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Integrated Agriculture Labelling and Consumer information: Retailer's strategies and regulatory issues in European context

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Abstract

The development of consumer concerns in the European context about food safety and environmental consequences of farming systems lead to the recent multiplication of private technical specifications to be applied by farmers on the request of large retailers and agro-food firms. These technical specifications on production define what is called Good Agricultural Practices (GAP) guidelines, Environmental Management Systems (EMS) or “integrated agriculture”. However, the lack of harmonized and scientifically based definition of GAP guidelines creates a lot of confusion and difficulties for their implementation by a large number of farmers, but as well regarding consumers information. This paper analyses the alternatives standard setting strategies developed in the european context in order to solve these impediments. The comparison focuses on the strategies developed by trans-national large retailer associations (EUREP system, BRC) and another option recently set up in France with a labelling regulation on “integrated agriculture” with a private certification system.

JEL : D73, L15, L 22, L81, Q18, Q56

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Introduction

Many European countries are now extending the implementation of quality assurance schemes and guidelines for Good Agricultural Practices (GAP) at the farm level in order to provide higher guarantees to their customer or as well to improve environmental management. Initially, these GAP guidelines were not supposed to serve as a support for labelling strategies and consumer information. Then, in many countries, their development has been realized through the integration of various, not necessarily harmonized, range of requirements (quality, environment, animal welfare, information management,...). However, their recent use as devices for environmental labelling (Grolleau 2001, Mahoult & al 2002) reaches the question of their harmonization and producer and retailer's strategies regarding this issue.

The aim of this communication is to analyse, based on transaction cost economics (Barzel, 1989), the alternative harmonization (or standardization) strategies implemented by the economic actors, including farmers, agro-industries and retailers, for the definition of these Good Agricultural Practices guidelines at the farm level and their use as a labelling device for consumers (Garcia-Martinez, Poole, 2004, Mazé, 2003). These new labelling devices have been considered by some farmers as an alternative to the development of *organic production*, while at the same time promoting more environmental friendly agricultural practices. What are the respective benefits or costs of *de facto* and *de jure* standardization strategies? Should they work as complementary or competing systems? Is the legal framework and third party certification system defined for organic production at the european level replicable in the case of "integrated agriculture"?

Contrasting with others studies focusing on consumer perception of environmental attributes and their willingness to pay, the analysis emphasizes here the organizational and regulatory implications of alternatives firm's strategies developed to introduce new labelling devices in the absence of a European regulation or standardization process at the international level. Empirical data are based on a comparative analysis of the strategies developed by some retailer's associations to define their own standards², here the EUREP'GAP system, and alternative solution like the one adopted in France through the regulatory framework surrounding the concept of *Agriculture Raisonnée* (Paillotin, 2000). While clear, concise labels could possibly be designed to address problems of asymmetric or imperfect information, the design of cost-effective quality inspection and certification systems is a central issue to these alternatives standards setting strategies.

²Another example is the initiative of the British Retailer Consortium (BRC) – see Arfini-Mancini (2003).

I – ENVIRONMENTAL LABELLING AND THE DEFINITION OF GAP STANDARDS .

In the past decade a number of quality-assurance or environmental certification schemes for agriculture have been developed in many countries in order to reduce the negative impact of intensive agriculture on environmental quality and biodiversity (Grolleau, 2001, Mazé et al. 2002, Manhoudt et al. 2002). For several reasons, agro-food products have long been excluded from the eco-label system applied in industrial sectors (see Grolleau, 2002 for a discussion)³. However, with the increasing consumer's demand for *organic production*, some opportunities appear for other private labelling using less restrictive label for the use of pesticide and nutrients that are considered more readily implemented on conventional farms.

1. 1 – “Integrated agriculture” as an environmental label.

In industrial sectors, environmental labelling schemes and eco-labelling strategies emerge recently as alternative policy instruments to more traditional “*command and control*” approaches and economic incentives mechanisms (Grolleau, 2001). Labelling, as a policy tool, appears to be a successful tool in adjusting consumption and production to better match socially optimum levels. Thus mandatory labelling can be used to correct externalities. Another dimension is that labelling can generate incentives through price premium and differentiation quasi-rents for the firms that are developing these labels (Klein-Leffler, 1981). However, their development in agriculture is still subject to controversies.

Some recent studies were suggesting that mandatory food-labelling were rarely effective in redressing environmental or others spill-over associated with food production and consumption (Golan & al., 2000). The reason for this statement is partly due to the fact that environmental protection involves most of the time, especially in agriculture, *process standards* rather than *performance standards* that are usually preferred by economists in combination with economic instruments. As noticed by Caswell (1998), “*labelling process attributes poses complicated issues because specification of processes themselves can be complex and the process can affect a range of other attributes (e.g. safety, nutrition)*”. However, several initiatives emerged since the mid-90's for the promotion of “*green labels*” on food products. These labels were considered as possible intermediate alternative to *organic production* that appears to be too demanding for farmers in terms of change of production systems.

³ A distinction has to be made between this environmental labelling and the eco-labeling (Grolleau, 2002). Eco-Label may focus on specific performance outcome of environmental improvement throughout Product Life cycle. For one example of eco-label for food products, see the label *Milieukeur* in Netherlands.

One new concept emerged recently that may become the major reference both for consumers and producers, i.e. the concept of “*integrated agriculture*” (or “Agriculture Raisonnée” in French⁴) based on less restrictive criteria for pesticide and nutrients use than organic production. This concept is covering a broader range of agricultural practices than, for example, techniques based on “*integrated pest management*”, especially used for fruit and vegetable productions. But there is still a need for more precise definition and standardization. Consumers are more likely to read and understand labels that are clear and concise.

A general definition of this new concept is provided by Manhoudt et al. (2002) as a « *sustainable, technically advanced form of agriculture which, in comparison with conventional agricultural practice, is associated with lower consumption of energy and other resources and reduced environmental pollution, conserves biodiversity and creates an attractive and varied landscapes* ». However, this qualitative definition has to be more precisely assessed rising both the question of the definition of optimal standards in terms of requirement’s level at the farm level, but also of their harmonization and standardization.

Thus, among many other initiatives, Manhoudt et al. (2002) were suggesting that per country a single, standardized label for integrated agriculture should be developed, based on the most recent scientific understanding of the environmental hazards of the varied aspects of agricultural systems. However, mandatory or voluntary labelling that is not supported by standards, testing, certification and enforcement services can result in confusion for consumers. **Several competing standardization strategies are actually developed in Europe, but with no actual consensus on the final outcome.**

In some cases private labelling programs may work effectively to correct market imperfection without requiring a minimum government involvement. It should be recognized that labelling programs have the possibility of stifling or damaging the development of private markets, particularly if they are not well designed. But if properly designed and implemented, third party standards setting, testing and certification may help to reduce search and information costs for consumers, increasing the likelihood that consumers will purchase the products that better fit to their preferences. Because they increase the value of information, these third party services can increase the amount of information that producer choose to provide to consumers through product label.

⁴ Another denomination than “integrated” has been chosen in France due to the misleading and negative character of “integrated” that could be interpreted as farm’s vertical integration and intensive farming. More over this definition of “integrated agriculture” or Agriculture Raisonnée is based on a narrower definition than the concept of “*sustainable agriculture*” that is becoming to be used in international conferences.

1.2– The role of GAP guidelines as reference standard.

A voluntary or mandatory labelling program on “integrated agriculture” requires the detailed specification of practices that are consistent to the label. This includes a materials lists, production practices for crops and livestock, transition time, who certifies compliance and the methods of communication in the supply chain and to consumers. Initially the development of quality assurance schemes in agriculture were mostly initiated by producer’s associations and by agro-food firms to improve traceability and increase the scope of information on agricultural production systems used by farmers and on-farm operations. Among the other consequences, retailers have subjected their suppliers to a growing number of inspections to check the compliance with contractual requirements.

In most European countries, GAP guidelines have been developed for almost all productions. However, their multiplication creates new concerns for farmers regarding their implementation at the farm level. These GAP guidelines have mostly non-harmonized requirements and employs widely differing criteria (Manhoudt & al., 2002). These GAP guidelines include also an increasing number of criteria (over 100 for many of them) with a higher diversity in the nature of requirements including product quality, workers safety, food safety and pesticides, animal welfare, environmental protection, ... And as a matter of fact, the complete harmonization of is not possible, because of the necessity of taking into account local environmental specificity. In the case of environmental objectives, applying the same rules may have contradictory effects depending of the local environment.

One of the new trends is that these GAP guidelines are no more based only on agronomic reasoning, but are also including criteria on management practices of farmers. This evolution is partly due to the extension of quality and environmental management systems based on ISO 9000 and ISO 14000 at the farm level (Mazé et al., 2002, 2003). The formalization of production process and documentation is a central dimension (Wall et al. 2001). Another point is that some sources of environmental risks in agriculture are not related to the use of agronomic reasoning for field operations, but also to the attention brought by the farmer after the treatment or during the transportation and storage of phytosanitary products, or others products. Regarding these evolutions, some GAP guidelines have been considered as very qualitative in their content by agronomists and criticized for this reason (Manhoudt et al. 2002, Girardin et al. 1999)⁵. But there is no unique and general definition for GAP guidelines.

⁵ Agronomic researches are actually under process to define and validate *Agri-Environmental Indicators* to assess the environmental impacts of farmers practices, including in general pesticide use, nutrient use, water management, energy and material consumptions, habitat management (Girardin et al 1999, Peschard et al. 2004).

Regarding its general use it seems that integrated farming is mostly related to crop production. For animal production, the focus is more on animal welfare

Most of these requirements are still not harmonized among the different retailers or agro-food firms and farmers have to deal with different level of requirements, slightly differences in the formulation of the GAP guidelines to be applied, or even to contradictory or incompatible requirements regarding the reality of actual agricultural production systems and farmers objectives. As well, the level of accuracy for documentation and reporting data about realized field operations is also often varying. Hence, the multiplication of these GAP guidelines creates new concerns for farmers due to their non-harmonization and their addition. And also, the strategies of retailers to impose their own standard even if from a technical point of view, they are not necessarily relevant to local situations.

II – STANDARDS SETTING STRATEGIES AS A COORDINATION DEVICE

The development of these GAP guidelines was not initially supposed to serve as a support for labelling strategies on “*integrated agriculture*”. Several recent initiatives tend to extend at the European level, rather than on a national basis, the scope of standardisation and harmonisation of GAP definitions and the organisation of quality inspections. As well, some retailer’s associations, especially in Germany and Great-Britain, are setting their own GAP guidelines to be implemented by their suppliers. The question is whether these private strategies may supersede the role of governments or official standard organization in defining a unique standard for “integrated agriculture” at the european level. Is private initiative stronger than official regulation in a context of international development?

2.1 – Food labelling regulation or private *de facto* standardization.

Most of the economic literature on food labelling focuses on consumer’s issues and their effects on market efficiency (Caswell, 1998). The use of labelling on food product is gaining in prominence in many countries as a regulatory tool to inform consumers and influence markets for food quality. Regulatory choice for food labelling can take several forms. Beyond the basic policies for a loyal information of consumers, governments may require mandatory disclosure of information, may place controls on voluntary claims used in public promotion or the use of product name, may provide public information and education and may subsidize the provision of information (Caswell, Mojduszka, 1996)⁶.

For more informations on these indicators: www.inra.fr/indigo/fra/introduction/html. However, the choice of the adequate methodology remains controversial in the scientific community.

⁶ For example, organic labelling standards are *process standards* that always specify how a product is produced but not always specify the performance attributes at the consumer level. However, many consumers are using organic labels as

The appropriate level of government intervention in labelling decisions, whether establishing mandatory labelling laws, providing services to enhance voluntary labelling or not intervening at all, depends of the type of information involved and the level and distribution of the costs and benefits of providing that information. Efforts are under way to standardize the use of a specific label in order to protect consumers against deception and producers against misrepresentation of other agricultural products when they do not meet recognized standards. The government must ensure that the quality standards in question are clear and achievable, testing services if necessary are available and that producers are able to prove, if not certify the validity of these claims.

In the literature, there is a distinction between several patterns of standardization that may influence the level of coordination and transaction costs involved in standard setting. David and Greenstein (1990) introduce a distinction between *de facto* standardization and *de jure* standardization. The latter are defined by governments or international/national standard organisations (like ISO, International Standard Organisation) while the former are set through market competition among firms and standards users. Standards by international organizations are often considered as less flexible regarding needed adaptations over time. Labelling standards must be updated to keep in step with the evolution of scientific information and understanding of effective communication methods. However, a more complete discussion of the respective cost/benefits of *de jure* versus *de facto* standardization is needed⁷.

Such analysis should consider the three main functions identified in the literature, i.e. minimum quality standards, compatibility standards and reference standards. The economic analysis has mostly considered the welfare effects of quality minimum standards (Bockstaël 1984, Ronnen, 1991, Linnemer-Perrot 1997) and of compatibility standards, the competition between standards and their strategic use by firms in order to capture consumers when there are switching costs (Farrel-Saloner 1985, Farrell, Shapiro 1988). As well, entry deterrence due to standard setting has been one major concern for the development of international trade in agriculture (Mahé, 1997). In another hand, the economics of food labelling has mostly analysed the effects on producer and consumer's welfare and horizontal market competition (Caswell, 1998). One of the questions for minimum standards is to know if this standardization will reduce the differentiation level, and thus the importance of price premium

an indicator of pesticide residue safety even if there is no necessary link between organic production and lower risks to consumers from pesticide residues (Caswell, 1998).

⁷ David and Greenstein (1990) are defining a "standard" as a set of technical specifications adhered to by a producer, either tacitly or as a result of a formal agreement". In the case of *de jure* standardisation, we find government or official standardization organization. For *de facto* standards, two situations have to be considered: uncoordinated mechanisms through market competition, or coordinated contractual and voluntary adjustment.

and differentiation rents for producers. If standards are stricter, thus rising production costs, than consumer preferences, consumers will seek for products with lower standards. If standards surpass the technological ability of producers or of consumer to verify, they will eventually lose their value. In another hand, the reference standards have been long mostly considered as unproblematic from an economic point of view (Holler, Thisse 1996), or even analysed as minimum quality standards (Bockstael, 1984).

Their contribution to economic efficiency is however crucial by reducing transaction costs and improving coordination. As well, they also can affect efficiency through a reduction of measurement's errors and inefficiency induced by oversearching behaviours on the consumer side (Barzel 1982, Kenney-Klein 1983, Williamson 1996). One of the consequences is related to their effects on the organization of vertical relationships between retailers, agro-food firms and farmers. As suggested by Barzel (2004), new standards turn private information into public good; shift self-enforced components of agreements into their contractual, state enforced components; lead to less vertical integration and make the contents of commodities clearer, more comparable and easier to enforce⁸. As a consequence, standards are not only affecting the level of production costs, but also of transaction costs. This dimension of standardization is often omitted in the literature. In the case of food labelling, producers have to prove the validity of their claims, and thus to design information system and traceability all long the chain, from the producers to the retailer. This involves a minimum level of compatibility between the information required or transmitted regarding the implementation of GAP guidelines.

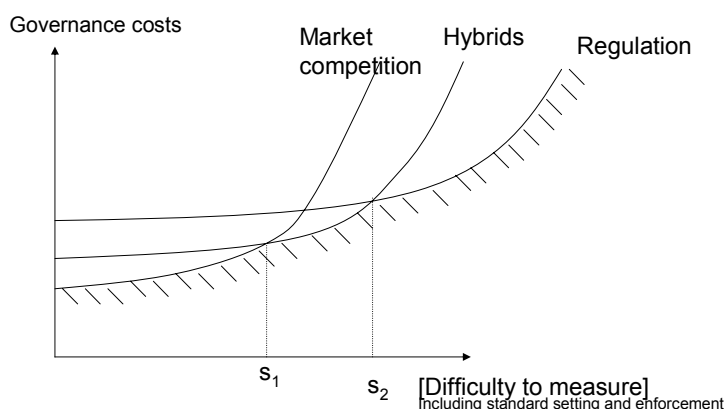
2.2 – The role of institutional arrangements in setting standards.

The establishment of a standard is fundamentally a coordination activity (Foray, 1995). According to David and Steinmuller (1993) there are different ways by which major producers can dominate and control de the process. Government regulatory processes that issue standards are often vulnerable to capture by large, domestic producer interest, as these can provide the technical expertise necessary to write the standards. As well, voluntary standard writing organization are subject to domination by representatives of major vendors, rather than users or minor suppliers, because these large firms have the R&D background and sending expert personnel to participate to the work of committees. Coalitions of existing producers can use voluntary standards to issue product specifications that impose costs burdens upon current rivals or potential users.

⁸ The analysis of Barzel (2004) is concerned with the use of standards, not with their creation

Fixing the choice of these standards setting strategies into transaction cost economics requires some adaptation to the Williamsonian approach focusing on contractual hazards created by the development of specific asset. The major issue is here more following the theoretical proposals of Barzel (1982, 2004) on the difficulty of measurement, including the definition and the choice of the relevant standards, and eventually their enforcement. In the figure 1, we replace the usual integration by the firms and hierarchies, by a higher integration level through state regulation, which can be analysed as suggested by Coase (1988) as a “superfirm”. These alternative governance structures have different properties for coordination. The hybrid mode is located between market and regulation with respect to incentives, adaptability and bureaucratic costs. As compared with the market solution, the hybrids sacrifices incentives in favour of superior coordination among parts.

Figure 1 – Trade off between alternative governance structure for quality or environmental standard setting (extended from Williamson, 1991, Barzel 1982)



From the heuristic model of Williamson (1991) illustrated by figure 1, the governance costs are expressed as a function of the difficulty of setting standards (s) and a set of exogenous variables (θ). Letting $H = H(s; \theta)$ denote the governance costs of the hybrid mode as a function of measurement problems (including the definition of relevant indicators or proxies for standards setting and their enforcement), the argument is that $M(0) < H(0) < R(0)$. When measurement problems increase (like for example for credence good) integration of these activities by hybrids organizations or through direct regulation by the state will be less costly. A more precise identification of factors influencing this shift in parameters is needed.

This cornering of standardization bodies by the main producers implies therefore the quasi absence of users from the process, and especially for food products of consumers' associations. Some researches figure out path –dependency phenomena and inefficiency in standards choices (David-Greenstein, 1990). The role of coalitions and the influence of producer's group as a major determinant of the standard-setting process has been emphasised (Foray, 1995). Contrasting with the theory of regulatory capture developed by Stigler (...), these studies are emphasising the role of users as a repository of specific knowledge and the expected benefits of their involvement in the standardization process. By interacting, users engender learning-by-using mechanisms. And as a matter of fact, the association of producers to the definition of GAP standards is a major issue as most of the requirements are related to agricultural production systems and farm organization.

There are however, at least two major reasons for thinking that cutting out the user results in losses as regards the social benefits of standardization. The first is connected to the issue of compatibility between products and the lack of standardization or the coexistence of multiple standards. In the situation of the setting of the “integrated farming” standard, the issue is on the criteria used and the need for the development of compatible information systems among the supply chain. The second reason concern the fact that users are a decisive link in the chain of positive feedbacks, i.e. **learning by using** that is at root of the dynamic evolution in the technology of standard. As a matter of fact, the new dimension in the development of GAP guideline is the inclusion of criteria on farmer's practices, and not only as in the previous on the final quality attributes of food products. Until recently, retailers are not necessarily aware of local agricultural practices and technical constraints of farmers.

Several reasons may explain the adoption of a regulation rather than an official standardization process: the delays needed for usual standardization due to the unanimity requirement, the very conflicting context surrounding this topic, both in the relationship between retailers and producers, but also between producers themselves and the representative farmer's unions. There is little incentive for the individual user to take part in the negotiating process when a standard is formulated. However, the specific point is here is the actual absence of trans-national standardization process at the European level⁹.

In another hand, *de jure* standardization through either regulation or official standardization is often considered as less flexible for adaptations over time. Official open

⁹ David (1985) provides a fascinating account of lock-in effects for QWERTY writers due to the initial costs of learning and changing routines. In this way, experimentation may allow the implementation of a learning process, but is also creating by the way differences in preferences.

standardization is developing in agro-food sectors. However, the standardization process is often costly and may be slow when there are many actors with conflicting interest. Foray (1995) suggests that there is an optimal size of coalitions that allow the finding of a final agreement. The timing of the standardization process is important for two reasons: i) the time to choose the right standard at the right time, ii) the time to achieve a design acceptable to all parties (David and Greenstein, 1990). Regarding the choice of *ex ante* or *ex post* standardization, the model of Choi (1996) analyses the respective costs and benefits associated to these alternatives. Contrasting with usual analysis in the literature, Choi (1996) suggests that incompatibility could be considered less as a coordination failure or the result of vested interests of the parties concerned, than a concerted effort to experiment with diverse technologies to extract information about the true values of the potential technologies.

Experimentation, however, creates divergent preferences for each party, which leads to the *ex post* standardization being realized less frequently than the social optimum. The consequence is that parties will agree on early standardization too frequently if they foresee the inefficiency in the *ex post* standardization process.

2.3 - The alternative strategies for GAP harmonisation in Europe

The development of GAP guidelines is a new activity and required the acquisition of new knowledge about agricultural production systems, especially for the retailers that were until recently more concerned with commercial products quality of. The involvement of retailers in the definition of GAP standards is partly due to the absence of harmonization at the European level, when most of their supplies chain are organised at the international level.

Another consequence of the involvement of these large retailers in the definition of these GAP guidelines is that they are also claiming to supersede the role of the state of governments in areas that were previously their privilege, like for example food safety. However, depending of the country, it seems that alternative strategies have actually been adopted. Some countries especially in northern Europe rely in priority to the implementation of ISO 14000 at the farm level without any specific item for consumer information (danemark, Norway or Sweden are some examples of such countries, when others countries relies more on recent retailers strategies based on their own standards and label (Eurep'Gap,..). The last group include a strategy of labelling regulation as a support for *de jure* standardization. That is the strategy adopted in France with the recent regulation on "Agriculture Raisonnée".

Table: examples of existing alternative GAP standards in Europe

| | | Examples | Advantages | Limits |
|----------------------------|---|--|--------------------------|--|
| Retailers strategies | Proprietary private standard | Carrefour, Auchan | Vertical harmonization | Non-harmonization across retailers |
| | Collective private standard | Eurep'Gap, BRC | Horizontal harmonization | Audit costs |
| European group | | EURFRU – OILB Integrated fruit production | European level | Specific GAP dimension |
| Professional GAP guideline | | In most european countries | | For one product National |
| Official Standardization | Open official standard | Fruit (Spain AENOR) on “controlled agriculture” Potato (France AFNOR) | | For one product National |
| Regulation | | Agriculture Raisonnée | Whole-farm | National |
| Meta-standards | ISO 14000 | Kvamilla (DK), Isonis | Whole-farm | No minimum standards |
| | NF 01-005 Quality mngt system for agricultural activities | Agri-Confiance (F) with an extension to environment | | No minimum standards, for one production |

Another alternative is the use of quality or environmental managements systems (ISO 14000) as meta-systems (Caswell et al. 2000). These metasystems standards involve a certification audit, a documentation of practices and an implementation and approval process. These meta-standard are not defining any specific level, but the general organizational rules. The use of *meta-standards* is another option for attenuating the diversity (Foray, 1995). Unlike anticipatory standards as a means to restrict *ex ante* the scope of divergence, a meta-standard preserves the advantages of variety and allows agents to maintain some specificities as they enter the standardization process (Steinmuller, 1995).

Several strategies have been adopted for the adaptation of quality and environmental management systems (respectively, ISO 9000 and ISO 14 000 series) at the farm level. One is chain-oriented and was promoted by French cooperatives for its standardization¹⁰. Another is based on a simplification, but still maintaining the compliance to the general standard. The Danish program *Kvamilla*, or *Isonis* in France are example. However, the number of farms involved in such programs still remains at a very low level (less than few hundreds) and their development in agriculture still remains limited. As well, these meta-standards are not supposed to be used for consumer information and they are not defining minimum standards to be applied by the firms, and in our case, the farmers. So we will not consider them as a

¹⁰ Another strategies has been adopted by cooperatives in France with the development of a quality-assurance system called “Agri-confiance” linking the cooperatives and their farmers. They have chosen to follow an official normalization procedure to the National French Association for Normalization (AFNOR) until its homologation the 20/06/2000 (Standard V01-005 Quality management system for agricultural activities –Model for the control of reciprocal commitments between producers and an organized agricultural production structure) which . The French cooperatives are now intending to introduce a standardization process at the European level.

possible alternative to the design of dedicated GAP guidelines (see Aubry and al. 2003, for an analysis of the complementarities between GAP standards and ISO 14000 systems at the farm level, and Mazé and al. 2003 for their link with information management).

III – THE ORGANIZATIONAL CONSEQUENCES OF STANDARDIZATION STRATEGIES

The original aspect of the development of these GAP standards is the recent role of retailer's association for their promotion. This new involvement is largely due to their international strategies and extension in others countries or to the need of a strengthened supervision of their relationships with their foreign suppliers. As well, the development of these GAP guidelines is used as a support for their own communication to consumers. Among the other consequences, large retailers have subjected their suppliers to a growing number of inspections to check the compliance with contractual requirements. In fact, these alternative standardization strategies may impact differently the organization and the efficiency of vertical relationships. Is private initiative stronger than official regulation in a context of a need for international standardization?

3.1 – Quality controls and the organisation of information systems.

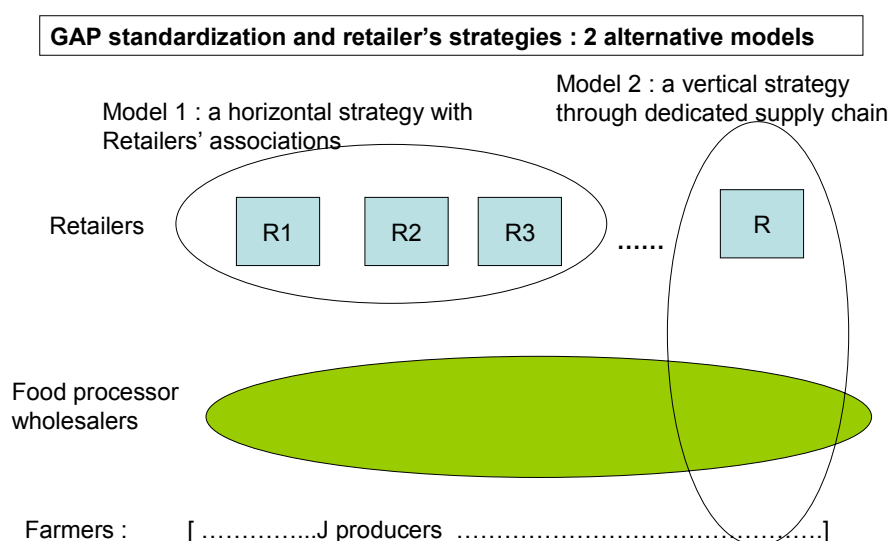
Most of large retailers, in several European countries, are developing very active strategies to develop their own brand name, new labelling devices or product certifications and to secure their own supply chain for food products. However, these large retailers are developing two alternative strategies regarding the harmonization of GAP guidelines.

Some of these large retailers are using their international development to extend their organizational control over their supply chain, including producer's organization and farmers. This strategy is especially developed by French large retailers (Mazé, 2002). In a first step, each retailers had is own GAP guidelines, thus equivalent to a proprietary standards.

Another option was developed through collective retailer' associations, especially by German and British retailers. One example of such strategy is given by the EUREPGAP system or the BRC systems (British Retailer Consortium). It should also be noticed that the french retailer *Promodès* joint initially EUREP, but cancelled its participation after its merger with the first French retailing group *Carrefour*. Since no French retailer is participating to this EUREP program.

These two alternative retailers' strategies regarding the standardization of GAP guidelines are based on two different logics (see diagram below). One is based on a horizontal consolidation strategy and the search for economies of scope through the sharing by a group of retailers of a unified GAP standard to be applied by their suppliers. This group of retailers is delegating to a specialized retailer's association the technical responsibility of setting and adapting standards through time, and as well negotiating with certifying bodies the criteria to be checked. The other strategy is based on a vertical strategy for standard setting and the development of proprietary labelling strategies by large retailers, in general associated with dedicated retailer's Chain brand name (Mazé 2002, Giraud-Héraut et al. 2003).

In this situation, this proprietary standard is associated to a differentiation strategy of the retailer and the obtaining by farmers of a price premium, resulting in higher production costs for the retailer. As well, the official ownerships of the quality guideline to be certified was a necessary condition to have access to the auditing reports established by the certifying bodies, and thus defining appropriate sanctions for non-complying suppliers. The overall credibility of the brand name strategy is relying on the reliability of these quality controls.



In a recent study, Giraud-Héraut & al. (2003) were suggesting in contrast with producers interest, it seems that the retailers and the consumers could in fact prefer regulated product improvement through the reinforcement of minimum quality standards. Their analysis is mostly based to explain the development of dedicated Chain Brandname by large retailers for beef products after the BSE crisis in 1996. The recent adoption of a labelling regulation in

France on “Agriculture Raisonnée”, and the adhesion of some of the major French retailers to it, may support such result. In other terms, creation of retailer’s Chain Brand name could paradoxically, be carried out more in the interest of the producers than in that of the retailers. However, several studies address the complexity of certification systems in Europe (Barnett et al. 2002). Each European country has its own system for official accreditation for certifying organizations¹¹.

In general, third party certification is supposed to provide assurance to consumers that the information supplied by firms is correct, especially for credence attributes that are not observable either before or after consumption. In a previous study, we have shown that certification systems were not necessarily used by the retailers for communication purposes to the consumers, but much more as a monitoring system of their suppliers in a situation of both had to learn how to implement these new GAP standards (Mazé, 2002). However, one of the main issues for the development of these labelling strategies is the limitation of quality control and certification costs at the farm level. With the multiplication of quality specifications, GAP guidelines,... farmers are more and more subject to control and the visit of auditors or of others customers. In the farming sector, the primary benefit of undertaking a reflection on the organisation of certification systems is to improve their efficiency i.e. their capacity to identify non-compliances of frauds while keeping certification and control costs down to an economically acceptable level.

These alternative GAP standardization strategies may impact differently the reduction of redundancies of quality controls and inspection costs at the farm level, and as well the nature of information needed to deliver a sufficient level of guarantees to the final consumers. Two dimensions should be taken into account: i) the global organization of quality controls and third party certification, including licensing contracts signed with the certifying bodies or other delegations (licensing) or subcontracting mechanisms, ii) the design of information systems for traceability and the access to auditing reports for the customers, while maintaining the privacy and the rights of farmers over their own information.

The externalization of these informations may be problematic for many farmers, as they can give an increased overview on the organization and the costs of overall production systems of the farmers. Information management is then a key issue for farmers and is still one of the major sources of networks incompatibilities in the agro-food supply chain. Thus,

¹¹ See Barrett et al. (2002) for an overview of the obstacles to be overcome for organic producers in the developing world to be certified due to the non-harmonization and the complexity of certification systems in the EU market.

beyond the question of standard setting, the comparison between GAP standardization through regulation or private strategies may provide different solutions to these issues. In the next section, we will provide a short analysis of these dimensions in the case of the Eurep'gap system (3.2) and of the regulatory design adopted in France for the labelling on "Agriculture raisonnée" (3.3).

3.2 – The EUREP'GAP system as a "benchmarking procedure".

The EUREP system is providing very specific pattern for the *de facto* harmonisation of GAP standards, even if its logo can only be used on the wholesale level for business communication and not for consumer information. As emphasized by Gabel (1991) standardization is not the only way of creating compatibility. An alternative way to achieve compatibility, which has not been fully developed in the literature, is through the development of *converters* that allows consumers of one network to utilize the network benefits of another. In the context of food products, these converters are of a different nature.

One example of such system is given by the EUREP'GAP system designed by a European retailer's association and regrouping a number of European supermarkets in the Euro-Retailer Produce Working Group (EUREP)¹². The EUREPGAP system was designed at the initiative of the Eurep group, created in 1997 by the EuroHandel Institute (EHI) and managed by its subsidiary company Food-plus base in Germany (Köln). Eurep is a private and non-profitable association. Large British retailers like Sainsbury's, Tesco, Safeway are participating to this group among others. This group first developed its activities and the definition of GAP guidelines in the sector of fruits and vegetable where importations of foreign countries are important and direct inspection limited. Other products are now concerned. This GAP guidelines is considered as very qualitative by agronomists (Manhoudt et al. 2002). The central innovation in the organisational design of the EUREP'GAP system is relying on two specific organizational patterns:

- the use of a "*benchmarking procedures*" that evaluate the *equivalence* between the requirements of two different guidelines (based on a cross-reference table) and the possibility

¹² Interview with Dr Christian Möller, Secretary of Foodplus GmbH (December 2001). Among the retailer members of EUREP : ASDA/walmart, Albert Heijn, COOP Italia, COOP Norge, COOP Switzerland, DelHaize, Eroski, Fedis/DRC, ICA Handlarna, Kesko, KF, Laurus, Marks and Spencer, McDonalds Europe, Metro, Migros, Pick'n'Pay, Sainsbury, Safeway, Spar Austria, Superunie, Superquinn, Somerfield, Tesco, TSN, Waitrose (source : EUREPGAP news update, june 2003).

of a *mutual recognition* or adjustments in the GAP requirements proposed by the producers regarding those required in the Eurepgap system¹³.

- A licensing system for granting the licence/certificate EUREPGAP. The general architecture of this licensing system include two different level : one dedicated for individual farmers or growers association, another one for EN 45011 (ISO65) accredited certifying bodies wanting to control the implementation of the EUREP GAP guideline.

Through these two procedures the Eurepgap system is acting like a central agency providing a service between, on one hand, the retailers, and on the other hand, the producers or growers associations. This benchmarking procedure is only one of the three available options for a farmer to adhere. But it is the most outstanding. The first situation is based on an individual request of the farmer to get the Eurep certificate and they are audited by an accredited certifying body. The farmers pay the controls and its membership to Eurep. The second situation is when a collective producer's group (also called Produce Marketing Organization) is becoming Eurep member. Most of the grower associations being a member of the Eurepgap system are exporting part of their production to the retailer's member of EUREP, in general in foreign countries.

Thus, through the development of this Eurep'gap system, the aim is to provide a private mechanism for the *mutual recognition* of auditing activities that may help to reduce redundancies in controls and inspection costs, and as well improve the sharing of information's about potential suppliers. The expected benefits for the retailers are several.

- All the accredited producers or growers association are registered by the Eurepgap secretariat, so they have access to an individual list of producer's through an information system. When it is a producer organization that is applying to eurepgap, all registered farms/sites are operating under the same management and control system, which is centrally administered and audited.

- Inspections and controls of the compliance to quality specifications are defined by the retailer's association. It includes all the materials needed for the interpretation of EUREPgap (Eurep gap control points and compliance criteria), and the sanctioning procedures to be applied by the certifying body (warning, temporary suspension of the contract, definitive). Eurepgap secretariat has to be immediately informed of suspension.

¹³ The Eurep GAP include two levels : MAJOR for which 100% compliance is compulsory and MINOR with 95% compliance. Among the included specifications some are related to the quality of seeds, specific techniques for (fumigation and sterilization of substrats), the writing by the operator of each cultural operation, the use of techniques on integrated pest management, banishment of non-authorized phyto sanitary products by the E.U.

- The definition of qualification required for the auditors and inspectors of the certifying body, and as well the furniture of all the documentations to be used by certifying bodies including the “eurep gap protocol”, the “Eurep gap general regulations” and the “Eurep’gap check list” defining the points to be verified¹⁴

In the case of this Eurepgap system, the strategy is based on the development of *de facto* harmonisation of GAP guideline through two different mechanisms: i) their use as a reference by large retailers for the organization of their relationship with their suppliers, ii) the introduction of a benchmarking procedure for producers using others GAP guidelines. These two mechanisms are defining an original standardization process at a trans-national level and may be considered as an alternative to regulation and *de jure* standardization. However, regulation may appear as a more efficient standard setting strategy for private firms.

3.3 – A public regulation as a support for “integrated agriculture”

Another standardization strategy was adopted in 2002 in France regarding the use of “Agriculture Raisonnée” (or “integrated agriculture”) as a labelling device (Paillotin, 2000). Due to a potential risk of confusion for consumers and a multiplication of GAP guidelines, a regulation was defined in France to frame the use of these labelling devices on “*Agriculture Raisonnée*”, the GAP standards to be applied and the certification system to be applied (Paillotin, 2000). In order to limit the risk of ever-increasing level of requirements at the farm level and outbidding between competing retailers, but also confusions and false claims for consumers, another strategy has been adopted in France with the definition in 2002 of a dedicated regulatory framework on “*Agriculture Raisonnée*”¹⁵.

This concept was introduced in France by the association FARRE created in 1993¹⁶. This association is regrouping a network of 384 voluntary farms using these GAP techniques based on a self-diagnosis by the farmer. Others networks and association were developing in France others conceptual approaches or GAP guideline for the development of a sustainable agriculture (Charte Agriculture paysanne, Quali’Terre, Plan Environnement Entreprise, ISO

¹⁴The certifying body must be part of either the European Accreditation multilateral agreement (MLA) on product certification or members of International Accreditation Forum (IAF). (Source : appendix to EUREPGAP certification contract).

¹⁵Décret 2002-631 du 25 avril 2002 relatif à la qualification des exploitations agricoles au titre de l’agriculture raisonnée (JO 28/04/02). This GAP guideline is including 98 points to be implemented by farmers, covering 14 different chapters. It should be also noticed that the official rules for labelling have not yet been established.

¹⁶This association FARRE (*Forum pour une Agriculture Respectueuse de l’Environnement*) was created by the major farmer’s union in France with the financial support of agro-chemical firms. This association is mostly oriented towards communication. Information is available on the website : www.farre.org

14000,...). But, as noticed before, other main retailers, especially in France granted another strategy through labelling and consumer information and the definition of proprietary GAP standards. After the BSE crisis in 1996, some large retailer (especially *Auchan*, *Cora*, ...) developed the use of labelling on “*Agriculture Raisonnée*” for consumer information.

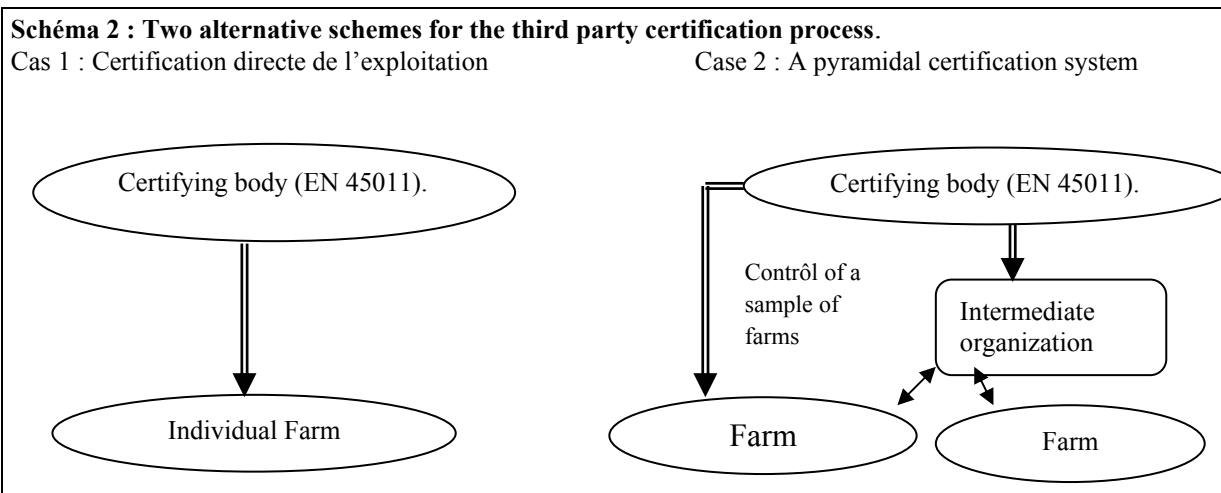
However, this multiplication of GAP guidelines brought new concerns to farmers, both because of non-harmonized and sometimes contradictory requirements that were not supported by any scientific data, but also regarding the information and documentation to be written by farmers for traceability. Contrasting with the initiative developed by the retailers or usual specialized GAP guidelines for one specific production (wheat, beef,...), the philosophy of the new GAP guideline adopted by the French regulation on “*Agriculture Raisonnée*” is mostly based on whole-farm approach with a main reference on cropping systems.

This evolution into a regulatory framework is presenting the advantages of allowing the access to a serious scientific expertise in the panel (that is mostly excluded in private initiative) and to speed up the obtaining of an agreement in a situation of large dissensions among farmers’ unions and producer associations themselves about the concept to be developed. The definition and the actualization of the GAP guideline is realized by a *National Commission for Agriculture Raisonnée* and the qualification of farms (CNAR), and also all the auditing documentation needed for the certifying bodies. Regional commissions are also created to define local GAP specifications to be added regarding specific local environmental problems. The representatives professional organisations participating to the definition of the GAP guidelines to be apply and its adaptation over time are defined by decree.

Another originality of the regulatory design adopted for “*Agriculture raisonnée*” is related to the architecture of the certification systems. A third party control is included in order to assure the overall reliability of the information delivered to the consumers and to control the effective implementation of the GAP guideline at the farm level. This means especially that self-evaluation by farmers is not sufficient. These certifying bodies have also to be accredited to the EN 45011 (instead of the EN 45012 applied for other GAP guidelines) to control the GAP “*Agriculture Raisonnée*”. The decision to deliver the certificate to one is under the responsibility of the certification committee of the certifying body. The certificate is delivered for a period of time of 5 years, with an annual control. The certificate can be suspended at any time by the certifying body if non-compliances are observed (Art. 9).

In order to reduce the level of inspection costs, while at the same time maintaining the level of guarantees, another option is introduced and formalized in the organization of the certification system with the possibility to delegate part of the auditing activities to dedicated

intermediate organizations (for example, a division of extensions services) under the strict supervision of the certifying body (see schema 2 below).



In the second option, the certifying body is remaining the only one responsible for the delivery of the certificate. This alternative organization in the architecture of the certification system was proposed in order to deal with the expected large increase of farmers involved in such program¹⁷. Some extension services have trained and specialized some of their advisors to this new activity (Maxime, Mazé, 2003) in preparation of the official operational setting of this “Agriculture Raisonnée” scheme in 2004. The design of inspection and certification is thus a central issue regarding the development of these standards and labelling devices on “integrated agriculture”.

However, the development of this new regulatory framework may have several consequences, first by introducing restrictions regarding the use of others environmental labelling devices for consumer information. One possible example could be related to labelling strategies on the use of “*integrated or biological pest management practices*’ that are friendly for the environment. The elimination of this type of claims may reduce for the producers to differentiate their own production, while at the same time not being able to fit the official regulatory framework for integrated farming. Another possible consequence for the future is related to the conditioning of others quality certification and labels (Label rouge, PDO,...) to the implementation of “*Agriculture Raisonnée*” by the farmers, thus acting like a

¹⁷The introduction of this delegation has been criticized according to the fact that the ISO 65 standard was already taking into account the possibility for certifying bodies to subcontract part of the audits and define the rules to be applied by the certifying bodies in order to guarantee the independence, impartiality and competence of these subcontractors. But as suggested by Arrunada (2000), the strengthening of certification rules by the regulator or consumer association with the objective of reinforcing the independence of the auditors may have the opposite effect by reducing the audit quality. (see Maxime, Mazé, 2003, for a discussion).

minimum standard. A recent study show that this type of GAP guidelines is still very demanding for many farmers, especially regarding information management (Aubry et al. 2003). Such requirements could thus be especially restricting for a large number of farmers already involved in quality certifications.

CONCLUSION

The extension to the european level of a unified standards setting for Good Agricultural Practices may appear as an inaccessible goal due to the diversity of definition and expectation of European consumers regarding environmental claims. As well, environmental requirements need to be adjusted to the specific local environmental problems met by farmers. The prioritization of corrective actions may thus be variable according to the place and to the type of agricultural techniques that farmers are using. This variability of actions is one of the specificity that could have compromised the definition of any unified standards, leading to a risk of confusion for consumers. As a matter of fact, retailers have not the technical knowledge required for environmental evaluation, and may thus required standardized practices that may not be a priority for some farmers.

The development of a regulatory framework in France aims to solve such scientific and technical difficulties, even if it supposes a change in the agronomic reasoning usually applied when evaluating GAP guidelines. As a matter of fact, the recent development and communication around environmental management systems like ISO 14000 (Wall et al. 2001), even if they remain limited in agriculture, have introduced a change in the way of analysing environmental problems and their perceptions by agronomists as well. The central point here is to bring these systems in line with a farmer follow-up and advisory approach so as to support their commitment to these approaches and develop reflections and trainings in terms of farm quality management. To that aim, the association of farm development bodies with farm certification schemes and their proximity with farmers, far from being incompatible with an idea of independence and credibility for such an approach, appears – under certain conditions – as an advantage in promoting the development of quality assurance system in the farming sector.

However, the possible future conditioning of CAP subsidies to the adhesion of farmers to such environmental and GAP scheme may have contradicting effect on the effective change of farmer's practices towards more pro-environmental behaviours. The consequence is a change of voluntary labelling schemes into mandatory standard implementation by farmers. The distinctive effects of voluntary and mandatory standards and labelling strategies have been widely addressed in the economic literature. The specific point that should be mentioned

here is that this evolution will be changing the underlying initial philosophy underlying the initial development of these quality and environmental management systems, especially the concept of continuous improvement cycle and the search for an increased responsabilization of farmers (Mazé et al., 2002, Maxime, Mazé 2003). As well, it may create a real risk of exclusion of farmers, especially those that are not involved in the most intensive farming systems, but will not be able to deal with information management requirements.

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