QUALITY SCHEMES AND QUALITY LABELS IN THE FRENCH FISH FARMING SECTOR

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ABSTRACT

Within the French fish farming sector, both in the freshwater sector (trout, carps) and in the marine sector (seabass, seabream, turbot), during the last years have emerged a number of quality schemes. These quality schemes show various forms (national charters with third part certification, standard, official quality labels, private certification, collective trademarks), they correspond to various levels of constraints in the specifications, and they have been initiated by diverse types of operators (producers, processors, distributors), as individuals or groups.Using the results of interviews of operators in the supply chain for the different sectors, we analyse the effects of the setting up of quality schemes, for the enterprises (production, processing), for the collective organization, and for the product enhancement. In the enterprises, the importance of induced changes varies greatly depending on their initial situation, the main changes being brought by setting traceability. In the case of collective quality schemes, an overall improvement of quality is recognized by the actors, but the expectations by the producers of a premium is hardly satisfied, in the present organization of the chain. At present, the small number of companies officially certified for labels show generally good results, but those can hardly be generalised.The study gives opportunity to analyse the construction of quality schemes regarding to the collective professional organization and the supply chain organization, and to discuss the use of collective quality schemes as tools for a general improvement of farming and processing.

Keywords: fishfarming, quality, certification, schemes, labels, signals, organization

INTRODUCTION

French aquaculture, with an overall production of 251,000 T in 2001 (OFIMER, 2003), is characterized by its diversity : shellfish (oysters and mussels) represent the main part (191,000 T), while fish farming shows three main sectors: pond freshwater fish farming (carps and others species), with an overall production of 11,000 T, freshwater trout farming, for about 44,000 T per year, and marine fish farming (seabass, seabeam, turbot), for 6000 T.
The situation of French aquatic food products market, equally supplied by domestic production and importation, creates conditions of a high competition.

Regarding to food-labelling programs, France has created a set of official labels according to origin (AOC), organic agriculture (AB), superior quality (Label Rouge) or specific characteristics (CCP). These labels have a great importance among agri-food products : up to 80% in wine sector and 20% in cheese sector for AOC certifying origin and related characteristics, up to 30% in value in broiler sector for Label Rouge. These French quality labels are completed by the EU designations for origin and specificities

(PDO, PGI, TSG)[1]. The official quality labels have shown a revival within the last years, after the alimentary crisis consecutive to ESB and dioxins (Louis 2000).

Compared to the agri-food sector, the fisheries and aquaculture products are new-comers in the programs related to certification and labelling of quality, and the application to the field of aquatic products has raised numerous questions (Charles & Boude 2001, Mariojouls & Roheim-Wessels 2002). Between 1989 and 2002, 16 official labels have been defined for the aquatic food products, among which 12 concern farmed products. Aside from these official labels have been developed collective trademarks, standards, charters, individual trademarks. Altogether, it can be said that in the French fish and shellfish farming sector, there is an on-going movement to create strategies for enhancing quality and improving marketing, both in the shellfish sector and in the finfish farming sector (Mariojouls & Paquotte 2003, Mariojouls 2002). In 2001, with 6947 T valued 31 million Euros, the seafood products represent only 1.8 % of the value of all officially labeled food, but it shows a good growth rate (10 % in value from 2000 to 2001).
Considering the overall set of programs aiming at enhancement of quality, we shall speak of "quality programs", including the official quality labels and the quality schemes, showing various forms.

AIMS AND METHODOLOGY

The present paper focus on the finfish farming sector, including freshwater trout farming, freshwater pond fish farming and marine fish farming. Within the last years, have been created a set of quality programs including various types (standard, charters, official quality labels as Label Rouge and organic culture, regional collective trademarks with specification list), by professional groups gathering fish farmers and also processors in numerous cases. Some supermarkets chains, within the same period, have created individual trademarks with specification list for the supply of fresh whole or cut farmed fish.

What are the main characteristics of these various "quality programs", and what is the focused "quality" ?
What have been the changes brought by the adoption of a "quality program" in the farming and processing companies ?
What are the consequences of the creation of "quality programs" for the professional collective organization, on one hand, and for the product enhancement and the segmentation of the market, on another hand ?

These are the questions that we tried to answer in the three fishfarming sectors by analyzing the content of 76 interviews with the actors : producers, processors, distributors (60 interviews), but also with professional bodies, extension services and public bodies (16 interviews). The interviews have been performed from April to September 2003, in ten regions, covering most part of the production of each sector. The questions to the economic actors focused firstly the case of each company for the changes brought by adoption of a quality program in terms of work (time spent, organization, cost, staff concerned, existence of a price premium on the product). We also invited the interviewees to give their perception and opinion about the consequences of the quality schemes at a global level, on the sector organization and on the product enhancement. In the case of non-economic actors, the interviews had a double aim: gaining general information on the concerned sector, collecting the opinion about the consequences of the creation of the quality programs at a global level.

[1] AOC : appellation d'origine controlée ; AB : agriculture biologique ; CCP : certification conformité produit ; PDO : protected designation of origin ; PGI : protected geographical indication ; TSG : traditional speciality guaranteed

PRESENTATION OF THE QUALITY PROGRAMS

National collective quality schemes

Freshwater trout farming sector

The French trout farming sector is characterized by very diversified production structures, regarding to the size of farms (from a few tonnes to several thousands tonnes), the focused market (34.000 T for direct consumption, about 10.000 tonnes for restocking and angling), and the natural conditions of farming (from mountainous areas to wide plains). The products for consumption include portion-fish (250-300 g, white or salmon trout) and big trout (1.5 to 3 kg, salmon trout), under several presentations: living portion trout, fresh whole portion trout, processed products (fillets and cuts, prepared dishes, smoked fillets) out of big trouts. The packing and processing units also show various structures and sizes, from individually owned unit on the farm, to specialized packing-processing plant of middle or large capacity (600 T to several thousands). Although the French market is mainly supplied by the domestic production, it has been facing for several years difficulties on the market, due to a severe competition from salmon, competition which can be deepened by the growing production of trout in new farming countries (Norway, Chili).

The fish interprofessional organization (CIPA[2]), gathering producers, processors and feed industries, has undertaken an important work on trout industry since 1996 in order to set up a quality scheme for trout production (for direct consumption) and processing, aiming at setting up better production practices, clearer commercial relationships, and reliable quality and traceability.
It was based on the analysis of the initial situation of the market (declining sales), and in farming sector, showing quality heterogeneity (with some off-flavors) and spread offer. An overall consensus was sought through working groups and a validation by the governing body of CIPA. A first quality chart was launched in 1997, but a more complete text about production and processing rules was published in 2000 as a norm (AFNOR NF V45-100), basis for the quality charter "*La truite, Charte Qualité* [R]" launched in February 2001, a collective trademark with a logo being associated to the chart. It concerns the fresh products and not the living trout, and focus largely the packing-processing conditions, plus the farming conditions. An external independent organisation is in charge of approving the processing companies and associated production units entering the program, and controlling the implementation of the specification list. The main points of it are : species (rainbow trout), fishfood (GMO free and no meat and bonemeal from land animals), freshness (guaranteed by catch date), traceability (from farm to retail shop), specifications on conditions for packing and processing, audits carried out by external independent organisation. The cost of the quality scheme in the farming and processing companies is supported by public funds through CIPA for the two first years, and then by the companies.

Marine fish farming sector

The marine fish farms in France show various structures, from small family size farms (50 to 100 T) to industrial farms producing several thousands tonnes. The products issued from this sector are fresh whole fish, from 250 g to 1 kg and over. Unlike the trout sector, the marine fish farmers are facing the competition of import of the same species, notably at lesser prices from the Mediterranean countries, and the domestic aquaculture production represents a limited production compared to the size of the market supplied by fisheries and aquaculture products. In order to identify the French farmed marine fish and their characteristics, and reinforce an existing good image for restaurants and export to North European countries (UK, Belgium, Germany), a quality scheme has been set up.
Following the same pattern as for trout, the marine fish farmers, also members of the CIPA, have launched in November 2001 a quality charter "*Qualité – Aquaculture de France*[R]", associated with a

[2] CIPA : Comite Interprofessionnel des Produits de l'Aquaculture

trademark and a logo. It concerns the production of seabream, seabass, turbot and sturgeon. The specifications concern mainly: fish food (GMO free and no meat meal and bone meal from land animals), freshness (guaranteed by catch date), traceability (from farm to retail shop), specifications on packing-processing, audits carried out by external independent organisation.

Role of interprofessional charters and projects

For trout as for marine fish, the interprofessional organization CIPA considers the quality schemes as a basis for a national collective definition of quality, to which can be added some other quality programs: regional collective programs, official quality signals (CCP, Label Rouge, organic farming).
Concerning the future for the quality schemes, further work is being continued by the CIPA for both trout farming and marine fish farming, in order to prepare an application for a CCP for each sector. For trout farming, the CCP would cover not only fresh products but also living trout. A code of good practices for trout farming should soon be published, as an intermediate step before the application of CCP.

Regional trademarks

Several regional trademarks are being under construction by associations of producers, in trout or marine fish farming, with the aim to valorise some specific features of the concerned fish farming in the region. The construction of a regional collective trademark and the use of the associated logo may correspond to several levels in the control of the specifications: i/ self control by the producer, ii/ control by a technician of the producers association, iii/ control by an external body. In the last case, the collective trademark may be regarded as an intermediate step before applying for an official quality signal (CCP , IGP).
Today, we observe two groups of regional trademarks. Some are regional trademarks created for a fish farming sector: “Trout of Artois”, “Trout of Ardeche”, “Trout of Pyrenees” (this last one being associated with a Carrefour trademark). Some are regional trademarks for agriculture farms, among which some trout farms have been included: “Trademark Natural Park of Vercors”, “Terroirs de Normandie”, “Bienvenue à la ferme”.
There are several on-going projects for construction of trademarks by producers groups: two for seabass and seabream farming (Mediterranean coast, Corsica), two in freshwater farming (Trout of Pays Basque, Carps of Dombes Region) associated with application for CCP and IGP.

Official quality signals

The official quality signals are applied by individual fish farmers, once they have been defined for the concerned production through the adequate procedure. The procedure for the construction of an official quality signal, unlike the construction of collective quality scheme or collective trademark, is strictly defined by the regulation, and represents a rather heavy work.

Label Rouge

The Label Rouge is the official quality signal for the superior quality of a product, defined through a specification list proposed by a quality group gathering producers and related industries, and receiving agreement through an official procedure involving the Ministry of Agriculture and specialized commissions. The implementation is controlled by an accredited certification body, as external independent organization. The creation of Label Rouge is motivated by the need to create a segment of high quality products in competitive markets.

The seabass Label Rouge has been defined in 2000 after the application issued by a quality group gathering two Mediterranean farms. The specifications concerns the genetic origin and the conditions of farming (feed, density and site).
The text defining the Turbot Label Rouge has been presented by the quality group Association Turbot Quality gathering one hatchery, four farming companies and two fish food manufacturers, and agreed in 2002. The specifications concern the conditions for farming, slaughtering and packing, the main points being: feed (protein 55% minimum, no land animal meal, lipid 12% maximum with minimum 60 % from

marine oil), conditions respecting animal welfare and body integrity (density, survey of sanitary conditions, slaughtering), harvesting time (minimum 17 months and 500g), specifications on flesh flavor and texture, traceability.
A project of Label Rouge for freshwater trout is under construction by a group of producers. The specifications would include farming conditions (feed, density, veterinary treatments, time for growth, water quality), harvesting conditions, traceability.

Organic farming of fish
The organic farming of fish has been defined in France after a long work by a committee gathering representatives of fish farmers, fish processors, organic agriculture organizations, administration, which issued a proposal which was finally agreed in 2000. The text includes a common core defining the general conditions, then technical appendix for each fish species. After revision in 2002, the text is part of the regulation relative to the organic production of animals[3] published in August 2003. The specifications concern mainly : choice of site (not polluted), origin of the fish (no GMA authorized), feed (marine raw materials, 30 % organic plants, no GMO, natural pigments), density (low), veterinary treatments (limited use), production volume per farm (limited), traceability. The products of certified organic fish farms are recognized by the logo AB, property of the Ministry of Agriculture.
Organic fish farming is at its beginning in France: in 2003 there are two farms for trout farming (one in freshwater, one in marine water), and two farms of seabream and seabass.

Projects of CCP and IGP
As mentioned upper, there are some projects of application for CCP and IGP associated with projects of collective trademarks ((Trout of Pays Basque, Carps of Dombes Region).

Distributors trademarks
The multiple supermarket chains have developed within the last years some individual trademarks for the main farmed species of fish and shellfish, following a pattern already used for agriculture food products. The first multiple to do it was Carrefour in 1998, creating a "Filière Qualité Carrefour" for farmed trout, followed by the other multiples: Auchan ("Filière Auchan"), Intermarché ("Gulf Stream"), Cora (« Engagement Dès l'Origine » EDO), Casino ("Terre & Saveurs"), Champion (« Sélection Champion »), Métro (« Filière Métro »).
The trademark is attributed to products supplied under a contract by selected producers, the contracts including a list of specifications, which implementation is controlled, in most of cases, by an external organization. The aim is to provide to consumers some guarantees on a quality level above the average quality level, and on traceability. While the creation of the supermarkets trademarks can be regarded as quality programs, the main difference with the programs upper presented is that they are entirely private: private control, and no publication of the specifications lists.
As for fish farmed in France, all the supermarkets chains have developed trademarks for the freshwater trout, and in 2003, several chains are preparing specification lists for the seabass and seabream farming.

[3] the last version of the regulatory text relative to organic farming of animals can be consulted at the following website : http://www.agriculture.gouv.fr/spip/IMG/pdf/ccrepabfconsoa1a2a3.pdf , and organic farming of fish is defined in Chapter 8.

Table 1: Main results for the existing Quality Programmes according to our inquiries

	Number of units (/ Total France)	Present production in the QP (share of domestic production) (a)	Sales with signalisation	Ex-farm Price increase on fresh whole fish compared to standard product
TROUT				
Quality Scheme « Truite Charte Qualité »	21 processing (/45) 95 farms (/800 sites)	27 000 T (80 %)	na	No price increase
Supermarkets chains trademarks	na	na	na	Often nul or very low Carrefour: up to 10 – 20 %
Organic trout	2 farms	120 T (0,3%)	120 T	Up to 100%
MARINE FISH				
Quality Scheme « Qualité Aquaculture de France »	8 hatcheries 18 farms (/27)	4 000 T (66%)	na	No price increase
Turbot Label Rouge	1 hatchery 5 farms 2 feed companies	860 T (27%)	250 T	6 – 12 %
Seabass Label Rouge	1 hatchery 2 farms	400 T (13%)	400 T	Limited price increase
Organic seabass and bream	2 farms	100 T (2%)	100 T	35 - 50%

(a) : calculated as the ratio to domestic production for direct consumption ; na : not available; T: traceability

Table 2: Main Changes induced by Quality Programs according to our inquiries

	Traceability setting up	Work and time required	Production Cost
TROUT			
Quality Scheme « Truite Charte Qualité »	Variable difficulty according to initial stage	Variable changes ½ day-man / week for T.	na
Supermarkets chains trademarks	Very important work	Specific technical requirements for some supermarkets	na
Organic trout	Very important work	Changes in farming techniques	+ 30 %
MARINE FISH			
Quality Scheme « Qualité Aquaculture de France »	Little changes for most	Limited changes	na
Turbot Label Rouge	Very important work	Changes on slaughter, package, processing 25 % of manager time at starting period	0.55 €/kg
Seabass Label Rouge	Important work	one day-man / week for T.	na
Organic seabass and bream	Important work	Changes in farming techniques	+ 20 %

(a) : calculated as the ratio to domestic production for direct consumption ; na : not available; T: traceability

PRESENT STATE OF THE ADOPTION OF QUALITY PROGRAMS, RESULTS AND PERCEPTIONS (Table 1 and 2)

The **national Quality Scheme for trout sector** is today implemented in 95 farming sites of large and middle size, a limited share of the 800 farming sites existing in France, but responsible for 80 % of the production for consumption.
Inside the trout farming companies, the changes induced by the adoption of the quality scheme are very variable according to their previous organisation and equipment. In big processing companies and their associated supplying farms, a number of managers declared that entering the quality scheme did not bring any change, as they were already involved in supermarkets trademarks demanding to observe similar specifications. Nevertheless, in some cases a second audit was necessary before agreement for the norm Truite Charte Qualite. For middle size farms, family-owned, the entry in the quality scheme has demanded changes, notably setting up a computerized management for traceability. It has not been possible to obtain from the interviewees an estimation of the cost linked with the adoption of the quality scheme, because a number of the changes are integrated as part of the evolution in techniques and management. But the extra-work linked with the management of traceability in routine is estimated unanimously equivalent to a half day-man per week, in units producing 200 to 400 tonnes per year. For middle-size processing companies, the main changes have concerned setting up traceability and controls, through the necessary staff training, internally.
There is no price premium for the products under the Quality Scheme, and the supermarkets chains refuse to display the associated trademark in the shops. But it has also been observed that some packing-processing plants forget to post up the logo.

The perception of the trout quality scheme by economic actors are mostly positive for technical and organisational aspects, quoting : the large share of production covered, a real enhancement of the products quality and a narrowing of the range of quality among products, the adoption of common features in the definition of quality, the reinforcement of the collective professional organization through a common program. But there is clearly a disappointment for marketing, as no valorisation of the enhanced quality is obtained through a better price.
The farmers who did not enter the quality scheme mentioned reasons of various types for their choice: structural reasons (farm too small, too many changes induced by the quality scheme), ideological reasons (opposition to the national Interprofessional organisation, refusal to be controlled), or marketing reasons (sale of live fish not covered by the quality scheme, sale on local outlets not requiring a national standard and trademark). A number of those farmers are reluctant to enter the quality scheme which, according to them, carries an “image of intensive production, industrial processing and distribution by supermarkets”.
There are some concerns for the future of the quality scheme in the middle size companies who declare that they may be not able to pay for the controls supported by the CIPA during the first two years. At the time of our inquiries in spring and summer 2003, the low level of prices and a severe draught created an especially difficult situation for the trout farming sector.

The results of the national **quality scheme for marine fish farming** also show a high coverage (66 %) of the production. Except for the middle-size companies which had to set up traceability, the needed changes for entering the quality scheme have been limited as this quality scheme was conceived to valorise an existing know-how. The perception of the Quality Scheme by the companies involved is mainly positive : efficiency of the controls on farming practices allowing the narrowing of the quality range, improvement in the recognition of products quality by their customers. The only dissatisfaction comes from the absence of price increase.
Most of small size family-owned companies did not enter the quality scheme, considered as not suitable for their size and market. The reasons mentioned refer to ideological choices, because they do not agree

with the national policy and feel they have a different farming system than the big farming companies, and to marketing reasons, as they want to show in priority the regional features for a local market.

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There is a small number of farms involved in a production certified by **Official Quality Signals**: 2 for organic trout, 2 for organic marine fish farming, 2 for seabass Label Rouge, 5 for turbot Label Rouge. It represents a share of the domestic production still very small for organic farming (less than 1 or 2 %), but more important in the case of Label Rouge (13% for seabass, 27 % for turbot). In all cases, there is an over-cost due to the specifications of the certified production (+ 20 to 30 % for organic production). There is a price premium allowed in all the cases, high for organic products, more limited for Label Rouge products. But these data cannot be generalized, as these certified productions began recently, and concern still a very small number or farms.

The **supermarkets chains** have adopted the norm Truite Charte Qualité as a basis on which they elaborate the specifications of their own individual trademark. It has not been possible to obtain the detailed list of specifications for farming and processing defining the trademarks. The overall information gathered during interviews allow to say that there are different level of exactingness, and Carrefour is regarded as the most exacting. Some chains require very few points in addition to the Norm Truite Charte Qualite, some chains are at the forefront of the possible requirements taking into account up-to-date technological information and prescribing specifications for what they consider as being key-points for quality, food security and marketing.
As for price, in general the chains do not consent any price premium or very little, considering that the guarantee on bought quantities is the main advantage they bring. Carrefour mentioned some price increase up to 10 to 20 %.

ANALYSIS and DISCUSSION

Organization of the supply chain

The features of the trout supply chain have deeply influenced the results of the Interprofessional Quality Scheme, because of the characteristics of the production and processing sector, and of the relationships with the distribution sector.
Finally, the quality scheme is satisfying the big and average size companies, while most of the small companies feel little concerned or unsatisfied. This may be regarded as a surprising result, because, as underlined by the FEAP[4] (web-site, July 2004), "*the larger companies will be able to achieve [individual quality programs] while for the smaller production units, the development of Quality Schemes appears to be a promising approach*". The present case offers the inverse scenario, as the big and middle size companies – often integrating farming and processing – have the leadership in the Interprofessional actions, while the small unit farms are less involved, although for some regions, the staff from professional associations ensure the representation. The important heterogeneity in the farms structure (size, focused markets) makes it difficult to gather all the producers around the same objective.
The distributors are not part of the Interprofessional organization, while the supermarkets, ensuring 66% of the distribution of fresh fish and 97% for smoked fish, have in the product chain a dominant position which has been the key-issue in the marketing result of the National Quality Scheme :
- the adoption of the Trout Quality Charter by supermarkets as a required standard is *de facto* a recognition, but is hardly satisfying considering their refusal to display the associated trademark, and to give any price premium,
- the creation of individual brands by supermarkets chains has been done in parallel in time and content with the professional quality programme, with important interactions between the two sectors,

[4] FEAP : Federation of European Aquaculture Producers

- the final situation of competition has reinforced the position of supermarkets to not recognize the professional Quality Scheme as a valuable trademark, and it can be said that the supermarkets trademarks have "swallowed" the Interprofessional trademark

One key-question today for the producers and processors is to establish relationships and dialogue with the distributors. Allowing them to enter the Interprofessional organization is discussed but is a very difficult point in the present unbalanced state of power. In addition, while it has been possible to put in common the technical facts related to quality in farming and processing, building up a common national strategy for marketing seems difficult today, considering the strong individualistic strategies from some companies, re-inforced by a context of high competition in a shrinking market.

This question is important for the present quality scheme, and for its future. The project to launch a certification (CCP) as a further step in the quality enhancement is regarded very sceptically by numerous fishfarmers, unless that would bring the added-value they expected from the present quality scheme. But obtaining a premium seems very uncertain considering the present state of mind of the supermarkets chains, and this again raises the question of the necessary dialogue to open with them.

National policy and regional strategies

Another question which is raised by the results of our interviews, about the general organization relative to quality programs, is the need to find a coherence between national and regional levels. As mentioned upper, the conception of the national interprofessional body CIPA is to create, through the national quality schemes, a basis for any other type of quality program, individual or regional This position is supported by the public body OFIMER[5], which consents a financial support to producers associations under condition of a previous entrance in the national quality scheme.

But some fish farmers refer as a priority to a regional identity in their project for quality programs, and perceive the national quality scheme as an abusive rule imposed by the central level, that they do not want to accept. We find here a conflict between a centralized conception and a local conception, often reinforced by a lack of direct contacts and understanding. Raised also are some more general questions about freedom and self-decision, in a sector of family-owned farms with a long tradition of independence.

Quality levels, market segmentation and payment of quality

Considering the set of the existing quality programs, one may ask about the resulting construction of a hierarchy in quality levels, and about a segmentation of the market. Another point which needs to be discussed is the payment of an enhancement of quality, as we observed that today, only the official quality signals (organic farming, Label Rouge) are allowing a price premium. The absence of price premium associated with the trout quality scheme appeals several remarks:

- The first one concerns the ambiguity of the role of a quality scheme, relatively new notion in France, while on the opposite the official quality signals are a reference in the agri-food sector, well known for bringing an added-value. Confusion in terms ("quality signals" and "quality schemes"), lack of clarity in the initial speech of the national professional body, all contributed to create expectations of a price premium which was not obtained from the Quality Schemes.
- Instead of being identified as bringing an enhanced quality, the quality scheme is becoming a new minimum level, and is recognized as a new standard for trout quality. This may be regarded satisfying, as a step forward in the general trend to progress in quality in the agri-food sector, and as a solid basis for

[5] OFIMER is the national public body in charge of the fisheries and aquaculture sector, *inter alia* supporting the quality enhancement programmes.

more exacting quality programmes. But that result is hardly incentive for entering the quality scheme for farmers who do not have an overall view of the markets.
- Can the creation of a quality scheme for products focusing the mass market allow a price increase ? This question can obviously not be answered simply, as it raises other questions, concerning the size of the quality discrepancy which may justify a price increase, the general conditions of the market allowing or not a rise in price, and the strategies the distributors. Paradoxically, the success of quality schemes in terms of amplitude (80% and 66% of the production involved, respectively for trout and marine fish) may be a reason for the absence of price premium in a situation of tensed markets.
- Is the new quality level visible for the consumers, making acceptable an increased price ? Although the CIPA organized several TV and radio campaigns of advertisement on the new brands, in absence of display of the trademarks in supermarkets, the Interprofessional Quality Schemes are little visible to the consumers, and logically have had a limited impact on the consumers. Very different is the case of official quality signals, which are perfectly identified by consumers thanks to an individual mark on fish, and a high notoriety.

Altogether, the range of products and quality levels issued from the quality programmes created within the last years is not made visible for the consumers, and cannot lead to a price segmentation.

Traceability

We can underlined that thanks to the creation of the quality schemes, traceability is now applied to the majority of trout and marine fish production, and also is becoming a standard. This shift has been observed widely in the agri-food sector: CHARLIER (2003) observes that traceability, which before the alimentary crisis was applied only for certified products and was a key for their differentiation, is today used for a large number of food products, and thus becomes a standard for quality and food security. In other words, the quality schemes have already gathered most of the fish farms which could quite easily adopt traceability. For a number of the remaining farms, the setting up of traceability will probably be a difficult challenge, that they will have to face anyway when traceability will become compulsory in EU in 2005.

Roles of the quality schemes

The French experience in quality schemes, and the perception expressed by the fishfarmers after one to two years of existence, invites to question the roles of quality schemes. As for quality enhancement, it appears than more than focusing a premium level, they are used to create a new standard. For marketing, if the producers have been expecting a price premium, it is likely that the role of quality schemes is more has been to allow to protect the market shares in competitive markets, and this has been achieved. On organisational viewpoint, the construction of quality schemes appears to be an efficient tool for reaching a common codification of technical practices, that allows an improvement of the quality of the products, but also reinforces the collective organisation. It is possible to speak here, as Gouin et al. (2004) showed in the fisheries sector, of new forms of relationships between actors in the chain, based on contractualisation between groups of producers and processors, and the distributors, but also among the producers and processors, based on the adoption of a common definition of what is quality.

In the international context, the setting up of quality schemes, and more widely what we have called quality programmes, is part of an overall movement for an enhancement of quality in the agri-food sector. In aquaculture, there are today numerous examples in Europe and in other parts of the world of creation of Code of Good Practices or Good Manufacturing Practices, or of Quality Schemes, tools for carrying messages for sustainable production, and for enhancing quality. A quick overview, at the time of writing this paper, on the existing quality schemes, allows to quote Ireland, Scotland, Norway, Greece, Thailand, Indonesia, as exhibiting today quality schemes, but this list is not exhaustive. As shown by Poli and

Scappini (2003) in EU, numerous countries have created various forms of quality programmes: GMP, European standards, Certified products, Collective trademarks, Quality Awards and Organic certification. The authors presenting this synthesis of a study performed over EU countries underline the difficulties encountered (scarce operators motivation and interest, lack of information and training), and also the positive results that *should be improvements in profit margins, sector rationalisation, healthier products, enhancement of the image of seafood and fish industry*. Nevertheless, there are very scarce observations available about the existence or absence of price premium, and it is indeed a difficult point, especially about in the case of collective trademarks associated with a general quality scheme concerning a mass production.

CONCLUSION

Analysing the results of the numerous quality programmes set up in the French fishfarming sector allows to draw several conclusions:

- indeed, through a big work in all the chain, they allowed in any case a real and recognized enhancement of quality, which is profitable for the distributors and the final consumers
- the side effects of that construction, regarding to the collective organization, are also positive in most of the cases,
- the most difficult point remains in the financial results, which are obviously positive mainly in the case of created niche markets linked with official quality signals having already a high notoriety,
- the simultaneous setting up of quality programmes by producers and processors, and by distributors, leads to a competition where the latter are the winners, taking advantage of a dominant position in the fish supply chain today.

Quality enhancement is nowadays one of the tools in the overall changes and progress of the agri-food sector. Joining that movement is for aquaculture sector probably not optional but compulsory. In the case of mass production, beyond the necessary and fruitful protection of market shares allowed, obtaining a price premium through a quality programme seems to be a further and difficult step which requires original and specific strategies, and market conditions allowing a segmentation.

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