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RESEARCH IN ECONOMICS AND RURAL SOCIOLOGY

Organizational innovations and food safety monitoring in the fresh produce industry

Although organoleptic quality and freshness remain the main cause of consumers' dissatisfaction, retailers are already thinking ahead about the effects of a possible consumers' confidence crisis regarding the safety quality of fresh fruit and vegetables. Chain procedures for the implementation of good agricultural practices (GAP) and monitoring systems of pesticide residues are beginning to emerge. In the United Kingdom, the part played by retailers who take on all the food safety risk (penal and commercial risk) is central. In France, the first to market (penal risk) and the retailer (commercial risk) share the safety risk. More complex systems are at work. This is notably the case of collective agreements on negotiated controls between importers and public authorities.

With globalization and health crises, the safety of fresh fruit and vegetables has become a strong concern among French consumers' and one of the main stakes of the supply chain. It is a matter of great preoccupation to the public authorities, who are traditionally in charge of the function of definition and control of safety standards. They have to control and reduce safety risk, which increases with agriculture intensification and trade internationalization while reassuring the consumer, who is poorly informed and easily manipulated by the Media.

The budgetary restrictions and difficulty to be organised within an international framework have urged public authorities to delegate a part of safety control to the private sector. Their target is to lower control costs without giving up their task of definition of the standards and monitoring mechanisms. Privatization modes are strongly orientated by national specificities and, in particular, by the liability systems in force. They affect the actors most concerned by safety, that is to say retailers and first to market: they apply to two levels of the control chain: agricultural practices (use of phytosanitary products) and control of residues in products through the marketing chain.

Research work carried out at MOISA joint-unit focuses on the privatization modes of safety monitoring and the efficiency of some of the collective mechanisms set up by the private sector.

After specifying the nature of safety and identifying the private actors most exposed to those risks and, consequently, those overreacting to the privatization process, we shall analyse the organizational forms set up by the private sector, first for the control of agricultural practices, then for the control of pesticide residues. By comparing France with the United Kingdom, we shall show how the liability system is important in understanding the structuring of those forms.

Safety nature and private strategies

Fruit and vegetables seldom have to face up the pathogenic contamination met by fresh products like meat, fish and cooked pork meats, which may have serious and immediate consequences on human health. The main problems concern pesticide residues. More and more epidemiological studies bring to the fore the increasing number of certain pathologies for professional pesticide users. These effects are more difficult to test on consumer health, but scientists suspect the same kind of impacts over the longer term and suggest applying the precautionary principle.

Public authorities have been pointing at the risk caused by the presence of pesticide residues in human food for a long time, and have notably set maximum residue limits (MRL). In case of non-compliance, the responsible person is the chain operator indicated by the liability rule in force.

In the United Kingdom, since the 1990 Food Safety Act the retailer is responsible and the implementation of the "due-diligence liability" principle puts non-compliance responsibility on the last chain operator before the consumer. In France, the penal liability rule is different: the responsible person is the first to market, that is to say, according to circumstances (national or imported products), the producer or the importer.

The penal risk for consumer deceit is practically non-existent. In fact, for different economic and strategic reasons (Codron *et al.*, 2005), and, in a perspective of differentiation, very few retailers dare put up a MRL lower than the statutory one and so very few retailers take the penalty risk for consumer deceit.

On top of the penal risk for non-compliance, there is also a commercial risk, all the more important since consumers are little informed and therefore easy to manipulate. This risk is above all collective, insofar as the only reputation actually exposed is the generic reputation of the product. Therefore, it

applies to all the food operators and more specifically to retailers, who are the main operators in contact with consumers. Retailers also perceive this risk, in an individual way. In certain countries such as the Netherlands, where consumers' associations undertake residue analyses and publish the results according to trade name, militant action directly threatens retailers' individual reputations. However, in countries where there is no such activism yet, retailers take that commercial risk into account but in a subjective and different way, according to the likelihood of such a threat in the future.

There are two big types of private actors mainly concerned by food safety: retailers (in France, just for the commercial part and in the United Kingdom for the commercial and penal parts) and the first to market (only in France for the penal part). Their controlling strategies develop at two levels: the level of agricultural practices and that of pesticide residues in the produce once on the market. We shall now see some of these control mechanisms.

Development of private good agricultural practice standards by European retailers

From the middle of the 1990s, the GAP (Good Agricultural Practices) codes (which may be assimilated to the standards for integrated farm management (IFM) and integrated production management (IPM) became strategic. Various kinds of actors are interested in them and retailers in particular. Modes of involvement vary greatly from one country to another.

EurepGAP, a minimum quality standard adapted to the due-diligence liability principle

In the United Kingdom, where the due-diligence liability principle prevails, retailers run a risk both on penal and commercial levels. In that country, the more active the consumer's associations, the higher the risk. The *due-diligence liability* principle implemented in the 1990s leads retailers to ascertain that means of control were actually set up in the food chain. As to pesticide residues, a pertinent control level is that of agricultural practices. It is the target of the Farm Assurance Schemes, which gave rise to the national collective standard (Assurance Produce) then, in 1998, to the international standard, EurepGAP, today including half of European retailers (British, Belgian, Dutch, Scandinavian...).

EurepGAP (Euro Retailer Produce Working-Group-Good Agricultural Practices) is, as indicated by its name, a standard for good agricultural practices. Though focusing on environmental and social aspects too, its first target remains the reduction in safety risk (for the consumer) and compliance with the *due diligence* obligation.

EurepGAP does not impose any more restrictive limit than the regulation on MRL. On the other hand, it greatly helps intensify controls made by public authorities, by imposing or recommending a whole set of actions, investments and information constraints at the level of agricultural practices.

On national markets where it is in a monopoly position, (particularly, the British market), EurepGAP almost acts like a minimum food safety standard. Actually, it integrates the statutory norm on the use of pesticides and

residues in products and completes it by a standard (often absent from the public domain) as regards good agricultural practices.

EurepGAP, the ambition of which is to become the minimum standard on a much larger market, has the advantage of minimizing control costs (economies of scale due to collective organization) and benefits from the "increasing returns to scale for adoption" effect, which increases its bargaining power with the number of memberships. Yet at the same time, it must make sure it remains acceptable to producers who bear a large part of this standard cost, and credible to the institutions and associations that assess the relevance of its standards and monitoring means.

A doctoral thesis near completion at the Moisa unit analyses the effectiveness of the EurepGAP certification system. It specifically allows us to challenge the concept that all forms of collusion between parties to the certification process are necessarily negative. In fact, it shows that when the standard is incomplete and may change, collusion allows some cooperation between actors and therefore an apprenticeship necessary to the evolution of the standards.

French retailers' procedures based on integrated farm management

In France, food safety concerning fruit and vegetables do not concern retailers as much. Legal responsibility does not fall on them (except for directly imported products). Commercial risk is much lower: unlike Northern European countries, consumer associations do not seriously bother French retailers. Furthermore, they enjoy the support of national producers and work together on the prevention of media crises.

The low level of real risk, as much legal as commercial, partly explains the fact that French retailers did not enter the EurepGAP standard (except for one of them). French retailers favoured individual procedures less centred on safety and more focused on environmental problems and integrated production, influenced by national producers' concerns. At the end of the 1990s, on the basis of the standards for good agricultural practices and by adding commercial constraints aiming at producing quality, they built production procedures comparable in the consumer's eyes to store brands (SB) .

However, these production procedures do not concern all the fruit and vegetable supplies of the French retail industry; an important part of the supplies remains submitted to traditional specifications.

In short, in France like in the United Kingdom, the standards for good agricultural practices are just an additional safety measure. Public authorities keep on controlling residues at different levels of the procedure. As for retailers, they carry out their own controls according to their own risk. Good agricultural practice codes are merely additional controls. In the short term, they theoretically help better target residue analyses. In the long term, they are also an incentive to reduce the load of residues in the products.

French importers and the monitors of residues

In France, where responsibility is on the first to enter a market, monitoring of residues at the import level is crucial.

With the strengthening of food safety regulation and public authorities' incentives for self-monitoring by the private sector, importers negotiated the implementation of collective agreements on food safety and normative (commercial) quality monitoring with public authorities. From 2000, the two biggest French fruit and vegetable import sites got organized under the aegis of their trade organizations, the Federation of Fruit and vegetable importers in Rungis (CSIF) and the National Union of French Fruit and vegetable importers in Perpignan (SNIFL). ***Emergence of self-monitoring collective agreements***

As regards food safety, those agreements specify the collective self-monitoring procedures that importing firms must follow. Public control comes in a second phase and consists in controlling that self-monitoring was effective.

All the mutual profits gained by importers underlie the collective dimension of their action. In particular, their grouping helps mutualize the costs of analyses carried out in laboratories and ensures lower access costs to legal information. Every year the public authorities, cosignatories of the agreements, acknowledge its legitimacy and value by renewing it. Ultimately, adhering to these agreements may act as a signal towards the different partners of importing firms. Consequently, they may hope for a gain in reputation.

In spite of these profits, implementing a self-monitoring system is costly. First, there must be a return for the importers' efforts. In particular, the risks taken by importers, if such a system did not exist, make a decisive lever. However, the State's threat does not seem to be a determining factor: in fact, there are very few controls and even fewer penalties. We commonly consider these statutory threats as the lever for voluntary approaches: companies organize themselves inside a sector, because they fear that the State will enforce a more costly measure than what they could have negotiated with it. Analytically, there is evidence that a commercial threat is sufficient to cause a voluntary approach to emerge from the group of importers: in fact, the collective commercial risk with the fruit and vegetable production chain helps develop the monitoring effort made by importers inside the chain. In fact, retailers may put pressure on producers and importers in order to meet their clients' requirements and protect

themselves against commercial risk. From then on, the retailers' idea of how important consumer associations' activism could become plays a dominant part in the emergence of a private regulation on pesticides.

This is what we checked on the Perpignan Market via a quantitative survey carried out in July and August 2006.

But heterogeneous behaviours within agreements

If the firms which joined the agreements want to protect themselves against a future commercial risk, their behaviour varies a lot within the group. At present, the minimum norm in safety control established by law is very low, and beyond that threshold, every firm, according to its size, decides on the frequency for analyses. The survey shows the strong variability of this effort compared to the firm size.

The research carried out on the determinants of effort according to the risks perceived by firms (Bignebat et al.) shows, on the one hand, that commercial threat leads firms to increase their effort and all the more so since the retail industry is one of their important clients. Paradoxically, on the other hand, the perception of a strong regulation threat has a negative influence on the observable effort level and this influence is not different according to firm size. Therefore, though firms assert that they are afraid of public authorities' action, we conclude that it does not seem to have the desired influence on their behaviour.

One of the assumptions which may explain this result is that regulation threat is not very convincing. In case of non-compliance with the recommended self-monitoring, penalties are usually verbal. Nevertheless, one may also think that, from a legal point of view, the precautionary principle imposed on importers is too vague for them to adapt their behaviour: actually, it is hard to estimate the level of adoption of "reasonable measures" in order to avoid a safety risk. This observation may explain why a great number of firms refer to the low level of agreement.

The next step in this work on food safety monitoring will have to be taken in a comparative perspective, in order to understand the diversity of models and the stability of their simultaneous existence. In particular, we will raise questions about the future of importers' agreements, in case all European retailers should adopt the EurepGAP standard.

Céline Bignebat and Jean-Marie Codron, INRA UMR Moisa, Montpellier
bignebat@ensam.inra.fr – codron@ensam.inra.fr

A survey on the Perpignan French import market

The agreement, implemented in 2001 by French importers on the Saint Charles market in Perpignan, known as the Quality procedure, involves 65 members so far. In July and August 2006, we carried out a quantitative survey with 55 of them. The firms in the sample are highly dispersed according to their size - the average turnover is 16.7 K€ and its standard deviation is 16.4. Their statements considering the threat of public interventions are relatively homogeneous, since 75% of them think that the action of the DGCCRF (French General Directorate of Competition, Consumption and Repression of Fraud) regarding food safety monitoring has an influence on their activity. Moreover, those stating that they fear public action are not of significantly different in size from the others.

We consider the companies' effort of self-monitoring as well as the number of analyses on pesticide residues in relation to their size, by taking, as a minimum standard, the norm indicated by the trade organisation and specified in the agreement.

For further information

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