

**Report of the**

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**FAO EXPERT CONSULTATION ON THE IMPLEMENTATION  
OF THE FAO INTERNATIONAL PLAN OF ACTION FOR THE  
CONSERVATION AND MANAGEMENT OF SHARKS**

**Rome, 6–8 December 2005**



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## PREPARATION OF THIS DOCUMENT

This report documents the discussions and conclusions of the Expert Consultation that was held to review the effectiveness of the FAO International Plan of Action for the Conservation and Management of Sharks. This Consultation was held in Rome from 6 to 8 December 2005. The meeting was held at the explicit request of the twenty-sixth session of the Committee on Fisheries (COFI) held in Rome, Italy, in March 2005. It is expected that the outcome of this Consultation will be used to provide guidance to discussions on the IPOA–SHARKS at the twenty-seventh session of COFI in 2007. The participants attended the meeting in their personal capacity.

FAO.

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### ABSTRACT

The FAO Expert Consultation on the Implementation of the FAO International Plan of Action for the Conservation and Management of Sharks (IPOA–SHARKS) reviewed available information and national, institutional and personal experiences in relation to factors governing the success of this programme. The constraints to programme implementation were reviewed and suggestions were considered as to how the efficacy and effectiveness of the programme could be improved. The view of the Consultation was that the IPOA–SHARKS was a beneficial endeavour and that efforts to improve its effectiveness should be strengthened.

### Distribution:

Participants in the meeting  
Directors of Fisheries  
FAO Regional Fishery Officers  
FAO Fisheries Department



## SUMMARY

### The Consultation

- i. diagnosed the current status of implementation of the FAO IPOA–SHARKS;
- ii. prescribed the needs to address deficiencies in, and documented opportunities to enhance the effectiveness of, the Plan; and
- iii. identified advice for future actions to improve implementation of the Plan.

The Consultation found the FAO IPOA–SHARKS to be well written and comprehensive but would benefit from better guidance and instructions. However, their view was that the IPOA–SHARKS had not achieved the level of success envisaged at the time of its introduction. While the IPOA–SHARKS appears well accepted at national political and policy levels, concrete operational activities have been meagre and unsatisfactory.

There was concern that the IPOA–SHARKS was “slipping off” relevant agendas and that promotion of the plan must be strengthened. Given the nature of the problems that remain, and indeed have intensified over time, consideration should be given to re-launching the initiative to re-invigorate the Plan and provide fresh impetus to its activities.

Failure of effective implementation of the IPOA–SHARKS at national levels has been exacerbated by confusion between its nature as an intention to act and the need of a programme of operational actions. In operational terms, some found the IPOA–SHARKS to be too complex, which inhibited action and a more simple approach was needed.

#### Particular concerns included:

- lack of appropriate taxonomic guides to identify species;
- lack or insufficient information on the population biology of elasmobranch species, both targeted and bycatch species;
- lack of funds for management;
- lack of human resources;
- competition from other management imperatives;
- lack of effective policy and institutional practices;
- scarce or lacking data, particularly for catch and fishing effort, to inform management decision-making;
- weak or non-existent capacity of many developing countries; and
- low political priority accorded to elasmobranch fisheries.

The voluntary nature relating to the implementation of the IPOA was seen by several of the Consultation’s participants as a major concern, but no agreement was possible as to how this might be changed and there was little support for some form of implementation arrangement along the lines of the FAO Compliance Agreement.

#### *Future requirements were noted to include:*

- the need to address the lack of sustained funding – a critical and widespread issue that constrains management of elasmobranch fisheries;

- the need for countries and institutions that possess particular skills and expertise in management of elasmobranch fisheries to share their expertise with management regimes that would benefit;
- the need to identify international organizations that may fund activities, especially on a regional basis;
- the opportunity to increase industry participation in, and support for, management of elasmobranch fisheries; and
- the need for greater recognition of the potential of regional fisheries management organizations (RFMOs) to contribute to management of elasmobranch; their support and involvement in addressing this problem should be sought.



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## **OPENING**

1. Mr I. Nomura, Assistant Director General, Fisheries Department and Dr Jorge Csirke, Chief, Marine Resources Service, Fisheries Department, FAO, Rome welcomed the participants<sup>1</sup> to FAO headquarters and stressed the importance of the meeting in identifying how the implementation of the International Plan of Action for Sharks (IPOA–SHARKS) could be strengthened. It was also noted that the participants represented a wide spectrum of backgrounds and experiences and that it was their view that this would be invaluable in contributing to the success of the Consultation.

2. Dr Shotton, Marine Resources Service, FAO, introduced the members of the Consultation and outlined the anticipated order of business (Appendix A) for the following three days and the reporting requirements. It was confirmed that those attending the meeting were doing so in a personal capacity and comments and views expressed at the meeting did not necessarily represent the views of any national department of fisheries.

3. Mr Neil Bensley, Policy Officer with the the Australian Government’s Marine Environment Section, Department of Agriculture Fisheries and Forestry, Canberra, Australia was elected Chairman of the meeting by acclamation.

4. The objectives of the Consultation were reviewed. These focused on:

- i. Providing a diagnosis of the current status concerning implementation of the FAO IPOA–SHARKS.
- ii. Providing a prescription of what is needed to address any deficiencies in, or document opportunities to enhance the effectiveness of, the Plan.
- iii. Providing advice in terms of (i) and (ii) to inform COFI and other interested parties as to what future actions, if any, should be undertaken to improve implementation of the Plan.

5. Shotton commented on the origin and status of the IPOA and relevant aspects in the history of the development of the Plan of Action. Relevant reports relating to the background of the programme were also introduced<sup>2</sup>. A number of background documents relating to national experiences in management of sharks were also introduced and summary reviews of the availability of relevant FAO documents relating to management and conservation of elasmobranchs<sup>3</sup>.

## **BACKGROUND TO THE IPOA–SHARKS**

6. Shotton introduced three FAO Fisheries Reports (FAO 1998a, 1998b and 1999). These described the first FAO Technical Working Group on the Conservation and Management of Sharks in Tokyo, Japan, in April 1998, two Consultations on the Management of Fishing Capacity, Shark Fisheries and Incidental Catch of Seabirds in Longline Fisheries both held in Rome, in July 1998 and in October 1998. Reference was also

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<sup>1</sup> A list of participants is given in Appendix B.

<sup>2</sup> See Appendix C.

<sup>3</sup> Although its title is the IPOA–SHARKS the Plan refers to all elasmobranchs and chimaerids, i.e. the chondrichthyans.

made to the formal FAO IPOA–SHARKS document, FAO (2000) and related FAO publications.

7. Past concern with the conservation and management of this group of fishes has embraced the complexity of the fisheries in which elasmobranchs are or have been harvested. These included directed fisheries for elasmobranchs, usually for sharks; fisheries in which elasmobranchs are taken as bycatches and thus marketed; and fisheries in which the bycatch of elasmobranchs are discarded. These fisheries are characterized by a wide range of reporting practices, from those in which no records were kept of discarded bycatches to those where there is no useful disaggregation in terms of species of the elasmobranch catch, even by major taxonomic division, e.g. order or family. Concerns were also expressed about the accuracy of species identification and insufficiency of appropriate taxonomic guides.

8. The Consultation was informed that most accounts indicate that few countries have a successful record of conservation and management of elasmobranch resources and the problem of depleted and threatened stocks and species of elasmobranch fishes continues to increase. Consequentially, the need for effective implementation of the IPOA–SHARKS is growing rather than diminishing. Thus, the imperatives that drove the creation of the IPOA–SHARKS remain as strong as ever.

## **BACKGROUND TO CONSERVATION AND MANAGEMENT CONCERNS OF ELASMOBRANCH FISHERIES**

9. The Consultation reviewed the characteristics that make elasmobranch fishes and their fisheries particularly vulnerable to the effects of fishing. These were:

- slow growth
- late maturity
- low fecundity
- particular vulnerability to capture, e.g. batoids by trawls
- the bycatch nature in many fisheries with the consequence that it is uncommon that they have a particular management plan to ensure the conservation of this group
- the low economic importance of many elasmobranch species results in little incentive to record their capture and subsequent discard
- the high value for shark fins stimulates localized directed fisheries that have high-revenue low-cost characteristics and
- the difficulty in species identification with the possibility that species may become rare or disappear without awareness that this has happened.

10. It was also noted that a wide range of national competencies exist in relation to the possible management of this group of fishes. Some countries with important shark fisheries have made much progress in the implementation of effective shark fishery management; however, in other countries where fisheries for these species are important, little if any management actions have been undertaken.

11. With few exceptions it was noted that fisheries for elasmobranchs were characterized by an absence of precise and accurate data relating to all aspects of the fisheries:

- i. identification of the species composition of the catch
- ii. accurate recording of the amount of catch and discards, if any

- iii. the amount of fishing effort by gear sector and type and
- iv. trade-related information.

These deficiencies were found across a wide range of countries including those otherwise considered to have advanced levels of fisheries management.

12. A particular concern exists resulting from the difficulties in identifying the species that are being caught: this complicates management on a species basis. This difficulty was often exacerbated by the lack of appropriate taxonomic guides to enable identification of the species that were being taken by a fishery. This deficiency is common to many management regimes.

13. It was noted that management of elasmobranchs involved most, if not all, of the problems involved in management of non-elasmobranch species. And, both common and different management problems existed at local, national, regional and global levels. Despite this, it was agreed that many of the characteristics of elasmobranch fisheries were sufficiently different that their successful management required specialized staff dedicated to this particular management task.

14. Fisheries management regimes in many countries were characterized by an almost complete, or complete, lack of management of elasmobranch fishery resources. It was agreed that there are a number of reasons for this that included: (a) lack of funds to undertake management, (b) lack of people to undertake management, (c) lack of appropriate experts, (d) competition from other management imperatives for limited resources, (e) lack of effective policy and operational guide lines and (f), lack of appropriate institutional practices. Usually in these cases, there were no particular efforts at monitoring or surveying and assessing elasmobranch fishery resources.

15. It was further noted that inconsistent and incoherent fisheries policies often compounded the difficulty of management of this group of fishes. For example, in some jurisdictions, the sale of shark fins may be prohibited but not the sale of shark meat.

16. The common failure of operational management efforts (as specified in directed annual management plans, etc.) to conserve and manage elasmobranch resources was often found to reflect the absence of an appropriate management policy framework and management objectives, especially in the case of bycatch species. Despite the common absence of appropriate policy structures, it was noted that elasmobranch fisheries are important sources of food and incomes, often for the poorer sectors of fishing societies and as such were of significant socio-economic importance. In some fisheries, 30–50 percent of the income from small-scale fishermen may be derived from the harvesting of sharks. This emphasized the need to consider the socio-economic importance of the fisheries, and not only in developing countries.

17. In those developing countries where management capacity and/or effectiveness is inadequate, the fisheries administrations often lack specialist elasmobranch fisheries managers and must address management obligations across a wide range of fisheries, gear types and areas. In such cases, it is not unusual for the data required to support good management decisions to be scarce or lacking.

18. An area of particular concern where accurate and reliable data are, in general, absent is that of deepwater fisheries and deepwater elasmobranchs. Examples were noted where even 10 years after the start of a deepwater fishery, information on the elasmobranch bycatch remained non-existent, scarce and/or incomplete. Special attention should be given to addressing the problems of these deepwater fishes.

19. There was unanimity on the need at national levels to collect well-defined data that could provide the foundation for developing an IPOA–SHARKS at national levels. Intrinsic in this was the need to get the “basic data” correct; what was being caught, by whom, how and where.

20. Particular concern was expressed about the inadequate or non-existent capacity of many developing countries to undertake effective resource management of their elasmobranch fisheries, i.e. stock assessment, provision of resource management advice and ensuring compliance with any management and conservation regulations. This inadequacy or failure often reflects the need on the part of developing countries to manage a wide variety of fish resources, types of fishing gear, fleet sectors and areas for fisheries that are of greater commercial importance. Elasmobranch fisheries in such countries are commonly accorded lower priority, if any, in terms of securing resources (funds and staffing) to satisfy management requirements because of their low value relative to species such as those fished for export markets. This is despite the importance of elasmobranch fisheries to fishers in lower socio-economic levels.

## **REVIEW AND ASSESSMENT OF THE IPOA–SHARKS**

21. The Expert Consultation was of the common view that the FAO IPOA–SHARKS document (FAO 2000) was well written and provided a comprehensive account of the actions required for effective conservation and management of elasmobranch fisheries. A major strength of the document was that it was concisely presented and provided clear goals and directions to those involved in the management of these fisheries. It was recognized that such a concise account would benefit from detailed guidance and instructions and, at least in terms of resource management and relevant fisheries biology, the intention was that the APEC manual, “Elasmobranch Fisheries Management Techniques” (Musick and Bonfil, 2005<sup>4</sup>) would provide a good source of supplementary guidance if required.

22. The Consultation was also of the view that the existence of the IPOA–SHARKS had provided much-appreciated support to those involved in the conservation and management of elasmobranchs. And as such, it had played an important role where management of these fishes had been improved.

23. The consultation was of the view that the IPOA–SHARKS continues to play an important role in raising concern over the management of these fishes and that the management objectives and goals, policy directives and steps involved in its operational implementation remain valid and current in terms of addressing the issues involved in the management of these resources. As such the IPOA–SHARKS has stimulated interest in this issue and raised its political profile – a necessity given the common need to secure additional funding and human resources to address the management requirements of these fishes.

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<sup>4</sup> This report, the result of the APEC FWG project 03/2001T, was developed by the APEC Fisheries Working Group and has been published by FAO.

24. It was agreed that the existence of the IPOA had somewhat contributed to awareness about the need for conservation of elasmobranchs and the role of national governments in this regard. This in turn had strengthened advocacy efforts and the building of public awareness.

25. It was noted that a few countries had made excellent progress in the implementation of national plans of action for the management and conservation of elasmobranchs; some of these equalled or exceeded what had been anticipated in the FAO document.

26. In sad contrast, the majority of countries have not made progress in implementing effective fisheries management and conservation of their elasmobranch resources. A number of possible reasons for this were identified.

- i. The economic importance of shark fisheries in many countries is low and, correspondingly, they are given low priority in the allocation of management resources (funds and experts).
- ii. The political will to insist that management jurisdictions address the problems of elasmobranch population is often weak or lacking.
- iii. Management regimes lack the expertise needed to determine which management actions are required and how to rank their importance and expedite their implementation.
- iv. Insufficient funding and/or human resources are available to address the problems posed by the management requirements of national elasmobranch resources.
- v. National initiatives often depend on resources provided by a donor or donors: when the donor programme ceases, so do the programme's activities. A consequence of this is the failure of both recipients of aid and donors to ensure that means are developed to ensure sustainable management once programme assistance stops.

## **REGIONAL FISHERIES MANAGEMENT ORGANIZATIONS**

27. There was common agreement on the importance of regional fisheries management organizations (RFMOs) as agents with a responsibility and capacity to contribute to better conservation and management of elasmobranch fisheries. However, such groups were often better able to address the issues of management of wide-spread pelagic or highly migratory species, rather than those of a local or regional nature.

28. It was noted that the record of such organizations was mixed. Several bodies have implemented effective well-directed monitoring programmes of elasmobranch resources in the regions of their competence. It was noted that these efforts usually centred around monitoring bycatch, either from longline fisheries, as in the case of fisheries prosecuting scombroids and Patagonian toothfish, or from purse seine fisheries, especially those targeting tunas. The Consultation expressed approval that some RFMOs had established specialized "shark" working groups specifically to address elasmobranch conservation concerns.

## **THE IPOA-SHARKS AND CITES**

29. There was considerable evidence that the existence of the IPOA had created a basis for the building of relationships between relevant conventions and elasmobranch-related conservation initiatives.

30. It was noted that the IPOA–SHARKS, wholly or in part, had resulted in many RFMOs explicitly addressing the issue of conservation of sharks and/or batoids, particularly where these species were not the target of directed fisheries by Commission members' fishing vessels. Further, it was noted that the IPOA was frequently featured in deliberations at meetings of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)<sup>5</sup>. More generally it was agreed that the IPOA–SHARKS had stimulated and facilitated the increasing attention being given to this issue in such forums.

31. In the context of FAO and CITES, it was noted that the mandate of CITES only extends to issues of trade and they cannot assist or play a more prominent role in the sustainable management of sharks. The desirability of clarifying and confirming the nature of the future relation between these two organizations was also stressed, not least because of the commonly differing policies and practices exhibited by the same country at the two different entities. It was also noted that the IPOA–SHARKS had implications for the objectives of the Convention for Migratory Species (CMS) and thus here too provided an opportunity for synergy.

### **IMPLEMENTATION ISSUES TO BE ADDRESSED AND/OR DEVELOPED**

32. There was a general view that few management regimes are likely to achieve long-term sustainability of their elasmobranch fisheries in their present form and indeed most management authorities are failing in this regard. Allied to this was the concern that many were uncertain about the status of the IPOA–SHARKS – was it still current and active? The Consultation concluded that there was a need for a formal strategic review of its direction and focus by those with the mandate for implementing the IPOA–SHARKS.

33. While there was widespread acceptance of the concepts implicit in the IPOA–SHARKS at the political level and also at the senior management level, the conversion of this support into operational activities that have produced concrete management results has been generally meagre and unsatisfactory. Conversely, where management activities are strong they are often disconnected from those at the decision-making level. In many cases there appears to have been a lack of awareness that the articulation only of national support for conservation of elasmobranchs does not constitute implementation of the IPOA–SHARKS – tangible management actions are an inherent, but often lacking, requirement of the national plans.

34. It has become apparent for many managers that the IPOA–SHARKS in the present form appears excessively complex and intimidates them from taking even preliminary steps that could be productive in its implementation. In these cases, a simplified approach is needed. To facilitate this, assistance is needed in identifying easy-to-implement priority management actions. How such rapid methods are used would vary among countries depending on the existing management regime and the major species of concern: species forming directed fisheries in some countries are of little or no concern in others.

35. Easily implemented actions become even more important in the common situation of scarce or insufficient funding that prevents the full implementation of an IPOA–SHARKS at

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<sup>5</sup> In 1995, CITES requested that the Food and Agriculture Organization of the United Nations (FAO), in conjunction with international fisheries management organizations, establish data collection programmes for monitoring the status of shark resources and their trade.



national levels and when many of the supports to management commonly accepted as being necessary are unavailable, e.g. accurate data on landings and fishing effort and complete and accessible databases. It was noted that the common inability, or disinterest, of management regimes to provide the funding required for effective management of elasmobranch fisheries often limits national efforts to do no more than write what the elements of a national Plan should be.

36. Overriding all such operational concerns is the widespread lack of funding needed to undertake management of elasmobranch resources (or indeed other species groups as well). As a consequence, while planning and documentation of management actions is possible and may be undertaken, in most cases no implementation of operational activities follows and the process stops. Resolution of this problem critically depends on satisfying the funding requirements for elasmobranch resource management.

37. Failure to effectively implement the IPOA–SHARKS at national levels appears to have been commonly exacerbated by confusion between the nature of a “plan”, as an intention of action, and that of an implementation programme of actions that will be undertaken. That is, was the primary objective of the IPOA to be advocacy, apparently the conclusion of some, or that of pro-active management and operational management actions? While this interpretation may have been welcome by some, it is clear that in several management regimes, simple articulation of the intention to act has been taken as satisfactory implementation of an IPOA. Here, a plan is considered to be an activity of advocacy, and the danger is that once documented, no further action is undertaken.

38. The voluntary nature relating to the implementation of the IPOA was seen by several of the Consultation’s participants as a major concern. But, no agreement was possible on how a more obligatory approach might be achieved. There was only little support for the view that some form of arrangement along the lines of the FAO Compliance<sup>6</sup> agreement would be appropriate.

39. In these contexts, several participants were of the view that the IPOA–SHARKS was “slipping off” relevant national and international agendas. But, as the problems of management and conservation continued to grow there was a need to strengthen efforts at promoting the implementation of the plan. This was important not least because of the time (often many years) that countries were taking in developing plans and implementing management actions.

40. It was agreed that to go beyond simple rhetoric about the need for “good management”, it is necessary to document national fisheries management priorities ranked by appropriate criteria. This, it was agreed, should provide the basis for the most rational allocation of management resources and support funding for commonly threatened groups such as the elasmobranchs.

41. There was unanimity that the involvement and support of fishers and others in the harvesting sector is essential for the success of any management effort concerning sharks. While management actions must target those undertaking fishing, it is essential that relevant management decisions are taken with the advice of those they will affect and have their

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<sup>6</sup> Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas. FAO. <<ftp://ftp.fao.org/docrep/fao/Meeting/006/x3130m/X3130m00.pdf>>

support. This inevitably means that time and money must be made available to undertake consultations with industry members and enable programme consultations, reviews and revisions.

42. It was commonly recognized that many countries with elasmobranch fisheries and management demands lacked the expertise needed for effective management of elasmobranch fisheries – this naturally constrained achieving the goals envisaged by the IPOA–SHARKS. Resolving these deficiencies might commonly involve a range of remedial activities such as:

- i. one-on-one training – workshops were not always an effective means of imparting skills and training;
- ii. appropriate mentoring and provision of role models on which to pattern management actions and procedures;
- iii. training of senior managers and decision makers, many of whom find it difficult to make time available for such development activities;
- iv. ensuring that managers and researchers are aware of the assistance that is available from the FAO and other agencies providing similar services;
- v. training for fishermen across a wide range of activities:
  - a. in more species- and size-selective fishing techniques;
  - b. in methods of live bycatch release; and
  - c. in proper recording of catch so as to identify the species that are taken in support of effective resources management.

43. The common existence of tensions between national jurisdictions responsible for conservation and those responsible for resource management was noted. In many management agencies where conservation and fisheries management were the mandates of separate departments, incoherent policies may develop that are not conducive to the agencies' overall objectives. Similar polarities may exist between the management objectives of developed and developing countries or neighbouring countries, a consequence of access to different information bases, different attitudes to risk and different discount rates. This can create a need for reconciliation of different management and conservation approaches.

## **FUTURE DIRECTIONS**

44. There was strong accord that no matter the variation in interest in supporting the IPOA–SHARKS at all levels, the problems of shark management and conservation continue to grow and will not disappear: this will require considered reflection on how to sustain management programmes of this species, no matter the source of funding. Further, the availability of **sustained** funding is a central critical issue constraining effective management of elasmobranch fisheries. In this regard, it was noted that 'episodic' funding of elasmobranch management programmes was not a problem that was restricted to developing countries.

45. It was agreed that countries and institutions that possess particular management skills and expertise in relation to elasmobranch fisheries should be encouraged to share their expertise with management regimes that can benefit from it.

46. International organizations should be identified that may have a capacity and interest in funding activities that can support implementation of the IPOA–SHARKS, especially those undertaken on a regional basis. The requirements for obtaining assistance from such agencies

should be determined and regionally-agreed approaches made that are consistent with the funding organization's institutional requirements.

47. Because of the growing practice of industry participation in management, including contributing to, or assuming, management costs, case studies should be undertaken of those situations where industry is contributing to management costs of elasmobranch fisheries, e.g. through the payment of product levies or other forms of management payments.

48. While the past role of RFMOs in contributing to management of elasmobranch resources within the regions of their competence was recognized, there was optimism that they could increase the level of their activities and play a greater part in management of these fishery resources. This support should be actively sought, possibly through the existing mechanisms of RFMO cooperation and consultation. Where appropriate, assistance and direction might be directly provided to those RFMOs known to be confronted with elasmobranch management requirements.

49. Further emphasis on expanding management and conservation efforts was needed at bilateral and regional levels, especially where shared transboundary stocks existed. In the case of such shared stocks of elasmobranchs, bilateral and multi-lateral efforts to implement the IPOA-SHARKS should be encouraged and facilitated. Regional and inter-governmental organizations should be encouraged to assist this process.

50. In conclusion, the Consultation was of the view that the IPOA-SHARKS has not achieved the level of success envisaged at the time of its introduction. Given the nature of the problems that remain, and indeed the many that have intensified with the passing of time, consideration should be given to the feasibility of relaunching the initiative so as to re-invigorate ownership of the Plan and provide fresh impetus to its activities.

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**APPENDIX A**  
**Annotated agenda**

FAO Expert Consultation on the Implementation of the FAO International Plan of Action for the Conservation and Management of Sharks  
India Room (A327)  
Food and Agriculture Organization, Rome  
6–8 December 2005

<b>Agenda</b>	<b>Comments</b>
1. OPENING OF MEETING	
i. Explanation and Summary of FAO's Objectives for the Expert Consultation	<i>What FI has in mind.</i>
ii. Housekeeping matters:	Any questions of participants about payments, return of receipts, etc.
• Collection of <i>per diems</i> and administrative requirements	
• Reporting of the meeting	The results of the meeting will be published in the FAO Fisheries Report Series.
• Status of views and opinions of participants?	
iii. Appointment of the Chairman for the Consultation	
iv. Confirmation of Agenda	
<b>PART I – REVIEW AND ASSESSMENT</b>	
2. HISTORY OF THE FAO IPOA–SHARKS PROCESS	Brief synopsis to provide context for the meeting.
3. REVIEW, DISCUSSION AND AGREEMENT ON THE OBJECTIVES OF THE CONSULTATION	
4. ISSUES FACING MANAGEMENT AND CONSERVATION OF ELASMOBRANCHS NATIONALLY, REGIONALLY AND GLOBALLY:	Review of the issues in light of developments concerning the management and conservation of sharks.
• Conservation and or Management?	
• Institutional and Governance Issues	
• Policy Issues	
• Strategic Policy Planning	
• Social-Economic Research & Analysis	
• Resource Research & Analysis	

Agenda	Comments
<ul style="list-style-type: none"> <li>• Fishery Operational Planning</li> <li>• Fishing Entitlements</li> <li>• Catch &amp; Effort Monitoring</li> <li>• Compliance &amp; Enforcement</li> </ul>	
5. IMPACT OF THE FAO IPOA–SHARKS	<p>The intention here is to record your views on how the IPOA–SHARKS process has affected <i>management and conservation</i> of elasmobranchs (locally, nationally, regionally, globally, as possible) and the consequential effects. In doing this it may be useful to consider:</p> <ul style="list-style-type: none"> <li>i. Identity and “power” of the national (fisheries) department with the mandate for management of elasmobranchs.</li> <li>ii. Identification of the national (fisheries) department that has the prime responsibility for interaction with COFI.</li> </ul> <p>Consideration of the relation between these two departments in terms of the IPOA.</p>
6. PROCESSES AT THE NATIONAL LEVEL	
<ul style="list-style-type: none"> <li>• <i>Strategic Planning Processes</i></li> </ul>	iii. Can anything be said?
<ul style="list-style-type: none"> <li>• <i>Resource (Stock) Assessment Activities and Issues</i></li> </ul>	<ul style="list-style-type: none"> <li>iv. Effectiveness of department responsible for collection of fisheries. data relating to catches of elasmobranchs – how well/poorly these departments function in relation to collection of elasmobranch data.</li> <li>v. How the process data of reporting to the FAO Global Landings system works (and hence the questions sent to you separately).</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Provision of Resource Management Advice</i></li> </ul>	vi. Issues – Directed fisheries, bycatch and endangered species.
<ul style="list-style-type: none"> <li>• <i>Fishery Management Plans</i></li> </ul>	vii. Do/should elasmobranchs get special attention? Ecosystem impacts?
<ul style="list-style-type: none"> <li>• <i>Compliance with Management Regulations</i></li> </ul>	<ul style="list-style-type: none"> <li>ix. Elasmobranch-related compliance problems (if any), e.g. enforcement issues, misreporting, enforcement successes, etc. and the reasons for problems or successes.</li> <li>x. Impact of IPOA–SHARKS on incidence of prosecutions for infractions (successful or unsuccessful and hence why).</li> </ul>

Agenda	Comments
<ul style="list-style-type: none"> <li><i>Conservation</i></li> </ul>	ix. Description and comment on the respective roles and cooperation/conflicts between those with the national mandate for “management” and those with the mandate for “conservation”.
7. PROCESSES AT REGIONAL AND GLOBAL LEVELS	Over to the participants?
8. ASSESSMENT OF THE SUCCESSES & FAILURES OF THE FAO IPOA–SHARKS	Participants views of the success in terms of the objectives of the IPOA.
<b>PART II – FUTURE DIRECTIONS – FUTURE ACTIVITIES</b>	
9. FUTURE CHANGES IN POLICY AND PRACTICES FOR THE IPOA	Is there a need to change how the policy direction of the IPOA–SHARKS ? If yes, how? Is there a need to change how the IPOA–SHARKS is being implemented? If yes, how?
10. CONSERVATION ISSUES	Dealing with issues of threatened and endangered species – the CITES arena and the IPOA – Any relation?
11. DIRECTED FISHERIES	Appropriate management of directed fisheries – should these be given special treatment vis-à-vis other directed fisheries?
12. BYCATCH ISSUES	Review, assessment and comment on this issue.
13. RFMOs	Can the Expert Consultation provide advice to RFMOs in terms of regional problems?
14. DURATION OF THE IPOA–SHARKS	Should the plan be given a termination date – or continue in perpetuity?
15. THE FLOOR IS OPEN!!	

**APPENDIX B**  
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**APPENDIX C**  
**List of documents**

**1. Consultation documents**

- 1 Comments from Bernard Seret, Muséum national d'histoire naturelle, F – 75231 Paris Cedex 05, France
- 2 Comments from Michael Arbuckle, Visiting Scientist, Fisheries Department, FAO and Ministry of Fisheries, Wellington New Zealand. Background information on Shark Management in New Zealand
- 3 Publications by the FAO Fisheries Department Relating to Management of Elasmobranchs Fisheries
- 4 Initial Responses Access to FAO Documents on Management and Conservation of Elasmobranch Fisheries. FAO, Rome
- 5 Implementation of the IPOA–SHARKS and Related Issues Republic of the Yemen. Dr Omar A. Subeih, Senior Research Officer, Director General (FRMCP), Yemen
- 6 Implementation of the National Plan of Action – Sharks For Gambia, Mendy Asberr, The Fisheries Department, The Gambia
- 7 Investigation on Utilization of Sharks in China (Draft). Wang Yamin, Fan Enyuan, Guan Jingxiang
- 8 Italian Review. F. Serenca, Arpat, Livorno, Italy
- 9 National Plan of Action for the Conservation and Management of Sharks (Shark plan). Australian Government. Department of Agriculture, Fisheries and Forestry. May 2004. 8299
- 10 Commonwealth Policy on Fisheries Bycatch. June 2000. 13pp.

**2. FAO publications**

<b>Year</b>	<b>Author</b>	<b>Title</b>	<b>Citation</b>
1978	Kreuzer, R. & R. Ahmed	Shark utilization and marketing	FAO/UNCTAD/GATT. 180pp.
1984	Compagno, L.J.V.	FAO Species Catalogue for Fisheries Purposes: "Sharks of the World" Volume I	FAO Fisheries Synopsis No. 125 4(1). 249pp.
1984	Compagno, L.J.V.	FAO Species Catalogue for Fisheries Purposes: "Sharks of the World" Volume II	FAO Fisheries Synopsis No. 125 4(2).655pp
1991	Prado, J. & S. Drew	Trials and developments in small scale shark fishing carried out by FAO, 1978–1990	FAO Fisheries Circular No. 840. Rome (Italy) , Oct. 1991, 68 pp.
1991	FAO	Draft code of practice for the full utilization of sharks	FAO Fisheries Circular No. 844. Rome (Italy). Fishery Industries Div., Dec. 1991, 74 pp.
1994	Bonfil, R.	Overview of world elasmobranch fisheries	FAO Fish. Tech. Pap. No. 341. 125pp.

<b>Year</b>	<b>Author</b>	<b>Title</b>	<b>Citation</b>
1998	FAO	Technical Working Group on the Conservation and Management of Sharks, Tokyo (Japan), 23–27 April 1998	FAO Fisheries Report (FAO), No. 583. 27pp.
1998	FAO	Report of the Preparatory meeting for the Consultation on the Management of Fishing Capacity, Shark Fisheries and Incidental Catch of Seabirds in Longline Fisheries. Rome, Italy, 22– 24 July 1998	FAO Fisheries Report No. 584. 48pp.
1999	FAO	Report of the Consultation on the Management of Fishing Capacity, Shark Fisheries and Incidental Catch of Seabirds in Longline Fisheries. Rome, Italy, 26–30 October 1998.	FAO Fisheries Report No. 593. 122pp.
1999	FAO	International Plan of Action for reducing incidental catch of seabirds in longline fisheries. International Plan of Action for the conservation and management of sharks. International Plan of Action for the management of fishing capacity	FAO, Rome (Italy). Fisheries Dept., 1999, 31pp.
1999	Castro, J.I., C.M. Woodley & R.L. Brudek	A preliminary evaluation of the status of shark species	FAO Fish. Tech. Pap. No. 380. 72pp.
1999	Shotton, R. (Ed)	Case Studies on the Management of Elasmobranch Fisheries	FAO Fish. Tech. Pap. No. 378. Vols 1 & 2. 920pp.
1999	Vannuccini, S.	Shark utilization, marketing and trade	FAO Fish. Tech. Pap. No. 389. 480pp.
2000	FAO Marine Resources Service	Fisheries Management 1. Conservation and Management of Sharks	FAO Technical Guidelines for Responsible Fisheries No. 4. Suppl. 1. Rome. 37pp.
2004	Bonfil, R. & M. Abdallah	Field identification guide to the sharks and rays of the Red Sea and Gulf of Aden	FAO Species Identification Guide for Fishery Purposes. FAO, Rome (Italy). Fishery Resources Div., 71pp.
2005	Bonfil, R. & M. Abdallah	Field identification guide to the sharks and rays of the Mediterranean and Black Sea	FAO Species Identification Guide for Fishery Purposes. Rome, FAO. 71pp.
In prep.		FAO Species Catalogue for Fisheries Purposes "Sharks of the world" Volumes I and III	

## APPENDIX D

### National elasmobranch management priorities from the perspective of participants in the expert consultation

Rank	Australia	China	Ecuador	Mediterranean Basin	Italy	Japan	Norway	South Africa	United States of America
1	Overfishing	No data collection system – lack of fishing data; data processing difficult	Lack of management policy, especially for medium- and long- term in context of national political uncertainty	Overfishing especially in the European countries	Overfishing	Lack of fishery data on a species basis	Data on landings by species not well recorded	Lack of human capacity, no dedicated shark researcher or manager	Lack of resources for management
2	Sharks traditionally have a low value in Australia	Lack of publications re conservation and species identification	Partial funding of fisheries management distorts priorities towards directly funded activities	Fragmentary information on fishing data	Lacking of specific data collection system. Incomplete list of species in reported catches	Need for improved species identification	No data on discards	Low priority of elasmobranchs as they are a small fishery	Poor fishery data quality
3	Data deficiencies	Training needed for management and fishermen; lack of public and fishermen's awareness	Lack of funding to implement the IPOA–SHARKS	Difficulty in species identification	Lack of observers on board and for shark landings	Need for greater public awareness and education	Few scientists working on elasmobranchs	Lack of biological knowledge	Problems of State/ Federal/ International jurisdiction

Rank	Australia	China	Ecuador	Mediterranean Basin	Italy	Japan	Norway	South Africa	United States of America
4	Need to improve baseline data	Few surveys or stock assessment	Cancel regulations undertaken without industry input and support that have created business uncertainty, promoted perverse incentives in the administration and smuggling of fins.	Lack stock assessment especially in the South and East basin	Lack of coordination between Environmental and Fishery Ministries to implement the IPOA-SHARKS	Lack of legal expertise for enforcement	Relatively low value of elasmobranchs	No stock assessment of important species	
5	Discards and bycatch not well recorded	Few, if any, scientists engaged in elasmobranch issues	Absence of funding for management of elasmobranch fisheries	Lack of biological knowledge	Lack of biological knowledge		The most important elasmobranch fisheries ceased because of overfishing	No dedicated observers on shark fishing boats	
6	Many sharks unidentified to species level	Lack of enforcement of conservation regulations	Lack of elasmobranch experts for management-related activities.	Non specific observations on shark fishing boats and landings	Catches of game fish completely lacking			Dumping of shark bycatch without proper recording	

<b>Rank</b>	<b>Australia</b>	<b>China</b>	<b>Ecuador</b>	<b>Mediterranean Basin</b>	<b>Italy</b>	<b>Japan</b>	<b>Norway</b>	<b>South Africa</b>	<b>United States of America</b>
7	Fisheries operate on the principle of Maximum Sustainable Yield rather than Maximum Economic Yield	Need for reduction of elasmobranchs bycatch	Get industry support for management	To implement the Mediterranean Action Plan issued by UNEP RAC/SPA (Only Malta has a National AP)				Lack of data collection	
8	Resource allocation issues		Need to fund value-adding activities in the shark fisheries					Foreign fishing in the exclusive economic zone of South Africa	

## APPENDIX E

### General national management priorities from the perspectives of participants in the expert consultation

Rank	Australia	China	Ecuador	Mediterranean Basin	Italy	Japan	Norway	South Africa	United States of America
1	Overfishing and achieving recovery of overfished stocks	Develop national fisheries strategy	Achieve political stability	Prevent the overfishing		Maintain stability of life in the fisheries communities	Ensure sustainable fisheries	Need for management advice based on good science	Preventing overfishing while achieving continuous optimal yields
2	Excess fleet capacity	Develop aquaculture	Implement fisheries resource management; develop fisheries policy	Achieving of the best solution for the overfished stocks		Control fishing to avoid overfishing	Maintain stability of life in coastal communities	Need for sustainable use of fish resources and recovery of depleted resources	Using best scientific data available for management decisions
3	Economically inefficient industries (MSY instead of MEY)	Reduce fleet capacity	Weak or lacking medium and long term vision regarding objectives and state of the fishery sector	Stimulate research programmes to increase the knowledge on the status of the stocks and the biological characteristics		Achieve stock monitoring on a species-by-species basis	Stop illegal unreported and unregulated fishing	Adequate Monitoring, Control and Surveillance	Recovering depleted species
4	Problems of resource allocation	Improve product quality	Strengthen research, monitoring, control and surveillance; develop adequately funded fishery management plans	Develop management models target to multispecies stocks	Supporting the intervention of official bodies as FAO-GFCM when the resources are shared between many countries	Monitoring of fishing activity	Reduce fleet capacity	Issue of long-term fishing rights	Management of bycatch

<b>Rank</b>	<b>Australia</b>	<b>China</b>	<b>Ecuador</b>	<b>Mediterranean Basin</b>	<b>Italy</b>	<b>Japan</b>	<b>Norway</b>	<b>South Africa</b>	<b>United States of America</b>
5	Need to strengthen stock assessment abilities	Improvement in markets and fish trade	Devolve responsibility for MCS activities to include other organizations	Reduction of the bycatch		Collection of fisheries statistics	Improve collection of Fishery data	Implementation of the ecosystem approach to fisheries	Management of stocks as a unit across their range
6		Enhance resources conservation and management	Lack of involvement of non-state sector (universities, etc.) in management process	Use observers on board and during the landings constantly to monitor the fishing effort	Improve national statistics on catches and landings				Social and economic impacts of management decisions
7		Develop legal and institutional capacity; develop research strategy			Implementation of the Ecosystem Approach to Fisheries				



## APPENDIX F

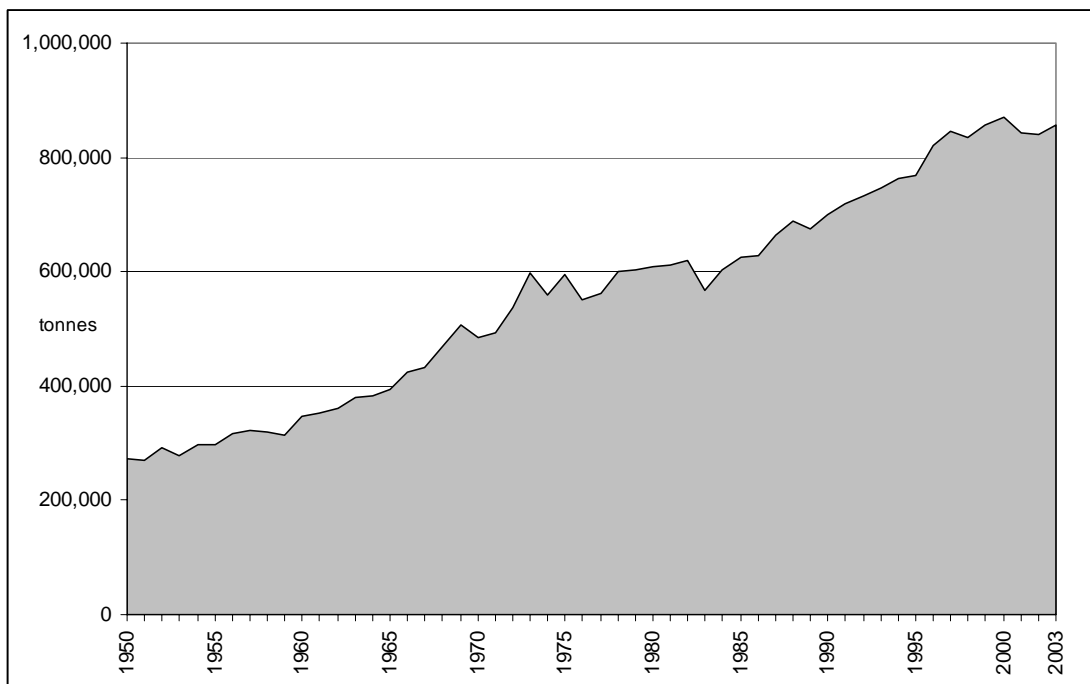
### Elasmobranch statistics in the FAO capture database

FAO Fishery Information, Data and Statistics Unit (FIDI)

The FAO Fishery Information, Data and Statistics Unit (FIDI) collates annual global fishery statistics on capture and aquaculture production, trade, apparent consumption, fishing vessels and fishers. Capture statistics are sent by national correspondents and describe catches by country, FAO fishing area and species. The quality of the FAO statistics mainly depends on the accuracy and reliability of the statistics collected nationally and provided to FAO.

Catches of the “Sharks, rays, chimaeras” species group have been stable since 1996 at about 850 000 tonnes (Figure 1 shows the catch trend since 1950). A possible reduction of shark catches may be masked by the improvement in species disaggregation by which data for this group (previously mostly lumped under the generic item “Elasmobranchii” or “marine fishes not identified”) have been reported in recent years following efforts of FAO and Regional Bodies to improve the quality of reported shark capture statistics.

**Figure 1**  
Total catches for “sharks, rays, chimaeras” in the FAO capture database



Initiatives by FAO and Regional Bodies, following the invitation of the 9<sup>th</sup> CITES Conference of the Parties (COP 9, Fort Lauderdale, Florida, USA 7-18 November, 1994) to improve monitoring of catch and trade of shark species, include adding the listing of elasmobranch species to the STATLANT questionnaires (International Council for the Exploration of the Sea, Northwest Atlantic Fisheries Organization, General Fisheries Commission for the Mediterranean, General Fisheries Commission for the Mediterranean and the Fishery Committee for the Eastern Central Atlantic.) and collection of shark statistics by tuna regional commissions (International Commission for the Conservation of Atlantic Tunas, the International Commission for the Conservation of Atlantic Tunas and the Indian Ocean Tuna Commission). Thanks also to the growing awareness on the needs for better elasmobranch data raised by the International Plan of Action on Sharks and more countries have been reporting elasmobranch catch statistics with greater disaggregation of species than before.

Table 1 shows the breakdown of elasmobranch statistics included in the FAO capture database for the last eight years available.

**Table 1**  
Breakdowns of FAO capture statistics for the “sharks, rays, chimaeras” species group

	1996	1997	1998	1999	2000	2001	2002	2003
Species items	37	46	55	59	75	73	82	106
Countries	108	107	107	113	114	119	123	124
Fishing areas	17	17	18	18	18	18	18	18
Total number of data series	341	361	398	425	477	500	539	593
Percentage of catches at the genus/species level	18.3%	18.6%	19.7%	19.8%	23.1%	22.5%	23.9%	23.7%

Note: only items with at least 1 tonne have been considered; data for years prior to 2003 do not include subsequent revisions.

The number of elasmobranch species items for which catch statistics are available in the FAO capture database has almost tripled in eight years and their share on total species items doubled along the period examined (see Table 2).

**Table 2**  
Percentage of “sharks, rays, chimaeras” on total species items in the FAO database

	1996	1997	1998	1999	2000	2001	2002	2003
“Sharks, rays, chimaeras” species items	37	46	55	59	75	73	82	106
Total species items	1 035	1 073	1 142	1 205	1 255	1 291	1 347	1 445
Percentage of “Sharks, rays, chimaeras” on total species items	3.6%	4.3%	4.8%	4.9%	6.0%	5.7%	6.1%	7.3%

The number of countries reporting elasmobranch catches has also grown in the same period and the total number of single data series by the three separate variables (species item, country, fishing area) increased by 74 percent between 1996 and 2003. However, the percentage of catches at the genus/species level of the total elasmobranch catches has also increased but at a slower rate (see Table 1); at present, catches at the genus/species level still represent less than one fourth of total elasmobranch catches.

Besides improvements in the data reported by national authorities, increases in disaggregation have also been achieved separating from generic groups the catches reported at the genus/species level when the information was available and including data from other sources. The former improvement has been facilitated by the creation of the ASFIS species list<sup>7</sup> that has made available codes for all elasmobranch species. Additional sources providing elasmobranch statistics have been the ad hoc inquiry for the preparation of the Castro *et al.* (1999) Paper<sup>8</sup>, and ICCAT and IOTC shark statistics. Only some of the data collected with the ad hoc inquiry have been included in the FAO capture database as they often covered only a single, or few, years and no other data were reported in the standard submissions for the subsequent years. Data disseminated by ICCAT and IOTC on shark catches have been taken when a given quantity, species or country was not yet included in the FAO database.

<sup>7</sup> Available at <<http://www.fao.org/fi/statist/fisoft/asfis/asfis.asp>>

<sup>8</sup> Castro, J.I. ; Woodley, C.M. ; Brudek, R.L. 1999. A preliminary evaluation of the status of shark species. *FAO Fisheries Technical Paper*. No. 380. Rome, FAO, 72p.

The FAO Expert Consultation on the Implementation of the FAO International Plan of Action for the Conservation and Management of Sharks (IPOA–SHARKS) (Rome, 6–8 December 2005) reviewed available information and national, institutional and personal experiences in relation to factors governing the success of this programme. The constraints to programme implementation were reviewed and suggestions were considered as to how the efficacy and effectiveness of the programme could be improved. The view of the Consultation was that the IPOA–SHARKS was a beneficial endeavour and that efforts to improve its effectiveness should be strengthened.

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