



## Potential methods and approaches to assess social impacts associated with food safety issues

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### ABSTRACT

There is evidence to suggest that consumer confidence in the European food safety has declined in recent years. Consequently, the need to integrate multifaceted dimensions into food safety governance has been recognised, although a lack of established methodologies to appraise wider social impacts represents a challenge for implementation. The aim of the current paper is to review *assessment methodologies* currently available to assess social impact of potential food safety issues, and to identify where further research may be needed to meet gaps in existing knowledge regarding the collection of social impact data.

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### 1. Introduction

The EU-funded SAFE FOODS project (running from 2004 to 2008) aims to improve consumer confidence in the food safety regulation, which has diminished in recent years due to several significant food safety incidents such as Bovine Spongiform Encephalopathy (BSE), and controversies related to genetically modified foods. As a result, the lack of consideration for wider societal concerns related to food safety was recognized and food safety institutions in the European Union identified the importance of explicitly integrating multifaceted dimensions into the food safety governance (see Dreyer, Renn, Cope, & Frewer, *this issue*). Therefore, to optimize the risk governance framework, SAFE FOODS proposes to expand conventional risk assessment by incorporating the evaluation of environmental, ethical, and socio-economic impacts into assessment in terms of risks *and* benefits associated with food issues. Specifically, a framework for improved risk analysis of foods has been proposed, systematically incorporates risk-benefit assessment, stakeholder consultation and public participation at appropriate stages in the risk analysis process. The framework includes risk-benefit assessments relating to *non-health aspects* of food safety. Two main types of assessment are identified, those relating to the risk-benefit assessment of health and environmental

impacts, and the assessment of economic, social and ethical impacts (see Koenig et al., *this issue*).

The dominant model of risk analysis applied in the agri-food sector is that proposed by FAO/WHO. This model comprises three phases: food risk *assessment*, food risk *management* and food risk *communication*. *Risk assessment* focuses on estimating the risk that a hazardous food safety incident will negatively affect human health (FAO/WHO, 1998).

At the time of writing, the methodologies appropriate for inclusion of Social Impact Assessment data at the assessment stage of the SAFE FOODS risk governance process is not explicit. Whilst economic and social impacts potentially arising from various regulatory measures may be assumed to be addressed by risk managers, systematic data collection focused on these issues is not formally incorporated into risk assessment – indeed, only data on negative impacts to human health, based on risk estimates, are formally considered. If socio-economic factors are considered in food safety governance, the basis and process for their inclusion in decision-making are not transparent, militating against societal demands for increased transparency in risk analysis. The lack of agreed methodologies which can measure social impacts also results in problems in systematic comparison and monitoring of the effects of risk-management policy interventions in space and time.

It is this important to consider the issue of social impact assessment as an intrinsic part of food safety governance. Very broadly, social impact assessment includes various processes pertinent to

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the monitoring and management of both intended and unintended social consequences, of planned interventions (for example, policies or other activities) and any social change processes invoked by those interventions. The direction of such social consequences can be either positive or negative (Barrow, 2000). Thus in the area of food safety governance, potential social impacts following the introduction of policy related or innovative technological interventions focused on food might be positive and/or negative. A further issue to be considered relates to the cost of developing food safety interventions, and any cost-benefit trade-offs this invokes. “Information on (societal) demand for food safety is needed to determine whether the benefit of safety regulations exceed the costs” (Lusk, 2007, p. 1189). Data is therefore needed to determine both societal demand for food risk mitigation activities, and the potential societal costs of developing appropriate measures.

Another important framework objective is to effectively engage diverse stakeholders, which was exemplified by a Delphi survey administered to experts regarding their perspective on these novel aspects of the model (Wentholt, Rowe, König, & Frewer, in press). The results suggest that European stakeholders supported the integration of non-health factors into the formal assessment, and recognized that food benefits may also be important to consider for specific hazards. However, the lack of established methodologies to appraise broader impacts was identified as a potential challenge for framework implementation (Wentholt et al., in press).

The aim of the current paper is therefore to review candidate social impact assessment methodologies currently available to assess social impact of potential food safety issues, and to identify where further research may be needed to meet gaps in existing knowledge regarding the collection of social impact data. Additional papers from the SAFE FOODS project discuss the assessment of environmental, economic, and ethical impacts, and these are excluded from the current discussion. The examination of strategies to initiate and integrate the evaluation of potential social impacts, together with identification of potential indicators, is discussed extensively in Dreyer et al., this issue. The identification of appropriate methodologies will enable the inclusion of rigorous data in the assessment phase of the SAFE FOODS risk governance model. Identification of societal priorities, as well as broader inclusion of health impact measures incorporating quality of life assessments, will facilitate better allocation of resources to risk reduction associated with specific pathogens and products in line with societal preferences.

## 2. Methods and approaches to assess social impact and consumer perception

To facilitate a comprehensive appraisal of social impacts, many different social indicators have been proposed which have been reviewed and classified into several categories by Vanclay (2002). The breadth of potential social impacts is demonstrated by the categories developed to classify them. Prominent examples include health and social well-being, quality of living environment, economic and material well-being, cultural, family and community, institutional, legal, political and equity, and gender relations. In 2005, the European Commission developed *Impact Assessment Guidelines* that detailed a list of economic, social and environmental indicators (European Commission., 2005). However, these inventories are not exhaustive and do not include any standardized measures to systematically incorporate the various socio-political and cultural factors into assessments. To facilitate the evaluation of diverse social concerns and priorities, it may be beneficial to utilise a common indicator which captures different types of potential benefits and risks.

In order to take into account the social impacts associated with food-safety assessments, quality of life measures are proposed as one alternative, which are commonly applied in the medical field but have not been widely adopted in Social Impact Assessments (SIAs). However, utilising quality of life measures in isolation is unlikely to deliver a systematic evaluation of diverse concerns related to human quality of life, societal preferences for sustainability, animal welfare, risk and benefit perception, ethical concerns, and other factors pertinent to social/economic risks and benefits, as recommended by the European Commission’s Scientific Steering Committee<sup>1</sup> (European Commission Health and Consumer Protection Directorate-General, 2003). Thus strategies based on quality of life measures need to be complemented by methodologies designed to assess consumer perceptions and attitudes, which also represent an important societal dimension of the potential social impact of a food risk or food risk management practice. Specifically, this paper will identify some candidate methods which can potentially be utilised in the assessment of “other legitimate factors” at the assessment stage of food risk analysis, as well as contributing to problem definition and framing, and monitoring the impact of policy options.

## 3. The utility of qualitative and quantitative approaches to social impact data collection

### 3.1. Qualitative methods

Focus groups offer a useful strategy to elicit concerns from various groups of individuals, which involve planned discussions that facilitate detailed analysis into an identified area. Focus groups are frequently used as a “stand alone method”, but also provide the foundation for the development of surveys, for example, those sampling the opinion of representative samples of a population of interest. The advantage of the use of focus groups in identifying the potential social impacts of food risks is that the preconceptions of researchers are not “forced” upon participants. Focus groups may result in the acquisition of additional insights derived from group interaction, and are constructive in the context of exploratory research which help understand how people think, often providing a starting point for the development of a theoretical model (Van Kleef et al., 2006). Focus group research has also been utilised in the development of quality of life measures, for example associated with the impact of specific diseases or events.

Utilizing focus groups to inform questionnaires has been adopted in the area of consumer perception research to investigate public perceptions regarding food choices for different demographic groups (Lawrence et al., 2007), food safety concerns (Frewer et al., 2001), food risk management practices (Van Kleef et al., 2006) and in the identification of how food hazard characteristics are perceived and managed by the public (McCarthy, Brennan, Ritson, & De Boer, 2006). Focus groups may also complement more structured experiments, offering a more in-depth perspective on specific issues, such as public perception of uncertainty presented in news stories (Johnson & Slovic, 1995) or strategies to reduce perceived risk on food packaging (i.e. description on package, unbiased information on product, reputable store image) (Mitchell & Boustani, 1994).

In order to elucidate the psychological constructs underlying public attitudes towards (food) technology, semi-structured interviews have been conducted using the repertory grid method (Frewer, Howard, & Shepherd, 1997, 1998; Mitchell & Harris,

<sup>1</sup> European Commission, Health & Consumer Protection Directorate-General, *Opinion of the Scientific Steering Committee on Setting the Scientific Frame for the Inclusion of New Quality of Life Concerns in the Risk Assessment Process*, adopted on 10–11 April 2003 as part of its exercise on Harmonisation of Risk Assessment Procedures.

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