



Contract No.: FP7-KBBE-2009-245003

## **Transparent\_Food**

*Quality and integrity in food: a challenge for chain communication and transparency research*

Coordination and Support Action – CSA

Food Quality and Safety

# **D 5.4 Final summary report integrating findings from Tasks 5.1 - 5.3 in terms of research needs**

Due date of deliverable: Project month 14 (January 31, 2011)

Actual submission date: March 30 2011

Start date of project: 01 December 2009

Duration: 24 months

Lead Contractor for this Deliverable: City University, London

<b>Project co-funded by the European Commission within the Seventh Framework Programme (2007-2013)</b>		
<b>Dissemination Level</b>		
<b>PU</b>	Public	
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	<b>X</b>
<b>RE</b>	Restricted to a group specified by the consortium	
<b>CO</b>	Confidential, only for members of the consortium	

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<b>Deliverable datasheet</b>	
Project acronym	Transparent_Food
Project full title	Quality and integrity in food: a challenge for chain communication and transparency research
Project contract No.	FP7-KBBE-2009-245003
Dissemination level	PP
Official delivery date	31 January 2011
Organisation name of lead contractor for this deliverable	City, UK
Authors	Dr David Barling (City) Dr. George Chryssochoidis (R Labs) Donna Simpson (City) Dr. Olga Kehagia (R Labs)
Editing	City, UK
Version and date	V1 / 30 March 2011
Approved by	Prof. Dr. Schiefer, Gerhard (UBO)

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## EXECUTIVE SUMMARY

This report has summarised the five broad areas of research needs were identified with specific research questions elaborated within each of the areas of research need. Within each of these areas there are a list of research questions identified that merit deeper investigation.

The **five broad areas of research need** and the **research questions** identified are:

### **1. Further investigation of the relation between certification schemes to corporations' own sustainability focused supply chains.**

1.1 To what extent are retailers and manufacturers developing their own sustainability focused supply chains and standards and how is this impacting on their use of third party certification schemes?

### **2. Investigation of the relation between certification schemes to public policy regulation of food and agricultural product and food marketing standards.**

2.1. What differences exist, if any and if so why, between public and private food labeling and logo based standards and certification schemes in terms of information transparency and disclosure?

### **3. Deeper and wider analysis of the ways signals and the forms of transmission are received and perceived by stakeholders and consumers.**

3.1. Identify the areas where specified consumer audiences or groups of citizens currently perceive a lack of adequate or relevant information and signals in order to realise their own goals as consumers or as citizens.

3.2. Identify the information/signals (label/non-label) that are incompatible with consumers' decision-making routines and practices. Consumers can find themselves overloaded with information. Work on risk communication has identified that it is the quality rather than the quantity of information that is most effective.

3.3. What are the information/signals (label/non-label) that are considered to be incomprehensible, according to different segments of consumers? Furthermore, in such circumstances, how do consumers attempt to make decisions on different qualities or integrity of their food in such circumstances? For example, what are the cues that consumers seek and where do they look for such cues? This may or may not

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link the role of food chain stakeholders in presentation of information in relation to consumer choices.

3.4. Which are the dimensions of information to use (what is timely, relevant, comparable, complete, easy to understand, accurate, valid and reliable) and how these differ due to the divergence in the underlying nature of pertinent issues (ranging from positive/enhancement to negative/controversial) as well as the process of such information disclosure?

3.5. Where along the food chain do consumers and citizens want more information about the history and composition of their food? What are the information hotspots in food chains that are in need of greater transparency?

3.6. How do these demands for information vary according to consumers' priorities and their own identities of consumers and citizens?

**4. Establishing consumer trust, the role of the media and managing the transition to greater transparency.**

4.1. How can authorities and the food chain establish suitably robust and effective risk processes and institutions to ensure high levels of consumer trust in the food chain?

4.2. What exact role does the media play in a) both generating and altering consumer/public targeted information disclosure, and b) the portrayal of supply chain transparency efforts?

4.3. How do public institutions and the food chain manage the transition from current levels of information disclosure ('less-transparent') to an environment characterized by greater information disclosure ('more-transparent')?

**5. A comprehensive review and systematic mapping of emerging and prospective technologies used by stakeholders & consumers for transmission of signals.**

5.1 What are the key information technology developments that will enhance the current states of transparency and information communication along food chains and how will they enable consumers and citizens to gain access to information?

## **1 INTRODUCTION**

This summary report draws together the findings of all the deliverables and identifies research needs from work package 5. Work package 5 was tasked with the objective of presenting comprehensive analysis on the following:

- The variety, forms and methods that signals are presented and transmitted to consumers by food chains.
- How consumers react to the information and signals including the potential 'trade offs' that occur in making purchasing decisions
- The responses and perceptions of stakeholders & policy makers regarding the role of signals and their effectiveness.

## 2 METHODOLOGY

This summary report draws together the findings of the deliverables achieved in work package 5 and from these findings identifies future research needs. The work upon which the research needs is based relies on a mixed methodology determined by the specific demands of each task and deliverable. The methodological approach is detailed in full in each separate deliverable. In summary, however, deliverable 5.1 involved consultation with stakeholders regarding the effectiveness of existing signalling practices. Discussion and consultation was necessary because of the absence of literature and research focusing on stakeholder perceptions, rather than consumer perceptions. In contrast, the next deliverable (5.2) drew on a wide range of literature and reviewed insights from a number of scientific disciplines to develop a theoretical framework concerning the disclosure of information and creation of signals to consumers. Achieving the completion of deliverable 5.3 relied on reviewing EU legislation and public policy documents that made reference to logos and labelling. A more itemised set of research needs is located in each deliverable.

### 3 SUMMARY FINDINGS AND RESEARCH NEEDS

This section identifies and explains the research needs based on the findings of the previous deliverables in WP 5. The issue of transparency in food chains can be approached from a number of starting points. The departure point for this summary of research needs arising from the work in WP 5 is that greater and appropriate transparency can be a facilitator for innovation and change to a more sustainable food system. That is a food system that is more sustainable environmentally, socially and ethically, and ultimately economically. Information in food chains and the transmission of that information in ways that are effective through being informative to the recipient are important elements of transparency that can promote innovation and change.

***Research Need 1: Investigation of the relation between certification schemes to corporations' own sustainability focused supply chains.***

This research need was generated by the exploration of the perceptions and experiences of stakeholders. These also included eliciting evaluations of the effectiveness of systems for producing and transmitting signals about food to consumers and from business to business. In reflecting on their experiences and sharing perceptions, stakeholders revealed that the utilisation of some certification schemes enabled them to meet their own agendas and aims, especially in the context of environmental impacts and sustainable food production. In addition, some retailers claimed to be more than 'users' of schemes but indicated that they had some leverage in discussions around standard setting. A key contributory factor is the use of schemes by specific stakeholders is the validity and credibility conferred by third party independent schemes concerning messages signalled to consumers.

While stakeholders emphasised the role of certification schemes in signalling messages and providing credible information to consumers, some also revealed that the reliance upon them is partial. This is because certification schemes are yet to be comprehensive in their coverage of different types of commodities and/or limited geographical sourcing or in the scope of what they cover in relation to the food product.

Consequently, in order to achieve goals around sustainability, some market innovators (retailers and manufacturers) are seeking to develop their own product supply chains that embed sustainability. Such efforts may be signalled to consumers directly via food products but are communicated also through non-label provisions of information, such as annual corporate responsibility and sustainability reports. These "first mover" retailers and manufacturers appear to be seeking to:

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- a) strengthen their business model to make it more sustainable and resilient; particularly in terms of both their natural resource impact and the resilience of the supply chain sourcing of food commodities and produce; and,
- b) reinforce their own brand in their attempts to create sustainably based supply chain strategies.

A key research need is based on the need to investigate more fully the contexts in which certification schemes are utilised by stakeholders (and when they are not). For example, this will involve exploration of the extent to which certification schemes will feature as a tool to signal information to consumers in the future, or, as revealed here, if retailers and manufacturers will develop their own sustainability focused supply chains and standards and thus rely less on third party certification schemes. A further development might involve greater collaboration between certification scheme owners and retailers over standards and commodity areas covered by existing schemes (as stated this exists already to some extent).

Attention was given (in Deliverable 5.1) to the contribution of corporate brand/s as a vehicle for signalling messages to consumers. Clearly brand/s are both a tool in the repertoire available to corporate stakeholders for signal management but at the same time, are a value and concept around which more specific and focused signals seeks to enhance and reinforce. Thus, in examining further the different roles of certification schemes and buyer led (manufacturer, retailer and food service company) supply chains the relationship to corporate brand strategies will need to be examined as part of the broader study of corporate supply chain strategies.

Hence the following **research question** arises:

*1. To what extent are retailers and manufacturers developing their own sustainability focused supply chains and standards and how is this impacting on their use of third party certification schemes?*

**Research Need 2: Investigation of the relation between certification schemes to public policy regulation of food and agricultural product and food marketing standards.**

A further dimension of food transparency schemes is the role of public policy and regulatory mandated labelling of food and agricultural products and the related standards for the marketing of food. Deliverable 5.3 examined the use of labelling as policy mechanism to further the EU's policy aims. Primarily, the policy aim behind the use of labeling is to enable consumer choice, trust and confidence in the food sold across the single European market. Labelling is used also to identify and signal minimum regulatory standards (e.g. organic production) in the European market. In addition, food labelling is used as a policy instrument to achieve specific policy goals. Food labeling that seeks to inform consumers about the nutritional composition of foods aims to contribute towards specific policy goals linked to improving public health and reducing obesity. In addition, the development of food transparency schemes in relation to environmental impacts and production process methods are considered a) a sufficient response to consumer demand b) to have the potential to provide benefits for producers and c) to contribute towards policy goals around sustainability.

Private schemes are ahead of legislation on signaling environmental and social and ethical impacts of food, and in some areas, such as Fair Trade, the European Commission considers the innovation and dynamism of private market based schemes to be the more effective approach at present. Conversely, the aspiration to further regulation based or mandated food labeling schemes is still restricted by lack of clear and accepted methodologies to provide a basis for clear measurement of the impact of a food process or of the final product. This is the case with animal welfare and carbon impacts at present. However, private initiatives are in the market with regard to these impacts. Hence, the scope of what is covered by food labeling and logos is dynamic and evolving. The role of regulated or mandatory standards or metrics for food labeling schemes reflects the complexity of the ever-broadening food policy landscape and this is set to continue. At the time of writing the EU EcoLabel is being reviewed to cover food products (under DG Environment).

This leads to a **research question** around the relationships between mandatory or regulated standards and transparency and private standards and transparency:

*2.1. What differences exist, if any and if so why, between public and private food labeling and logo based standards and certification schemes in terms of information transparency and disclosure?*

**Research Need 3: Deeper and wider analysis of the ways signals and the forms of transmission are received and perceived by stakeholders and consumers.**

Work package 5 clearly identified a range of signal areas: food safety, food quality, health and dietary related signals, social and cultural, origin, environmental impacts and sustainability and, animal welfare. Some of these signals were identified as being particularly challenging to send to the consumer(s), in particular, these were: food safety, origin, environmental impacts and sustainability and, animal welfare. The identification of signal areas provides a basis for further research. How are areas for signal focus decided? For example, with an issue that is rising in public and industry prominence such as the carbon content of a food product, how is the signal arrived at? What are the metrics that lay behind the signal? How are they related in form and content?

Deeper and wider analysis is required because signal areas are subject to diverse modes of transmission. These range from mandatory labelling (i.e. through the use of text-only e.g. food allergens) to voluntary certification schemes (i.e. fair trade schemes). How do the signal senders develop the signals? For example, how do the signal senders seek to overcome ambiguity and confusion concerning signals? For some stakeholders, consumers' receiving the intended signals of stakeholders was a consequence of a range of factors including: clear and simple methods of transmission, the wider role of society in engaging in and reporting of debates linked to particular signals and, the interest and willingness of consumers to 'receive' or understand.

In spite of efforts of stakeholders to provide clear and relevant information to consumers' confusion and 'blurriness' regarding the reception of certain signals exists. Work package 5 focused on stakeholders and consumers' experiences of signals. The research need identified stems from a recognition that an approach which accounts for the perceptions of specific meanings of signals of both consumers and stakeholders. For example, as clearly demonstrated (in D5.2), 'organic' as a signal is intended to indicate a PPM but it is perceived and received by consumers as a 'healthier' choice than other non-organic alternatives. Required in future research in this area is therefore greater investigation of how to overcome the mismatch between the sending and receiving of signals from stakeholders to consumers.

Further reasons for the challenge around the sending of signals exist. For example, food safety is a non-competitive issue and for reasons of wider market stability and confidence, food safety is not explicitly signalled. Thus one research need involves greater exploration around what kinds of signals and methods of signalling are required by consumers in order

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to assure them in their food purchases and, if this differs during periods of 'negative' information provision (i.e. during moments of food chain 'crisis' such as disease outbreak).

In the case of consumers' perspectives the deliverable 5.1 highlighted the following **research questions**:

*3.1. Identify the areas where specified consumer audiences or groups of citizens currently perceive a lack of adequate or relevant information and signals in order to realise their own goals as consumers or as citizens.*

*3.2. Identify the information/signals (label/non-label) that are incompatible with consumers' decision-making routines and practices. Consumers can find themselves overloaded with information. Work on risk communication has identified that it is the quality rather than the quantity of information that is most effective (see deliverable 5.2).*

*3.3. What are the information /signals (label/non-label) that are considered to be incomprehensible, according to different segments of consumers? Furthermore, in such circumstances, how do consumers attempt to make decisions on different qualities or integrity of their food in such circumstances? For example, what are the cues that consumers seek and where do they look for such cues? This may or may not link the role of food chain stakeholders in presentation of information in relation to consumer choices.*

*3.4. What are the dimensions of information to use (what is timely, relevant, comparable, complete, easy to understand, accurate, valid and reliable) and how these differ due to the divergence in the underlying nature of pertinent issues (ranging from positive/enhancement to negative/controversial) as well as the process of such information disclosure?*

Current efforts to increase the disclosure of information on food chain activities to the public, in order to improve transparency may not necessarily lead to more effective or consistent results in every case. Fostering a more targeted transparency may be a more effective approach towards social and business actions. These targeted demands will also ensure that transparency is sustainable, that is the metrics and methods employed improve over time, and the information becomes more relevant<sup>1</sup>.

Hence, further **questions for research** are around:

*3.5. Where along the food chain do consumers and citizens want more information about the history and composition of their food? What are the information hotspots in food chains that are in need of greater transparency?*

*3.6. How do these demands for information vary according to consumers' priorities and their own identities of consumers and citizens?*

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<sup>1</sup> Fung, A. Graham, M. & Weil, D. (2007) Full Disclosure: The Perils and Promise of Transparency Cambridge University Press New York.

These research questions need to focus on different types of food product as well as there will be variation across different food types and their final make up (e.g. fresh, processed, highly manufactured, ready meals etc.)

***Research Need 4: Establishing consumer trust, the role of the media and managing the transition to greater transparency.***

The deliverable 5.2 disseminated the extensive work carried out on trust and risk. Food crises have been a recurring feature on the European market in recent decades leading to an increased research into risk and risk perception amongst European publics. Trust is a social phenomenon has attracted substantial research attention. Understanding actors' own perceptions of trust is fundamental for transparency and information disclosure processes to work effectively. Work on risk perception has covered food as well as other areas. Chryssochoidis *et al.* (2009)<sup>2</sup> review of research studies identified the following trust-related factors: (a) information-related characteristics (b) risk-related characteristics (c) institutional characteristics (d) individual socio-cultural and personality characteristics. From this wide ranging review on the shaping and the enhancement of consumer trust, there emerges some very pertinent points for future research on food transparency in relation to consumer trust and risk management strategies and processes. The research questions generated are:

*4.1. How can authorities and the food chain establish suitably robust and effective risk processes and institutions to ensure high levels of consumer trust in the food chain?*

*4.2. What exact role does the media play in*

*a) both generating and altering consumer/public targeted information disclosure*

*b) the portrayal of supply chain transparency efforts?*

*4.3. How do public institutions and the food chain manage the transition from current levels of information disclosure ('less-transparent') to an environment characterized by greater information disclosure ('more-transparent')?*

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<sup>2</sup> Chryssochoidis, G., Starda, A. & Krystallis, A. (2009) Public Trust in Institutions and Information Sources; towards integrating extant knowledge, *Journal of Risk Research*, 12 (2): 137- 185.

**Research Need 5: A comprehensive review and systematic mapping of emerging and prospective technologies used by stakeholders & consumers for transmission of signals.**

Deliverable 5.1 revealed that stakeholders raised the possibility of future signalling practices that will increasingly rely on technology at both the point of purchase and post-purchase. This includes the use of hand held devices and greater use of RFID technology in the future. In addition, advances in semantic web technology will allow for much more sophisticated information to be collated, disseminated and delivered to mobile devices at point of purchase (in store or when ordering via the web), and post purchase in response to specific questions about products being or having been purchased. The growth of ‘infosumerism’ will enable interested and attentive publics to demand more information and transparency about their product purchasing. Hence, greater use of traceable information will be made. Technology, as revealed by some stakeholders, has the potential to facilitate participatory forms of transparency and disclosure in which actors along the supply chain can make specific information requests, or, in the case of producers, can allow for greater elaboration on the information currently shared. Thus, for example, origin as a signal has the potential to go beyond a reference to a national location or address of manufacture but can also be a point upon which information about producers and their localities are shared.

The mapping of signal related technologies would not only plot the developments and uptake of existing and emerging technologies but also illustrate the areas around which there are barriers to the effective transmission of signals. For example, as established in work package 5, an absence of clear and agreed methodologies exists in some signal areas (animal welfare, carbon content etc.). Consumer engagement on the use of technologies, including the accessibility of such would also be integral to future research in this area. Further, a key question centres on the extent to which trust is facilitated or obstructed by the use of the new emerging technologies. A potential point of comparison exists with the emerging technologies and the relatively well-established customer care telephone lines. The latter represents non-label method of provision of information and an opportunity to elaborate on initial signals sent to consumers.

This leads to further **research questions** about the impact of new communication and web technologies:

*5.1 What are the key information technology developments that will enhance the current states of transparency and information communication along food chains and how will they enable consumers and citizens to gain access to information?*

The question of trust was addressed more explicitly and comprehensively in deliverable 5.1 and was addressed under the previous research need.

## 4 SUMMARY AND CONCLUSION

This report has summarised the five broad areas of research needs were identified with specific research questions elaborated within each of the areas of research need.

The five broad areas of research need identified were:

1. Further investigation of the relation between certification schemes to corporations' own sustainability focused supply chains.
2. Investigation of the relation between certification schemes to public policy regulation of food and agricultural product and food marketing standards.
3. Deeper and wider analysis of the ways signals and the forms of transmission are received and perceived by stakeholders and consumers.
4. Establishing consumer trust, the role of the media and managing the transition to greater transparency.
5. A comprehensive review and systematic mapping of emerging and prospective technologies used by stakeholders & consumers for transmission of signals.

Within each of these areas there are a list of research questions identified that merit investigation.

## CONSORTIUM

	Department for Food and Resource Economics, University of Bonn ( <b>UBO</b> )	Germany
	Kuratorium für Technik und Bauwesen in der Landwirtschaft e. V. ( <b>KTBL</b> )	Germany
	Department of Food Biotechnology and Food Process Engineering, Technische Universität Berlin ( <b>TUB</b> )	Germany
	The European Association for Food Safety ( <b>SAFE</b> )	Belgium
	The Swedish Institute for Food and Biotechnology AB ( <b>SIK</b> )	Sweden
	Faculty of Agricultural Sciences, University of Aarhus ( <b>AU</b> )	Denmark
	Centre for Food Policy, City University London ( <b>City</b> )	United Kingdom
	RLabs Market Research Ltd. ( <b>RLabs</b> )	Greece
	Faculty of Bio-engineering, Department of Agricultural Economics, Ghent University ( <b>Ugent</b> )	Belgium
	Campden BRI Magyarország Nonprofit Kft ( <b>CCH</b> )	Hungary