



Transparent_Food



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

Coordination and Support Action – CSA
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D4.5: Specification of critical research needs and priorities with relevance for environmental, ethical and social concerns and for improvements in food chain transparency

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CONTENTS

CONTENTS..... 1

EXECUTIVE SUMMARY..... 4

1. INTRODUCTION..... 6

2. RESEARCH NEEDS 8

 2.1 IMPROVED TRANSFER OF INTEGRITY CHARACTERISTICS WITHIN A CHAIN 8

 2.2 INDEPENDENT AND INTEGRATED EXTERNAL ASSESSMENT OF INTEGRITY OF FOOD CHAINS 13

3. CONCLUSION..... 15

CONSORTIUM..... 16

EXECUTIVE SUMMARY

Integrity in the food chain is about the ethical, social and environmental impacts related to the food chain activities. However, these aspects of integrity cannot be tracked on the food product as such. Thus, the assessment of integrity must be based on the transparency and tracking of the processes involved in the production chain, which is challenging due to the very complex structure of most food chains. In order to facilitate improvement of transparency we have identified research needs related to

- a) Improved accessibility to and transfer of integrity characteristics through the chain facilitated by the companies' reporting schemes, and- as an alternative to this-
- b) Independent and integrated assessment of the wider impact of different food chains in relation to integrity

For a) these are:

1. Establishment of a sound, manageable and robust framework that points out the relevant aspects to take into account when choosing the traceability reference unit in different types of food chains and covering different integrity dimensions.
2. A critical assessment of the currently used indicators and clarification of the possibilities to establish sufficiently comprehensive indicators that reflect the impacts aimed for at the different integrity dimensions and that at the same time is possible to include in schemes.
3. Establishment of a framework for cost effective systems for data sharing that allows connection to a relevant reference unit and allows a timely and transparent update of process information and a reasonable degree of open access for all interested parties.
4. Identification of barriers and opportunities for making inspection results from rule based systems publicly available in a meaningful way.
5. Identification of key performance indicators for different types of foods and different dimensions of integrity to allow a more goal directed sampling of information.

And for b) these are:

6. A critical review on how existing indicators (more comprehensive than what is used in existing labelling schemes) integrity dimensions (animal welfare, working conditions, environmental impact) translate into true impacts that can be communicated to the consumer.
7. Establishment of criteria to be used in guidelines for external reviews and assessment of schemes in order to facilitate comparability between schemes and over time

1. INTRODUCTION

Integrity in the food chain is about the ethical, social and environmental impacts related to the food chain activities that are affected by the choices of different actors, including the consumers. It is widely acknowledged that transparency within the food sector is of crucial importance to the sustainable development of the sector based on critical and informed choices by consumers, NGOs and policymakers. Not least ethical, social and environmental concerns regarding food systems are important in this context because of increased consumer interest in these issues and an increased policy interest to engage business, NGOs, and consumers in obtaining societal goals.

Due to the very complex structure of food systems, however, the issue of transparency is also very complex and dynamic. Furthermore, the aspects of integrity in question cannot be tracked on the food product as such. Thus, the assessment of integrity must be based on the transparency and tracking of the processes involved in the production chain.

In D 4.1 *State of the art on information use in food chains with relevance for environmental concerns* and D4.2 *State of the art on information use in food chains with relevance for ethical and social concerns*, a large number of initiatives and activities relating to the communication of ethical, social and environmental concerns were screened from a European perspective. A selected number of schemes were assessed in more detail in D.4.3 *Analysis, evaluation and documentation of selected 'best practice' monitoring and reporting schemes*. In these reports we have found a number of areas of concern that are being addressed by different schemes ranging from: terms of trade, working conditions, animal welfare, social capital and community cohesion to environmental aspects like energy use, carbon footprint, pesticide use, eutrophication and biodiversity.

Basically, two approaches have been used in these schemes:

- i) An approach that sets some minimum requirements to be fulfilled in the different steps of the production chain. If these are fulfilled, the product can be certified and get the scheme label. So what is communicated through the chain is the certificate (and a certified product can be an input in another process within the same certified label) and this is ultimately the information presented to the consumer. We call this a rule based scheme and the scheme of 'EU Organic food' could serve as an example.

- ii) An approach where some quantitative information on the environmental performance of a product is estimated for the particular product in question based on quantitative information on the different processes and aggregated throughout the chain. Thus, it is the aggregated impact at a given point in the chain that can act as information for decision support, and ultimately the aggregated impact is presented to the consumer. The “Carbon footprint” of a product serves as an example for this approach. We call this a performance based scheme.

The vast majority of schemes follow the first approach. It was clear from this work that there were a number of shortcomings in the present schemes in order for them to fulfil the goal of transparency: *that everyone with a stake and interest in food production and consumption has access to the information needed in order to make informed decisions on the issues of integrity*. Furthermore, insufficiencies existed in the ability of different schemes to support benchmarking within schemes and thus act as a learning tool to improve performance within the scheme on the dimensions in question. The purpose of this document is to highlight some of these insufficiencies and suggest initiatives accordingly.

2. RESEARCH NEEDS

Some of the insufficiencies identified can be alleviated by an enforced research effort. The prevailing insufficiencies in the present schemes addressing integrity in the food chain can be organized as follows:

- No clear concept for the traceability reference unit (TRU) compatible with the requirements in relation to integrity dimensions
- Insufficiencies in methodology to reflect (with confidence) properly the dimensions (objectives) aimed for
- Lack of (methodology for) access to relevant information to all parties
- Poor incitement for different actors within a rule based scheme to improve or differentiate above what is set as the minimum requirement within the scheme
- Insufficient chain approach (many schemes deal only with one part of the chain)

In the following the research needs are elaborated around these topics. Furthermore, given the fact that the integrity ‘quality’ cannot be monitored in the product as such and that most integrity dimensions in reality are seeking to address more long term and societal concerns and are less directed to the very specific batch of product as opposed to food safety (like a Salmonella contaminated chicken, that may cause harm), we consider two ways to enhance transparency:

- Improved accessibility to and transfer of integrity characteristics through the chain facilitated by reporting schemes in the industry itself.
- Independent and integrated assessment of the wider impact of different food chains in relation to the societal and consumer concerns.

These two approaches could theoretically be relevant for both rule based and performance based systems, but it is clear that the latter approach for the rule based systems will require a larger effort in translating ‘rules into impact’.

2.1 Improved transfer of integrity characteristics within a chain

2.1.1 Traceability reference unit

It is not trivial to set the relevant traceability or reference unit in food systems in relation to the integrity parameters. Intuitively - in the simplest case - one might see the foods grown at a given season at a particular enterprise as the relevant unit. However, in establishing the carbon footprint of products through a life cycle assessment (LCA), one will need information of the carbon footprint related to some inputs used, for which there will be no seasonally specific information. The LCA approach requires estimates on material balances involved and information on how these contribute to a given impact category. Generally the impact calculations are (and will have to be) based on a limited number of fairly accurate measurements from the foreground system, which are combined with data obtained from data bases for the background systems being included. If data are not available, which often is the case, assumptions must be made e.g. by making use of data for similar processes/products or by modelling. There is a need to establish guidelines for what needs to be estimated based on the product specific data and which data from acknowledged databases can be used. In addition, it is not a trivial exercise to set the system boundaries for the background information.

The situation will be even more complex in systems of continued production like livestock products. E.g. in pig production different batches of production may have quite different history. Will it be relevant to use the batch (not talking about the individual animal?) as a reference unit knowing that probably most of the integrity parameters are sought to reflect more long term impacts? This also goes for the processing unit and ultimately is a question of what is relevant to stakeholders and for what purpose. Moreover, in processed foods with a large number of ingredients, there may be 'too many' foreground farm systems to give meaningful representation of all specific product lots used. There is presently no well developed definition of appropriate time and scale boundaries for the integrity dimensions leaving much to the individual scheme owner in setting these criteria and which in fact makes informed choices difficult for the inexperienced user of that information.

There is a need to establish a sound, manageable and robust framework that points out the relevant aspects to take into account when choosing the traceability reference unit in different types of food chains and covering different integrity dimensions in order to harmonize indicator calculation.

2.1.2 Methodology to reflect the integrity dimensions

For the long term impact and trust it is imperative that there is coherence between what stakeholders perceive as ‘covered’ by a claim and how the food chain actually impacts on the integrity dimension in question. There are, however, huge differences in how comprehensive and true the different dimensions can be assessed. While concepts of dimensions like energy use and carbon footprint are well developed and can easily be assessed (under the assumption of access to data and choice of the relevant reference unit as detailed above), concepts for other dimensions like animal welfare and terms of trade are less easy to define. Presently the certification schemes translate ethical and social values to relatively simple indicators and/or guidelines, which may be very narrow in scope. E.g. in the EU Organic Food scheme animal welfare is deemed superior to non-organic animal welfare because the space supplied to the animals is larger than the legal requirements, but no evaluation of the state of the animals is performed. While the increased space basically should support the welfare of the animals, a number of events and conditions in the particular housing system may counteract this, and it may probably be easy to observe animal welfare problems at a farm that fulfils the space criteria set.

Another example is terms of trade (Fair trade labels) where relevant standards have been fulfilled, but in fact it is not documented that the producers involved in the schemes experience a better livelihood than they would otherwise have had (and that is probably what is asked for by the consumer). It is important to be aware of these drawbacks of the indicators presently used. On the one hand, narrow indicators may be easy to define, but on the other hand they may not reflect what is asked for. Furthermore, the more narrow definitions that are used, the higher risk for strategic thinking in how to optimize those indicators rather than the actual impact. This may in turn lead to ‘scandals’ in relation to certification and in the longer term undermine the efforts being made.

There is a need to assess critically the indicators presently being used and to establish sufficient, comprehensive indicators that reflect the impacts aimed for in the different integrity dimensions.

2.1.3 Access to relevant information in performance based schemes

In performance based schemes, like the carbon footprint, the information related to a product basically needs to be present at each point of processing and or redistribution in order for final assessment of the product presented to the consumer. Thus, in principle the information (values and principles for calculation) can be stored and made available to all within the chain

and outside the chain. However, some parameters may contain protected knowledge, which the company may not want to share, and – apart from the aspects of verification of the numbers - it may have little appeal to end users. The challenge here lies in establishing a shared data exchange system that is available to a range of users and from where different users of a defined product can draw information for further processing.

Such a data exchange system should ideally also contain the relevant information necessary for impact assessment of the very typical resource use like electricity and transport over which the food chain actor has no control, ensuring that all actors using the same resource also assess the impact the same way equally. Private and public databases that can support such uniformity in impact assessment do exist (like the private Ecoinvent database and ILCD) and rules for assumptions and calculations for carbon food print exist, like PAS 2050. However, it seems that the technology and principles used are not sufficiently robust to ensure that these are ‘Gold Standards’, and sufficient to avoid strategic misuse of calculation methods to ‘greenwash’ products.

Aggregation of information and data is necessary in order to communicate information to consumers in an understandable way. The aggregation of selected information and the formation of a signal are based on “choice editing“, e.g. by the owner of a signal/label. Aggregation of data on the other hand means loss of detailed information and also a decrease in transparency. An approach to handle these two somewhat contradictory aspects is needed. A way to establish transparency with a ”reasonable backpack” that can handle both information and data may be the setting up of a network of access points where data can be accessed before aggregation (e.g. web page linked to the producer showing the relevant contribution to the integrity indicators).

There is a need to find cost efficient systems for data sharing that allow connection to a relevant reference unit, a timely and transparent update of process information and a reasonable degree of open access for all interested parties.

2.1.4 Data for improved transparency and for benchmarking within rule based schemes

In rule based schemes all producers fulfil a set of minimum requirements, which are generally publicly available for the interested user. The verification of the fulfilment is generally carried out through an inspection process by an accredited certification body. In order for the

inspector to judge compliance with the certification criteria, a range of information is collected. E.g., in order to judge the space allowance per animal the actual space allocated to the animals at a particular farm needs to be monitored, or in order to judge if minimum wages are paid to workers the actual payment in the concrete situation needs to be recorded. This information, however, is not accessible for persons outside the certification body as it is now in the schemes, which we have assessed. This limits transparency in two ways. Firstly, in some schemes, e.g. Global G.A.P., an overall compliance **rate** with the scheme is a prerequisite for certification, but it is not transparent which criteria that are not fulfilled in the individual cases. Secondly, it is not possible to evaluate or compare the performance of different producers/food chains within the same scheme.

Furthermore, while acknowledging that often quite advanced systems are in place to ensure a continued development in criteria in many schemes with inputs from industry and NGO's (as described in the preceding deliverables), the lack of transparency of the inspection results hinders that producers within a scheme themselves can make use of benchmarking to improve their integrity results, nor can they use a superior performance in marketing etc.

There is a need to identify barriers and opportunities for making inspection results publically available in a meaningful way

2.1.5 Key performance indicators

Some of the complexities in evaluating the integrity of the food chains are related to monitoring and keeping track of the integrity characteristics throughout the food chain. However, it seems that in many cases the major impact for a given category takes place in a specific stage (or in few steps) of the chain. Better insight in how the different steps actually impact on the integrity aspects for different foods/food chains, and where there is room for manoeuvre for the producer may facilitate more simplified data handling and at the same time allow a more detailed assessment of the particular aspect in focus.

There is a need to identify key performance indicators for different types of foods and different dimensions of integrity to allow a more goal directed sampling of information.

2.2 Independent and integrated external assessment of integrity of food chains

The research needs identified until now follow the idea that the information is created and handled within the chain and among the chain actors. The problems occurring are related to the fact that relatively narrow indicators have to be used for practical reasons, identifying relevant time and scale frames, data handling, and verification, besides the fact that the integrity dimension cannot be monitored on the product as such. However, most integrity dimensions in reality are seeking to address more long term and societal concerns and are less allocated to the very specific batch of a product which is important when considering food safety.

Furthermore, from a consumer perspective, transparency is about creating trust (and the task of the monitoring system is to make sure that this trust is justified). Thus, fully open systems may not be needed. “Transparency on demand” may be a solution where information is retrieved from a third party (e.g. a database containing confidential company specific data) and processed on demand to a format being acceptable and understandable for the customer without revealing sensitive business information. Parallel to this, it seems that independent assessments of the performance of farms, processors and other actors in a food chain vis-à-vis the promises of the label scheme is a valuable way to create transparency. Thus, for some systems such as organic agriculture and fair trade a number of independent scientific studies offer in-depth knowledge of how and to what extent these systems in reality have better environmental performance, higher biodiversity, improved animal welfare, improved prices, farm worker livelihood and social capital etc. These assessments feed into the general knowledge and awareness of the coverage of issues and the performance results of different schemes and thus potentially could inform the public and the consumers. For example, there are studies, which show under which conditions organic agriculture schemes support biodiversity and livelihood of smallholder farmers in developing countries. This may inform producers of the consequences of paying the price premium for the products they buy. Whether this is conducive for consumer trust is still an open question and should be a target of research.

Most schemes – especially the new private labels – have so far not been studied extensively and there is a lack of knowledge of how much these schemes and their rules and practices actually impact on externalities in the chain. The Code of Good Practice for assessing the impacts of social and environmental standards systems elaborated by ISEAL Alliance in collaboration with Committee on Sustainability Assessment (COSMA) may improve the level

of knowledge. The Commission has also recently published an “EU best practice guidelines for voluntary certification schemes for agricultural products and foodstuffs” designed to describe the existing legal framework and to help improving transparency, credibility and effectiveness of voluntary certification schemes. However, there is still a need to relate to the topics mentioned in section 2.1 about time and scale delimitations and in particular to justification of how rules can be translated into quantifiable impacts.

Following this path we see a need for the following research:

2.2.1 A critical review on how existing indicators (more comprehensive than what is used in present labelling schemes) for integrity dimensions (animal welfare, working conditions, environmental impact) translate into true impacts that can be communicated to the consumer.

2.2.2 Establishment of criteria to be used in guidelines for external reviews and assessment of schemes in order to facilitate comparability between schemes and over time.

3. CONCLUSION

We conclude that while important efforts are being done by private and public bodies to improve transparency of food chains, some basic requirements are still not met and needs a research effort. These are related to identification of the relevant traceability reference units, how indicators can be improved to better reflect the impact envisaged to be reflected, and how the data handling infra- structure can be improved – also in relation to the costs.

Furthermore, an alternative way of creating sound consumer trust - compared with a systematic transfer of information through the food chain on a daily basis - should be considered. Given the fact that the integrity ‘quality’ cannot be monitored in the product as such, and that most integrity dimensions in reality are seeking to address more long term and societal concerns (as opposed to food safety where it is important to know the exact status of the very particular product), it might be as effective to make a regular independent assessment of foods chains in relation to integrity aspects. This should be explored in more detail.

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