

CERTIFICATION SCHEMES IN CENTRAL AND EASTERN EUROPE: A *STATUS QUO* ANALYSIS IN THE AGRIFOOD SECTOR

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In the last few years, following a number of food crises, quality assurance systems have been widely introduced into the European agrofood sector. Customers' growing quality demands and their undermined trust in food safety are only two of the driving forces behind this trend. With regard to quality assurance schemes, Central and Eastern European agriculture and food industries are in a catch-up position. To compensate for the lack of research in this field, this paper presents an overview of certification schemes in the European agriculture and food industry with a special emphasis on Central and Eastern Europe. It also discusses the characteristics and scope of the schemes and future development trends.

INTRODUCTION

At this point in time, quality assurance schemes are becoming increasingly popular in the food industry and agricultural sector [Schiefer & Rickert, 2004; Hatanaka *et al.*, 2005; Theuvsen *et al.*, 2007a]. The reasons for this are the growing quality demands of customers, particularly large retailers and processors, and a number of food crises, such as BSE or Dioxin residues in feedstuffs, which have undermined consumers' trust in food safety and revealed a lack of transparency in food supply chains. Moreover, systematic quality assurance and improved traceability are considered cornerstones for improving the competitiveness of European agribusiness [Bogetoft & Olesen, 2002; Theuvsen & Hollmann-Hespos, 2005]. One further driver of the implementation of certification procedures is the huge importance of certificates if a supplier wants to deliver to large retailers such as Aldi, Carrefour, Tesco and Metro. This makes the implementation of a scheme such as the International Food Standard (IFS) obligatory [Gawron & Theuvsen, 2007].

The European Union is encouraging this trend through legislative actions, such as the introduction of EU-wide certification systems, as in the organic farming sector; the PDO (Protected Designation of Origin) and PGI (Protected Geographical Indication) systems; the establishment of European food safety agencies; and strict regulations on food safety and hygiene. All in all, EU activities are geared toward establishing a "quality-driven single market in foodstuffs" [Verhaegen & Van Huylenbroeck, 2002: preface].

Although certification schemes are most prevalent in Western and Southern Europe, for instance, Germany, the UK, France, Italy and Spain, Central and Eastern Europe

are in the process of catching up with regard to the number of such schemes. Some schemes established in the Eastern and Central European countries, for instance, the Czech KLASA system, have already gained considerable publicity and importance. Moreover, several Central and Eastern European PDOs and PGIs have been registered. Beer, bread, vegetables and other regional specialties are protected by the European Union [European Union, 2008].

Furthermore, schemes established mainly in Western Europe are gaining more and more relevance in Central and Eastern Europe due to the growing role these countries play in international food supply chains. Farms, for instance, have been certified according to the GlobalGAP standard in Poland, Slovenia, Slovakia, Lithuania, Hungary, Albania, Croatia, the Czech Republic and Bosnia/Herzegovina [GlobalGAP, 2008]. Processors have been certified according to the International Food Standard in Albania, Bulgaria, Poland, Rumania, Slovakia, Slovenia, the Czech Republic and Hungary [IFS, 2008]. Even the German scheme Q&S is represented in Poland, Slovakia, the Czech Republic, Bulgaria and Hungary. Whereas in the Czech Republic only four farms have acquired a Q&S certificate, while in Hungary 49 farms have been certified [Q&S, 2008].

With this trend in mind and to compensate for the lack of research in this area, this paper presents an overview of certification schemes in the European agriculture and food industry, especially in Central and Eastern Europe (including Turkey). In addition, the paper highlights the characteristics of these schemes and concludes with projections for future developments in certification and quality assurance in Eastern and Central Europe and the convergence trends that can be observed throughout the European Union and beyond.

CERTIFICATION SCHEMES IN THE EUROPEAN AGRIFOOD SECTOR

“Certification is the (voluntary) assessment and approval by an (accredited) party on an (accredited) standard” [Meuwissen *et al.*, 2003, p. 172]. Neutral and independent third-party audits by a certifying party with the aim of assessing the compliance of a certifiable party – a farm or a firm – with a standard typically laid down in a systems handbook are at the heart of certification procedures. Firms successfully passing the audit procedure receive a certificate that can be used as a quality signal in the market to reduce the quality uncertainty of buyers and, in this way, lower transaction costs [Luning *et al.*, 2002]. Certification has to be distinguished from the activities of public surveillance and control authorities that monitor compliance with legal requirements and from second-party audits, such as those conducted by customers checking suppliers’ compliance with their own standards [Meuwissen *et al.*, 2003]. A closer look at the systems implemented in the European Union reveals a broad spectrum that can be organized in various ways: standard setter, addressees, foci, objectives, geographical coverage, number of participants and supply chain coverage [Theuvsen & Spiller, 2007] (In the following, examples are given in brackets.)

With regard to the **standard setter**, we can roughly distinguish between private and public standards [Jahn *et al.*, 2003]. Public standards can be laid down by the EU (Regulations (EC) 2092/91, 509/2006 and 510/2006) or by national or regional governments. Private standards can be laid down by customers (BRC Global Standard, International Food Standard), suppliers (Assured Farm Standards in the UK), norming institutions (ISO 9001, ISO 22000), inspection and certification institutes (Food TUEV Tested; Fresenius Quality Seal) or nongovernmental organizations interested in such goals as fair trade (TransFair) or animal welfare (Freedom Food). Furthermore, combinations are possible, as in the case of the German Q&S system, where industry associations representing different stages of the supply chain have joined to set a standard.

Addressees of the certificates can be either other businesses, consumers or – in some cases – both. Business-to-Business (B2B) standards are not communicated to the final consumers, who are often unaware of their existence; GlobalGAP, International Food Standard and the ISO 22000 are all B2B standards. B2B standards seek to reduce quality uncertainties in food supply chains and, in that way, serve as quality signals, reduce transaction costs and liability risks and favor spot market transactions [Schulze *et al.*, 2006]. Business-to-Consumer (B2C) schemes address the final consumer, typically by displaying a logo on the products produced by certified farms and firms (Freedom Food, Label Rouge). B2C standards represent the majority of certification schemes in the EU but often (although not always) operate in market niches. Italy offers two well-known examples: the PDO Pecorino Toscano and the PGI Olio Toscano olive oil [Belletti *et al.*, 2007]. Some schemes have a B2B as well as a B2C focus. Examples are the German Q&S system and the British Assured Food Standards (with its well-known Little Red Tractor logo). Since these schemes address not only consumers but also other businesses, they typically represent major parts of the market.

Certification schemes can have very diverse **objectives**, which can be roughly described as the improvement of food safety by guaranteeing compliance with minimum standards and differentiating food products. Minimum standard schemes reduce quality uncertainties, especially with regard to credence attributes, such as freedom from microbiological risks. Often these schemes systematically compile legal rules, norms and industry guidelines (such as good hygiene practices) but largely refrain from defining higher standards. Enforcing compliance with minimum standards is typical of many B2B schemes, like the BRC Global Standard, GlobalGAP and the International Food Standard. The private enforcement of legal rules prior to certification – often only incompletely controlled by public authorities – might be an explanation why many certified farms and firms perceive even the minimum standard schemes as additional burdens [Gawron & Theuvsen, 2007; Schulze *et al.*, 2008].

Differentiation strategies seek to create product offerings that are perceived as superior by customers. Differentiated products enjoy higher prices and higher customer loyalty than undifferentiated products, which compete only on price [Porter, 1980]. Product differentiation is typical of the vast majority of schemes addressing the final consumer. Differentiation can be based on compliance with above-average process standards, such as organic farming (Bioland, Demeter) or animal welfare (Freedom Food), guaranteed region-of-origin (Regulation (EC) 510/2006) or higher organoleptic qualities (Label Rouge). Often two or more differentiating aspects are combined, for instance – as in the case of many PDOs and PGIs – region of origin, traditional production methods and higher organoleptic qualities. At least parts of the consumers tend to show a higher willingness to pay for such product and process attributes [Batte *et al.*, 2007; Bennett, 1996; Krystallis & Chryssohoidis, 2005; Skuras & Vakrou, 2002].

The **focus** of certification schemes can be systems, processes or products [Pfeifer, 2002]. Quality management system audits are typical of schemes seeking to guarantee minimum standards in a B2B environment (ISO 9001, ISO 22000, GlobalGAP, International Food Standard, BRC Global Standard, Q&S). Production processes are the main focus of organic farming labels and the EU egg classification system, for example. A product focus is often characteristic of PDOs, PGIs and TSGs. Combinations can also be found, for instance, when process characteristics, like those pertaining to animal husbandry, are added to a process standard, such as Q&S, to form a regional quality initiative.

The **geographical coverage** of the certification schemes implemented in the EU is very diverse. Local standards admit only local producers and processors as partners, as is the case in many PDOs and PGIs. Regional certification schemes are often founded by regional governments or medium-sized processors operating in a regional market. There are also national schemes. IKB in the Netherlands is mainly a national system. Although it is also used outside its home country, the vast majority of the farms and firms it certifies are in the Netherlands. International schemes have been broadly implemented in a number of countries. Examples are the International Food Standard, GlobalGAP and ISO 22000.

The **number of participants** varies considerably. For example, the smallest certification scheme currently operated in Germany has hardly more than 130 members, whereas the Q&S system, with more than 117,000 participating farms and firms, is one of the largest standards.

Supply chain coverage is also diverse. Some schemes focus only on one stage of the supply chain, for example, agriculture (GlobalGAP) or processing (International Food Standard). Other standards cover multiple or even all stages in the chain; a case in point is Q&S (animal feed industry, agriculture, processors, retailers).

All in all, the certification landscape reveals a multi-faceted picture with remarkable differences between different regions. In the northern and western parts of Europe, minimum requirement schemes dominate, while differentiation schemes are of less relevance in these food markets. The situation is reversed in the Mediterranean countries, where a stronger tradition of high quality and highly differentiated food and a longer tradition of protecting regional and traditional specialties favors the spread of differentiation systems, such as PDOs and PGIs. Central and Eastern Europe are in a catch-up process with regard to certification systems. Nevertheless, some schemes established in the East-

ern and Central European EU member states, for instance the Czech KLASA system, have already gained considerable importance.

SELECTED CERTIFICATION SCHEMES IN CENTRAL AND EASTERN EUROPE

As mentioned, certification schemes are gaining more and more importance in Central and Eastern Europe. The most prevalent schemes (ISO 9001, GlobalGAP, Q&S, Demeter, BRC Global Standard, IFS and PDO/PGI and TSG systems) are described below (Table 1).

ISO 9001:2008

ISO 9001 is a private standard developed by the International Organization for Standardization. It is a B2C standard focusing on the management system and covering all the steps in the agrifood chain except agricultural production. ISO 9001 is a global standard with about 900,000 certificates conferred worldwide [ISO, 2006]. As an industry-neutral standard also adopted in the food sector, ISO 9001 does not include any sector specific aspects, such as hygiene rules (HACCP concept, for instance), sensory tests, *etc.*

TABLE 1. Number of certificates in Central and Eastern Europe (April 2008).

	ISO 9001 (all industries)	GlobalGAP	BRC	IFS	Q&S	PDO/PGI	Demeter
Albania	28	-	-	-	-	-	-
Armenia	34	-	-	-	-	-	-
Bosnia and Herzegovina	242	1	-	-	-	-	-
Bulgaria	3,097		3	17	2	-	-
Croatia	1,676	67	4	8		-	1
Czech Republic	12,811	12	78	82	6	12	1
Estonia	577	-	3	2	-	-	-
Georgia	52	-	-	-	-	-	-
Hungary	15,008	641	50	220	62	1	4
Latvia	625	-	1	2	-	-	-
Lithuania	697	1	9	9	-	-	-
Macedonia	217	4	2	1	-	-	-
Moldova	41	1	-	3	-	-	-
Poland	8,115	392	134	237	199	2	5
Romania	9,426	24	3	30	-	-	1
Russia	6,398	-	3	5	-	-	-
Serbia	1,551	-	4	-	-	-	-
Slovakia	2,195	12	11	21	8	1	1
Slovenia	2,182	7	3	17	-	1	22
Turkey	12,350	1,232	89	54	-	-	101
Ukraine	1,808	-	1	1	-	-	-
CEEC Total	79,130	2,394	398	704	277	17	146
Germany	46,458	7,189	267	2,799	109,405	69	1,621
Europe Total	415,169	56,504	6,000	8,045	117,369	779	3,219
World Total	897,866	71,125	7,286	8,543	117,369	780	7,678

[Sources: ISO, 2006; Q&S, 2008; BRC, 2008; European Union, 2008; Demeter, 2008; GlobalGAP, 2008; IFS, 2008]

GlobalGAP

The GlobalGAP standard was developed in 1997 by retailers organized in the so-called Euro-Retailer Produce Working Group and, therefore, is a private standard. It is a B2B standard whose main objective is the improvement of food safety by guaranteeing compliance with minimum standards. GlobalGAP focuses only on agricultural production. Just like ISO 9001, it is a quality management system audit. All in all, GlobalGAP has issued 71,125 certificates around the world [GlobalGAP, 2008].

Q&S

In response to the BSE crisis starting in the year 2000 in Germany, in 2001 the private Q&S GmbH established the Q&S System to guarantee compliance with minimum standards and, in this way, signal food safety to processors, retailers (B2B) and the final consumer (B2C). Q&S focuses on the quality management system and covers the whole supply chain from agriculture to the final consumer. Most participants are still located in Germany but the number of certified farms and firms outside Germany is growing quickly; nevertheless, it can still be considered a national system [Q&S, 2008].

BRC Global Standard

Similar to some of the schemes mentioned above, the BRC Global Standard grew out of the initiative of British private label retailers. The British Retail Consortium is the leading trading organization in the UK. The BRC Global Standard is a B2B standard guaranteeing minimum standards. It includes quality management system audits in food processing companies. It is an international scheme with about 6,000 certificates issued in Europe and about 7,300 in the world [BRC, 2008].

International Food Standard (IFS)

In 2002, German retailers cooperating in the quality assurance board of the EHI Retail Institute developed the IFS. Like the BRC Global Standard, the IFS tends to cover minimum standards and addresses food processors and retailers. One main objective was the reduction of the number of audits and, therefore, certification costs. The focus is on food processors' quality management system. As an international scheme, it has conferred about 8,500 certificates throughout Europe [Tromp *et al.*, 2007; Buhlmann, 2004; IFS, 2008].

PDO/PGI/TSG

With the support of the European Union, the introduction of PDO, PGI and TSG systems started in 1992. The main objective was to differentiate food products by guaranteeing their region-of-origin or traditional production methods. Consumers are informed by product labels. Unlike the schemes mentioned above, the focus here is on product quality. All in all, there are 785 PDOs, PGIs and TSGs in the European Union [European Union, 2008; Belletti *et al.*, 2007].

Demeter

In 1994 Demeter became one of the first private ecological associations to adopt guidelines regarding the production

of organic products. Similar to the PDO, PGI and TSG systems, product differentiation is its main objective. Demeter is a B2C standard and is communicated to the final consumer by a product label. Demeter mainly addresses the production process in agriculture. Certificates are conferred on producers and processors in many countries, including Hungary, Slovenia and Turkey [Demeter, 2008].

ISO 9001 is one of the largest schemes; about 900,000 firms worldwide and more than 79,000 companies in Central and Eastern Europe are certified according to this standard. ISO 9001 is applied to nearly all industries; numbers for food processing are not publicly available.

GlobalGAP is represented in twelve countries in Central and Eastern Europe. As of 2008, 71,125 certificates have been conferred, including nearly 2,400 in Central and Eastern Europe. The vast majority of GlobalGAP certificates have been conferred in Turkey (1,232), Hungary (641) and Poland (392).

The BRC Global Standard, which is mainly used for auditing food processors, is most important in Poland (134 certificates), Turkey (89) and the Czech Republic (78). All in all, this standard has been implemented in 7,286 companies worldwide.

In response to the BRC Global Standard, the International Food Standard was developed and implemented in a number of countries around the world. With regard to Central and Eastern Europe, most of the certificates were conferred in Poland (237), Hungary (220) and the Czech Republic (82).

All in all, 117,369 farms, suppliers, processors and retailers participate in the Q&S system. In Hungary 220 certificates have been conferred, and in Poland 199; these figures reflect these countries' intensive integration into Western European food supply chains.

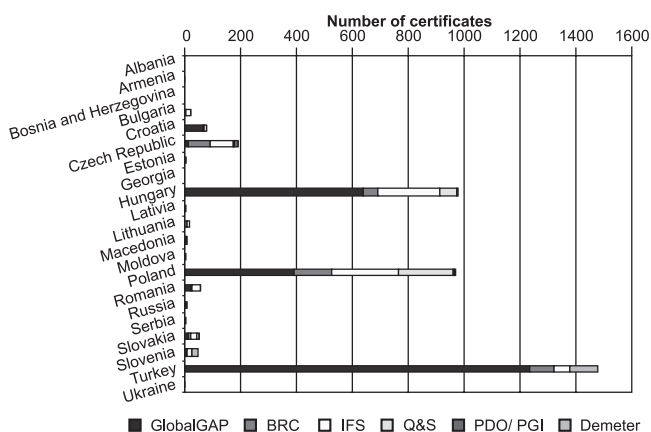
The PDOs and PGIs, which are strongly supported by the European Union, can only be found sporadically in Central and Eastern Europe. Hence, twelve products are protected in the Czech Republic, two in Poland and one in Slovakia and Slovenia. Except for one product from Colombia, all 780 PDOs and PGIs come from Europe.

Demeter is an organic standard that has gained more and more relevance in the eastern and south eastern parts of Europe. Turkey, for example, contributes 101 members, and Slovenia 22. Five farms participate in Poland, and four in Hungary. Demeter has about 7,700 members in total.

Hungary (978), Poland (969) and Turkey (1,476) boast the highest number of certificates, whereas the absolute number of certificates is much lower in countries such as Croatia, the Czech Republic, Slovakia and Slovenia (Figure 1).

The picture looks different when country size is taken into account. The number of certificates per one million inhabitants is by far the highest in Hungary (97.8). The numbers for the Czech Republic (18.4), Croatia (18.2) and Slovenia (25.0) look now much more impressive and are very close to the number of certificates conferred in Poland (25.4) and Turkey (20.9). The average number of GlobalGAP, BRC, IFS, Q&S, PDO/PGI and Demeter certificates issued per country is 10 in Central and Eastern Europe.

GlobalGAP shows the largest regional coverage, followed by the BRC Global Standard and the Q&S system. There has



Note: Because of missing data on food processing, ISO 9001 was not included in Figure 1. Source: ISO 2006, Q&S 2008, BRC 2008, European Union 2008, Demeter 2008, GlobalGAP 2008, IFS 2008.

FIGURE 1. Number of certificates conferred in Central and Eastern Europe.

been only occasional interest in Demeter and PDO/PGI certificates. Nevertheless, the PDOs, PGIs and TSGs also serve to illustrate the catch-up process in Central and Eastern Europe. Whereas the Southern European countries are still far ahead in terms of absolute numbers with regard to PDOs, PGIs and TSGs, the Czech republic has become the most active country with regard to new registrations (11), and Poland (6) and Slovakia (3) have also outperformed many other EU member states, such as Austria, the UK and Belgium [European Union, 2008].

DISCUSSION AND CONCLUSIONS

Our results show that quality assurance schemes have gained growing importance in Central and Eastern European countries. Nevertheless, there are remarkable differences between the countries surveyed. A quick glance at export statistics indicates that high numbers of certificates coincide with high exports. Turkey, Poland, Hungary and the Czech Republic are good examples of the hypothesis that quality certificates have become a *conditio sine qua non* for successful exports of agricultural and food products. This observation parallels similar results from South America [Lazo *et al.*, 2007]. Furthermore, with the exception of Turkey, admission to the EU seems to support the diffusion of quality assurance schemes in Central and Eastern European countries. Nevertheless, the close relationship between food exports and number of certificates nourishes the hypothesis that certificates, at least in some cases, function as non-tariff trade barriers on international markets [Zheng & Jiang, 2002]. Today, supplying retailers in Germany, Italy and France is next to impossible without an IFS certificate, whereas in the United Kingdom the BRC Global Standard is more or less obligatory.

The eastern enlargement of the EU on May 1, 2004, meant that the new member states had to meet more stringent food quality and safety regulations as well as serve more demanding markets for agricultural and food products. Growing certificate numbers in several of the new member states

show that agriculture and the food industry in those countries are adapting to new legal and market requirements. The development of the KLASA certification scheme in the Czech Republic illustrates that Central and Eastern European countries are no longer simply reacting to market requirements but have started their own initiatives in the field of food quality and safety. It can be anticipated that new EU member states as well as neighboring countries currently still lagging behind will also jump on the bandwagon in order to improve their export opportunities to the EU markets.

It will be interesting to see how the trend towards certification influences food supply chains. A World Bank study has argued that more demanding, professionalized food supply chains favor production contracts and other forms of contract farming in Eastern Europe, Central Asia and other transformational economies [Swinnen, 2005]. On the other hand, Schulze *et al.* [2007] argue that in developed countries quality assurance schemes favor spot-market transactions due to reduced quality uncertainties. Theuvsen *et al.* [2007b] have argued that certification schemes influence information sharing in food supply chains and, therefore, have a strong effect on their competitiveness. Since many Central and Eastern European countries are still in a transformation process, we may see two different phases. At first, suppliers' high demands (including certification) may drive out smaller farmers and producers. Then, in a second phase, certification procedures may favor more open markets in a more professionalized food industry.

Future research should address the costs and benefits of quality assurance schemes in Central and Eastern Europe. So far, cost-benefit analyses have been performed mainly in economically more developed countries [Gellynck *et al.*, 2007; Belletti *et al.*, 2007]. Furthermore, little attention has been paid to producers' and processors' perceptions, which should also be analyzed. Again, prior studies have mainly focussed on Western European countries [Enneking *et al.*, 2007; Jahn & Spiller, 2007].

All in all, certification has become a strong trend in Central and Eastern Europe. Future research will show how further developments will exactly look like.

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