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Supermarkets and the Artisanal Fisheries Sector in Latin America

Case Studies from Brazil and Peru

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**Supermarkets and the Artisanal Fisheries Sector in
Latin America
Case Studies from Brazil and Peru**

by

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The growth of the retail sector and its increasing dominance in food distribution to the consumer has led to a long-term shift in the distribution of economic power and the restructuring of supply systems. The purpose of this study was to try to analyze the impact of the super market development in two Latin American countries, Brazil and Peru, on the marketing channel of fish and seafood with particular reference to the artisanal fisheries sector. In this connection the study also describes the artisanal fisheries sector in both countries in some detail. Results from the study are based on a survey covering the expectations and requirements of supermarkets and linking these requirements to the reality in the artisanal fisheries sector. Under the impact of the supermarket's alternative distribution network, traditional distribution wholesale and retail systems are adopting a competitive adaptation strategy based on the imposition of similar quality and logistical requirements. From the standpoint of small-scale producers, the principal conclusion points to strong selection processes which will spare only the most efficient and those able to confront the new barriers which include investment costs, management skills and new organizational forms involving higher levels of association and cooperation. In the annexes details of the interviews are presented for both countries.

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Supermarkets and the Artisanal Fisheries Sector in Latin America

Case Studies from Brazil and Peru

Introduction

The supermarket format emerged as far back as the 1930-40s in the US and marked a revolution in food retail and consumer relations. Providing a perfect environment for the exploration and promotion of new products, it also became the privileged site for refrigeration technology, placing a premium on new forms of preservation which would evolve from frozen to chilled and finally to fresh products. Supermarkets became the object of academic attention in the late eighties and early nineties in Europe (Green 1989, Wrigley & Marsden, 1994) and somewhat later in the US (Heffernon, 2003). These studies focused on the way large-scale retail was able to internalize information technology and logistics to transform supply systems. They also demonstrated how this was leading to a shift in power relations *vis-à-vis* food manufacturing and agriculture, reflected in the reduction of suppliers, “entry fees” and supermarket “own brand” products. Cheaper prices for the consumer provided generalized legitimacy for the expansion of the supermarket model.

The emergence of large-scale retail as the dominant actor in the vertical organization of the food system rightly attracted attention as a major long-term shift in the distribution of economic power and the restructuring of supply systems - supply chain management, efficient consumer response (Dobson, 2003). No less important, however, was the horizontal concentration of retail, which successively led to the displacement and internalization, first of general food stores, then the traditional specialized outlets – butchers, bakers, fishmongers, fruit and vegetable stores, florists – even extending into the territory of the delicatessen. The “one-stop shopping” concept appeared set to sweep all before it and the super(hyper)market format and the economic power of large-scale retail expressed, within the food sector, the more general shift to “demand-driven” production systems (Gereffi).

While food-manufacturing multinationals emerged as early as the end of the nineteenth century, large-scale retail remained fundamentally limited to the domestic markets of the developed countries, and in the case of the US largely to regional markets. This was to change markedly from the middle 1980s. The regional markets of the US enticed European entrants (Ahold) and German hard discount led a foray into the British market, but retail concentration provided strong entry barriers in the mature European and US markets. The southern European markets, however, became a target for supermarket FDI, Carrefour being particularly notable in Spain and Italy. Market concentration and slow growth in the developed economies combined with the pressures (sustained growth as the basic criterion of shareholder satisfaction) and opportunities of globalization (information technology, financial deregulation, institutional reforms on FDI⁴, sharp growth in large developing countries), saw a surge in retail trans-nationalization in the 1990s with central Europe and developing countries as the prime targets.

⁴ FDI, Foreign Direct Investment. See annexes for a list of abbreviations.

Recent literature (Berdegué *et al.* 2004, GPN Working Paper 8, 2003) has focused on the speed, scale and impact of this new wave of global FDI by large-scale retail. The GPN Working Paper shows that in 1990 the Dutch Ahold had only ventured into the US, Carrefour was present in no more than five foreign countries, whereas the English Tesco and the US Wal-Mart remained national firms. By 2002, however, Ahold was present in 28 countries, Carrefour in 30, Wal-Mart in 11 and Tesco in ten. As for scale, Tesco, which in 1998 had no presence in East Asia, plans to reach a global share of 28 percent by 2006-7. In this same period, its operating space outside of the UK will rise from 8 to 50 percent. The impacts have been equally impressive, with Tesco already emerging as market leader in Thailand, while in Brazil all of the leading 4 food retailers are now trans-nationals⁵. The traditional developing world has now, however, to compete with the economies of the ex-Soviet bloc particularly in Central Europe for supermarket FDI (Wrigley, 2000).

Reardon and colleagues have developed perhaps the most systematic research to date on the nature and impact of supermarket expansion in the developing worlds of Latin America, Asia and Africa. Their work has paid attention to the implications of these developments on existing production and distribution systems with particular reference to their consequences for small-scale producers.

While earlier publications (Reardon and Berdegué, 2002) focused on the velocity and scope of supply system reorganization with dire consequences for small producers their more recent considerations emphasize the importance of transition periods which offer greater opportunities for small-scale suppliers to adjust to supermarket requirements (Berdegué *et al.*, 2004).

Reardon and colleagues research on Latin America, Africa and Asia concludes that the supermarket system, which assumed dominance with extraordinary speed and took root first in countries with a well established modern food system, concentrated in the metropolitan centers and directed primarily to the middle class consumer, has now expanded into small and medium countries through processes of regionalization and has also advanced from the metropolis into the poorer districts and from the metropolitan centres into the medium-sized towns of the interior. The supermarket system, therefore, should not be seen as a complement but increasingly as a substitute to traditional retail channels. In addition, the different quality and logistical criteria according to which supermarkets operate is leading to the development of a parallel distribution system based on proprietary distribution centers and a register of favoured suppliers.

Two further conclusions underline the radical implications of supermarket dominance in developing countries. In the first place, under the impact of the supermarket's alternative distribution network, traditional distribution wholesale and retail systems are adopting a competitive adaptation strategy based on the imposition of similar quality and logistical requirements. And secondly, supermarkets are increasingly building their own global supply systems, importing and exporting to their branches in other countries. The viability of this

⁵ Cassino (F) has now increased its participation in Brazil's leading supermarket chain, Pão-de-Açúcar, to 50 percent and seems poised to take over the management. Carrefour (F), Sonae (Portugal) and Walmart (US) make up the quartet.

strategy depends on a homogenization of quality requirements, which will tend to narrow and eventually eliminate distinctions between domestic and export standards.

From the standpoint of small-scale producers, the principal conclusion points to strong selection processes which will spare only the most efficient and those able to confront the new barriers which include investment costs, management skills and new organizational forms involving higher levels of association and cooperation. The research conclusions were based primarily on studies of the fruit and vegetable sector. This has become a strategic sector for supermarkets for a number of reasons, among which could be mentioned: changing dietary patterns, lack of dominant players already entrenched in the sector, the importance of logistics, and recognition of this sector's role for consumer fidelity.

In many cases, supermarkets have been able to build fresh fruit and vegetable value chains almost from scratch (as in the case of exports from Africa to the British supermarkets). While the results of this research can serve as guiding hypotheses for the current study, it is not necessarily the case that all the impacts associated with the dominance of supermarkets will be reproduced in the case of the fish sector. This report draws on the results of the above studies as working hypotheses for the analysis of three country studies of the fish sector: Brazil, Chile and Peru. Before presenting these studies we briefly indicate some of the general distinguishing features of the fish sector.

The fish sector is proportionately the most internationally traded of all major food categories involving some 40 percent of total fish production in live weight equivalent. Its internationalization dates back to the 16th century and the overall evolution of the sector has been influenced by the dramas peculiar to ocean capture fishing – stock depletion, national conflicts, intense regulation. These factors have been primarily responsible for the shift from northern to southern waters as also for the extraordinary rise of fish farming.

Developing countries are now responsible for more than 50 percent of world trade and some 80 percent of imports are accounted for by the US, Europe and Japan. While per capita consumption in developing countries (9.2 kg) is significantly lower than the developed world (21.7 kg), the importance of fish as a protein source is proportionately greater, averaging 20 percent and reaching 50 percent in some countries as against an average of 13 percent in developed countries.

The sector is characterized by complex, conflictive and long consolidated interest groups ranging from artisanal fishing communities and primary on-land processors, to trawler-factories, world food industry leaders and highly concentrated fish-farming interests which merge with other intensive protein production sectors. Supermarkets and catering have played a major role in the popularization of new products categories – particularly shrimps and salmon.

Their logistical and quality demands have led to backward integration in the form of the direct contracting of trawler catches, accelerating the marginalization of fishing communities based on chilled fishing and on-land processing. At the same time, supermarkets are promoting locally fished brands (along the lines of *appellation d'origine* labels) as a special quality niche. They have also committed themselves heavily to fish-farming, in spite of increasing health and environmental critiques, putting at risk their “consumer-driven” image.

On the other hand, the internal logic of capture fishing has been the principal driving force in the emergence of major interests involved in fish farming whether they be transnational feed and genetics sectors or development and multilateral agencies. Similarly, the most significant moves to sustainable capture fishing have been led primarily by food industry giants, particularly Unilever with the Marine Stewardship Council initiative, more directly dependent in the medium term on the maintenance of capture fishing.

While these features point to a more complex picture than in the case of fresh fruit and vegetables, the strategic role of fish products both in trade and consumption in developing countries and the extraordinarily rapid transnationalisation of supermarkets in these countries point to the importance of further research into the impact of new retail and catering investments on existing fish and sea food production and distribution channels.

Retail, Supermarkets and Foodservices: Impacts on the Fish Sector, Fish Producers and Primary Processors of Seafood in Developing Countries: Case Study of Brazil

1 Introduction

Brazil is in many ways a showcase for examining the impact of supermarkets on food production and distribution channels. Supermarkets account for some 65 percent of food retail and have experienced a strong trend to concentration with the leading five increasing their total share from 23 percent in 1994 to over 40 percent by the year 2000.

Concentration has accelerated in the new millennium with the Brazilian/French, Cia Brasileira de Distribuição, buying out Sendas and confirming itself as leader, and Wal-Mart acquiring Ahold's investments in the Northeast (Bompreço). In the more recent period, these leaders have made a turn to the poorer consumer reproducing the broad-based marketing strategy of the supermarket format and large-scale retail already confirmed in the developed countries.

Brazil also provides an opportunity for analyzing the diverse components of the transnationalised retail sector to the extent that leadership is shared between domestic, US and European firms. As a range of studies has already confirmed (Belik and Santos 2002, Green and Santos, 1998, Farina 2002, *Reardon et al.* 2003, BNDES, 2000) the Brazilian supermarket system has advanced a long way in the construction of parallel distribution and supply systems exhibiting the full range of proprietary distribution centers, registered suppliers and global sourcing.

At the same time, Brazil has experienced nothing less than a revolution in out-of-home eating habits over the last ten years with the radical innovation of "food by weight" (*comida a kilo*) restaurants which has imposed itself as the preferred lunchtime option, a model which is now being exported even to the developed world. At the same time, fast-food and restaurant chains are rapidly replacing the individual family owned restaurants. This new catering sector, in its turn is creating its own distribution systems and imposing increasingly rigid quality criteria, matching, if not surpassing, those being implemented in the supermarket sector.

In both supermarket and catering sectors, fish and seafood products play an increasingly important role. Already in the middle 1990s, over 50 percent of fresh fish consumed in the metropolitan area of Rio de Janeiro was bought in supermarkets (INFOPECA, 1997). In addition to their traditional role in the sale of industrialized canned fish (sardines), supermarkets (along with catering) have popularized salmon consumption based primarily on imports from Chile, prepared frozen shrimps from specialized suppliers, including the promotion of frozen fish products with some supermarkets developing own brands in this category.

New products from continental, particularly fish farming sources (carp, tilapia) are being introduced in this context. At the same-time we are beginning to see the supermarkets (Carrefour) assuming export functions, supplying seafood products (particularly shrimps) to their sister branches in developed country markets.

Fish is increasingly present in the “food by weight” restaurants, and sushi food has now moved out from its ethnic limits and has been adopted widely in the middle classes. The extraordinary growth of shrimp farming (up from 40 000 tonnes in 2001 to 120 000 tonnes in 2004 and a projected 160 000 tonnes for 2005) has transformed Brazil’s fish products trade balance, which in the middle 1990s was heavily in deficit but now sports a large surplus. This sector is now diversifying its exports in the face of US embargos and exploring domestic market outlets. In the process it is establishing alliances with restaurant chains for the establishment of sales and distribution centers with a view to eliminating the “middle-man” and lowering prices which are seen as a key obstacle to further domestic consumer growth (Barbieri, 2003).

Brazilian per capita fish consumption is low even for a developing country although its population of over 180 million makes it one of the world’s largest fish and seafood markets. The FAO places overall per capita consumption at 6.8 kg, while the Brazilian home consumption survey (POF/IBGE, 2003) would put this figure even lower at 4.6 kg per capita. Higher figures would seem to be indicated if we take into account the explosion of fresh water commercial fishing (“fish and buy”) and the increasing importance of fish in the popular “pay by weight” restaurants where data collection is more fragile.

Under the Lula government the fish and seafood sector has formally assumed more strategic importance, evidenced in the creation of a special Secretaryship for its promotion. Brazil’s ocean fishing sector with a 200 mile limit, amounting to 3 500 000 million sq km, represents its weakest link given the precarious condition of its fleet and the dependence on heavy investments for its renovation. On the other hand, fish farming has exploded as we have seen above and now represents some 30 percent of total fishing volume, comprising both marine and fresh water fishing, with inland waters comprising 1 700 000 million sq km. While the sector has currently slight weight in terms of total GNP, 0.4 percent in 2002, this figure is projected to increase to two percent by 2006.

There are some 336 fishing firms registered in the Ministry of Agriculture (Gazeta Mercantil, 2002) and the sector is responsible for 800 000 direct and 4 000 000 indirect jobs according to the National Council for Fishing and Aquaculture (CONEPE). The current government proposes to increase these figures by 150 000 and 400 000 respectively.

Fish products are also considered to be strategic in the promotion of institutional markets (primarily via the Zero Hunger programme), particularly directed to school meals, with the intention of creating a new generation for whom fish has a more central dietary role. Significantly, the fish promotion campaigns initiated by the new Secretaryship have been organized in partnership with the supermarkets, confirming their pivotal role in food consumption trends.

In this study, we focus on the transformations in production and distribution channels consequent on the consolidation of modern retail and catering in Brazil, which in its turn has its dynamic in broader processes of transnationalisation and globalization. Within this focus the study will pay particular attention to the impact of these developments on small-scale producers dependent on the fishing sector in both coastal and inland communities. Coastal

communities may have been protected precisely by the lack of a sophisticated ocean fishing sector. On the other hand, without significant support it is difficult to see these communities adjusting to the new minimal quality demands, which involve more sophisticated electricity, freezing and storage capacity. In addition, the priority given by modern retail and catering to imported products, such as salmon, reinforce tendencies to the marginalization of these traditional communities.

The explosive emergence of a highly professional coastal shrimp-farming sector in its turn may represent new employment opportunities but it is less clear that traditional communities in Brazil's marshy regions (some 2 000 000 hectares) are being enabled to make the transition to sustainable fish farming practices. In the more recent period, both a greater awareness of the ecological damages associated with shrimp farming and the emergence of the diseases which have devastated Asian fish-farming in the past, may lead to greater priority for the protection of traditional fishing communities.

IBAMA's (Brazilian Environmental Control Agency) stricter approach to the concession of fish-farming licenses would suggest that this might now be the case. While in the coastal regions threats would seem to be the prevailing factor, opportunities are more evident in the case of fresh water fishing, comprising rivers, hydroelectric or urban drinking water dams and the promotion of pisciculture in rural areas.

Many conflicts can be identified here also between different users of these waters (amateur versus professional fishing, industrial pollution, the use of rivers as grain highways), but freshwater species are now being promoted both for the domestic market (surubim, *Pseudoplatystoma coruscans*) and for export (particularly so in the Amazon and the Pantanal), and fish farming in its turn is leading to the cultivation of species other than shrimps, such as carp and especially tilapia which, although currently directed to exports, has greater potential for popular domestic consumption.

Our study on Brazil begins with a review of the profile of the artisanal fishing sector in Brazil, identifying its principal characteristics and capturing its technological and regional heterogeneity. The issue of market insertion is then discussed, involving a description of different marketing channels. This section closes with a consideration of two case studies which exemplify the very different ways in which artisanal production participates in Brazil's fish markets.

The second part of the study on Brazil focuses on the impact of supermarket (and food services) dominance of fish markets for continued participation of the artisanal sector. While the artisanal sector is responsible for over 50 percent of fish production in Brazil, supermarkets now account for over 60 percent of fresh fish retail sales. On the basis of interviews with the major supermarkets in Rio de Janeiro and São Paulo, together with their representative associations, and drawing also on secondary data we examine the extent to which new barriers to access are emerging which threaten traditional forms of market insertion. In the final section, we review policy options for strengthening the participation of the artisanal sector in the light of these trends.

2 Artisanal Fishing in Brazil

2.1 The importance of fishing communities.

In the past and even in the current context of Brazilian public policies the productive character of fishing communities has tended to be underplayed – and these have therefore been regarded as the objects of social assistance rather than as productive units. A glance at official statistics shows this view to be completely incorrect.

In terms of production achievements, small-scale fishing communities, taken as a whole, have contributed more than any other fishing sector. In Brazil, nearly 50 percent of overall fish production has come from fishing communities, whilst only 25 percent has been caught on an industrial basis, with a further 25 percent coming from fish farms.

If we consider the less developed Brazilian regions, small-scale fishing is even more important: 85 percent of fish production in the northern region comes from fishing communities (only 9.2 percent corresponds to industry and less than 6 percent to aquaculture); in the north-eastern region these figures are respectively about 66 percent, 4.5 percent and 29.5 percent. Small-scale fishing production corresponds to almost 100 percent of total production in the states of Amazonas, Amapá and Maranhão.

In the south-eastern and southern regions the circumstances are different. In Santa Catarina, 73 percent of total fish production corresponds to the industrial sector's production, about the same occurring in Rio de Janeiro (64 percent) and Rio Grande do Sul (49 percent).

Aquaculture is predominant in Paraná, Piauí, Rio Grande do Norte and Ceará. The next table presents a decomposition of Brazilian fish production in each state, by the three main categories – aquaculture, small-scale and industrial⁶.

Besides its evident economic importance, small-scale fishery activity is also relevant for social reasons, especially in the Northeastern and Northern Regions. There are officially 381 fishing colonies – more than 60 percent of them situated on the northeastern coast. The number of fishermen associated with these colonies is estimated at between 250 000 (IBGE, 2000) and 270 000 (IBAMA, 2003).

⁶ For an overview on aquaculture in Brazil, see annexes.

Table 1 – Aquaculture, Artisanal and Industrial Fishing⁷: Total Production by Brazilian States (in tonnes, IBAMA/2003)

	Catches				Aquaculture		Total (t)
	Industrial	%	Artesanal	%	Total	%	
BRASIL	250.810,0	24,9	504.472,0	50,1	251.287,0	25,0	1.006.569,0
North	25.199,0	9,2	231.984,0	85,0	15.797,0	5,8	272.980,0
Rondonia	0,0	0,0	4.395,5	43,7	5.672,0	56,3	10.067,5
Acre	0,0	0,0	1.537,0	53,6	1.333,0	46,4	2.870,0
Amazonas	0,0	0,0	66.581,0	94,8	3.675,0	5,2	70.256,0
Roraima	0,0	0,0	262,0	20,8	1.000,0	79,2	1.262,0
Pará	25.199,0	14,5	146.705,5	84,2	2.323,0	1,3	174.227,5
Amapá	0,0	0,0	10.888,0	97,9	238,5	2,1	11.126,5
Tocantins	0,0	0,0	1.615,0	50,9	1.555,5	49,1	3.170,5
Northeast	12.866,0	4,5	188.078,5	66,0	84.181,0	29,5	285.125,5
Maranhão	0,0	0,0	56.850,5	97,6	1.392,0	2,4	58.242,5
Piauí	0,0	0,0	3.568,0	39,2	5.539,0	60,8	9.107,0
Ceará	2.082,0	4,8	21.861,5	50,0	19.809,0	45,3	43.752,5
Rio Grande do Norte	4.140,0	10,5	16.536,5	42,1	18.578,5	47,3	39.255,0
Paraíba	6.644,0	47,7	4.068,0	29,2	3.231,0	23,2	13.943,0
Pernambuco	0,0	0,0	9.265,5	54,5	7.737,5	45,5	17.003,0
Alagoas	0,0	0,0	8.730,0	80,5	2.116,5	19,5	10.846,5
Sergipe	0,0	0,0	4.489,0	69,5	1.970,5	30,5	6.459,5
Bahia	0,0	0,0	62.709,5	72,5	23.807,0	27,5	86.516,5
Southeast	63.507,5	41,3	52.995,0	34,5	37.246,5	24,2	153.749,0
Minas Gerais	0,0	0,0	7.714,0	50,1	7.687,0	49,9	15.401,0
Espírito Santo	0,0	0,0	14.829,0	83,2	3.003,0	16,8	17.832,0
Rio de Janeiro	40.752,5	64,1	16.973,0	26,7	5.884,5	9,3	63.610,0
São Paulo	22.755,0	40,0	13.479,0	23,7	20.672,0	36,3	56.906,0
South	149.237,5	58,1	19.468,5	7,6	88.194,5	34,3	256.900,5
Paraná	0,0	0,0	3.298,5	12,4	23.378,0	87,6	26.676,5
Santa Catarina	110.045,0	73,2	8.664,0	5,8	31.531,5	21,0	150.240,5
Rio Grande do Sul	39.192,5	49,0	7.506,0	9,4	33.285,0	41,6	79.983,5
Centre-West	0,0	0,0	11.946,0	31,6	25.868,0	68,4	37.814,0
Mato Grosso do Sul	0,0	0,0	4.744,0	64,1	2.659,0	35,9	7.403,0
Mato Grosso	0,0	0,0	5.825,0	25,6	16.902,0	74,4	22.727,0
Goiás	0,0	0,0	1.086,0	15,7	5.846,0	84,3	6.932,0
Distrito Federal	0,0	0,0	291,0	38,7	461,0	61,3	752,0

The Fishermen's National Confederation (CNP) roughly estimates the number of non-associated marine fishermen at 288 000. Recent data collected by the IBGE census (2000) points to a figure of 326 696 fishermen over the whole country (47 percent in the northeastern region), most of them the heads of poor families.

2.2 Fishing communities' standard of living: Social and economical features

A remarkable feature of the small-scale fishermen's standard of living concerns the intense rural-urban migration. The image of these workers as strictly rural inhabitants is no longer

⁷ For a list of the main Industrial Fishing Companies, see annex, page 36.

valid, especially in the southern regions – on São Paulo’s northern coast, 98 percent of artisans fishermen live in urban or peripheral urban zones, while this figure is about 83.5 percent in Santa Catarina (IBGE, 2001). In northern states, on the other hand, a larger proportion of fishermen still live in rural areas.

A number of convergent socio-economic factors can be adduced to explain this migratory movement. Tourism, the pollution of the rivers, land speculation and the establishment of natural conservation areas have driven small-scale fishermen and their families out of their original working territories. The lack of basic social services in rural places has also had a similar effect. On the other hand, the “promise” of a better way of life in the city, as well as urban productive and economic advantages, has attracted fishing communities’ families from rural areas. Among these advantages, one can also point to the proximity of larger fish consumer markets and an industrial infrastructure for production landings. Common negative consequences of this migration process are the generally bad living conditions which the fishermen and their families face in these peripheral urban areas.

As mentioned above, artisanal fishermen are typically heads of poor families, originally from rural areas though actually living in peripheral urban zones – with the exception being the northern region. We are considering a group of workers whose average illiteracy rate is about 44.6 percent for men and 53.5 percent for women (Ministry of Labour, 2003) of whom only 9 percent have finished primary school. Furthermore, artisanal fishing is predominantly a male activity, in general for men aged over 30 years. About 60 percent of the artisanal fishermen are aged between 30 and 50 years old.

2.3 *Biological conditions*

The composition of artisanal fishing catches has been changing throughout the country. In northern states, catches of some typical species, like the Piramutaba (*Brachyplathystoma vaillantii*) and the Tainha (*Mugil brasiliensis*), have decreased, while those of the Pescada Amarela (*Cynoscion acoupa*), Pargo (*Lutjanus purpureos*) and other pelagic fish have grown in importance. On the northeastern coast, small-scale fishing of lobsters, prawns (Camarão-sete-barbas, *Xiphopenaeus kroyeri*), Sardines and Peixe Espada (*Trichiurus lepturus*) have increased.

In the northern and northeastern states artisanal fishermen have taken advantage of less scarce fish resources. On the other hand, in the southern coast over exploitation of commercial marine species is evident. In the southeastern states a great number of species are considered to have collapsed. Catches of many types of prawns and pelagic species have decreased – in this case, including, Manjubas (*Curimatella lepidura*), Sardines, Corvina (*Micropogonias furnieri*), Cavalinha (*Scomber japonicus*) and others Scombridae. The Peixe Porco (*Balistes capricus*) has recently been one of the most frequently landed species.

With regard to southern states’ artisanal catches, the main marine products are the Corvina (*Micropogonias furnieri*), Manjuba (Engraulididae), Enchova (*Pomatomus saltatrix*), Castanha (*Umbrina canosai*) and Tainha (*Mugil spp.*). Most of these species are in a state of collapse, which is a clear sign that their continuous exploitation is unsustainable. While in the northern states the proportion of collapsed species is about 3 percent (North) and 12 percent

(north-east), in the southern states these figures are much higher – 29 percent in the south-eastern and 32 percent in the southern region.

As regards freshwater artisanal fishing, the biological conditions and the main captured species are displayed in the next table, for the most important Brazilian hydro-graphic basins.

Table 2 – Most Important Artisanal Fisheries per Hydro-graphic Basin

Main Basins	Most Important Commercial/Captured Species	Localization	Scientific Name	Bibliographic References
Amazonic	Corvina		<i>Plagioscion squamosissimus</i>	
	Tucunaré	-	<i>Cichla sp.</i>	
	Jaraqui		<i>Semaprochilodus nigricans</i>	Petrere (1978) and Bailey and Petrere (1989)
	Tambaqui		<i>Colossoma macropomum</i>	
	Piramutaba	Mainly at the Amazon River's estuary	<i>Brachyplatystoma vaillantii</i>	
Northeastern	Curimatá		<i>Prochilodus lacustris</i>	
	Pescada	Parnaíba River	<i>Plagioscion sp.</i>	Paiva (1973 and 1976)
	Piau		<i>Schizodon sp and Leporinus sp.</i>	
	Tilápia do Nilo		<i>Tilapia Niloticus</i>	
	Pescada do Piauí	Northeastern Lakes (açudes)	<i>Plagioscion squamosissimus</i>	
	Prawns		<i>Macrobrachium sp</i>	Paiva et al (1994)
	Tucunaré		<i>Cichla ocellaris</i>	
Paraná River	Pintado	Regular River	<i>Pseudoplatystoma corruscans</i>	Petrere e Agostinho (1993)
	Dourado		<i>Salminus maxillosus</i>	
	Corvina		<i>Plagioscion squamosissimus</i>	
	Mandis	Upper reservoirs	<i>Pimelodus maculatos</i>	Various (GEO Brasil, 2002)
	Curimbas		<i>Prochilodus lineatus</i>	
	Sardela		<i>Hypophthalmus edentatus</i>	
	Corimba	Itaipú reservoir	<i>Prochilodus lineatus</i>	Agostinho et al (1993)
São Francisco	Corvina		<i>Plagioscion squamosissimus</i>	
	Pintado		<i>P corruscans</i>	
	Curimatá	-	<i>Prochilodus marggravii</i>	Sato e Godinho (forthcoming)
Eastern	Dourado		<i>Salminus brasiliensis</i>	
	Traíra	-	<i>Hoplias malabaricus</i>	
	Bagres		<i>Pimelodidae</i>	Petrere (1989)

Basic Sources: GEO Brasil (2002) and Projeto BRA/90/005

2.4 Landing infrastructure

Landing infrastructure is precarious in Brazil for all types of fishing activity, in particular artisanal fishing. On the north-eastern coasts, for instance, fish are very often landed and negotiated on the beach. In the northern region, the *geleiras* still exist – a small boat equipped with ice storage and controlled by urban merchants, where the artisanal's production is first

purchased, frequently at very low prices. Poor infrastructure is also common in peripheral urban areas which are not usually adapted for fishing activity.

2.5 *Fishing communities: Commercialization*

Fish marketing channels are little analysed and understood in Brazil, where overall information on this issue is collected and recorded only on a rudimentary basis. The situation is even worse when considering the artisanal fishing scenario.

Primary sources of data depend exclusively on case studies, which reflect very particular circumstances, given the heterogeneity of situations and the different marketing channels to which the fishing communities have access. For both these reasons – lack of information and high heterogeneity – surveying these channels and building an even incipient map is a complex and uncertain task.

Nevertheless, some stylised facts regarding the fishing communities can be sketched out. First of all, as previously mentioned, there is no doubt that fish marketing channels include a range of heterogeneous attributes, related to regional and local specificities, landing features, variety of species, fishing tackle and techniques and social practices. As a result, rather than one overall pattern, different experiences and conditions coexist in Brazil.

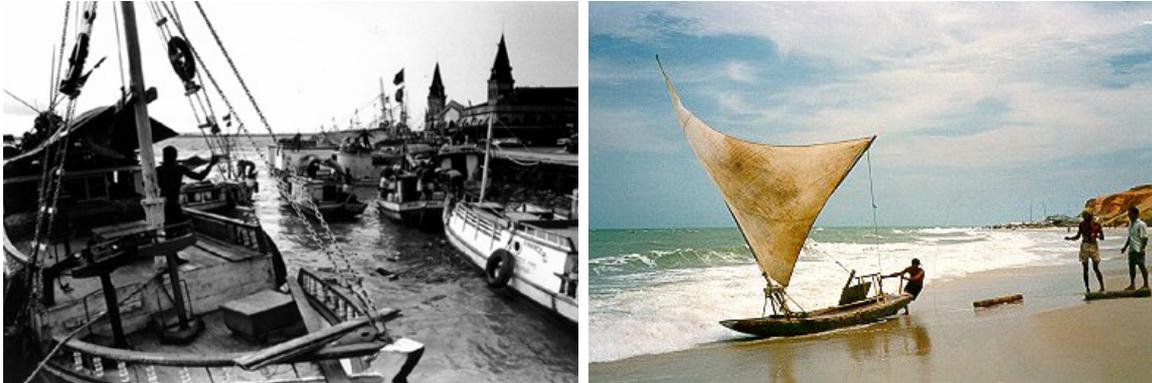
In many cases, fishing communities are extremely dependent on middlemen's support and benevolence: in some regions small-scale fishermen and their families receive resources from interested middlemen in the form of equipment, fishing tackle and money for periods when fishing is forbidden. Middlemen are very often owners of the boats, the equipment and, sometimes, own small retailer establishments – this is commonly the case in Pará, Ceará, Rio Grande do Norte, Bahia, Pernambuco, and even in the southern states.

Besides this relationship of dependence, marketing channels which have their starting point with small-scale fishermen are often precarious: unsteady production, low or variable quality, frequent losses, deficient storage and weak landing structures. In this context, one can easily understand the hypothesis of the very limited bargaining power of artisanal fishermen at the first stage of marketing negotiations. For example, small-scale fishermen working at the mid-part of the São Francisco River obtain only 5 percent of the final product's price (Projeto BRA/90/005).

The distance between fishermen and final consumers is generally mediated by a large number of middlemen. In Pará, for example, small-scale fishermen sell their production to the *geleiras*. From this point forward, the product goes on to the *balanceiro*, the *retalhista* and, finally, to the retailer market, passing by many types of transport and formal and informal negotiations.

Very often, between fishermen and the *geleiras* there are the *consignatários* – middleman who finance the production and sell it to the *geleiras*. An important wholesaler centre in Belém (Pará's capital) is the *Ver-o-Peso* market, a meeting point of fishermen, *geleiras* and *consignatários*. Fish marketing patterns in the country as a whole are characterised by long circuits involving many actors.

Figure 1 – Geleiras (in Pará, left) and Jangadas (in Northeast, right)



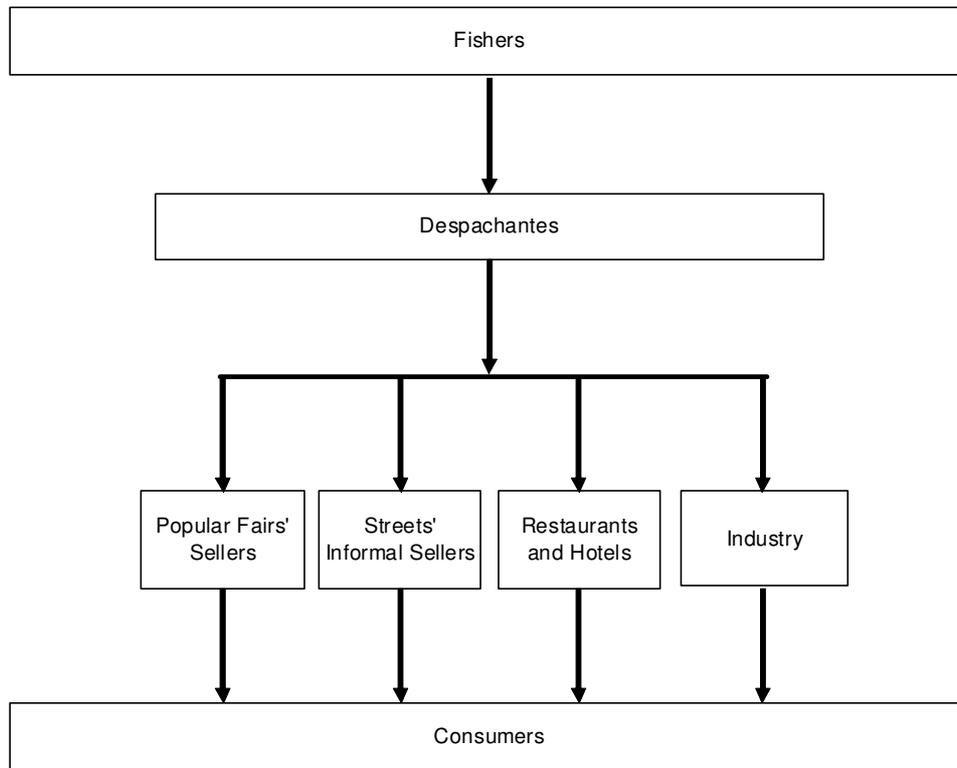
Fish marketing channels in Belém and Manaus (Amazonas' capital) are similar. In both cases, there is a long time lag between fishing and first trading – sometimes 12 days and losses are reckoned at 30 percent. In large cities, local markets work with small and inadequate fridges; in small cities fisheries are traded basically fresh, often alive.

In Manaus, production is principally disembarked at the Panair market (Feira da Panair), on the Amazon River border. Nightly boats arrive at the port and the negotiation between fishermen and middlemen (*despachantes*) begins. Sometimes these boats are themselves middlemen, who travel the Amazon waters searching for small-scale fishermen and their production – as the geleiras do; sometimes they are the primary source.

At the Panair market, agents are supposed to be price-takers and the wholesaler market, competitive. The *despachante* negotiates with fishermen and passes on the production towards the retail market.

The production is first purchased while still onboard, through a kind of auction system. The transaction is in cash and the *despachante* retains ten percent of the total revenue. The *despachante* very often supports fishermen with food and diesel for their next journey; in which case the final commission is 15 percent rather than ten percent. The following figure sums up the fish market chain in Manaus (which is closely related to the Belém case).

Figure 2 – Fisheries' Marketing Chain in Manaus



Source: Projeto BRA/90/005 apud. Magnarita e Flores (1989)

However, there are attempts to shortcut these circuits. In spite of a lack of entrepreneurship and the feelings of insecurity, artisanal fishermen, moved by vital necessities of subsistence, have searched for alternative commercialization channels. In some cases, they gain direct access to the consumer market, themselves selling their production at popular fairs or even from their own houses – as for example, the artisanal fishermen who work on the Paranoá Lake (Brasília) and on the São Francisco River. In these cases, the consumer market accessed is typically low-quality and low-price: peripheral urban areas, low-income buyers and poor communities.

On the other hand, the shortcut can be in the form of a tight professional relationship between fishermen and the retailer market. In Pará, there have recently been some cases where fish trading companies from the state's capital, Belém, send trucks directly to the beaches in order to collect the fresh production. In the south-eastern region, some marketing strategies have moved in this same direction.

In São Paulo and Rio de Janeiro firms buy the fresh small-scale production through branches located at central landing posts. Informal truck drivers are important in this connection, buying directly from fishers and selling at central wholesaler markets.

It is difficult to record all the different commercialization channels that small-scale fishers have access to. It is still more difficult to define the percentage of total production which passes through each existing channel. Two case studies in the next section will serve as examples and highlight different fishery's commercialization chains, regarding distinct regions, markets and distribution frameworks.

3 Artisanal Fishing in Brazil: Case Studies on Marketing Chains

We have selected two case studies in order to illustrate distinct marketing chains of fish products that have their starting point with fishing communities. The first one is rudimentary, informal, small-sized and based on freshwater species. The second is more complex, running from a marine fishing community towards one of the largest fish retailer markets in Brazil.

3.1 Artisanal fishing and commercialization at the Paranoá Lake

The Paranoá Lake is an artificial construction dated from 1959, in the very heart of the Federal District (Brazil's capital). Situated on the urban area of Brasília, the lake is fed by the Paranoá River, 21 streams and five tributaries.

Figure 3 – Brasília and the Paranoá Lake



Source: Walter (2000)

Around the lake, some of the richest and the poorest dwellings in the city coexist. Amongst the latter, are entire families who depend on small-scale fishing activities. The number of artisanal fishermen is calculated at 92 and their families have an average size of five people. Nearly half of them are illiterate or have incomplete primary schooling.

Artisanal fishing at the Paranoá Lake is concentrated on a small number of species. The Tilapia do Nilo (*Oreochromis niloticus*) is the most frequently captured species – around 85 percent of the total, followed by the Carp (*Cyprinus Carpio*, 11 percent) and the Tilapia do Congo (*Tilapia rendalli*, two percent). The equipment most used includes the *canoe*, roughly made of compressed wood, and the *tarrafa*⁸.

In terms of marketing chains, the small-scale fishing activity at the Paranoá Lake represents an example of simplicity and independence. Artisanal fishermen own their equipment and control their own production: as a consequence, the so called middlemen's financial support does not exist and fishermen are free to trade their production with whomever they choose.

Along the whole marketing chain there might be, at the most, only two middlemen between artisanal fishers and consumers. The Paranoá Lake is the only source of local fish in the Federal District and its production represents less than two percent of the total local consumption. Local fish supply is extremely limited and there are no exports to other regions.

Figure 4 – Storage, Processing and Commercialization



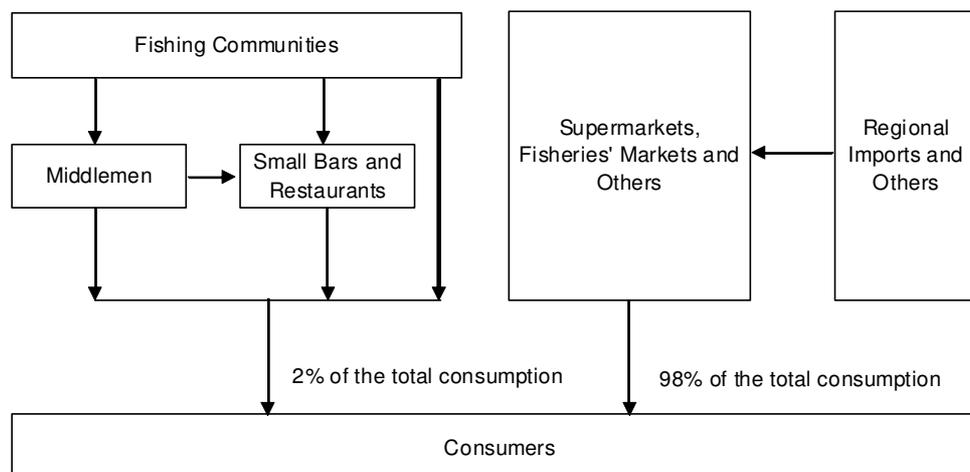
Source: Walter (2000)

Walter (2000) estimated that around 85 percent of the artisanal fishermen sell their production directly to consumers; mostly in popular markets, but also in the streets and to a lesser extent to middlemen and small bars. Sales can take place also at the Lake's border (7.5 percent) or in the fishers' homes (36 percent).

Prices and sale's strategies are different, depending on the types of species traded and the place of commercialization. The figure below sums up the main channels of fish marketing in the Federal District.

⁸ The tarrafa is a very popular fishing net. When it is thrown over the top of the water it forms a circle and closes naturally while get deeper and is collected by the fisherman. This technique is usually found at estuaries, sea borders and shallow waters.

Figure 5 – Paranoá Lake and Marketing Chains



In this case study, we can see a direct relationship between fishermen and consumers. Furthermore, there is a clear distinction between the artisanal marketing chain and the *mainstream* chain. First, this small-scale production does not reach the conventional retail markets and supermarkets. On the other hand, a large percentage of consumers who pay for the artisanal production, do not consume fish at supermarkets.

Walter (2000) interviewed consumers who had bought fish directly from artisanal fishermen or at popular markets supplied by the Paranoá Lake's small-scale production. The author found that those consumers lived predominantly in poor neighbourhoods; around 65 percent of them were illiterate or had incomplete primary school education. Given this context, nearly 50 percent replied they had been buying fish exclusively at those popular markets; 25 percent said they bought fish also at supermarkets – where they considered the prices to be higher and the products not so fresh.

In conclusion, the Paranoá Lake case although not complex is important. Many families depend heavily on this small-scale fish production for their survival; and on the other hand, this production supplies a large and marginal consumer market of low-income families. The organisation of this small-scale marketing circuit is entirely independent of mainstream commercialization channels.

3.2 Macaé: Fishing communities and the retail market of Rio de Janeiro⁹

The city of Macaé has a population of 150 000 inhabitants and is located on the northern seacoast of the state of Rio de Janeiro, about 200 km from the city of Rio de Janeiro. Macaé makes up part of a group of other coastal municipalities where fishing has been a traditional and important activity.

⁹ Information about Macaé fishing activity is based on the Report UFRJ/Soltec/Pólo Náutico/ Nupem (2005).

Figure 6 – The State of Rio de Janeiro and Macaé



In comparison to the previous study case, socio-economic relations are much more complex in Macaé. There are a large number of social actors involved in the fishing activity: boat and canoe builders, public inspection agents, fishing cooperatives and colonies, small ice and raw equipments factories, frozen fish manufacturers and an important off-shore field of petroleum and gas production. Amongst all these actors, artisanal fishermen and their families are the weakest social units, dwelling in low-income households and living in precarious conditions.

The number of artisanal fishermen in Macaé is estimated at nearly 2000. Considering those who are beneficiaries of public social policies, we can say that 82 percent of them have incomplete primary school education and 10 percent are illiterate. Production is very varied in terms of marine species.

In terms of marketing channels, small-scale fishing in Macaé depends heavily on middlemen. In general, there are no restrictions on any species caught and the production is not processed – basically only fresh fish are traded. Most of the middlemen involved in the first stage of negotiations consist of independent truck drivers, not officially recognized as formal firms. From Macaé and other nearby municipalities, production goes on mainly to the city of Rio de Janeiro, Niterói city and also, to São Paulo and Minas Gerais. In order to understand better the subsequent stages of the fish marketing process which begins in Macaé and surrounding fishing communities, we should briefly summarize the way fish marketing is organised in the city of Rio de Janeiro.

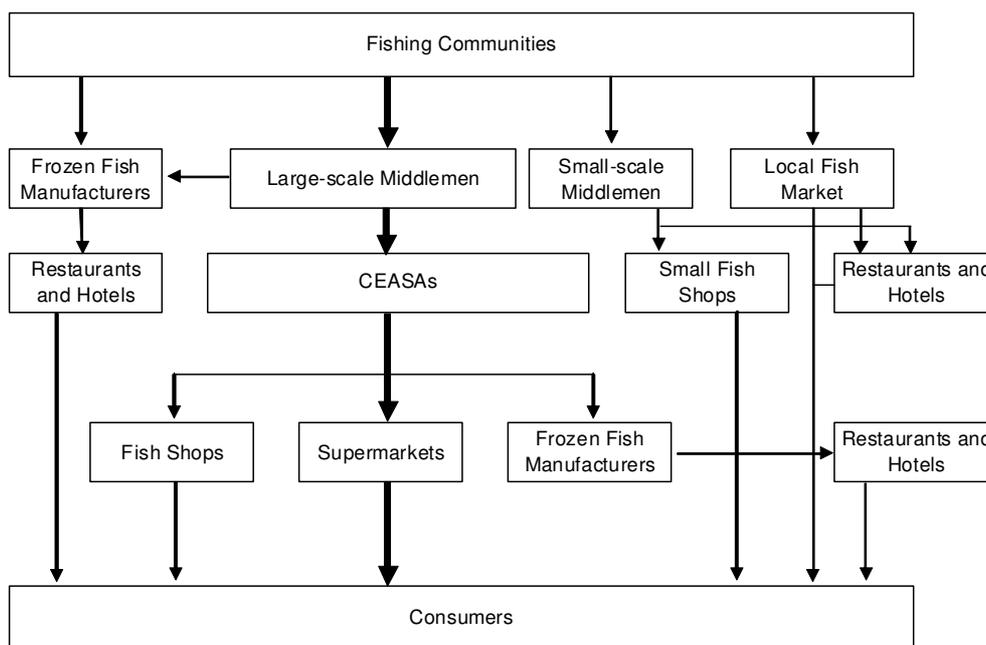
The metropolitan region of Rio de Janeiro has around 13 000 000 inhabitants and represents an important centre of fish distribution and consumption, receiving the production landed not only at ports in Rio de Janeiro, but also from many other states, ranging from Bahia, on the north-eastern coast, to Rio Grande do Sul, in the South.

The CEASA (Centrais de Abastecimento) is the most important wholesaler *entrepôt* in the whole marketing chain that exists in Rio de Janeiro and it is where the distribution of fish and agricultural products is heavily centralized. It is physically located in Irajá, a district within the metropolitan region of Rio de Janeiro and connected to an important access road – Avenida Brasil.

In the CEASA there are dozens of boxes and kiosks where fish products are traded everyday through an auction system. Around 70-80 percent of traded fish comes from São Paulo and the southern states, mainly Santa Catarina and Rio Grande do Sul.

In line with this marketing dynamic, the production of the small-scale fishing communities of Macaé is largely channelled to the Irajá and other CEASAs. The figure below summarises the main fish marketing channels that have Macaé and surroundings areas as their starting points and from there move towards large wholesale centres and, also, to other smaller wholesalers centres and retail markets.

Figure 7 – Macaé Fishing Communities and Commercialization Chains
(Darkest arrows representing principal flows)



Source: UFRJ/Soltec/Pólo Náutico/ Nupem (2005)

At the Rio de Janeiro CEASA 60-70 percent of all the fish products are purchased by supermarkets, and 30-40 percent is negotiated by restaurants and bars, fishmongers, fish markets and independent and informal sellers.

Concerning the retail market in Rio de Janeiro, there are almost 200 popular street markets per week and two important fish markets. Around 150 fishmongers are associated with some of the CEASA’s kiosks, as well as more than 2 000 informal sellers, who, on a daily basis,

buy fresh fish at the CEASA and sell it in the streets of peripheral urban zones, low-income neighbourhoods and popular markets. The below list provides an outline of the retail market structure of Rio de Janeiro.

Fisheries Retailer Market in Rio de Janeiro
(Fresh products, participation in percent of total tonnes)

Retail Market Type	Percentage
Supermarkets	50.44
Independent Sellers	15.62
Fish Shops	15.21
Fairs	9.39
Fish Markets	6.94
Bar and Restaurants	2.39

Source: INFOPECSA (1998)

The Macaé case illustrates a complex of economic and logistical connections and demonstrates the long marketing circuits which exist between fishing communities, supermarkets and more traditional forms of retail. Fish production originating in Macaé and surrounding municipalities is heavily channelled, via middlemen and an important large-scale wholesaling centre, into large and small-scale retail markets. Data towards the end of the 1990s suggested that more than 60 percent of fish traded in the CEASA was purchased by supermarkets, which accounted for more than 50 percent of the retail market¹⁰.

4 Supermarkets and the Dynamic towards Reorganization of Distribution and Production Circuits for Fresh Fish Products

Systematic secondary data on the position of large-scale retail in the fresh fish market is virtually non-existent in Brazil and our analysis is primarily based on interviews (see questionnaire on page 36) conducted with category managers from an intentional sample of supermarkets in Rio de Janeiro and São Paulo, which included trans-nationals, leading national and also regionally-based firms. The sample also included supermarkets which operate in poor urban districts. Respecting the wishes of the interviewees, the supermarkets will not be identified by name in this report.

As we indicated in our introduction, the guiding thread of our interviews focused on the degree to which large-scale retail is transforming fresh fish distribution channels and the impact that this is having, or is likely to have on the artisanal fishing sector. The key reference for this line of interrogation has been provided by the research into fresh fruit and vegetable markets in the developing countries carried out by Reardon and colleagues.

¹⁰ For an overview on fisheries' consumption in Brazil, see annexes.

A parallel research programme has been conducted by the IDS/Sussex within the framework of global value chain analysis focusing on the integration of pre-packed fresh fruit production from Africa into British supermarkets supply networks (Barrientos, Dolan and Humphrey). Marsden and Cavalcanti (2004) have been developing similar work in the case of Brazilian fruit exports. The conclusions from these studies would suggest that traditional commercial circuits are being bypassed in favour of more direct relations between retail and primary production, based on new quality and logistical criteria which impose a heavy selective pressure on farmers, particularly small-scale, undercapitalized and traditional knowledge-based operations.

Our questionnaire also took into account a review of secondary literature on modern retail and the fresh fish sector in the industrialized countries (Wilkinson, 2004). Fish and fresh fruit and vegetables share a key characteristic in that they are both perishable goods and depend on the efficient coordination of the cold chain. The fish sector, on the other hand, remains a predominantly extractivist activity, (although this is rapidly being challenged by the explosive growth of fish farming), where volume, quality and type of fish available remain subject to high levels of uncertainty in spite of ever more precise information and tracking systems. These factors call in question retail's fundamental strategy for ensuring consumer allegiance - continuous availability and consistent quality.

European supermarkets have responded to these challenges on two fronts. They have begun to contract directly with primary producers bypassing the fish auctions, although these latter are still predominant. In this way, they are able to plan supplies and also adopt traceability criteria, important not only for demonstrating the freshness of the product but also for ensuring conformity with sustainable fishing practices and regulations regarding fishing zones. United States labeling regulations are similarly demanding a declaration of origin for fish products.

As civil society groups increase their monitoring of supermarket purchasing practices, the issues with regard to ocean fishing go beyond adherence to permitted fishing zones and species and extend to the technologies employed for capture - types of nets, slaughter and preservation practices. Supermarkets, such as Sainsbury's in England, have adhered to the Marine Stewardship Council (MSC), launched by Unilever and the World Wildlife Fund, which involves the development of best (sustainable) practices for capture fishing. In the case of capture fishing, supermarkets are pushed in this direction by the demands of their supply chain management. It must be recognized, however, that both leading seafood processors (Unilever) and NGOs (Greenpeace, WWF) have played the principal role in moves to sustainable fishing practices.

The trends to traceability, as in the EU TraceFish initiative, are also part of a broader movement to ensure new levels of food quality and safety. On the other hand, supermarkets are driven equally by volume and price criteria which in many cases are leading them to bypass local supplies in favour of global sourcing from the large fish factories. In this case, quality cedes to the dictates of logistics and price, with losses in freshness (prefrozen) and occasionally also convenience (block fillets have been argued to be more prone to the eventual presence of bones), opening up new niches for the high quality fishmonger based on fresh local supplies. With regard to capture fishing, therefore, the supermarkets in the

industrialized countries are promoting a shift in distribution channels, which bypasses the fish auction and traditional intermediaries in favour of (in)direct contracting with fishing fleets which includes adherence to specified best practices.

At the same time, global sourcing with factory trawlers begins to displace local production and processing, which becomes transformed into a niche “geographical indication” product. Independently of the degree of direct contracting with fishing fleets, however, the nature of modern retail and food service demand, even when this is filtered through traditional fish auctioning channels, accelerates tendencies to global sourcing. In the case of Grimsby, home to one of Britain’s main fish auctions, 95 percent of the fish auctioned no longer comes from local catches and its fishing fleet has been reduced to only 20 vessels (IntraFish Industry report, 2003).

The second major strategy adopted by modern retail and food services is the promotion of fish farming. This latter was an endogenous response to the collapse of capture fishing stocks and also represents a “product extension” of the industrialized agriculture model typical of white meat production. Indeed, many of the same firms (genetics, chemicals and feed) are involved in the development of fish farming, which has also received decisive support from governments and multilateral agencies. In principle, fish farming not only overcomes the uncertainties in supply, characteristic of capture fishing, but allows for the simplification of products lines which facilitates the consolidation of eating habits.

Instead of dozens of fish types, which may or may not be available, each with their specific culinary characteristics, supermarkets can now promote new eating habits around key fish farming products with guaranteed supplies and homogeneous quality. The transformation of salmon and prawns from previously luxury products into daily staples has been the most marked expression of this trend, and once again global sourcing is the key, with developing countries playing a leading role. For many such countries receipts from fish products have become a principal export earner.

The commitment of supermarkets to fish farming has been evident in their reluctance to adopt origin labeling in the wake of adverse publicity with regard to the environmental and food quality problems associated with fish farming. In their different ways, salmon and prawns have become the lead products of supermarkets and food-services alike both because they have long been associated with luxury products and because they are minimally affected by the twin obstacles to consumer fish food acceptance – smell and bones.

The success of these products means that modern retail and food services are “locked-in” to the fish-farming model and will become increasingly vulnerable to the environmental and health critiques now associated with these productive practices. Their reputation for the promotion of sustainable capture fishing (although subject to critical appreciation by leading NGOs such as Greenpeace) will now have to be extended to fish farming given the central role of these products in their marketing strategies.

Britain now consumes 2 500 000 fresh cut sandwiches daily and prawn sandwiches hold second place in sales. In this sense, these new fish products are central to modern retail’s strategy to redesign food consumption around chilled and fresh ready prepared meals based

on flexible short cycle “recipe-style” product lines. Within this strategy the leading food producers are no longer the long life-cycle brand leaders such as Nestlé, Unilever, Kraft, but the relatively anonymous suppliers of ready prepared foods (Northern Foods) who become the major bulk purchasers of food ingredients, including the above mentioned fish products.

Within the context of chilled and fresh, pre-prepared and pre-packed meals fish products lose their specificity (especially negative associations with smell and bones) and become an interchangeable component of flexible meal services. For this, continuous supply and constant quality are essential and modern food services accordingly accelerate the shift to fish farming.

Insights therefore from evidence accumulating with regard to the fresh fruits and vegetable sector in developing countries and a review of relevant literature on fish products and retail and food services in developed countries informed the interviews carried out in Brazil’s leading cities of São Paulo and Rio de Janeiro.

In the introduction we presented an initial appreciation of the expansion of modern retail in Brazil and a number of additional characteristics of the Brazilian situation need to be taken into account before discussing the results of our interviews. In the first place, Brazil’s metropolitan cities are primarily positioned on or near the coast, or in the case of the Amazon on the principal rivers, which means that fish eating habits have been heavily formed by their surrounding habitats – freshwater fish in the case of the Amazon and sea-fish in the case of Rio de Janeiro and São Paulo, to which key historical influences should also be added – the pre-eminence of dried salted cod in Rio de Janeiro and sushi in São Paulo.

While habits for pre-prepared foods are quite changeable (explosion of sushi in Rio de Janeiro, tilapia ready-to-heat frozen fish nuggets) this would not seem to be the case for home cooking, where family traditions and cooking expertise, or its lack, exert a strong path dependence. The introduction of fresh water fish farming products onto the supermarket’s fresh fish counter in Rio de Janeiro, therefore, encounters special difficulties, although resistance would seem to be less marked in São Paulo, whose population is more varied and while close to the coast has many of the characteristics of an inland city.

A second factor, which needs to be taken into account, is that although supermarket growth has been spectacular since the 1990s it exhibits crucial limiting features when compared with modern retail in Europe or the US. Brazilian supermarkets have made great inroads into traditional retail outlets and most branches have the full range of fresh product counters – fruit and vegetables, meat, dairy products, bakery, fish.

On the other hand, what is becoming the defining characteristic of modern food retail in Europe – the shift to meal services based on fresh or chilled pre-packed, pre-prepared products – is only in its infancy, and frozen ready-to-heat offerings still predominate (Burch and Lawrence, 2005). These comprise typically industrialized foodstuffs and within this category fish products have a quite minor position. Fresh fish, on the other hand, has established itself as a necessary component of the self-service, food by weight restaurants, which dominate the mid-day meal options in Brazil. Some of these are now developing into restaurant chains and an analysis of their supply chain would be an important complement to the present study.

Our interviews with supermarkets, therefore, dealt primarily with the wet fish counter sector. Fish products are divided between four category managers. Cod, which is a major item of fish consumption in Rio de Janeiro, falls within the category of dried and salted, primarily meat, products. Frozen fish, in its turn, is managed within the frozen foods category. Tinned fish is similarly incorporated within the tinned food sector. It was not possible to interview each of these category managers and in general interviewees were either not inclined to discuss or not cognizant of marketing decisions in other category sectors. Our interviews, except in the case of one smaller supermarket, were, therefore, limited to individuals responsible exclusively for the fresh fish sector.

What emerges clearly from the interviews is that while the fresh fish counter is a necessary component of the one-stop shopping concept it is not strategic in the way that dairy products, meat and fruit and vegetable are. Fresh fish's share in total takings ranges from 1 – 2.5 percent, which reflects the low per capita consumption levels in these States. In addition as we saw above, per capita consumption has declined over the last thirty years, exactly the period in which poultry consumption increased from 2 kg per capita to 32 kg per capita. As also discussed earlier, differently from meat consumption, in the case of fish, relative expenditure declines as income rises. This situation has two consequences. In the first place it is difficult for the fresh fish sector to compete for funds in the form of publicity to stimulate market growth. Secondly, low per capita consumption has as its corollary a lack of culinary traditions and skills. All the interviews draw attention to high levels of ignorance as regards fresh fish preparation (cook, stew, fry?), and support the secondary data which points to the importance of canned fish in total fish consumption.

The vagaries of capture fishing also pose severe problems for market growth strategies. The inability to ensure constant supply, either through the seasonal bans aimed at protecting the reproduction cycles of different species (all the interviewees declared their rigorous adherence to these regulations, with fish being monitored both for banned species and for size) or simply as a result of the permanent variability of catches, makes difficult the construction of food habits. Irregular supply is also reflected in sharp price oscillations where consumers are unable to form any notion of prices or plan expenditure. One example given was of a price oscillation for one common type of fresh fish of R\$14, R\$5 and R\$16 in the three weeks prior to our interview. In addition, in this sector, price bargaining occurs within overall parameters defined by supply and demand, with the supermarkets unable to dictate price targets. Relative prices also work against growth in fish consumption, with white meats two or three times cheaper and red meat also a more competitive option.

Interviewees with long experience in the sector identified a continuous decline in supply of domestic catches of fresh fish. Stock depletion in the coastal waters has forced vessels into fishing at greater distance, involving higher costs (diesel, food, wages) and lower quality (longer time from capture to sales). In addition, Brazil's industrial fleet is seen to be technologically ill equipped leading to greater dependence on imports, merluza being a prime example, which is almost entirely imported and arrives processed, frozen and packaged. Shortage in supplies was, on the other hand, also attributed to the more favourable conditions for exports to Europe.

While all interviewees identified street and municipal markets as offering continued competition, which was associated in most cases with long standing purchasing traditions, their viability was seen to depend increasingly on fiscal benefits in the form of a variety of sales tax exemptions. In addition, hygiene was seen to be a major problem, especially in the case of street markets where fish are exposed to the sun for hours on metal counters without ice bedding¹¹. In all cases, supermarkets were seen to have the competitive edge, gaining an ever increasing share of the fresh fish market which was attributed both to superior hygiene/quality and the latter's greater capacity for providing portioned fish pieces.

While supermarkets in Rio de Janeiro and São Paulo show themselves to be subject to many of the vagaries of supply and demand in the fresh fish market, they have increasingly imposed their own criteria on marketing practices and have largely shifted to the development of independent marketing and distribution channels.

At the minimum level, all supermarket suppliers must comply with the full range of government regulations, fiscal, sanitary and environmental. (One supermarket promotes a business culture designed to minimize the social pressures consequences on frequent transactions with the same parties, explicitly prohibiting the acceptance of gifts). Secondly, supermarket conceptions of quality were said to be non-negotiable and contractual agreements allow for the return of any merchandise, which does not pass inspection on delivery, with veterinary staff monitoring these deliveries. Prices, on the other hand, are subject to permanent negotiation with the supermarkets using their buying power to secure the lowest prices. Payment is credited to the supplier's bank account normally within thirty days although this period may extend to fifty days.

Purchasing practices vary but there is a clear tendency to move closer to the source of supply. The lower limit case is provided by a local supermarket chain, which operates through an auctioneer at the traditional wholesale auction, CEASA. The auctioneer has been under verbal contract for three years, replacing a prior auctioneer dispensed as a result of problems over quality. In this case, the supermarket does not participate directly in the auction, merely indicating the required purchases which may be modified according to availability and freshness based on the auctioneer's own judgment. A dominant Rio de Janeiro supermarket, on the other hand, has its own office, complete with veterinary staff and storage capacity, in the city's principal wholesale auction, CEASA, and conducts its own daily purchases, based on requests from each of its branches. As the single most important purchaser it has considerable negotiating power and operates through registered suppliers, all of whom must have the required legal, sanitary, transport and fiscal documentation.

The auction is run by the Rio de Janeiro Association of Fish Auctioneers (APPAERJ) and opens on the sound of the bell at 17.00 each day. The auctioneers, distinguishable by their uniform, supervise the display of fish samples and communicate their prices individually to would be buyers, which in addition to supermarkets include restaurant owners and fish – mongers. Pictures of the fish whose purchase is in the period of prohibition are posted on the walls together with the relevant decrees, as are specified minimum sizes for catches of different fish species.

¹¹ Curiously the lack of ice is understood by some consumers as an indication of freshness with the suspicion that the ice beds used by the supermarkets serve to camouflage lack of freshness.

While the communication of prices and the visual presentation of the merchandise on offer are the only formal indicators allowed to be disclosed, in practice other criteria may be taken into account. Buyers may well inspect the lorries and make choices based on fishing practices since these influence the quality of the product on offer. Health criteria determine that only whole fish can be sold, with the exception of salmon, which is eviscerated but with the head left intact.

The Auctioneers Association has some 55 members and is a closed club with entry dependent on the purchase of an outgoing member's place. An auctioneer may have only a number of supplier clients, but he may also finance fishing boats and even own fishing boats. More decisive, however, he must have considerable working capital since he only receives payments after an average of thirty days.

While, in principle, there are a considerable number of auctioneers and the formal rules favour transparency and price competition, the precise mechanisms of price formation are unclear. In the case of São Paulo, for instance it was suggested that the auction is controlled by two or three leading figures. In Rio de Janeiro, on the other hand, supermarket buying power may well limit the potential for collusion by the auctioneers.

While the percentages vary seasonally, as much as 80 percent of the fish on sale at the CEASA can come from outside the State of Rio de Janeiro, with the bulk of this originating in Santa Catarina, the home of Brazil's largest industrial fishing fleet. By far the greater part of the fish traded at the auction therefore comes some 1 500 km by road transport. The cooler sea temperatures in this State are said to be the origin of higher quality fish, although the fish which make it to Rio de Janeiro, north of São Paulo, will tend to be at the lower end of this quality range. It is clear, therefore, that local supplies of any kind only play a minor part in the State's leading fish auction. It should be noted, however, that there is an auctioneer who is specifically based on suppliers from Macaé, a center of artisanal-fishing discussed in the first section of this Report. Fish from fresh water farming systems are also marketed in the CEASA.

Dependence on the traditional fish auction is not the strategy of all Rio's supermarkets, however, and one in particular is moving to establish its own distribution platform, motivated both by quality and logistical considerations. On the quality issue it is argued that the CEASA, in spite of its regulation on the sale only of whole fish, is very insalubrious. A distribution platform would also allow contracts to be closed directly with suppliers eliminating the intermediaries of the auctioneer system and also speeding up the time from ship to shop, thereby improving quality. Although this supermarket still negotiates most of its fresh fish through the CEASA, relations with other suppliers are being managed with the aid of a GNX e-business system. Suppliers, conditional on acceptance of the supermarket's entry conditions, which, in addition to legalized documentation for all activities, includes provisions for quality inspection and the adoption of stipulated quality levels (for example HACCP), are registered on annual, non-exclusive contracts. Daily orders are received from each supermarket branch and are then negotiated with the registered suppliers on the criteria of lowest cost, volume and delivery. Although not currently required, this system will permit the progressive inclusion of best fishing practices (types of equipment, methods of slaughter).

In São Paulo, the equivalent auction center, CEAGESP, already plays only a minor role in the supply systems of the leading supermarkets, 20 percent in the case of one leading chain. Direct contact with producers allows the supermarkets to develop partnership relations with suppliers permitting greater responsiveness to perceived consumer demand. The CEAGESP, however, is still decisive for small supermarket chains in São Paulo and municipal markets assume the same role in the interior of the State.

Given the recent fusion/acquisition between the leading supermarket chains in Rio and São Paulo we can expect an acceleration of this bypassing of the traditional wholesale markets in favour of direct negotiation with suppliers at the landing points. Intranet e-business systems, such as the GNX already in use by one leading supermarket chain, permit the auctioning function to be assumed online by the supermarket category manager. With access to this market premised on fulfilling the conditions for online registering, the supermarkets are able to impose their own minimum quality and supply criteria.

In the case of São Paulo, the shift away from dependence on the traditional wholesale fish market would appear to be closely related to the greater weight of supplies from industrial fishing fleets and firms, with less importance being attributed to coastal, artisanal fishing supplies. In Rio, where the wholesale market is still of central importance, greater weight was attributed to coastal, artisanal supplies, although with marked, seasonal variations. While, therefore, artisanal fishing-communities are nationally responsible for over half of domestic fish supplies (considerable more than the share of family farming in agricultural supplies), this is not reflected in their participation in the leading supermarkets' supply chains, although in all cases their share is still considered to be relevant.

More significant was the importance assigned to imports, which in the São Paulo interviews tended to assume pride of place, over both industrial and artisanal domestic supplies. Dried cod is a traditional Brazilian import dating back to colonial times, which maintains its popularity both in traditional dishes and in the form of "cod balls", sold in frozen form in supermarkets or served as a snack in restaurants and bars, where it has become an essential item of food service menus. While cod, therefore, is a traditional food which has been adapted to modern eating patterns, salmon fillets have made an explosive entry into the urban diet of these two leading Brazilian cities, especially so in the case of São Paulo. In this way, Brazil has begun to internalize one of the major tendencies identified within the global fish food chain - the replacement of fresh white capture fish with farm produced salmon.

The change in marketing channels is dramatic. One importer is responsible for the whole of Rio de Janeiro's supplies and the supermarket interviewed on this issue contracts its supplies directly with a fish farm in Chile, which is subject to inspection on production methods and sanitary conditions. The salmon market in Brazil has been subject to sharp fluctuation, first with a flood of imports as Chile searched for alternative markets after its products were banned in the US. More recently, in 2005, it has suffered the adverse effects of health scares, which led to a 40 percent decline in restaurant consumption and severely affected the booming sushi market.

Levels of consumption are, however, now recovering and these new patterns of fish consumption have become a permanent fixture of the “food by weight” restaurants. Recent reports, which have drawn attention to unacceptable working conditions on the Chilean fish farms, may further affect the image of farmed fish supplies, although this is more likely to have repercussions in Europe than in Brazil.

Table 3 – Salmon Imports

Salmon - Imports (tonnes)	
Total 1976-1980	66
Total 1981-1991	219
1992	47
1993	69
1994	325
1995	1 740
1996	18 531
1997	4 754
1998	5 012
1999	3 710
2000	5 215
2001	7 364
2004*	8 448
2005*	11 844

Sources: FAO (1976-2001) and SEAP/MDIC (2004-5)

The third component of imports comprises frozen, filleted fish which has become a major item in Brazil’s trade balance. In the interviews conducted, the ability to offer portioned, filleted fish was seen to be a major competitive advantage of the leading supermarkets. Brazilian supermarkets therefore, are becoming increasingly integrated into the global supplies of the trawler factory fleets. Traditional frozen fish, on the other hand, were said to be regarded with suspicion since the quality of the fish is difficult to identify and the industries concerned have tended to use excessive icing to artificially cheapen the product.

Imports depend heavily on the evolution of the exchange rate which can abruptly interfere with supplies. Brazil’s leading white meat producer launched a line of frozen fish meals, “The Seven Seas”, with the fish imported from Norway. Changes in the exchange rate led to the cancellation of this product line, which had involved significant sunk costs. Stabilization policies and fiscal reforms go some way to minimizing exchange rate vulnerability but other factors make heavy import dependence problematic. Brazil, for instance, depends for almost all its *merluza* on Argentina where prolonged strikes have interrupted supplies.

The problems of import dependence have led to renewed pressure for investments in Brazilian fleets, which would in practice favour industrial fleets. There is considerable debate in Brazil both on the nature of Brazil’s fishing stock and on the wisdom of expanding fishing capacity. An alternative approach would be give priority to technological modernization (tracking and equipment) while maintaining present levels of capture capacity through the docking of outdated vessels. Given the fiscal austerity, which characterizes current macroeconomic

policy in Brazil, it is unlikely that significant new investments will be available in the short term.

Independently of the uncertainties associated with imports, the central issue for supermarkets is the ability to guarantee constant, homogeneous supply, which capture fishing by its nature precludes. In this respect, pisciculture was considered to be an important option, more so in São Paulo than in Rio where there is greater resistance to freshwater fish. In one interview it was suggested that fresh water farmed fish were becoming the most important source of supply and in the majority of the interviews fresh water farmed supplies scored as high a rating as artisanal capture fishing. Interviewees in São Paulo suggested that supermarkets were investing heavily in the promotion of fresh water farmed fish because of the constancy of quality and supply. It was argued that the introduction of fresh farmed fish was leading to the establishment of new quality thresholds for fresh fish. Farmed fish can be brought live to the supermarket distribution platform, supplies can be programmed, guaranteeing permanent availability, and prices stabilized.

Detailed contracts can be drawn up with individual suppliers, specifying production conditions and subjecting the farm to inspection and auditing. In this sense, fish farming reproduces a model of contract integration long dominant in the production of white meats, especially poultry. One supermarket has begun to develop “Guarantee of Origin” labels for these products, which can only be used in the case of supply to this supermarket.

Guaranteed sales provide an important stimulus for fish farmers to enter into these contract arrangements. A wide range of fish is now being marketed on this basis and the interviewees predicted strong growth for this sector in the coming years. Attention was also drawn to the increasingly commercial profile of producers in this sector, which has also seen the entry of important investments in filleting capacity and the processing of skins for the leather goods industry.

The bulk of this activity is developed in the South and Centre West of the country although major investments have been undertaken also in the Amazon region, principally for exports. We drew attention in the first section of this Report to the extraordinary explosion of shrimp farming in the northeast of Brazil. While the great majority of production is for export, the interviewees drew attention to the importance of shrimp consumption. If its traditional capture fishing is in decline, Brazil is firmly integrated into the global shift to fish farming, as an importer in the case of salmon, as an exporter in the case of shrimps, and as a dynamic component of the domestic supermarket supply chain.

Brazil’s leading supermarkets are replacing the street markets and the fishmongers as the preferred source of fresh fish purchases. They are also increasingly bypassing the traditional wholesale auction markets, less so in Rio than in São Paulo, but the tendency is clear also in Rio and is likely to accelerate as a result of recent fusions/acquisitions. Supermarkets are, therefore, now dealing primarily with direct producers or their immediate suppliers.

When asked under what conditions artisanal fishing supplies could access the supermarket wet fish counters the replies focused on the need to adjust to supermarket standards on the whole range of criteria underlying their trading procedures. In the first place, the actors and

all their transactions would have to be legally registered. They would have to abide by the norms of good fishing practices. They should be organized into cooperatives to ensure scale. They should have storage and distribution facilities. And above all they would have to achieve the quality standards defined by the supermarkets. The high road to continued insertion, therefore, is clearly defined and requires concerted policies for its achievement.

In the final section, we will present a range of policy measures aimed at meeting these requirements. At the same time, the interviews made clear that traditional supply chains will persist, attending street markets, fishmongers and small supermarket chains. If, however, the lessons from the FLV research of Reardon and colleagues prove a valid reference also for the fish sector we can expect to see more stringent quality criteria being adopted in these traditional supply chains. In either scenario, therefore, the artisanal fishing communities are faced with major challenges if they are to continue as relevant actors in Brazil's rapidly changing fish supply system.

5 Public Policies and Recommendations for the Small-Scale Fishing Sector

Given the challenges ahead, a set of concerted initiatives is required if the current precarious and insecure living standards are to be improved and a viable socio-economic environment for the artisan fishing sector generated. Some of these ought clearly to be promoted by the state through urgent and well-targeted public policies. Others remain within the sphere of the market or, in particular, within the competence of the artisan fishing sector itself, where the capacity for association, cooperation, learning, exchanging and partnership building play a central role.

5.1 Policies in implementation

The SEAP has recently developed an extensive agenda of public policies for the fishing sector as a whole, mainly focused on previously diagnosed bottlenecks (Conferência SEAP/2003). A summary list of difficulties/targets identified includes:

- i) Biological sustainability
- ii) Social exclusion and the precarious standard of living of small-scale fishing communities
- iii) Discontinuity in public policies
- iv) Lack of a solid and operational regulatory environment.
- v) Lack of information
- vi) Unqualified labour force – including the different actors of the supply chain.
- vii) Precarious infra-structure
- viii) Low added value and no access to credit.

Regarding the infra-structural and credit weaknesses, some initiatives have been planned and are already being carried out. Industrial fisheries have been contemplated by the credit programme, PROPESCA. Credit has been also channelled into the Programme for Oceanic Fishing Fleet Modernisation (PROFROTA Pesqueira – Law 10849/04). On the other hand,

there are a number of credit programmes oriented towards aquaculture (PROAQUA) and artisan fishing (PESCART) – operated by regional banks (Banco do Nordeste and BASA) and the Banco do Brazil. Lack of collateral, labour informality and perceptions of discrimination are pointed out as obstacles to credit access, especially those supposed to reach the artisan fishing sector. Investments have been allocated to the construction of new fishing ports (Entrepósitos Pesqueiros) in Rio de Janeiro, Santos, Cananéia, Cabedelo, Laguna, Manaus, Belém, Vitória and Natal. Artificial reefs have been placed along the seacoast in order to avoid predatory fishing and the utilization of forbidden techniques (anti-arrastos reefs).

Some of the planned initiatives might benefit artisanal, fishing communities. Ice production/processing units and support for cold storage are being constructed and implemented – 20 units in 2005 and 15 foreseen for 2006. The insurance programme covering prohibited fishing periods has been extended and about 170 000 artisanal fishermen have recently joined the programme. By the end of 2005, the fishing sector census will be finished – artisanal fishermen have officially been counted and information about them gathered and collected. Research, technical assistance, data collection and fisheries/fleet monitoring have been the focus of attention – transference of technologies to artisanal fishing and the cultivation of native species are mentioned by the SEAP as particular objectives. Educational programs have also been carried out (mainly literacy programs for fishing communities).

Aquaculture has been especially contemplated by the Decree 4895/03, which grants permission and regulates the activity on water reservoirs (one percent of total water surfaces). Some projects are being projected and structured on the main Brazilian reservoirs – Itaipú, Tucuruí, Sobradinho, Furnas and Três Marias. Projects for research and technology transfer, new species development and local production have been supported – the Pirarucu project in Ceará, native fish from the Pantanal, shrimp production in the North-eastern, oysters in Santa Catarina etc.

Regarding the fish marketing chain, there are some initiatives for the stimulation of demand and exports. The project Feira do Peixe (Fish Markets) intends to promote about 1 200 markets all over the country. The yearly Fish Week programme promotes fish consumption in collaboration with supermarkets and schools.

5.2 *Recommendations*

Although still in the process of implementation and despite the fact there are few visible results, renewed public policies for the fishing sector are welcome and appear to be based on correct diagnoses and appropriate initiatives. On the basis of the challenges discussed in the present study, particularly associated with marketing trends and difficulties related to the insertion of artisanal production, we highlight some general recommendations for the sector which deal with broad strategic orientations for public action in addition to initiatives to be undertaken by the fishing communities themselves.

- a) Artisanal => Aquaculture Transition: public policies should support the migration of artisanal fishermen towards the aquaculture sector. Given the huge aquaculture potential in Brazil, this transition should also benefit artisanal fishermen, increasing

and stabilizing their standard of living¹². This movement should be promoted and accompanied by appropriate public policies for labor training and technology transfer, technical assistance, access to credit and marketing facilities. Biological sustainability should be a priority.

- b) Cooperative and associative behavior should be strongly encouraged: groups are stronger than individuals. Cooperatives or even informal groups of artisanal fishermen may take advantage of economies of scale, more professional commercial and productive relations, better commercial bargains, prices and facilities. The supermarket interviewees gave considerable importance to this point. Public policies should structure appropriate incentives towards this objective, for example, through credit and the access to social benefits.
- c) Partnerships are crucial: the SEAP has been working in association with other public and non-governmental entities. This should be deepened and extended to the universities (research), micro-credit institutions (with focus on informal workers), private companies (social responsibility), municipalities and local government (decentralization of public action), SEBRAE (aquaculture – technical support for new producers), and NGOs (cooperative behavior).
- d) Focus on added value and quality and the scale-up of marketing practices through better infra-structure: the initiatives which have already been carried out are positive and should be intensified – ice factory units, transportation facilities and diesel subsidizing, plus easy access to large ports. Access to supermarket channels very much depends on the success of these measures.
- e) Independence of the Political Cycle: last but not least, public policies for the fishing sector have now been reinitiated and the aquaculture sector is in rapid expansion. All these efforts towards a better fishing sector environment should be independent of the political cycle. The continuity of good practices should be the number one priority.

¹² For an overview on aquaculture in Brazil, see annexes.

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Annex 1 – Brazil

1 Brazil

1.1 List of abbreviations

BNDES	Banco Nacional de Desenvolvimento Econômico e Social	The Brazilian Development Bank
CEAGESP	Companhia de Entrepostos e Armazéns Gerais de São Paulo	Fish and Agricultural Wholesaler <i>Entrepôt</i> (São Paulo)
CEASA	Centrais de Abastecimento S/A	Fish and Agricultural Wholesaler <i>Entrepôt</i>
CNP	Confederação Nacional de Pescadores	Fishermen's National Confederation
FDI		Foreign Direct Investment
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis	Brazilian Institute for Environment and Natural Renewable Resources
IBGE	Instituto Brasileiro de Geografia e Estatística	Brazilian Institute of Geography and Statistics
POF	Pesquisa de Orçamento Familiar	Brazilian Home Consumption Survey

1.2 Summary of interviews

Companies	Trans-national	Leading Rio Supermarket	Leading National
Consumer Market and relevance of fisheries for supermarkets			
05. Relevance of fisheries for the supermarkets sector. Scale from 1 to 10, 10 = top.	5	4	3
06. Why that number?	High prices and low demand: fisheries are not as relevant as other products	It's not an important sector, although its maintenance is necessary.	For the SM sector, fisheries have low participation in total sales. For us, it is strategic, because represents differentiation and competitiveness (number 6 for CBD)
07. Participation of fish sales in supermarket total sales (annually)			
08. Main obstacles for the development of demand?	High prices, lack of information and marketing, people have little confidence in the product, especially frozen	The main obstacle is cultural: lack of habit	Other products are more competitive in terms of prices (chicken and meat). Fisheries find obstacles related to provision stability, quality and cultural habits
09. Have there been significant changes in fisheries demand?	Decreasing demand: it is a response to lower supply and higher prices.	Increasing demand, specially related to the better off consumers and Japanese food: it is probably connected to the healthier life style represented by fisheries	Yes: connected to the healthier life style represented by fisheries
10. Main competitors in the fish retailing market	Local markets and popular fairs	na	Local markets, popular fairs, municipal markets, fisheries shops
11. Have there been changes in consumer behaviour in relation to quality?	Quality has dropped and consumption has decreased	Search for more variety . Consumers are more aware of quality.	Consumers are more aware of quality. They want to know how to cook different fish.
12. Main fishes in total sales	Salmon, Cação (<i>Charcharhimus</i> spp.) and Corvine	Sardines, Corvine, Grey Shrimp, Cod, Pescadinha (<i>Cynoscion</i> spp.)	Merluza, Cação, Low Price Fresh Fisheries (corvine, sardine, tainha) and Salmon

13. Scale of relevance (1-10, 10 = top)			
a. Crustaceans	4	7	5
b. Mollusks	3	3	3
c. Fresh fish of high value	7	8	6
d. Fresh fish of low value	9	9	8
e. Frozen products	6	7	6
f. Industrial products, ready to eat	na	2	4
g. Canned products	na	4	6
Logistic and Suppliers			
14. Main suppliers	Industrial Fishing Companies (from Santa Catarina and Northeastern companies). From CEAGESP only 20%	CEASA (Rio de Janeiro) and CEAGESP (São Paulo) for fresh products. Costa Sul Pesacados for frozen products.	Diversification: Imports, Industrial Fishing Companies, CEASA, Middlemen
16. Have there been changes in supply (quantities)?	General decrease of supply	Yes, specially an increase in shrimps supply (from shrimp farms) and salmon imports	Decrease of conventional fresh products and increase of cultivated species
17. Have there been changes in supply (quality)?	General decrease of supply also in terms of quality	No - stable	There have been an overall increase in terms of quality since cultivated species have entered into the market
18. And changes in contracts?	Negotiations have been more difficult - related to the decrease of supply	No - stable	Contracts have become more flexible.
19. Relevance importance of fish supplies by origin on a scale from 1 to 10 (10 = top)			
a. Importers	9	6	9
b. Industrial Fishery	10	5	8
c. Coastal catch, artisan fishing and their organisations	8	8	6
d. Pisciculture in continental waters	6	6	6
e. Aquaculture in marine waters	no supply	7	6
f. Don't know, buy from intermediaries	na	na	na

20. Regarding the fisheries sector and its potential, in your opinion, what are the opportunities that supermarkets have in the present and ahead?	There is no change at the moment. There may be something ahead (not specified)	na	Opportunities might come from industrial suppliers and larger companies (changes in commercialization). Cultivated fishes have become more important - suppliers are becoming professionals and are able to offer provision and prices stability.
21. How can supermarkets benefit from existing opportunities	Looking for new suppliers, developing new products and demanding quality (developing the label d'origine contrôlée).	Changing lay outs, highlighting quality, developing and improving the fisheries shops inside the supermarkets stores.	There are huge opportunities for the largest retail companies, because they are able to purchase fisheries from large/industrial suppliers. The medium supermarkets chains will negotiate only with CEASAs and the smallest ones will leave the fisheries sector.
22. What are the main obstacles to the commercialization of fisheries, in terms of:			
a. Demand	Brazilian consumers are not able to cook fish dishes: lack of information	Lack of variety and divergent habits	Brazilian consumers are not able to cook fish dishes: lack of information & there are other substitute products, as meet and chicken
b. Supply	Lack of quantity and quality	Deficient supply chain	The sector is not integrated: agents do not work together; there is speculation
23. How are supermarkets and your company dealing with those obstacles?			
a. Demand	Demonstrating to consumers how to prepare fish dishes and ensuring quality labels	Searching for others sources of supply (specially from aquaculture, given priority to small-scale producers)	Training employees, highlighting technical features of products and promoting cultivated products
b. Supply	There is no action	There is a need for re-structuring the supply chain	Investing in a centralized distribution structure, building partnerships, searching for imports (primary sources) and respecting efficiency and transparency.

24. In the coming 5 or 10 years, what will be the structure of the fishery market, in terms of:			
a. Demand behaviour	If the actual situation continues, in the future we will not work with fisheries	Demand will increase: fishes are associated with a healthier life style	Demand will increase 10% per year; largest share of cultivated species and easy-to-prepare products
b. Competition and structure of retailing market for fish	There was no position on this	Supermarkets will increase their market share in the fisheries retail segment	Supermarkets will increase their market share in the fisheries retail segment
c. Supply / wholesale structure	Small-scale middlemen will disappear	No changes	Supermarkets will be integrated into the productive sector and connected with primary producers. CEASAs will be less important
d. The role of importers	na	It changes, depending on the exchange rate. Now imports are becoming more important because of the US\$ depreciation	It depends on the exchange rate
e. Primary sources of fisheries	na	Sharp increase of the cultivated species	Increase: from large industrial companies and cultivated species
25. What could be the main criteria for artisanal fishers to become supermarket suppliers?	They must be a company: they must have formal contracts, representatives, structure, logistics.	Quality, logistical structure (storage and distribution), good practices etc	Associate/cooperatives with centralized commercialization: without organization, production increase and quality standards, the artisanal sector will continue to be a hostage of middlemen and low remuneration.

1.3 Stylized facts on fish consumption in Brazil

Brazilian per capita fish consumption is low even for a developing country, although its population of over 180 000 000 makes it one of the world's largest fish and seafood markets. While the InfoPesca studies of the middle 1990s put total per capita fish consumption (fresh and industrialized) as high as 16.4 kg in the metropolitan region of Rio de Janeiro, 15.3 kg in São Paulo, 12.8 kg in Brasilia and 7.7 kg in Salvador, FAO places overall per capita consumption at 6.8 kg, while the home consumption survey (IBGE/POF, 2003) would put this figure even lower, at 4.6 kg per capita. Higher figures would seem to be indicated if we take into account the explosion of fresh water commercial fishing ("fish and buy") and the increasing importance of fish in the popular "pay by weight" restaurants, where data collection is more fragile. Based on the home consumption survey (POF, 2003) the next table roughly indicates the per capita family consumption of the main fishery products, by Brazilian regions.

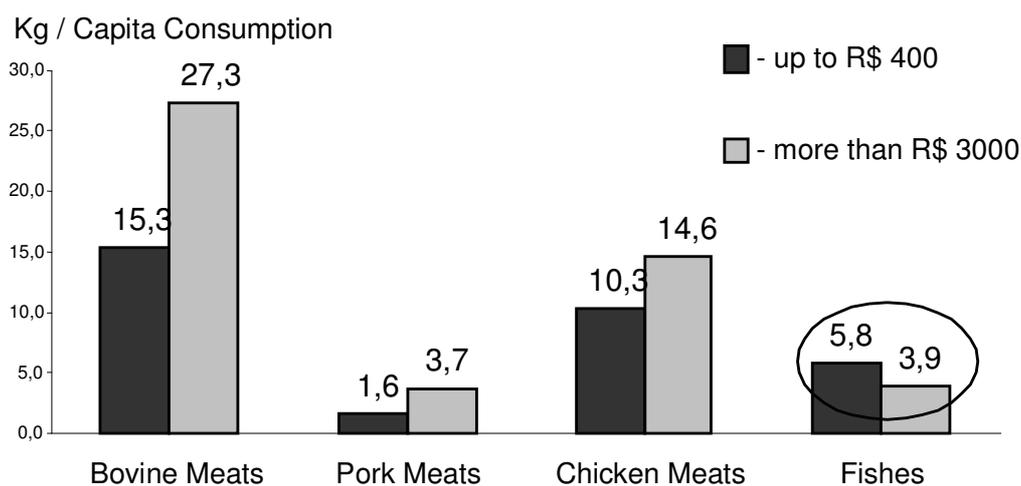
Fish Consumption by Brazilian Regions
(Annual family consumption per capita, in kg – 2003)

	Brazil and Regions					
	Brazil	North	Northeast	Southeast	South	Centre-West
A - Total Fishery Consumption (kg/capita)	4.59	24.67	4.97	2.17	1.78	1.36
A.1 - Marine Waters' Fishes (fresh)	1.82	5.52	2.23	1.46	0.82	0.40
A.2 – Fresh water's Fishes (fresh)	2.12	17.76	1.78	0.34	0.46	0.53
A.3 - Not Specified Fishes	0.64	1.39	0.96	0.38	0.50	0.43

Source: POF - IBGE

The northern region presents the highest fish consumption in Brazil, especially of freshwater species. This characteristic is likely to be one of the sources of explanation for the fact that the poorest Brazilian families, on average, consume a larger quantity of fish products when compared to the richest. As a source of daily proteins, fish seems to be more important among the poorest people. This fact is shown in the graphic below.

Fish and Meat Consumption by Range of Family Income



Source: POF/IBGE

Considering families whose household incomes are lower than R\$400, the average per capita

fish consumption is nearly 5.8 kg, while among those families with total income higher than R\$3 000, that consumption is lower than 4 kg. For meat products, on the other hand, the differences between the poorest and the richest families' levels of consumption are as would be expected, with red meat, pork and chicken being consumed in larger quantities by the richest families.

Part of the fish products consumed in Brazil has its origin in imports. The most relevant imported fish are salmon and cod – with imports of both at nearly US\$140 000 000 in 2004, 40-45 percent higher than in 2003. Throughout the 1990s, the Brazilian fish trade balance had been heavily in deficit. The extraordinary growth of shrimp farming (up from 40 000 tonnes in 2001 to 120 000 tonnes in 2004 and a projected 160 000 tonnes for 2005), however, has transformed this negative scenario, leading now to a large international trade surplus.

1.4 Aquaculture in Brazil: An overview

The number of aquaculture productive units is estimated at 98 557, distributed throughout the country in some 78 500 hectares (GEO Brasil, 2002). The ratio of units per hectare illustrates a positive reality of the sector: with the exception of prawn farming, production in general is in small-scale properties, which reproduces the same strategic direction adopted by countries that have been world leaders in fish farming (Mercado da Pesca, 2005).

As indicated previously, the aquaculture production is mainly concentrated on marine prawns (90 000 tonnes per year), carp (54.5), tilapia (52) and molluscs (15.5). However, more than 60 species have been grown commercially or experimentally in Brazil, 51 of them consisting of fish – many typical species have been produced and experimented in recent times, such as the *pintado*, the *surubim*, the *dourado* and the *brycons* (Scorvo Filho, 2005). Brazilian aquaculture's potential is widely recognized because of the variety of freshwater native species and also because its inland waters have still been largely under-explored.

In this context, recent legal advances regulating public waters and have been an important stimulus for the sector. For example, aquaculture producers are now gaining access to one percent of the public waters stored in hydroelectric reservoirs, which represents around 55 000 hectares of freshwater and represents an impressive potential for fish farming of up to 825 000 000 tonnes per year (SEAP, 2005).

Fish farming in Brazil is a very new experience and there has been a rapid rhythm of technological change. Intensive production at freshwater reservoirs has been recently explored through tank nets and cages. Five or seven years ago, fish farming was predominantly carried out in dug-outs and small dams. In this sense, the SEAP (Special Secretaryship on Fishing and Aquaculture, created by the Lula Government in 2003 and connected directly to the President's Office until its transfer to the Ministry of Agriculture and Fisheries in august 2005) and the SEBRAE (national agency that supports small and medium firms) have worked together to disseminate new technologies and management methodologies among small-scale producers.

The connection between fish farming and fish processing is still incipient and has been largely confined to small-scale filleting plants and a limited number of prawns processing

factories – although this scenario has started to change, as new firms begin to work in many regions. Regarding commercialization channels, only a small amount of cultivated fish has reached the large-scale Brazilian retailer market (Scorvo Filho, 2005).

Some initiatives now indicate that a more professional linkage between the aquaculture sector and the retailer market is beginning to emerge, such as the 1st International Congress for the Commercialization of Cultivated Fishes (São Paulo, 2002), where relevant sector stakeholders met and discussed questions about supply chains, marketing and commercialization channels. SEAP has had an important institutional role in promoting and improving these linkages.

Artisanal Fisheries and the Expansion of Supermarkets in Lima

Case Study of Peru

1 Introduction

Fishing has a long history in Peru. All along the 3 080 kilometres of coastline, pre-Hispanic societies and today's Peruvian inhabitants have found themselves, culturally, socially and economically related to it.

Fish is a basic staple of both rich and poor in the traditional Peruvian kitchen¹³. Conquest historians report that fish for human consumption reached almost every pre-Hispanic Peruvian. Adequate property rights for access to marine resources¹⁴ and relevant distribution channels seem to have been key factors for the widespread consumption of fish.

Inca trails fully connected the coast to the Highlands and special delivery systems consisting of *Chaskys* and *Tambos* were used in Inca times to get fresh fish to the highlands¹⁵. This organisation of fish production, distribution and consumption changed radically when the Conquest took place, and later on also, with a shift in priorities for the exploitation of marine and fish resources in republican times from human to industrial consumption.

The exploitation of marine resources – i.e. anchovy and derived products like guano – accounted for the economic “booms” in Peruvian republican history. Peru has the world's biggest fishing fleet and contributes with ten to 20 percent of the world's annual marine catch. This high participation in the world's fishing is not, however, accompanied in terms of value added and /or direct benefits for the majority of the Peruvian population.

In fact, just 13 percent of the annual catch in Peru is oriented to human consumption with fish-meal and oil production accounting for the rest. The monthly income of artisanal fishermen – responsible for 50-80 percent of the annual catch for human consumption – comes to US\$115. Fish consumption predominates on the coast and among urban populations while rural inhabitants have the lowest level of fish consumption (2 kg). A complex distribution and marketing chain raises prices by up to 30 times from producer to consumer.

Since 1995 the sustained expansion of a modern retailing sector in Lima (the country's biggest marketplace) is paving the way for the reorganisation of retail marketing structures. The impacts of modern retailing are already evident for some agricultural goods such as fruit and vegetables, influencing both the transformation processes and distribution channels¹⁶.

¹³ The most popular traditional dishes of the Peruvian kitchen (Cebiche, Tiradito and Escabeche) include fish as the main ingredient. There are 1 200 restaurants in Lima dedicated to the preparation of Cebiche. (Prompyme, 2004).

¹⁴ In pre-Hispanic societies, access to marine resources was restricted to fishing communities and the number of fishermen was limited. This system guaranteed sustainability and conservation of marine fauna and resources. In Colonial times marine resources and fishing areas became a “commons” (Trillo, 2003).

¹⁵ Chaskys were messengers and Tambos were stores distributed along the Inca Trails.

¹⁶ CARE-Peru “Lessons from the experience in articulating rural producers to markets”.

What are the prospects for the small-scale fisheries sector in Peru within a context of supermarkets and modern retailing expansion? How might the strategies defined by supermarkets to ensure quality and scale for the supply for “hydro-biological”¹⁷ products impact on the fishing sector as a whole? What will be the impacts for human consumption?

This section identifies some likely impacts of supermarket expansion into the fishery sector based on the visions and perspectives of the main actors involved in the process: supermarkets and other modern retailing representatives, artisanal fishing communities and their representatives, the industrial fishing and the government sector in Peru.

The analysis uses secondary data on the performance of the fishing and modern retailing sectors from 1993-2003. Qualitative first hand information is used to capture the views of the main actors involved. This information was obtained through interviews with representatives of artisan fisheries from ANEPAP¹⁸ (Jose Luis Bernuy; Flor Velez, Antonio Romero and Luis Sanchez); a representative of the industrial fisheries from SNP¹⁹ (Dr. William Inuterregui) and a group survey applied to supermarket specialists from SPSA; TOTTUS; MINKA and WONG, who kindly and openly accepted to share their visions about these crucial productive sectors in Peru.

2 Profile of the Fishing Sector

2.1 The fishing sector

“Off the Coast of Peru and Northern Chile lies one of the richest marine environments on Earth – the Peruvian region.....the most productive on Earth, annually contributes about 10-20 percent of the world’s marine catch” (Deligiannis, 2000).

Peru has one of the most intensive fishing activities in the world. A wide diversity of coastal, pelagic and demersal species – for both human consumption and industrial processing – allows artisanal and industrial fisheries to coexist. About 727 fish species have been identified within the Peruvian region, 84 of which are commercial but only 19 percent are exploited (Cámara de Comercio de Lima, 1997). The Peruvian fishing sector has been primarily pelagic oriented.

Inland fishery is intense also in Lake Titi-caca (Southern Peru) and in the Amazon River. Fishing communities have organised along the lake and river for centuries. The richest marine regions are in Northern Peru: Paita – Pimentel, Chimbote – Huarmey and Huacho – Callao. In southern Peru, Pisco - San Juan and Atico are also important. The majority of fish landings for human consumption comes from these regions.

¹⁷ Official terminology used by the Ministry of Production to refer to all products coming from water (whether from sea, lakes, river or aquaculture). Anuario Estadístico PRODUCE, 2003. Ministerio de la Producción – Perú.

¹⁸ Asociación Nacional de Empresarios de Pesca Artesanal del Perú.

¹⁹ Sociedad Nacional de Pesquería

2.2 Actors

“Peru’s 1970 bonanza accounted for almost 24 percent of all fisheries production...harvesting this windfall and turning it into hard currency was the work of 21 700 fishermen on 1 400 boats and almost 9 000 factory workers in 170 factories spread out along the coast of Peru. The boom was almost entirely in industrial fisheries, for fish meal or oil- as opposed to artisanal fisheries for consumption” (Deligiannis, 2000).

For decades, a clear division of fish production has taken place between artisanal and industrial fisheries in Peru. Small-scale fisheries account for 50-80 percent of annual fish landings for human consumption. Industrial fishery accounts for 94 percent of annual landings for anchovy and other commercial pelagic species for human consumption such as hake, jurel (*Trachurus murphyi*) and horse mackerel.

There have been times when artisanal and industrial fisheries have come into conflict. In 1996 industrial fishing was allowed to catch white anchovy – a natural food for species relevant to artisanal fisheries – and the decision was considered by artisanal fishing communities (and other actors, see below) as one of the factors²⁰ whose combined effect has been the decrease of the available bio-mass for fishing with a negative impact on their fragile economies (El Comercio, 2004; Pesca en Red, 2005).

Industrialists are organised in the National Fisheries Society (SNP), an organisation composed of entrepreneurs from 77 large-scale enterprises operating in different industrial sub-sectors: fish meal and oil processing, frozen, canned, aquaculture – in addition to ship owners. The small-scale fishery organisations are dispersed and fragmented, and a report from UN²¹ registered about 300 artisanal fishing organisations in 2001. Artisanal fishermen are among the poorest in the population, with monthly per capita income of US\$115 (UN, 2001).

2.3 Performance

The fishing sector is crucial both for the balance of trade and employment in the Peruvian economy. By 2003, the fishing sector contributed 11-12 percent to annual exports and accounted for 1.5 percent of GNP.

Figures on employment in the sector differ from one source to another. According to official reports the sector employs 96 557 people involved in primary and secondary activities as well as other related services, while 64 percent of people employed in the sector are engaged in primary activities carried out along the coast. Fishing is a decentralised sector in regional terms, with Lima representing only 7.6 percent of landings for human consumption.

²⁰ The Corean and Russian fleets were allowed to fish in Peruvian waters.

²¹ “Fisheries in the World: Peruvian Republic” (2003). Artisanal fisheries’ contribution to human consumption was around 80 percent in the past decade. The diminishing trend is related to the decrease in biomass availability.

2.4 Fisheries

The Peruvian fishing sector relies basically on one marine resource (anchovy) and a few other pelagic species (sardine) and hake. Within the period 1993-2003, anchovy represented 70-90 percent of annual landings. Diversification remains the most significant challenge for the Peruvian fishing sector in the coming years.

While there is a diminishing trend in the availability of traditional fish of high value such as *bonito* (*Sarda chiliensis chiliensis*), *corvina* (*Cilus gilberti*), *lenguado* (*Paralichthys woolmani*), relatively “new” low cost species have increased their participation in landings, such as *jurel*, horse mackerel, *tollo* (*Mustelus whitneyi*) and *perico* (*Coryphaena hippurus*). At present, *jurel* is the fish in greatest demand in income segments C and D (MINKA Survey). As discussed in section 3, supermarkets and modern retailers have been effective in introducing new species, as in the case of MINKA with fish such as *camote* (*Pinguipes chilensis*) and *reineta* (*Brama australis*). TOTTUS is also successfully introducing tropical species from the Peruvian jungle. The trend has also favoured imports (*reineta* comes from Chile).²²

Giant squid (*pota* *Dosidicus gigas*) has also increased its participation in landings for human consumption, geared to exports. Up to 2001, the *pota* catch was carried out by the industrial fleet, but by 2003, 89.1 percent of *pota* landings corresponded to the artisanal fleet (CASER, 2004).

2.5 Industrial plants

By 2003 there were 321 industrial plants, 56.4 percent (181) oriented to production for human consumption and 43.6 percent (140) for fish-meal and oil production. Among the industrial plants for human consumption, 43.6 percent are for frozen fish, 47 percent for canned and 9.4 percent for cured fish. Only 25 percent of industrial capacity is currently operational (SNP, 2004).

²² Socio-economic Profile / Peru, 2003

Group	Income US\$ (monthly)	% Population	% National Income
A	3293	2	48*
B	794	12.4	
C	314	28.7	28
D	176	36.2	26**
E	123	20.7	

Source: Apoyo S.A (2003).

*includes A and B

** includes D and E

2.6 Demand

Fish consumption increased from 13 kg per capita in 1993 to 15.8 kg by 2003, and is higher than red meat consumption (9.8 kg), although lower than the consumption of chicken (23 kg). An INEI survey (1999) on food consumption among the lowest income groups shows that fish or other marine products are not included in their basic consumption basket. With the exception of the retail chain MINKA, supermarket formats directed to income sector D do not include fish and marine products.

From 1993 to 2003 a strong growing trend in sales of fish and marine products has taken place in the domestic market. In this period, sales grew by 51.7 percent led by fresh products. On average, 38 000 tonnes of fish and marine products were sold monthly in the Peruvian domestic market: 78 percent as fresh fish, 13 percent canned, 6 percent frozen, 3 percent cured.

In 2003, 93 percent of sales were of domestic origin and 7 percent was imported. Since 1999, fish imports for human consumption have shown an upward trend. As noted by supermarket specialists, Ecuadorian and Chilean products have established a solid position in the Peruvian domestic market in the canned and frozen sub-sectors respectively.

2.7 Distribution and marketing for human consumption

“...artisanal fishermen earn monthly incomes of 400 New Soles (US\$115)... major gains go to intermediaries, who carry the harvest from the landing places to the fish terminals in Lima Artisanal fishermen receive less than 5 percent of the consumer price.” (El Comercio, 2005).

Sixty percent of fish consumed in Lima comes from Northern Peru (from Piura and Tumbes). Fish caught in the North is transported to the two main fish wholesale terminals in Lima (Ventanilla and Villa María del Triunfo), which market 30-35 percent of the annual fish landings for human consumption. These terminals lack appropriate infrastructure (cold storage systems), are over-crowded and have deficient hygienic conditions.

In 2002, the market MERCALLAO was launched by private investors (MINKA) as a new wholesale fish terminal, and the former ones (Ventanilla and Villa Maria del Triunfo) were forced to introduce improvements in their infrastructure. Nevertheless, due to the intense competition from neighbouring terminals – and some design limitations – MERCALLAO gradually became a large retail terminal. Approximately 6 000 tonnes (on average) are traded monthly in MERCALLAO – restaurants, including gourmet outlets, have become important customers.

In the absence of an efficient system, distribution and marketing channels involve many agents: fishermen and their families, collectors at the seashore, local intermediaries, wholesalers and retailers in Lima. The absence of basic infrastructure at artisanal fishery localities also implies deficient handling and management conditions with negative impacts on product quality and prices.

From the artisanal fishing communities to the consumers, prices can rise 30 times. Supermarket teams single out deficient handling and high final prices as the main obstacles to a major development of domestic demand.

3. Impact of Supermarkets on the Reorganization of Fish Marketing Channels

3.1. Supermarkets in Peru: A new beginning

Supermarkets, although not new in Peru, underwent restructuring in 1995²³. In the mid-1980s this emerging sector suffered from the hyperinflation process, which the Peruvian economy experienced from 1987 to 1990, lowering the purchasing power of urban inhabitants to less than one third. Economic debacle, internal war and social unrest, created very unfavourable perspectives for the sector.

From 1990-1995 the Peruvian economy went through a dramatic stabilisation programme and structural reforms. The economy recovered by 1993 and some key private investments (national and international) were stimulated. The provision of a wide range of goods and services for millions of people living in urban areas (with increasing incomes and/or increasing access to credit for consumption) became the major focus and challenge for business.

3.2. Modern retail

Modern retail is about facilitating shopping through self-service, a wide diversity of goods in the same place, buying good quality at reasonable prices while feeling comfortable and safe. By 2005, 75 supermarket stores and other modern retail outlets (shopping centres i.e. MINKA) point to the slow but sustained expansion taking place over the past ten years.

Despite significant geographical expansion, the market penetration of supermarkets is still low compared to other countries in the region. Recent market research estimates supermarkets in Peru (Lima) to account for 25 percent of annual sales in the retailing sector in 2004 and reaching 28 percent by year 2005, while in Colombia they are responsible for 60 percent and in Brazil for 65 percent. Preferences for buying in small local markets are still widespread in Lima among the lower income groups.

The retail market in Peru amounts to US\$4 000 000 annually. Supermarkets, local markets and small stores are all operators in the market. Supermarkets have a projected market penetration of 40 percent by 2006²⁴.

3.3. Market penetration and market segmentation

Market penetration has advanced furthest in high-income groups (A and B)²⁵, but current strategies also address sectors C and D. By 2005, the two leading firms have formats oriented to sectors C and D. These discount formats do not include fish as a basic product. The low cost strategy of discount stores does not include investing in the installation of cold systems. MINKA is the only modern retail firm oriented to sector D which includes fish products.

²³ In the 1960s and 1970s supermarkets competed for the demand of an increasing urban population in Lima. "Todos", "Galax", "Scala Gigante" "Tia" were some of the competing firms.

²⁴ *Semana Economica*, Octubre 2004.

²⁵ Seventy eight percent of women in segments A and B declare that they buy weekly in supermarkets and/or other modern retailing formats (Apoyo, 2004).

Table 1 – Peru modern retailing, formats and market segmentation

Firms	Trade marks	Formats	Segments	Number
Wong	Wong	Supermarket	A and B	11
	Metro	Supermarket	B	7
	Metro	Hypermarket	C	9
	Eco Almacén	Discount store	D	
	Vivanda		A	1
SPSA	Santa Isabel	Supermarket	A and B	17
	Plaza Vea	Hypermarket	B and C	11
	Mini-Sol	Discount store	D	6
TOTTUS	Tottus	Hypermarket	B and C	3
PRECO	Preco	Discount store	D	9
MINKA	Minka	Commercial	C and D	1

Sources: Master (2004), Semana Económica (Enero 2001) and CASER (Julio 2004).

As a consequence of the high levels of income concentration, the better-off groups in Lima are still the central arena for competition while growth in other regions has attracted few and different operators from those competing in Lima. Just one firm - “Centro”- has started operations in Chiclayo and Cajamarca (in Northern Peru) where the remaining 25 percent of the better-off groups live.

3.4. Performance and major operators

In 2004 total sales in the industry amounted to US\$1 000 000 and two firms (WONG and SPSA) concentrated 96 percent of the sector’s total sales.

Table 2 – Supermarkets performance: Peru: 1998-2004

	1998	2004
Number of stores	37	75
Total Sales (US\$ million)	594	1 000
Penetration retail market	15	25
Number of competing firms	1	4
Market shares /Major operators		
Wong	72.2	62.4
SPSA	27.8	28.8
TOTTUS		7
Others		1.8

Source: CASER (2004), Semana Economica (2004)

The strategic war among competing companies is intense. In 1998, WONG had 72.2 percent of the market. Despite keeping first place, WONG has lost market share since TOTTUS entered in 2002 (in segments B and C). SPSA has maintained third place in the market and recently launched “Vivanda” a new format directed at challenging WONG’s market share among the better off groups (El Comercio, 2005).

3.5. Profiles and strategies

Supermarkets have in common: a) a wide range of products (13 000 to 15 000); b) competitive prices, c) quality and d) geographic expansion, as key aspects of their general penetration strategy. The Peruvian consumer is very much guided by price-diversity criteria but also by price-quality, and supermarket strategies tackle this question in different ways:

WONG is well known for its win-win approach to negotiation with suppliers and its capacity to generate economies of scale. At present, WONG has launched a price reduction strategy to ensure growth. This strategy requires the strengthening of its capacity to get to the first stage of the value chain in some strategic products (vegetables, fruits and fish), looking for direct marketing agreements with producers (as would be the case of the artisanal fish sector).

SPSA has focused on quality and by 2005 investments were oriented to improve supplies and the appearance of key products such as vegetables, fruits and fish. These products generate the major client traffic into the stores (Semana Económica, 2005).

TOTTUS in two years has gained almost 10 percent of the modern retail market and has one format: hypermarkets which have proved to be the most successful format in Lima. TOTTUS strategy is very much focused on diversity and the firm offers a wide range of alternatives for each type of product.

MINKA is a commercial mall with the features of modern retail (self service, wide diversity of products in one place, food and non-food etc.). MINKA does not have direct suppliers but operates through *locatarios* – those who hire the space in the mall. In logistical and marketing terms, MINKA has the same functions as a supermarket and focuses on income segments C and D.

With the exception of TOTTUS²⁶, all these firms are Peruvian investments.

3.6. Supermarkets, modern retail and fish consumption

How relevant are fish products within the general strategy of supermarkets and modern retailers? To approach this issue, SPSA, TOTTUS and MINKA were consulted, representing approximately 40 percent of the modern retail market by 2005. WONG leads the market with 62 percent and was also contacted for the study but was not available for interviews. Nevertheless, WONG representatives kindly accepted to fill the questionnaire for supermarkets. To that extend, the following analysis includes the whole sector. Teams of

²⁶ It is Chilean capital.

specialists at operating centres were surveyed in SPSA, TOTTUS and MINKA. Interviews included the participation of logistics and operating managers.

Supermarket participation in the retail market for fish is currently (2005) at 20 percent, whereas it accounts for 25 percent in other products²⁷. The table below shows that fish products represent 3-5 percent of supermarkets total sales (depending on the season).

Fish products are perceived as highly strategic (rated between 7 and 10 in a 1-10 scale, where 10 is the top rank), they are considered a staple product (as, for instance, milk), crucial for attracting clients into the stores. Fish and seafood are currently “a product line of *preferred routine* for customers, but it is projected to become a *destination category*” (Wong representative).

Table 3 – Fishing Sector and Modern Retailing

	SPSA	TOTTUS	MINKA	WONG
Share of total Sales (%)	2%	3%	3 to 5%	3%
Strategic relevance (1-10, 10 = top)	7	10	6 to 7	6
<u>Relevance of fishing products</u>				
Crustaceans	5	4	2	8
Molluscs and Cephalopods	5	1	6	8
Fresh fish of high value	10	7	8	10
Fresh fish of low value	7	8	10	10
Frozen products	7	4	5	8
Industrial products ready to eat	7	2	2	5
Canned products	6	9	4	-

Source: Supermarket Survey

Fresh fish of either low or high value are the most significant products for supermarkets. As TOTTUS specialists remarked, the relevance of each product depends on the social segment. *Jurel* (a low value fish) is crucial for MINKA (oriented to sectors C and D), while for SPSA, *lenguado*, *bonito* and trout (high value fishes) are among the most significant in total sales in formats for income segments A and B. WONG – the leading firm - gives special attention to crustaceans, molluscs and cephalopods.

²⁷ According to SPSA and TOTTUS specialists. See TOTTUS and SPSA surveys (ANNEX 1)

Table 4 – Principal Fish in Supermarket Total Sales

	SPSA	TOTTUS	MINKA	WONG
Segments A and B	Tollo diamante (<i>Isurus oxyrinchus</i>)	Lenguado (<i>Paralichthys woolmani</i>)		Lenguado (<i>Paralichthys woolmani</i>)
	Lenguado (<i>Paralichthys woolmani</i>)	Chita (<i>Anisotremus scapularis</i>)		Corvina (<i>Cilus gilberti</i>)
	Atún (<i>Thunnus</i> spp.)	Trucha (trout)		Tollo de leche (<i>Mustelus mento</i>)
	Bonito (<i>Sarda chilensis chilensis</i>)			Tilapia
	Tollo (<i>Mustelus whitneyi</i>)			Cojinova (<i>Seriorella porosa</i>)
	Trucha (trout)			Chita (<i>Anisotremus scapularis</i>)
	Perico (<i>Scarus perrico</i>)			
Segments C and D		Tollo diamante (<i>Isurus oxyrinchus</i>)	Jurel (<i>Trachurus murphyi</i>)	Perico (<i>Scarus perrico</i>)
		Perico (<i>Scarus perrico</i>)	Caballa (<i>Scomber japonicus</i>)	Reineta (<i>Brama australis</i>)
		Atun (<i>Thunnus</i> spp.)	Tollo (<i>Mustelus whitneyi</i>)	Pampanito (<i>Alectis ciliaris</i>)
			Camote (<i>Pinguipes chilensis</i>)	Cabrilla (<i>Paralabrax humeralis</i>)
Source: Supermarket Survey				

3.7. Views on demand, supply and competitors

According to supermarket specialists, demand for fish products is constrained by a combination of little information about the wide range of products available for human consumption and lack of confidence in the products. Customers are aware of bad handling conditions at primary sources (artisanal fisheries) as well as in fishing terminals. Also high prices limit demand, leading people to look for safer products and cheaper substitutes, such as chicken.

Table 5 – Main Obstacles to Demand and Supply of Fish Products

Demand	Firms
People do not know the wide range of products and possibilities for consumption	SPSA, MINKA, WONG
Little confidence in the product (they know about the bad handling conditions)	SPSA, TOTTUS, WONG
High and unstable prices due to problems in the supply side, high prices limit demand	TOTTUS, WONG
Distorted consumption patterns and preferences	MINKA
Supply	
Informality at all stages and speculation	WONG
Artisanal infrastructure in bad conditions	SPSA, MINKA
Irregular supply, we cannot offer a regular wide range of products	TOTTUS, WONG
Decreasing in biomass availability	TOTTUS
High fluctuating prices and lack of cold systems to allow price management	MINKA, WONG

Source: Supermarket Survey

Demand constraints such as the lack of confidence and high prices have an origin in supply: artisanal fisheries have generally inadequate infrastructure (they do not use ice, have no cold systems etc.), and inefficient distribution and marketing channels, such as high handling costs, which are reflected in the final prices for consumers. High levels of informality – at every stage of the artisanal productive process – are also emphasized by specialists.

Some supermarket representatives are aware of the decreasing availability in marine biomass and remarked on the need for adequate policies to cope with the situation:

“... Supply has become more irregular and less in terms of quantities (...) opportunities for the sector will depend on regional policies to face decreases in marine biomass. Right now there is no solution in sight; there are no effective mechanisms to combat over fishing” (TOTTUS representative).

3.8. Suppliers and primary sources

At present, (with the remarkable exception of WONG) supermarkets’ main suppliers are collectors at the seashore, intermediaries and /or wholesalers. SPSA buys from collectors at the seashore (90 percent), TOTTUS buys from wholesalers at fishing terminals, while retailers at MINKA also buy from wholesalers, implying that they all buy at high prices, regardless of some small gains due to negotiating abilities on quality and quantity:

“There is some price negotiation according to quality and quantity, but differences in prices are of just some cents.” (TOTTUS representative)

Table 6 – Main Providers and Relevance of Primary Sources
(in a scale from 1 up to 10, 10 = top, x = important)

	SPSA	TOTTUS	MINKA	WONG
Importers	4	1	8	x
Industrial Fishery	6		9	
Coastal catches, artisanal fishermen	7	7	10	x
Aquaculture in continental waters	8	5	4	x
Aquaculture in marine waters	n.a	n.a	6	
We buy from intermediaries	x			
We buy from collectors	x			
We buy from wholesalers		x	x	

Source: Supermarket Survey

Directly marketing from primary sources seems to be a way out of buying at high prices and some supermarkets – like WONG and SPSA – look at it this as a future strategy.

Artisanal fisheries are acknowledged as the most relevant primary source of products but there is considerable expectation with regard to the potential of industrial fishing to cope with irregular supplies and ensure adequate infrastructure for better handling conditions:

“...We know that artisanal fishery is the most important supplier for human consumption but industrial fishery is important to ensure provisions. In times of fishing bans the anchovy sector does not operate, and so, industrial fleets change their fishing techniques and are already working for human consumption supplies. Industrial fleets can go further than artisanal fleets.” (MINKA representative)

Visions about the role of importers differ, and while for MINKA and WONG importers are quite relevant, SPSA and TOTTUS do not consider them as crucial suppliers. Modern retail firms consider existing fishing terminals as the main competitors. Local markets come in second place, especially for segments C and D where market penetration has been more difficult. For strategic products such as meat and chicken, recent market research find 78 percent of people consulted in segments C and D still buy in local markets and 3 percent in small stores (Apoyo, 2005).

Table 7 – Main Competitors Named by Supermarkets

SPSA	TOTTUS	MINKA	WONG
1. Fishing Terminals	Small district fairs	1. Fishing Terminals	1. Small district fairs
2. Small district fairs		2. Supermarkets	2. Fishing terminals

Source: Supermarkets Survey

Prestigious local markets (small district markets) have been pressured to improve and they now represent strong competition for the supermarkets. The same is happening with fishing terminals:

“We know they all have projects to introduce further improvements.” (MINKA representative)

3.9. Views about future market structure and market trends

There is agreement among supermarket specialists on the increasing trend in demand for fish products as a result of growing preferences for healthy food (in better off social segments). The demand for fresh and frozen products and new species like tropical fish and aquaculture products (trout, *paiche* (*Arapaima gigas*) and tilapia) is likely to increase. Increased demand in other income sectors is also likely with products like *perico*.

Supermarkets are confident in their capacity to influence consumption, through publicity, information and educational campaigns as has already happened with species like *perico*, *camote*, *reineta* and tropical species from the Peruvian jungle. Supermarkets are planning to increase the offer of fish product alternatives, especially for new species and products:

“We are going to offer our customers all the alternatives in our stores.” (SPSA specialist)

Specialists foresee that the retail market will continue to undergo further improvements in operating conditions, not limited only to supermarkets but also to other competitors (local markets and fishing terminals). It appears, therefore, that there will be “a place for every one”.

Nevertheless, supermarkets will certainly go beyond their current 20 percent participation in the retail market as they have the best strategies and capacities. The leading firm (WONG) argues that supermarkets will go even further in the coming ten years if they are successful in stimulating fish demand: “supermarkets participation could reach 80 percent”, according to the WONG representative.

As for future primary sources, specialists foresee that aquaculture will become a major source of products. Some of them see industrial fishing as an alternative for the regular supply of fresh fish but recognise they are even more interested in “hake and canned products”, so artisanal fishing would continue to be the one to supply the domestic market.

They also foresee serious problems for artisanal fisheries, however, if adequate policies are not implemented to cope with the trend for a decline in the available marine biomass, the need to improve infrastructure conditions and the promotion of an entrepreneurial approach, with fishing seen as a business. These may become factors for the increasing exclusion of artisanal fishing.

Table 8 – Importance of retail market for fish in coming years

a. Demand behaviour

Fish consumption will increase for aquaculture products (aquaculture: Trout, Tilapia and species from the Peruvian Jungle as Paiche, Palometa (WONG)
Fish consumption will increase due to growing preference for low fat and healthy products. We aim to provide all the alternatives to buy in our shops (SPSA)
Processed products (frozen) and fresh fish will increase, preference for *perico* will continue to grow (TOTTUS)
As far as we do publicity, demand will increase (SPSAA, WONG).
Some entrepreneurs are investing in changing consumption patterns in favour of new products and species (hayduk and cipesa)./ (MINKA)

b. Competition and structure of retailing market for fish

As supermarkets stimulate fish consumption, in the coming ten years they will raise up to 80 percent (WONG)
Supermarkets will go beyond 20 percent. Other competitors will have to improve, we know they have new projects (SPSA)
Supermarkets will increase their participation in all the retailing sector, now they provide 22 percent of the basic consumer basket (TOTTUS)
Terminals are improving, there is a chain reaction, but the major increase will be in supermarkets market share, they have the best strategies (MINKA)

c. Supply structure

Aquaculture should become the main supplier (WONG)
As supermarkets expand, intermediaries and collectors will increase their participation (if industrialists do not enter) (SPSA)
Industrialists are concentrated on hake, artisans are left with little and have to go beyond limits, costs will increase as biomass decreases. (TOTTUS)

d. The role of importers

We do not think imports will increase. Imports are just to offer a diverse range of products and only in very few cases (TOTTUS)
There will not be significant changes (SPSA)
Imports will increase, there are right now important products with significant levels of acceptance (MINKA)

e. Primary sources of fish products (composition)

Aquaculture should become the major source and provider for fish and mariscos (WONG)
As industrialists are more interested in exports and in canned products, artisanal fishers would be the ones to supply the domestic market. (MINKA)
Aquaculture for Trout and Tilapia will be important (they come now from Piura) (SPSA)
Without adequate policies, changes are going to be very hard for artisans due to diminishing biomass (TOTTUS)
Aquaculture will increase, there is great potential for Trout and Tilapia. Maybe industrialist will enter the market. (MINKA)

Source: Supermarkets Survey

4. Profile and Impacts on the Small-Scale Fishing Sector

Artisanal fisheries are carried out in 109 localities along the Peruvian coastal line. They account for 50 percent of fish production for human consumption. About 34 356 people are directly involved in artisanal fisheries (fishers, processors, ship-owners, fish-farmers and small artisanal enterprises). In some regions, artisanal fishery is the only sector influencing the dynamics of small local economies²⁸. Indirect employment generated by the sector is also important but there are now accurate figures available.

Table 9 – Peru Artisanal Fisheries Profile (2003)

	Direct employment
Fishers and their Families	28098
Ship Owners	6258
	Infrastructure
Vessels (5-30 tonnes storing capacity)	6258
Operating vessels	60 (%)
Artisanal Fisheries localities	109
Landing Places	47

Source: Pesca en Red (2005).

Support infrastructure is composed by 47 relatively new landing places along the coastline provided by the state through FONDEPES²⁹ and covering 59 percent of artisanal fishing localities. About 99 percent of the artisanal fishing fleet is made up of wooden constructions with storage capacity ranging from five to 30 tonnes – but only 60 percent is in working order³⁰.

4.1. Economics of artisanal fisheries: From survival to entrepreneurship

Artisanal fishing operates as a household economy on the basis of a pool of family resources (a vessel, fishing equipment, traditional techniques and family labour) passed on from generation to generation. Since they form part of the Peruvian population which is under the poverty line, artisanal fishing families are guided by strategies aimed at maximizing daily incomes.

Family labour is allocated to fish production, processing and marketing. Men are responsible for fishing, while women and children take on the processing and petty trading (Olivia, 1993). By 1993, educational levels among artisanal fishing communities were at primary school level.

²⁸ (Bernuy, 2000).

²⁹ It is a foundation for the development of the artisanal fishery sector.

³⁰ Jose Luis Bernuy in El Comercio (2004).

In recent years, artisanal fishing organizations, such as ANEPAP³¹, with some support from state programs (Pesca en red, 2005), are working on the incorporation of an entrepreneurial approach into artisanal fisheries by building management capacities to cope with the diminishing availability of marine resources and the challenges of globalization.

ANEPAP has 417 associates at national level, who are engaged in different stages of the fishing sector (fishers, processors, ship-owners, fish-farmers, heads of individual enterprises). A group interview was held with the board of ANEPAP representatives to understand the artisanal fishery sector's point of view on the potential of supermarket expansion to improve the artisanal fishery sector.

“In the absence of landing places, *chalanas* are contracted to carry the harvested fish to the shore (...) without any protection. From the boat to the *chalana* and from the *chalana* to the seashore, the fish is selected and sold, and remains exposed to the sun for hours. These are the so called handling conditions which collectors and intermediaries use as solid arguments to reduce prices at the seashore level.” (Olivia, 1993; p.28)

Price determinants at the first stages of the fishery chain such as access to basic infrastructure at the fishing localities and channels for direct marketing by artisans are matters of great concern on the political agenda of the artisanal fishing organizations.

The implementation of landing places by FONDEPES at artisanal fishing localities had become crucial by 2000, but the artisanal fishermen's limited capacity to accumulate capital meant that the investments necessary for maintaining and improving this infrastructure has been delayed in the absence of sustained access to financial services.

“It all begins with the ship-owner's motivation. When he or she accumulates and realises the need to capitalise, then he or she will be able to afford the boat, the handling costs and a freezer transport, and the moment comes when intermediaries can be avoided. Today, there are successful cases, such as the artisan fishing community in Tumbes which markets directly in Piura.” (Flor Velez – ANEPAP)

Either by means of individual management or collective action, marketing concerns will have to be tackled by the artisanal sector in the coming years (Pesca Responsable, 2000).

At present, artisanal members of ANEPAP together with FRIGOAES (a private enterprise member of SPSA) are negotiating MERCAPESCA, a project aimed at implementing a wholesale market in Lima - Chorrillos.

³¹ National Association of Artisanal Fishermen Enterprises.

Table 10 – The MERCAPESCA Project

MERCAPESCA Project	
Objective	Establish a Wholesale Market for Fish and Seafood
Investment	US\$6 000 000
Investors	FRIGOAESA, ANEPAP
Extension	30 000 m ²
Location	Lima - Chorrillos
Condition	In negotiation with the State

Source: Interview with ANEPAP

4.2. Supermarket Expansion: New Conditions and Factors for Inclusion or Exclusion

Supermarket expansion may open the way to direct marketing with the artisan fishing sector. Impacts on the sector will depend on the strategy implemented by supermarkets in the attempt to guarantee quality, low prices and a sustained supply of fish products.

Supermarkets address different agents in the marketing chain, according to their strategic objectives. SPSA deals with collectors at the seashore level, since their strategy relies on quality product rather than on low prices. As part of their strategies for fish supplies WONG and SPSA have also proposed working with the artisanal sector according to ANEPAP representatives. WONG is looking at the artisanal sector and its organisations as part of its price reduction strategy.

To benefit from these opportunities, new conditions of sustainability and increased supplies are required which would imply formalisation, modernisation and entrepreneurial organisations for the artisanal fishing community.

Table 11 – Supermarket Strategies for the Supply of Fish Products

Firm	Present supplier	Projected supplier	Conditions	What they offer
WONG	Artisanal fisheries	Artisanal fisheries and their Organisations	Sustainable Supply (7 tonnes/day), Exclusivity and Quality	Daily payment and Transport Facilities
SPSA	Collectors at seashore	Joint project with artisans and MERCAPESCA for wholesale	-	Joint administration and Export facilities
TOTTUS	Wholesalers in terminals	Wholesalers in fishing Terminals	-	-
MINKA	Retailers	Industrialists	-	-

Source: Supermarket Survey

5. Likely Impact of Supermarket Expansion and Factors for Inclusion / Exclusion of the Artisan Sector

“For artisanal fishers it is attractive to work with supermarkets in order to sell in volume and to ensure better prices. We would have to hire cold systems.” (Luis Sanchez, ANEPAP)

Supermarket strategies targeting artisans would imply a radical change in the artisanal sector’s mentality, organisation and management capacities – as in the case of the WONG proposal to ANEPAP. There is also the possibility for the industrial fishing sector to become the main supplier for supermarkets rather than the artisanal fishing communities.

Table 12 – Likely Impacts and Factors for Inclusion/Exclusion of the Artisans

Impacts	Factors
Consortium Organisation, Income Improvement, Innovation, Export Orientation	Inclusion
	Direct marketing proposals (joint projects) Artisan at first stages in the value chain, crucial for supermarkets’ low price strategies (WONG)
	Exclusion
	Lack of access to credit and basic infrastructure Lack of entrepreneurial management and organization (quality culture, honouring commitments etc.) Badly positioned in the eyes of supermarkets. Disadvantaged position in relation to intermediaries.

Source: Supermarkets Survey

The artisanal fishery sector is not well positioned in the eyes of the supermarkets. They are considered to be too distanced from an entrepreneurial style of management; likely to have problems in honouring contracts, difficult to contact directly and little willing to change. They are considered to be at a considerable disadvantage when compared with collectors and intermediaries. In addition, they lack adequate infrastructure to guarantee quality and sustainable supplies.

In contrast to the artisanal fishery sector, industrial fishing is well positioned in the eyes of supermarkets: they have an entrepreneurial approach, and would be able to guarantee the scale of supplies required. The fact that few of them seem willing to turn to diversification and the domestic market is the reason why supermarkets have not yet reached agreements with them (MINKA has made several approaches with little response). Their participation in the supply of fresh fish products (the most demanded products for human consumption) is subject to considerable fluctuation.

It is crucial for both supermarkets and the artisanal fishery sector to find ways for establishing direct marketing relations. Supermarket specialists listed a number of criteria for artisans to become supermarket suppliers, the listed criteria coincide with those issues identified as challenges by artisan fishing representatives of ANEPAP and can be considered as an Agenda for would-be supermarket suppliers. This shows that the artisanal fishery sector is aware of the challenges it will have to face if it is to benefit from the expansion of supermarkets.

“To respond to supermarkets we need to organise in consortiums, we need an entrepreneurial approach to fishing, but first of all, we need to improve our vessels with cold systems (...) we need a change of mentality.” (Jose Luis Bernuy, ANEPAP)

“Landing places were provided in artisan localities but due to lack of financial resources, the communities could not afford to maintain them (...) we still see each other as labourers rather than entrepreneurs.” (Flor Velez, ANEPAP)

The financial issue appears crucial for artisan fishermen inclusion/exclusion. The leading firm (WONG) stresses the need to rescue artisan fishers from their current financial debts with intermediaries “so that they can offer better price conditions”, echoing artisans’ demands for better access to financial services. Improving artisans’ access to financial services seems also crucial to improve artisans’ infrastructure.

Table 13 – Criteria for Artisan Fishermen to Become Supermarket Providers

Company	Criteria
SPSA	Formality to assume commercial conditions
	Improving infrastructure to ensure quality and quantity
	Organization
TOTTUS	Compensate their disadvantage position in the marketing chain via organization
	Finding alternative commercialisation channels
	Systems by Lonjas as the one experienced in ILO
MINKA	Improve technical conditions (use industrial ice)
	Improve handling conditions by improving "faenas"
	Count with a Collecting Centre
	Maintain landing places provided by the state
	Learn to honour compromises
WONG	Incorporate a new attitude favourable to change
	Rescue artisans from their current debts with intermediaries
	Improve fishing tasks orienting them to most demanded species
	Training on quality standards on the basis of HACCP

Source: Supermarkets Survey

6. Reaction of the Fishery Sector as a whole to the Concentration Tendency in the Retail Sector

6.1. The economics of industrial fishing and its reaction to the supermarkets

Industrial fishing in Peru is pelagic and export oriented. Less than 5 percent of the industrial fleet is adequate for other marine species for human consumption (*jurel* and horse mackerel). The exploitation of anchovy has been a secure means for accumulation and a safety net in the economic dynamics of industrial fishing in Peru. The anchovy business is considered by some industrials as an “anchor business”³², which has allowed a number of synergies for other fishing businesses.

Table 14 – Peru Industrial Fisheries Profile

Direct employment	
Fishermen in the industrial fleet	17455
Fish meal and oil processing	7216
Canned industry	7200
Frozen industry	2300
Infrastructure	
Industrial vessels	1299
Fish meal and oil factories	181
Canned, frozen and cured factories	140
<u>Operating capacity (%)</u>	<u>25%</u>

Source: Libro de Oro de la Pesquería SNP (2003)

In order to understand the vision of industrial entrepreneurs with regard to supermarket expansion a representative of SNP was interviewed.

6.2. Domestic market, human consumption and industrial diversification

“The time has come to redefine the fishing business in Peru and to look for the new opportunities in the fishing market for direct human consumption.” (Walter Martínez Moreno, Pesquera HAYDUK)³³.

The industrial fishing sector is aware of new trends in the markets and some are reacting to the good performance exhibited by the domestic market in recent years. Views on the

³² Martínez (2004).

³³ Pesca Responsable (2004; p. 37).

potential of the domestic market and supermarket expansion are quite varied among entrepreneurs in anchovy industrial fishing. While some are already investing in a diversification strategy (HAYDUK, CIPESA) and reaching the domestic market with new products for human consumption (canned anchovy and frozen products), others remain quiet observers.

The orientation of recent investments in the sector shows: a) attempts to count on a national industrial fleet adequate to fishing for human consumption b) that former anchovy enterprises are diversifying their production lines, towards frozen and canned production. For large scale enterprises diversifying is possible due to the surplus allowed by fish meal and oil revenues, *“otherwise, turning towards domestic market alone becomes a highly risky business”* (SNP Manager Director).

To be competitive in the fish for human consumption market, the required investments are considered to be high both in both financial and technological terms. Neighbouring countries such as Ecuador would have important comparative advantages in terms of fuel availability compare to those of the Peruvian entrepreneurs. The fact that Ecuador is a petroleum producer implies that Peruvian enterprises would need important support from the Peruvian state together with changes in fishing regulations.

To that extent, HAYDUK’s and CIPESA’s diversifying strategies towards the domestic market are seen as risky investments. Human consumption of fish is perceived to be low, not just because of cultural questions (distorted patterns of consumption), but as a consequence of deficient marketing and distribution channels.

6.3. *The limits of supermarkets expansion*

Commercialisation of fish in the domestic market is considered by fishing industrialists as a major problem. Marketing chains are so complex that they limit consumption.

“... by raising prices, they keep the population away from consuming fish. Supermarkets are growing and they are a clear alternative for consumption in Lima, but most of the production comes from outside the region, and requires a sound distribution system, and infrastructure with adequate product handling (...) these investment capacities go beyond any good intentions of the largest and most competitive supermarket firm.” (SNP Manager Director).

Supermarket expansion could influence and could improve artisanal supply capacities but it will depend on important changes in the artisanal sector’s approach to the market and its management capacities, replacing subsistence by an entrepreneurial mentality.

“Artisanal fishing communities need to realise that while they grow as a social group the marine resources they exploit have almost disappeared, so they must be the most enthusiastic and interested in improving supplies.” (SNP Manager Director)

Industrialists are likely to enter into the domestic market for fish consumption not only with frozen and fresh products but also with products for niche markets (delicatessen), which would mean competition also with the artisanal fishery sector.

7. Policies for Small-Scale Fishery Sector in light of the above Tendencies

In the light of this study, some initiatives and programmes from the State, development agencies and the private sector have been identified as relevant to address the challenges posed by the expansion of modern retailing in Peru.

The programmes corresponding to State policies oriented to increase fish consumption, to promote new fisheries and to experiment alternative marketing systems for the artisanal fishery sector. Nevertheless, they require an integrated approach in order to benefit artisanal fisheries and consumers from the expansion of supermarkets.

Cebiche Programme – PERU COMPITE: A Peruvian State programme aimed at linking the artisan fishing sector with demand from restaurants. In Lima, 90 percent of the restaurants oriented to the elaboration of Peru’s typical fish dish, *cebiche*, still buy from wholesalers. The programme responds to a prospective study on the productive chain of *cebiche* and focuses on the very first stages of the process, identifying social and infrastructure problems in the artisan fishing localities

FONCODES³⁴ and Credit for Artisanal Fisheries: The Peruvian State has recently reactivated a rotating fund for the provision of credit services for artisan fisheries. The rotating fund amounts to US\$1 992 169 and is oriented to ship-owners and fishermen. The amount is low but it would allow small investments to improve artisanal fishing infrastructure.

IMARPE³⁵ Educating Consumers: MINKA has been successful in introducing new alternatives for consumption, and customers now buy *Camote* instead of *Pejerrey* (*Odontesthes regia regia*) to prepare *Tiradito*. MINKA specialists work together with IMARPE to inform and to educate consumers in favour of new species and products. IMARPE has a permanent Stand in MINKA, as part of the State Programme “Friday is Fish day”.

COMMERCIALISATION by Lonjas: In Ilo (Southern Coast of Peru) the Spanish Cooperation Agency (AECI)³⁶ and the Peruvian State have launched a pilot project aimed at implementing a system of commercialisation by Lonjas (small terminals beneath landing places, with frozen storage facilities). Associated artisan fishermen are, thereby, able to commercialise directly in better conditions.

³⁴ National Fund for Compensation and Development.

³⁵ Instituto del Mar del Peru.

³⁶ Agencia de Cooperacion Española.

PROMPYME³⁷ and Entrepreneurial Artisanal Fisheries: PROMPYME is promoting the creation of enterprises through the “incubator” methodology. Artisanal fishery organisations are participating in the programme.

CEP³⁸ Paita: An initiative from FONDEPES. CEP Paita is a training institute aimed at improving capacities and abilities in fishing “faenas” for artisanal fishermen. ANEPAP associates are very active in attending and promoting the courses.

FAO-Peru: Has facilitated contacts between artisanal fishery organisations and supermarket representatives. ANEPAP and WONG were contacted through the FAO representation in Peru.

8. Some Concluding Remarks on the Situation in Peru

In Peru, the expansion of supermarkets may follow a different dynamic from that shown in neighbouring economies (Chile, Brazil). Lower income segments, on present trends, seem likely to continue to prefer traditional operators such as local markets and small stores which have gone through a modernisation process to cope with supermarket expansion.

In the light of the above, it is probable that concentration in the retail market in Peru will not easily reach the levels experienced in Brazil or Chile, but will certainly be a crucial factor in coming years. Nevertheless, supermarket plans project a penetration of 40 percent in the retailing market as a whole by 2006 (in 2005 they reached 28 percent) and the investments required to reach that target are already underway.

Since fish products are considered highly strategic for supermarkets and the trend has been for growth in demand, the participation of supermarkets in the fish retail sector will continue to grow. At present, they participate with 20 percent of the retail market and project to advance further in the coming years. Leading operators in the supermarkets sector are looking for direct marketing agreements with the artisanal fishery sector in order to ensure low prices.

New consumption products are being introduced by supermarkets and they have shown a remarkable capacity to influence consumption by informing and educating consumers. This will benefit tropical species (from the Peruvian jungle), aquaculture and imports.

Though considered currently to be the most important primary supplier, the artisanal fishery sector may be bypassed by these trends if adequate policies for the promotion of the sector are not taken into account to overcome factors which have been identified as likely to lead to its exclusion, or if active measures are not taken to strengthen the factors favouring its inclusion. Artisanal fisheries are not well positioned in the eyes of supermarkets and modern retailers and changing that image becomes a crucial strategy requiring also the support of the state. Finance and credit are key factors influencing

³⁷ Programme for the promotion of small and micro enterprises.

³⁸ Centro Educativo Particular.

tendencies to inclusion/exclusion in the artisanal fishery sector. Improving access to financial services would contribute to reducing their disadvantaged position relative to intermediaries, which in addition to improved infrastructure, would allow for the negotiation of better quality and price conditions.

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Annex 2 – Peru

2. Peru

2.1 *Income segments in Peru*

Socio-economic Profile / Peru, 2003

Group	Income US\$ (monthly)	% Population	% National Income
A	3293	2	48*
B	794	12.4	
C	314	28.7	28
D	176	36.2	26**
E	123	20.7	

Source: Apoyo S.A (2003).

*includes A and B

** includes D and E

Group A and B: constitute the better off groups in the Peruvian society, 75% of these families live in Lima, the remaining 25% lives in Coastal areas. They are highly educated, they are a high skilled labour force mostly employed in the formal sector (industry, mining, large scale retailing and the financial sectors), they have decision making positions. According to Apoyo, they represent 14% of the Peruvian population.

Group C: the medium class group. Marketing analysts identify "a traditional medium class group" and an "emerging medium class". The former has been traditionally employed in the public sector. Members of the emerging medium class run small and micro enterprises in the informal sector. They represent 28% of the Peruvian population.

Group D and E: the most disadvantaged groups, with little or no access to basic services, they constitute the non skilled labour, employed in marginalised economic sectors such as agriculture and informal petty trading. They represent 58% of the Peruvian population.

2.2 Interviews in summary

Consumer market and relevance of fish and seafood for supermarkets	SPSA	TOTTUS	WONG	MINKA
05. Relevance of fish and seafood products .Scale from 1 to 10	7	10	6	06-lug
06. Why that number?	It is a staple	It is a staple	Dentro del supermercado y del plan de categorías definimos a la de pescados como una línea de rutina preferida, con la aspiración de convertirse en una categoría de destino	Commercially it is less important than other products in the basic consumption basket of people in segments C and D
07. Participation of fish sales in the supermarkets total sales (annually)	2%	3%	3%	3-5% depends on the time of the year
08. Main obstacles for the development of demand	<p>People do not know wide range of products and possibilities for consumption</p> <p>People have little confidence in the product (they know about the bad handling conditions)</p>	Problems have a supply basis, demand is important and has been growing. Prices are high due to problems on the supply side, high prices limit demand	The first obstacle is the lack of information about fish and seafood health benefits. Second, the fisheries production-commercialization chain is very informal with unstable supplied quantity and prices.	<p>People do not consume enough fish due to distorted consumption patterns and preferences (cultural and economic factors)</p> <p>Consumption is high and diverse in the Coast, the Highlands and the Forest regions. Further education is required, many are not familiar with the wide range of species and potential for consumption</p>
09. Significant changes in demand?	<p>Yes, growing in supermarkets (among better off segments (A and B).</p> <p>Major amounts of volume sold are in the Hypermarket formats (segment C)</p>	No	Yes. There has been an increasing demand for freshwater species and fishes from the Amazon region.	Depends on the time of the year

10. Main competitors in the fish retailing market	1.Fishing Terminals 2. Local Markets	Local Markets	First of all, the local popular markets; also fisheries' terminals and Villamaría	1.Fishing Terminals 2. Supermarkets
11. Changes in consumer behaviour in relation to quality	Yes In all income segments they are more aware about quality, have more information and use it (as a consequence of our promotional work)	Yes Much more demanding, they want to know everything (as a consequence of our promotional work)	Prices are still the main variable for the consumers' decision	Yes More aware about quality, they are more demanding (as a consequence of supermarkets approach and working strategy)
12. Main fishes in total sales	Tollo diamante	Depends on the segments	Lenguado, Corvina, Tollo de leche, Tilapia, Trucha, Cojinova, chita, salmon, perico, reyneta, merluza, pampanito, cabrilla	Segments C and D:
	Lenguado	Segments A and B:		Jurel
	Atún	Lenguado		Caballa
	Bonito	Chita		Tollo diamante
	Tollo de leche	Trucha		Camote
	Trucha	Segment C:		Frozen
	Perico (in summer time)	Tollo (tiburones)		Merlín
		Perico		Aguja
13. Scale of relevance (1-10, 10 = top)				
a. Crustaceous	5	4	8	2
b. Pulpos , conchas, mejillones	5	1	8	6
c. Fresh fish of high value	10	6-7 *	10	8
d. Fresh fish of low value	7	7-8 *	10	10
e. Frozen products	7	4	8	5
f. Industrial products, ready to eat	7	2	5	2
g. Canned products	6	9	na	4
Logistic and Suppliers				
14. Principal suppliers	1.Collectors at seashore (90%) 2. Intermediaries (10%)	1. Wholesalers at fishing terminals	Wholesalers, artisanal fishermen, aquaculture companies and frozen products from industry	1. Wholesalers at Fishing Terminals

<p>15. Contractual conditions</p> <p>a. Provision Timing</p> <p>b. Payment</p> <p>c. Prices</p> <p>d. Prices: negotiation by quality and volume</p> <p>e. Fleets</p> <p>f. Quality</p>	<p>a. We have a portfolio of collectors for a daily provision</p> <p>b. Weekly</p> <p>c. defined by supply and demand. Supermarkets price takers</p> <p>d. Yes, in terms of volume</p> <p>e. We assume fleets</p> <p>f. We do not specify in detail as each species has its own quality criteria but in all cases 100% quality is required</p>	<p>There are no contracts</p> <p>a. daily</p> <p>b. 2-3 days credit</p> <p>c. Demand and supply</p> <p>d. Yes, by both quality and quantity but differences in prices are of just cents</p> <p>e. We assume fleets</p> <p>f. Total Freshness , from 8-10, lower levels are rejected</p>	<p>a. Daily provision for fresh fish and seafood and twice per week for frozen products.</p> <p>b. Daily for fresh products and 7-15 days credit for frozen.</p> <p>c. Daily negotiation</p> <p>d. Quality is standard and defined by the supermarket.</p> <p>f. Every supplier has to follow HACCP references.</p>	<p>a. Daily provision</p> <p>b. In cash and daily</p> <p>c. Anyone can change prices if information and adequate infrastructure is available. Supermarkets are in that position</p> <p>d. Yes</p> <p>e. Locatarios</p> <p>f. Contracts specify that products will be checked and evaluated the moment they come in and also on line. We specify what they should bring and how to bring it.</p>
<p>16. Changes in supply (quantities)</p>	<p>Yes, more quantity is coming these days but because of seasonal reasons</p>	<p>Yes it has become more irregular and less in terms of quantities*</p>	<p>Yes. More relevance to aquaculture species: stability in quantities and prices.</p>	<p>Locatarios know that they face here a permanent demand so they are always coming with supplies. Supplies amounts are according to the season.</p>
<p>17. Changes in product quality (in supply)</p>	<p>Yes. Initially our level of rejection was more than 20%, right now it has gone down to 1%-2%.</p>	<p>Yes, is has improved due to our level of quality evaluation</p>	<p>Yes, it has improved due to more attention at terminals.</p>	<p>Yes, it has improved considerably due to our permanent evaluation</p>
<p>18. Changes in contracts</p>		<p>Yes. Time for payment. Now Supermarkets can pay in 2 –3 days</p>	<p>na</p>	<p>No</p>

19. Relevance of type of fishery and other supplier of fish (original)				
a. Importers				
b. Industrial Fishery	4	1+	6	8 #
c. Coastal catch, artisan fishers and their organisations	6 *	- ++	2	9 ##
d. Pisciculture in continental waters	7-8**	6	10	10
e. Aquaculture in marine waters			10	
f. Don't know, buy from intermediaries	8	5	4	4
	Not available	Not available	Not available	6 ###
20. Opportunities for supermarkets in present context	The opportunity that industrial fishers enter in the consumer market and ensure supply (artisans have not adequate infrastructure)	RG may help artisans to improve management, it will depend on the regional policies to face decrease in biomass. Right now there is no solution on the way, no equipments to combat over fishing.	Fishermen may improve their infrastructure and management, diminishing time of disembarking and losses. They may as well by pass middlemen in the commercialization chain	We believe the sector will improve in operative capacities. Artisanal fisheries may improve their infrastructure and management, right now both are obsolete.
21. How can supermarkets benefit from existing opportunities	Benefiting from existing opportunities will depend on our capacities to expand (more outlets) and to enter new market segments.		Negotiating directly with fishermen and orienting catches towards more commercial species.	We have tried agreements with large industries but there was little response. Nevertheless working with them is easier. Perhaps they will decide to enter

- As a prospect

- ** For the highest quality species

- + depends on some species, for instance "reineta" is important and comes from Chile

- ++ It is not so important for us at the moment, just for very few species: merlin, espada. Our provision structure is as follows: 70 percent comes from artisan fisheries, 30 percent industrial factories for frozen fish and Trout.

- # We have imports from Chile during the whole year, Perico comes from Ecuador, these products have a secure market

- ## We know that artisan fisheries are the most important for human consumption, but industrial fishery is also important . For instance, in times of prohibition, industrial vessels just change their nets and there it is, they go further and deeper than artisan fishers. We have had many conversations about this with industrialists but they have not replied to our questions.

- ### At present our provision of langostinos (lobsters) comes from pisciculture in the North of Peru

Conclusion

Although general conclusions for developing countries cannot readily be drawn from the above three case-studies, the communalities identified are sufficient to warrant further research analysing transformations in the fish products sector and impacts for artisanal fishing in the light of the increasingly hegemonic position of supermarkets in food retail and distribution. A striking feature in each case was the key role still being played by artisanal fishing in ensuring supplies for the domestic market, proportionately more than the share of family farming in the provision of agricultural products. In Brazil, this was associated with the weakness of the industrial fishing fleet, in addition to strong regional traditions of fresh water fish consumption. In Peru and Chile, on the other hand, the continuing importance of artisanal supplies to the domestic markets is facilitated rather by the industrial sector's preference for exports - feed from ocean capture in the former and new products from fish farming in the latter.

In each case, however, the studies make clear that necessary (although not necessarily sufficient) conditions for continued access to the market will imply radical changes in organisation, logistics and product quality being imposed directly by large-scale retail, and increasingly adopted also by traditional market outlets. The problems currently associated with the fish sector - uncertain supply, long distribution chains, price instability and poor, uneven, quality - are reflected in the diverse strategies being adopted by different supermarket chains, as evidenced in the interviews. While, however, both the strength of traditional outlets and the degree of market penetration by large-scale retail varies considerably from country to country, the leading retail firms have either already achieved or plan to assume dominance of the sector in the short to medium term.

Only in cases where consolidated consumer demand is associated with products exclusively or largely dependent on traditional fishing community supplies does retail show itself disposed to actively promote cooperation with this sector. Supermarket competitiveness depends on continuity of supply with products of homogeneous quality and stable prices. Where possible, therefore, they bypass traditional wholesale and establish their own distribution networks based on direct contracting with the domestic industrial fleet, with imports or, increasingly with commercial fish farming. While in many other product categories supermarket strategy is oriented to diversification, this is only possible as an evolution in relation to consolidated consumer habits. In the case of fish, consumption is often still based on the vagaries of supply dependent on climatic and seasonal variations and increasingly also on regulatory measures aimed at establishing sustainable stocks. Neither price nor product stability can be easily achieved in these conditions, and supermarkets correspondingly look to the possibilities of fish farming supplies, particularly, but not exclusively (tilapia and carp are also contenders) those which have acquired notoriety and global logistics - salmon, trout, shrimps.

The heterogeneity of the fish sector makes generalisations particularly difficult. Countries have widely different resources (coast, fresh water), and in addition the sector has to compete with alternative animal protein sources, whose availability varies greatly by country and region. The research of Reardon and colleagues has already shown how the domestic food markets of developing countries are being redefined in the light of the new

quality and logistical standards established by large-scale retail and increasingly adopted by traditional food distribution circuits as the condition of their competitive survival. The above case-studies have shown that similar tendencies are now at work in the fish sector.

In some instances, the perspective of the artisanal fish sector may be more favourable than for family farming in other food products given the special difficulties of organising “modern” fish markets and consumption patterns noted earlier. The dispersion of supply similarly favours market access for traditional fishing communities particularly in less densely populated regions where supermarket penetration is weaker. The engagement of industrial fleets and commercial fish farming in global markets, especially in countries with a limited domestic demand, is an additional factor favouring the continued participation of artisanal farming. This may even lead supermarkets, as we saw in the case of Peru, to contemplate direct negotiations with the artisanal fishing sector.

In general, however, our research suggests that to the extent that supermarkets assume control of the marketing chain and no longer depend on traditional wholesale and its supporting middlemen, they condition the choice of their suppliers on a series of criteria which are only exceptionally present in artisanal fishing communities. Transactions must obey current legal and fiscal requirements, delivery schedules must be rigidly adhered to and scale, quality (freshness, size) and continuity of supply must be guaranteed. At the best of times, capture fishing presents severe marketing problems for modern retail and explains the attractiveness of fish farming supplies, although these often involve the construction of new consumer habits. While, artisanal fishing is not automatically excluded in this new context, there is little evidence of supermarket commitment to promoting the organisational, management and technological competences required for competitive market access.

Given the social, economic and environmental importance of traditional fishing communities in developing countries, public policies are, therefore, crucial, if these communities are to develop the necessary competences for continued market inclusion. In each of the countries studied, detailed and comprehensive policies have been elaborated which show a clear awareness of the problems facing this sector. It remains to be seen, however, whether human and material resources proportionate to the challenges will be available to provide effective solution to the problems identified.



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