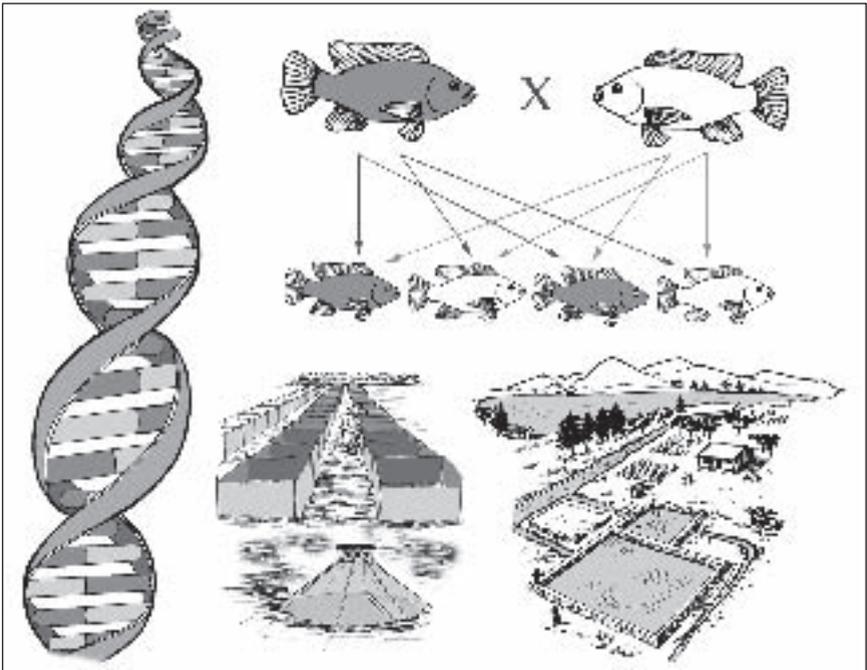


AQUACULTURE DEVELOPMENT

3. Genetic resource management



Cover design, artwork and layout by Emanuela D'Antoni,
Devin M. Bartley and José Luis Castilla Civit.

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PREPARATION OF THIS DOCUMENT

These Technical Guidelines have been prepared by the Fisheries and Aquaculture Department of the Food and Agriculture Organization of the United Nations (FAO) under the coordination of Devin M. Bartley (Senior Fishery Resources Officer) with the support of the FAO Regular Programme, FAO Commission on Genetic Resources for Food and Agriculture, FishCode (FAO's Programme of Global Partnerships for Responsible Fisheries) and the World Fisheries Trust. The following experts in the field of genetic resource management contributed to individual chapters in the Guidelines: Devin M. Bartley, Malcolm C. M. Beveridge, Randall E. Brummett, Joachim Carolsfeld, R. J. Lawton, Brian J. Harvey, Anne Kapuscinski, Graham Mair, Raul W. Ponzoni, Roger S. V. Pullin, Douglas Tave and Álvaro Toledo. The overall editor for the Guidelines was Devin M Bartley with assistance from the above experts. Layout formatting was by José Luis Castilla; cover design was by Emanuela D'Antoni.

The majority of the coordinating and editing work to produce these guidelines was accomplished while the overall editor was on FAO Staff Development Training in Victoria British Columbia, hosted by the World Fisheries Trust. The support of the FAO Advisory Committee on External Training and the World Fisheries Trust is gratefully acknowledged.

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ABSTRACT

These Technical Guidelines have been developed to support sections of the FAO's Code of Conduct for Responsible Fisheries on aspects of genetic resource management in aquaculture. Guidance is provided on broodstock management and domestication, genetic improvement programmes, dissemination programmes for genetically improved fish, economic considerations in genetic improvement programmes, risk assessment and monitoring, culture based fisheries, conservation of fish genetic resources, gene banks, a precautionary approach and public relations. The effective management of genetic resources, risk assessment and monitoring can help promote responsible aquaculture by increasing production output and efficiency and help minimize adverse impacts on the environment. These benefits of the responsible application of genetic principles to aquaculture should be communicated to consumers, policy-makers, scientists and others interested in responsible fisheries and aquaculture.

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BACKGROUND

1. From ancient times, fishing has been a major source of food for humanity and a provider of employment and economic benefits to those engaged in this activity. However, with increased knowledge and the dynamic development of fisheries, it was realized that living aquatic resources, although renewable, are not infinite and need to be properly managed, if their contribution to the nutritional, economic and social well-being of the growing world's population was to be sustained.

2. The adoption in 1982 of the United Nations Convention on the Law of the Sea provided a new framework for the better management of marine resources. The new legal regime of the oceans gave coastal States rights and responsibilities for the management and use of fishery resources within the areas of their national jurisdiction, which embrace some 90 percent of the world's marine fisheries.

3. In recent years, world fisheries have become a dynamically developing sector of the food industry, and many States have striven to take advantage of their new opportunities by investing in modern fishing fleets and processing factories in response to growing international demand for fish and fishery products. It became clear, however, that many fisheries resources could not sustain an often uncontrolled increase of exploitation.

4. Clear signs of over exploitation of important fish stocks, modifications of ecosystems, significant economic losses, and international conflicts on management and fish trade threatened the long-term sustainability of fisheries and the contribution of fisheries to food supply. Therefore, the Nineteenth Session of the FAO Committee on Fisheries (COFI), held in March 1991, recommended that new approaches to fisheries management embracing conservation and environmental, as well as social and economic, considerations were urgently needed. FAO was asked to develop the concept of responsible fisheries and elaborate a Code of Conduct to foster its application.

5. Subsequently, the Government of Mexico, in collaboration with FAO, organized an International Conference on Responsible Fishing in Cancún in May 1992. The Declaration of Cancún endorsed at that Conference was brought to the attention of the UNCED Summit in Rio de Janeiro, Brazil, in June 1992, which supported the preparation of a Code of Conduct for Responsible Fisheries. The FAO Technical Consultation on High Seas

Fishing, held in September 1992, further recommended the elaboration of a Code to address the issues regarding high seas fisheries.

6. The One Hundred and Second Session of the FAO Council, held in November 1992, discussed the elaboration of the Code, recommending that priority be given to high seas issues and requested that proposals for the Code be presented to the 1993 session of the Committee on Fisheries.

7. The Twentieth Session of COFI, held in March 1993, examined in general the proposed framework and content for such a Code, including the elaboration of guidelines, and endorsed a time frame for the further elaboration of the Code. It also requested FAO to prepare, on a “fast track” basis, as part of the Code, proposals to prevent reflagging of fishing vessels which affect conservation and management measures on the high seas. This resulted in the FAO Conference, at its Twenty-seventh Session in November 1993, adopting the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, which, according to FAO Conference Resolution 15/93, forms an integral part of the Code.

8. The Code was formulated so as to be interpreted and applied in conformity with the relevant rules of international law, as reflected in the United Nations Convention on the Law of the Sea, 1982, as well as with the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995, and in the light of, *inter alia*, the 1992 Declaration of Cancún and the 1992 Rio Declaration on Environment and Development, in particular Chapter 17 of Agenda 21.

9. The development of the Code was carried out by FAO in consultation and collaboration with relevant United Nations Agencies and other international organizations, including non-governmental organizations.

10. The Code of Conduct consists of five introductory articles: Nature and Scope; Objectives; Relationship with Other International Instruments; Implementation, Monitoring and Updating and Special Requirements of Developing Countries. These introductory articles are followed by an article on General Principles, which precedes the six thematic articles on Fisheries Management, Fishing Operations, Aquaculture Development, Integration of Fisheries into Coastal Area Management, Post-Harvest Practices and Trade, and Fisheries Research. As already mentioned, the Agreement to Promote

Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas forms an integral part of the Code.

11. The Code is voluntary. However, certain parts of it are based on relevant rules of international law, as reflected in the United Nations Convention on the Law of the Sea of 10 December 1982. The Code also contains provisions that may be or have already been given binding effect by means of other obligatory legal instruments amongst the Parties, such as the Agreement to Promote Compliance with Conservation and Management Measures by Fishing Vessels on the High Seas, 1993.

12. The twenty-eighth session of the Conference in Resolution 4/95 adopted the Code of Conduct for Responsible Fisheries on 31 October 1995. The same Resolution requested FAO *inter alia* to elaborate appropriate technical guidelines in support of the implementation of the Code in collaboration with members and interested relevant organizations.