



EUI Working Papers

LAW 2012/21

DEPARTMENT OF LAW

PRIVATE REGULATION AND INDUSTRIAL ORGANISATION:
THE NETWORK APPROACH

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The Network Approach*

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EUI Working Paper **LAW** 2012/21

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ISSN 1725-6739

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Printed in Italy
European University Institute
Badia Fiesolana
I – 50014 San Domenico di Fiesole (FI)
Italy
www.eui.eu
cadmus.eui.eu

Abstract

The paper investigates the relation between private transnational regulation through standards and the formation of transnational networks.

More particularly, focusing on standards compliance, the analysis is intended to test whether private regulation induces the existence of networks able to: (a) enhance the efficiency and effectiveness of compliance coordination in accordance with a “whole-chain supply approach” to safety regulation; (b) contribute to monitoring along the chain, even when this function is in different ways performed by other players (public authorities, independent certifiers, etc.); (c) possibly and eventually redistribute costs of compliance along the chain.

Starting from the observation of contractual practices, mainly within supply chains subject to international certification schemes (for example in the case of food supply chains), different models of networks will be compared depending on: (i) the allocation of monitoring and sanctioning powers (these being assigned to producers, traders or independent actors); (ii) the means of monitoring (peer monitoring v. more formalised monitoring duties); (iii) the types of sanctions (particularly, label/certificate suspension or revocation); (iv) the structure of the network (as based on merely linked contracts or on a mix of contractual and organizational relations).

Keywords

Private regulation – third party certification – standard compliance – interfirm networks – contractual governance

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PRIVATE REGULATION AND INDUSTRIAL ORGANISATION: THE NETWORK APPROACH

*Fabrizio Cafaggi & Paola Iamiceli**

1. Introduction

The internationalisation of markets and trade is transforming the regulatory space and reshaping the structure of supply chains. States, as global regulators, increasingly reveal their weaknesses while private players, both market actors and NGOs, are often taking the lead. Private regulatory regimes are emerging and consolidating, often as a complement of public regulation, sometimes even as a substitute, when treaty making entities and international organisations are unable to regulate¹.

The driving factors towards the growth of transnational private regulation (hereinafter TPR) are numerous. Amongst them, we can highlight (1) higher concentration at retail level, (2) the multiple crises connected with product safety in food and non food sectors and the consequent demand of consumers for stronger, more effective and coordinated control, (3) the inability of States to deal with cross-boundary risk management.

The difficulties, as far as States are concerned, relate not only to standard setting but also, and even more importantly, to implementation and compliance monitoring. In this domain it has become clear that a “one size fits all” strategy is ineffective and in several areas a supply chain approach to regulation has been proposed by legislation. This approach assumes that firms and more generally private actors, including NGOs, can provide more effective and often cheaper implementation of regulation.

This process has generated a significant, primarily informal, delegation to private actors along the supply chain. Strategies of delegation to private actors concern both standard setting and implementation; they differ across sectors and, even within the same sectors differences emerge depending on the commodity. Thus, even in the area of food safety, one of the subjects of this contribution, the different types of supply chain and market structures influence the effectiveness of the ‘supply chain regulatory approach’ and the need to differentiate both objectives and instruments².

The supply chain regulatory approach demonstrates a radical change in perspective, the shift from product to process but more broadly to chain regulation³. Process standards regulation has moved

* This paper is part of a broader research project on “Transnational private regulation (TPR) and system level innovations in global food value chains” realized in collaboration with Turku University of Applied Sciences (Finland, 2011-2013). A former version was presented and discussed at the VIII Annual Conference of the Euro-Latin Study Network on Integration and Trade (ELSNIT) in Paris (15-16 October 2010). The paper is the result of a joint contribution by the authors both in terms of the analysis of background literature and practices and the elaboration of derived implications. However, paragraphs 1, 2, 3, 4 and 6 have been drafted by Fabrizio Cafaggi and paragraph 5 and sub-paragraphs have been drafted by Paola Iamiceli.

¹ For an overview see F. Cafaggi, *New foundations of transnational private regulation*, in *Journal of law and society*, 2011, p. 20 ff.; T. Buthe - W. Mattli, *The global rulers*, Princeton University Press, 2011.

² M.B. Hutter, *Understanding the new regulatory governance: business perspectives*. in *Law & policy*, 2011, p. 459 ff.

³ Commission of the European Communities, *White Paper on Food Safety* Brussels, 12 January 2000, COM (1999) 719 final; OECD, *Final Report on private standards and the shaping of agro-food systems*, Paris, Working Party on agricultural Policies and Markets, 2006; Joint Fao/Who Food Standards Programme, Codex Alimentarius Commission, 33rd Session, *Consideration of the impact of private standards*, Geneva, Switzerland, 5-9 July 2010. See also J. Vapnek, *From Hand to Mouth, via The Lab And The Legislature: International And Domestic Regulations To Secure The Food Supply*, in 40 Vand. J. Transnat'l L., 2007, p. 987 ff.

away from the product and focussed much more on the organisational dimensions of processes including social and environmental standards.

The features of the supply chain affect the choice of the regulatory strategies but in turn the selection of the regulatory strategy may require or induce changes in the supply chain⁴. The choice between a product or a process standard, between an input or an output standard, the degree of interdependence of standards compliance, can influence the relationships among firms located along the supply chain and affect their contractual relationships.

A safety standard related to the production process and the product necessarily involves many knots of the supply chain. As will be illustrated, information regulation concerning risk assessment and risk management of dangerous products may require the creation of inter-firm networks so as to increase communication and effectiveness. Thus, the creation of regulatory networks to produce information about new risks concerning drugs, food, feed or even financial services, may be the result of a regulatory strategy based on the assumption that strong risks interdependence requires organisational coordination among the enterprises which conventional bilateral contracts cannot ensure. While “command and control” regulatory strategies may work in the context of vertically integrated firms (where hierarchy is available) or paradoxically with single firms among their divisions, when risks can be parcelled out, risks interdependence requires the abandonment of “command and control” and the adoption of responsive strategies which often call for network based organisational models⁵.

We observe mutual interaction between regulatory strategies and organisational models but how they interplay and influence each other is still significantly under-investigated. Those who theorise about regulation, even when advocating market friendly schemes, do not consider market structures and vertical (dis)integration of the supply chain as significant variables to be internalised in the definition of objectives and choice of instruments. Those who study the evolution of industrial organisations rarely consider regulation, both public and private, as a significant factor affecting the selection of models.

In this paper we claim that there is a strong correlation between regulation and industrial organisation, that their influence is reciprocal and varies both across sectors and within sectors. We want to investigate the relationship between regulation and industrial organisations at the transnational level, focusing on product safety.

We adopt a broad definition of regulation which includes both public and private regulation while we leave out the regulatory function of civil liability. In a separate paper we integrate ex ante (regulation) with post (liability) instruments⁶. We look at liability as a form of ex post regulation which can affect how the supply chain is redefined. The allocation of liability for dangerous products among the different market players and especially importers and distributors may promote the creation of both vertical networks along the chain and horizontal networks for retailers selling the same products to the final consumer. Often liability for defective or dangerous products produces incentives to create organisational models that minimise risks and maximise effectiveness. There is now a consolidated literature illustrating how the allocation of liability triggers private regulation. Examples range from data protection to food safety, from corporate social responsibility to electronic commerce. Firms facing the liability threat react by adopting regulatory agreements along the chain to minimise the potential liability costs.

⁴ G. Gereffi – J. Lee, *A global value chain approach to Food Safety and Quality Standards*, Paper prepared for the Global Health Diplomacy for Chronic Disease Prevention Working Paper Series (February 2009); F. Cafaggi, *Transnational Governance by Contract - Private Regulation and Contractual Networks in Food Safety* (March 29, 2011), available at SSRN: <http://ssrn.com/abstract=1874749>.

⁵ F. Cafaggi, *Transnational Governance by Contract - Private Regulation and Contractual Networks in Food Safety*, cit.

⁶ See F. Cafaggi and P. Iamiceli, *The effects of civil liability on supply chain variations*, unpublished on file with the authors.

In this contribution, we investigate the correlation between safety regulation and models of industrial organisations. Sector-wise, we shall compare safety regulation in food and other areas. Product safety is part of risk regulation a relevant but limited area of TPR. The conclusions we reach about the interplay between regulation and industrial organisations cannot be generalised. However, they signal strong interplay and call for further investigation in other fields.

Supply chains in the food sector have become ever more transnational following trade growth and the integration of markets⁷. The shift from domestic to transnational in the last 30 years has been dramatic. No single domestic government can regulate the most important food chains. The role of retailers has gained major importance⁸. The regulatory space is the outcome of a combination of public and private regulatory regimes often overlapping, sometimes competing.

In the food sector a supply chain approach has been expressly advocated by international organisations (FAO); it has also been adopted by the European Union and more recently by the US with the Food modernisation Act of 2010⁹. The centrality of traceability as a risk assessment and management tool in food regulation has the shift from single enterprises to the supply chain as the regulatory unit.

In the non food sector, approaches to product safety regulation is rather different and the detection of a specific relationship between the structure of the supply chain and the regulatory approach is much more difficult.

The paper proceeds as follows. In the first section, we address the influence of different forms of the supply chain and market structures on regulatory choices. In the second section, we examine how regulation influences the choice of models between markets, hierarchies and networks. We focus in particular on the role of networks as a means to enhance the effectiveness of compliance with private standards and compare different regulatory schemes in order to identify possible correlations between regulatory models and network models. Concluding remarks follow the delineation of a research agenda.

⁷ Joint Fao/Who Food Standards Programme, Codex Alimentarius Commission, 33rd Session, *Consideration of the impact of private standards*, cit.; D. Fuchs – A. Kalfajanni – T. Havinga, *Actors in private food governance: the legitimacy of retail standards and multi-stakeholder initiatives with civil society participation*, in *Agric. Hum. Val.*, 2011, 28, p. 353 ff.

⁸ M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, in *Food policy*, 2005, 30, p. 354 ff.; D. Fuchs – A. Kalfajanni – T. Havinga, *Actors in private food governance*, cit.; T. Havinga, *Private regulation of food safety by supermarkets*, in *Law and Policy*, 2006, p. 515 ff.

⁹ Joint Fao/Who Food Standards Programme, Codex Alimentarius Commission, 33rd Session, *Consideration of the impact of private standards*, cit.; S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, paper prepared for FAO/WHO, may 2009, available at www.fao.org. In the European legislation, see: Regulation (EC) n. 178/2002 of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety; Regulation (EC) n. 765/2008 on market surveillance and accreditation.

Section I

2. How Do Supply Chains Affect the Choice of Regulatory Strategies and Instruments at Transnational Level

This section addresses the following, apparently rhetorical, question: can the choice of regulatory strategies ignore the structure of the supply chain, the degree of vertical integration or disintegration, the level of market concentration, the distribution of power along the chain among the various enterprises?

Our answer is that both the level of market competition and the degree of vertical integration strongly affect the choice of regulation and its distributive effects¹⁰.

On the relationship between market competition and choice of regulation, clearly the oligopolistic nature of the market suggests that market players will endeavour to preserve the *status quo* and use private regulation as a barrier to entry. The potential anti-competitive effects of TPR will be more limited in a highly competitive market where private regulation can presumably affect primarily the entry costs of newcomers¹¹. Hence the use of public regulation, including competition law, should be favoured over private when markets are thin and access is costly.

The choice between regulatory strategies and instruments depends also on the degree of vertical integration and competition between firms along the supply chain¹². Here, the argument we present, unlike the previous one, is descriptive rather than normative. In limiting the analysis to TPR it seems that a high degree of vertical integration is compatible with “command and control” since the use of hierarchy as a regulatory device is made possible by the existence of a controlling actor, be it a single firm or the controlling entity of a pyramidal multinational group.

Vertical disintegration implies a longer and more fragmented chain which requires a stronger, albeit more expensive, coordination mechanism. In this case “command and control” might be a very costly and highly ineffective strategy. Responsive regulation, where the different firms along the supply chain are requested to coordinate and each one acts on the expectation that the others have adequate incentives to cooperate, appear to be more suitable to supply chains characterized by high level of outsourcing.

¹⁰ One of us has addressed the distributive effects of transnational private regulation elsewhere, see F. Cafaggi and Katharina Pistor, *The distributive effects of transnational private regulation*, on file with the author. We shall not address the distributive question in this paper.

¹¹ On the impact of private standards on competition see also the subsequent paragraph and cited authors therein. On the impact of competition on regulation, as here examined, see also G. Gereffi – J. Lee, *A global value chain approach to Food Safety and Quality Standards*, cit., in which the authors maintain that the higher the concentration at both the production and distribution level (bilateral oligopolies), the more likely the emergence of comprehensive private standards (process and product standards); the higher the concentration at the level of producers without a similar concentration at the distribution level (producer-driven chains), the higher the emergence of private standards concerning process (more than products); the higher the concentration at the level of retailers without a similar concentration at the production level (buyer-driven chains), the higher the emergence of private standards concerning products (more than process); the higher the fragmentation at both levels (traditional markets), the more limited is the production of private standards, while public standards remain limited and less comprehensive.

¹² On this aspect see also G. Gereffi – J. Lee, *A global value chain approach to Food Safety and Quality Standards*, cit., p. 15, where it is maintained that it is exactly when a producer moves from a vertical integrated model to vertical disintegration that he/she has higher incentives to codify standards and ensure compliance, while, being the production vertically integrated, retailers show higher incentives to produce standards.

If this hypothesis could find sufficient empirical support the link between the choice of regulatory strategy and the structure of the supply chain would be confirmed. Vertical integration would be associated with a more intense use of “command and control” while fragmented chains would choose responsive and market based private regulatory strategies. Clearly we are fully aware that other factors in addition to the supply chain structure influence the regulatory strategy.

An additional factor is related to competition along the chain and among players positioned at the same level within the chain¹³. The degree of competition concerns primarily vertically disintegrated supply chains. If the main contractor or the MNC selects the contractual partners via auctions or other competitive devices for individual projects, this might increase efficiency but might make more difficult to share regulatory objectives.

Competition may open different possibilities in terms of regulation:

- a) A high degree of competition suggests that “command and control” may not be operationalised but also that responsive regulation, which requires coordination, might be difficult to achieve. More market based strategies might better reflect internal equilibria associated with high level of competition.
- b) A low degree of competition along the chain suggests that both “command and control” and responsive regulation may be usefully deployed.

A second set of questions concerns the relationship between the structure of the supply chain and the nature of the regulatory instruments deployed in the domain of private regulation.

The question concerns in particular the correlation between supply chains and the form and content of contracts¹⁴.

Is there a functional correlation between the nature of the supply chain and that of contracts and contracting practices?

¹³ See G. Gereffi - R. Garcia-Johnson - E. Sasser, *The NGO-Industrial Complex*, in *Foreign Policy*, 2011, p. 64 (“While competition can foster higher industry standards, less pressure will leave companies room to dictate their own terms of compliance.”).

¹⁴ See F. Cafaggi, *Transnational Governance by Contract - Private Regulation and Contractual Networks in Food Safety*, cit.

Section II

3. The Impact of Regulation on the Structure of the Supply Chain

Standards may result from three different complementary regulatory sources:

- public regulation (e.g. European regulations, inter-state conventions, etc.);
- private regulation (e.g. codes of conduct, guidelines, other standards as set and implemented by single firms, enterprise organisations or other private entities, mainly through contracts).

We address the questions whether and how different regulatory instruments influence the organisational features of the supply chain, producing changes in relationships among enterprises. In particular, we investigate when networks arise in response to the adoption of a regulatory strategy.

As regards private regulation, we will focus on some examples of “third party certification systems” in both food and non food (particularly textile) sectors as market based private regulatory strategy focusing on compliance.

Economic literature, widely drawing on empirical studies, extensively analyses the changes in the supply chain as directly or indirectly induced by the increase in number and sophistication of private standards¹⁵.

Two main perspectives are considered: one related to the market structure; another one concerning the organisation of the firm and its strategies of inter-firm collaboration.

In relation to market structure, it is contended that the increasing diffusion of private standards creates entry barriers for suppliers who have insufficient skills and resources to comply with these standards or drives them away from global markets¹⁶. This phenomenon is particularly striking in developing countries, although it might emerge in other countries as well¹⁷. Depending on the context, the proliferation of standards may either force exit from the market or create a dual system, in which compliant production is distinguished from “un-regulated” production, with higher risk for safety¹⁸.

Still in the first perspective, the divide between fragmentation and harmonisation of standards is considered. On one side, excessive fragmentation of standards increases the costs of compliance,

¹⁵ S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit.; Joint Fao/Who Food Standards Programme, Codex Alimentarius Commission, 33rd Session, *Consideration of the impact of private standards*, cit.

¹⁶ WTO, Committee on Sanitary and Phytosanitary Measures, *Private Standards and the SPS Agreement*, 24 January 2007 (07-0335). See also I. Maher, *Competition Law and Transnational Private Regulatory Regimes: Marking the Cartel Boundary*, in Scott, Cafaggi and Senden (eds.), *The Challenge of Transnational Private Regulation: Conceptual and Constitutional Debates*, Blackwell, 2011; S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit.; A. Marx – D. Cuyper, *Forest certification as a global environmental governance tool: What is the macro-effectiveness of the Forest Stewardship Council?*, in *Regulation & Governance*, 2010, 4, p. 404 ff.; A. Marx, *Global governance and the certification revolution: types, trends and challenges*, in *Handbook on the politics of regulation*, edited by D. Levi-Faur, 2012, p. 590 ff., part. p. 600; D. Fuchs – A. Kalfajanni – T. Havinga, *Actors in private food governance*, cit., p. 354. On the issue of the impact of food safety standard on free trade see also J. Wouters - A. Marx - N. Hachez, *In search of a balanced relationship: public and private food safety standards and international law*, Leuven Centre for Global Governance Studies, Working Paper No. 29 - June 2009.

¹⁷ See O. De Schutter, UN Reporter on right to food, Note august 4th 2011.

¹⁸ D. Fuchs – A. Kalfajanni – T. Havinga, *Actors in private food governance*, cit., p. 356.

compounding the risk of market exit¹⁹. It might also favour captive relations between the standard setter (usually the buyer/retailer) and the standard taker (seller), increasing the risk of opportunism²⁰. On the other side, harmonisation of standards might lower competition among enterprises, which would otherwise be prone to invest in higher quality standards to gain competitive advantage²¹.

Looking more specifically at the structure and the boundaries of the firm as well as at the models of the supply chain the impact of private standards on the choice between vertical integration and outsourcing has been analysed with specific focus on the choice between different types of inter-firm collaboration within the chain.

In this perspective, five models have been identified (market-type relations, modular value chains, relational value chains, captive value chains, hierarchical value chains – i.e. vertical integration), depending on the complexity of information and knowledge transfer, the nature of this knowledge as codified or not and the capabilities of suppliers in relation to the requirements of the transaction²². Availability of standards may help to codify the relevant knowledge, while potentially increasing the complexity of the transaction and the level of needed capabilities for a supplier. Within this theoretical framework, higher and more complex standardisation would generate modular chains (if suppliers' capabilities are adequate) or vertical integration (if availability of skilled suppliers is lacking)²³. As can be noted above, the latter scenario would be the most diffuse in developing countries, though gradual knowledge transfer may take place and leave room for relational collaboration at some point²⁴.

Elaborating on this theoretical approach, others question why in fact vertical integration is not so widely practiced as expected in contexts of low sophistication of suppliers and high demand of standard compliance. In this view, one possible explanation should be identified in the role of “third party assurance systems” as institutions in charge of scrutinising and monitoring potential and actual suppliers. This scheme would lower the costs of outsourcing, reducing the incentives for vertical integration. Its concrete efficiency would not remain without criticism, however, given the lack of competence and the risk of corruption that have been observed in practice as regards some third party assurance systems²⁵.

In all these approaches however the role of inter-firm networks seems to be under investigated or even neglected and bilateral contracting remains the reference point.

In the first approach, the emergence of modular chains as a result of codification through standardisation is emphasised, while the option of vertical integration remains a strong alternative, given the high cost of compliance for unskilled suppliers. The emergence of relational value chains, based on collaboration and mutual knowledge transfer may require different organisational forms. In fact, standards may need to be reviewed and adapted to actual contexts and unforeseen circumstances,

¹⁹ Joint Fao/Who Food Standards Programme, Codex Alimentarius Commission, 33rd Session, *Consideration of the impact of private standards*, cit.

²⁰ D. Fuchs – A. Kalfajanni – T. Havinga, *Actors in private food governance*, cit., p. 354.

²¹ Joint Fao/Who Food Standards Programme, Codex Alimentarius Commission, 33rd Session, *Consideration of the impact of private standards*, cit.

²² G. Gereffi – J. Humphrey – T. Sturgeon, *The governance of global value chains*, in *Review of International Political Economy*, 1, 2005, p. 78 ff., part. p. 85. As regards social more than safety standards, see also G. Gereffi - R. Garcia-Johnson - E. Sasser, *The NGO-Industrial Complex*, cit., p. 56 ff., part. p. 64 (“In countries with nascent or ineffective labor and environmental legislation, certification can draw attention to uneven standards and help mitigate these disparities”).

²³ On the correlation between standards and vertical integration, see G. Gereffi – J. Humphrey – T. Sturgeon, *The governance of global value chains*, cit.

²⁴ G. Gereffi – J. Humphrey – T. Sturgeon, *The governance of global value chains*, cit.

²⁵ M.M. Blair – C.A. Williams – L.W. Lin, *The Roles of Standardization, Certification and Assurance Services in Global Commerce*, in *Journ. Corp. Law*, 2008, p. 325 ff.

including changes in technology; even assuming unchanged standards, compliance requires exchange of knowledge and information, which might be codified or not. In this perspective organising relational value chains in a network form may be desirable²⁶.

In the second approach, the role of third party assurance operators is seen more as a substitute of active control by buyers than as a source of interdependence and collaboration among the several knots of a network. Certification is still primarily referred to individual operators with whom the certifier concludes a service contract. But coordination among suppliers in the chain is necessary to meet certification requirements and group certification is growing²⁷. Looking at how the private certification systems may promote the creation of networks among producers or between producers and distributors may be promising. To outsource functions may imply a different shape of the network that ensures collaboration among certified, especially when certification includes the whole supply chain. Moreover the costs of certification, which increase the overall cost of regulation, may be too high to be borne individually while the adoption of network forms may contribute to a better spreading of costs thereby increasing fairness but also efficiency.

We therefore suggest that the adoption of (private) responsive regulatory strategies or market based strategies, like some certification schemes, might be better implemented by the use of networks that allow stronger adaptability and wider peer monitoring. More specifically, networks may support all three dimensions of “risk analysis”: risk assessment, risk management and risk communication²⁸.

Under the first aspect, hazard identification, hazard characterisation, exposure assessment and risk characterisation can more effectively be realised through an intense collaboration by several actors along the chain with different skills and diversified proximity to the source of the risk²⁹.

Risk management needs coordinated responses as well, since the precautionary principle can be definitively frustrated by the lack of consistency along the chain.

Risk communication is, by definition, a “network activity”, requiring collaboration and information channelling among several operators, including (though not only) enterprises along the chain³⁰.

As networks tend to incorporate the “value chain approach”, the benefits of effective standard implementation aim to reach consumers at large. How profits and costs of these mechanisms are, in concrete terms, distributed along the value chain is a more critical issue, that in turn strongly influences the choice of networks as to standard implementation devices and the choice of models and forms of networks if the former choice is made.

The following analysis will elaborate on the observation of some network dynamics that are emerging within standard implementation mechanisms, both in private regulation (particularly in the area of third party certification systems) and in civil liability.

²⁶ As indirectly suggested by G. Gereffi – J. Humphrey – T. Sturgeon, *The governance of global value chains*, cit., about evidence concerning Kenya. On the role of networks, see next paragraph.

²⁷ S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 30. On the role of farmers’ cooperatives in fostering farmers’ capability to comply with standards, see M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit., p. 361. On the different but connected issue of the role of small scale farmers networks as a means to allow farmers to appropriate a larger share of value along the chain, see United Nations, General Assembly, 4 August 2011, *The right to food*, p. 15 ff.

²⁸ See art. 3, n. 10, Eur. Reg. 178/2002, cit.

²⁹ See art. 3, n. 11, Eur. Reg. 178/2002, cit.

³⁰ See art. 3, n. 13, Eur. Reg. 178/2002, cit.: “‘risk communication’ means the interactive exchange of information and opinions throughout the risk analysis process as regards hazards and risks, risk-related factors and risk perceptions, among risk assessors, risk managers, consumers, feed and food businesses, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions”.

4. Where Do Networks Stand? Some Guidelines

According to the previously examined literature, on the one hand, increasing vertical disintegration would boost private standards' production; on the other, at some point complexity of standards and costs of compliance would induce a higher level of vertical integration.

Where might networks stand in this picture? Does regulation favour the creation of networks or influence their functioning? When 'regulatory' networks to implement private standards are set up, how do they influence the inter-firm relationships along global supply chains?

In this contribution, the focus is not on the design of standards but rather on their implementation. Given that regulation involves all or at least many different knots of the supply chain, implementation requires a network structure rather than a sequence of bilateral contracts. This specific need for coordinating standards' implementation represents an additional driver for the formation of vertical networks along the supply chain, as already induced by relevant changes in market relations between suppliers, manufacturers, traders, retailers³¹.

We want to show that both private and public regulation stimulate the creation of new networks or deploy current networks to implement regulatory standards. In particular, with special reference to private regulation, we will focus on compliance monitoring and certification systems. Within this area we will examine whether networks play any role in complementing the monitoring function of certifiers or other players in the regulatory scheme.

The very nature of the new standards is based on a high degree of interdependence along the chain which cannot be effectively managed by bilateral contracts in fragmented supply chains. Interdependence has to be governed in a setting which often includes a combination of cooperative and competitive relationships among multiple actors³². This peculiar mix between competition and cooperation might assume different features and intensity depending on the type of network. We will distinguish accordingly between vertical and horizontal inter-firm networks.

But what do we mean by network as a legal concept³³?

By inter-firm networks, we intend all those collaborative structures that enterprises establish, either through contracts or organisations, in order to realise common interest projects and to coordinate interdependent activities or interdependent modes of using resources (often complementary resources, innovative knowledge, intangibles in general)³⁴. Interdependence occurs in a supply chain when each

³¹ As it is shown in the recent analysis of H. Collins, *The weakest link: legal implications of the network architecture of supply chains*, in *Networks. Legal issues of multilateral co-operation*, cit., p. 187 ss., part. p. 193 ff., observing changes in the mechanisms of purchasing decisions, marketing decisions, information disclosure along the value chain, joint design, and the use of software as a tools for determining and coordinating choices within contractual relations.

³² G. Teubner, *Coincidentia Oppositorum: Hybrid Networks Beyond Contract and Organisation*, in M. Amstutz, – G. Teubner (eds.), *Networks. Legal Issues of Multilateral Cooperation*, Hart Publishing, Oxford and Portland, Oregon, 2009, p. 3 ff., part. p. 25 ff.

³³ The issue has been recently revisited also by G. Teubner, *Coincidentia Oppositorum: Hybrid Networks Beyond Contract and Organisation*, in M. Amstutz, – G. Teubner (eds.), *Networks. Legal Issues of Multilateral Cooperation*, cit., p. 3 ff., starting from the contribution of R.M. Buxbaum, *Is Network a Legal Concept?*, in *Journ. Inst. Theor. Econ.*, vol. 149, 1993, p. 698 ff.

³⁴ This definition is intended to show the intrinsic inter-disciplinary essence of the concept of network, as influenced in the last decades by economic and sociological studies more than legal ones. Though in different perspectives reference should be made to: O.E. Williamson, *The mechanisms of governance*, OUP, 1996, p. 93 ff.; C. Ménard, *The Economics of Hybrid Organizations*, 3 J. of Instit. and Theor. Ec. 345 ff., (2004); A. Grandori, *Interfirm Networks: Organizations and Industrial Competitiveness*, Routledge, London, 1999. In the field of sociological studies: W.W. Powell, *Neither Market Nor Hierarchy: Network Forms of Organizations*, in L.L. Cummings – B.M. Staw (eds), *Research in Organizational Behavior*, 12, 1990, p. 295 ff.; S. Helper – J.P. MacDuffie – C.F. Sabel, *Pragmatic Collaborations: Advancing Knowledge While Controlling Opportunism*, *Industrial and Corporate Change*, 9, 2000, p. 443 ff. Combining the sociological approach with the legal one: G. Teubner, *Coincidentia Oppositorum*, cit. In the recent legal debate: G.S.

component of a product or a service is specific to the others and cannot be easily re-deployed in other supply chains or other process. The notion of interdependence does not merely refer to the link among connected exchange contracts along the chain³⁵. Rather it is related to specific investments and the complementarity of critical resources³⁶. Interdependence (among critical resources, among activities, eventually among governance structures) is the core feature of this type of inter-firm relation: indeed, it allows synergies among complementary elements, one of the main sources of efficiency, especially but not only in the area of R&D³⁷. Interdependence induces collaborative practices, co-determination, mutual learning, internal monitoring³⁸. As we see below, the monitoring function of networks may be crucial for standard compliance.

By definition, refusing strict integration strategies (like those associated with mergers and acquisitions, for instance), inter-firm networks allow the preservation of the legal and economic autonomy of members together with their entrepreneurial identity³⁹. The balance between interdependence and autonomy is due to the ability of the network to establish coordination among the knots and induce collaboration, also thanks to trust-enhancing mechanisms and reputation-based compliance systems without ownership integration⁴⁰.

Unlike both vertical integration and market-type relations, inter-firm networks show higher flexibility, capable of adapting and responding, at lower costs, to technological changes, unforeseen circumstances, exogenous risks⁴¹. An adequate allocation of risks, power and profits within the network normally serves this purpose⁴². The need for a simultaneous satisfaction of both individual and collective interests within the network and the inadequacy of polar models (bilateral exchange contract and organizations as collective entities) to attain this combination creates room for self-regulation within the network⁴³.

(Contd.)

Geis, *Business Outsourcing And The Agency Cost Problem*, in *Notre Dame L. Rev.*, 2007, p. 955 ff.; F. Cafaggi (edited by), *Contractual networks, Inter-firm cooperation, and Economic Growth*, Elgar, Cheltenham, UK - Northampton, MA, USA, 2011; F. Cafaggi - S. Grundmann, *The Contractual Basis of Long-Term Organisation – The Overall Architecture*, in a book co-edited by both the Authors, forthcoming within Elgar, Cheltenham series.

³⁵ Though this reference is definitively relevant in contract theory and legislation. For an examination in the perspective of French law as regards the legislation on “ensemble contractuel”, see C. Aubert de Vincelles, *Linked Contracts under French Law*, in F. Cafaggi (edited by), *Contractual networks, Inter-firm cooperation, and Economic Growth*, cit., p. 163 ff., part. p. 168 ff.

³⁶ See O.E. Williamson, *The Economic Institutions of Capitalism*, Free Press, New York, 1985; Id., *The mechanisms of governance*, cit., p. 93 ff.; L. Zingales, *In search of new foundations*, in *Journal of finance*, 2000, p. 1623 ff.; S. Grundmann, *The Contractual Basis of Long-Term Organisation – The Overall Architecture*, cit.

³⁷ W.W. Powell, *Neither Market Nor Hierarchy*, cit.

³⁸ S. Helper – J.P. MacDuffie – C.F. Sabel, *Pragmatic Collaborations*, cit.; G.S. Geis, *The Space between Markets and Hierarchies*, 95 Va. L. Rev. 99 (2009); H. Collins, *The weakest link: legal implications of the network architecture of supply chains*, cit., p. 199.

³⁹ G. Teubner, *Coincidentia Oppositorum*, cit., p. 24.

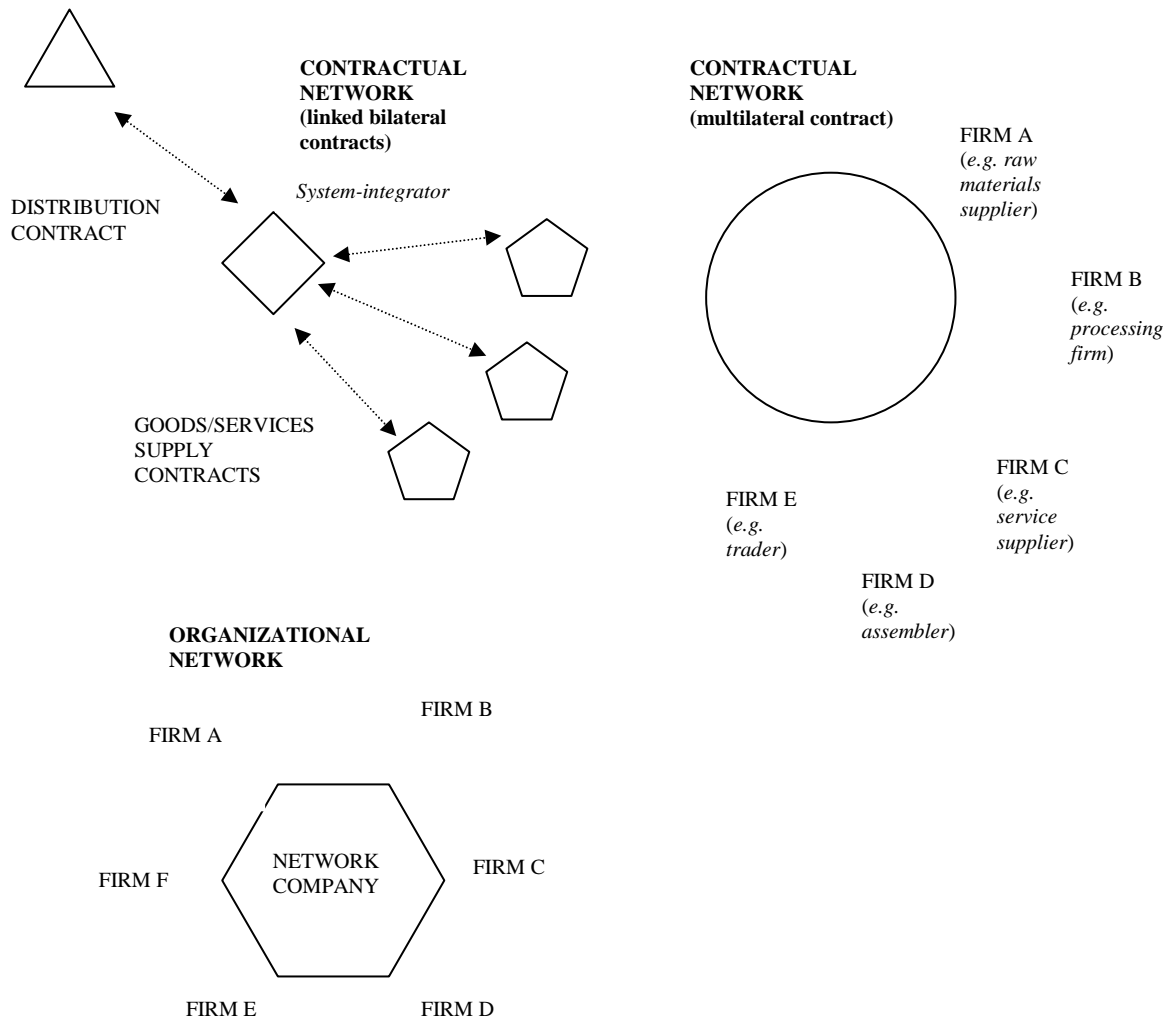
⁴⁰ W.W. Powell, *Neither Market Nor Hierarchy*, cit.

⁴¹ W.W. Powell, *Neither Market Nor Hierarchy*, cit. As regards financial or security transactions, see P.W. Heermann, *The Status of Multilateral Synallagmas in the Law of Connected Contracts*, in M. Amstutz, – G. Teubner (eds.), *Networks. Legal Issues of Multilateral Cooperation*, cit., p. 104 ff., part. p. 114 ff.

⁴² S. Grundmann, *Contractual networks in German private law*, in F. Cafaggi (edited by), *Contractual networks, Inter-firm cooperation, and Economic Growth*, cit., p. 156 ff.; F. Cafaggi, *Contractual networks and contract theory: a research agenda for European contract law*, in F. Cafaggi (edited by), *Contractual networks, Inter-firm cooperation, and Economic Growth*, cit., p. 66 ff.

⁴³ G. Teubner, *Coincidentia Oppositorum*, cit., p. 19.

In previous contributions, we have shown how the choice of legal forms can affect the functioning of inter-firm networks in terms of allocation of power and collaborative practices⁴⁴. We distinguished among contractual and organisational networks. The former are governed either through a multilateral contract (e.g. a contractual joint venture or a multilateral framework contract as a source of technical standards) or a set of linked bilateral contracts (e.g. subcontracting networks, franchising, cross licensing, etc.)⁴⁵. The latter are established through the creation of a new entity, normally a corporation or an interest grouping⁴⁶. The organisational network does not imply full ownership integration but rather the creation of a new co. where several firms along the supply chain organise the production process. Each firm will continue to produce individually but the coordination is ensured by organisational law rather than contracting.



⁴⁴ See F. Cafaggi – P. Iamiceli, *Reti di imprese tra crescita e innovazione organizzativa. Riflessioni da una ricerca sul campo*, Il mulino, Bologna, 2007.

⁴⁵ See F. Cafaggi, 'Contractual Networks and the Small Business Act: Towards European Principles?', 4 *European Review of Contract Law* 49 (2008), 495. On contractual networks based on the link among bilateral contractual relations see also R. Brownsword, *Network Contracts Revisited*, in M. Amstutz, – G. Teubner (eds.), *Networks. Legal Issues of Multilateral Cooperation*, cit., p. 31 ff., part. p. 33; G. Teubner, *Coincidentia Oppositorum*, cit., part. p. 21: "The reference of one contract to another entails the inclusive acceptance by the contractual partners of a foreign private order". With specific reference to production and distribution chains: S. Grundmann, *Contractual networks in German private law*, cit., p. 111 ff.

⁴⁶ See Council Regulation (EEC) No 2137/85 of 25 July 1985 on the European Economic Interest Grouping.

As will be demonstrated below with reference to networks direct to manage standard implementation, contractual networks based on bilateral linked contracts show higher flexibility and the ability to tailor bilateral relations to specific circumstances and characteristics as they arise at any single knot of the supply chain. On the other hand, homogeneity and convergence among different bilateral relations may be more costly to attain; the role of a leader enterprise, if any, is crucial under this respect as well as her/his ability to exercise authority. Unlike what could be expected empirical research shows that organizations are used when power is and has to be evenly distributed whereas bilateral sequential contracting is used when power is unevenly distributed. Multilateral contract networks and organisational networks tend to distribute decision making power more evenly and to allow decision making practices based on consensus, majoritarian view or delegation of power depending on the legal form⁴⁷. In organisational networks and especially in “incorporated” forms, segregation of assets as well as more sophisticated agency mechanisms allow the network to deal with third parties at lower transaction costs and to design financial risk separating it from the entrepreneurial risk of single participants⁴⁸.

In fact, inter-firm networks are not self-enforcing relations; incentives for collaboration and investments in the common interest project need to be built also through an adequate design of the governance structure of the network, which complementarily deploys legal and non-legal sanction for lack of cooperation⁴⁹. Indeed, given the interplay between interdependence and autonomy, network collective interests co-exist with individual interests, which might threaten the stability of the network as well as inducing forms of abuse⁵⁰. The regulatory strategy implemented through total quality management or safety standards pursues a common interest related to the production of safe and not defective products and risks assessment and management associated with it.

We shall focus on contractual networks and describe the different types that can be created along the supply chain. We follow the distinction between horizontal and vertical networks.

Vertical networks, as created among enterprises that play a different role along the chain (e.g. farmers, manufacturers, certifiers, retailers) normally face lower threats in terms of internal competition, as compared with horizontal networks (e.g. the one among retailers), where participants are definitively competitors⁵¹. In practice, vertical networks are mainly contractual and based on bilateral linked contracts, while horizontal networks tend to be organisational or based on a multilateral contract⁵².

⁴⁷ F. Cafaggi, *Contractual networks and contract theory: a research agenda for European contract law*, cit., p. 100 ff.

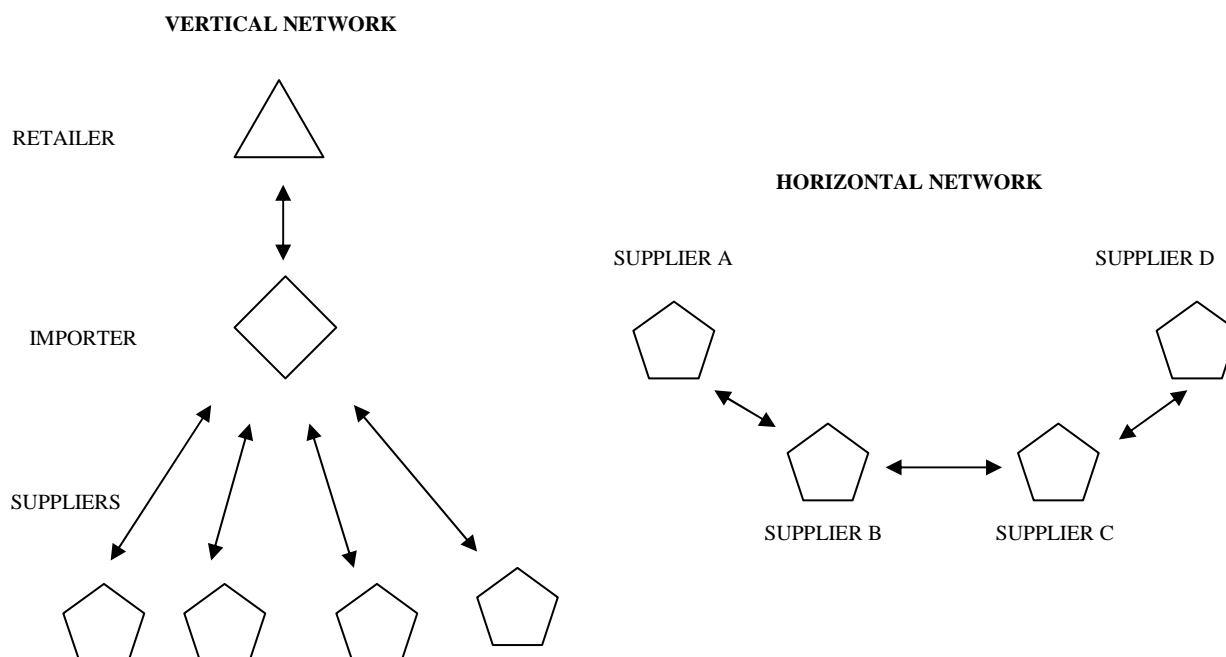
⁴⁸ See H. Hansmann – R. Kraakman, *The essential role of organization law*, 110 Yale L. J. 387 (2000); E.M. Iacobucci - G.G. Triantis, *Economic And Legal Boundaries Of Firms*, 93 Va. L. Rev. 515 (2007).

⁴⁹ See H. Collins, *The weakest link: legal implications of the network architecture of supply chains*, cit., part. p. 205 f., who argues that the lack of direct contractual relations along the supply chain (e.g. between raw material suppliers and assembler) can be understood as a deliberate preference for non-legal sanctions. Therefore “to impose legal obligations directly between remote parties without explicit contracts may lead to an inefficient distortion of behaviour if these remote parties react by incurring additional transaction costs to ensure that no legal recourse is available, as for example by entering into contracts of indemnity or exclusions of liability”.

⁵⁰ F. Cafaggi, *Contractual networks and contract theory: a research agenda for European contract law*, cit., p. 102 ff. See also, in different perspectives: G. Teubner, *Coincidentia Oppositorum*, cit., p. 19; H. Collins, *The weakest link: legal implications of the network architecture of supply chains*, cit., p. 199 ff. and p. 208 where it is argued that the incentive of single knots to pursue both individual and collective interests allows to justify some practices (e.g. price variations in damages of suppliers) on the basis of network’s interest, so excluding forms of abuse by retailers.

⁵¹ F. Cafaggi, *Contractual networks and contract theory: a research agenda for European contract law*, cit.

⁵² F. Cafaggi – P. Iamiceli (eds.), *Interfirm networks in the wine European Industry*, European University Institute working paper, 2010, available at http://cadmus.eui.eu/bitstream/handle/1814/15654/LAW_2010_19c.pdf?sequence=3



5. The Role of Networks in Standards Compliance: The Case of Third Party Certification

Which role could then inter-firm networks play when regulatory implementation is at stake? Which forms and models of networks could we expect to identify in this context?

We will focus on networks that are either established or practically oriented to manage mechanisms of compliance with standards (mainly private standards). As regards networks, two types of monitoring are compared: *peer monitoring*, where knots are expected to monitor other knots in order to protect the network's interest; *hierarchical monitoring*, where control is ensured through authority in a context in which power is asymmetrically allocated. Although in principle both contractual and organisational networks may assume each type of monitoring function, we shall examine whether there is any correlation between forms of monitoring and forms of networks. The view suggesting that, when networks tend to provide for monitoring and detecting breaches along the chain, they prefer hierarchy, while networks primarily due to ensure flows of coordinated information reject hierarchy in favour of an "acephalous or heterarchical" form of inter-firm collaboration, cannot be subscribed in this analysis⁵³. In fact evidence shows that both hierarchical and peer monitoring emerge within networks as built along the supply chains. Moreover compliance over standard implementation requires both inspection practices and prompt information flows along the chain, well beyond the conventional setting of bilateral exchange contracts⁵⁴.

⁵³ For this correlation see H. Collins, *The weakest link: legal implications of the network architecture of supply chains*, cit., p. 200 and p. 203 (about a comparison between retailers' driven networks and franchise networks).

⁵⁴ On the network dimension of inspection rights as well as of information duties in contractual networks see also S. Grundmann, *Contractual networks in German private law*, cit., p. 149 ff., who tends to apply restrictively the former ones and extensively the latter ones.

Monitoring and certifying compliance with (public and private) standards are key components of regulatory implementation processes. Both legitimacy and effectiveness of this type of regulation strongly depend on the choice of the regulatory instrument⁵⁵. Implementation and compliance monitoring in large and transnational supply chains are too costly both for governments and for retailers: hence the spreading use of certification as a dominant strategy for implementing private regulation. Not only certification schemes have proliferated as a response to scandals but they are also assuming a more pro-active role in seeking out sources of risk and companies' wrongdoing⁵⁶. Their diffusion is growing but still very diversely across sectors and, within the same sector, per type of product⁵⁷.

Certification has thence become a key to access markets of developed countries by suppliers located in developing countries who have to abide by international standards⁵⁸. It provides evidence of compliance with standards and signal market participants compliance with quality and safety standards. Under this perspective certification is seen as an "informational tool"⁵⁹ and as a form of "regulation by information"⁶⁰.

In this perspective it is held that certification reduces information asymmetry within contractual relations along the chain (B2B) and within the communication with consumers. Transaction costs are then lowered both *ex ante* and *ex post*: *ex ante* because codes and standard reduce contract incompleteness without need for explicit negotiation; *ex post* because certifiers take care of monitoring⁶¹.

Conventionally, a distinction is made between first party certification (as provided by suppliers), second-party certification (as provided by paid technicians employed by retailers) and third-party certification [hereinafter TPC] (as provided by independent certifiers, the cost of which is normally borne by the supplier)⁶². Certification is a credence good and its governance design is crucial to ensure reliability⁶³.

Certification is based on standards whose compliance can then either be verified by the regulatees (first or second party certification) or by accredited 'independent' bodies (third party certification). The core element of monitoring compliance and certifying deals with gathering and conveying relevant information on actual processes and products. Tracing risk sources along the chain represents a crucial element of monitoring compliance. Signalling to the market that a product or a process is

⁵⁵ S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 7. On the legitimacy question see also D. Fuchs – A. Kalfajanni – T. Havinga, *Actors in private food governance*, cit.; A. Marx, *Global governance and the certification revolution: types, trends and challenges*, cit., p. 598.

⁵⁶ G. Gereffi - R. Garcia-Johnson - E. Sasser, *The NGO-Industrial Complex*, in *Foreign Policy*, 2011, p. 58, p. 64.

⁵⁷ A. Marx, *Global governance and the certification revolution: types, trends and challenges*, cit., p. 596 ff.

⁵⁸ See WTO, Committee on Sanitary and Phytosanitary Measures, *Private Standards and the SPS Agreement*, 24 January 2007 (07-0335). Exclusionary mechanisms are also triggered by this dynamics, however, as regards small-scale suppliers who face major difficulties in compliance. See above, footnote n. 16, also for other references.

⁵⁹ A. Marx – D. Cuyper, *Forest certification as a global environmental governance tool*, cit., p. 410.

⁶⁰ See, also for a critical view, T. Bartley, *Certification as a Mode of Social Regulation*, Jerusalem Papers in Regulation & Governance, Working Paper No. 8, May 2010, part. p. 7.

⁶¹ F. Ciliberti – G. de Groot – J. de Haan – P.P. Pontrandolfo, *Codes to coordinate supply chains: SMEs' experiences with SA8000*, in *Supply Chain Management: An International Journal*, 2009, p. 117 ff.

⁶² G. Gereffi - R. Garcia-Johnson - E. Sasser, *The NGO-Industrial Complex*, cit., p. 56 ff.; F. Ciliberti – G. de Groot – J. de Haan – P.P. Pontrandolfo, *Codes to coordinate supply chains*, cit., p. 119; Joint Fao/Who Food Standards Programme, Codex Alimentarius Commission, 33rd Session, *Consideration of the impact of private standards*, cit., p. 7; M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit., p. 357.

⁶³ See F. Cafaggi, *New foundations of transnational private regulation*, forthcoming *Journal of law and society*, 2011. See also T. Bartley, *Certification as a Mode of Social Regulation*, cit., p. 11.

compliant with the standard is generally achieved through logos, labels or trademarks, administered with licenses issued on the basis of certified compliance after audits⁶⁴.

Monitoring and certifying are not only costly but also critical in terms of risk allocation⁶⁵: indeed, an issue concerning gatekeepers' liability for lacking or defective monitoring may arise in the context of third party certification⁶⁶. Ultimately reliability on the certification systems rests on the effective public oversight and liability triggered by the final consumers when hazardous products or processes have been certified.

Who has the incentives/capacity for enacting such mechanisms?

Recent studies show that in the food sector, third-party certification has become the norm for many private safety standards⁶⁷. TPC can produce relevant information and convey it to consumers, overcoming market failures due to uncertainty and information asymmetry. Independent certifiers can contribute to solving asymmetric information problems with the final customer but should facilitate production and information transfers along the supply chains.

The independency of certifiers from producers and retailers adds legitimacy and reliability in the view of consumers. Clearly this independence may be undermined when certification services are paid by the certified even if at the end of the process the final cost is borne by consumers or business customers. Independence is the result of multiple factors; among others: effective competition among certifying bodies; accurate oversight by accrediting bodies with severe and prompt sanctioning mechanisms in case of fraudulent behaviour.

Recent studies show that the effects of TPC may go beyond an efficient signalling function. Indeed, these mechanisms are able to reshape the relations among enterprises along the chain, enabling some firms (as well as limiting opportunities for others) to participate in the global trade⁶⁸. Certification operates as a selection mechanisms to access the global value chain and position firms along the chain.

In particular, retailers (mainly large chains of supermarkets) benefit by such systems, being able to shift the tasks and risks connected with monitoring and certification to third parties, while shifting the costs to suppliers, whose selling capacity is in fact made conditional upon certification. This explains why some TPC systems are promoted by retailers' organisations⁶⁹ and why supermarkets end up imposing the use of particular certifiers on suppliers⁷⁰. Recent studies, especially those looking at the distribution of costs, as imposed by such systems, address the fairness of this process⁷¹. While compliance with certification may affect due diligence analysis, it does not immunize from liability. Nor can liability be excluded when negligent certification has wrongly signalled compliance. Joint and

⁶⁴ T. Bartley, *Certification as a Mode of Social Regulation*, cit., p. 8 ("In contrast to those codes that do require external auditing, certification systems go one step further in using that auditing to award a "seal of approval" of some sort").

⁶⁵ On costs of implementation and verification, see S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 28; M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit., p. 361.

⁶⁶ We do not address this issue, on which debate is quite intense. See: F. Cafaggi, *Le rôle des acteurs privés dans les processus de régulation: participation, autorégulation et régulation privée*, in *Revue française d'administration publique*, 2004, p. 23 ff.

⁶⁷ S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 7; D. Fuchs – A. Kalfajanni – T. Havinga, *Actors in private food governance*, cit.; M.B. Hutter, *Understanding the new regulatory governance*, cit.

⁶⁸ M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit., p. 360 f.

⁶⁹ See, for example, in the food safety area, EUREPGAP (see par. 5.3).

⁷⁰ M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit., p. 359.

⁷¹ S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 36.

several liability between certifiers, certified and licensed is the response to negligent certification which results into hazardous products or processes.

The effects of third party certification on suppliers are more complex. Indeed, those who have the (financial and organisational) capacity to engage with the certification process gain both commercial opportunities and benefit from efficient organisational and technological changes as induced by compliance with standards. By contrast, for smaller enterprises and, more critically, for developing countries, certification costs for enterprises are often prohibitive. For these, the support provided by NGOs to upgrade their business structure and methods might play an important role and turn into a significant opportunity for their development⁷².

It is important to highlight how (in industrialised more than in developing countries) some authors also point out the potential role that cooperatives could play to sustain small and medium enterprises to bear costs and challenges linked with the certification processes⁷³. More in general emerging economies are increasingly supporting SMEs certification by funding local intermediaries, which provide technological and administrative support.

High certification costs may prompt to group certification in order to share the economic burdens. The emergence of network form is thence linked to both efficiency and distributional drivers. Coordination among parties reduces transaction costs related to inspection and audits. In addition, if one enterprise along the chain is non compliant, it can influence the ability of the final producer to earn certification. Corrective measures have to be taken on behalf of the whole chain. Network certification can reduce and redistribute the costs and make certification available for small enterprises that want to access international markets.

In our perspective, networks would not only help single enterprises, boosting technological and organisational development (e.g. providing services to support tasks which are required by standards), but, more importantly, they would enable a specific form of coordination along the chain, making the certification system consistent with the “value chain approach” as illustrated above.

We attempt to verify whether this approach is already reflected in some TPC systems and, if so, the implications it produces. We consider examples from food and non food sectors; we have chosen textile where private standards and TPC have grown significantly in recent years⁷⁴. Illustrations are conceived as providing hints for analysis, without being necessarily representative of largely diffuse practices. More structured and extended empirical research would be necessary to bring material evidence and strong foundation to our hypothesis.

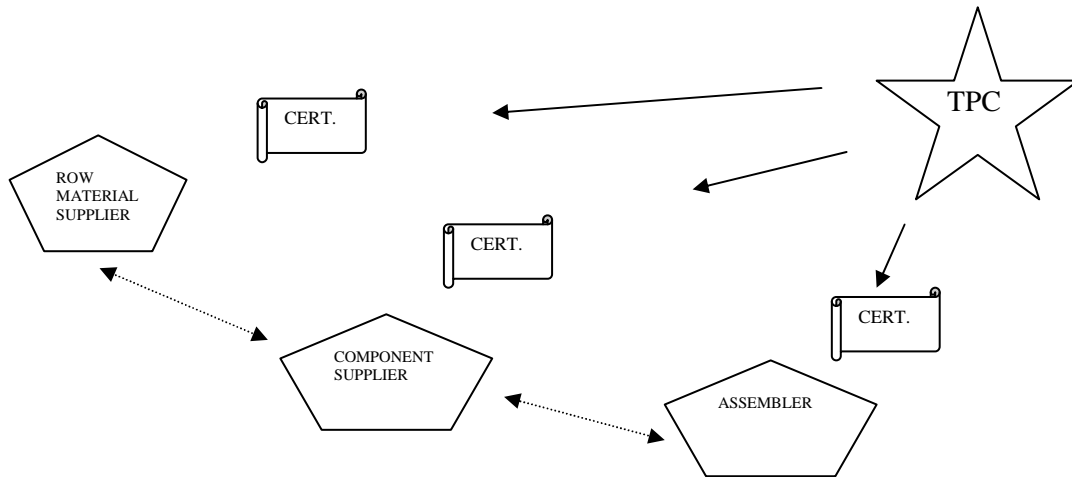
Both in the food and textile sectors we find examples of TPC systems based on the holistic view, according to which safety is ensured only if all the several stages of the value chain are covered.

The main consequence of this view consists in making all the operators along the chain subject to the control of compliance with the requirements connected with the issue of a certain label/certificate. This would mean that any gap in the chain would result in the ineffectiveness of the whole certification process for the whole chain. Consequently, anyone has the incentive to induce her/his partner previous in line to be subject to the same audit.

⁷² On the impact of regulation on unskilled farmers in terms of higher learning opportunity, see S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 31; M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit.

⁷³ M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit, p. 361. See also S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 31, as regards the role of farmers’ organisations in Morocco.

⁷⁴ See A. Marx, *Global governance and the certification revolution: types, trends and challenges*, cit., p. 596 ff.



This “linear coordination” is important, but potentially weak. Costs and incentives for partaking in the TPC systems may be different for each party, also depending on the opportunity for each enterprise to access the market without the TPC system. Of course, lack of cooperation in terms of refusal of being part of the system by one single enterprise would undermine the whole investment made by compliant participants.

We here compare three possible options as identified in the observed cases and sectors (food and non food). We sort them by intensity of coordination giving rise to different forms of networks. The more the coordination system is able to govern interdependency among the parties, the less the implementation of standards suffers from inefficiencies and lack of cooperation. We also look at the type of regulatory scheme, being this driven by independent actors (e.g. research institutions) or by enterprises involved in the certified product/service value chain (manufacturers, traders, retailers, etc.). Furthermore we take into account the scope of the regulatory scheme, being this due to extend control over relatively integrated segments of the value chain, over the whole processing chain or including the distribution phase as well.

Some comparative remarks on the three options will be presented in par. 5.4.

5.1. Standard Setting and Monitoring Delegated to Independent Actors: (I) The Oeko-Tex Case

The first option emerges in the textile sector. It is a case of private regulation where both standard setting and compliance assurance are in charge of an international body composed of specialised research and test institutions (neither producers-, nor retailers-based)⁷⁵. Indeed, it includes a private standard scheme elaborated by textile research and test institutes in Europe and Japan, implemented by the same association through its member institutes⁷⁶.

The declared scope of this scheme is to iron out the global differences relating to the assessment of harmful substances in the textile industry and to equally spread the costs of standard implementation. This goal is mainly attained through a multiplication of tests along the chain: then tests are conducted whenever a textile product is processed further or a chemical change is made. The enterprise in charge of bearing the costs is the one that is in a position to materially alter the use of chemicals or similar substances. By conducting tests on source materials, the next enterprise in line along the chain can

⁷⁵ See <http://www.oeko-tex.com>: “The Oeko-Tex® Standard 100 was introduced at the beginning of the 1990s as a response to the needs of the general public for textiles which posed no risk to health. “Poison in textiles” and other negative headlines were widespread at this time and indiscriminately branded all chemical across the board used in textile manufacturing as negative and dangerous to health.”

⁷⁶ http://www.oeko-tex.com/oekotex100_public/content5.asp?area=hauptmenue&site=gruendefuereinfuehrung&cls=02

avoid having to undertake similar testing procedures. Each enterprise must then have its own certificate for its sales products.

How is coordination attained and how is this network structured?

As it is often the case, a double set of contractual relations is involved:

- industrial and commercial relations direct to produce and exchange goods and services (which are separately subject to certification);
- certification services relation, including label (registered trademark) licensing.

The former relations link enterprises along the supply chain, generally, by means of linked bilateral contracts.

The latter ones link each enterprise in the chain with the standard setter/certifier, that therefore engages into several bilateral relations with applicant firms.

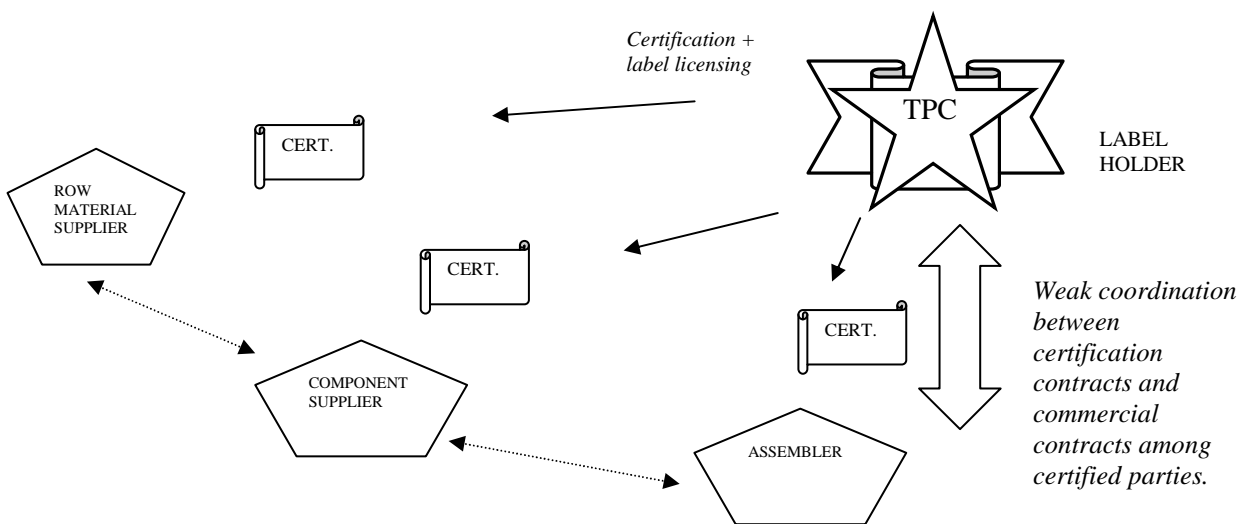


Figure in bold: coordination role; the degree of coordination is indicated by the thickness of the line (weak coordination model)

Comprehensive control, separately involving each stage of the chain, and fair allocation of costs would be attained thanks to:

- the role of third party certifier, to whom enterprises have to disclose the list of suppliers to enable certifiers to verify the continuity of tests along the chain;
- the pressure that in fact each applicant will bring on his/her suppliers to bear, requesting certification in order to benefit from the certification and the consequent label award;
- a peer monitoring system among enterprises involved in this networks: indeed, whoever identifies irregularities among partners or competitors is requested to report to the relevant member institute (certifier).

The presence of a third party acting as a certifier is definitively important for ensuring the extension of tests to the whole chain and, only to a certain extent, the allocation of costs⁷⁷. However it does not seem sufficient to provide reluctant players with adequate incentives to be subject to tests and attain

⁷⁷ In fact, it cannot be excluded that suppliers and producers will be able to allocate these costs differently adjusting prices for goods and services incorporating or not the costs of certification.

certification. Neither would the pressure brought by contractual partners be suitable, depending on relative bargaining power. The way in which this type of network seems to contribute to standard compliance is rather by peer monitoring.

Other aspects should be considered to determine the degree of coordination that this scheme is capable of deploying. Among these, the concrete allocation of costs may generate some weaknesses as regards the incentive to cooperate. In fact, there might be an unbalanced relation between costs (which are connected with idiosyncratic factors related with the technical features of process and product as controlled by each applicant enterprise) and benefits of certification, which will not necessarily be spread along the chain following the same idiosyncratic factors and will possibly be concentrated in the last part of the value chain in favour of final producers and/or retailers.

It is important to underline that retailers remain out of this implementation scheme and this seems a clear weakness of this type of network.

Under these conditions, if final producers do not have sufficient bargaining power to impose compliance to suppliers and to extract from traders and retailers sufficient remuneration for the added costs along the chain, the mechanism risks collapse.

Indeed, the exclusion of traders and retailers from compliance mechanisms seems inefficient. Previous analysis has shown how standard setting has increasingly involved the active participation of retailers for reasons related with both incentives and capacity in the governance of the global value chain. Given the interdependence between standard setting and compliance (e.g. administering compliance mechanisms adds information which may lead to enhance standard setting), ignoring the role of retailers while designing inter-firm networks supposed to govern compliance seems ineffective.

This model can be described as a model with a low degree of chain coordination.

One source of weakness is related to the lack of effective link between the industrial/commercial relations through which due to be certified goods and services are exchanged and the contractual relations concerning certification service supply.

Only to a certain extent can peer monitoring complement this weakness inducing consistent compliance along the chain.

5.2. The Partial Separation between Standard Setting and Monitoring: (II) The Global Organic Textile Case

A second option has also been identified in the textile sector⁷⁸. In this case the holder of labelling rights on the logo (a registered trademark), that are (sub-)licensed to certified enterprises, is a limited liability company established by three industry organisations in the world and one charity in the UK. Standards are elaborated by a technical committee composed of experts appointed by members. Licenses are awarded to enterprises on the basis of certified compliance with standards. Certifiers are third parties as accredited under the rules of the standard setter. Therefore, in terms of regulatory strategy, we here have a producers based system (main “owners” being industrial organisations) delegating standard setting to an internal technical committee and compliance assurance to external players, as accredited and independent certifiers. Unlike the case under (I), producers directly or

⁷⁸ Global organic textile standard (see <http://www.global-standard.org>): “The aim of the standard is to define world-wide recognised requirements that ensure organic status of textiles, from harvesting of the raw materials, through environmentally and socially responsible manufacturing up to labelling in order to provide a credible assurance to the end consumer.”. Though the focus is on quality and environmental standards, safety is an important concern when toxicity comes into question (e.g., among environmental criteria, the following is included: “prohibition of critical inputs such as toxic heavy metals, formaldehyde, aromatic solvents, functional nano particles, genetically modified organisms (GMO) and their enzymes”).

indirectly exercise control over regulatory strategies. As it is seen below this aspect of standard setting influences the type of network due to deal with standard compliance.

Then, how is compliance assured and which type of network is formed, if any?

Again in this case we can identify a network model due to govern compliance along the chain.

The network model resembles the previous one (see (I)) in many respects while departing from it in others.

In particular, we may recognise the same double set of relations as previously described: the contractual relations, by which parties exchange goods and services along the chain, and the relationship between each of these parties and the certifier in order to get the certification service.

Given the role of the industry in the standard setting phase, unlike the case under (I) assurance and compliance related services are delegated to external players (independent certifiers), who have no direct title on labelling rights. Hence, in this case, a third set of relations is needed in order to assign to certified entities the license to use the trademark on certified products. More precisely, license is first assigned to certifiers and then sub-licensed to certified entities. Under this respect, certifiers play as intermediaries between the trademark holder (the standard setter) and the certified entity, adding to such intermediation an important monitoring function.

Indeed, a strong link exists between the certificate issue and the license assignment, provided that only certified entities may legitimately use the trademark⁷⁹.

Being independent from standard setter while exercising inspection and monitoring powers, certifiers may cooperate with the standard setter once defection is detected. Then, indeed, both standard setter and certifiers are due to pursue legal remedies against unauthorised or misleading use. Under this respect a special emphasis is given to corrective measures and to remedies due to safeguard the scheme's credibility⁸⁰.

The distinction between standard setting and assurance-related services (inspections, certificate issue, licensing) call for a more complex coordination scheme if compared with the one described under (I). In the examined case it leads to the construction of a contractual network based on the link among bilateral contracts with different but connected functions: some exclusively assigned to the trademark holder (standard setting); some exclusively assigned to certifiers (assurance-related services) and some co-assigned to both (corrective and sanctioning powers, standing to sue).

As a first conclusion, the example helps to see an impact of the type of private standard regulation (as driven by producers and not by independent players, like under (I)) and the complexity of the network due to coordinate the role of independent certifiers with the one of the standard setter.

What is the impact of this construction on the supply chain?

In a former perspective it could be assumed that the described mix between cooperation and specialization between standard setter and certifiers might help the effectiveness of the assurance scheme. Other elements contribute to draw this conclusion as regards the examined case.

In particular, some important features distinguish this model from the one described under (I):

⁷⁹ See GOTS Licensing and Labelling Guide, § 3.1: "With the completion of GOTS certification by an Approved Certifier the Certified Entity acquires a sub-licence which entitles it to participate in the GOTS programme, including use of the standard and the GOTS logo on its respective GOTS Goods in accordance with the provisions of this labelling guide and as long as the certification remains valid."

⁸⁰ See GOTS Licensing and Labelling Guide, § 5: "The IWG [*standard setter*] and/or the Approved Certifiers will pursue all legal remedies for any unauthorised or misleading use of the GOTS logo on product declarations, in advertisements, catalogues or other contexts, including actions such as corrective and/or legal action and/or publication of the transgression so as to safeguard credibility of the GOTS identification."

- all players acting along the supply chain must hold a valid conformity certificate: processors, manufacturers *and traders*⁸¹;
- more specifically, while retailers who receive and sell ready pre-packed and labelled products directly to end consumers are exempt from the certification requirement, traders (that buy and sell products to other retailers) are not⁸²: this induces them to be actively part of the implementation system, charged with verifying the authenticity of certified products and ensuring integrity of goods; this also contributes to spread compliance costs along the distribution chain discouraging inefficient forms of chain fragmentation where new intermediaries cannot effectively contribute to higher safety and control;
- exemptions or exceptions are foreseen for:
 - small-scale subcontractors with a low risk potential, provided that these suppliers have a contract with a certified entity (that is responsible for their compliance with the standard) and are clearly identified so that they may be subject to inspection by certifiers⁸³;
 - traders with less than 5000 euro annual turnover with certified goods, provided that they do not re-pack and/or re-label goods, that they are anyway registered with a certifier and full information is granted in case of excess of the 5000 euro threshold⁸⁴;
- as a final rule, the entity under whose name or brand the certified goods are sold to end consumers is responsible for *exercising due care* in ensuring compliance of the products with the requested standards⁸⁵; this means that, at least indirectly, this entity is induced to exercise a monitoring power along the chain, which is triggered by the contractual liability regime.

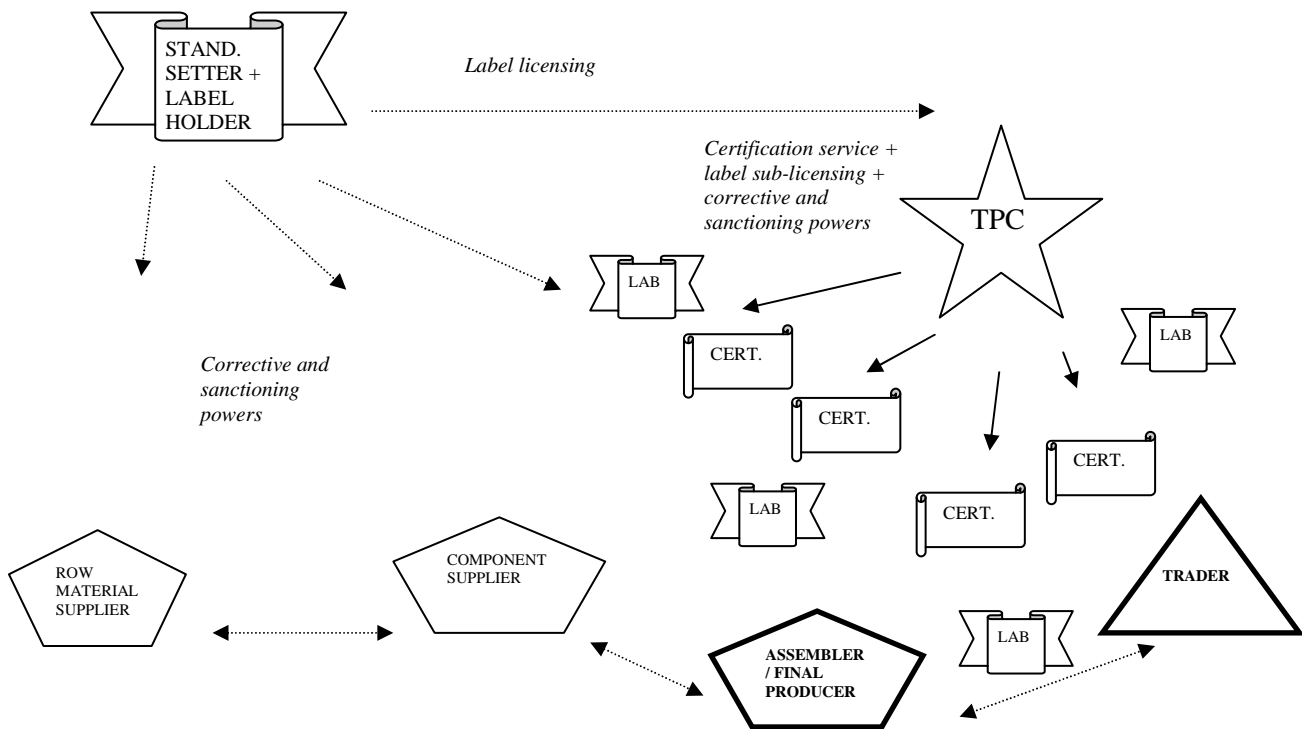
⁸¹ See Global Organic Textile Standards, Version 3.0, March 2011, § 1: “The aim of this standard is to define requirements to ensure organic status of textiles, from harvesting of the raw materials, through environmentally and socially responsible manufacturing up to labelling in order to provide a credible assurance to the end consumer. This standard covers the processing, manufacturing, packaging, labelling, trading and distribution of all textiles made from at least 70% certified organic natural fibres. (...) Processors, manufacturers and traders that have demonstrated their ability to comply with the relevant GOTS criteria in the corresponding certification procedure to an Approved Certifier receive a GOTS conformity certificate (= operational certificate, scope certificate) that lists the certified products (and the production stages) that are in compliance with this standard.”

⁸² See Global Organic Textile Standards, cit., § 4.1 and Annex (A) for the definition of *Trader* as “Entity trading with (= buying and selling) GOTS Goods in the supply chain between the producer of the fibre and the retail merchant of the final product regardless whether the goods are physically received or not (e.g. an import, export or wholesale trading entity). Agents that do not become proprietor of the goods and retailers only selling to the end consumer are not considered as traders”. See also *Import safety. Regulatory governance in the global economy*, edited by Coglianese, Fonkel, Zaring, University of Pennsylvania Press, 2009.

⁸³ See Global Organic Textile Standards, cit., § 4.1.

⁸⁴ See Global Organic Textile Standards, cit., § 4.1.

⁸⁵ See Global Organic Textile Standards, cit., § 4.1.



Figure(s) in bold: coordination role; the degree of coordination is indicated by the thickness of the line (stronger coordination model, if compared with model I)

This scheme extends the reach of coordination along the chain including an important knot, as shown in the previous analysis. Indeed, the involvement of traders within the compliance system may be crucial, given the role that these enterprises are capable of playing in the governance of the global value chain.

In more general terms two factors influence the scope and the extension of certificate requirement: the level of risk contribution (hence the exemption for small scale subcontractors and for retailers not involved in labelling and packaging) and the allocation of value along the chain (hence the exemption of traders who get marginal turnover from certified products sales).

Both these factors play an important role also as regards the identification of the entity requested to exercise due care in ensuring compliance of the products with the standards, this being the one holding the brand of the products as sold to end consumers. Moreover the vicarious liability borne by this brand owner reinforces the effectiveness of the certification system, *de facto* assigning a coordination role to that enterprise.

This illustration would support the hypothesis according to which networks can play a significant role in standard compliance monitoring.

It is important to underline that, unlike the previous model, here coordination is *internal* in the supply chain, though monitoring and compliance assurance are *external* due to the fact that they are conducted by independent third parties in the first place. In contrast, in the previous model the main coordinator was *external* (standard setter and certifier), while certified suppliers were in charge of a generic peer monitoring, without facing any particular sanction for possible lack of intervention. This

demonstrates that contractual supply networks may be used to conducting different forms of monitoring: peer monitoring (see the case under (I)) as well as a monitoring function induced via contractual (vicarious) liability, as in this case (II).

A different issue in the current case relates to the identification of the coordinator player within the supply chain. It can be questioned whether the brand owner is always in the best position to ensure full compliance along the chain and adequately allocate costs (eventually internalising them into the price system for goods and services supplied). It can also be questioned whether this enterprise is always in the best position to coordinate risk assessment, management and communication along the chain, ensuring that all knots have technological, organisational and financial resources or providing himself/herself assistance if needed⁸⁶. In this respect we can comparatively examine option (III) here below.

The coordination and monitoring ability of the final producer/trader could also be influenced by his/her actual bargaining power, as affected by outside options of suppliers. As seen above, a high degree of competition can increase the costs of coordination, making it difficult to deploy networks. In this respect, it can be questioned whether, at least in some circumstances, retailers would be in the best position to coordinate the compliance mechanism.

5.3. The Group's Certification Model: (III) The Case of GlobalG.A.P.

The third example concerns the food safety standard area and in particular the implementation mechanism designed under the GlobalG.A.P. (EurepGap), a private sector body setting voluntary standards for the certification of the production processes of agricultural produce around the world. This initiative was initially promoted by major retailers and is still strongly influenced by them though co-participated by producers as well⁸⁷. Therefore, in terms of regulatory strategy, this case can be presented as a retail-based model, though open to a certain degree of multi-stake participation.

Although G.A.P. standards are pre-farm gate standards (covering the cycle from any step before the plant is in the ground to non-processed end-product), the certification system is intended to be part of a verification mechanism of Good Practices along the whole production chain⁸⁸. As it is shown below, the focus on a relatively integrated segment of the value chain, could be considered as an element favouring the formation of (sub-) horizontal networks due to contribute to the enforcement of the private standard regime.

Furthermore GlobalGap has evolved from a purely safety standard setting organisation into a combination of setting standards also for environmental and worker health and safety⁸⁹. This is a clear sign of single policy regimes moving towards multi-policy in order to internalise, in a single regime, potential conflicts among different policies⁹⁰.

⁸⁶ The issue parallels the one examined by S. Grundmann, *Contractual networks in German private law*, cit., p. 127 as regards the liability of emitting bank for mistakes and loss in bank payment along the payment chain up to the receiving bank. According to this Author “[t]he professional at the end of the chain, as a member of the network and thus who knows it, is in much better position to find the culprit. If recourse moves along the chain, it will automatically find its way to the culprit”. Costs of litigation are not ignored within this perspective although it is argued that these could be kept under control by charging the culprit of these costs and imposing inquiry duties along the chain (Id., p. 129).

⁸⁷ S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 22. On the structure of the organization see GLOBALG.A.P. (EUREPGAP) General Regulations Integrated Farm Assurance, § 3.1 (i): “GLOBALGAP (EUREPGAP) is an equal partnership of agricultural producers and retailers that want establish certification standards and procedures for Good Agricultural Practices (G.A.P.)”.

⁸⁸ See § 3.1, (vi).

⁸⁹ See Global Gap, General Regulations, Integrated Farm Assurance, Part I (General Information), § 2.

⁹⁰ See F. Cafaggi, *The architecture of transnational private regulation*, EUI working paper, 2011.

With regards to compliance assurance, like in example (II), a third party certification system is enacted with the involvement of accredited certification bodies.

If compared with previous examples, we can here recognise the same double set of relations: on the one side, the contractual relations due to govern the exchange of goods and/or services along the chain; on the other, the certification service relations (including the label licensing).

The way in which these two sets of relations are connected and the legal devices used to assure compliance and coordination are quite different from the ones above observed.

Indeed, two implementation mechanisms are included:

- one in which certification is awarded to individual applicants;
- one in which certification is awarded to producer groups⁹¹.

In the former case, the applicant producer shall ensure (by providing correspondent documentation) that any subcontractor is either (a) certified by a third party certification body or (b) assessed by the producer as compliant in accordance with the same criteria⁹². This combination between being subject to third party verification and active monitoring over its own production cycle emphasises the interdependence and coordination of compliance modes along the chain, favouring mutual learning and risk prevention. According to this model, the producer becomes liable for the chain and has to monitor the different tiers to ensure compliance. This type of liability, even if not necessarily combined with legal liability, very likely triggers the creation of a network, led by the producer, to monitor compliance.

In the latter case (the one of group certification), a different type of coordination is envisioned. The certification is assigned to a producer group which proves to be capable of running a quality management system, common for all group's participants. Typically this would be the case for a cooperative where many producers, each one being an independent legal entity join the cooperative. It does not apply to a conglomerate where there are subsidiaries⁹³.

The producers' participants are then subject to the same type of internal control, so that they cannot escape control by selling their product outside the group. Indeed, the collective audit and certification system obliges participants to sell their produce through the group.

The consolidation of the quality management system does not only reduce costs but also enhances the efficiency and effectiveness of the audit by favouring an exchange of information, mutual learning and diffusion of best practices.

In order to enact such a system the group must dispose of a specific organisational structure. Indeed, it must be an entity, legally separate from its own members. The legal "incorporation" of the groups enables the organisation to act on behalf of members and to administer a sanctioning system charged with reinforcing the effectiveness of the implementation mechanism⁹⁴.

⁹¹ On this option, see also S. Henson – J. Humphrey, *The impact of private food safety standards on the food chain and on public standard setting processes*, cit., p. 30.

⁹² See Global Gap, General Regulations, Integrated Farm Assurance, Part I (General Information), § 4.4.2 (Obligations of Producers) (xi) ff.: "Producers shall ensure that any services subcontracted to third parties are carried out in accordance with the requirements of the GLOBALGAP (EUREPGAP) standard. Where subcontractors (such as plant protection product applicators, harvesters, or other agronomic activities subcontracted by the producer, see also Annex I.1 Definitions) have been assessed by a 3rd party certification body which is GLOBALGAP (EUREPGAP) approved, the producer shall receive a report from that certification body where the following information is included (...). In all other cases where the subcontractor has not been assessed by a 3rd party certification body, the producer or the subcontractor needs to supply a self-assessment as required in AF.3.6.1".

⁹³ See Globalgap, General regulations, cit., part III (producer group - option2), § 1 (What is a producer group?).

⁹⁴ GlobalGap, General Regulations, cit., III, § 1.3 (Management and Organisation).

Members are allowed to leave the group and register with another group provided that they have respected the rules laid down by the group and no sanction process is pending against these members⁹⁵.

The organisational structure does not represent the only governance device here deployed. Indeed, this is an organisational network complemented by a contractual scheme.

First, as applicant and then certificate holder, the group is contractually liable *vis à vis* the standard setter (*i*)⁹⁶.

Second, the label license contract is conditional upon certification as provided under the certification service contract with an accredited certifier (*ii*)⁹⁷.

Third, each member signs a contract with the group committing to comply with G.A.P. standards and to be subject to audits and the sanctioning power of the group (*iii*)⁹⁸.

Fourth, each member is obliged to include in any service level agreement or contract with any subcontractor clauses obliging this subcontractor to comply with G.A.P. standards (*iv*)⁹⁹. This compliance may be assessed either by the group's participant outsourcing the service or by an accredited TPC (whose report must be received by the group's participant as well). The standard setter itself has the power to exercise control over certified enterprises' sub-contractors¹⁰⁰. Thus, the certification applies not only to the producer groups but it should also capture the whole chain by requiring monitoring commitment of single participants to monitor its own sub-chain. This means that, although in many cases in practice the producers' group can be seen as a horizontal sub-network (e.g. among strawberries' producers) due to contribute to compliance of certain products with required standards, this sub-network can assume a vertical dimension involving the upper part of the value chain.

The producer group has sanctioning powers, which have to be specified in the individual contracts with the scheme participants. In case of non-compliance corrective measures have to be taken by the non compliant party¹⁰¹. Responsibility for implementing and resolving corrective actions shall be defined in contracts¹⁰². If non compliance persists an escalating system based on warning, suspension and cancellation will have to be contractually defined¹⁰³. A similar sanction scheme is applied by the

⁹⁵ See GlobalGap, General Regulations, cit., I, § 4.4.2, p. 14.

⁹⁶ GlobalGap, General Regulations, cit., III, § 1.2.1: "The legal entity will enter into a contractual relationship with GLOBALGAP (EUREPGAP) through the signature of the GLOBALGAP (EUREPGAP) Sub-Licence and Certification Agreement with a GLOBALGAP (EUREPGAP) approved CB, and becomes the sole holder of the GLOBALGAP (EUREPGAP) certificate.". See also GlobalGap Sublicence and Certification Agreement, art. 4.9 ("GLOBALGAP reserves the right to enforce all provisions made in clause 4 of this agreement directly."); art. 8 ("In the event of a willful or negligent infringement of the obligations under the GLOBALGAP (EUREPGAP) System, in particular obligations that CP has contractually undertaken, GLOBALGAP shall be permitted to enforce the measures described in the List of Sanctions within the General Regulations in its latest version").

⁹⁷ GlobalGap, General Regulations, cit., III, § 1.2.1.

⁹⁸ GlobalGap, General Regulations, cit., III, § 1.2.3.

⁹⁹ See GlobalGap, General Regulations, part III, option 2, § 1.13 subcontractors: "Procedures shall exist to ensure that any services subcontracted to third parties are carried out in accordance with the requirements of GlobalGAP standard".

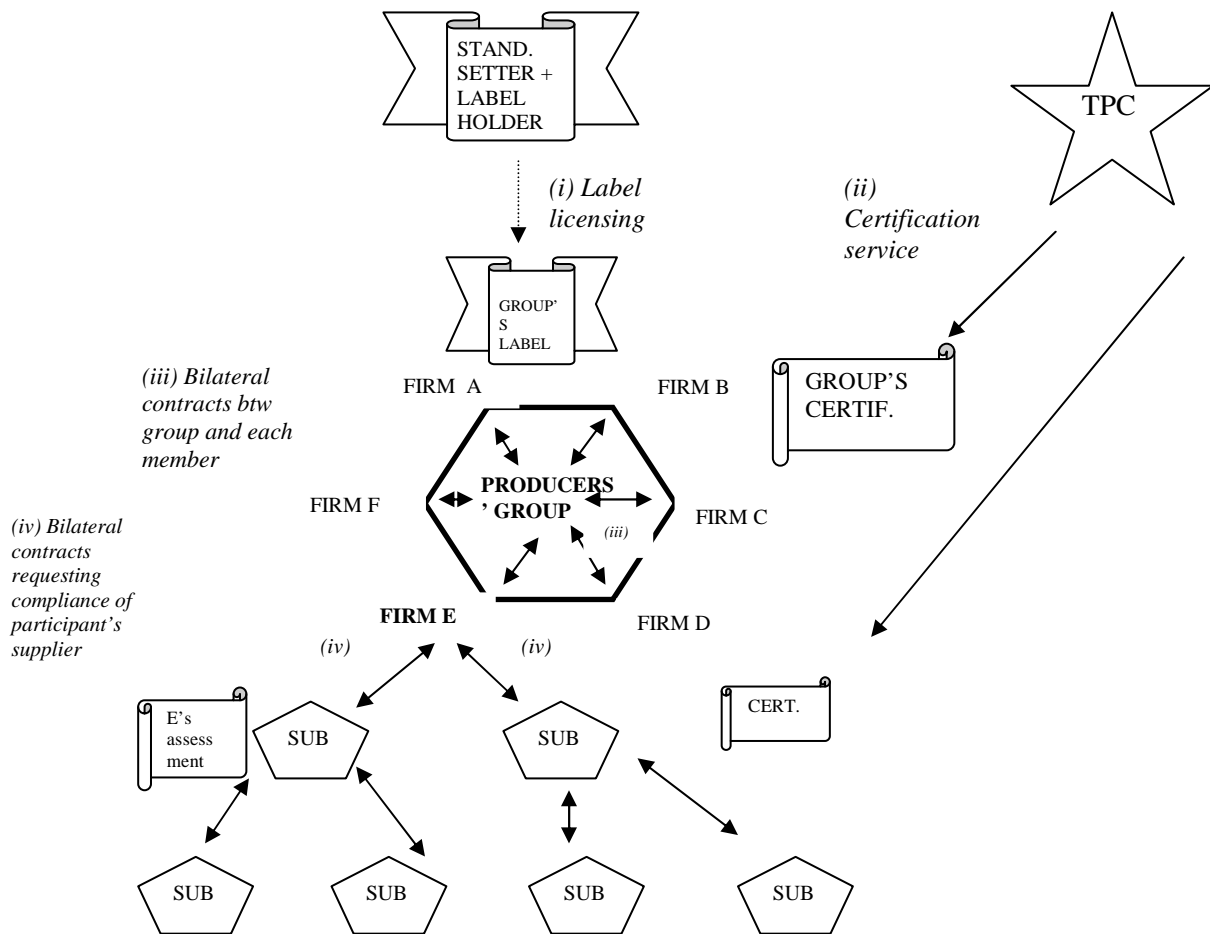
¹⁰⁰ See GlobalGap Sublicence and Certification Agreement, art. 5.2 ("If subcontractors are involved in the production CB and/or GLOBALGAP has the right to perform a full physical inspection of the subcontractor. CP has to ensure that free access as stated in 5.1 is provided by the subcontractor on request.").

¹⁰¹ See GlobalGap, General Regulations, part III, option 2, § 1.9.3 (Non compliances and corrective action systems).

¹⁰² See GlobalGap, General Regulations, part III, option 2, § 1.9.3 (iv).

¹⁰³ See GlobalGap, General Regulations, part III, option 2, § 1.11 (Sanctions of non conformance): "Contracts with individual producers shall define the procedure for sanctions including the levels of warning, suspension and cancellation".

certifier to the group in order to monitor over its compliance. Like in the case described under (II) the standard setter may also exercise some sanctioning power without referring to the certifier¹⁰⁴.



This is an example in which a complex mix between contracts and organisation offers a “chain design” of compliance. The costs of risk assessment, management and communication are collectively borne within the group, being reduced by scale economies and optimised in terms of efficiency. Flexibility is maintained through the use of contracts: not only inside the organisational network, but also outside it, enabling the group to share the coordination role with single participants who are able and willing to govern compliance along “their own” chain.

Conclusively, the combination between organisational and contractual devices within the same network enhances its efficiency and effectiveness:

- the organisation process reinforces the possibility of harmonising the enforcement system and spreading the costs of a professionalised internal audit scheme, while:
- the contracts allow an adequate level of flexibility, as requests can be made to adapt the common management system to a number of different settings.

In this case, a regulatory scheme driven by retailers (also open to the participation of producers) has generated a model of network coordinating compliance with high ability to govern interdependence

¹⁰⁴ See GlobalGap, General Regulations, part I, § 6.3.1.

along the chain and a high degree of responsibility placed on producers if adequately organised. This can be portrayed as an example in which networks of producers contribute to the reallocation of powers along the chain in contexts in which retailers still hold a competitive advantage as standard setters.

When is this network likely to arise? Probably where a certain number of producers share quite similar needs in terms of risk analysis and do not face a high level of competition, while simultaneously being able to take significant advantage from cooperation and competition.

It could be questioned whether the nature of G.A.P. as a pre-farm-gate standard system is relevant under this respect. In fact, at this stage of the production chain, enterprises are extremely fragmented and often individually unable to make relevant investment in risk analysis. Although competition among farmers might be high, the firm's size may not allow the attainment of a minimum level of competitiveness without networking.

As we see below, alternative schemes of coordination may exist as generated by the same (or a similar) regulatory scheme, depending on market conditions and the ability of producers or retailers to engage in network design.

5.4. Comparing the Three Cases.

The examination of third party certification schemes sheds some light over the impact of private regulation through standards on the structure of the supply chain. A "network response" to the need for effective compliance along the whole processing and, sometimes, distribution chain can be observed. A concurrent impact on contractual governance of the supply chain also emerges as a consequence of transnational private regulation.

In general terms the network establishes a coordination system to favouring information flows among enterprises involved in the same chain, to identifying technical and operational measures aimed at ensuring compliance with regulatory standards, to reinforcing monitoring through inspection and sanctioning schemes.

Different types of networks emerge depending on the model of standard regulation and the adopted third party certification scheme.

Particular attention has been paid to (1) the relation between standard setting and monitoring and to (2) the scope of standards and compliance mechanisms as applicable along the value chain pursuant to the "holistic approach" above described.

(1.a) Under the former perspective the examples show that, when standards are defined by research institutions or assurance services enterprises, distinct from producers operating in the relevant value chains (this is the case under I)¹⁰⁵, the same standard setter may operate as certifier without infringing the independency requirement stated for TPC schemes (intended as independency from enterprises acting along the value chain, namely producers, traders and retailers)¹⁰⁶. The same entity can then be in charge of monitoring compliance, certifying such compliance and licensing the use of label/trademark linked with the standard, which is normally owned by the standard-setter (here also

¹⁰⁵ Under this respect the analysis partially builds on the conventional distinction between state-driven, companies-driven and NGOs-driven standards, as elaborated by Abbot and Snidal (K. Abbot – D. Snidal, *Strengthening international regulation through transnational new governance: overcoming the orchestration deficit*, in *Vand. Journ. Trans. Law*, 42(2), 2009, p. 501 ff).

¹⁰⁶ See M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit.; G. Gereffi - R. Garcia-Johnson - E. Sasser, *The NGO-Industrial Complex*, cit., p. 58. See also A. Marx, *Global governance and the certification revolution: types, trends and challenges*, cit., p. 592, where a distinction between standard setter and independent certifiers seems to be assumed in TPC.

certifier). A single bilateral contract normally regulates the supply of all these services to the enterprise applying for certification. In order to be effective and consistent with the “holistic principle”, the monitoring function of the standard setter/certifier needs to be complemented by some form of contributory monitoring as enacted by suppliers and manufacturers operating along the supply chain who are requested to: (i) provide the certifier with full information about the enterprises due to intervene in the production process; (ii) report any type of infringement of the standards. These duties, as imposed within each assurance service contract between the certifier and the certified enterprise, induce a form of contractual link between such contracts and the supply contracts used to exchange goods and service along the (regulated product/service) value chain. This link generates a contractual network which combines (external and) independent monitoring by the standard setter/certifier and (internal) peer monitoring among the certified enterprises. It also represents an attempt to “contractualize” peer monitoring practices beyond the scope of bilateral contract relations between clients and contractors operating along the supply chain.

(1.b) A different setting emerges when standard setters are institutions directly or indirectly participated by producers and/or retailers¹⁰⁷. This is the case covered by the examples described under (II) and (III). Then the TPC scheme needs to ensure the certifiers’ independency by introducing some level of separation between standard setting and monitoring. The separation between standard setting and certification induces the formation of a more complex network, in which assurance services contracts (for monitoring and certification) and licensing contracts (for the use of label and trademarks, as normally owned by the standard setter) may follow different paths or at least generate multiple contractual relations with the certifier and the standard setter, respectively. Indeed, even when the main contractual relation is formally established by the applicant firm with the certifier (being the trademark sublicensed to the applicant by the standard setter via the certifier), the certificate holder is also responsible *vis à vis* the standard setter and subject to its sanctioning power.

Then, despite the initial separation between standard setting and monitoring, in fact multiple actors contribute to monitoring, including, to some extent, the standard setter. A more complex network needs then to coordinate standard setter’s and certifiers’ powers with a view to an effective control over standard compliance, as it is shown in the examples under (II) and (III).

(2) The structure of the network may also depend on the scope of the regulatory scheme as regards the extent of the value chain due to be monitored.

(2.a) Under this respect, if the focus is on a relatively integrated segment of the value chain, characterized by enterprises with relatively similar economic structure, managerial capability and economic power along the supply chain (like in the example of pre-farm gate standards, as described under (III)), then the network might more easily include a sub-network, which horizontally crosses the value chain, including several enterprises operating in that integrated chain segment (e.g. strawberries’ producers). This sub-network plays an important role, as special regards small and medium enterprises’ capability to comply with standards: indeed, it provides qualified services to members in order to sustain such capability and includes a monitoring and sanctioning function to increase the effectiveness of the standard scheme from the inner part of the chain.

(2.b) Otherwise, when the scope of the standard and certification scheme is to extend the certification along the whole chain from raw materials suppliers to traders (like in the II case scenario), then a more diversified allocation of economic power and compliance capability along the chain may generate a different type of network to enforce the standards and monitor over their compliance: here a single enterprise in the value chain could be identified to coordinate compliance along the chain being considered responsible for product conformity. This role is normally assigned on the basis of the enterprise’s capability to exercise effective control over the supply chain, being this capability induced by technological or managerial primacy. However, in fact, this assignment is also influenced by the

¹⁰⁷ On the distinction between state-driven, companies-driven and NGOs-driven standards, see above footnote n. 104.

market structure and herein by additional factors generating power asymmetry along the chain (e.g. oligopolistic demand of goods or service provided by highly fragmented suppliers).

In both cases (here described under 2.a [case III] and 2.b [case II]) the monitoring scheme organised by the network is enriched coupling external regulatory (by certifiers) and internal contractual monitoring: in case under III an horizontal (sub)network is established for this purpose; in case under II the function of internal monitoring is assigned to the chain leader of an already existing vertical contractual network as established for goods and services supply along the chain. Differently, in case under (I), external monitoring by certifiers is coupled with some form of peer monitoring among certified producers, without identifying, on the mere basis of networks' rules, a chain coordinator that could be held responsible for standard compliance by the chain.

In the perspective of contractual governance of the supply chain, these monitoring techniques could be seen as different attempts to "contractualize" peer monitoring practices along the chain. This happens when the licensing contract requests the certified enterprise to monitor over other enterprises' compliance along the chain. Contractual liability measures, including certificate's cancellation, will then contribute to enact such monitoring duties as provided under the certification service and licensing contract. Depending on the extent of the monitoring practices (whether referred to the certified own contractors or to any other actor operating along the chain), this mode of contractual governance can stay within or go beyond the boundaries of bilateral relations privacy.

Of course, this analysis does not consider (neither ignores) the role that public regulation of product liability and product safety can play while defining, even out of a private design of networks for standard compliance, liability regimes based on the whole chain approach¹⁰⁸. Indeed, the hypothesis according to which liability can trigger coordination mechanisms and hence the formation (or transformation of existing) networks may hold in both cases of public and private regulation of liability.

The combination between monitoring systems which are internal and external in respect of the value chain, as just described, also contributes to shed light on the second correlation above mentioned: the one between private standard regulation and contractual governance of the value chain.

Indeed, as seen in the perspective of the contractual relations between enterprises operating within the same certified product value chain, the adoption of a third party certification scheme changes the rules of contractual performance and enriches the set of remedies applicable against non-performance. Like in other collaboration contracts characterised by high interdependence among performance due by different parties along the chain, information exchange, error detection practices, performance adjustments play an important role within the contractual relation¹⁰⁹. Other practices are concurrently relevant for reasons specifically related with standard implementation. Benchmarking mechanisms become more and more common as a means to operationalize standard compliance¹¹⁰. Furthermore, external and independent actors contribute to monitor over performance improving the observability of compliance. In many cases, given the nature of standards, tangible and intangible aspects of the

¹⁰⁸ See, for example and in particular, Regulation (EC) n. 178/2002 of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety, part. art. 19.2: "A food business operator responsible for retail or distribution activities which do not affect the packaging, labelling, safety or integrity of the food shall, within the limits of its respective activities, initiate procedures to withdraw from the market products not in compliance with the food-safety requirements and shall participate in contributing to the safety of the food by passing on relevant information necessary to trace a food, cooperating in the action taken by producers, processors, manufacturers and/or the competent authorities".

¹⁰⁹ G.S. Geis, *The Space between Markets and Hierarchies*, cit.; M.M. Blair – E. O'Hara, *Outsourcing, Modularity and the Theory of the Firm*, mimeo, 2008, available at <http://law.vanderbilt.edu>.

¹¹⁰ WTO, Committee on Sanitary and Phytosanitary Measures, *Private Standards and the SPS Agreement*, 24 January 2007 (07-0335).

performance become observable (especially when safety standards are joined with social standards, concerning labour practices or alike)¹¹¹.

Moreover, effectiveness in reacting to standards' violation is more easily ensured: indeed, the TPC scheme tends to provide corrective measures more than compensatory ones; it tends to grade measures in respect of type of violations to a larger extent if compared with conventional regimes for breach of contracts; as seen above, in some cases it introduces forms of vicarious liability, inducing coordination mechanisms along the chain, also when public regulation fails to do that¹¹².

It should be said that this form of impact of the private standard regime on contractual governance can be observed also out of the explicit reach of TPC scheme. The previous analysis shows that, at least in the observed cases, unless in charge of packaging, re-packaging and/or labelling, retailers are not normally subject to the certification requirement. This cannot mean that they are external in respect of the compliance network (this even leaving apart their role within standard setting). Indeed in most cases compliance with private standard is requested in the supply contract itself as signed between supplier and retailer and certification is a contractual obligation besides being a condition for the use of a given trademark/label associated with the standard¹¹³. Depending on the type of value chain, on the competitive or oligopolistic nature of the market and on the type of standard (requesting more or less specific investments for the compliant enterprise), this mix between TPC monitoring and contractual monitoring over performance may either reinforce the hierarchical nature of some value chains or counterbalance a pre-existing allocation of powers within a given contractual relation.

6. Concluding Remarks

In this paper we have addressed the relationship between transnational regulation and industrial organization.

We have shown that there is a mutual interaction:

- the structure of the supply chain influences the selection of regulatory strategies, in particular the choice between hierarchical command and control and responsive or market based;
- the selection of the regulatory strategy affects the shape of the supply chain, the distribution of power and values along the chain and the structure of markets; more particularly: (i) regulation and civil liability increase interdependence and can promote the formation of different types of organizational responses, among which we have concentrated on networks; (ii) the choice of regulatory schemes influences contractual governance along the value chain.

The main focus of the paper has addressed the latter relationship, aiming to identify and compare different models of networks and to analyse their impact on contractual governance.

Networks are deployed in supply chains both for standard setting and for implementation of regulatory regimes. In this contribution the focus was on implementation linking the creation of network to monitoring compliance. The use of the network form for standard setting both in the public and private domain has been widely investigated while less attention has been devoted to implementation.

We have provided a few concrete examples in the field of safety regulation distinguishing between food and non food, highlighting that different types of regulation generate networks with different forms of monitoring: peer and hierarchical. In particular, examining certification, we have shown that

¹¹¹ F. Ciliberti – G. de Groot – J. de Haan – P.P. Pontrandolfo, *Codes to coordinate supply chains*, cit., p. 118.

¹¹² On the impact of private standard regulation on contractual governance, see F. Cafaggi, *Compliance and remedies of regulatory provisions in transnational commercial contracts*, in file with the author.

¹¹³ See M. Hatanaka – C. Bain – L. Busch, *Third-party certification in the global agrifood system*, cit., p. 359; D. Fuchs – A. Kalfajanni – T. Havinga, *Actors in private food governance*, cit., p. 354.

networks with different organizational complexity are generated: ranging from light contractual to a complex mix between organizational and contractual in order to cover the upper part of the supply chain.

The analysis shows that in practice differences between networks aimed at monitoring standards compliance may depend on who establishes the regulatory schemes, this being driven by producers, retailers or independent actors (like research institutes) and on the extent to which the certification requirement is imposed along the chain (this including also traders and sometimes retailers or not).

Indeed, looking at the first element, the involvement of producers and retailers in the phase of standard setting, while inducing some level of separation between standard setter and certifier in order to ensure the independence of the latter and so increasing the number of specialized actors, generates higher need for coordination.

Looking at the extent of the certification scheme (as involving or not traders and retailers as certified actors), we have observed the development of sub-networks as structures due to contribute to monitoring over standard compliance through a mix of internal control (by producers' groups or hierarchical contractual networks along the value chain) and external control (by certifiers). Here the analysis suggests that the more the scope of the private standards scheme is referred to a relatively integrated segment of the value chain operated by relatively homogeneous groups of producers (with similar structure, managerial capability, economic power), the more the sub-network takes the form of a horizontal organizational network; by contrast, a more extended reach of regulatory scheme, directly involving traders and, eventually, retailers (as mostly holding stronger economic power along the chain), triggers forms of vertical coordination mostly led by single enterprises through hierarchical contractual networks.

These hypotheses would need further evidence and examination and represent one of the possible premises of a future research agenda.

Not only private standards schemes influence the formation of networks to enhance coordination in compliance by different actors along the chain. By doing so, they also influence contractual governance of the value chain.

Indeed, the incorporation of clauses and terms referring to regulatory standards, both public and private, changes the monitoring structure of the exchange contract which becomes embedded into a network framework. Contractual performance of the regulatory provision constitutes, at the same time, an obligation owed to the other contractual parties, and also a duty to implement the regulatory regime of which the party is a member. Compliance with contractual performance obligations thence becomes an issue involving third parties who monitor and sanction the breach when it also constitutes a violation of those regulatory regimes. Performance of obligations of transnational regulatory provisions in commercial contracts along supply chain is therefore monitored by multiple actors who operate within separate, yet connected regimes. Compliance with regulatory provisions is subject to first party monitoring by the buyer, and third party monitoring by the certifier and by the regulatory body, which has promoted/imposed compliance with the code of conduct or the framework contract. In theory, the regulatory part is separated from the commercial part, which remains primarily regulated by the more conventional instruments. Clearly, however this separation is artificial and the overall monitoring function is the outcome of the interaction among the various involved parties.

This architecture influences the observability of performance, increasing monitoring costs but potentially decreasing the risk of default or at least mitigating its consequences. While the main focus is on the regulatory compliance clearly the overall contractual performance is subject to higher monitoring than the normal commercial contract. Monitoring affects not only the stage of performance but also sanctioning since the main objectives of remedies is to restore compliance rather than compensation. Cooperative remedies existing for regulatory non-compliance may thence also affect the resolution of strictly commercial disputes.

This approach is consistent with regulatory objectives within the safety domain. What is relevant in safety, public and private transnational regulation, is that regulation has to respond to the emergence of hazards over time and corrective measures have to be taken when mistakes are made. Compliance is the combination of measures to define *ex ante* the hazard control system and to ensure its proper functioning over time. Coordinated responses along the chain have to be promptly offered and certification schemes have to ensure that the organizational structure is adequate to meet regulatory requirements. The goal is broader than abiding by the rules: the objective is to comply with regulatory objectives.

Approaches change both across sectors and within sectors because each supply chain features specific relationships and power distribution. The endorsement of the supply chain approach in the food sector clearly increases the use of sophisticated organizational forms to implement private regulation or to respond to liability regimes.

Further empirical research is needed to analyse the correlations between regulation in a broad perspective and the evolution of organizational models within and across sectors. On the one hand, along the lines indicated by economic sociology and neo-institutional economics, attention should be paid to the correlation between different types of supply chains and regulatory outputs, considering not only the type of standards but also their modes of implementation. On the other hand empirical research is needed to document how the adoption of a particular regulatory regime affects the formation of networks or groups, the degree of vertical integration or disintegration of the chain.

