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# Exclusion of Farmers as a Consequence of Quality Certification and Standardisation

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**Abstract.** During the past decades, Belgian and European agriculture encountered several crises and as a result, food safety and quality have become governmental issues. This has led to vertical coordination and the appearance of quality conventions between links in the food supply chain. In practice, the quality conventions initiated by changed institutional settings turned out to be compulsory. This research aims to assess the exclusion-effect of this process and this is undertaken through data-analysis concerning farmers' participation in certification initiatives and homogeneity analysis.

The results of a survey concerning 319 Belgian farmers show that 25% of the farmers are not involved in any initiative of quality improvement. They are significantly older and less educated, but have also very little access to farmers' organisations and extension. Their gross margin is lower in comparison with participants; they are more oriented to one specialisation and are less labour intensive. The combination of these elements can be seen as a constraint to enter initiatives and as a probable danger to exclude the concerned farmers from the market.

This paper further elaborates upon these results, but also studies farmers' opinion regarding laws, contracts and labels. Finally, some recommendations towards public policies are made.

**Keywords:** Certification, standardisation, exclusion, food quality, food safety.

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## 1. Introduction

In recent years, Belgian and European agriculture have been encountering several problems such as the mad cow disease, foot and mouth disease, and crises (dioxins and PCB's), bringing about several consequences on different institutional levels like changing legislation concerning the agro-food-complex. Next, there are also changes in the relationship between the different actors in the chain and the ways in which these relationships are coordinated. These reactions were already extensively described (see e.g. Ménard [1], Eymard-Duvernay [2], Chappuis and Sans[3], Bridge[4] and Bates *et al.* [5]), and this paper will therefore emphasise on the consequences of these changes incurred by farmers.

In section 2, an overview will be given of the context of certification and standardisation, starting with the different trends in the entire food supply chain, and agricultural production in particular. Next, some definitions and classifications of certification initiatives will be given and the final paragraph will search for possible effects of the certification and standardisation process.

The third section describes the outset and results of a survey carried out with farmers. The discussion will start with an overview of the main characteristics of farmers that take part in certain initiatives. These findings are further elaborated upon through homogeneity analyses

and an analysis of the opinion of the farmers on different types of standardisation such as contracts and hallmarks.

In the final section, an overview of the main findings and the conclusions will be given.

## 2. Context of certification and standardisation

### 2.1 Recent trends

The aim of this section is to give an overview of the recent trends in the food sector and will thereby mainly concentrate on the European situation and especially on the British case, as this has been studied and described most often. However, other possibilities and examples will be added when possible.

Hobbs *et al.* [6] identify two main drivers of change in the UK food sector: the 1990 Food Safety Act and the BSE crises. The first is a public law and is also referred to as the “due diligence defence”. Because of this defence, food companies have to demonstrate their proactive measures to ensure that the food they obtain from upstream suppliers and handle is safe for human consumption. The BSE crises caused in the UK a shift from risk management towards the restoration of the consumer confidence. In Canada and Australia, on the other hand, food scares were also a primary driver of change, but the authorities opted for a policy aimed at risk management and prevention of trade-threatening food safety issues. The private sector is confronted with these food safety issues and the changing regulating environment and reacts with vertical supply chain alliances [6, 7].

Food safety is obviously an important topic for the entire European Union with the European Product Liability Directive as the most prominent legislation. This directive has been in existence since 1985, and was, as a consequence of the different food crises and scares, extended towards primary production. It stipulates that consumers can sue food producers for damages caused by defective products without proving negligence [8].

Both the due diligence defence in the UK and the European legislation were important institutional drivers of change, but they also created an incentive for the development of private standards within the supply chain. These measures have to ensure that due diligence is met as retailers are now forced to impose standards upon their suppliers to meet the legal requirements [7]. The relationship between actors in the supply chain is furthermore affected by the changing regulating environment and the actors may react with vertical relationships. According to Hobbs *et al.* [6], it is, at this moment, not clear which institutional environment will be the most effective and efficient means of delivering safe food. Other elements related to food safety in the UK, which also occur in private standards, are the traceability of food products along the food supply chain, and knowledge of the production and processing practices of upstream firms.

In some cases, private standards are needed to fill in for missing public standards or they have to respond to market requirements, especially when it comes to food safety. Standards are also strategic instruments of market differentiation, market share and niche protection and act as tools to build a reputation, based on both product quality and food safety. An example is the introduction of sophisticated systems of quality management, including the application of food safety/quality metasystems. This reflects the economic and social incentives faced by individual businesses that operate within the food supply chain. The standards tend to be formulated and imposed by buyers (retailers and processors) and are the key to their cost control and reputation with consumers, thus their overall competitiveness. Metasystems can take the form of self-

regulation or third-party certification (voluntary or required by those with whom the firm does business). These metasytems also function as a tool of chain coordination and as a management system to implement process and quality standards at each level of the chain. Through coordination, transaction costs can be lowered, information asymmetries can be reduced and additional rents can be captured from the consumer market. In the food supply chain, agreements between farmers and distributors exist regarding issues beyond food safety, but safety is a major driving force.

Studies, described in the international literature, show that the incentive required for standards to be private is lower if the public good nature of the standard is stronger. This implies that quality standards are more often private goods, while standards on safety and agricultural health are more often public standards. Moreover, large firms at the lower echelon of the chain often set-up “meta-management systems” that combine quality and safety process standards and certification for the suppliers from the farm through the first-stage processors [9, 10, 11].

An important remark in this matter concerns the power of the retailers. The multiple food retail sector is namely dominated by a relatively small number of supermarket chains, which results in the fact that there are relatively few alternative outlets. So, multiple retailers have market power and are able to impose their requirements very effectively on the supply chain. The majority of private initiatives starting out as voluntary have now become mandatory to deliver goods to a retailer. The combination of the change from a warrantee defence to a due diligence defence and the power of UK multiple food retailers has created a scenario where these retailers can impose their requirements throughout the supply chain [7]. Bergès-Sennou and Caprice [12] mention similar evolutions in France as the retail sector combines a rapid growth with an elevated concentration in the sector (5 retailers represent 90% of the market in supermarkets) and the development of retailer brands. The reason behind the success of these brands is very different depending on the country and the product. It was, however, observed that the French consumers generally had, at the time of the food scares, more confidence in these retailer brands in specific supply chains. The decrease of their sales was lower in comparison with national brands.

Consumers can also have an influence on the existence and content of private standards. Food safety is a very important issue in the purchase decision of consumers and this leads, according to Loader and Hobbs [11], to high information and measurement costs to determine the safety of food products. Next to that, food products are no longer ‘search goods’, but have become ‘experience goods’ as quality characteristics can only be determined after consumption, or ‘credence goods’ from which the consumer can not determine the quality because he lacks knowledge. Northen [7] defines food safety attributes as one sub-set of undetectable product attributes which can be defined as credence attributes. The failure of market mechanisms and government policy to signal credence quality attributes (including food safety) has created the need for private quality management (through the use of farm assurance schemes) to communicate these quality attributes (and allow buyers in the supply chain to reduce their costs of discovering quality). The credibility of the scheme label is generated from adequate scheme standards and independent inspections carried out by experts. Loader and Hobbs [11] see three possible ways to persuade the consumer of the credence attributes of food products: (i) firm-level responses such as the introduction of product certification or labelling, (ii) legislative protection in the form of labelling regulations and (iii) the allowance of tort liability law.

## 2.2 Definitions

For a better understanding, it is important to have some insight in the existing definitions of standards. Bredillet[13] for example mainly works in the domain of project management and

thinks of standards as key factors for economic and (individual and organizational) competence development. Standardisation is hereby, in general, a democratic process that results from businesses and organizations voluntarily choosing to develop their own guidelines. Standards are in this view socio-economical constructs resulting from negotiations that enable complexity, ambiguity and uncertainty to be reduced within the stakeholder groups. They play an important role in the coordination of the agent-actor-stakeholder behaviour and relationship and at the same time offer a way to resolve recurring or known problems.

Reardon and Farina [9] give a more explicit definition: "Grades and standards consist of a collection of technical specifications, terms, definitions and principles of classification and labelling. They include rules of measurement established by regulation or authority (standards) and a system of classifications based on quantifiable attributes (grades)." Their main objective is to pertain to quality, safety, authenticity and goodness of the production process. These authors distinguish two main groups: performance and process grades and standards. Performance standards aim to realize a high quality of the final product and do not take the production method into account. Process standards on the other hand focus only on the production method under the assumption that a good production method will lead to a high quality of the final product. Busch [14] works more in the field of moral economy and states that standards are the means by which objectivity is produced in the market, but as they can never be fully specified, they are always subject to renegotiation in the light of future events and are always discussed in practice as the subject used to complete specifications.

This matter is also discussed in the French literature where Sylvander [15], amongst others, defines the concepts of standards and norms. The definition of a standard is a set of technical specifications to which a producer commits himself, in a tacit way or due to a formal process of voluntary standardisation or to follow a public decision. A norm, however, is a written reference document that is accessible to the public. It describes the changing rules of the game concerning the guidelines or technical specifications. Compliance to these prescriptions is not mandatory; the prescriptions are elaborated upon by a recognised organism with the commitment of all parties concerned. The norms are destined to be used repetitively and continuously and want to realise an optimal advantage for the entire community. Sylvander [15] cites David [16] in attributing three functions to a standard: (i) a reference function to reduce the transaction costs, (ii) a compatibility function to improve compatibility of products and methods in the complex supply chains and (iii) a social function to enhance the well-being of the citizens.

The functions of norms and standards are also discussed by other authors and this discussion is closely linked with the processes and evolutions established in the previous paragraph. Several initiatives were elaborated on in order to inform the buyer or are demanded by the buyer to be sure about the supplier's products, but Holleran et al. [17] state that quality assurance systems are, in the end, designed to assure the customers that contracted product characteristics and/or production processes are consistently delivered. They recognise that there are many ways, forms and systems to realise these objectives but they all have two features in common: a reliance on documentation of production processes and practices and third-party auditing and certification.

The different authors cited indicate that there are different kinds of norms and standards and that classification can be undertaken through the use of several key elements. Holleran *et al.* [17] distinguish three main groups of quality assurance systems: (i) private voluntary international quality assurance standards such as ISO 9000, (ii) national firm-level assurance systems that may be linked with labels and (iii) proprietary quality assurance systems that specify retailers' specific safety and quality requirements. To group the different existing initiatives, two main

elements were used: the origin of the initiative (public or private) and the fact that the participation is voluntary or mandatory. Vuylsteke *et al.* [8] also make a distinction between mandatory and voluntary norms in Belgium. The mandatory norms comprise mainly the legislative prescriptions that are the same for all farmers in a certain sector. The initiative to participate in a voluntary system lies in general with the farmer, but the origin of the certification initiative or norm may be different (government, buyer or other institution).

This paper will only discuss the selection or exclusion effects of the voluntary initiatives. The reader has hereby to keep in mind that the term 'voluntary' is rather relative. Participation is thought to be voluntary in the way that it isn't enforced by law, but in certain cases the farmer has no choice if he wants to maintain his current outlet. The existing certification and normalization initiatives in the Belgian supply chain are grouped in three categories according to their characteristics and origin.

- *Buyers' norms* represent a norm, or standard, imposed on farmers by distributors and processors. Such norms often involve Good Agricultural Practices-codes, brand names, and market intermediaries such as auctioneers or certain wholesale butchers or even contracts between farmers and contract buyers. This type of standardisation leaves little room for initiative by, or involvement of the farmer. These types of initiatives provide usually just a limited or no support framework.
- The second group is called the '*chain norm*' and it is in reference to the standards demanded (or proposed) by market intermediaries. These are usually initiatives where the objective is to create integrated management of the production and marketing chains, which usually involves a sales brand with restricted access to a farmers' body or to market intermediaries. This form of standardisation leaves little room for professional negotiations but often results in greater information for farmers.
- The third and final category is that of '*labels and hallmarks*' and it covers norms where the farmers' membership of the certifying bodies is usually voluntary. It involves collective brands available to individual farmers, or even organised by farmers themselves.

These three categories also reflect even more complex organisational structures, usually involving tighter frameworks for the farmer, who is called upon to invest more, both in the definition of the norm and in its application [18].

### 2.3 Possible effects of certification and standardisation

The effects of quality certification on the individual farmers, farm structure and the farm organisation are hardly studied. Therefore, this paragraph is based on a broader range of literature including food safety regulation and agri-environmental schemes as these are closely related with quality certification.

It can be important to study the ways in which standardisation takes place before the discussion of its effects. Bredillet [13] states that standardisation can take place in two different ways: through market exclusion and through joint modification. In the model of market exclusion, there are at first several distinct methods available but as time passes the other players are effectively excluded from the market and standardisation has taken place. In the case of joint modification processes, some degrees of standardisation or compatibility are accepted. Different methods exist but in the end this will lead to methodological modification due to the users' desire of interconnectivity.

Another important element in the discussion is the fact that the compliance to standards is in many cases a strategic and organizational decision and should have impacts throughout the internal and external operation of the firm. Loader and Hobbs [11] see three possible strategic choices faced by a firm in its response to regulation: (i) stonewalling (ignore the problems), (ii) opportunity-seeking (gain competitive or other advantages) and (iii) a mixed strategy that combines elements of previous strategies. Henson and Hooker [10] give a series of factors that act to encourage firms to supply safe food and they mainly take the form of negative incentives. Examples are market forces, food safety regulations and product liability law. Loader and Hobbs [11] also define three elements that influence the compliance decision: the degree of market concentration, the extent of information asymmetry and the strength of the enforcement procedures. These are, to some extent, the same as those mentioned by the previous authors. Although these studies not only refer to food safety regulations, their conclusions can be generalized to the compliance to food quality systems in general. The only difference is that hardly any rent can be expected from 'successful' food safety control because consumers expect food safety to be provided in all cases where positive quality standards may result in a price premium.

Advantages cited by the participants are that meeting the standards (with formal certification) benefits their business and opens new opportunities [9], gives a competitive advantage [11] and provides a more closely coordinated system, which allows them to be more responsive and to adjust rapidly to changing conditions [19]. A higher degree of coordination and collaboration between the different levels in the food supply chain can eventually lead to increasing vertical integration. Motives in favour of this evolution are the reduction of transaction costs, reduction of risk, enhanced ability to innovate and to differentiate, more efficient exchange of information and organizational structures and improved market position. Vertical integration also has disadvantages such as the dissipation of resources, high demand on capital, reduced flexibility and rigidity of organizational structures. To assess benefits and costs, it is therefore important to consider the specific characteristics of raw materials, produce and structures. Its surplus value can be related to the individual firm (more effective and efficient conduct of business and assured sales), the entire supply chain (increased profitability through high-quality produce and optimising production) and competing supply chains (increase in competitiveness) [19].

Disadvantages of certification and standardisation are that the excluded tend to find themselves relegated to waning and unprofitable markets [9] and a risk for information overload of the consumers [11]. Other possible negative effects will be discussed with the consequences of particular initiatives and researches in the next paragraphs.

Bates *et al.* [5] studied the profiles of UK potato growers selling their produce through several marketing channels. It was discovered that farmers selling either on contract or by oral agreement are more specialised and more capital intensive than those selling on the spot market. These growers are also farming larger areas and making greater use of post-harvest technology. The final conclusion of this article is that the choice of marketing channel is a cost / revenue / risk trade-off decision. Holleran *et al.* [17] studied the consequences of participation in quality systems and concluded that in the short run, firms incur sunk costs related to adoption of the quality system. These sunk costs vary depending on firm size, product type and existing quality system. There is also an apparent desire to shift the costs of quality control to others in the chain. However, reduced costs may be incurred by firms that adopt the quality system to improve operational efficiency. The observed quality systems furthermore serve as a mechanism of communication between buyers and sellers, reducing the buyer's uncertainty of a product's attributes by providing information about the seller's production process. The adoption of systems like ISO 9000 stems from both firm-driven, internal incentives (often the primary motivation) and customer or regulation-driven, external incentives. Ultimately, quality

system adoption is firm-specific, depending in part upon such factors as firm size, level of existing quality system, scope of quality system and product complexity. Increased costs are also observed when British farmers decide to start with organic farming next to the extra record-keeping to meet the inspection standards. Another bottleneck is the multitude of inspection and this could be improved by one comprehensive inspection for all the initiatives on the farm (Falconer [20]).

Both Vanslebrouck *et al.* [21] and Falconer [20] studied the participation of farmers in agri-environmental policies. Although these kinds of measures are not studied in this paper, the outcomes could be similar for the participation of farmers in quality certification. The results show that the acceptance rate of the agri-environmental measures is determined by both the expected effect on farm production and the farmers' environmental attitude, which is more positive among younger and better educated farmers. Other variables which influence participation decisions are farm size and previous experience of farmers themselves or of neighbouring farmers with agri-environmental measures. The most important reasons not to participate are the costs of the application procedure and the argument that the environment would not benefit from the schemes. It is however striking that a high level of non-participating respondents did not consider themselves to be well-informed.

### 3. Selection effects of the standardisation process

#### 3.1 Research setting

The results described in this article come from research<sup>1</sup> conducted on the consequences of the standardisation process on the structure and organisation of agricultural enterprises. Five product groups were hereby selected: dairy, fruits, vegetables, pork and beef. The sample for data-collection was established on the basis of the annual statistical agricultural surveys. For every sector, two provinces were selected (one in Wallonia and one in Flanders) on the basis of their relative importance within that sector. From each selected province, a randomly selected sample was taken. The distribution of the sampled farmers over the different sectors and the two main Belgian regions is provided in Table 1 below. The data were collected by a questionnaire with the farmers and in total there were 319 respondents. Farmers were contacted by telephone and the questionnaires administered by a pollster during a visit to the farm.

**Table 1.** Distribution of the different firms over the sectors and the regions

	Flanders	Wallonia	Total
Vegetables	81	17	98
Fruits	18	12	30
Dairy	51	42	93
Beef	19	36	55
Pork	27	16	43
Total	196	123	319

Source: data based on own research

<sup>1</sup> This research project (S/02/020 and SO/19/054) was funded by the Federal Science Policy and was executed by the Department of Agricultural Economics of the Ghent University and the SEED-unity (Socio-Economie Environnement Développement) of the Fondation Universitaire Luxembourgeoise.



The survey consisted of questions on the general characteristics of the farm, the knowledge of standardisation initiatives, the vision on normalisation, the position in the chain and finally the consequences of standardisation for farmers that participate in hallmarks, contracts or other initiatives. The data are analysed by the statistical program SPSS using descriptive analysis and homogeneity analysis.

### 3.2 Descriptive analysis of the farms and farmers

In the first step of the analysis, it was determined whether the farmer participates in a standardisation initiative. In the sample, there are 74 farmers who don't take part in initiatives. The remaining 245 respondents have at least a normalization initiative on their farm. If farmers have two or more hallmarks or contracts on the farm, they are grouped together based on the most severe initiative. It is hereby thought that hallmarks have the most severe prescriptions, followed by integral chain management and finally buyers' norms. According to this classification, there are 97 farmers that follow a buyers' norm on the firm, 80 respondents are certified for integral chain management and 68 managers are recognised for participation in a hallmark or brand.

These four groups (no initiatives, buyers' norm, integral chain management and hallmarks) are compared along different characteristics. An overview of these characteristics is given in Table 2.

#### Farmers' characteristics

The figures indicate that there are important differences in the farmers' characteristics between those who don't participate in certification initiatives and those who do. The non-participants are, on average, older and less educated (only primary education) than their colleagues who do participate and in many cases they have no agricultural education. In the first group, a lower number of farmers are members of a farmers' association and 50% don't take part in any kind of extension services. The biggest difference between the two groups concerns the succession of non-participating farmers, which is less certain. The final figures indicate that agriculture is the main occupation of farmers who participate in any kind of initiative and this leads to a higher degree of satisfaction with their income.

The comparison of the different types of initiatives with the Mann Whitney U Test shows significant differences concerning the participation in extension, succession and the satisfaction with the income. Farmers with a hallmark more often indicate that they have access and participate in extension in comparison with those who follow a buyers' norm. Participants in buyers' norms and integral chain management differ significantly on the remaining two issues, succession and satisfaction with the realised income. Farmers classified in the first group and who are older than 45 years of age often answer that there is no successor for their exploitation and there is also a higher percentage of these farmers who are not satisfied with their income.

#### Farm structure

The gross margin and the degree of specialisation are different in function of the occurrence of a certification initiative. There is a distinct gap between the average gross margin of farms without initiatives (€ 118.804) and those with initiatives (€ 162.762). The reason for this difference could lie in the fact that these farmers miss the price premium for products of a good quality, especially as there is no difference in the average farm surface between the two groups. More than 70% of the farmers that aren't recognised for a certification initiative are characterised as 'specialised'. This means that more than 2/3 of the gross margin is realised by

one type of production, while bipolar farms have two types of products which represent more than 1/3 of the gross margin and all other farms are considered to be mixed. The group of farms with an initiative is also mainly specialised, but the distribution over the three types of specialization differs significantly from the group 'no initiatives'. The Mann-Whitney U Test also indicates a difference in specialization of farms who take part in initiatives for integral chain management in comparison with the other types of initiatives. The first group is, in general, less specialized and there is a higher percentage of mixed farms.

**Table 2.** Farmers' characteristics, farm structure and farm organisation in function of the type of initiative

	No initiatives (n = 74)	Buyers' norm (n = 97)	Integral chain management (n = 80)	Hallmark (n = 68)
<b>FARMERS' CHARACTERISTICS</b>				
Age (year) <sup>°</sup>	48,2	44,5	42,4	40,3
Education (%) <sup>°</sup>				
- primary education	37,8	24,2	21,1	13,4
- secondary education	45,9	64,2	67,1	70,1
- higher education	16,2	11,6	11,8	16,4
Farmers' association (%) <sup>°</sup>	66,2	87,6	79,7	86,6
Extension (%) <sup>*°</sup>	50,0	56,3*	66,7	77,9*
Succession (if older than 45) (%) <sup>*</sup>				
- yes	32,5	17,1*	48,0*	52,9
- no	50,0	48,8*	32,0*	29,4
- no idea	17,5	34,1*	20,0*	17,6
Agricultural education (%) <sup>°</sup>	50,7	68,8	75,3	79,4
Main occupation (%) <sup>°</sup>	89,2	95,9	100,0	98,5
Satisfaction income (%) <sup>°*</sup>				
- satisfied	31,0	57,5*	32,5*	45,4
- neutral	15,6	14,9*	18,2*	13,6
- not satisfied	63,4	27,6*	49,4*	40,9
<b>FARM STRUCTURE</b>				
Gross margin (€) <sup>°</sup>	118.804	149.331	174.655	163.154
Surface (ha) <sup>*</sup>	41,5	31,4*	54,8*	39,3
Specialisation (%) <sup>*°</sup>				
- specialised	70,4	69,8	40,8*	57,4
- bipolar	23,9	22,9	26,3*	25,0
- mixed	5,6	7,3	32,9*	17,6
<b>FARM ORGANISATION</b>				
Type of firm (%) <sup>°</sup>				
- One man	47,3	13,5	16,7	29,4
- With partner	25,7	68,8	59,0	38,2
- Other type	27,0	17,7	24,4	32,4
Income all from the farm (%) <sup>*°</sup>	62,2	85,1*	78,2	66,2*

<sup>°</sup> indicates that there is a significant difference (Chi Square test or OneWay Anova) between respondents that have an initiative on their farm and those who have no initiatives.

<sup>\*</sup> indicates that there is a significant difference (Mann Whitney U test or OneWay Anova) between the different types of standardisation initiatives. If only one column is marked, this type of initiative is significantly different in comparison with the other initiatives.

Source: data based on own research

## Farm organisation

Two variables are considered concerning the farm organisation: the type of organisation and the origin of the income. Farmers who don't take part in certification initiatives work more often alone in comparison with their participating colleagues and only 62% of them indicate that their entire income comes from the farm. A higher percentage of farmers that are involved in normalization initiatives indicate that their entire income originates from the farm. These conclusions concerning the origin of the income may be linked to the variable on main occupation, but this did not result in a significant difference.

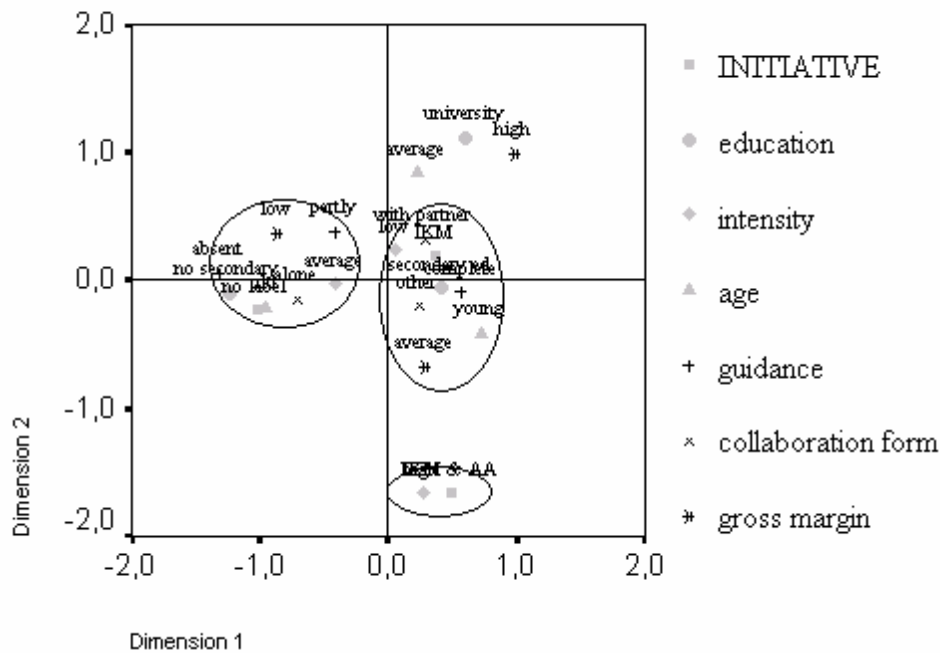
### 3.3 Homogeneity analysis for the dairy sector

The Belgian dairy sector is mainly considered as a strictly-ruled, well organised sector, and as an innovator concerning certification and normalisation. There are, in this sector, three main types of norms. On the one hand, there are the legal prescriptions and rules, and on the other hand, the (in principle) voluntary rules such as AA (ruled by the government), the prescriptions for organic production and other quality initiatives and hallmarks. Another important element in this sector is the initiative called 'Integral Quality Management for Milk' (IQM). This quality system was designed and elaborated by the sector itself. Participating farmers have to comply with prescriptions on five main elements: animal health, animal welfare, milk production, cleaning and the environment. There are also rules described for collection and transport, including collection, transport, milk reception, a code of conduct for the drivers and respect for the suppliers [8]. The IQM certification is performed by an independent control body. Participation in the IQM-initiative was at the start voluntary and early participators got also a once-only premium whereby a higher price for IQM-milk was charged. The initiative had a fast growth, but has now become compulsory in most dairy transforming companies. This is consistent with the picture drawn and evolutions described in the earlier paragraphs of this paper.

Homogeneity analysis is used to get a better visualisation of the link between different types of initiatives and the characteristics of farmers and exploitations. This technique describes the relation between characteristics and aims to group several similar cases. The result is a two or three dimensional figure that visualised the relation between the categories of the variables and the cases. Homogeneity analysis is a technique for data-reduction that plots cases of the same category near to each other. In a two-dimensional figure, two sets of values are calculated to reach a maximal spreading of the categories. Homogeneity analysis with SPSS allows the use of more than two variables, contrary to correspondence analysis, but has the disadvantage that the interpretation is mainly visual and there are no indicators for the quality and the accuracy of the result. Only eigen values are calculated [22, 23].

In the described data sample, there are 129 dairy farmers, who can be divided in three groups: 37 farmers who do not take part in any initiative, 36 farmers who follow the most severe initiatives such as AA or organic production (always in combination with IQM) and the remaining 56 respondents who are recognised for IQM-production only.

Figure 1 gives the result of the homogeneity analysis using these three groups and the following characteristics: *education* (no secondary education (= primary education), secondary education and university (= higher education)), *intensity* (low, average, high), *age* (young, average, old), *guidance* (none, partly (= farmer's association or extension), complete (= farmer's association and extension)), *collaboration form* (alone, with partner, other) and *gross margin* (low, average and high). The intensity is calculated as the amount of milk per ha of grass and feed crops on the farm.



**Figure 1.** Results of the homogeneity analysis for the dairy sector  
 Source: figure based on own analysis

The Y-axis seems to be the dividing line for participation in certification initiatives. The graph also indicates that the absence of initiatives is linked with characteristics such as an older farm manager, the degree of primary education, a low gross margin, a low intensity, farmers working alone and the absence or only partial guidance of the manager. Farmers participating in IQM are, according to this analysis, characterised by complete guidance, are young, hold a diploma of secondary education, earn an average gross margin and the firm has an average intensity. This type of certification is, according to the analysis, linked with cooperation with the partner or another type of organisation (apart from farmers that work alone). The characteristic 'high intensity' is the only one that is associated with farmers that combine IQM and AA from those who only have IQM.

### 3.4 Farmers' view on standards and norms

It seems quite clear that farmers' relations with standardisation approaches and the role of the government are closely connected. It is interesting to analyse how farmers view different 'models' of standards and norms, and to analyse whether their adoption of one or another model is connected to a particular view of these standards and norms [18].

#### Legal requirements and the role of the government

The standards and requirements set down by law are not questioned by most farmers, as they are seen to be necessary for quality. However, meeting these prescriptions requires a special effort, particularly by smaller holdings.

A first remarkable fact is an apparent paradox: all farmers criticise the government for over-interfering with agriculture, but an even greater majority wants better support from the public authorities. This, without doubt, reflects the difficulties they see in adapting to these legal requirements. and particularly the fact that around one-third feels they need further training in order to do so. It is, on the other hand, interesting to note that it is amongst those who have

been the least affected until now (those not involved or part of a 'buyer' system) that we find the highest proportions who think that the new legal requirements will lead to changes in their production choices. This could indicate that those farmers involved in 'label' systems expect significantly fewer changes to result from the new legal requirements than from their own initiatives. All this has to be seen against the background of a majority of farmers who do not believe that the legal requirements will really affect their production choices.

### The contracts

The contracts linking farmers and buyers or market intermediaries are not really an area that demonstrates different forms of standardisation approaches. The majority farmer opinion (67 %) is that the contracts are an answer to falling prices and thus provide the farmers with greater income security. However, 75% of farmers believe that the prices they receive barely compensate for the additional costs incurred, and a similar proportion sees contracts as a threat to their independence. For them, contracts are not positive, either in terms of their environmental impact (only 25% think they are beneficial) or in terms of the farm's image. It is interesting to note that farmers involved in 'label' schemes are even more pessimistic in this context, and those involved in 'buyer' schemes are slightly more positive. It can thus be said that contracts between farmers and market intermediaries are seen by farmers solely in organisational and commercial terms: They are a method of ensuring greater security in disposing of production, but at a risk of being even more dependant.

### The labels

Label initiatives enjoy a much more positive image among the majority of farmers. For example, 80% think a label improves the farm's image, 70% think label systems improve the environmental conditions on farms, and more than 70% believe that a label equals higher quality. It seems important to note that these opinions are shared by a majority of farmers independent of their specific situation in terms of standardisation approaches or labels. This should perhaps be seen in relation with the equally strong majority who wish to improve consumer information. This all demonstrates a strong sensitivity amongst farmers to the general social perception of agriculture and the fact that for them, the label is an attractive and significant means of changing that perception. However, the farmers realise that the label is not a cure-all as 70% of the respondents indicate that it requires a training input. Other consequences of adherence to a label are increased production costs (for 80% of the participants) and the time spent on administrative tasks, while almost 70% of the farmers do not see it as a solution for declining prices.

Beyond these generally shared views, we can note some differences of perception according to the specific situations of different farmers:

- Those involved in a label system are slightly more emphasising its advantages in terms of prices and profitability.
- Those participating in labels underline the problem of limited market outlet. This is mentioned by two out of three farmers involved in label systems who stress these difficulties, whereas two-thirds of the other farmers have the opinion that the market for such products is sufficiently large. There may be a tendency for farmers not involved in label systems to underestimate the economic advantages, and overestimate the market advantages of such systems.

To sum up

- Agricultural opinion is quite unanimous on many points, in particular on its desire for government support. It is also generally suspicious about contractual relations with buyers, primarily for reasons connected with independence.
- It is more surprising to note that labels enjoy a very positive image with a very large majority of farmers. Labels are seen as a method to rethink their place in society as they associate labels not just with quality, but also with environmental considerations and the good image of agriculture as such.

## 4. Conclusion

### A social selection effect

The analysis showed that different farmer profiles can be found in moving from one of the above normative poles towards the other. These findings can also be repeated for the individual sectors as shown in the homogeneity analysis of the dairy sector.

In short, farmers who do not participate in any standardisation approach tend to be older, with less formal education, are less commercially efficient and less engaged in the various professional networks and associations. Life and career trajectory factors can be added to these socio-economic, or capital-based, ones. Most non-participating farmers do not have a successor. When it comes to organisational factors, they often work alone on the farm and thus have less disposable time. Finally, there is the specialisation factor, as they are often engaged in only one form of (non-contractual) production. The selection effects of standardisation approaches are multifactorial, and are seen as being the final element in a generally unfavourable professional climate or as something completely removed from the farmer.

The 'buyer' approaches tend to select farms that differ little from those that are not involved in terms of 'training' or 'organisational support' capital but often have a family labour pool. These are often smaller, but higher income yielding, farms. These approaches, often imposed on farmers by produce buyers, thus tend to differentiate between those who do and do not take part because of social integration factors (training and membership of professional or representative bodies) and available time.

The farms that are involved in 'chain' standardisation approaches are, on average, the ones with more capital and family labour. They are usually larger than the average sized farm, and are less specialised in one area of production. They achieve the highest average gross margin. This tends to lead to the conclusion that those initiatives select the most efficient and best-equipped farms that have the time and cultural approach to engage in negotiations about standardisation approaches. Being less specialised, they can more easily take the risk of higher quality production in one part of the farm's operation.

Finally, when it comes to 'label' standardisation approaches, this also tends to involve those farms with the best capital base and labour assets, but with little specialisation and lower income levels. This may explain the significant number of farms in the beef and pork sectors adopting this form of standardisation approach. It seems that this option is seen as a solution by farmers with a reasonable capital base but strong economic pressures to innovate.

## Sectoral effects

Attitudes and behaviour towards standardisation are of course partly sector specific. The milk sector e.g. is concentrated in a handful of large firms, while the meat sector is much less concentrated. There are also special conditions, such as the crisis in the beef sector that seems to have convinced intensive farmers to seek a quality 'label'. These general tendencies are, however, to be found across the different sectors - standardisation approaches tend to almost exclude those farmers with fewer human capital and economic resources. The 'buyer' organised standardisation approaches would seem to attract the more specialised farmers who are less involved in their professional associations.

## Selection factors

Although our sample is too small to undertake the kind of detailed multivariate analyses that would enable us to estimate the relative impact of different factors, we can make the following remarks about the process of selection.

First of all, it is clear that the different standardisation approaches have differing demands in terms of time, capital, and training investments. It is the availability of these factors that is important. It is also clear that the difficulties that the less well endowed farmers face could be offset, at least in part, by support and guidance, whether such initiatives come from public bodies or the private sector. Nevertheless, a group of older farmers, without successors, will probably remain outside the standardisation approach system.

The time factor seems to exclude a certain number of farmers who work alone on their farm from standardisation processes that demand a time investment, partly in training, but above all in terms of record-keeping and following up procedures.

The degree of specialisation within the farm may be another factor, as mixed farms can more easily take the risk, or make the effort, to adapt a part of the farm to production under a standardisation approach. For more specialised farms, such a decision impacts on the whole farm and all the work to be carried out. Usually specialised farms adopt standardisation approaches described as 'buyer' ones, and are thus imposed upon by outsiders. Bipolar farms often choose for a middle approach and farms engaged in mixed farming are more frequently involved in standardisation approaches - and in the most demanding of those approaches. Accordingly, we can argue that farm specialisation makes farms more dependent and less easily able to adapt to changing demands imposed by the increasing number of quality control initiatives.

Finally, there is the sectoral 'crisis' factor, which suggests that certain farmers, provided that they are well established, can develop all specific quality initiatives when they are forced to do so by the failure of intensive farming methods in a declining market.

It is important to emphasise the 'type of organisation' factor in the sense that the most demanding standardisation approaches (labels) demand better support and training. We think that either voluntary participation or organised support structures can help compensate for the difficulties which certain farmers encounter when joining quality schemes which have their own administrative and/or technical requirements.

## General conclusions and policy recommendations

The conclusion of this research is that, through the whole process of norms and standards, a higher quality profile is enforced on the market. This tendency, parallel to the development of legal standards, reinforces the role of private market actors, particularly of market

intermediaries in the definition of both quality and security. The role of the government in this process, which is a form of privatisation/commercialisation of quality, can be questioned. It is clear that a majority farmers want an increased role for the government, mainly as protection while the better endowed farmers tend to opt for standardisation approaches that work to their advantage by giving them negotiating power.

Accordingly, three scenarios can be envisaged:

- disengagement of the government from setting norms and standards, leaving this to the private sector,
- re-engagement of the government in designing, implementing and enforcing compliance with norms and standards,
- re-establishment of an area for negotiation among farmers and the agricultural professions, the State, and market intermediaries to test changing norms and standards based on the label experience.

While the 'commercial' scenario is the most probable, because of economic constraints and the relative weakness of the public authorities, it does, however, remain possible for the government to play a role, on the one hand to help farmers (including the most vulnerable ones) to adapt to the development of standardisation approaches, and on the other hand to play, a proactive role in experimenting with new definitions of quality.

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