States of FAO, have had a direct role in its development. However, in most countries, the Code still needs to be diffused to producers and to middle-level administrators and researchers. The general principles it promotes are basically not contested by anyone. They are seen by the countries as an appropriate means of conserving natural resources for future generations and of reducing the conflicts derived from interactions, whilst still permitting the further development of the sector in a sustainable way in order to meet future demand for fishery products.

However, the fact that we are dealing with a Code of Conduct, and that the words “responsible aquaculture” are emphasised, highlight the necessity for control over the manner in which the sector operates. The principal criteria for such controls should be the adoption of responsible and sustainable production practices. The Synthesis of the national reports has shown that existing rules neither clearly highlight codes of conduct nor codes of practice; nor do they identify which production systems are most compatible with the concept of sustainability. The national reports demonstrate the fact that the specific characteristics of the predominant aquaculture systems differ. However, the lack of a regulatory framework which prioritises the concepts of sustainability and responsibility, and the lack of studies on the evaluation of production systems from this point of view, is common throughout the sector.

The adoption of the principles of the Code necessitate their comprehension and adoption by the production sector. Their adoption would be more rapid if, rather than considering the CCRF as a repressive tool, the Code could be demonstrated to constitute a means of enhancing the economic value of aquaculture products. Perception of the financial benefits which would accrue from the implementation of the Code would help the production sector to bear whatever additional costs its application may impose. Financial benefits certainly could arise from a public sensitised to pay more for responsibly-produced goods (from farms where the conservation of the environment and biodiversity, and product safety, are of paramount importance), but this would require that such aquaculture products be instantly recognisable and be appreciated both by consumers and administrators. It would be necessary to convince consumers why they should pay the extra for products with a “responsible” label or certification.

In reality, the sector in the Mediterranean area faces three types of situations:

- firstly, there are countries with an existing and relatively large aquaculture production, in which some or most production systems need to be adjusted (to a varying degree) to comply with criteria set by the principles of the Code. This situation may require more modern or technologically advanced forms of production to be introduced. The costs of introducing such improvements need to be regarded as fair, by producers and administrators alike.
- secondly, there are countries which have an nascent aquaculture sector. Here there is the political will to expand the sector, both for domestic food supply and as a foreign currency earner, and there is a need to introduce new (for those countries) technologies. Planning the national expansion of aquaculture with investors in a unified, harmonious way demands a proficient knowledge about which systems should be favoured. This implies that the impact of the various technological packages under local conditions needs study (see Element C).
- thirdly, there are countries in which aquaculture could be considered as an additional, complementary activity which can be integrated with other existing forms of natural resource utilisation and viable production systems (e.g. rice-fish culture, the rotation of utilisation of areas, the use of irrigation networks and reservoirs, etc.). This situation is closely linked to cases where aquaculture could be prioritised as an economic component in the conservation of areas of special interest, such as coastal lagoons or wetlands. In these cases the acceptance by local communities and planners of extensive forms of aquaculture would guarantee the conservation of the environment and special biotopes.

The analysis of the local situation by the national groups which include the three main sectors concerned, namely administrators, academics, and private producers, could lead to the identification of suitable and



permissible forms of production. In this respect, the aim of Element D of the Action Plan would be to adapt the CCRF into an instrument which would increase the economic value of sustainable aquaculture production, thus encouraging its adoption by producers.

In considering the Code as a tool to promote aquaculture development in a sustainable way as Element D of the Action Plan, five related objectives can be considered on the basis of the synthesis of the national reports, as listed below. The five objectives have been designated Objectives D1 – D5 and, following their definition, *a series of related potential activities within the Action Plan are provided (for discussion and for the ranking of priorities by the participants in the Consultation).*

- **Objective D 1:** to obtain a better understanding of the levels of sustainability for the integration of aquaculture with traditional agricultural or fisheries activities. This would be coupled with actions to optimise the production process, so that the insertion of responsible forms of aquaculture production within the overall natural resource utilisation system would improve its economics.

*A number of examples of potential activities for Objective D 1 have been identified. These comprise:*

- *developing criteria leading to the design of indicators linked to the analysis of sustainability of production systems and to their economic and social impact (economic and social impact is also related to objective D3)*

The development of indicators and models to assess the viability and sustainability of production systems is a possible regional undertaking in which co-operation between countries on the typologies of models and the selection of production systems could accelerate the process required to reach standards for the evaluation of activities. The adaptation of these indicators to national realities should permit a better comparison of indices and should, in theory at least, improve the comprehension of regional standards. Trade should be facilitated if certification procedures are accepted at the regional level.

- *promoting research efforts* in order to:

Optimise existing production systems (operating at the level of seed quality, feeds, health management, or rearing techniques, for example).

Test new species and systems which could be inserted in niches (either of the market or of sites), where these exist.

Divulge the existing information on topics related to production systems in the region which is of relevance to individual national situations. In this connection a common trend has been observed towards the intensification of production systems, although in most cases these have developed without a proper regulatory framework. The research efforts could be related to verifying the extent to which the most problematic (from the point of view of impact) systems need be de-intensified to meet sustainability criteria, yet still be economically viable.

- **Objective D 2:** to promote the role of associations of aquaculture producers, in particular for small-scale aquaculture farmers, as a mechanism to ensure the application of the principles of the Code and to evolve the recognition of the product quality.

*An example of activities which would assist in achieving Objective D 2 would be:*

- *using producer associations to favour at least a partial re-conversion of small-scale fishing communities into aquaculture*

Using associations, the diffusion of Code-related concepts amongst the private sector would be facilitated. These associations could also be involved in the provision of services (such as the facilitation of credit, in particular for small-scale farmers), thus enhancing the social impact of the application of the CCRF. In addition, the presence of producer associations could provide a sufficient critical mass for the discussion of the adequacy of the norms for production, and for monitoring the application of the regulations related to the principles of the Code, thus leading to self-certification of production practices under the supervision of the associations. The role of small-scale producer associations could also be directed towards improved control of product prices

through collective negotiation. This would strengthen the usually weak position of the small-scale producer.

- *to encourage the enactment of national legislation which favours the development of aquaculture in support of local communities (fisheries associations and co-operatives)*

It is recognised in the Synthesis that there is very little involvement of the local communities in the legislative process. The involvement of local communities will prevent conflicts between the interest groups and the Administration.

- **Objective D 3:** the establishment of administrative and financial measures leading to the promotion of sustainable and responsible aquaculture production. Objective D 3 is linked to objective D 1.

*Activities designed to achieve Objective D 3 could include:*

- *assessing, through the use of sustainability indicators, the various forms of production to aid decisions on those that should be encouraged, and those which should be avoided*

The results of these assessments should be reflected in appropriate regulations, leading to the determination of specific incentives and deterrents.

- *creating specific credit lines, especially oriented towards the small-scale production sector*

These could favour the re-conversion to aquaculture production of coastal communities, or the inclusion of aquaculture activities in the case of the agricultural sector. This facility could be derived from the analysis of systems and from decisions about which lines of work should be supported by the administration.

- *providing appropriate insurance schemes*

Agreement by all parties about what could be insured could be transformed into an element of direction for the sector. In most countries, the criteria for insuring sustainable aquaculture production remain yet to be developed.

- **Objective D 4:** to improve the public image of aquaculture in order to get appropriate recognition of its products. This objective is also related to previous objectives and elements of the Action Plan

*Two activities which could contribute to achieving Objective D 4 are:*

- *increasing transparency in the management of the sector, both by public administrations and by private sector associations*
- *improving the dialogue with institutions and NGOs concerned with sustainability and product quality assurance*

Objective D4 is closely linked with Element A of the Action Plan, which concerns the diffusion of information and education. The organisation of an information campaign highlighting the compliance of aquaculture production methods with the principles of sustainability in the use of resources should, in the medium term, lead to the acceptance of a special label by the consumer community. This could justify the eventual extra costs which the adoption of methods to ensure sustainability and responsible practices would impose.

- **Objective D 5:** to promote a total quality concept for aquaculture production. This objective is also linked to Element E of the Action Plan.

*Activities related to Objective D 5 could include:*

- *introducing quality criteria assurance methods nationally*

These would be accepted as high-level standards in the region, thus justifying the claims about products of high quality by the producer associations.

As is the case for the other four elements, Element D has a strong degree of interrelationship, which emphasises the importance of approaching the Action Plan in a comprehensive way, in order to obtain the best results possible. Once more, the five objectives of Element D also highlight the crucial role which national initiatives must play in adopting the principles of the Code as a catalyst for increased aquaculture production and economic growth. Regional initiatives in some of these objectives have importance but they cannot replace, or be considered separately from national initiatives.

**ELEMENT E:                    To use the principles of the CCRF to improve and stabilise trade in aquaculture products in the Mediterranean region**

The regional market in aquaculture products is dominated in value terms by marine species. Marine finfish are considered export products by most countries and sold principally in the EU market, especially to Italy. EU countries are the most important consumers of molluscs but they also are the main producers. Trade in inland aquaculture products includes trout, produced in EU countries and Turkey and either locally consumed or exported, and carp and tilapia which are principally sold on domestic markets.

According to the national reports, farmed marine finfish are regarded as high-value products which do not need market promotion. Nevertheless, the recent enforcement of new quality standards by the EC has shown how far their production was dependent on export towards Europe. This new and unbalanced market situation, which highly affects non-EU Mediterranean countries, is creating trade barriers by decreasing free market competition and favouring those countries which are in the EU, whose own trade has been assisted by the elimination of customs barriers within the EU. Thus EU countries themselves, and those non-EU countries which have the capacity to adapt their quality standards rapidly to the new ones requested by the EC, are at an advantage. As well as the imposition of EU quality standards, the application of export/import fees is considered unfair by the affected countries and is contrary to the principles expressed in Articles 11.2 (Responsible international trade) and 11.3 (Laws and regulations relating to fish trade) of the CCRF, which has been voluntarily accepted by the whole region.

Ambition to obtain the highest possible prices and the need to maintain their good reputation with the purchasers of their products seem to be the main factors which induce producers to maintain high quality standards. For marine products these standards, which are principally based on the application of HACCP procedures or the principles included in the Codex Alimentarius, result in the products reaching their markets as fresh as possible (through efficient processing and rapid transport). They also occasionally include certification of farm source. However, linking the products with eco-friendly production practically never occurs.

Inland aquaculture products, with the exception of trout, are usually less well controlled, probably because (being destined for domestic markets) they are not subject to international quality standards. In most of the Mediterranean countries, the national reports indicate that freshness is regarded as the main characteristic for which consumers are ready to pay a special price. As noted above, the production and trade in trout is a special case. It is geographically confined to cold waters, extremely significant in terms of the quantity produced, reasonably stable in market price (despite increasing competition with salmon imports), and highly supported by well-organised national producer associations.

Aquaculture products seem to be generally well appreciated in the region. This is particularly true for molluscs, as consumers are aware about the high risks linked with their possible contamination (several countries already adopt sanitary certification of the farming areas, and depuration facilities also exist). In some countries wild-caught marine fish are preferred to farmed animals but this discrimination does not seem to have seriously affected the market yet. Inland farmed fish are well accepted, as producers are able to supply the market with fresh or even live products and also because wild-caught freshwater fish are rarely sold.

Despite the fact that aquaculture production is considered mainly as a good means of reducing fish imports in many countries of the region, limited attention is still addressed to the analysis of domestic market potential and the promotion of aquaculture products. The development of domestic market potential appears to be a recommendable alternative to the high current dependence of aquaculture producers on supplying export markets. Such action would help to limit the huge problems which arise when international trade barriers appear.

*A number of potential activities within Element E of the Action Plan have been identified. These are related to the implementation of Article 11 of the CCRF (which covers the aspects of trade in fisheries products, including aquaculture) and include:*

- ***upgrading and unifying the standards of production, processing and transport and promoting their application (through training and the transfer of expertise)***

This is particularly important for an industry in which its economically more important products are mainly directed to export markets in the EU. This is an issue which requires concerted action at the regional level and where the role of the GFCM Committee on aquaculture and its associated networks would be important.

In addition to the inherent benefits of uniformity within the Mediterranean region, a common platform of trade standards is also needed in order to prevent the application of the Code itself from becoming something which creates trade barriers. This problem has already been observed in the capture fisheries industry, where environmental issues have resulted in specific conditions being applied by importing countries on other countries with products to sell. Recent cases related to the hygienic quality of processing plants have already affected aquaculture producers in the Mediterranean, who have found their access to EU markets blocked or constrained. Unifying high-level standards for product quality, and their regional application, would not only assist trade but also limit the environmental impact of the industry. The adoption and application of better standards would also be a factor which would improve the image of the sector. This could also have a positive impact on the value of aquaculture products.

- ***increase co-operation in the region and in particular between EU and non-EU countries to harmonise legislation applicable to trade in aquaculture products.***

The fact that various countries in the region are non-EU members can seriously endanger, as has been demonstrated in the Synthesis, the trade in aquaculture products. In order to avoid conflicts between different national laws that could create barriers to trade, the harmonisation of legislation and the continuous cooperation among the countries should be encouraged. The harmonisation of legislation applicable to trade could be one of the mandates of an appropriate regional body in aquaculture trade issues.

- ***strengthening national and regional producers associations***

The role of producer associations in trade is also important. Activities directed at promoting the establishment or strengthening of national or regional producers associations may also eventually assist the public administrators in the stabilisation of the sector. In fact, as shown already in the case of existing mature regional associations, it should be possible to use them for tracking prices and market opportunities, and for the organisation of campaigns for promoting consumption. Individual countries may not be able to organise such campaigns alone, if their national aquaculture sector is still small.

If this regional activity is to prove valuable it will be essential for the producers associations to appoint a single representative as the partner for the public administrations concerned. This will facilitate dialogue and improve the capacity to intervene positively in aspects of trade.

Regional links between national associations already exist for some products and some countries (mainly European). It would be beneficial for the entire area to expand the membership of these regional links, so that other countries could also benefit from existing experience.

- ***evaluating domestic market capacity***

The evaluation of domestic market capacity, taking local preferences and their promotion into account, is linked to the need to develop safety mechanisms against gluts in international markets. At times, these gluts may be due to the large number of producers; thus actions which would reinforce the sustainability of the sector by expanding domestic local markets is in accordance with the principles of the Code.

- ***educating consumers in the benefits of fish consumption, especially with regard to responsibly produced aquaculture products***

Educating consumers has proven already beneficial in expanding the consumption of aquaculture products in EU markets. In the case of the Mediterranean area, such promotion campaigns have been limited to salmonids and the EU countries. Consumption patterns for fishery products in the Mediterranean countries are very different from country to country; in several countries it is certainly necessary to promote consumption. The use of the media to carry messages which highlight the aspects of responsibility in aquaculture production systems may improve consumer attitudes towards aquaculture products. However, a prerequisite to such campaigns is the adoption and application of standards of quality to justify the claims of responsibility. Norms and procedures for quality control, such as HACCP, are not well known in several GFCM member countries and their diffusion is still needed.

- ***promoting aquaculture products within the tourism industry***

In many national reports, the tourism industry was identified as a source of conflicts for coastal aquaculture. However, it is also true that tourists represent an important clientele for Mediterranean food products, especially seafood. The consumption of Mediterranean seafood species seems to be gradually increasing in central Europe, as a direct result of vacations in the Mediterranean and the consumption of local food. This represents an opportunity which can assist the production sector. Due to the lack of effective regional associations for product promotion this opportunity has been partly missed to date. Many European consumers are sensitive to topics linked to environmental degradation, and to the need for ensuring responsible and sustainable development. Thus, the adoption of standards and the labelling of the rearing processes used by producers would be crucially important in the creation of a special image for Mediterranean aquaculture product quality.

Aquaculture products could also be promoted within the tourism industry by linking the product with the production activity as an opportunity for the public to view aquaculture facilities. Many people are curious about aquaculture. It may be possible to persuade the tourism industry that, rather than viewing aquaculture as detrimental to their business, there would be enhanced value for them if they were to organise tours which link visits to aquaculture farms with consumption of their products in local restaurants.

- ***involving an appropriate regional body in aquaculture trade issues***

The national reports expressed support for the establishment of a regional body which would be involved in aquaculture trade-related issues. A mechanism which already contemplates such questions is the Committee on Aquaculture of the GFCM, which could take care of this topic with the assistance of its associated networks.

