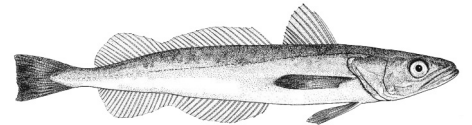


CATCH SHARES IN ACTION

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## Argentine Individual Transferable Quota Program



### AUTHOR

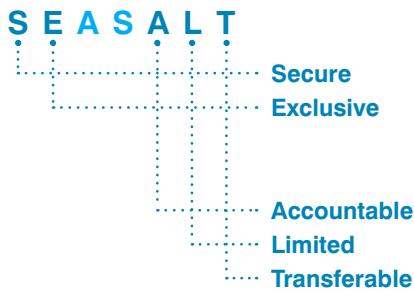
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Jeff Young

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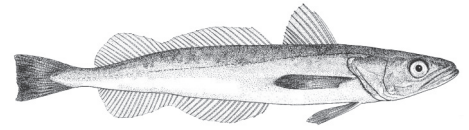
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## CATCH SHARES IN ACTION

### Argentine Individual Transferable Quota Program



**SPECIAL DESIGN FEATURES**



MULTI-SPECIES, INDIVIDUALLY-ALLOCATED, QUOTA-BASED, TRANSFERABLE

The Argentine Individual Transferable Quota Program manages four of the country’s most commercially important species by allocating quota to individual vessels under a single catch share program. Program goals focus on long-term stock conservation, the maximization of domestic employment and the promotion of social stability. As distinct fleets target each species, managers have incorporated special design features within the program to meet each fishery’s needs. Quota set-asides give managers the flexibility to address fishery-specific social and biological goals, while the multi-criteria allocation process incentivizes investment in the domestic economy and compliance with fishing regulations.

In 1998, the Argentine government enacted its Federal Fisheries Act (Ley Nacional 24.922) to achieve more sustainable development of its marine resources. Part of this legislation stipulated the creation of an Individual Transferable Quota (ITQ), or catch share program. After several years of design and experimentation, managers launched an official catch share program in 2010, known locally as Régimen de Cuotas Individuales Transferibles de Captura. The catch share program manages four species: Argentine hake (*Merluccius hubbsi*), Patagonian grenadier (*Macruronus magellanicus*), Patagonian toothfish (*Dissostichus eleginoides*) and southern blue whiting (*Micromesistius australis*).

Each of the four species is found within the waters over Argentina’s continental shelf. Argentina’s federal fisheries council, Consejo Federal Pesquera (CFP), is the lead agency responsible for administering the catch share program, while the Secretary of Agriculture, Fisheries and Food (SAGPyA) is the agency tasked with implementation. In 2012, there were 195 licensed vessels with quota to harvest Argentine hake, 34 vessels with quota for Patagonian grenadier, seven vessels with quota for Patagonian toothfish and six with quota for southern blue whiting (CFP, 2012). The Argentine hake, Patagonian grenadier and southern blue whiting fisheries use mid-water or bottom trawl nets, while the Patagonian toothfish fleet uses longlines (FAO, 2001). In 2012, the total volume of Argentine landings was 691,486 metric tons (MinAgri, 2012), approximately 47% of which was managed under the catch share program.

**SYNOPSIS**

## Road to a Catch Share

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Over the past several decades, Argentina has rapidly developed its fisheries sector. Policies favoring foreign investment and economic development created thousands of jobs in processing and harvesting. Increased catches and export-oriented production expanded national earnings (Johns, 1992; UNEP, 2002). However, Argentina was not well equipped to sustainably manage the rapid growth of its fisheries. Prior to the Federal Fisheries Act of 1998, no comprehensive national fisheries law existed (UNEP, 2002).

The limited entry management approach established in 1991 was not sufficient in halting the rising capacity in Argentine waters (Schonberger and Agar, 2001). Fishing licenses could be easily transferred to new, higher capacity vessels upon decommission of outdated or sunken vessels (Abaza and Jha, 2002; Kalikoski et al., 2006). Meanwhile, European firms transferred excess capacity from European waters, financed vessel upgrades and further drove capacity growth through joint ventures (UNEP, 2002). Between 1989 and 1996, the processing fleet experienced a fivefold increase in aggregate power, while the ice trawler fleet tripled in capacity (UNEP, 2002). In the Argentine hake fishery, ice trawlers were replaced with much larger processor vessels imported from Europe (Schonberger and Agar, 2001; Abaza and Jha, 2002).

The limited licensing system also failed to regulate the content of catch (Cauhepe, 1999). Vessels could target and capture any encountered species. Although catch limits were in place for several commercially important species since the early 1990s, limited accountability and enforcement of catch limits resulted in an inability to control the quantity of catch (FishSource, 2013). Fishing occurred beyond sustainable levels, resulting in diminishing catch-per-unit-effort and a near collapse of the Argentine hake stock in the late 1990s (FAO, 2001; UNEP, 2002; FAO, 2009). As a result of diminishing catches of Argentine hake and southern blue whiting, effort was shifted to underexploited species such as Patagonian grenadier. Overcapacity and overexploitation threatened several of Argentina's fisheries with collapse, placing social stability and the livelihoods of coastal communities at risk.

To address many of the looming biological, social and economic concerns in Argentina's fisheries, the government passed the Federal Fisheries Act in 1998. This law mandated the development of a quota-based catch share program. The law also designated the newly formed federal fisheries council, CFP, as the lead agency to develop and administer the program. A provisional individual quota system was in place for Argentine hake starting in 2001 (E. Godelman, personal communication, 2013), and after a decade-long design process, CFP launched the catch share program for Argentine hake, Patagonian grenadier, Patagonian toothfish and southern blue whiting at the start of the 2010 fishing season.

## Performance

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Three years after implementation, the catch share program is largely meeting its goals and a number of notable improvements have emerged. The program has provided a stable platform for management during the recent economic recession and has provided flexibility to buffer against economic shock.

Fishermen have achieved 100% catch limit compliance for each of the four species (FishSource, 2013). Prior to catch share implementation, catch limits were regularly exceeded. Increased compliance has given managers the flexibility to set catch limits that balance rebuilding timelines with short-term economic gains, creating stability for both stocks and fishermen. Thus far, the program has stabilized the once-overfished Argentine hake and Patagonian toothfish stocks and is preventing the overexploitation of Patagonian grenadier. In recognition of management improvements, the Patagonian grenadier fishery was certified sustainable by the Marine Stewardship Council in May 2012.

Export prices have also increased for all four species since implementation of the catch share program (MinAgri, 2012). Price increases may not be solely attributable to the catch share program, as much of the harvest is exported and international markets have been consistently strong with demand increasing over the past decade. However, the catch share program has put the fishery on a path to improved sustainability and economic value in the long term.

## STEP 1 IN ACTION

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### Define Program Goals

Fisheries have become an increasingly significant component of Argentina's export economy, and are particularly important to the local economies of coastal communities such as Mar del Plata and Puerto Deseado. To promote stability in the sector, Argentina's Federal Fisheries Act outlined three primary objectives (Ley Nacional 24.922, Chapter 1, Section 1, 1998):

- The rational use of living resources
- Long term conservation
- The maximization of employment of Argentine labor

The catch share program was designed to achieve the objectives outlined in the Federal Fisheries Act. Specifically, the program sought to maximize fisheries production at sustainable levels, while preserving traditional fleet composition and employing as many national citizens as possible.

## STEP 2 IN ACTION

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### Define and Quantify the Available Resource

The catch share program manages the Argentine hake (*Merluccius hubbsi*) stock south of 41°S, Patagonian grenadier (*Macruronus magellanicus*), Patagonian toothfish (*Dissostichus eleginoides*) and southern blue whiting (*Micromesistius australis*). These species represent four of the most important commercial species in Argentina as they generate significant employment opportunities and export earnings for the country. Argentine hake, Patagonian toothfish and southern blue whiting were historically overfished species. To preserve these species

and their associated economic benefits, CFP included them as the first species to be managed by the catch share program. The program also includes Patagonian grenadier, an increasingly sought-after species, to prevent its overexploitation.

Fishery interactions often occur as the four species can overlap in range and depth. For example, Southern blue whiting is primarily caught as incidental catch in the Patagonian grenadier fishery. The distribution of each stock also spans throughout the Patagonian continental shelf, extending beyond the EEZ of Argentina. As a result, these four stocks are subject to fishing by foreign vessels in the high seas and in the “Falkland Islands Conservation Zone” claimed by the United Kingdom (Villasante and Sumaila, 2009). From 1999 to 2006, Argentina and the United Kingdom collaborated on research, monitoring and information gathering in order to promote sustainable fisheries (Villasante and Sumaila, 2009). Cooperation ended in 2006 due to disputed claims to the Falkland Islands. Catch limits are currently set independently for the shared stocks, which may pose a threat to the long-term health of those stocks (A. Arkhipkin, personal communication, 2012).

Argentina’s catch share program manages the portion of each stock within its marine jurisdiction. The National Institute for Fisheries Research and Development (INIDEP) is the lead fisheries science agency and makes catch limit recommendations each year based on stock assessments and biological surveys. At the beginning of each year, CFP sets a catch limit for each of the species based on INIDEP’s scientific recommendations. For each species, the majority of the catch limit is allocated to individual vessels, while smaller portions are set aside to address social, biological and administrative needs (Ley Nacional 24.922, 1998).

## STEP 3 IN ACTION

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### Define Eligible Participants

Shares are allocated to vessels, and eligibility to participate in the program is restricted to vessels owned by individuals or companies holding fishing licenses for one or more of the four species. In Argentina, fishing licenses are reserved for national citizens and companies registered in the country. This effectively limits participation in the program to Argentine citizens and domestic companies.

The program was specifically designed to promote employment and retain a diverse fishing fleet. For the Argentine hake and Patagonian grenadier fisheries, managers incorporated additional eligibility provisions to address fleet diversity. For Argentine hake, province-specific “social reserves” were specially designed for smaller-scale vessels, while a “reallocation fund” for Patagonian grenadier provides fishing opportunities under the catch share program for vessels with lower catch histories.

Concentration limits are used in the program to prevent excessive share consolidation and when applicable, apply to the parent company of each vessel. Limits vary for each species, largely based on the size of the fleet targeting the species (Table 1). For example, managers set concentration limits higher in the Patagonian toothfish and southern blue whiting fisheries, as a smaller number of participants historically targeted these species. Meanwhile, managers set concentration limits lower in the Argentine hake and Patagonian grenadier fisheries to account for the greater number of vessels and diversity of fleets.

**TABLE 1** | PARTICIPATING FLEETS AND CONCENTRATION LIMITS

SPECIES	CONCENTRATION LIMIT	FLEETS
Argentine Hake	10%	Artisanal, ice trawlers, processors (trawlers)
Patagonian Grenadier	15%	Ice trawlers, processors (trawlers)
Patagonian Toothfish	40%	Processors (longliners)
Southern Blue Whiting	40%	Processors (trawlers)

Source: Consejo Federal Pesquero Resoluciones 20-23, 2009

A new entrant must be a registered tax payer with the Federal Taxes Agency of Argentina (E. Godelman, personal communication, 2013). New participants can enter the program by obtaining a license to target one of the four species and purchasing quota for that species. Existing licenses can be purchased from ship owners or fishing companies. Acquired licenses may come with attached quota, or quota may be purchased or leased from an existing quota holder.

## STEP 4 IN ACTION

### Define the Privilege

The catch share program grants quota-based privileges for the capture of Argentine hake, Patagonian grenadier, Patagonian toothfish and southern blue whiting. Each share represents a percentage of the annual catch limit set by CFP.

Shares are valid for a period of 15 years (Ley Nacional 24.922, 1998). CFP is able to partially or fully revoke shares after two years of quota inactivity. This may reflect the national government's goals of promoting full resource utilization and maximizing employment. The Federal Fisheries Act currently does not specify what will happen to individual shares after the first 15 years of the catch share program.

The catch share program imposes restrictions on transferability to preserve fleet composition and to protect employment in the processing sector. CFP has the ability to revoke quota that has been leased for more than two years to a vessel outside of the fishing company. This ensures that fleet composition remains relatively consistent through the course of the program. The program also contains safeguards for employment in the processing sector. Landings from the ice trawler fleet are processed onshore and the sector tends to support a higher level of onshore employment than the at-sea processing fleets. To maintain onshore employment, quota transfers from ice trawlers to processing vessels are restricted (CFP Resolucion 24, 2009).

## STEP 5 IN ACTION

### Assign the Privilege

With input from multiple stakeholders, CFP established the criteria for quota share eligibility and allocation for the catch share program. In order to meet the program goals of preserving historical fleet composition and maximizing Argentine employment, CFP created a two-tiered allocation process. The primary tier of allocation identified a control period, set species-specific minimum catch percentages to determine eligibility (Table 2), and then allocated quota based on a multi-criteria weighting process. For Argentine hake and Patagonian grenadier, a secondary tier of allocation was also included to incorporate vessels with lower catch histories.

**TABLE 2** | MINIMUM CATCH PERCENTAGES FOR PRIMARY ALLOCATION

IVQ SPECIES	MINIMUM PERCENTAGE OF TOTAL LANDINGS	CONTROL PERIOD
Argentine Hake	0.50%	1988-1996
Patagonian Grenadier	3%	1988-1996
Patagonian Toothfish	1%	1988-1996
Southern Blue Whiting	3%	1988-1996

Source: Consejo Federal Pesquero Resoluciones 20-23, 2009

At the start of the 2010 fishing season, SAGPyA conducted the primary tier of allocation, granting long-term shares to vessels meeting minimum catch histories. Shares were allocated through a multi-criteria weighting process that provided incentives for vessels and companies contributing most to national employment, investment and economic development. At the same time, the multi-criteria process recognized good stewardship by penalizing vessels with a history of fishing violations. For all four species, the primary allocation formula was based on five weighted factors: catch history at 50%, level of domestic employment at 30%, contribution to the processing sector at 15% and parent company investment in the economy at 5%. Sanction history was used to reduce the primary allocation and varied between -5% and -1% (Ley Nacional 24.922, 1998).

The secondary tier of allocation was designed to allocate shares for Argentine hake and Patagonian grenadier vessels with lower catch histories. For Argentine hake, a portion of the catch limit was set aside under the social reserve, managed by provinces. The provincial governments of Buenos Aires, Rio Negro, Chubut, Santa Cruz and Tierra del Fuego were able to allocate shares to vessels registered in their jurisdiction, each based on their own criteria (CFP Resolucion 23, 2009). For Patagonian grenadier, managers set aside quota in a reallocation fund, which allocated shares proportionally based on a lower and more recent catch history (CFP Resolucion 20, 2009). Vessels meeting a minimum average catch (350 metric tons) from 2000 to 2007, and having fished for the species from 2004 to 2007, qualified for reallocation fund quota (CFP Resolucion 22, 2009).

For each species, managers set aside portions of the annual catch limit for fishery-specific needs. These include an artisanal reserve for Argentine hake to accommodate the artisanal fleet, conservation reserves



for Patagonian grenadier and southern blue whiting to promote long-term stock health, and administrative reserves for Argentine hake, Patagonian grenadier and Patagonian toothfish to allow managers to address other management needs such as requests for fleet expansion (CFP Resolucion 10, 2009).

## STEP 6 IN ACTION

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### Develop Administrative Systems

The catch share program is administered by CFP, which oversees quota transfers and trading. CFP must also approve all trades, whether they are full or partial (Ley Nacional 24.922, 1998).

To provide precise information on fishing mortality, size, sex and age of catch, INIDEP manages a system of onboard and on-shore observers (SSPyA Disposicion 424, 2004). Vessel operators must pay for their onboard observers.

CFP collects a small transaction fee from each quota transfer, which goes toward the National Fisheries Fund, the main source of funding for the catch share program (Ley Nacional 24.922, 1998). In addition to fees from quota transfers, revenue is generated from fishing permit issuance, access fees from foreign vessels, penalties for infractions of the Federal Fisheries Law and sales from confiscated equipment and vessels.

## STEP 7 IN ACTION

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### Assess Performance and Innovate

Three years after implementation, the catch share program is meeting most of its goals. Each of the four fisheries has achieved catch limit compliance (FishSource, 2013). The most significant improvement has occurred in the Argentine hake fishery, in which catches previously exceeded legal limits on a regular basis (FishSource, 2013). Patagonian toothfish appears to be slowly rebuilding, while improved accountability under the catch share program is helping stabilize the Patagonian grenadier stock (MSC, 2012; FishSource, 2013). One of the most notable achievements has been the certification of the Patagonian grenadier fishery by the Marine Stewardship Council in May of 2012 (MSC, 2012).

The program is also meeting most of its economic and social goals. Export prices have increased for each of the four species since program implementation and allocation was specifically designed to maximize the utilization of Argentine labor.

Although the increased accountability within the catch share program has helped stocks stabilize, concerns remain over whether Argentine hake, Patagonian grenadier and southern blue whiting stocks can meet or remain at biological targets (FishSource, 2013). While CFP has consistently set catch limits within INIDEP's recommendations, recommended catch limits for Argentine hake and Patagonian grenadier currently exceed precautionary limits (FishSource, 2013; E. Godelman, personal communication, 2013). This is likely a deliberate policy by fisheries managers or the government to delay the rebuilding schedule and help the industry weather the economic recession. Although the current catch limits appear to be maintaining a stable level of biomass, the non-precautionary approach may create a slight risk of fishing beyond sustainable levels. This is of particular

importance in the Patagonian grenadier fishery, in which target reference points have not been set in recent years (FishSource, 2013).

The spatial characteristics of these four species also continue to pose challenges. Since the four stocks straddle the Falkland Islands Conservation Zone claimed by the UK and extend into the high seas, collaboration on management is important. To ensure the health of the stocks and subsequent success of the catch share program, collaboration and information exchange may need to be re-established.

The improved management and increased accountability within the catch share program is helping provide stability in the short-term, but external policy issues will need to be addressed to ensure that stocks can rebuild to healthy levels in coming years.

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