

**The EU food regulatory policy making:
Indirect effects on the food chain governance**

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Abstract

The perpetual expansion of the EU regulatory policy making, especially in the late 1980s, created new demands regarding the governance of these policies within the EU but also at the global level. This paper examines the specific case of the EU food chain regulatory framework and investigates its implications on the food chain governance. It specifically examines how the EU food chain regulatory framework emerged with the scope to ensure higher quality, healthy and safe food along with promoting innovation and the use of modern technologies which is also part of the Commission's 'Better regulation' agenda. Based on the regulatory governance theories, the analysis reveals that the regulating of the food chain has a two fold effect on the modes of governance and organisation in the sector at the global level. Firstly, regulating the EU food chain (process and content - requirements and levels of application) directly determines the standards and the levels in the sector that they have to comply with or 'what' (is regulated) and 'who' (is regulated); and secondly the politics involved in regulating affects indirectly how those regulated (the 'who') become interdependent and interconnected in new modes of governance.

Introduction

In November 2007, the Vice-President of the European Commission, Günter Verheugen (2007:1) wrote that 'the European Food Industry, in contrast to other industrial sectors, is per se characterized by a complex value chain'. The governance of the food chain that involves a variety of levels (production, manufacturing, retailing, storage and consumption) incorporates many actors, diverse interests and conflicts and special resources. The food chain is also changing and reshaping at a variety of scales (Marsden, 1998; as cited in Morris and Young, 2000). 'A number of these transformation changes are linked to attempts to make quality more central to how food supply chains operate' (Watts and Goodman, 1997 as cited in Morris and Young, 2000).

The introduction and the application of quality in agro-food production in this context is not a straightforward process because: first, '*quality*' is an inherently difficult concept to define, thus potentially leading to confusion in its application; *second*, producing food for the quality market requires businesses throughout the agro-food chain

to change production and management systems, which may be a source of resistance to notions of quality' (Morris and Young 2000:1).

'The regulation of food policy became important public policy area because it (a) 'affects directly, personally and continually the well being of every citizen'; (b) 'food safety has important economic dimensions' 'requires specialised technocratic knowledge that triggers innovation'; (c) 'has an important international dimension' and (d) 'has an important cultural dimension' (Ansell and Vogel 2006: 5-6).

Having the above as a point of departure this paper concentrates specifically on how the Europeanisation and internationalization of food standards and regulatory measures induces changes in the food chain governance at the global level, namely structures in the industry, innovation and competitiveness, information diffusion to consumers. Although, interesting the paper does not focus on the rent-seeking aspects of the regulatory policy making and how they influence the shaping of standard setting and rules.

Increasingly, the interdependent world characterised by the emergence of a variety of transnational challenges such as health pandemics or the development and use of technologies. These problems demand international and supranational responses that result in the transfer of regulatory competences from states to the supranational and international levels. Quality and standards of food either in relation to supply or to production became very important and contested in the EU by a series of scandals¹ in the 1990s 'that hampered the credibility of regulators' (Bernaouer and Caduff, 2006:81). The EU responded to these developments with the establishment of new institutions² and an expanded regulatory policy targeting quality and food safety problems. By responding to the external challenges the EU becomes 'the world's largest regulatory power'³ across a range of sectors from food to chemicals' (Drezner 2007 as cited in Jacoby and Meunier 2010:306). The EU regulatory policy making 'applies a special expertise, employs

1 Use of hormones in beef production, dioxin in Belgian chicken feed, mad cow disease etc.

2 The Prodi Commission established in 1999, the new Directorate-General for Health and Consumer Protection became responsible for the measures to protect both human and animal health from the risk of BSE and later in 2002 the European Food Safety Agency.

3 Jacoby and Meunier in the special issue on managing Globalisation 2010 at Journal of European Public Policy refer to five major mechanisms through which the concept of managed globalisation is pursued. These are 1) expanding policy scope 2) exercising regulatory influence 3) empowering international institutions 4) enlarging the territorial sphere of EU influence and 5) redistributing the costs of globalisation. We consider that the first four mechanisms are especially relevant to the EU regulatory bureaucracy.

administrative capacities and regulates in the sense of imposing a structure on an industry...’ (Baldwin and McCrudden, 1987 in Majone (2006:379). ‘The EU writes rules, develops the institutional architecture to monitor those rules, and encourage and contribute to the building of the capacity of international organisation to enforce them’ (Jacoby and Meunier, 2010:307). The EU food regulations aim to ensure higher quality, healthy and safe food along with promoting innovation and the use of modern technologies as part of the ‘Better Regulation’ agenda scope.

First, the paper examines the EU food regulating based on *who* and *what* type of actors need to comply with the rules; then it considers how the specific regulations link the various levels in the food chain and the non coercive elements that are not possible to be depicted if one concentrates only on the rent-seeking aspects of the regulatory policy making. The analysis reveals that the EU regulating of the food chain has a two fold effect on the modes of governance and organisation in the sector at the global level: a. regulating the EU food chain (requirements and levels of application) directly determines the standards and the levels in the sector that they have to comply with or ‘what’ (is regulated) and ‘who’ (is regulated); and secondly the ‘politics’ involved and the ‘content’ of regulations determine indirectly how the regulated (‘who’) become interdependent and interconnected in new modes of governance that also restricts control transparency and information diffusion to a small number of actors.

Theoretically the paper falls within the regulatory policy making literature at the non-state level and its ‘special features that distinguish it from other modes of policy making’ (Majone, 2006:378). Regulation ‘usually refers to sustained and focused control exercised by a public agency on the basis of a legislative mandate, over activities that are regarded as desirable to society’ (Selznick 1952 in Majone, 1996:9).

The paper is structured as follows: the theoretical perspective and the different theoretical approaches on the regulatory policy making are presented after the introduction. The paper proceeds with the method followed for the study and the specific selection of the EU food chain regulations and the reasons behind this selection. The various levels that each one of them applies to are identified, from the primary production to the final consumer. A historical review of the developments of the EU food chain

regulatory framework and the institutional setting follows. Then, the agro-food chain governance structures are analysed. Lastly, some conclusions are drawn.

Theoretical background

Initially, the regulatory theory focused on the rent-seeking aspects of regulating through the negotiations among the politicians and the industry that aimed to satisfy the sectoral economic interests and correct market failures. Producers and businesses use their power to influence decision and policy makers while politicians seek re-election that result in regulating. Thus, regulation is ‘the outcome of the strategic pursuit of interests by rational actors, notably big firms and regulators in big agencies’ (Stigler, 1971 as cited in Moran, 2002). ‘The central tasks of economic regulation are to explain who will receive the benefits or burdens of regulation, what form of regulation will take and the effect of regulation upon the allocation of resources’ (Stigler, 1971:2). ‘Regulation has a single normative justification: improving the efficiency of the economy by correcting specific forms of market failure such as monopoly, imperfect information, and negative externalities’ Majone (2006:379). The above mainly economic view of regulating has been criticised for ignoring the social aspects ‘that arise from externalities, information deficits –the information available to some of these engaging in the market transactions is seriously imperfect’ (Ogus, 2004: 31-32). The political point of view also considers the normative aspects that justify the regulatory policy making in satisfying the public interest and investigates the role of asymmetries of information embedded in regulating. Consequently, regulatory policy ‘can be used to indicate what sacrifice would have to be incurred, in terms of aggregate social welfare, in order to achieve the given distributional objective’ (Ogus, 2004:35).

Jordana and Levi Faur (2004:5) add that ‘the regulatory toolbox has expanded and most importantly, contains new techniques of ‘regulation for competition’. In the 1980s and 1990s, the EU regulatory policy making expanded especially in setting standards that were supported by the big international firms that were protected from high competition. The scope of the regulatory policy making has broaden and it includes more levels (multi-level, national, transnational, global) but also types of actors (regulators,

administrators, industry and society). The view of 'EU as a regulatory state' (Majone, 1996) that intervenes mainly in the member states 'is too limited to capture the nature of change in policymaking and governance'... 'in the new order of regulatory capitalism' (Levi-Faur, 2006:364).

In Europe, regulatory issues have been mainly treated 'either as purely administrative... or as judicial'. It is often argued that the shift from 'economic interventionism' to regulation as the main policy type is the product of changing governance paradigms (Majone 1996 in Radaelli 2005). The EU regulatory expansion in the 1990s enhancing the role of the EU institutions and the actors involved. Thacher (2006:314) shows that 'a number of networks of national regulatory agencies collaborate with the Commission and constitute significant potential sources of 'soft law' such as codes and norms but also in strengthening European epistemic regulatory communities'. Furthermore, as a response to the regulatory expansion, the member states introduced national secondary legislation defining the details in regulations because they realised that otherwise would 'be obliged to follow decisions made by the ECJ which they could not control' (Thatcher, 2006:316).

According to the Commission's 'better regulation' agenda the scope of EU food regulating is to ensure higher quality, healthy and safe food by the regulators and the producers along with promoting innovation and the use of modern technologies. 'The institutional context of regulation describes the locus where rules are drafted, implemented, monitored, and enforced' Mattli and Woods (2009:17). These institutional settings can be broad or closed, they can allow access or be very exclusive, they can allow deliberation and participation, consultation, be transparent or not. These elements have often contributed to discussions of legitimacy and transparency (Mattli and Woods 2009). For example, the case of Codex Alimentarius Commission that involves NGOs in their regulatory processes (Mattli and Woods 2009:18).

Having as a point of departure the multi-level governance of regulatory policy making, this paper first aims to map the institutional setting involved in the EU food chain regulatory policy making (Steiner, 2005). It does not only concentrate 'on the strategic pursuit of interests by rational actors, notably big firms and regulators in big agencies' and the negotiations among policy makers and firms (Stigler, 1971:2). Then it

concentrates in three aspects concerning the food chain regulatory in order to examine the link between food regulating and governance structures. These aspects are: a. the different levels that the regulations apply to concerning the food chain and how these levels are linked b. the compliance requirements and the rigorousness of control based on size of firms and c. the social aspects and information transparency that are considered as part of the rationale of the food regulatory policy.

The main claim of the paper is that the EU food regulatory policy making impacts on the organisation and coordination of firms' activities and the governance in the policy area. However, one of the important aspects in the EU food regulatory policy making is the justification of the introduction of the regulations on the society and the consumers that are also affected by it.

Jacint and Levi-Faur (2004: 1) claim that 'the degree of change in the ways governance through regulation is exercised can hardly be exaggerated'. 'Governance structures refer to the general rules in a society that define relations of competition, cooperation, and market-specific definitions of how firms should be organized. These rules define the legal and illegal forms of how firms can control competition. They take two forms: laws and informal institutional practices' (Fligstein, 1997:9). 'Rules reflect the real groups with real interest. There are organized actors who have an interest in the rules as they are and because once in place, rules act as powerful devices to both enable and constrain action, one can see why there are huge pressures to prevent the convergence of markets across the world' (Fligstein 1997:14). Governance responses are embedded and constrained by ongoing social relations (also enhanced by the specific regulatory framework indirectly). Consequently, 'the behaviour and institutions need to be analysed as being constrained by ongoing social relations and that to construe them as independent is a grievous misunderstanding' Granovetter (1985:481).

To sum up, the expansion EU regulatory policy making has important implications in the governance structures in the specific food policy area. The new governance structures need to incorporate the societal and public interest through information diffusion and transparency.

Methodology

The paper views the EU food regulatory policy from a multi-level governance perspective that includes the various levels of the EU food chain: the primary producer, the food processing, food packaging and food distributing and final consumer on the EU food chain law. It is often hard to separate the different stages that link the food production with food distribution and consumption. This interconnection is also enhanced in the EU food safety regulations that apply simultaneously at various levels of the food chain from the primary production, the processing levels to the distribution level and final consumer through the ‘farm-to-fork’ measures.

Both EU law documents, regulations but also on secondary data provided in the relevant literature are used in this paper. The EU food chain law has really expanded and it has become very complex. Through the ‘Better regulation agenda’ the Commission aims to provide rules and laws that secure the EU citizens interests for high quality life and health in a simpler, transparent and less bureaucratic regulatory form while promoting economic development through innovation the EU has proposed (EC, 2006). Nevertheless, it would be especially time consuming and methodologically complex to examine all the regulations⁴. For this reason, the paper concentrates on the main EU Regulation (EC) No 178/2002⁵ of the European Parliament and of the Council that lays down the general principles and requirements of food law, establishes the European Food Safety Authority (EFSA) and lays down procedures in matters of food safety, specific rules for the organisation of official controls on products of animal origin intended for human consumption⁶ and the EU ‘hygiene package’⁷ legislation (Table 1). Reg 852/2004 (12-

⁴ For simplification the paper does not consider differences among the member states food regulatory implementation. ‘regulatory fragmentation has important implication for consumer food safety awareness. It provides producers with the opportunity to capitalize on public saliency of food safety matters in Europe’ (Bernauer and Caduff, 2005:83) delete from here.

⁵ EU regulations are directly applicable law. Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law

⁶ Co-decision applies on the EU food –law which provides a veto power to the EP.

⁷ The "hygiene package" laws lay down hygiene rules for foodstuffs, which, in addition to Regulation (EC) No 852/2004, includes the following acts:

Regulation (EC) No 853/2004 laying down specific hygiene rules for food of animal origin in order to guarantee a high level of food safety and public health;

Regulation (EC) No 854/2004 putting in place a Community framework for official controls on products of animal origin intended for human consumption and laying down specific rules for fresh meat, bivalve molluscs, milk and milk products.

The following acts supplement Community legislation on food hygiene:

Regulation (EC) No 178/2002 laying down the general principles of food law. This Regulation explains the food safety procedures and establishes the European Food Safety Authority;

15) present the way the EU firms have to implement the HACCP points as introduced by the Codex Alimentarius⁸ (code of international food standards drawn up by the United Nation Food and Agriculture Organisation) as well as the international obligations laid down in the WTO Sanitary and Phytosanitary Agreement. Examining the content of these regulations allows understanding the rationale and the incentives put forward by the EU institutions in order to justify their introduction. The main claim is that only when the ‘what’ is regulated by ‘whom’ is combined with ‘how’ it affects and ‘why’, we can explain the inter-industry links and changes in the EU food chain governance structures. The food chain responds to the regulatory requirements and is controlled by the corresponding administrative authorities trying a. to fulfill the requirements but also importantly to take into account the society’s satisfaction (the consumers) because they in turn determine their success by consuming their production.

Regulation (EC) No 882/2004 re-organising official controls on foodstuffs and feedingstuffs so as to integrate controls at all stages of production and in all sectors;

Directive 2002/99/EC laying down the conditions for placing products of animal origin on the market and the restrictions applicable to products from non-EU countries or regions of non-EU countries subject to animal health restrictions.

⁸ ‘The Codex Alimentarius Commission, Latin for ‘food code’, is an inter-governmental body that sets guidelines and standards to ensure ‘fair trade practices’ and consumer protection in relation to the global trade of food. Since its establishment in 1963 so has experience in controlling food in an ever-more globalized world. It has over 170 member countries within the framework of the Joint FAO/WHO Food Standards Programme established by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO). Its primary purpose is “protecting the health of consumers and ensuring fair practices in the food trade.” http://www.anh-europe.org/campaigns/codex#What_is_codex

Table 1: EU ‘Hygiene package’ regulations

Action	Ref. Number	Description	Measures /Objectives	Who is regulated?	Legal basis
REGULATION (EC) European Parliament and Council	No 852/2004 of 29 April 2004 (especially Art. 3)	on the hygiene of foodstuffs	-human health -consumer interests -Internal market	-The manufacturers -Food business operators -All stages of production, processing and distribution of food and to exports, including sale to final consumer	TEC, Art.95 and 152(4)(b),Art. 251
REGULATION (EC) European Parliament and Council	No 853/2004 of 29 April 2004 (OJ 2004 L 139/55)	laying down specific hygiene rules for food of animal origin	-human health -consumer interests	-Food business operators.	TEC, Art. 152(4) (b) and Art. 251
REGULATION (EC) European Parliament and Council	No 854/2004 of 29 April 2004 (OJ 2004 L139/206)	laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption	-human health -animal welfare	Food business operators National control Authorities	TEC, Art. 152(4) (b) and Art. 251

Setting the scene

In the European Union food issues were not always as salient. The Treaty of Rome did not mention explicitly consumer protection or public health. Instead the goals of food safety were added as amendments to Art.3 of the Treaty of Rome⁹ by the Single European Act and the Maastricht Treaty (TEU). The provision of the TEU introduced the specific titles on public health (now Art. 152), on consumer protection (now Art. 153), on agriculture (Art. 32-38), on environment (Art. 174) and on internal market (Article 14 and 95).

The food sector became of vital importance to the European economy. The food and drink industry is a leading industrial sector in the EU, with an annual production worth almost 600 billion €, or about 15% of total manufacturing output and the world's largest producer of food and drink products. The food and drink industry is the third-largest industrial employer of the EU with over 2.6 million employees, of which 30% are in small and medium enterprises. The food industry is directly linked to the agricultural sector that has an annual production of about 220 billion € and provides the equivalent of 7.5 million full-time jobs. Exports of agricultural and food and drink products are worth about 50 billion € a year. The economic importance and the ubiquity of food in our life suggest that there must be a prime interest in food safety in society as a whole, and in particular by public authorities and producers' (EC, 2000:6).

The Commission considers ensuring high food safety¹⁰ standards in the EU as a key policy priority that resulted in the introduction of various reforms in the institutional setting dealing with food and feed issues. Alemanno (2006) divides the EU food law in four main periods: Genesis: 1962-mid 1980s, New approach: SEA 1986-BSE 1997, Europeanisation of food risk: 1997-2001 and Global approach: 2002 to today

1.Genesis: 1962-mid 1980s: For long, the EU law dealt with the food safety issues in a rather sparse, patchy and incoherent way. Initially was part either of the Common Agricultural Policy rules (Broberg, 2008) or the environmental policy. 'The first EU

⁹Art. 3 of the Treaty of Rome refer to the free movement of goods, persons, services and capital and the elimination of customs duties between themember states.

¹⁰Broberg (2008:12) refers to "Food safety" as to whether the consumption of a foodstuff by a human may cause a risk to his/her health.

food Directive concerned the colors in foodstuffs and was adopted by the Council in 1962, without a number because there was no a numbering system of EU laws' (O'Rourke 2005:3). Progress in EU food law was slow and it was triggered by a number of major court cases, such as the famous Cassis de Dijon¹¹ followed by the introduction of the Commission's Communication 'Completion of the Internal Market: Community Legislation on Foodstuffs'¹², in 1985 (O'Rourke 2005:3). The EU risk and food regulations started to change in the 1970s and 1980s (Vogel, 2001) as part of the environmental protection and was caused by factors such as the Chernobyl disaster in 1986 and the enactment of the Single European Act in 1987' (Broberg, 2008:10). At that time 'food safety was viewed as a barrier to the free movement of foodstuffs' that 'should be eliminated' by 'legislation and case-law' (Broberg 2008:1). The legislation did not provide any coherent scheme (Broberg, 2008:1).

2.New approach: SEA 1986-BSE 1997: Despite a series of Commission proposals on food safety directives (additives, labeling foods for particular nutritional needs, hygiene and official controls), 'The Free Movement of Foodstuffs within the Community' was published in 1989 by the Commission that introduced the 'mutual recognition principle'-minimum harmonization method. That meant that when a food product is lawfully produced and marketed in a member state should be automatically allowed to be marketed in another member state. The EU Food Law until 1992 concentrated on questions related to trade and free movement of goods (o'Rourke 2005:3). It was the BSE crisis in the late 1996 which boosted the close co-operation among the member states and the Commission concerning the need of a common EU food law and resulted in a series of measures to manage the risk of BSE in the EU. In April 1997, the Commission published the Green Paper on European food law. It also launched a public debate on the legislation on foodstuffs in relation a. to the needs and expectations of consumers, producers, manufacturers and traders and b. the objectives of such legislation such as ensuring the independence, objectivity, equivalence and effectiveness of the control and inspection systems while ensuring a safe and wholesome supply. The Green

¹¹ Case 120/78 Rewe-Zental AG v Bundesmonopolverwaltung für Branntwein (1979) ECR 649.

¹² Community legislation on foodstuffs should be limited to provisions justified by the need to: protect public health, provide consumers with information and protection in matters other than health and ensure fair trading, provide for the adequate and necessary official controls of foodstuffs (Com (85) 603).

Paper was expected to ensure the free movement of goods within the internal market and competitiveness of European food industry and enhance its export prospects along with a high level of protection of public health, safety and the consumer, the (EC, 1997; Alemanno, 2006).

3. Europeanisation of food risk: 1997-2000: In his first speech at the EP (July 1999), the then Commission President Prodi indicated the launching of the White Paper 2000 and the need to establish an independent European Food Safety Authority. The White Paper introduced a significant change in the EU's view of the food safety aspects. In 1999, the new Directorate-General for Health and Consumer Protection (DG SANCO) was established with the responsibility to protect both human and animal health from the risk of BSE.

These were often perceived as a “regime change” that affected the nature of the system as a whole’ and ‘means a totality of rules, measures, and norms aimed at achieving a certain goal’ (Broberg 2008:11). Broberg (2008:9) considers that the expanded general EU food law became: ‘coherent because it covers all types of foodstuffs; comprehensive because it covers the whole food chain; transparent because it encourages public consultation and right to information; and risk-based because it is based on independent scientific advice; it provides protection of public health is given priority, through the precautionary principle¹³, even where scientific uncertainty exists; it considers the free movement of goods (all Member State measures must be weighed against the objective of creating a common market)’.

4. Global approach-2002 to today: This period started with two major developments: the introduction of the Regulation 178/2002 and the establishment of the European Food Safety Authority (EFSA) (Art 22 and 23). Although EFSA ‘was originally promoted as a European FDA’ (European Commission, 2000a, 1997a as cited in Alemanno 2006:238), that included management and legislation competences, the EU food safety system separated the risk assessment from risk management.

¹³ The precautionary principle may be invoked where urgent measures are needed in the face of a possible danger to human, animal or plant health, or to protect the environment where scientific data do not permit a complete evaluation of the risk. It may not be used as a pretext for protectionist measures. This principle is applied mainly where there is a danger to public health. For example, it may be used to stop distribution or order withdrawal from the market of products likely to constitute a health hazard COM (2000) 1.

Institutional EU expansion on food chain policy area and Governance Implications

First, the EU food chain regulatory policy is analysed in relation to the types of requirements and levels of application that the food law standards apply ‘what’ (is regulated) and ‘who’ (is regulated); secondly how the politics involved in regulating affect indirectly those regulated (the ‘who’) that become interdependent and interconnected in new modes of governance. The paper acknowledges that a more systematic and in depth empirical investigation is required, however, it aims to provide an illustration of the arguments developed above.

As Table 1 shows, the EU food hygiene regulations apply to all levels of the food chain (production, processing and distribution of food, and also of feed produced for, or fed to, food-producing animals). This is significant because it links these levels of the food chain and can be used as a common element in enhancing their cooperation in avoiding costs of testing and possibly leading also to vertical integration structures. The regulations objectives and measures aim to ensure higher quality and health for the consumers. This is important because it links the rules and sectoral interests with the public interest but also can be the basis for justifying the policy regulating.

The EU food law has developed in a piecemeal fashion and through time ‘it got rid of its original sin, its pro-market bias, by illustrating the importance of ensuring the safety of the products throughout the Community’ (Alemanno, 2006:237). Implementation of the food law remains at the national level competence which means a variety of national provisions, regulating and administrative systems in the member states need often to be combined.

The 1990s crises made evident the need for supranational EU food regulatory framework. The role of the Commission, the European Parliament (EP), the EU and national bureaucrats and technocrats is crucial in the development of the EU food regulatory regime, while the elite, the member states governments or the general public were not always in depth informed for the process. The asymmetry of information among the actors involved or affected by the regulation and the need for a more harmonised common legislation became determining for the type and the fast expansion of the EU food chain regulatory policy.

The establishment of DG SANCO strengthened the Commission's competences in the food policy. For the first time, with the launching of the 2000 White Paper followed by the introduction of Reg. (EC) No 178/2002, the EU established a more comprehensive and coherent food policy that covers horizontally all the phases of food production, distribution and trade, from intermediate to finished products (Alemano, 2005:248, EC, 2000:8). At the same time the need for more administrative and management resources led to the establishment of EFSA. EFSA aimed to assess risk and 'to provide independent information, scientific advice and support the Community's legislation and policies in all fields which have a direct or indirect impact on food and feed safety, to ensure a high level of consumer protection and restore and maintain confidence in the EU food supply. EFSA is supported by the Standing Committee on the Food Chain and Animal Health¹⁴ (SCFCAH). These two bodies complement the Commission's resources to provide specialized scientific and technocratic knowledge and expertise related to food processing and safety and a wide range of other measures to improve and bring coherence to the legislation covering all aspects of food products from "farm to table".

EFSA¹⁵ also collaborates with the EP and the EU member states in taking effective and timely risk management decisions. These developments contributed to the EU food

¹⁴ SCFCAH is composed of representatives of the Member States and chaired by the Commission representative, is organised in sections to deal with all the relevant matters.

¹⁵ EFSA organization includes: a. the Management Board of 14 members that are proposed by the Commission and are appointed by the Council in consultation with the European Parliament. The management board includes a number of candidates substantially higher than the number of members to be appointed, plus a representative of the Commission. Four of the members represent interest organisations (e.g. consumers) (Art. 25); (b) the five year period Executive Director is appointed through a hearing by the EP. He is the legal representative of EFSA and participates in the meetings of the Management Board, without voting rights. The Executive Director is responsible mainly for the day-to-day administration of the Authority and for implementation of the budget. He prepares proposals in consultation with the Commission, and interaction with the European Parliament; (c) an Advisory Forum consisted of one representative per Member State advises the Executive Director in the performance of the latter's duties, particularly in connection with drawing up the work programme and prioritising requests for scientific opinions. Chaired by the Executive Director, the Forum meets at least four times a year. It encourages the European networking of national bodies operating within the Authority's fields of activity: exchanging information, pooling knowledge and making the most of the available resources; (d) Scientific Committee whose Chair attends the meetings with no voting rights and Scientific Panels: These are composed of independent scientific experts appointed for three years by the Management Board on a proposal from the Executive Director. They are responsible for adopting the Authority's scientific opinions within their respective spheres of competence. The Scientific Committee is composed of the chairpersons of the scientific panels and six independent experts. This committee coordinates with the scientific panels, the organization of public debates and sets up working groups on matters which do not fall within the

chain institutional and legislative fragmentation and complexity involving not only many levels but also different types of actors (national administrators, scientific actors, representatives of relevant interest organizations but also executives that are affected by the EU integrated food chain regulations). The Reg. (EC) No 2230/2004(23 December) formalized the multi level actor involvement and lays down the detailed rules for implementation of Reg. (EC) No 178/2002 with regard to the network of organisations operating in the fields within the EFSA's mission. This regulation sets the rules for the horizontal and vertical coordination of the food safety activities in order to ensure an efficient control of the food quality. EFSA becomes the controlling institution to which the member states have to report. For example, the regulation defines the tasks of the organizations in the member states as 'the collection and analysis of data connected with risk identification, exposure to risks, risk assessment, food or feed safety assessment, scientific or technical studies, or scientific or technical assistance for risk managers'; furthermore it defines their status as legal entities pursuing public interest objectives; their organisational arrangements must include specific procedures and rules ensuring that any tasks entrusted to them by EFSA will be performed with independence and integrity' (EC, 2004). An example of EFSA's competences and their role in regulating and policy initiatives that have been contested and hard to agree upon for long periods are portrayed in Genetically Modified Amflora Potato (GMAP). After twelve years of continuous efforts, the Commission adopted two decisions (March 2nd 2010), concerning the GMAP based on a series of favourable safety assessments carried out over the years (since January 2003) by the EFSA and drawing on a considerable volume of sound science (EC, 2010: IP/10/222). This product has been developed by German chemical company BASF. The first decision authorises the cultivation of Amflora in the EU for industrial use and the second relates to the use of Amflora's starch by-products as feed. In order to calm cross-contamination fears the Health and Consumer Policy Commissioner John Dalli, said that the decision 'includes strict cultivation conditions to prevent GM potatoes from remaining in the fields after harvest and to ensure that Amflora's seeds are not inadvertently disseminated into the wider environment'. He also

competence of the scientific panels. The ten Scientific Panels are: 1) Panel on additives, flavourings, processing aids and materials in contact with food; 2) Panel on additives and products or substances used in animal feed; 3) Panel on plant protection products and their residues; 4) Panel on genetically modified organisms; 5) Panel on dietetic products, nutrition and allergies; 6) Panel on biological hazards; 7) Panel on contaminants in the food chain; 8) Panel on animal health and welfare; 9) Panel on plant health.

added that his decision to adopt the cultivation of Amflora aims to promote innovation and took place ‘after an extensive and thorough review of five pending GM files, it had become clear that there were no new scientific issues that merited further assessment, as those concerning safety had been fully addressed’. The EU also launched a reflection group on how to combine a European authorisation system with giving member states the freedom to decide on GMO cultivation. Based on the decision BASF plans can move forward and plans to begin cultivating Amflora this year on 250 hectares in the Czech Republic, Sweden and Germany and expects when the demand peaks the license fees to reach about 20-30 million euros (\$27-40.6 million) per annum. Despite controversial views in the member states after a long time and following the EFSA suggestion based on scientific knowledge the EU satisfied the demands of the industry.

This example shows that sectoral pressure can influence EU regulatory policy making which is linked and justified as promoting innovation. The case shows how an especially controversial and contested policy issue has been adopted by the EU. It was supported by the determining support of EFSA in collaboration with the scientific committee and the Commission has been able to justify the introduction of such policy decision and promote it even as positive for the society (consumers). Finally as the potato Amflora case shows the cost of implementation and compliance is transferred to the sector and the national level authorities that have to control and monitor implementation. Similarly in the ‘hygiene package’ case there the cost of testing and certification is transferred to the sector while EFSA has to control if the national authorities and monitor implementation. The fragmentation of EU food policy making contributes to institutional changes but also creates new arenas of influence and bargaining of interests and the governance of food.

The transfer of the responsibilities and cost of testing to the sector by the EU food regulatory policy has trigger new forms of inter-industry links and vertical organization structures in the food chain. Firms at different levels establish common laboratories in order to avoid multiplication of the same testing which reduces the cost, increases efficiency (less time) and increases collaboration among the different levels of the food chain. Furthermore, this collaboration leads to the establishment of new processing methods, manufacturing, storing, distributing, retailing and communication. Food

producers, processing firms, labelling, storage companies but also transportation tend to cooperate in order to comply with the EU rules but also find ways to decrease transaction costs by not going through the same quality and safety testing. This cooperation can often have important implications to the development of new products and innovation initiatives in order to respond to the new standards and consumers' information and satisfaction and new demands in the market. At the same time affect the firms' competitiveness and structures in the food industry since not all firms can comply with the requirements depending on their market share, size and resources (Smith, 2010). In other words, some the firms re-organise and restructure their activities so that remain sustainable, efficient and profitable in the long term while continuously formally ensure the consumers' expectations for higher quality and safety while others exit the market.

In order to investigate how regulating affects sectoral governance structures the types of compliance rules and the level of compliance and control rigorousness of the regulations on these affected by the rules is investigated. **Compliance and control rigorousness** refer to the range of differentiation of control and compliance requirements that the regulation induces. Initially, the implementation of HACCP systems in the EU was made by Directive 93/43, requiring five of the seven principles by certain parts of the food industry. This was followed by the 'hygiene package' (Table 1). According to the EU food law there are no specific quality assurance schemes that require the certification of HACCP procedures. The EU food law concerning the application of food safety management systems based on HACCP does not require full implementation by all. However, 'although enterprises do not need not to resort to external assistance or expertise to put HACCP systems in place; ...the broad range of expertise required for the conduct of the first step of hazard identification often requires such a move, especially for smaller enterprises' (Wendler, 2007:233). According to Art (15) Reg 852/2004 preamble of the EU 'hygiene package regulations', 'the HACCP requirements should take account of the principles contained in the Codex Alimentarius. They should provide sufficient *flexibility to be applicable in all situations, including in small businesses*' (my emphasis). Furthermore, Art (1d) Reg 852/2004 indicates that 'the general implementation of procedures based on the HACCP principles, together with the application of good hygiene practice, should reinforce food business operators' responsibility' which shows the importance of transferring responsibility and the involvement in the process of the private actors (Wendler, 2007). An important indication of the flexibility and lack of rigidity

is shown by Reg 852/2004 (15, in the preamble) ‘the HACCP system is an instrument to help food business operators attain a higher standard of food safety. The HACCP system should not be regarded as a method of self-regulation and should not replace official controls’. Last but not least, the nature and the size of the firms have to be taken into account in relation to compliance requirements. In first stance, the level of flexibility can be considered positive because it allows small size firms not to follow the regulation and if able to remain in the market, produce and compete. On the other hand, from a competitiveness point of view, it provides a good basis for differentiation and comparative advantages to these firms that have the size, the resources and thus the possibility to differentiate their production in the market based on high quality assurance. The proposal that determines requirements based on size ‘has met with strong resistance from some national food safety authorities, whose representatives argue that the application of hazard identification and control techniques should not depend on the size of an undertaking but on the risk in a given production or preparation process. It has also been argued that it is precisely small enterprises that are often the source of food hazards such as salmonella. These observations indicate that the recent adoption of European regulations through the ‘hygiene package’ has not led to a centralisation of competences for food safety management systems at the European level’ (Wendler2007: 236). Wendler argues that ‘the adoption of European regulations through the ‘hygiene package’ has not led to a centralisation of competences for food safety management systems at the European level’ (Wendler2007: 236). Fulponi (2006: 4 as cited in Wendler 2007:237) shows very thoroughly that ‘in many cases, food companies introduce quality management systems that are more stringent and that go beyond the minimum standards prescribed by public regulation.... used for a differentiation of products in response to consumer demands for higher quality’. ‘Prominent examples of such premium product lines include Loblaw’s President’s Choice, Tesco’s Nature’s Choice and Carrefour’s Fillière Qualité’ (Fulponi 2006: 7in Wendler 2007:237). Besides, these elements enhance multi-level governance structures that allow interaction and coordination both vertically and horizontally such as the EU food chain. These types of strategies when established do not only generate profits for the specific companies because they target a higher income consumers group. At the same time they can operate as barriers to entry for existing small firms or new ones. This paper instead proposes that it is worth examining the relation of the increased number of mergers and acquisitions as well as the vertical integration in the food chain especially after this type of regulating that links explicitly all the levels from production to consumption, which led to an exodus of small firms out of the market either because they could not compete and keep their

market share or because they did not have the resources to comply with the regulatory requirements.

As mentioned above, this type of regulations also often encourage the introduction of new processing methods and quality management principles especially by the bigger firms in order to allow the ‘identification of the critical points which need to be kept under control in order to guarantee food safety’ (EC, 2004). Testing ‘focuses on measurable indicators and may thus offer a cheaper and timely way of controlling food safety than standard product sampling and testing (Bernauer and Caduff 2006:86). The introduction of these new techniques that aim to ensure the required standards in the best possible manner apply to all food chain levels and introduce systems of certification and traceability, the communication among the various levels becomes an important and necessary element. In order to implement the HACCP ‘many food processors and retailers in advanced industrialized countries have in recent years established corporate food safety systems at a cost of billion euros (Ollinger ad Ballenger, 2003 as cited in Bernauer and Caduff 2006:86). Highly concentrated markets (meat vs. seafood) facilitate not only the introduction of higher standards but also their effective implementation throughout the supply chain (Bernauer and Caduff, 2005:91). This led to an increased role of the private sector resulting in public private partnerships but also to market concentration and change in governance patterns. Marion (1979) showed that in general the food chain reacts to the standards regulations with higher concentration or other forms of organisational structures such as mergers and acquisitions as in the United States. According to a CIAA (2003) report (as cited in Bernauer and Caduff, 2006:84), and despite the lack of a systematic data collection the EU food chain is characterised by a consolidation of market shares, increases in profit margins, wider geographic implantation of firms and substantial mergers and acquisitions activity. ‘Be it in Europe or the US (100 firms now account for 80% of all value-added), the concentration of manufacturing power is the same it is just the names that are different (Table 2). In the US is Nestlé and Unilever, in EU Kraft and General Foods (now merged and owned by Altria, the bland new name chosen by tobacco giant Philip Morris)’ (Guardian 2003). Bernauer and Caduff (2006:85) also based on the European Marketing Distribution data show that ‘the top 10 of the European retailing companies held a market share of 20%’.

Table 2: Concentration ratios in Food chain, 2001-2002

Top 10 global food retailers Global sales in Euros, 2002	Top 10 global food manufacturers Total food sales in US\$, 2001-2002
1 Wal-Mart (US) 199bn 2 Carrefour (Europe) 86bn 3 Ahold (Europe) 53bn 4 Kroger (US) 51bn 5 Metro (Europe) 47bn. 6 Albertsson's (US) 39bn 7 Kmart (US) 39bn 8 Rewe (Europe) 36bn 9 Tesco (Europe) 34bn 10 Aldi (Europe) 33bn	1 Nestlé 46.6bn 2 Philip Morris (Kraft) 38.1bn 3 ConAgra 27.6bn 4 Unilever 26.7bn 5 PepsiCo 25.1bn 6 ADM (corn milling) 23.5bn 7 Tyson (meat processing) 23.4bn 8 Cargill 21.5bn 9 Coca-Cola 20.1bn 10 Mars 15.3bn
(Source: Cap Gemini Ernst & Young)	(Source: Global Food Markets Leatherhead Food International)

Source: Guardian (2003)

They show that there is a difference in maturity and concentration ratio's among the North and the South in the EU, with higher concentration ratios and market share in Northern Europe¹⁶ (32% of the market share) and lower in the Southern (14.4% respectively). According to Palpacuer and Tozanli, (2008:71) 'retail concentration has indeed doubled in Europe during the 1990s, from a top five retailers' market share of 13% in 1990 to 26% in 2000, although it remained much higher in Northern Europe than in Southern Europe so that on average, retail concentration did not come near the level in the most concentrated segments of manufacturing in European food chains. With the exception of Carrefour, most retailers had not reached leadership positions in a significant number of national markets in Europe by the early 2000s. However, retailers' buying power within the chain was strengthened by a growing centralization of sourcing'. For instance, the top six central buying offices accounted for as much as 65% of retail food chain sales in Italy up to 72% in the UK and up to 98% in France in 2000.

Although these concentration characteristics and their differences could indicate a response to fragmented EU food market and regulatory framework (especially with respect to implementation) one can not attribute it with certainty to these reasons. On the one hand it is the competition for the protection of national markets in the member states through food safety regulations and on the other the differential administrative practices

¹⁶Northern Europe: Austria, France, Belgium, Germany, UK, Ireland, the Netherlands and Switzerland, Southern Europe: Greece, Italy, Portugal and Spain (Bernauer and Caduff, 2005:85.)

and implementation of the EU and domestic regulation (Bernauer and Caduff (2005:83). Therefore more aspects need to be researched based on specific data on the implementation of the regulations and the way this is linked to changes in governance.

Nevertheless, ‘one can not deny that improvements in transportation technologies in terms of suppliers’ proximity for the sourcing of perishable products, the use of refrigerated long distance transportation of fresh meat, that allows the products to travel for long periods of time before reaching retailers or processing factories, modifications in product content in order to improve the transportability and conservation of ingredients while at the same time complying with the European food regulations that affected the dairy, cereals and meat chains organisation and governance, since the early 1990s. In regulations both the specification (input) and performance (output) standards are considered’ (Ogus, 2004:33).

The economic aspects relate to the capability of the firms to comply in relation to their size ‘compliance with food safety legislation may impose disproportionately larger costs on small firms because they lack and economies of scale advantage’ (Loader and Hobbs, 1999: 695). It is more difficult for small size firms to invest on production standards (ie.hygiene) because they do not have the resources or the capacity which allows for large size firms to have a competitive advantage and better access to market. Thus, higher standards by regulations can increase profits and access for the large firms in a market but it will not necessarily increase consumer’s satisfaction and trust because the consumers are not always able to have the precise information about who follows the regulations and who doesn’t. It instead could increase their insecurity, while the involved firms may end up in a competition race for higher standards that will become especially costly (Bernauer and Caduff, 2006). Therefore limiting corporate competition among the levels of the food chain through regulatory policy making is becoming preferable by the firms especially on consolidated and mature food markets as the European. When all firms face similar standards they can coordinate and cooperate so that they follow common ways of measuring these standards. This facilitates traceability but also cooperation in establishing similar manufacturing and processing, storage and control methods while interaction and exchange of information becomes simpler and effective and easier trusted by the consumers that face one language for safety and health

standards. In addition, highly regulated markets can create incentives for greater vertical coordination to control throughout the production process or reinforce concentration (Unnevehr and Jensen, 1999).

Last but not least, the changes in the sectors' governance may induce unexpected consequences on a significant part of these affected, namely the consumers. Consumers' satisfaction and trust is ensured by providing them the relevant information based on scientific knowledge and objective proof based on the regulatory food chain framework. The EU regulating is used to ensure the consumer concerns while the food chain economic activities are not threaten and deteriorated.

The importance of food safety for consumers as indicated already by 'a Eurobarometer survey carried out in 1997 that revealed that the most important issue for 68% of consumers was the safety of the food they eat. That was after the BSE crisis, but before the dioxin crisis. But the big crises were not the only factors that have shaken the consumers' confidence. Concerns were expressed about a number of growth promoters, antibiotics, hormones, pesticides, herbicides, listeria, salmonella, campylobacter and E. coli have also taken their toll whose safety was not ensuring. In addition to feeling threatened, many consumers feel betrayed. In their opinion, the intensive production methods developed over the last decades with the laudable objective of giving everybody enough to eat, have got out of hand and are no longer used for the long-term benefit of all but for the short-term profit of a few'. But also recently (37%) associate food and eating "to a large extent" with being concerned about the safety of food¹⁷, the results show that there is considerable variation in opinion at the country level (EFSA, 2010:13-14).

The EU food regulating occurs within the EUs 'Better regulation' agenda. This agenda aims to ensure higher quality, healthy and safe food along with promoting innovation and the use of modern technologies. To what extent these elements are based on constrains that the society imposes to institutions behavior (Granovetter, 1985) it is worth consideration.

¹⁷ QF1 To what extent do you associate food and eating with each of the following? OPTIONS: Satisfying your hunger; Enjoying a meal with friends or family; Selecting fresh and tasty foods; Looking for affordable prices; Checking calories and nutrients – fat and sugar, etc.; Being concerned about the safety of food. ANSWERS: To a large extent; Somewhat; Not very much; Not at all; Do not know.

In spite of the initial scope of the EU food regulating as in other areas lie on the market failures and inefficiencies, to reduce regulatory competition among the member states different regulatory regimes, reduce barriers to trade because of these differences that hindered the internal market, it is shown above that the high level of concentration occurs in the industry. This high level concentration of the industry is combined with a regulatory policy fragmentation where many EU, national, public and private actors are involved which results in a complex governance system affecting information diffusion concerning consumers' satisfaction and security on safety issues. Van Waarden (2006:42) argues that 'typically transactions involving food are characterized by information asymmetries. The seller knows more about the quality than the buyer does. Where, when and under what conditions was it harvested, preserved, processed, stored, mixed? These asymmetries provide countless opportunities for fraud and deception'. This is combined with a complex regulatory fragmentation and high sectoral concentration. 'Regulatory fragmentation has important implication for consumer food safety awareness. It provides producers with the opportunity to capitalize on public saliency of food safety matters in Europe' (Bernauer and Caduff, 2006:83).

These crises made evident that the economic aspects were not sufficient in addressing the upcoming challenges perceived as closely related to health risks but also under the pressure of the public opinion the EU was given the opportunity to respond and find solutions supranationally that would incorporate consumer concerns and not only focus on economic aspects. Nymand-Christensen (1999) argues that consumer confidence is restored by 'better legislation, stronger controls and full transparency'. The simultaneous combination becomes even more important because the chain by which food products reach consumers is long and complex, and clearly if one link is weak, whether it is at production, transport or distribution level, the impact on public health can be significant (Nymand-Christensen (1999). Consequently, EU food chain regulations are formulated so that 'to provide a high level of consumer and public health protection while at the same time not impeding the diversity of food products existing in Europe' (O'Rourke, 2005:1, EC, 2004:18). EU food law links considerably the different levels in

¹⁸Reg 852/2004, Preamble (7) The principal objective of the new general and specific hygiene rules is to ensure a high level of consumer protection with regard to food safety.

the food chain and includes consumers concerns and their rights to be informed so they can make the right choices while the public authorities have the duty to inform the general public about risks to health (Reg 178/2002, Art. 8, 9 and 10). As Hajer (2003:175) claims ‘the role of knowledge changes as the relationship between science and society has changed: scientific expertise is now negotiated rather than simply accepted’.

However, the shift of testing and quality assurance responsibility to the industry which is very concentrated and vertically organized, can generate concerns in relation to information diffusion and transparency provided to the consumers about their food, since it is controlled by a group of few with direct interests. This can have important implication on consumers trust and satisfaction.

Concluding remarks

This paper discussed the development of the EU food chain regulatory policy and its implications to the food chain governance within the EU ‘Better regulation’ scheme. Although regulations were introduced to deal with the market inefficiencies and failures, they also trigger changes in the governance structures of the food chain and incorporate demands for high quality, safe food and health of the consumers. On the one hand, the EU food chain law has become more coherent and induced various institutional changes within the EU and on the other it contributes to new forms of production and manufacturing in the attempt to provide safer and higher quality food. These developments result in higher concentration and changed governance structures. Simultaneously, the consumers’ needs for more information and transparency concerning their food production are dominated by a smaller group of producers.

Nevertheless, more empirical research is necessary in order to document the precise governance responses to food chain regulations. Such studies will identify the effects of the implementation of hygiene standards by the firms on the structure, although as discussed above size of the firms can indicate different advantages in the market, with the larger firms being in a stronger position.

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