

## **IMPLEMENTATION OF INTERIM MEASURES ON BOTTOM (DEEP SEA) FISHING BY CHILE**

### **1. Introduction**

In the Third Meeting to discuss the establishment of a South Pacific Regional Fisheries Management Organization (SPRFMO), held in Reñaca, Chile, in May 2007, interim voluntary non-legally binding measures were adopted, focused on the sustainable management of fish stocks, and the protection of vulnerable marine ecosystems in a specific area of the South Pacific. Such interim measures should be complemented by the participants, according to their own regulations and laws, considering the ecosystem and precautionary approaches in the fishing management.

Regarding the interim measures on bottom fisheries (deep sea fisheries), Chile has recognized the value of the initiative in terms of promoting the protection of marine ecosystems supporting particularly-featured fisheries in the high seas, and of which little knowledge is available.

Notwithstanding the foregoing, it is important to highlight that as established in the interim measures, the protection of marine ecosystems is linked to the sustainable management of fish stocks; therefore, the purpose of it does not include prohibiting fishing activities, but ensuring long term sustainability. At the moment of the adoption of such measures, Chile reported sporadic operations in the area, many of them aimed at developing such fisheries, thus, signing the agreement of an interim bottom measure means ensuring future sustainability for fishing activities developed by Chile in the area.

Considering the purpose of the measures, the past and present operational reality of the national fleet, and the management regime in which Chilean vessels operating in the high seas are, this report aims at explaining the interpretation of these measures by Chile, as well as describing their implementation.

## 2. Implementation of Interim Measures

For purposes of describing the implementation of the interim bottom fishing measures, each article of the measures will be sequentially listed, interpreting, in each case, the way in which Chile has implemented it.

### Management of Bottom Fishing

In respect with bottom fisheries, Participants resolve to:

#### Article 1

**Limit bottom fishing effort or catch in the Area to existing levels<sup>1</sup> in terms of the number of fishing vessels and other parameters that reflect the level of catch, fishing effort, and fishing capacity.**

The levels of catch and operation areas of the Chilean fleet during the 2002-2006 period, are shown in Table I.

Table 1: Operation of the Chilean fleet in the high seas of the South Pacific, between 2002 and 2006.

<b>Specie</b>	<b>Date</b>	<b>Catch (Tons)</b>	<b>Operation area</b>
Alfonsino	June 2002	2,3	Nazca Ridge
Alfonsino	February 2003	10,8	Nazca Ridge
Non-classified fish		0,4	Nazca Ridge
Alfonsino	October 2005	5,1	Nazca Ridge
Non-classified fish		0,2	Nazca Ridge

The vessels operated in prospective activities during 2002-2006 in the areas adjacent to the EEZ, between 21°20' S.L and 28° S.L and 80° W.L and 87° W.L. Such fishing activities are indicative of the interest by the country in the development of activities in such area (Figure 1)

<sup>1</sup> Existing levels of fishing effort or catch means the average annual levels over the period 1 January 2002 to 31 December 2006.

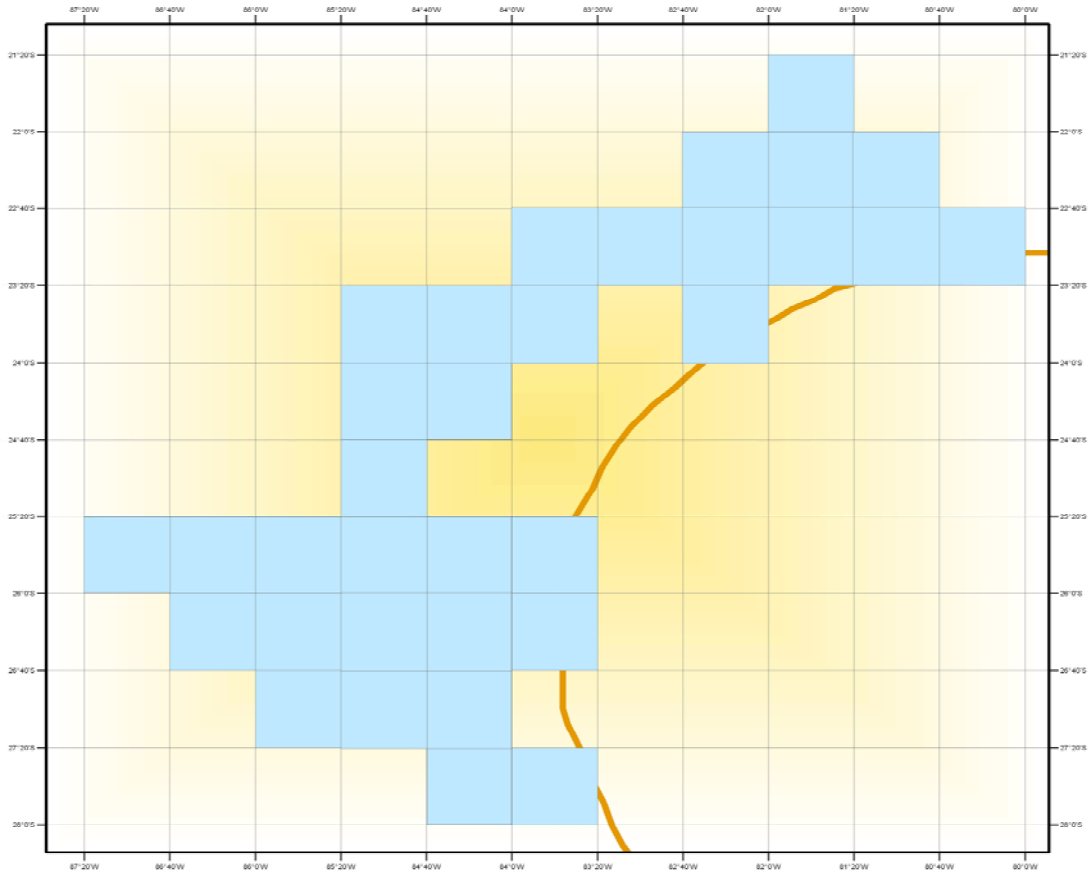


Figure 1: Operation area of the bottom fishing Chilean fleet between 2002-2006

## Article 2

**Not expand bottom fishing activities into new regions of the Area where such fishing is not currently occurring.**

The regime that regulates the national vessels operating in high seas is based on the General Law on Fisheries and Aquaculture as of 1991<sup>2</sup>, and on the FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas<sup>3</sup>, which Chile incorporated to the national regulation through SD. N° 78 as of 2004, of the Ministry of Foreign Affairs. The Agreement of Compliance rules through SD. N° 330 as of 27 December 2005<sup>4</sup>, which, among others, establishes that the operation of vessels flying national flag in high seas, can only be

<sup>2</sup> Approved by SD. N° 430 as of 28 September 1991 of the Ministry of Economy (MINECON).

<sup>3</sup> Adopted by FAO through Resolution 15/93 during the 27th Session, held in November 1993.

<sup>4</sup> S.D. N° 330 as of 27 December, 2005, of the Ministry of Economy, Undersecretariat for Fisheries.

carried out by previously requiring and being granted a fishing authorization, which is given by the national fishing authority.

According to the national regulation, the authorization to carry out extractive fishing activities has a generic nature, thus enabling vessels to operate on any species, without area or fishing gear restriction of any kind. According to such regime, until 2007, the Chilean fleet authorized to operate in high seas comprised 240 vessels.

Considering Chile's hindrance to restrict the operation of authorized vessels in high seas, in full accordance with provisions of the Interim Measures, starting in 2008, operations carried out by the authorized fleet in high seas shall be made on the presentation and analysis of an "Agreement for the Operation of National Flag Vessels using Bottom Sea Fishing Gear in the High Seas of the proposed South Pacific Regional Fisheries Management Organization," henceforth Protocol for Operation, which will compile and report scientific observer activities and other relevant issues (See Annex I)

### **Article 3**

**Starting in 2010, before opening new regions of the Area or expanding fishing effort or catch beyond existing levels, establish conservation and management measures to prevent significant adverse impacts on vulnerable marine ecosystems<sup>5</sup> and the long-term sustainability of deep sea fish stocks from individual bottom fishing activities or determine that such activities will not have adverse impacts, based on an assessment undertaken in accordance with paragraphs 11 and 12 below.**

The prevention of significant adverse impacts on vulnerable marine ecosystems and the long term sustainability of deep sea fish stocks are addressed, on one side, through conditioning the authorized fleet to implementing the Protocol for Operation, which requires, among other data, detailed information on the species conforming the bycatch and incidental catches found during bottom fishing operations and specifying the procedure for documentation and report of it, contributing with data that may eventually document the existence of vulnerable marine ecosystems. On the other side, recognizing that articles 11 and 12 of the Interim Measures constitute the way in which possible impacts of individual bottom fishing operations on VME assessments are to be carried out; a methodological scheme will be implemented following the guidelines contained in the Interim Deep Sea Fisheries Impact Assessment Framework.

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<sup>5</sup> For the purposes of these interim measures, "vulnerable marine ecosystems" includes seamounts, hydrothermal vents, cold water corals and sponge fields.

#### Article 4

**Cooperate through coastal States adjacent to the Area informing the interim Secretariat of their own conservation and management measures in respect of deep sea fish stocks.**

Chile has applied conservation and management measures to most of bottom fishing resources inside the EEZ. In order to comply with article N° 4 of the Interim Measure, it has been interpreted that the resources of interest for the propose Organization are those proposed to be managed, and, therefore, a compilation has been made of the regulation measures applied to deep sea resources, which have management measures inside the EEZ and have been considered by the Interim Science Working Group as likely to be managed by the South Pacific Regional Fisheries Management Organization. A description is given on the access regime in which the fisheries currently are, the management measures applied and a chronology of themselves (Annex II).

#### Article 5

**Cooperate to identify, on the basis of the best available scientific information, vulnerable marine ecosystems in the Area and to map sites where these ecosystems are located, and provide such data and information to the Interim Secretariat for circulation to all Participants.**

Chile presents an important deficit of information on VMEs off its jurisdictional waters; this information is mainly limited to the contribution of Golovan and Pakhoruhov (1987)<sup>6</sup> and Parin et al. (1977)<sup>7</sup>, along with other more general information compiled as part of the FIP Project 2006-57.

The process of accumulating new information on VMEs will be complemented with reports by observers of bottom fishing operations in high seas, which may be authorized according to the FAO Agreement of Compliance.

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<sup>6</sup> Golovan and Pakhorukov. 1987. Distribution and behavior of fishes on the Nazca and Salas y Gomez Submarine Ridges. *Journal of Ichtiology*. 27(4):71-78.

<sup>7</sup> Parin, N. V., A. N. Mironov and K. N. Nesis. 1997. Biology of the Nazca and Salas y Gomez submarine Ridges, an outpost of the Indo-West Pacific fauna in the Eastern Pacific Ocean: composition and distribution of the fauna, it communities and history. *Advances in Marine Biology*. 32: 145-142.

**Article 6**

**In respect of areas where vulnerable marine ecosystems are known to occur or are likely to occur based on the best available scientific information, close such areas to bottom fishing unless, based on an assessment undertaken in accordance with paragraphs 11 and 12 below, conservation and management measures have been established to prevent significant adverse impacts on vulnerable marine ecosystems and the long-term sustainability of deep sea fish stocks or it has been determined that such bottom fishing will not have significant adverse impacts on vulnerable marine ecosystems or the long term sustainability of deep sea fish stocks.**

**Article 7**

**Require that vessels flying their flag cease bottom fishing activities within five (5) nautical miles of any site in the Area where, in the course of fishing operations, evidence of vulnerable marine ecosystems is encountered, and report the encounter, including the location, and the type of ecosystem in question, to the interim Secretariat so that appropriate measures can be adopted in respect of the relevant site. Such sites will then be treated in accordance with paragraph 6 above.**

As stated in the interpretation of Article N°2, the administrative regime for Chilean vessels in high seas does not permit restrictions to operations in such area. Chile recognizes that the assessment of the impact of fishing on VMEs shall be carried out in the framework on the mandate of articles 11 and 12 of the Interim Measures, and a new Impact Assessment proposal, which are to be discussed by the SPRFMO SWG.

**Article 8**

**Notwithstanding paragraph 2, in regions of the Area where bottom fishing is not currently occurring, undertake, as appropriate, scientific research activities for stock assessment purposes in identified parts of such regions and only in accordance with a research plan that has been provided to the interim Secretariat for forwarding to the interim Science Working Group and all Participants, preferably 60 days prior to the commencement of that activity. Participants will provide promptly a report of the results of such scientific research activities to the interim Secretariat for circulation to all Participants.**

Aware of the little information available for identifying, locating, and establishing vulnerability levels of the marine ecosystems in deep waters off the EEZ, Chile has promoted the implementation of a research plan focused on the ecological characterization

of seamounts in the adjacent high seas. In case of this kind of initiatives to thrive in the short term, the research plan will be informed to all the participants of the Organization and to the Interim Science Working Group through the Interim Secretariat, in accordance to article 8 of the Interim Measures on bottom fisheries

#### **Article 9**

**Appoint observers to each vessel flying their flag and undertaking or proposing to undertake bottom trawling activities in the Area and ensure an appropriate level of observer coverage on vessels flying their flag and undertaking other bottom fishing activities in the Area.**

The Protocol for Operation establishes, in cases in which bottom fishing happens, that the ship owner shall have a scientific observer on board of the vessel(s) participating. The observer shall be appointed by the Undersecretariat for Fisheries, and shall be in charge of collecting information of the operation, the catch of target, by-catch, and incidental species.

These provisions apply to national ship owners and vessels flying national flag that wish to carry out commercial fishing, prospective or research operations in the high seas area defined by the SPRFMO, and, when developing them, bottom fishing gears are used, including gears that work on the seabed, those in which any of their components has contact with the bottom in any moment of the operation or those designed to resist eventual impacts with the bottom.

#### **Article 10**

**To strengthen its control over bottom fishing vessels flying its flag, each Participant will ensure that all such vessels operating in the Area be equipped with an operational vessel monitoring system no later than 31 December 2007, or earlier if so decided by the flag State.**

The national fishing regulation, through the General Law on Fisheries and Aquaculture, article N° 64 a, b and c; as well as the S.D N° 139 as of 1998, establish the obligation to use a satellite positioning system in all fishing vessels flying national flag. This obligation extends to the EEZ and to the high seas, and considers the operation of the system from departure to arrival to the destination port in each trip, with data-delivery frequency levels higher than those of the standards established in the SPRFMO framework.

Similarly, the Protocol for Operation of bottom fishing vessels in high seas of the SPRFMO also establishes the use of satellite positioning devices.

**Articles 11 and 12**

Please refer to the document entitled “Interim Deep Sea Fisheries Impact Assessment Framework”

## Annex I

### **INFORMATION REQUIRED AND AGREEMENT FOR THE OPERATION OF NATIONAL FLAG VESSELS WITH BOTTOM FISHING GEARS IN HIGH SEAS OF THE SPRFMO**

#### 1. Preamble and Objectives

This Agreement has been designed considering the provisions of the bottom fishing Interim Measures adopted in the Third International Meeting to discuss the establishment of a South Pacific Regional Fisheries Management Organization (SPRFMO), and signed by the official representative of the Chilean Government.

Consequently, the objectives of these provisions are:

1.1 To obtain scientific and operational information on the most relevant aspects of the operation of national flag vessels, which may increase scientific knowledge of the country

1.2 To address information required by the SPRFMO Interim Secretariat whenever needed.

2. Information that national ship owners shall submit to the Undersecretariat for Fisheries to carrying out bottom fishing activities in the high seas of the SPRFMO.

a) Vessel Identification, flag or country, name of vessel, name of captain or fishing master, call sign, and total number of crew.

b) Identification of Fishing Gear: characteristics of fishing gear to be used (type, dimensions, material.)

c) Characteristics of the vessel: length, GRT, main engine power, fuel capacity, hold capacity, fresh water capacity, catch conservation methods, types and characteristics of detection equipment.

d) Waste treatment procedures. The vessels shall indicate the waste storage and/or treatment devices, including whether it has containers or incinerators, and they way in which the different wastes are treated.

e) Reference description of the zone in which it intends to operate.

f) Target and potential species expected to be caught.

g) Length of the fishing trip (Minimum and maximum time range.)

3. Information the observer, supported by the ship owner, shall handle to the Undersecretariat for Fisheries once finished the bottom fishing activities in the high seas of the SPRFMO.

a) Fishing gears used

b) Declaration of fishing gear loss, totally or partially.

c) Depth at which fishing activities took place, including relevant features of the bottom (type, relevant geographic features.)

d) Target species shall be clearly identified for each fishing gear, quantifying in weight the captured target species.

e) At the end of the fishing trip, a list shall be handled of the bycatch species and their catches (in weight) for each fishing gear. In the case of species unknown for the observer, which may require expert identification, the approximate time length of such identification shall be included as well. Once identified, the species information shall be sent to the Undersecretariat for Fisheries.

f) Incidental catch of sea birds, mammals and reptiles (turtles), emphasizing on those protected or endangered species. Sight of them shall also be registered if possible.

g) Actual length of the fishing trip, including the trip to the fishing zones and length of the fishing operation in each zone.

h) Fishing effort. Information on the amount and geographic position of sets. Total and by-set number of traps and hooks. Length (in bathoms or meters) by set and total, in the case of tangling nets, or gillnets. When trawling gears are used, the swept area shall be specified for each gear set. Resting time shall be reported when appropriate.

i) Recording sightings of other fishing vessels in the area. Indicate date, position, activity carried out; flag, name and/or call sign shall be registered whenever possible.

j) Detailed account on the work/prospection/research zones: cartographic identification, depth range of operations, environmental conditions of the zone, types of submarine topographic features (canyons, seamounts, guyots, etc.)

k) Identification of scientific observer(s) appointed to the vessel. Name of the observers, nationality, organization that hires them, name of contact.

## Annex II

### CONSERVATION AND MANAGEMENT MEASURES APPLIED BY CHILE IN ITS JURISDICTIONAL WATERS ON DEEP SEA-PELAGIC FISHERIES: ALFONSINO, PATAGONIAN TOOTHFISH, CARDINAL FISH, AND ORANGE ROUGHY (UNDER THE DEFINITION OF THE RFMO).

#### 1. Introduction

The Undersecretariat for Fisheries has identified that, from the interim species list, which is to be regulated by the future Organization, and for which descriptive records have been developed<sup>8</sup>, conservation and management measures have been adopted mainly for the following resources: Alfonsino *Beryx splendens*, Patagonian Toothfish *Dissostichus eleginoides*, Cardinal fish *Epigonus crassicaudus*, and Orange roughy *Hoplothethus atlanticus*.

#### 2. Resources

##### 2.1. Alfonsino

###### a) Brief Description of the Fishery

The catch of Alfonsino as an industrial-scale commercial fishery started in 1998. Between 1999 and 2003, the catch increased significantly, which made the fishing authority to establish annual global catch quotas.

Authorized fishing gears for industrial fleet include: (i) trawling net (bottom and mid-water); (ii) gillnets; (iii) fishing hooked line; and (iv) longline. However, the bulk of catches is carried out with bottom trawling nets, and with mid-water trawling nets.

Over the last years, length distribution of the catch of this resource has been variable, with an average that ranges between 23cm and 50cm (FL).

The fleet currently authorized to fish for Alfonsino is composed of 18 vessels with an average power of 1,666 Hp.

###### b) Fishery Regulation

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<sup>8</sup> For some species, descriptive records are still in development

Currently, the resource is under a full exploitation regime<sup>9</sup>. Therefore, the entry of new ship owners to the fishery is closed. In addition, since 2003 annual global catch quotas are established.

Table I: Annual catch quotas 2003-2008.

Source: Undersecretariat for Fisheries.

Year	Aug. 2003 – Aug. 2004	Aug. – Dec. 2004	2005	2006	2007	2008
Quota (t.)	5,002	2,130	3,000	3,000	3,000	3,000

c) Detailed Regulation

Regulations	Decree or Resolution
Suspension of fishing authorizations applications, reception, and granting for industrial vessels.	S.D. N°57 as of 1999 of the Ministry of Economy
	S.D. N°116 as of 2003 of the Ministry of Economy
	S.D. N°952 as of 2005 of the Ministry of Economy
	Ex.D. N°855 as of 2006 of the Ministry of Economy
	Ex.D. N°1.194 as of 2007 of the Ministry of Economy
Annual Global Catch Quota	S. D. N°116 as of 2003, of the Ministry of Economy, establishes catch quota between August 2003-August 2004 in 4,752 tons
	S. D. N°121 as of 2004 of the Ministry of Economy amends S.D. N°116 as of 2003, increasing catch quota to 5,002 tons.
	Ex.D. N°645 as of 2004 of the Ministry of Economy establishes quota August-December 2004 period in 2,130 tons.
	Ex.D. N°1.026 as of 2004 establishes 2005 quota in 3,000 tons.
	EX.D. N°1.575 as of 2005 of the Ministry of Economy establishes 2006 quota in 3,000

<sup>9</sup> S.D. N° 644 as of 2004, of the Ministry of Economy

	EX.D. N°1.513 as of 2006 establishes 2007 quota in 3.000 tons.
	EX.D. N°1.752 as of 2007 establishes 2008 quota in 3,000 tons.
Declaration of Full Exploitation Regime	Ex.D. N°644 as of 2004 of the Ministry of Economy
Suspension of Registration in the Artisanal Fishing Registry	Res. (SUBPESCA) N°2.267 as of 2004.
	Res. (SUBPESCA) N°2.407 as of 2005.
	Res. (SUBPESCA) N°2.014 as of 2006.
	Res. (SUBPESCA) N°2.339 as of 2007.

## 2.2. Patagonian Toothfish

### a) Brief description of the Fishery

This resource started to be commercially exploited in Chile by the artisanal fleet in the 1970's in the central zone of Chile. The activity spread rapidly to the central-south zone where the bulk of the artisanal fleet is currently operating north to parallel 47°S.L. South to this limit, a reserved area for ship owners that have extraordinary fishing licenses is located, and the fleet is mainly composed by industrial vessels.

Due to the vessel length restriction imposed in 1985 (15 meters maximum length, and 12.000<sup>10</sup> maximum amount of hooks) most of users of this fishery are artisanal fishers. The Artisanal Vessels and Fishers Registry, updated in January 2005, showed that the total registered number of artisanal vessels amounts to 5,742 units, 1,855 of which are motorboats. Nevertheless, the number of vessels that actually operates in the patagonian toothfish fishery north to parallel 47° S.L. is estimated to be around 200 units.

### b) Fishery Regulation

Since 2000<sup>11</sup>, two fishery units are distinguished:

One of the units is located north to parallel 47° S.L. and is in full exploitation state. The entry of new ship owners is temporarily suspended. The artisanal fleet operating north to

<sup>10</sup> Res. N° 439 as of 1985, N° 43 as of 1986, and N° 136 as of 1992.

<sup>11</sup> S.D. 519 as of 5 October 2000.

parallel 47° S.L. is not subject to a catch quota, but only to the maximum length of vessels, and the maximum number of hooks by set is restricted<sup>12</sup>.

The other fishery unit is located south of the parallel 47° S. L. In 1992 it was declared in incipient development regime<sup>13</sup>. The same year, as an obligatory regulation, the use of fishing hooked line or longline as fishing gears is established<sup>14</sup>.

Currently, the unit located north to parallel 47 S. L. is under a full exploitation stage, with suspended access to new owners.

Meanwhile, the zone located south of the parallel 47 S. L. is regulated through the establishment of Individual Transferable Catch Quotas.

Table II: Global Catch Quotas for fishery units located north and south of the parallel 47° S. L.

Source: Undersecretariat for Fisheries.

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Quota (t.)	5,000	6,500	7,500	6,000	6,000	4,500	4,500	4,200	4,200	3,500	3,500

Year	2005	2006	2007	2008
Quota (t.)	3,000	2,700	2,700	3,000

### c) Detailed Regulation

Regulations	Decree or Resolution
Effort regulation	S. D. N°439 as of 1985 of the Ministry of Economy
	S. D. N°43 as of 1986 of the Ministry of Economy
	S. D. N°328 as of 1986 of the Ministry of Economy
Establishes the operation zone for artisanal fishers	Res. N°136 as of 1992 (Subpesca)

<sup>12</sup> Decree 439 as of 1985, Ministry of Economy

<sup>13</sup> S.D. N°328 of 26.06 as of 1992

<sup>14</sup> Res. N°1249 of 17 of 12 as of 1992.

Incipient Development Regime Declaration	S. D. N°328 as of 1992 of the Ministry of Economy
Fishing gear regulation	Res. N°1.249 as of 1992 (Subpesca)
Suspension of application, reception, and fishing authorization granting for industrial vessels.	S. D. N°328 de 1992 of the Ministry of Economy
	Ex.D. N°595 as of 1991 of the Ministry of Economy
	Ex.D. N°273 as of 1996 of the Ministry of Economy
Global Annual Catch Quota in the Fishery Unit	Ex.D. N°680 as of 1993 of the Ministry of Economy establishes quota of 1994 in 5,000 tons.
	Ex.D. N°193 as of 1994 of the Ministry of Economy establishes 1995 quota in 6,500 tons.
	Ex.D. N°246 as of 1995 of the Ministry of Economy establishes 1996 quota in 7,500 tons.
	Ex.D. N°266 as of 1996 of the Ministry of Economy establishes 1997 quota in 6,000 tons.
	Ex.D. N°726 as of 1997 of the Ministry of Economy establishes 1998 quota in 6,000 tons.
	Ex.D. N°508 as of 1998 of the Ministry of Economy establishes 1999 quota in 4,500 tons.
	Ex.D. N°426 as of 1999 of the Ministry of Economy establishes 2000 quota in 4,500 tons.
	Ex.D. N°376 as of 2000 of the Ministry of Economy establishes 2001 quota in 4,200 tons.
	Ex.D. N°793 as of 2001 of the Ministry of Economy establishes 2002 quota in 4,200 tons.
	Ex.D. N°1.011 as of 2002 of the Ministry of Economy establishes 2003 quota in 3,500 tons.
	Ex.D. N°779 as of 2003 of the Ministry of Economy establishes 2004 quota in 3,500 tons.
	Ex.D. N°932 as of 2004 of the Ministry of Economy establishes 2005 quota in 3,000 tons.
	Ex.D. N°1.403 as of 2005 of the Ministry of Economy establishes 2006 quota in 2,700 tons.

	Ex.D. N°1.380 as of 2006 of the Ministry of Economy establishes 2007 quota in 2,700 tons.
	Ex.D. N°1.624 as of 2007 of the Ministry of Economy establishes 2008 quota in 3,000 tons.
Suspension of Registration in the Artisanal Fishing Registry	Res. N°57 as of 2003 (Subpesca)
Biological Seasonal Ban	Ex.D. N°273 as of 1996 of the Ministry of Economy
Modification of the fishery unit geographic area.	S.D. N°519 as of 2000 of the Ministry of Economy
	Ex.D. N°322 as of 2001 of the Ministry of Economy
Global Annual Catch Quota outside the Fishery Unit	Ex.D. N°351 as of 2006 of the Ministry of Economy establishes 2006 quota in 2,700 tons.

### 2.3. Cardinal Fish

#### a) Brief Description of the Fishery

The exploitation of this resource begins in the 90s. By 2004, the fishery is declared in full exploitation regime<sup>15</sup>. This resulted in access closure to the fishery. Also, global annual catch quotas are established.

Cardinal fish specimen size range has varied annually, ranging between 20 and 45 cm length in 2003, with an average size of 32.6 cm length; in 2004, the range included size between 17 and 41 cm length, with an average of 34 cm length. By 2005, catches fluctuated between 18 and 41 cm length, with an average of 32.11 cm length.

The fleet authorized to fish for cardinal fish is composed of 23 vessels.

#### b) Fishery Regulation

Currently, the entry for new participants to the fishery is temporarily cancelled and global catch quotas are established annually.

<sup>15</sup> Ex.D. N°644/04 of the Ministry of Economy

Table III: Global Annual Catch Quota 2004-2007 period.  
Source: Undersecretariat for Fisheries.

Year	Aug. 2003 -Aug. 2004	Aug. - Dec. 2004	2004	2005	2006	2007
Quota (t.)	3,125	550	2,010	2,300	2,300	2,094

c) Detailed Regulation

Regulation	Decree or Resolution
Suspension of applications, reception, and fishing authorization granting for industrial vessels.	Ex.D. N°116 as of 2003 of the Ministry of Economy
	Ex.D. N°2.267 as of 2004 of the Ministry of Economy
	Ex.D. N°952 as of 2005 of the Ministry of Economy
	Ex.D. N°855 as of 2006 of the Ministry of Economy
	Ex.D. N°1.194 as of 2007 of the Ministry of Economy
Global Annual Catch Quota in the Fishery Unit	Ex.D. N°116 as of 2003 of the Ministry of Economy establishes catch quota between August of 2003 and August of 2004 in 3,125 tons.
	Ex.D. N°646 as of 2004 of the Ministry of Economy establishes quota from August through December as of 2004 in 550 tons.
	Ex.D. N°1.025 as of 2004 of the Ministry of Economy establishes 2005 quota in 2,300 tons.
	Ex.D. N°1.576 as of 2005 of the Ministry of Economy establishes 2006 quota in 2,300 tons.
	Ex.D. N°1.512 as of 2006 of the Ministry of Economy establishes 2006 quota in 2,094 tons.
	Ex.D. N°624 as of 2007 of the Ministry of Economy amends Ex.D. N°1.512 as of 2006 of the Ministry of Economy replaces 2006 by 2007.
Full Exploitation Regime Declaration	D.S. N°644 as of 2004 of the Ministry of Economy
Suspension of registration in the Artisanal Fishing Registry	Res. N°2.267 as of 2004 (Subpesca)
	Res. N°2.407 as of 2005 (Subpesca)
	Res. N°2.014 as of 2006.
	Res. N°2.339 as of 2007 (Subpesca)

Effort Regulation	S.D. N°439 as of 1985 of the Ministry of Economy
	S.D. N°43 as of 1986 of the Ministry of Economy
	S.D. N°328 as of 1986 of the Ministry of Economy
Determines operation zone for artisanal fishers.	Res. N°136 as of 1992 (Subpesca)
Fishing gear regulation	Res. N°1.249 as of 1992 (Subpesca)
Biological Seasonal Ban	Ex.D. N°273 as of 1996 of the Ministry of Economy
Modification of the area of the Fishery Unit	S.D. N°519 as of 2000 of the Ministry of Economy

## 2.4. Orange Roughy

### a) Brief Description of the Fishery

This fishery was the last to start operating at a national level, in 1999. This condition allowed the implementation of article 40° of the General Law of Fisheries and Aquaculture, establishing an Incipient Fishery Regime, that is, the fishery is managed through a mechanism of public auction of the total annual quota.

During fishing seasons 1999 and 2000 seven and eight trawling vessels participated, respectively. These industrial vessels range in length between 42.8 and 58.8 meters.

During 2000 season, six vessels reported catches. In 2001, the number of vessels reduced to four, and activity was reported in the southern area of the country which was frequented by the fleet the previous year.

### b) Fishery Regulation

The orange roughy fishery was declared in Incipient Development Fisheries Regime in 1998, comprising all the EEZ, including Chile's insular and continental coast. As a result, a global annual catch quota was established, bidding the fractions in smaller transferable quotas.

As a result of the critical situation of the resource, since 2006 the orange roughy is subject to a biological seasonal ban.

Table IV: Global annual catch quota, 1999-2007 period.

Source: Undersecretariat for Fisheries.

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007 <sup>16</sup>
Global quota (t.)	1,500	1,580	2,140	2,500	2,500	2,500	2,500	-	300

c) Detailed Regulation

Regulations	Decree or Resolution
Suspension of application, reception, and fishing authorization granting for industrial vessels.	Ex.D N°500 as of 1997 of the Ministry of Economy
Incipient Development Regime Declaration	S.D. N°538 as of 1998 of the Ministry of Economy
Global Annual Catch Quota	Ex.D. N°507 as of 1998 of the Ministry of Economy establishes 1999 quota in 1,500 tons.
	Ex.D. N°301 as of 1999 of the Ministry of Economy fractions quota per area established in Ex.D N°507 as of 1998 of the Ministry of Economy
	Ex.D. N°427 as of 1999 of the Ministry of Economy establishes 2000 quota in 1,580 tons and fractions by fishing area
	Ex.D. N°450 as of 1999 of the Ministry of Economy amends Ex.D. N°427 as of 1997 eliminates fractioning by area and reserves 128 tons per owners having the valid authorization to the moment of incipient development regime declaration.
	Ex.D. N°382 as of 2000 of the Ministry of Economy fixes 2001 quota in 2,140 tons and fractions per fishing area.
	Ex.D. N°798 as of 2001 of the Ministry of Economy fixes 2002 quota in 2.500 tons and fractions per fishing area.
	Ex.D. N°1.012 as of 2002 of the Ministry of Economy fixes 2003 quota in 2,500 tons.
	Ex.D. N°780 as of 2003 of the Ministry of Economy fixes 2004 quota in 2.500 tons.
	Ex.D. N°933 as of 2004 of the Ministry of Economy fixes 2005 quota in 2,500 tons.

<sup>16</sup> Quota aimed at research fishing

	Ex.D. N°1.051 as of 2007 of the Ministry of Economy fixes 2007 quota aimed at research in 300 tons.
Biological seasonal ban	Ex.D. N°1.592 as of 2005 of the Ministry of Economy
	Ex.D. N°289 as of 2007 of the Ministry of Economy
	Ex.D. N°164 as of 2008 of the Ministry of Economy