

# Towards a market-oriented management model for straddling fish stocks

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Received 10 January 2005; accepted 24 February 2005

## Abstract

Management of straddling fish stocks has been noted for its political complexity. Negotiations frequently falter as each party seeks to focus upon their own individual and shorter-term goals than the collective interest of the sector. Entrenched positions are often only deepened as new entrants participate to establish their own claims to any emergent share of resource. Unsurprisingly, deadlocks are common and typically compromises are reached only after the real period of biological then economic crisis has passed. Examples to illustrate this tendency can be found in most of the world's oceans and is writ large within the current impasse over blue whiting (*Micromesistius poutassou*) in the North Atlantic. The development of this fishery is discussed and it is shown that despite the scope to add value to the resource base through a pattern of exploitation focussed more upon human consumption than fish meal and oil, there seems little incentive to extricate participants from the cycle of demise that has engulfed negotiations so far.

In an attempt to consider how such seemingly intractable problems might be resolved, attention is next turned to the construction of a new model for resource management specifically intended to contend with the problems thrown up by straddling stocks. Central to this is the need to ensure motivation and incentivisation of value chain members in both national economic zones and international waters. It is proposed that a Multinational Resource Cooperative (MRC) is established and would be the key element in the management model. The MRC, on behalf of the national stakeholders, would auction quota so that fish enterprises can purchase quota units defined in terms of species, quantity, catch area and the time of catch. The MRC would also be financed through a quota auction fee as explained below and arrange its own quota control and enforcement services. By auctioning rights to stakeholders the MRC will enable control and enforcement of the TAC; allocations of fair national shares of resource and critically, motivate fish enterprises to devise and implement market-oriented value adding strategies. Adoption of such a scheme should result in a more efficient use of the remaining straddling stocks whilst there is still time to do so. Importantly, the proposed rent distribution mechanism would also shift the focus of negotiations from being dominated by quotas and access rights to more evident pecuniary metrics.

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**Keywords:** Fisheries behaviour; Fisheries management; Straddling fish stocks; Market orientation; RFMO; Law of the Sea

## 1. Introduction

This paper formulates a model and outlines essential elements of a market-oriented management system intended for application where straddling fish stocks cross the borderlines of national EEZs and international waters. Fisheries management is faced with demands that are increasingly recognised as multifaceted and in

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which ecological, sociological and economic factors, amongst others, figure prominently. Historically, the priority has been to protect the fish stocks against over-fishing and depletion, often determined according to biological considerations and measures [1]. Where fish stocks straddle different economic zones, fisheries management is further complicated by ownership uncertainty and is often in dispute. Commonly this happens within a dynamic fishery: one where there may be an absence of any historical pattern of exploitation, or perhaps one wherein some participants have only recently engaged in the fishery, as might happen through pressures on other former alternative fisheries. In such circumstances, negotiations over ownership settlements tend to over-shadow other management demands.

In the UN Law of the Sea of 1995, a consensus was reached that the management of the straddling and highly migratory fish stocks should be carried out through regional fisheries management organisations (RFMO). A review by Bjørndal et al. [2] concluded that the local problems faced during the stage of setting up regional fisheries organisations for the management of straddling and highly migratory fish stocks were much more complicated and difficult to resolve than in the case of “shared fish stocks”. The main difficulties stemmed from the larger number of players and the possibility of new members entering the regional fisheries organisations.

Notwithstanding the fundamental importance of the complications of setting up RFMOs to protect the stocks, the literature dealing with straddling stocks has given no explicit attention to market-oriented management value-adding issues. Market orientation is conceptualised as a long-term organisational behaviour which performs “organisation wide generation, dissemination and responsiveness to market intelligence” [3,4]. Capturing added values in the market through differentiation and market orientation is all about long-term business learning [5]. Market-orientated management schemes, when applied to the fishing industry setting, motivates enterprises to add to the total resource value by maximising profit from the limited fish quotas through identifying and responding to changes in what the market values. Typically, this will be driven by entrepreneurial incorporation of responses to changes in market-based phenomena such as consumption preferences, cost differentials and competing values. A market-oriented management model therefore should improve both the freedom and flexibility to enable enterprises to adopt their perceived optimal marketing strategy whilst, at the same time, recognising the wider management objectives of the fishery, including any total allowable catch (TAC) and its allocation to all other stakeholders, countries and enterprises alike.

This paper discusses the relationships between present management practices of straddling stocks and business

enterprise value-adding behaviour and is illustrated by the contemporary and contentious case of the Atlantic blue whiting (*Micromesistius poutassou*) fishery. This is then developed with the presentation of a market-orientated value-adding (MOVA) management model of straddling fish stocks wherein a Multinational Resource Cooperative (MRC) plays a key role as an executive RFMO body.

## 2. Management and value adding of straddling stocks

Typically, the starting point for international and national resource management negotiations is to settle the TAC and allocate shares between stakeholder nations and interests. The impact of any TAC allocation to nations may in itself become an institutional hurdle for market-oriented behaviour in the fish value chains which intertwine from the point of capture along different market channels. For example, operational barriers to market-oriented priorities may occur if fisheries management imposes (biologically determined) grade sizes in catches; restrictions on where and when catches may be landed may compromise the freshness delivered or seasonal constraints may hinder proper handling, processing, product yield and efficient utilisation of plant capacity and equipment.

Assuming some agreement on the size of the TAC is reached, the next step is commonly to define the national shares. In the case of a straddling fish stock, debate frequently revolves around determination of what belongs to each national EEZ or region and is complicated where (i) the migration pattern changes according to marine ecological variations and (ii) the catch history changes according to different national or regional patterns, stages and advances in economic development. The catch history at certain points in time has been the traditional principle for agreements over sharing quotas of straddling fish stocks, e.g. between the EU, Norway and Iceland. It has also been the principle in sharing fishing rights amongst fish producers nationally. For example, when access to Norwegian quotas of pelagic fish in the 1970s and groundfish in the 1990s were closed, the vessels' previous catch histories were adopted as the main criteria for future allocation of individual quota rights. Iceland also used, apart from two exceptions, historical records to allocate quotas when its ITQ system was introduced, see Matthiasson [6]. In some cases, such agreements may be renegotiable. For example, in the EU Accession treaty of 2004 the historical catches of the ten new entrants are expressed as parts of the different stocks and the words “for the first time” are added, in order not to completely exclude the legal possibility of adjusting these parts later [7] The emergence of a proposal, at least, to alter the allocation of deepwater species within 6 months of accession [8]

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