

**Report of the**

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**NORWAY-FAO EXPERT CONSULTATION ON THE MANAGEMENT OF  
SHARED FISH STOCKS**

**Bergen, Norway, 7-10 October 2002**



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## PREPARATION OF THIS DOCUMENT

This is the Report of the Norway-FAO Expert Consultation on the Management of Shared Fish Stocks held in Bergen, Norway, from 7 to 10 October 2002. The discussion papers and case studies presented at the Expert Consultation will be published as a Supplement to the Report.

The Expert Consultation, held in cooperation with the Government of Norway, was organized in fulfilment of the approved 2000-01 and 2002-03 Programmes of Work and Budget of the FAO Fisheries Department to, *inter alia*, consider policy options for the management of highly migratory and straddling fish stocks and provide information and analysis to foster international understanding on the management of shared fish stocks.

### **Distribution:**

List of participants  
All FAO Members  
FAO Fisheries Department  
FAO Regional Fishery Officers

FAO.

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### ABSTRACT

The Norway-FAO Expert Consultation on the Management of Shared Fish Stocks was held in recognition of the fact that the management of shared fishery resources remains one of the great challenges on the way towards achieving long-term sustainable fisheries. The Expert Consultation considered, in particular, the management of transboundary fish stocks and straddling fish stocks. It directed itself to the practical problems to be faced in the management of these resources within the United Nations Convention on the Law of the Sea, the United Nations Fish Stocks Agreement and other relevant international instruments. As such, it was not designed to prescribe solutions, but was rather designed to serve as a neutral forum in which options and their implications for management could be reviewed in a constructive manner.

The Consultation concluded that, with very few exceptions, non-cooperative management of shared fishery resources carries with it the threat of overexploitation. Having said this, cooperation in the management of these resources is to be seen as an essential pre-requisite for effective resource management, but not as a guarantee of effective management.

With respect to cooperative management, the Consultation noted the obvious but often ignored fact that no attempt to establish a cooperative arrangement can be expected to succeed (and no established agreement can last) unless each and every participant anticipates receiving long-term benefits from the cooperatively managed fishery that are at least equal to the long-term benefits it would expect to receive in the absence of collaboration.

The Consultation emphasized:

- the need for cooperative management arrangements to be resilient through time, in the sense that they be able to absorb the impact of unpredictable shocks stemming from natural variability, climate change or other unpredictable ecological or economic disruptions;
- that the sharing of the benefits from the fisheries should not be restricted to allocations of TACs, or the equivalent, to national fleets;
- that consideration should also be given to the use of what the Consultation referred to as “negotiation facilitators”, or “side payments”, such as quota trades, or mutual access arrangements. These would allow to broaden the scope for bargaining over allocations, assist in achieving compromises when there are differences in the management goals of cooperating States/entities, and enhance the flexibility and resilience of the cooperative arrangements over time.

With respect to cooperative management of straddling fish stocks, the Consultation noted two critical issues: the issue of new members or participants in regional fisheries management organizations or arrangements, and the issue of what in fact constitutes a “real” interest of a State in a straddling stock fishery. The Consultation reviewed approaches currently being taken to address the issue of new members or participants.

Finally, the Consultation emphasized the fact that problems of implementation and enforcement are far more complex for shared fisheries, than those encountered with non-shared fisheries.

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## *OPENING OF THE SESSION*

1. The Norway-FAO Expert Consultation on the Management of Shared Fish Stocks was opened by Mr Peter Gullestad, Director-General of Fisheries, Norway, and Mr Serge Garcia, Director, Fishery Resources Division, Fisheries Department, Food and Agriculture Organization (FAO), Rome, Italy.

2. Mr P. Gullestad welcomed the Experts to the Consultation on behalf of the Government of Norway. He noted, *inter alia*, that Norway had committed itself to arrange this Expert Consultation for two reasons. One was Norway's history of supporting the work of FAO, both by financing programmes and by cooperating with FAO staff, especially in the field of fisheries. The second reason was Norway's long and comprehensive experience in the management of shared fish stocks as nearly all fishery resources occurring in Norwegian waters were shared with one or more parties.

3. Mr S. Garcia welcomed the participants on behalf of Mr Jacques Diouf, Director-General of FAO and of Mr Ichiro Nomura, Assistant Director-General, Fisheries Department, FAO, Rome. He stressed the very important contribution of shared stocks to world fisheries production and the useful experience accumulated in international cooperation on fisheries. He pointed out, however, that in many areas of the world, cooperation had not led to effective and explicit sharing, in terms of allocations, and that more had to be done worldwide to develop and implement more rational sharing agreements for jointly managed resources, particularly for shared exclusive economic zone (EEZ) resources. He wished the meeting could highlight issues, opportunities and potential solutions, sharing experiences and approaches and outlining a path for future progress. Mr Garcia also thanked all participants for their collaboration in the endeavour. He finally expressed the grateful thanks of FAO to the Government of Norway for its continuing support to the FAO Programme in Fisheries in general and for this meeting in particular.

4. Mr P. Gullestad assumed the Chair for the Consultation. It was attended by 37 Experts in their personal capacities. A list of participants is attached as Appendix B.

5. The Agenda for the Consultation is attached as Appendix A.

6. The documents for the Consultation are listed in Appendix C.

## *PRESENTATION OF DISCUSSION PAPERS AND CASE STUDIES*

### *Discussion Papers*

7. Mr Gordon Munro presented the opening discussion paper entitled "On the Management of Shared Fish Stocks".

8. The ensuing debate addressed several issues including terminology and definitions, scope of application of game theory to shared stocks issues within national EEZs, and areas of interpretation of international legal instruments, especially the 1995 UN Fish Stocks



Agreement. It was commented that “resilience” was the preferred term to “time consistency” to connote the critical requirement of a cooperative agreement to be robust and stable over time.

9. The role of side payments was discussed in the context of both, their ability to enlarge the bargaining space in the negotiation of cooperative agreements as well as their potential role to respond to the claims of potential - or actual - new members of a cooperative agreement in the case of straddling stocks. In this connection, it was observed that fisheries may be of minor national interest, and possibly sacrificed, in order to reach agreement on economically more valuable shared maritime resources (e.g. oil, gas, etc.). Conversely, it was noted that progress in reaching consensus on shared fisheries issues (e.g. in the European Union) did not infrequently rely on side payments originating from other sectors than fisheries.

10. The definition of what constitutes a “real interest” is critical when addressing the new member issue in the case of straddling fish stocks. It was commented that the sole or predominant reference to historical catches in determining real interest in a fishery may work against the interests of late comers (e.g. many developing countries and especially new nations), while, on the other hand, may unjustly favour those fishing fleets which have contributed to the over-exploitation of straddling fish stocks. A possible buy-in of new members into existing cooperative management arrangements may also be to the disadvantage of many developing countries facing limited financial resources.

11. Ms Annick Van Houtte presented a paper entitled "Legal Aspects in the Management of Shared Fish Stocks – A Review".

12. In the discussion following the presentation, several legal issues were raised concerning the management of shared stocks. It was suggested that a distinction might be made between the notion of agreements being "legally binding" and "politically binding", with the latter perhaps carrying more weight in practical terms, than the former. It was further noted that arrangements often became "politically binding" before they were formally adopted and became legally binding for their parties. Another issue related to compatibility of management measures under the 1995 UN Fish Stocks Agreement and whether a coastal State with less strict management measures within its EEZ than a regional fisheries management organization or arrangement (RFMO) might be required to strengthen its management measures to make them compatible with those of the RFMO. It was pointed out that the 1995 UN Fish Stocks Agreement implemented the 1982 UN Convention and that therefore such an alignment of compatibility was not provided for. It was also noted that a legal definition of "shared stock" had not evolved. It was questioned whether a legal definition would be beneficial given that the lack of definition may provide flexibility in the application of the term.

### *Case Studies*

13. Ms Kathleen Miller presented a paper entitled "North American Pacific Salmon: A Case of Fragile Cooperation".

14. Following Ms Miller's presentation, a question was raised with respect to the appropriateness of the allocation formula. It was pointed out that the appropriate percentage of allocation depended on the environmental conditions. It was noted that disputes arose also within the North Atlantic Salmon Conservation Organization (NASCO) concerning the abundance estimates which led to an agreement with the International Council for the Exploration of the Sea (ICES) on the parameters concerning the calculation of the abundance estimates. When ICES changed its calculation methods, problems started again within NASCO which adopted a real time abundance monitoring on a two weeks basis.

15. Mr David Doulman presented the paper prepared by Mr Transform Aquorau entitled "Cooperative Management of Shared Fish Stocks in the South Pacific".

16. The paper highlighted the success, which Pacific Island States have achieved in taking a cooperative approach to the management of the tuna resources within their respective EEZs, in terms of the harmonisation of their approaches to fishing by distant water fishing nations (DWFN). The heart of the discussion focussed on the degree to which this approach could be applied elsewhere. It was pointed out that most of the tuna stocks in the region were still in a healthy state, thus making otherwise difficult management decisions, such as allocations, relatively easy at this point in time. The degree of success, which the Pacific Island States were having with vessel monitoring systems (VMS) and transshipping compliance was also questioned. In response, it was pointed out that, to begin with, all of these countries share a common goal in their interactions with DWFNs. The Pacific Island States have put in place very effective incentives for DWFNs to comply with the regulations, such as the register of fishing vessels. A loss of good standing in the register has dire consequences in terms of access to the fishery. In response to a question of the importance of the 1995 UN Fish Stocks Agreement, the effectiveness of the bloc of Pacific Countries at the UN Fish Stocks Conference was noted. The UN Fish Stocks Agreement has provided the basis of the new Western and Central Pacific Ocean Fisheries Commission. It was suggested that the role of the Foreign Fisheries Agency, which facilitates the coordination of the countries, would change with this new arrangement, as more complex layers of fisheries management and negotiation evolved.

17. Mr Olav Schram Stokke presented a paper entitled "The Loophole of the Barents Sea Fisheries Regime".

18. The nature of the initial allocation of the total allowable catch (TAC) and the subsequent allocation swaps were clarified. It was pointed out that the initial TAC allocation criteria were fixed, irrespective of the exchange of quotas (or swap allocations). The issues of scientific research, scientific certainty with regard to a stock, and of who should provide such information was further discussed. The current proliferation of scientists dealing with fish stocks related matters was noted in this regard. The increasing focus on and use of the precautionary approach was felt to become sometimes out of proportion when for instance the specificities of fish stocks and a related fishery sector were not sufficiently taken into account.

19. Mr Walter Ranke presented a paper entitled "Cooperative Fisheries Management Issues in the Baltic Sea".

20. In discussion, it was pointed out that when TACs were first established by the International Baltic Sea Fishery Commission (IBSFC) in the mid 1970s the Coastal States had access to all fishing grounds of the Baltic Sea. Later following the close of the III UN Law of the Sea Conference and the establishment of national Fishery Zones covering the whole Baltic Sea the allocations had to be made under new legal conditions. Several considerations played a role in determining the specific allocations (historical catches, aerial distribution of fish stocks and fishing dependent areas etc.), but there were no clear rules or parameters for reference. However, factors extraneous to fisheries did not figure in the allocation process. For the last few years, the allocations for the Contracting Parties have been based on fixed percentages for the individual species (Cod, Herring, Sprat and Salmon) by countries. Taking into account the specific interests of Contracting Parties in certain species and fisheries transfers of quota and/or reciprocal access agreements have become a normal procedure on a bilateral basis. It was noted that, when transfers of quota are made among members (or reciprocal access agreements), these transfers are not permanent (for one respective year only) and that they are normally exchanged for quota for other species subject to IBSFC management. There have, however, been instances of quota being exchanged in return for development assistance payments.

21. The IBSC has taken steps to limit the effects of IUU fishing. Measures include national authorization of vessels allowed to fish cod in the Convention Area, monthly catch reporting, landing reports where landings are made in ports of other Contracting Parties and since 2001, joint-inspection schemes.

22. Mr Sigmund Engesaeter presented a paper, prepared by Mr. Trond Bjørndal, entitled "Management of Straddling Fish Stocks: the Case of Norwegian Spring-Spawning Herring Fishery".

23. After the presentation, Mr. Engesaeter provided some clarifications in response to questions raised from the floor. He noted that the simulation modelling of the outcomes of the various management scenarios (e.g. open access, cartel, monopoly), was based on data of the fishery from the 1990s.

24. In commenting on the assumptions underlying the various management scenarios, the practicality of the monopoly strategy was questioned, as it would go against the wish of fishers to participate actively in the fishery. The monopoly strategy assumes that the fishery would be exploited exclusively by the most efficient fleet thereby maximizing overall returns of the fishery. The less efficient fleets of other countries would be required to terminate their fishing activities, but would be compensated, by receiving shares of the net profit.

25. With regard to the contents of the actual cooperative agreement, it was noted that transfers of quotas were incorporated into the agreement. In addition, the agreement contains bilateral parts allowing Parties to fish in each other's EEZs in order to provide greater flexibility to fishers. This allows, for example, non-Norwegian fleets to exploit adult herring when they are in the Norwegian zone and commercially most valuable.

26. In examining the reasons why cooperation finally succeeded, the conclusion of the UN Fish Stocks Agreement was likely an important factor as it provided guidance on how to address the claim to a share of the TAC by the European Union.

27. Mr Birane Samb presented a paper entitled "Case Study of Small Pelagic Fish Resources in Northwest Africa".

28. A question was raised with regard to the manner in which the recommended total catches for the small pelagics, sardinella and horse mackerel, was determined. Stock assessment activities have been undertaken with the assistance of the Nansen Project, via acoustic surveys, and through the assessments of the FAO Working Group on Small Pelagics in North West Africa. These activities have enabled the four countries of North West Africa to collect the relevant scientific information and assess these stocks. The use of the term "coastal stocks" was clarified: the term refers to those small pelagic stocks occurring in the EEZs of the coastal States concerned.

29. Mr Derek Staples presented a paper entitled "Management of Shared Fish Stocks – Australian Case Studies".

30. In response to a query from the floor, Mr Staples explained that Australia uses a number of different approaches to the allocation of shared stocks. In the case of the Arafura/Timor Seas Fisheries, no formal process for allocation is in place with Indonesia at this stage. For the Torres Strait Fisheries, allocations in the Protected Zone are based primarily on vessel numbers, as provided for under the Torres Strait Treaty. For the South Tasman Rise Fisheries, allocations were based on historical catch. He also remarked that Australia is developing collaborative scientific arrangements for shared stocks with East Timor. It is recognized that capacity building will be an important aspect of this collaboration.

31. Ms Jane Willing presented a paper entitled "Arrangement between the Government of Australia and the Government of New Zealand for the Conservation and Management of Orange Roughy on the South Tasman Rise".

32. The debate in plenary addressed several issues relating to the cooperative agreement and the particularities of the orange roughy fishery. It was observed that the agreement, and its improved amendment, had insufficient flexibility to prevent the depletion of the orange roughy stock. This experience demonstrates that, in the case of a fragile stock, such as orange roughy, there is an urgent need for the speedy conclusion of a cooperative agreement, or, at the very least, the implementation of temporary emergency management measures. The inability of the arrangement to control unregulated fishing by third Parties placed additional pressure on the fish stock.

33. Mr Rashid Sumaila presented a paper entitled "Management of shared hake stocks in the Benguela Marine Ecosystem".

34. Discussions took place concerning the SADC Protocol on Fisheries and its impact on the SADC member countries, in particular coastal states. The Protocol contains a number of provisions which explicitly refer to the cooperative arrangements for the management of transboundary stocks. The responsibility for implementing the Protocol rests primarily with the SADC Member States. As far as transboundary fish stocks are concerned, relevant coastal States are required to cooperate to achieve the objectives of the Protocol. These coastal States will be primarily responsible for the implementation of any cooperative arrangement which they may have concluded. The management of fisheries based on a large marine ecosystem approach was also debated. It was questioned whether such approach would allow for a better management of a fishery. Undoubtedly, the management would be more complex. For instance, in the present case, the Benguela Current Large Marine Ecosystem (BCLME) project is funded by GEF and deals with fisheries, pollution, biodiversity, impact of mining activities, coastal zone management, etc., all activities likely to have an impact on the Benguela Current Ecosystem. The ultimate objective of the project is the creation of a Benguela Current Commission to manage the large marine ecosystem, including fisheries and other sectors. As such, the management of the hake fishery is likely to become a component of a wider system.

35. Mr Julio D. Chaluleu presented a paper entitled "Shared Fishery: Argentine-Uruguayan Common Fishing Zone".

36. The case study provides an effective demonstration of the fact that the existence of a comprehensive framework for international cooperation, while necessary, is not sufficient to ensure proper conservation and management. Implicit in the paper is the fact that the central issue of overcapacity has not been effectively addressed. Responding to specific questions, Mr Chaluleu clarified that (i) only vessels from Argentina and Uruguay fished in the common fishing zone; (ii) coastal stocks of croakers are likely to be common to Brazil as well (to a certain extent) but the fact that they do not migrate much leads to believe that there is not much interference between management and exploitation systems; and (iii) the two countries provide scientific advice to the Commission. Mr Chaluleu also stressed that the scientific monitoring is suffering from lack of financial resources, due to the particular economic conditions prevailing in the area at present.

37. Mr Andrew Thomson presented a paper entitled "The Management of Red Fish (*Sebastes mentella*) in the North Atlantic".

38. The Consultation observed that the situation concerning the management of redfish in the North Atlantic Ocean provided an opportunity for North East Atlantic Fisheries Commission (NEAFC) and the Northwest Atlantic Fisheries Organization (NAFO) to enhance their cooperation for the long-term sustainable development of fish stocks in the North Atlantic Ocean. It was pointed out that effective cooperation between the two organizations was imperative and that solutions to support the conservation and management of redfish must be found. It was noted that, since all the Contracting Parties of NEAFC are also Contracting Parties of NAFO, collaboration between the two organizations was made easier, than would otherwise have been the case.

39. Mr Moshen Al-Husaini presented a paper entitled "Fishery of Shared Stock of the Silver Pomfret (*Pampus argenteus*) in the Northern Gulf".

40. The Consultation noted that pomfret, a highly valuable fish in the northern Gulf, is taken by a gillnet fishery that is exploited by fleets from three neighbouring countries. Additional information on fleet structure and scientific information on the stock is required in order to promote more effective cooperative management. It was pointed out that over the 1980s, a main fishing area for pomfret was closed. When the area was reopened in 1991, both a significant increase in fishing effort and high CPUEs led to a substantial increase in catches. This experience indicates that pomfret stocks can be rebuilt, if fishing effort is restricted. The goal of management for this stock is the implementation of an ITQ system. It was suggested that, while such an approach to management could assist in easing the problem of allocations between the countries exploiting the resource, the approach would require a mature fisheries administration to be effective.

41. Mr J. Zuzunaga presented a paper entitled "Some Shared Fish Stocks of South Eastern Pacific".

42. A question was raised with regard to the implementation of the Galapagos Agreement. It was asked how consistency was ensured between the management measures adopted on the high seas and those applicable in the EEZ of the respective parties. It was noted that the Agreement was not yet in force. Nevertheless, relevant species need to be protected. In the interim, there seems to be a general understanding that relevant EEZ related management measures of each Party would apply to the adjacent high seas area. Information on cooperation in scientific research was asked for. Cooperation exists between Peru and Chile: biological research has been undertaken with respect to anchovies and sardines. Furthermore, IMARPE Institute (Istituto del Mar del Peru) has, during its 40 years of existence, collected accurate and comprehensive data. The presenter demonstrated that the management measures in place constitute an appropriate response to natural challenges like El Niño phenomenon.

#### *ESTABLISHMENT OF WORKING GROUPS*

43. The Consultation agreed to establish three Working Groups, A, B and C, that would consider the major issues relating to the management of shared fish stocks. The Groups were requested to focus their discussions, as follows:

- Working Group A, chaired by Mr Einar Lemche: Resolving allocation issues;
- Working Group B, chaired by Mr Alain Laurec: Achieving coordination of management plans and objectives and of research programmes; and
- Working Group C, chaired by Mr Burger Oelofsen: Ensuring implementation and enforcement of management agreements.

44. The Experts in each Working Group are given in Appendix D.

*PRESENTATION AND DISCUSSION OF REPORTS OF THE WORKING GROUPS***Working Group A: Resolving allocation issues**

45. Working Group A decided to divide its report into two parts: the first part lists general features of the allocation issue, which it feels are not sufficiently well understood. The second part, and heart of the report, consists of an examination of the allocation issue with respect to transboundary and straddling fish stocks.<sup>1</sup> The Working Group examined each class of stocks in turn, while acknowledging that there are many elements in common.

*General issues*

46. The first general issue considered by the Working Group is that of “negotiation facilitators” (i.e. incentives to attain effective cooperation; Working Group B, in its report, refers to negotiation facilitators as “side payments”). The Working Group recognized that negotiations on allocation should not be confined to shares of TAC alone. The development of cooperation can be facilitated by supplementing the allocation of TAC shares by such devices as access arrangements and quota trading (both trading in kind and in cash). Furthermore, these devices will serve to enhance the long term flexibility and resilience of the cooperative arrangement, once the arrangement has been concluded.

47. The second such issue considered by the Working Group is what might be termed the basic requirement for stable long term cooperation: it has to be recognized that each and every participant in a cooperative arrangement must anticipate receiving long term benefits from the cooperative arrangement that are at least equal to the long term benefits, which it would receive, if it refused to cooperate. This fact, which should be obvious, is often ignored in practice.

48. The third general issue concerns the need for the cooperative arrangement to be resilient through time. This requires, in the first instance, that the allocations be reasonably stable and predictable. Allocations that are subject to sudden, and seemingly capricious, changes will by definition render the cooperative arrangement unstable. At the same time, however, the allocations must not be rigid and inflexible over time. The cooperative arrangement must be able to withstand and respond in an orderly manner to unanticipated shocks. These shocks can arise, inter alia, from natural factors such as the environment, from political shocks and from changes in the economic environment. Where possible, cooperative agreements should have built into them mechanisms for dealing with such shocks. To the extent such mechanisms consist of provisions prescribing that a specific change will result in specific amendments to the agreement, an important element of the mechanism needs to be a common understanding of how to measure the pre-agreed parameters that will constitute the change in question.

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<sup>1</sup> In this Report the following terminology has been applied: (i) *transboundary stocks* are those fish stocks that occur within the exclusive economic zones of two or more coastal States (1982 UN Convention, Article 63, paragraph 1); and (ii) *straddling stocks* are those fish stocks that occur both within the exclusive economic zone and in an area beyond and adjacent to it (1982 UN Convention, Article 63, paragraph 2).

## **Transboundary stocks**

### *Key allocation criteria*

49. With regards to transboundary stocks, Working Group A asked itself what historically have been the prime allocation criteria. They have been and are: zonal attachment of the resource, and historical catches within a country's EEZ. Various other supplementary allocation criteria have been used in past or existing cooperative agreements. These include dependency of the economy of the country or of the coastal area, on fisheries, including employment and food security. Further supplementary criteria include engagement in research and in monitoring, control and surveillance, and others. A comprehensive list of possible allocation criteria has been elaborated in the 1995 UN Fish Stocks Agreement, as well as by a working group of ICCAT (Annex 8 of ICCAT 2001 Annual Report). Neither of these documents, however, provides guidance on the specific weights to be given to the individual criteria.

50. At the behest of NEAFC, ICES did in 1978 publish, in great detail, a list of factors that might be taken into account in the interpretation of zonal attachment. ICES identified six key factors:

1. The spawning areas
2. The distribution of egg and larvae
3. The occurrence of juvenile and pre-recruit fish
4. The occurrence and migrations of the fishable part of the stock
5. The history of the fishery including the distribution of catch, rate of exploitation and fishery regulations
6. The state of exploitation of the stock

51. The ICES report noted that while above factors 1 – 3 are clearly biological criteria, factor 4 has a biological and a management aspect, and that factors 5 and 6 are based on catch statistics and management rules. The report also noted that it would require an unrealistic amount of work to collect all biological data necessary to determine zonal attachment according to the above factors. More importantly, it acknowledged that the choice of factors and their weighting to calculate zonal attachment would in practice be a matter of negotiation between the parties to the agreement.

52. History has also revealed that there are strong advantages to having the percentage allocations of the TAC, based on such criteria, stable over time. The example of North Sea



herring has demonstrated the great disadvantage of creating a link between the allocation key and specific characteristics of the stock, subject to change, such as the size of the spawning stock biomass.

53. In order to make an allocation system workable, however, it may often be necessary to supplement this allocation framework with negotiation facilitators, as discussed in paragraph 46. The experience of the International Baltic Sea Fisheries Commission provides an excellent example of the use of such facilitators. It is worth noting that, in spite of involving many countries and having faced political difficulties created by the Cold War and the end of the Soviet Union, the Baltic cooperative fisheries arrangement has, with the aid of these facilitators, worked remarkably well.

54. The Working Group also noted that useful insights can be gained from the experience of the cooperative arrangement for the Norwegian Spring Spawning herring, where quota transfers and allowance to fish in each others zone are part of a total agreement package.

#### *Special allocation criteria for developing States*

55. Working Group A did not discuss in detail special allocation criteria for developing coastal States, because it could find only few examples of transboundary resources involving both developed and developing coastal States. The Working Group saw no need for such criteria when the relevant coastal States are all developing.

### **Straddling stocks**

#### *Decision-making procedures*

56. Working Group A then turned to the issue of allocations to be made in the case of straddling stocks. Two possible models of the decision-making procedure were put forward. One, a two stage model, involves dividing the TAC between that to be taken within the EEZ, or EEZs, and that to be taken within the adjacent high seas. The portion of the TAC to be taken within the adjacent high seas would have to be further allocated among the RFMO members operating in the adjacent high seas. The second model effectively collapses the two stages into one, thus potentially reducing negotiation costs. Both models have been applied by NAFO and by NEAFC.

#### *Key allocation criteria*

57. On the basis of existing evidence, the Working Group concluded that zonal attachment and historical catches were the most applied criteria. Zonal attachment was considered especially important for that segment of the resource to be found within the EEZ or EEZs, whereas historical catches were found to be particularly important for sharing that part of the resource in the adjacent high sea. When historic catches are used as an allocation criterion, it needs to be recognized that developing States may, for various reasons, not enjoy the benefit of a history of fishing. In such cases, due cognisance should be given to the special status

given to developing States by both the 1982 UN Convention on the Law of the Sea and the 1995 UN Fish Stocks Agreement. The supplementary criteria listed with reference to transboundary stocks (see paragraph 49), are equally relevant to the case of straddling fish stocks.

58. The Working Group then noted that allocation among members of the RFMOs may be complicated by the “real interest” issue.

*Allocations of quota to New Members*

59. In addition to the real interest issue, the New Member issue was the most difficult issue which the Working Group had to address. The Working Group noted that the issue is explicitly addressed in Article 11 of the 1995 UN Fish Stocks Agreement.

60. The Working Group also took the view that the following ICCAT working group conditions for applying access allocation criteria were particularly relevant. These conditions are as follows (see paragraphs 22 – 23 of Annex 8 of ICCAT 2001 Annual Report):

*The application of the allocation criteria should take into account the contributions to conservation made by qualifying participants necessary to conserve, manage, restore or rebuild fish stocks in accordance with the objective of the Convention.*

*The allocation criteria should be applied consistent with international instruments and in a manner that encourages efforts to prevent and eliminate over-fishing and excess fishing capacity and ensures that levels of fishing effort are commensurate with the ICCAT objective of achieving and maintaining MSY.*

*The allocation criteria should be applied so as not to legitimize illegal, unregulated and unreported catches and shall promote the prevention, deterrence and elimination of illegal, unregulated and unreported fishing, particularly fishing by flag of convenience vessels.*

61. The Working Group then noted the experience of NAFO: in its 21st Annual meeting NAFO adopted a resolution to guide the expectations of future new members with regard to fishing opportunities within the NAFO regulatory area. In the resolution NAFO stated the following:

1. *NAFO is an open organization. Non-members may join the Organization by depositing an instrument of accession in accordance with Article XXII of the Convention. In accordance with Article IV of the Convention, all Contracting Parties are members of the General Council.*

2. *Should any new member of NAFO obtain membership in the Fisheries Commission, in accordance with Article XIII (1) of the Convention, such new members should be aware that presently and for the foreseeable future, stocks managed by NAFO are fully allocated, and fishing opportunities for new members are likely to be limited, for instance, to new fisheries (stocks not currently allocated by TAC/quota or effort control), and the "Others" category under the NAFO Quota Allocation Table.*

62. In addition, the Working Group noted the particularly helpful discussion paper "Indications to Guide the Expectations of Interested Non-Contracting Parties of NEAFC". This paper first states that NEAFC should seek consensus on a policy vis-à-vis potential applicants for membership. It then proposes two alternative policies, a "general" policy and an "individual" policy in allowing for new members as follows:

*A "general" policy could include:*

- 1) *New members will participate, on the same basis as existing Contracting Parties (CPs), in future allocations of stocks which are unregulated at the time when the application is made.*
- 2) *New members who were previously "Co-operating NCPs" will "carry with them" part of the relevant Co-operative quota.*
- 3) *New members will be able to fish stocks which are regulated when the application is made. However, such fishery can only be conducted on Others-quotas established for this purpose.*

*An "individual" policy could consist of NEAFC CPs jointly agreeing with each applicant which fishing possibilities the applicant will receive if it becomes a new member. Whether such an agreement would be limited in time would depend on the negotiations.*

*The timetable for such a procedure could be:*

- 1) *The potential new member will send the NEAFC Secretariat a letter stating its intention to apply for membership provided that "satisfactory fishing possibilities" can be obtained. Specific wishes in that respect, as well as arguments pertaining to "real interests", should be described in the letter.*
- 2) *NEAFC CPs negotiate jointly with the applicant.*

3) *If consensus is achieved between the applicant and (a majority of) the NEAFC CPs, an agreement is signed at administrative level. This agreement will have two conditions: that the applicant Government will, according to Article 20, para. 4, forward to the Depositary an application in which the terms of the agreement are confirmed, and that this application is accepted by the Governments of NEAFC's CPs according to Article 20, para. 4.*

63. The Working Group believed that negotiation facilitators could play an important role in dealing with the New Member issue. If, for example, it were possible for prospective New Members to purchase quotas from existing members of RFMOs, this could serve to ease the problem of quota allocation to New Members.

*Special allocation criteria for developing States*

64. The Working Group noted that explicit provisions for developing States are contained, *inter alia*, in Articles 24 and 25 of the 1995 UN Fish Stocks Agreement. It also noted that to its knowledge there are no cases of implementation of these provisions at the current time. The Working Group does, however, anticipate that this issue will achieve considerable importance in the future. However, the implications for allocation need clarification.

**Additional considerations**

65. There is considerable controversy over the time frame that should be used in measuring historical catches. Various formulas have been suggested. The Working Group is not able to find any one formula that is clearly superior to the others.

66. A second issue concerning historical catches pertains to historical catches within the EEZ. The question is whether the catches by the fleet or fleets of the coastal state alone are to count in determining the coastal states share of the resources or whether the catches of foreign vessels within the EEZ are to be included as well. The consensus is that all catches within the EEZ are to be counted, when establishing the historical catch record of the coastal state.

67. A third issue arose from the recognition that fisheries management should proceed on an ecosystem basis rather than on a single stock basis. The Working Group is certain that this is highly relevant to the management of shared stocks. It is believed that, if an ecosystem approach is taken with respect to shared stocks, this will have at least three implications:

1. More data and research will be required.
2. Negotiations over allocation are most likely to become more complex.
3. RFMOs and similar cooperative fisheries arrangements will have to be geared towards dealing with the ecosystem issues.

68. A fourth issue concerns overcapacity. The Working Group is certain that the existence of overcapacity greatly aggravates allocation issues, as well as intensifying resource management problems.

**Working Group B: Achieving coordination of management plans and objectives and of research programmes**

69. Coordinating management plans, objectives and research will have many benefits in a shared-stock fishery, but the realization of these benefits will require a significant investment in the form of financial resources. Without such an investment, the real benefits to society of well-managed fisheries will not be realised. In setting up management plans and the coordination of research, the level of investment should be considered in a cost/benefit framework, and every endeavour should be made to ensure adequate resources are available to effectively carry out the various tasks.

70. At the outset, it was recognised that in order to achieve coordination of management plans and objectives, and of research programmes, it was necessary to have:

- Cooperative management authority
- Joint Management Plan
- Common Objectives
- Agreed tools for managers, including indicators and reference points to monitor performance
- Joint scientific body to provide advice

71. Well-designed fishery management plans usually contain at least (i) description of the fishery (ii) objectives of management (iii) measures to achieve objectives (iv) indicators and reference points used to measure actual performance against objectives (v) decision rules on how to change management when objectives are not being reached, and (vi) information needs and research required to support management.

72. However, to develop such a plan in a shared-stock situation, even with the above infrastructure in place, there are a number of challenges that need to be addressed. At the highest level, it will require shared responsibilities among States and some devolution of sovereignty. The Working Group first listed these challenges and then discussed each of them in turn.

## ***Management Plans and Objectives***

### *Identifying differences in the urgency and need for coordination*

73. Although it appears that it in nearly all cases, there is an overall long-term benefit in achieving coordination in managing shared stocks, the need and urgency for coordination varies considerably across different fisheries. These range from, in one extreme, events having high impact (e.g. fishing long-lived, high-valued species, where there is a high risk of irreversible damage), through to cases where coordination may increase the overall rent returned from the fishery.

74. It was felt that these differences needed to be assessed in a risk assessment approach and that the level of coordination should be appropriate to the need. However, even in cases where it was felt that the benefits were less, it was still important to start moving towards coordination to achieve the longer-term benefits.

### *Recognizing and accommodating differences in the goals and aspirations of the different parties*

75. The need for clear and agreed objectives in the management plan was seen to be very important, as it is believed that this has been one of the major causes of failure of fisheries management in the past. However, in a shared-stock situation it was also recognised that the level to which this could be achieved would vary, and would be particularly difficult where different socio-economic conditions and policies existed among the parties sharing any particular stock.

76. As a basis for developing objectives, it is necessary to recognize that a hierarchy of objectives will exist for all of the economic, social and ecological dimensions of fisheries. This hierarchy ranges from high level policy objectives (or goals) to lower level operational objectives that can be addressed directly through management activities. There is also often a long-term as well as short-term dimension, the former usually being the easier to agree upon. Ideally, it is important to agree on all the lower level operational objectives among all stakeholders. In situations where this may not be possible, agreement on the broad goals and longer-term objectives (e.g. sustainability of stocks) becomes of paramount importance. The different parties can then develop their own lower-level objectives, providing that they are consistent with the overall policy. Ideally this should be a transparent process as part of the joint management plan. In many cases, a compromise situation may be needed to select, for example, mid-term objectives with agreed targets and limits. In achieving these sorts of compromise, use of side-payments could facilitate the requirements of each party's goals and aspirations without compromising the higher level objectives such as the sustainability of the stock.

*Incorporating the differences in time scales of different processes into management plans and objectives*

77. It is important to recognise that different time scales exist for different management processes. For example, political cycles are usually in the order of 3-4 years while management responses normally react on a longer time scale. This will often result in a conflict between long-term and short-term interests. To the degree possible, these different processes should be decoupled, recognising that this will be difficult in a shared-stock situation. However this is now happening at the national level in some countries (e.g. Australia) where policy is set within defined boundaries and fisheries management operates within these boundaries, without political intervention.

78. In many situations there is a need to balance the short-term needs with longer-term goals and benefits. Management plans must take into account the needs of the fisher, especially in cases where his/her family depends on tomorrow's catch. The incremental steps required to meet the long-term goal should be identified, along with the cost (possibly to be borne by the society) needed to meet it. In another situation, fishers may know that they will only be participating in a fishery in the medium term, and long-term benefits may be of little relevance. These differences need to be recognised and accommodated in the development of plans and objectives.

79. Differing time scales exist between other management processes, for example, the collection and analysis of data and information, the building of appropriate capacity within any participating party, and the changing of public opinion towards fisheries and their management. Again these differences need to be recognised and accommodated in any joint management plan.

*Building in sufficient flexibility to take account of change*

80. Management plans for shared fish stocks need to recognize the dynamic nature of the systems they are managing and take these into account in their specifications of management measures (e.g. changes in the distribution, abundance and/or migration patterns of target species). Past experience has shown that plans not incorporating this flexibility often fail to deliver. Finding the balance between consistencies in the plan and allowing flexibility can be guided by past practice and the experience of other fisheries, especially of those managing similar species. The plans should incorporate a review schedule so that they can be evaluated and updated as required.

81. On-going research and monitoring of the changing natural, social, economic and political conditions should underpin the plans so that adjustments in harvesting activities and management measures can be made. One element that will be important in this regard will be the ongoing cooperative scientific efforts to better understand the linkages between the changing biophysical conditions and the stock dynamics and the geographic distribution of the target species. In addition, changes in relevant social, economic and political conditions should be routinely tracked and openly communicated among the cooperating parties.

82. To achieve flexibility, it may be necessary to broaden the scope for negotiating by using tools that reflect changing circumstance, including side payments, linkages with non-fishery concessions, provision for quota trades and access arrangements. Pursuits in such options will require timely adjustments in management plans and attention to implications for data collection.

*Defining the linkages between science, management and politics*

83. Better linkages need to be developed between science, management and politics in most fisheries, but this is especially important in the management of shared stocks. The roles and responsibilities of the different groups need to be clearly described and agreed. In particular, it is important to distinguish between those giving advice e.g. scientists/economists and those making the management decisions. These all need to work together to achieve the agreed goals but their responsibilities and accountabilities need to be clearly identified. In general, those giving advice will need to provide options to the decision makers along with the implications of selecting one option over another (including an assessment of uncertainty and risks in all aspects of the social, economic and ecological dimensions). The decision makers will have to make choices and make the reasons for the decision transparent to all stakeholders.

*Improving communication of existing information among stakeholders, parties and different processes involved in management*

84. Two communications issues can be identified: (i) communication of information among the diverse groups involved in the management process, especially in shared stock situations (e.g. the different scientists/economists – decision makers – fishers), and (ii) communication to the public on the issues being addressed by management and its potential benefits.

85. In the first issue, it is important to recognise the diversity of the target audiences and the need to be able to communicate effectively to them in a language they easily understand (language in the sense of jargon, technical terms, concepts etc.). Poor communication often results in the procrastination of decision-making and poor management. Good communication also facilitates the building of confidence and trust among the different parties. Communication among these groups and parties is a multi-way dialog and listening is as important as giving messages. Setting-up of structures to facilitate dialogue among the different groups out of the political arena needs to be encouraged (e.g. mechanisms to encourage cross-disciplinary dialog or dialog among fishers from different parties).

86. It was seen that informing the public would be a key element of coordination, especially in terms in influencing the political process to assist in the development and implementation of fisheries management. Fishers and other stakeholders should be encouraged to provide more information to media outlets (e.g. TV and radio) on their activities, the benefits of management and the impact of poor management on the country's economy and on the consumers. This could be organised through fishery cooperatives or similar organisations providing clear messages to the public.



## *Research*

87. Many fora have recognised that management “should be based on the best scientific advice available”, but it is much less clear how to achieve this, especially in a shared-stock situation. The research needs to balance (i) excellence (ii) relevance (iii) independence (iv) timeliness, (v) comprehensiveness, and (vi) cost-effectiveness. Of major importance is that the research should address the needs of management and not be solely driven by the needs of the researchers. On the other hand, management regimes must take into account the state of knowledge and what is possible to obtain in the immediate future.

### *Setting priorities for research*

88. Data and information required for fisheries management covers the broad spectrum of social, economic and ecological (including the target species) dimensions and given the large data requirements this entails, priority setting is an important part of the coordination of research. If done properly, this will provide the more important information at the lowest possible cost. The setting of priorities should involve the relevant stakeholders, especially the beneficiaries of the research (not just the providers of the research). The process should consider what aspects of the information spectrum are appropriate for the management issues under consideration and provide a balance between immediate users needs and possible future needs. For example in analyzing ecosystem data, the top priorities may be to include those environmental parameters that have an impact on the fishery and also those on which the fishery itself has an impact (e.g. habitats or food web distortions). After the broad issues and needs of management have been identified, one method of prioritizing research is to rank them against an “attractiveness” scale (i.e. do they meet the need) and a “feasibility” scale (i.e. will they deliver on the need in a cost-effective way) and only conduct the projects that score well on both scales.

### *Coordinating data collection and management*

89. Data collection schemes in shared-stock situation should be based on a common framework, for example, the European Union framework for collecting basic data relevant for fishery management<sup>2</sup>. This enables coordinated data collection on the fishing fleet, monitoring and control, landing sites etc. along with joint programs such as surveys where appropriate (e.g. ICES/IBTS, the international bottom trawl survey conducted by the States sharing the stocks<sup>3</sup>).

90. However, in setting up data collection schemes, it is important not to overlook the wealth of information contained in existing data that could be re-analyzed for a different purpose. For the broader consideration of fisheries management many of these data may exist in other agencies or institutions. This applies, in particular to social and economic data relevant to fisheries. Knowledge obtained by fishers with years of experience of observation

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<sup>2</sup> <http://europa.eu.int/eur-lex>. See Commission Regulation (EC) No. 1639/2001 and Council Regulation (EC) No.1543/2000.

<sup>3</sup> [www.ices.dk](http://www.ices.dk)

of aquatic systems, is also often overlooked and should be part of the coordination arrangements.

91. If it is deemed necessary to collect new data, a scheme for ensuring good management of the data and sharing among all participants is essential. One approach may be to set up a common database. A good example is that recently set up in Western Africa for fishery/biological data under FAO guidance that contains catch statistics, fishing effort, number and type of vessels, biological parameters for key species, which are available to all participants in the joint analyses of the fishery. When this approach creates problems, for example confidentiality issues arise, other schemes of direct transfer of data among participating parties can also be adopted, providing they are well documented, and the common database be limited to publicly available information.

92. As with all data collection programmes, validation of the data is essential to ensure that misleading advice is not to be given to the decision maker. Because data is available from a number of different sources, shared-stock analyses may lead to better data validation and every effort should be made to compare these different data sources for consistency.

#### *Standardizing analyses and assessments*

93. Common assessments of stocks, fleets as well as the broader social, economic and ecological aspects are highly desirable, as long as the process retains the opportunity for new types of analyses and innovation to be considered. This type of standardization will require better inter-disciplinary coordination as well as better coordination within disciplines and will require the technical experts within these to be able to conduct analyses without undue pressures from political processes. At this point in time, it is recognised that standardization of biological analyses may be easier to achieve than those pertaining to, for example, fleets, but this should not deter the will to achieve the necessary coordination.

94. Use of external experts has proved to be useful in a number of occasions, bringing a degree of neutrality as well as new expertise and ideas into the process. Peer review should also be undertaken to promote better quality control and credibility of assessments.

95. Joint development of models facilitates the mutual understanding and communication of management needs, as well as informing the priority setting process. With the broadening into a more ecosystem approach to fisheries (EAF), there will also be a need for a more integrated approach to analyses and assessments that incorporate various types of data, disciplines and decision support tools.

#### *Ensuring the availability of adequate equipment and human capacity*

96. Providing the best available scientific advice depends directly in having the capacity to conduct research and disseminate the results. In an increasingly complex field of fisheries, there is an urgent need to attract and retain good people trained in the one or more of the

many disciplines of fisheries management. Training of existing people to keep abreast with new demands and new technologies is also becoming increasingly urgent.

97. Conducting research in a shared-stock environment often provides the opportunity for a transfer of technologies and expertise otherwise not available. This should recognize that not all parties need to have an equally high level of capacity but that a minimum accepted level should be developed among all parties. Opportunities then exist for building on strengths of one or more of the parties to avoid unnecessary duplication and costs. The same applies to equipment and laboratories where the opportunity exists for sharing (e.g. a research vessel) and avoiding unnecessary duplication in specialist laboratories such as those carrying out genetics studies or fish ageing.

98. Capacity can be built with the exchange of technical experts, training and sharing of experiences, both with the particular arrangement and among other similar arrangements around the world.

#### *Dealing with data-poor situations*

99. Probably in all fisheries situations, insufficient data exists to properly support decision-making. This is particularly the case in some small-scale fisheries and in fisheries of developing countries. However, there is always sufficient information to initiate some sort of management and to build the information base as the management evolves. Relatively rapid collection of some data and information can be achieved by using that collected for similar fisheries and situations to that of the data-poor one. Knowledge of the fishers and the communities should also be tapped and several rapid assessment techniques are now becoming available. Use of key indicators can also be quickly adopted based on the experience of others in different parts of the worlds. In some situations data are present but not made available for political and other reasons. Incentives for freeing up the information should also be considered and the overall benefits of informed decision making advocated.

#### **Working Group C: Ensuring implementation and enforcement of management agreements**

100. The Group recognized that the requirements to implement and enforce fisheries conservation and management measures for transboundary and straddling stocks would vary depending on the complexity of different fisheries (e.g. the number of Parties, the nature of the fishery and the movement of the stock).<sup>4</sup>

101. A number of different scenarios of varying degrees of complexity can be considered. The simplest case is that of two countries sharing a stock, each fishing in its own EEZ. A number of factors may compound this situation: disagreement on the delimitation of the boundary between the two countries, access by third countries to the fishery, reciprocal access

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<sup>4</sup> The Group agreed that industrial fisheries would be the focus of its discussions. Nonetheless, it acknowledged that small-scale fisheries also faced difficulties in the implementation and enforcement of fisheries management measures. The Group noted that the principles underlying the implementation and enforcement of measures in industrial fisheries could be applied equally to small-scale fisheries.

to other countries' EEZs and the fish stock in question also being a straddling fish stock with portions of the stock being found outside the EEZ on the adjacent high seas.

102. A matrix presentation of the set of potential situations and scenarios for the management of transboundary and straddling fish stocks is shown in Table 1.

**Table 1: Set of Potential Situations and some Scenarios for the Management of Transboundary and Straddling Fish Stocks<sup>5</sup>**

		TRANSBOUNDARY		STRADDLING
		Coastal States	+ Third parties	<i>Scenario E</i>
<b>BOUNDARY AGREED</b>	No reciprocity	<i>Scenario A</i>	<i>Scenario C</i>	
	Reciprocity		<i>Scenario D</i>	
<b>BOUNDARY NOT AGREED</b>	No reciprocity	<i>Scenario B</i>		
	Reciprocity			

103. For the purposes of the Working Group, the terms implementation and enforcement are understood to include the following: "implementation" refers to tools which allow for management measures to be implemented. They include joint inspection and/or observers schemes, regional registers, records of high seas fishing vessels, catch reporting and exchange of data, port/landing inspections, vessel monitoring systems, etc. "Enforcement" refers to those actions which are likely to be taken in case of non compliance with management and conservation measures. These sanctions may vary and be of administrative or criminal nature. Sanctions of administrative nature may embrace refusal, suspension or withdrawal of authorization to fish.<sup>6</sup>

<sup>5</sup> The simplest case of managing a transboundary fish stock is when two coastal states are sharing a fish stock (A). Several variables can be added to create a vast number of potential situations and scenarios, a few of which have been pursued here: Consider first the case where the boundary between the two countries is not agreed (B). A second type of complication arise when third parties are given access to the stock in one or both countries' zones (C). Scenario B and C can be combined into a situation where the boundary is not agreed and where third parties are given access to the resource in question (D). A new layer of complexity is added when the fish stock in question is a straddling fish stock (E).

<sup>6</sup> Notwithstanding the impact that market related measures can have to reduce or eliminate trade on fish or fishery products derived from IUU fishing, such measures were not considered by the Working Group.

104. The Group considered that sanctions should be of sufficient severity to effectively prevent and deter non-compliance with agreed management arrangements. As a consequence, ensuring consistency, transparency and promptness in the application of sanctions is highly recommended. This implies that there be for instance an exchange of information on illegal and unregulated fishing activities. Furthermore, the Group was of the view that the sanctions must be defined in such a manner as to achieve comparable results among the participating States.

105. The Group recognized that not all countries have the same resources and technical capacity to implement and enforce relevant conservation and management measures. This situation should be acknowledged when agreeing to implementation and enforcement arrangements. Where possible and appropriate, policies should be put in place to facilitate industry contributions towards the cost of fishery management, and in particular, the costs associated with the implementation and enforcement of management measures.

**Scenario A: Two coastal States, a single transboundary stock occurring wholly within their EEZs and being harvested by national fleets within their respective EEZs**

106. This scenario requires the cooperation of the two States in the management of the transboundary stock. It presupposes cooperation in terms of the exchange of data and research information and the harmonization of management measures to promote sustainable utilization, levels and methods of exploitation and the status of the stock.

107. The Group agreed that the implementation and enforcement of fisheries management measures for a transboundary stock under this scenario requires, as a minimum, the following measures:

- Maintenance of a register for vessels authorized to fish the stock;
- Use of a system to monitor fishing activities (including, as appropriate, ready access to records relating to the authorization to fish, the amount and species of quota, the area of operation, trip duration, fishing logs, etc.),<sup>7</sup> and
- Port inspections of vessels, catch on board and catch offloaded.

108. The information gathered from these checks should be exchanged by the two States at pre-determined intervals in an agreed form. Such transparency and cooperation will promote confidence between the States and among fishers engaged in harvesting the stock.

109. It is expected that coastal States will ensure compliance by its fishing vessels with agreed management measures, in accordance with their national legislation. Harmonization of policies and legislation with respect to enforcement matters is therefore recommended.

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<sup>7</sup> For an elaboration of these issues, see paragraph 51 of the FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.

***Scenario B: Two coastal States, a single transboundary stock occurring wholly within their EEZs and being harvested by national fleets within their respective EEZs, and where there are disputed boundaries between the Parties giving a disputed area for management***

110. In situations where there are disputed boundaries between two coastal States, and where there is a disputed area where part of the stock occurs, effective cooperation for the sustainable management of the stock across its entire range is highly recommended.

111. For fisheries management purposes, it might be preferable to establish an "area of joint management" which includes the disputed area. This will facilitate the management of the stock in its entirety and thus avoid a loophole in the management.

112. In addition to the measures required for the implementation and enforcement of fisheries management arrangements in Scenario A, the following measures should be deployed with respect to the area of joint management:

- Special reporting requirements for fishing vessels when they operate in the said fishing area, including the provision of simultaneous reports to both coastal States; and
- Reciprocal monitoring and surveillance schemes for each coastal State with respect to vessels flying flag of one of the Parties and operating in the said area or primarily flag State responsibility for monitoring and surveillance (e.g. boarding, inspection, arresting and bringing into port, etc.).

113. If either of the coastal States license vessels from a third country to fish within their respective EEZs, conditions would need to be agreed, in advance, by the coastal States if these vessels are to be permitted access to the area of joint management.

***Scenario C: Two coastal States, a single transboundary stock occurring wholly within their EEZs and being harvested by national fleets and fleets from other countries in either or both of the EEZs***

114. In some instances, coastal States provide for access of third parties to their EEZs. In addition to measures for the implementation and enforcement of management arrangements for a transboundary stock in Scenario A, the following measures should be adopted and implemented:

- Fishing activities by a third party fishing vessel authorized to fish in the EEZ of one of the coastal States should be controlled and surveilled by that coastal State;
- Third party fishing vessels should be subject to at least the same terms and conditions of licence (including boarding inspection and enforcement

requirements) when they are operating in either or both EEZs as the terms and conditions imposed on national vessels from the coastal States; and

- The flag State legislation should include control measures (e.g. an authorization procedure) for its vessels fishing in the EEZ of another State.

***Scenario D: Two coastal States, a single transboundary stock occurring wholly within their EEZs and being harvested by national fleets that have reciprocal access to each others EEZ***

115. Reciprocal fishing arrangements between two adjacent coastal States should be based on an agreement that would specify clearly the terms and conditions of access for their respective fleets. In addition to the measures included in Scenario A and C, the following measures should be implemented:

- Special reporting requirements (e.g. for catch, area of operation, entry and exit from the EEZ, notification, etc.) that would serve to reinforce coastal State management measures. As appropriate, such a requirement could involve real time reporting;
- Collaboration between the coastal States to create a culture to sensitize fishers and to encourage them to abide by the terms and conditions of their licences;
- A means that can be invoked by the coastal State (Party in the agreement or arrangement) in the event that its vessels commit an offence in the adjacent EEZ;
- Observer programme(s) for scientific and enforcement purposes; and
- As appropriate, education and awareness creating programmes addressed to all fishers, where institutional differences (capacity, means of control, etc.) exist among the coastal States Parties to an arrangement.

***Scenario E: One (or more) coastal State, one (or more) straddling stock that occurs in the EEZ of one (or more) coastal State and the high seas***

116. A fish stock that straddles between the EEZ of a single coastal State and the high seas requires effective international cooperation between the coastal State and other countries fishing the stock to ensure that it is managed in a sustainable manner. This situation is provided for in the 1995 UN Fish Stock Agreement especially Part III and Part IV of the Agreement relating to mechanisms for international cooperation concerning straddling fish stocks and highly migratory fish stocks. These Parts address in particular the establishment of regional organizations or arrangements where none currently exists and the strengthening of existing organizations and arrangements to make them more effective.

117. In addition to the measures in Scenario A, the following requirements should be considered for the management of a straddling stock:

- Establishment of a regional fishery management organization or arrangement;
- Authorization of the use of fishing vessels and the notification of vessel specifications;<sup>8</sup>
- Vessel requirements (e.g. documentation of vessels, marking of vessels and gear, information relating to fishing activities, reporting of catch and fishing effort, and communication of vessel movements and catches);<sup>8</sup>
- Observation and collection of scientific information; and
- Establishment of a joint control and inspection scheme tailored to the needs of the region (e.g. assignment of means of inspection, infringement procedures and follow-up requirements).

#### *SUMMING-UP*

118. The Consultation noted that there had been a high degree of compatibility among the reports of the three Working Groups. This was seen as a very positive outcome.

119. It was stressed that data collection is a matter of crucial importance both for scientific purposes (see the report of Working Group B) and for monitoring, control and surveillance (see the report of Working Group C). Obtaining reliable data from commercial fleets was cited as an example of strong common interest for parties involved in the management of shared fish stocks. It was suggested that possible synergies should be more systematically taken advantage of. However, such efforts should not put at risk the collection of independent information for scientific purposes.

120. A further observation was that there did not appear to be a strong correlation between the sophistication of a sharing mechanism and the health of fish stocks. It was noted that cooperation was a prerequisite for effective management of shared stocks, but that, in the absence of the implementation of conservation and management measures, improved stock status could not be assured. Thus, cooperation is to be seen as a necessary, but not sufficient, condition for effective resource management.

#### *CLOSURE OF THE CONSULTATION*

121. In closing the Consultation, the Chairman thanked Experts for their contributions and their efficient manner in which they had collaborated. He expressed the view that the

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<sup>8</sup> These minimum requirements are based on the interim arrangements of the South East Atlantic Fisheries Organization applicable until a permanent surveillance and control system is established.



Consultation had addressed important issues relating to shared stocks in a comprehensive manner and added that the outcome of the Consultation would assist in better understanding the complex issues involved.

122. Mr Garcia thanked the Government of Norway for its support for the Consultation and the Experts for their excellent participation. He indicated that the report of the Consultation would be made available at the forthcoming Twenty-fifth Session of the FAO Committee on Fisheries in February 2003.

**AGENDA**

1. Opening of the Session
2. Presentation of Discussion Papers and Case Studies
  - Discussion Papers
  - Case Studies
3. Establishment of Working Groups
4. Presentation and Discussion of Reports of the Working Group
5. Summing-up
6. Closure of the Consultation

## APPENDIX B

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### **Discussion Paper**

On the Management of Shared Fish Stocks  
 (G. Munro)  
 Legal Aspects in the Management of Shared Fish Stocks – A Review  
 (A. Van Houtte)

### **Case Studies**

Fishery of Shared Stocks of the Silver Pomfret, *Pampus Argenteus*, in the Northern Gulf  
 (AL-Husaini)  
 Cooperative Management of Shared Fish Stocks in the South Pacific  
 (T. Aqorau)  
 Shared Fishery: Argentine-Uruguayan Common Fishing Zone  
 (J.D. Chaluleu)  
 North American Pacific Salmon: a Case of fragile Cooperation  
 (K.A. Miller)  
 Case Study of Small Pelagic Fish Resources in Northwest Africa  
 (Samb Birane)  
 Management of Shared Fish Stocks Australian Case Studies  
 (D. Staples)  
 The Loophole of the Barents Sea Fisheries Regime  
 (O.S. Stokke)  
 Arrangement between the Government of Australia and the Government of New Zealand for the  
 Conservation and Management of Orange Roughy on the South Tasman Rise (J. Willing)  
 Management of Shared Hake Stocks in the Benguela Marine Ecosystem  
 (R.U. Sumaila, C. Ninnes, B. Oelofsen)  
 Management of a Straddling Fish Stock: The Case of the Norwegian Spring-Spawning Herring  
 Fishery  
 (T. Bjørndal)  
 Some Shared Fish Stocks of South Eastern Pacific  
 (J. Zuzunaga)  
 The Management of Redfish (*Sebastes mentella*) in the North Atlantic Ocean (Andrew H. Thomson)  
 Cooperative Fisheries Management Issues in the Baltic Sea  
 (Walter Ranke)

### **Discussion Guides**

Working Group A: Resolving Allocation Issues  
 Working Group B: Achieving Coordination of Management Plans and Objectives, and of Research  
 Programmes  
 Working Group C: Ensuring Implementation and Enforcement of Fisheries Management  
 Arrangements for Shared Stocks



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The Norway-FAO Expert Consultation was held in recognition of the fact that the management of shared fishery resources remains one of the great challenges on the way towards achieving long-term sustainable fisheries. The Expert Consultation considered, in particular, the management of transboundary fish stocks and straddling fish stocks. It directed itself to the practical problems to be faced in the management of these resources within the 1982 UN Convention on the Law of the Sea, the 1995 UN Fish Stocks Agreement and other relevant international instruments. As such, the Expert Consultation was not designed to prescribe solutions, but was rather designed to serve as a neutral forum in which options and their implications for management could be reviewed in a constructive manner.

