Inter-American Tropical Tuna Commission

WORKING GROUP ON FISH-AGGREGATING DEVICES (FADs)

Ensenada, Mexico

27 January 1999

REPORT OF THE CHAIRPERSON

The IATTC Working Group on Fish-Aggregating Devices (FADs) held its first meeting in Ensenada, Mexico, on 27 January 1999. It was chaired by Lic. Mara Murillo Correa of Mexico. The attendees are listed in Appendix 1.

At the request of the Working Group, Dr. James Joseph, Director of the IATTC, reviewed the fishery in 1998, in particular the restriction on the catch of yellowfin tuna. He noted that complete data were not yet available, but it appeared that the catch of yellowfin in the CYRA was about 16 to 20 thousand tons above the limit of 225 thousand tons. He noted that, in aggregate, the catches from the CYRA by large vessels for which data were available included 17% yellowfin during the restricted period, or 2% above the established limit. Some countries and some vessels abided by the restrictions, but others did not. He recalled his suggestions from previous occasions that the IATTC may need to establish a compliance committee.

Mexico supported the suggestion for a compliance committee, saying that its vessels had complied with the restrictions, and it was concerned that others had not. Ecuador also supported the suggestion for a compliance committee, and expressed its concern that the measure concerning tender vessels was not being complied with. The IATTC staff was also asked to report on the difference between the permissible quota and the recorded catch of yellowfin tuna in the CYRA.

The IATTC staff then presented information concerning trends in FAD sets over recent years, including catches and discards of the various species of tuna, and showed the catches of small fish in various areas in sets on dolphins, schoolfish, and floating objects.

A general discussion followed on the impact of FAD fishing on yellowfin and bigeye tuna, its importance for skipjack catches, and the need to consider all the implications of any actions which might be taken at the 63rd meeting of the IATTC in June 1999. The Panel stressed the need to implement measures which would ensure the sustainability of the tuna fishery in the eastern Pacific.

It was agreed that the IATTC staff should analyze a comprehensive set of proposals for action, and provide the results by mid-May 1999, so that they could be considered by a working group prior to the June meeting. The IATTC staff will analyze the effectiveness of the various proposals, individually and in combination.

Ecuador, the European Union and Spain, Mexico, and the United States presented documents containing requested analyses (Appendices 2-5). Japan requested a study of the effect of reducing the catch limit for bigeye, including discards, to between 25 and 35 thousand tons.

Ecuador reiterated its proposal for a moratorium on fleet growth made at a meeting of the working group on fleet capacity in 1998, and also suggested a total closure of the tuna fishery in the eastern Pacific Ocean during August and September, which might have beneficial economic consequences, and also provide biological benefits.

Dr. Joseph said the staff would study all the proposals, some of which appeared to overlap considerably. Many of the requests would be answered by May, and in fact some of the work had already been started. The major difficulty in this analysis would be attempting to predict the response of fishermen to management measures.

Mexico suggested that the Working Group meet during the week of May 17, 1999, to formulate recommendations for the IATTC meeting in June. Venezuela agreed that the Working Group should meet prior to the IATTC meeting but, bearing in mind the large volume of work that been requested, suggested that the timing of the meeting should be determined by the IATTC staff's work load. The United States agreed, and suggested that the staff make its own suggestions for management, in addition to the proposals presented by the members of the Working Group.

Appendix 1.

Comisión Interamericana del Atún Tropical - Inter-American Tropical Tuna Commission

REUNIONES DE LOS GRUPOS DE TRABAJO - MEETINGS OF THE WORKING GROUPS

Ensenada, B.C., México
27 - 29 de enero 1999 – January 27-29, 1999

ASISTENTES – ATTENDEES

COLOMBIA

ARMANDO HERNANDEZ
Cámara de la Industria Pesquera – ANDI
ALVARO BUSTAMANTE
ALVARO BUSTAMANTE, JR.
ATUNEC, S.A.

COSTA RICA

HERBERT NANNE
INCOPESCA
GEORGE HEIGOLD
Cia. Enlatadora Nacional, S.A.
TOMAS GILMORE
Sardimar
ODIN THAANUM
ACUATICA, S.A.

ECUADOR

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LUIS TORRES
Ministerio de Comercio, Industria y Pesca
GUSTAVO GONZALEZ CABAL
CESAR ROHON
Cámara Nacional de Pesquería
HECTOR VILLEGAS
TUNLO, S.A.
CARLOS CALERO
MIGUEL A. LARROCEA
Conservas Isabel, S.A.
MIGUEL MOLINA
EMPESEC

EL SALVADOR

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A. ELIZABETH VILLALTA
Ministerio de Relaciones Exteriores
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CENDEPESCA
MARIO ROLANDO SAENZ MARIN
RICARDO HERNANDEZ
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OPAGAC
JUAN P. RODRIGUEZ-SAHAGUN
ANABAC
JOAQUIN GOMEZ VILLEGAS
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FRANCIA - FRANCE

JEAN CHRISTOPHE PAILLE
Embassy of France

GUATEMALA

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MITSUYA HIROSHI
Ministry of Foreign Affairs
KENGO TANAKA
Ministry of Agriculture, Forestry and Fisheries
SALLY CAMPEN
Fed. of Japan Tuna Fisheries Cooperative Associations

MEXICO

CARLOS CAMACHO
PABLO ARENAS FUENTES
GUILLERMO COMPEAN
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RICARDO BELMONTES ACOSTA
VICTOR MANUEL SARABIA LUNA
PEDRO ULLOA RAMIREZ
JAVIER MORENO
SANTIAGO GOMEZ AGUILAR
OSCAR PEDRIN OSUNA
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MICHEL DREYFUS
RAFAEL SOLANA
CARLOS DE ALBA
Secretaría de Recursos Naturales y Medio Ambiente
MARIA TERESA BANDALA
Secretaría de Relaciones Exteriores
MARK ROBERTSON
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ANTONIO FUENTES MONTALVO
ANTONIO SANDOVAL
TOBIAS CONTRERAS TEJO
Procuraduría Federal de Protección al Ambiente
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GERARDO LOJERO WHEATLEY
COMEXTUN, S.A. de C.V.
JOSE CARRANZA
JESUS IBARRA
ERNESTO ESCOBAR
Pesca Azteca, S.A. de C.V.
BRUNO DUARTE JORDAN
Pesquera Buena Esperanza, S.A. de C.V.
LUIS A. CALVILLO
TUNIPAC S.A. de C.V.
MARIO MONTANO
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ROSALIO CASTRO
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KUAN-HSIUNG WANG
National Sun Yat-sen University
WEN-BIN HUANG
Taiwan Fisheries Bureau

UNION EUROPEA - EUROPEAN UNION

MARGARIDA CARDOSO
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XAVIER VAZQUEZ
Comisión Europea

UNITED STATES - ESTADOS UNIDOS

BRIAN HALLMAN
WILLIAM GIBBONS-FLY
MICHAEL ORESTE
Department of State
WILLIAM HOGARTH
WANDA CAIN
CATHY EISELE
PATRICIA DONLEY
SVEIN FOUGNER
WILLIAM JACOBSON
GARY SAKAGAWA
National Marine Fisheries Service
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DAVE BURNEY
U.S. Tuna Foundation
EDWARD VAN OS
Marco Chilena
CHARLES HART
Marco Marine Seattle, Inc.
ARNOLD FREITAS
Caribbean Fishing, Inc.
LUIS PINEL
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RAUL ROMERO
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FENAPESCA
LILLO MANISCALCHI
INOCENCIO NATOLI
INATUNCA

ORGANIZACIONES NO GUBERNAMENTALES-NON-GOVERNMENTAL ORGANIZATIONS

NINA YOUNG
Center for Marine Conservation
KATHLEEN O'CONNELL
Whale and Dolphin Conservation Society
KITTY BLOCK
Humane Society

Appendix 2.

PROPOSAL OF ECUADOR

1. REQUEST TO THE IATTC STAFF:

Prepare tables, charts and analyses for skipjack and bigeye, similar to those prepared and presented for yellowfin tuna and which we were submitted to us during this week.

This would enable us to have a full and complete picture of the status of the tuna fisheries in the EPO.

2. MANAGEMENT MEASURES:

2.1. Ratify and enforce the ban on the operation of tender vessels in the EPO. In this regard we support the proposal for creating, as soon as possible, a Compliance Committee, which shall be given sufficient powers to enable it to carry out its mandate effectively.

2.2. A complete ban on transshipments.

2.3. Bearing in mind the data supplied by the Commission, in the months of August and September, for a period of up to 60 days, impose a total prohibition on the catch of tunas in the EPO, to include vessels of carrying capacity greater than and less than 400 tons.

This closure will doubtless have a positive socioeconomic effect on the artisanal fisheries of our countries because it will allow an increase in the presence of dolphinfish, swordfish, billfish, etc., which are targeted by coastal fishermen.

2.4. Maintain the moratorium on fleet growth at current levels for a period of two or three more years.

Appendix 3.

PROPOSAL OF THE EUROPEAN COMMUNITY AND SPAIN

Proposal for analyses to be carried out by the IATTC staff with the aim of reducing the mortality of juvenile yellowfin and bigeye in the EPO, through the regulation of the fishery on floating objects and other measures to limit the size of the fish caught.

1. Introduction

The purse-seine tuna fleet operating in the EPO has two different components: vessels of carrying capacities less than and greater than 363 mt. The former do not carry observers and do not fish on dolphins, while the latter have 100% observer coverage of the trips they make and can set on dolphins. Both components of the fleet make sets on schoolfish.

To answer the questions posed below we suggest using the most recent data for the fishery, covering the last five years (1994-1998). The time strata to consider are the bimonthly periods or quarters in which the best results are obtained with the proposal. The spatial strata to consider are those used by Dr. Allen in his presentation on 27 January 1999 (13 strata), or others which may be thought more appropriate. The reference size, for the consideration of juvenile yellowfin, could be 60 cm, or any other size suggested by the IATTC staff.

2. Questions

In addition to the study proposed below, we would be interested in the IATTC staff's opinion on the following matters:

a) The feasibility of establishing a minimum size (weight) for individual yellowfin caught, similar to that established within ICCAT for the Atlantic Ocean. Would it be possible to make such a measure work? Potential benefits of regulating minimum weight with a pattern of exploitation similar to that of the most recent period (1994-1998).

b) A possible complement to this regulation would be a ban on discards of all types; this would allow compliance with the rules to be monitored in port.

c) Importance of the annual catches of juveniles made by the fleet of purse-seine vessels under 363 mt carrying capacity, in sets on floating objects, in each of the spatio-temporal strata established (two-month period/quarter and the thirteen areas). Possibility of assigning observers to these vessels.

d) Given that a reduction in sets on floating objects would improve the exploitation pattern of the fisheries for yellowfin and bigeye in the EPO, by how much should the number of sets on floating objects be reduced? In what areas? In what seasons? How would the reduction be effected, by fleet, or by vessel? What would be the benefits for yellowfin and bigeye? What would be the drawbacks for skipjack?

3. Requested analysis

The analysis being requested is to establish the spatiotemporal strata (two- or three-month period and thirteen areas) with a greater presence of juvenile (*e.g.* less than 60 cm) yellowfin in the catches made on floating objects of any kind in recent years (1994-1998).

After determining the spatial stratum or strata in which 40% of yellowfin juveniles are caught on FADs in a quarter, by purse-seine vessels over 363 mt, analyze the effects of closing that quarter and area(s) to sets on floating objects.

Given that the behavior of the fleet, faced with the closure, can vary, various hypothetical scenarios have to be considered, to which others can be added, as determined by the IATTC staff, given its knowledge of the fishery:

a) The fishing effort of the "affected" fleet remains in the closed area during the closed period, fishing on schoolfish and dolphins.

b) The effort moves to adjacent areas, setting on floating objects, schoolfish and dolphins, distributed in the same proportions as in recent years (1994-1998) in those areas.

c) Vessels use the period for rest and repairs.

The results being requested, mantaining the same level of effort in the fishery as in the previous year (or the two previous years, 1997 and 1998), are:

1) Short-term (1- and 2-year) reductions in catch of skipjack, yellowfin and bigeye.

2) Medium- (3- and 4-year) and long-term (5- and 6-year) gains for yellowfin and bigeye in the purse-seine fishery.

3) Medium- and long-term gains in the longline fishery.

Appendix 4.

PROPOSAL OF MEXICO

Request by the Mexican delegation for an analysis of regulatory measures for the fishery for tunas associated with floating objects in the eastern Pacific

Given the consensus on the negative effects of the fishery on fish-aggregating devices (FADs) on yellowfin and bigeye tuna and on the ecosystem as a whole; and given the rapid expansion of this fishery since 1993, both in number of sets and in its spatial and temporal range, measures to regulate this fishery are required. The aim of such regulation should be focused on reducing the fishing mortality of juvenile tunas, with the aim of ensuring the sustainability of the resource.

The Mexican delegation requests of the staff of the Inter-American Tropical Tuna Commission (IATTC) a detailed analysis of the following regulatory measures. The objective is to have the tools for selecting the best measure which fulfils the above objective.

We request that the analyses carried out contain the elements necessary for taking decisions. Required for that purpose are the implications, advantages and disadvantages of each of these measures, and also the possibility of combining some of them.

We recommend that the importance of the fleet of less than 400 short tons which fishes in this manner be analyzed, in reference to its effect on discards, mortality of juveniles due to fishing and the possible interaction with the fleet of over 400 short tons.

Cases of regulation for study

1. **Total ban on FADs**

2. **Reduction of sets on floating objects.**

Study plans for the immediate or gradual reduction of the number of sets on floating objects until a satisfactory level is reached. This level will have to be evaluated in the light of the above-mentioned objective and of the IATTC's own conservation mandate. This plan could be similar to that for regulating dolphins, and consider different criteria for allocation. Measures for allocating "quotas" for sets on floating objects should be analyzed.

The following options should be considered in this analysis:

a) Immediately limit the number of sets on FADs and floating objects to the level recorded in 1997.

b) Reduce the number of sets to the levels recorded in 1990 and 1991 (before the development of the fishery on FADs). It is important that the number of sets made by vessels of less that 400 short tons be taken into consideration in this analysis.

This can be analyzed using the following schemes:

- Immediate.
- A progressive system over a two-year period.
- A system of equitable allocation.

3. Temporal and spatial ban on floating objects.

Study possible areas and periods for closure. It is important to analyze the implications of a total ban on FADs and other floating objects north of 5^{o}N or, if applicable, recommend a more suitable latitude.

4. Quotas for juveniles.

Analyze quota allocation schemes for yellowfin tuna, similar to those in force for bigeye, or alternatively some other options.

5. Prohibition on discarding tuna or all bycatch.

Analyze the consequences of prohibiting discards of juvenile tunas. Analyze the consequences of prohibiting discards of other non-target species.

Another possible regulatory measure for study would be the following:

- Control the number of radio buoys and other locating objects.

Appendix 5.

PROPOSAL OF THE UNITED STATES

United States request for data and analyses relating to the management of the tuna fishery of the eastern Pacific Ocean

28 January 1999

INTRODUCTION: The United States requests the assistance of IATTC staff to develop the data and analyses needed to consider and make recommendations on alternative management measures for the tuna fishery of the EPO. The purse-seine tuna fishery of the EPO is a multi-species fishery with participants using three principal strategies: sets on dolphin, sets on schools, and sets on floating objects, including fish-aggregating devices (FADs). Restrictions on any one strategy will have impacts on and implications for those who use another strategy, as well as impacts on the stocks of tuna, dolphin, and other living marine resources for which the IATTC has interest or responsibility. The types of measures adopted, and the relative stringency of the measures, will have different types, levels, and distribution of impacts. In order to develop recommendations for optimal short- and medium-term measures to manage the floating objects fishery, the Working Group needs information that portrays to the extent practicable the nature, magnitude, and distribution of impacts of the alternative measures available.

In addition, the Working Group is mindful of the data and information assembled by IATTC staff for this meeting. The Working Group appreciates that the efforts of IATTC staff and recognizes that data for comprehensive and complete analyses of alternatives may not always be available The materials provided were very helpful in beginning to consider the types of alternatives that should be evaluated and the additional information needed. With this in mind, the Working Group requests some additional considerations relative to data needs and problems as described below.

REQUESTED PRODUCTS:

1. Updated data sets and data analysis. The Working Group requests that IATTC staff include in its materials answers to the following questions:
    - How representative are sample data for the 1994-98 fishery for depicting results for the entire fishery or for coupling with the long time series of data which the IATTC has been collecting and maintaining?
    - How are any biases in recent years' data or fishery taken into account in simulating future conditions to evaluate the impacts of changes in management measures?
    - What fleets or groups of vessels were sampled for bycatch and discard data? Any additional data compiled to support the evaluations requested below should also be presented (*e.g.*, current and historic data on the number of vessels by size class and the extent to which each is or has been more or less dependent on certain fishing strategies, measured in terms of percent of sets or percent of catch made in each fishing strategy).
2. An evaluation of the benefits and costs of alternative measures to manage the fishery on floating objects. Among the alternatives to analyze are:
    - No action (This would use the most recent year for which data are available to establish a baseline for analysis of impacts of alternative management measures. Note that this should

assume full implementation of the measures adopted in June and October 1997 relative to the use of tender vessels and transshipments at sea.)

- Removal of all controls (*i.e.*, allow unlimited growth of fleets and effort in all gear types). (This establishes the "worst case" scenario from lack of management.)
- Limiting total catch in floating object or FAD sets to 1995 levels.
- Limiting number of floating object or FAD sets to 1995 levels.
- Establishing time/area closures for floating object or FAD sets.
- Establishing gear restrictions (*e.g.*, mesh size for floating objects or FAD fishery).
- Limiting the number of FADs a vessel may carry on board.
- Establishing quota on catch of yellowfin and/or bigeye tuna taken in floating object sets, to be implemented by prohibiting floating object sets after quota(s) is (are) reached.
- Setting capacity or effort limits for each fishing strategy in order to maximize cumulative yield of all tuna stocks in the fishery.

FACTORS TO EVALUATE AND COMPARE: The U.S. requests as complete an analysis as practicable of all biological and economic impacts of each alternative measure for the short and long term. It is recognized this will occasionally require assumptions about the manner in which vessel operators and owners respond to changing management measures. These assumptions should be clearly described where applicable. The evaluation should explain the anticipated nature, magnitude and distribution of impacts to the extent practicable. Among the factors that should be evaluated are:

- Number of sets projected by each fishing strategy by statistical area
- Total catch and catch by species by gear type
- Retained catch by species by gear type
- Discarded bycatch of tuna by species
- Discarded bycatch of non-tuna resources by species
- Estimated size composition of the catch of tuna by species
- Projected future annual yield of stock and/or yield per recruit by species
- Number of vessels expected to fish by gear type and area
- Distribution of catch by species by area
- Distribution of effort by gear type by area
- Enforcement and administrative difficulties
- Ability to evaluate the effectiveness of the measure
- Implications for management of the schoolfish fishing strategy
- Implications for management of the dolphin fishery and DML allocations

Use conditions in various time periods as baseline.

TIMING:

Data update and evaluation by March 1

Progress report to members for informal discussions by mid-April

Members to comment to IATTC staff as appropriate by May 1

Final product to members two weeks before June meeting