



## Exploring European food system vulnerabilities: Towards integrated food security governance



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### ABSTRACT

Studies on vulnerabilities and drivers of change in the food system have largely failed to address holistic but also the competing interpretations of “food security”. In general, they tend to focus on specific sectors and dimensions of the food system as well as on outcomes, rather than unpacking root causes of vulnerability. To contribute to overcoming these limitations, a Delphi survey with 45 European experts on food security was conducted to identify the main drivers of change, threats and weaknesses of the EU food system and to uncover their root causes. Linking empirical data with theoretical discussions on vulnerability and governance, we identify five food system governance deficiencies that impinge upon food security in Europe: a failure to deal with cross-scale dynamics; the inability to address issues related to persistent inequalities in food rights and entitlements; increasing geopolitical and sectorial interdependencies; power imbalances and low institutional capacities; and conflicting values and interpretations of “food security”. These five dimensions, we conclude, need to be addressed in an integrated fashion to progress the current polarised academic and policy debates and begin to build a more democratic, sustainable and secure European food system.

### 1. Introduction

Rising levels of malnutrition, socio-economic inequality and environmental degradation continue to signal the failure of food systems to deliver good food for all. Food systems are complex multilevel networks of food actors (and related activities) embedded in intricate socio-economic, political and ecological relationships that shape their outcomes across different geographies and social groups. Food security – or the condition when all people, at all times, have access to sufficient, safe and nutritious food (FAO, 2002) – is one of the primary goals of a food system. Therefore, its pursuance should be the main aim of food system governance (Erickson, 2008a). However, how well current food systems fulfil this objective remains a contested and highly politicized issue (Erickson, 2008b; McMichael, 2009). As researchers have observed (Foran et al., 2014), food security is an evolving and multi-dimensional construct that includes widely acknowledged dimensions (such as ensuring global access to food) but also competing interpretations of key problems and solutions needed to deliver good food.

Recent attempts to manage and address these contestations have focused primarily on expert exercises around food futures, which largely aim to identify drivers of change and vulnerabilities in the food system that originate different scenarios (see Reilly and Willenbockel, 2010 for a review). Despite efforts to integrate different perspectives,

these exercises still suffer from four main limitations that, we argue, illustrate key challenges for the current research agenda on food system vulnerabilities. First, there is a lack of *acknowledgement of the trade-offs* that take place at the global level between food system outcomes (Erickson et al., 2009) – such as, for example, those occurring between biofuel and food production, which have implications in environmental and food security terms (Harvey and Pilgrim, 2011). Working through these trade-offs at *multiple scales* and in different *geographies* is deemed to be crucial to reduce the overall vulnerability of the food system (Erickson, 2008b).

A second limitation of existing scenarios is their *sectorial and narrow focus* on food production (van Dijk, 2012). Although some exercises have attempted to consider also market transactions that translate into indicators such as food prices and calorie availability (Reilly and Willenbockel, 2010), most scenarios over-emphasize the supply side of the food system; addressing some basic aspects of availability of, and access to, food but downplaying food utilisation (see, for example, Global Environment Outlook of UNEP scenarios in Zurek, 2006) and the intermediate activities that take place between production and consumption (Sonnino et al., 2014b).

The tendency to confine the analytic focus on production brings up the third limitation of existing exercises – that is, their tendency to *pre-frame* the problems and possible solutions (see, for example, the food

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security scenarios provided in [Maggio et al., 2015](#) for the European context). Resulting often from the nature and quantity of available data and time limitations, this pre-framing tendency can compromise what is meant to be a *participatory* exercise and affect the potential relevance (and ownership) of the results for audiences operating within different food security frames.

Fourth, scenario analysts often focus on outcomes, rather than on processes and meanings. In many instances, scenario exercises are guided by a search for consensus, rather than by efforts to tackle competing interpretations of food security and of the food system vulnerabilities that affect the capacity to deliver good food for all (see for example [Maggio et al., 2015](#)). Food security frames reflect different sets of interests, values and power geometries ([Mooney and Hunt, 2009](#)). By disregarding these competing interpretations, existing scenarios tend to *address the proximate, rather than structural, causes* of food insecurity – i.e. they conceal the normative assumptions at play in the governance of food systems. Furthermore, all vulnerability assessments have policy implications, since they inform decisions that entail trade-offs among socio-economic, health and environmental outcomes ([Ericksen, 2008b](#)) and, therefore, affect people's wellbeing. This raises the need for research that elaborates further on the role of governance – or, adapting [Kjaer's \(2004\)](#) definition to the food security context: all modes of governing encompassing activities carried out by different actors to guide, steer, control or manage the pursuance of food security – in addressing food system vulnerabilities, both conceptually and practically.

To progress debates on food security, this paper draws on socio-ecological conceptualizations of vulnerability as the product of multi-level interactions between human and environmental dynamics. Such conceptualizations have proven to be particularly relevant in conducting systemic analyses of food security, since environmental and social outcomes are critical to delivering good food for all ([Ericksen, 2008b](#)). This approach is helpful to tackle the gaps identified in the literature since it fosters a multiscalar, holistic and flexible perspective that moves away from sectorial, narrow and pre-framed approaches to food security and focuses instead on the main structural vulnerabilities of the European food system and their causes.

Our methodology, which was based on a Delphi survey with 45 experts from across Europe (see [Appendix A](#)), differs from existing studies in two fundamental ways. First, to avoid a pre-framing of the answers, we designed an open-ended questionnaire that aimed to capture individual perceptions and interpretations of global drivers of change and vulnerabilities of the EU food system. While Delphi surveys and related exercises aim for consensus, our goal was to identify points of convergence, disconnections and new levers to unblock a very polarised food security agenda (see, for example, accounts of distinct EU food security frames in [Candel \(2014\)](#)). Second, to enhance understanding of the perceived structural (rather than proximate) causes of food insecurity, we included specific questions on the underlying causes behind the vulnerabilities of the EU food system. As we will discuss, the analysis of the responses has identified governance as a key generator of food system vulnerabilities. As we will explain, our analysis identifies five main governance dimensions that affect food security in Europe and that, we conclude, need to be addressed in an integrated fashion to begin to build a more democratic, sustainable and secure food system.

## 2. Conceptualising food system vulnerabilities: towards a governance perspective

Scientists from different disciplinary traditions have utilized the term “vulnerability” as “a powerful analytical tool for describing states of susceptibility to harm, powerlessness, and marginality of both physical and social systems, and for guiding normative analyses of actions to enhance well-being through reduction of risk” ([Adger, 2006: 268](#)). Given the broad and contested nature of this field of investigation, it is probably not surprising that the term “vulnerability” has been subjected

to a wide range of different, and sometimes contradictory, definitions.

[Adger \(2006\)](#) identifies four main traditions of vulnerability research, which are mostly characterised by different levels of integration of social and environmental elements. The first tradition revolves around the *vulnerability of livelihoods to poverty* and it is based on [Sen's entitlements approach \(1983\)](#), which highlights the role of social differentiation in causing vulnerabilities. The second research tradition focuses on *natural hazards* and incorporates elements of engineering, physical and social sciences to assess the exposure, probability and impact of hazards on different groups in society ([Burton et al., 1993](#)). The third, *human and political ecology*, tradition calls for a better understanding of the political and structural causes of vulnerability that are by-passed by more managerial approaches. In this framework, understanding the reasons why poor and marginalised people are mostly at risk from natural hazards is critical ([Watts, 1983](#)). Finally, [Blaikie et al. \(1994\)](#) propose a *pressure and release model (PAR)* of hazards that combines elements of all other approaches to stress the multiplicity and diversity of vulnerability pressures, which are dynamically linked to both physical and biological hazards and to local geographies and social differentiation.

Along these lines, [Turner et al. \(2003\)](#) have proposed an integrative and interdisciplinary vulnerability framework for the assessment of coupled human-environmental systems. Their goal is to identify who and what is vulnerable to the multiple environmental changes currently underway, under the assumption that vulnerability, as a feature of socio-ecological systems, requires a focus on the linkages within and outside such systems. For other scholars, in turn, the attention needs to focus on the interactions between social dynamics within a socio-ecological system, since the vulnerability of a system fundamentally depends on the multilevel interactions between its components ([Eriksen et al., 2008a](#)).

Apart from the extensive literature on household food security (see seminal work by [Maxwell and Smith, 1992](#)), there have been several analyses of *food system vulnerabilities* that integrate the ecological and social dimensions of food. This is the case, for example, of [Fraser et al. \(2005\)](#), who analyse food system vulnerabilities through a “panarchy” framework that highlights the importance of maintaining diversity within the food system to maximise the range of options available at times of crisis. [Ericksen \(2008a, b\)](#) has provided a substantial contribution to this scholarship through the development of a framework that builds on [Eakin's and Luers' \(2006\)](#) integration of social and ecological approaches to understand food system vulnerability to environmental change. She suggests that vulnerabilities are “rooted in the processes involved in food systems, which are a product of activities and responses to external and internal drivers and changes” ([Ericksen, 2008a: p.14](#)), and raises the need to include more effective governance conceptualisations in the study of food system vulnerabilities (see also [Hopes and Brons, 2016](#)). In general, efforts to understand the latter through a reflexive approach that integrates a focus on dynamic pressures with the analysis of the root causes of food system vulnerabilities occupy a small niche in the literature. Recent accounts of the drivers of food insecurity in Europe focus largely on proximate causes – such as demographic trends, the availability of fruit and vegetables, household budgets and the under-nutrition/overweight paradox (see [Maggio et al., 2015](#) and [Cockx et al., 2015](#)). Furthermore, a prevailing focus on vulnerable groups often limits the scope for providing a more holistic account of food system vulnerabilities which might obscure the wider-reaching consequences of food system (un)sustainability and (in)securities (from food scares to food price hikes or the consequences of climate change) that ultimately put different actors at risk in different ways.

In this paper, we contribute to this body of work through an integrated focus on the root causes of vulnerability, its expressions and dynamic pressures (see [Table 1](#)). In this respect, our paper intends to contribute also to recent debates on the role of governance as both a driver of, and a potential solution to, food insecurity ([Pereira and](#)

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