Putting food on the table

The European Union governance of the wicked problem of food security

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Abstract

Food security concerns and arguments have made a revival in European Union (EU) governance since the 2007-8 and 2010 global food price crises. This renaissance of food security has been accompanied by increasing awareness among scholars and policymakers about high degrees of complexity, uncertainty, controversy, and cross-scale dynamics surrounding food security as well as consequent governance implications. This dissertation conceptualizes food security as a wicked problem. Following from this conceptualization, the dissertation aims to explore how the EU governs the wicked problem of food security. Both the EU governance of food security and the EU governance of wicked problems in general have hardly been systematically studied so far. Wicked problems are policy problems that are ill-defined, that rely upon elusive political judgment for resolution, and that evolve out of an attempt to solve yesterday's perceived problems. By definition, wicked problems cannot be permanently solved. The overarching question of how the EU governs the wicked problem of food security is addressed through four sub-questions: (i) what insights does the existing body of food security governance literature provide about governing the wicked problem of food security?; (ii) which food security frames can be distinguished in EU policymaking and how do the EU institutions deal with this diversity?; (iii) what conditions enable or constrain the European Commission in coping with the wicked problem of food security?; and (iv) to what extent has the EU realized a shift towards strengthened policy integration in the governance of food security?

Overall, the dissertation shows that the EU institutions, and particularly the Commission, are relatively well capable of dealing with the frame conflicts surrounding food security debates and possess sufficient latent abilities to govern the wicked problem of food security. At the same time, actual governance changes in the aftermath of the food price crises were found to be rather limited. Whereas EU decision-makers pleaded for more comprehensive and holistic food security approaches, policy integration remained largely restricted to discursive levels. I conclude that in most EU policy domains food security frames were primarily used to find support or legitimization for existing policy processes or preferences. Although substantial policy efforts *were* initiated, these remained largely restricted to the traditional domains of development cooperation and humanitarian aid. Consequently, the re-emergence of food security concerns in EU policymaking has not (yet) resulted in a more comprehensive and integrated EU governance of food security. The dissertation ends with putting forward notions of good-enough governance and clumsy solutions as suggestions for strengthened EU food security governance.

Voor mijn ouders en grootouders

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Simon, Pauline, Annieke, Mike, Rachel and the Candel, Van Gils and Wieck families. You have always been there for me to chat, eat and drink together, go on trips, celebrate, play games, and so much more. I hope we will continue to do so for a much longer time. Bart and Jasper, I have always admired your sense of humor, strong personalities, and independence. Although we sometimes do not see each other for too long a time, the fact that this does not affect our bond says enough. Opa en oma, volgens mij komt de 'Candelliaanse' behoefte om te discussiëren, te vertellen en dingen grondig uit te uitzoeken bij jullie vandaan. Ontzettend bedankt voor jullie verhalen, interesse en liefde. Paps en mams, jullie hebben me altijd gestimuleerd mijn talenten te ontplooien, nieuwsgierig te zijn en me altijd, ook in moeilijkere tijden, onvoorwaardelijk gesteund. Ik ben jullie eeuwig dankbaar voor jullie liefde. Dit proefschrift is aan jullie vier opgedragen. Laura, du warst die letzte Jahre immer da für mich, im wahrste Sinne des Wortes. Danke dafür, ich liebe dich.

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Introduction

Europe's capacity to deliver food security is an important long-term choice for Europe which cannot be taken for granted (European Commission, 2010a).

The claim that the EU should massively invest in food security […] builds on attitudes like 'better safe than sorry' and 'you never know'. There are a number of threats out there about which we cannot have absolute certainty: attacks by Martians, killer mummies from the Pyramids and dinosaurs escaping from Jurassic Parks. Serious policy makers have to analyze and weigh these risks. Food security does not pass the test; there is no reasonably discernible threat during the coming decades (Zahrnt, 2011).

1.1 Background and problem outline

1.1.1 The re-emergence of food security concerns in EU policy discourse

The food price crises of 2007-8 and 2010 shocked policymakers around the world. Within a fortnight relative food prices doubled (figure 1.1), driving hundreds of thousands of people into a sudden state of food insecurity (Barrett, 2010; Brinkman, de Pee, Sanogo, Subran, & Bloem, 2010; Ruel, Garrett, Hawkes, & Cohen, 2010). Various scholars have argued that these events were a decisive catalyst for a worldwide increase of violent conflict, including the Arab Spring (Breisinger, Ecker, & Al-Riffai, 2011; Rosin, Stock, & Campbell, 2012). More recently, lack of food security has been linked to migration waves in the Middle East and Africa (Baker, 2015; FAO, 2015b). Most governments and international organizations were caught off-guard by these events, so it took some time before adequate responses were deployed (FAO, 2011; FAO et al., 2011; Timmer, 2010).
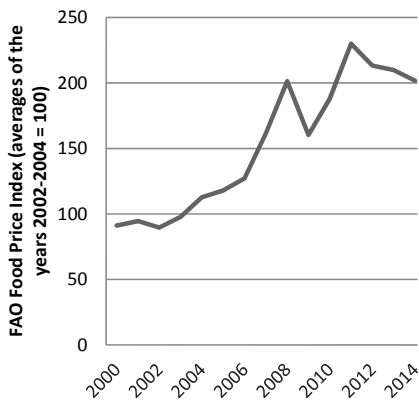
Figure 1.1 FAO food price index,

data derived from FAO (2015a)
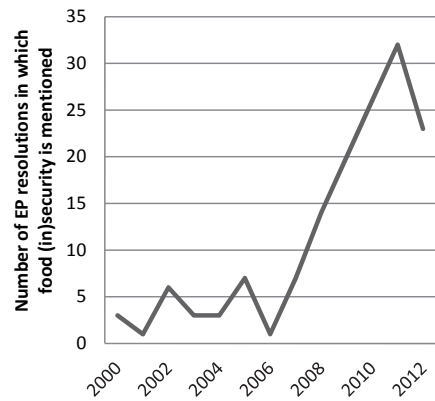
Figure 1.2 Attention to food security in

the EP, data derived from EUR-Lex

The food price crises led to a recurrence of food (in)security concerns in macropolitical and subsystem policy debates within the institutions of the European Union (EU). Figure 1.2 illustrates this trend by showing the number of resolutions within the European Parliament (EP) that refer to food (in)security from 2000 through 2012. As the first quotation above illustrates, food security was hereby discussed not only in terms of external action vis-à-vis least developed countries, but also with regard to the resilience of *European* food availability and, to a lesser extent, accessibility (Bindraban, Burger, Quist-Wessel, & Werger, 2008; Grant, 2012b; Zahrnt, 2011). Such concerns

had been absent from EU policy discourse since vivid memories of widespread hunger during World War II led the founders of the European Community to ensure the availability of affordable food as one of the key objectives of the Common Agricultural Policy (CAP) in the Treaty of Rome of 1957 (Meester, 2011; Spaargaren, Oosterveer, & Loeber, 2012). The recent pervasiveness of food security arguments in debates about the CAP, the Common Fisheries Policy (CFP), the EU's biofuels policy, the development of the new framework program for research and innovation Horizion2020, and even environmental policy, *inter alia*, therefore came as a surprise to many.

This renaissance of food security arguments within EU policy domains other than development cooperation did not occur without considerable criticism, as is illustrated by the second quotation at the start of this chapter in which Zahrnt ridicules food security discourse within the CAP reform debate. His critique contends that it is absurd to discuss EU food security while food production levels are much higher than domestic consumption (Zahrnt, 2011). According to this line of reasoning, such a focus distracts attention from more pressing problems; increasing production and productivity within the agricultural policy community would obscure solutions that arguably have a higher potential of achieving food security, such as food wastage reductions, allowing developing countries to protect and develop their agricultural sectors, or the greening of agriculture (cf. Boysen, Jensen, & Matthews, 2015; Grant, 2005; WWF, 2013). Some scholars and stakeholders have even argued that the concept of food security has been hijacked by neo-liberal and productionist interests and have pleaded for the introduction of alternative notions and paradigms (Jarosz, 2011; Koc, 2013; Lang & Barling, 2012).

A common denominator that these critiques share with proponents of the 'doubling food production by 2050' discourse (Tomlinson, 2013) is an underlying profound belief that food insecurity can ultimately be solved. It may be a complex problem whose causes, impacts, and recipes are not yet well understood, but a combination of new knowledge, coordinated and coherent strategies, and innovative solutions could provide an effective approach to rooting out food insecurity (cf. Purdon, 2014). The polarized debate between proponents of further agricultural intensification using modern technology, such as genetically modified organisms (GMOs), and those who are in favor of organic or agro-ecological agriculture in the (EU) agricultural policy domain is a good illustration of this belief in solubility. Both camps draw on valid scientific insights to support claims that a certain mode of production would be the most effective way of addressing food insecurity (cf. de Schutter & Vanloqueren, 2011; Diao, Headey, & Johnson, 2008; Horlings & Marsden, 2011; Shiferaw, Prasanna, Hellin, & Bänziger, 2011). Various scholars have attempted to overcome the divide by introducing approaches that could potentially bring both camps together, arguing that the road forward lies in 'sustainable

intensification' (Garnett et al., 2013; Tilman, Balzer, Hill, & Befort, 2011). However, the underlying belief in solubility has remained largely unchallenged.

Apart from a (criticized) diversification of food security concerns across policy domains, EU decision-makers and stakeholders came to call for better integrated food security approaches to address the complex and cross-cutting nature of food security (Council of the European Union, 2013; e.g., European Commission, 2010c; Piebalgs, 2013; Red Cross EU Office, 2013). Some commentators have even argued that the EU should develop a 'common food policy' to integrate its existing fragmented policy efforts into a holistic approach (e.g., Marsden, 2015; Slow Food; Via Campesina, Friends of the Earth Europe, European Platform for Food Sovereignty, & European Health and Agriculture Consortium, 2010). The underlying rationale of such calls is that integrated approaches would be better able to signal and respond to emerging threats, to reduce externalities, and to realize synergies between policy efforts. As such, integrated food security approaches would be more 'effective' in addressing food insecurity.

In this dissertation, I argue that, due to the above-shown complexity, crosscutting nature, and controversies as well as attempts to deal with these in EU governance, food security should be considered as a *'wicked' policy problem*, which is insoluble by definition[1]. Although it may be possible to further increase food production levels and enhance access to nutritious food, a combination of high uncertainty and complexity, frame controversies, stagnated interaction patterns, and cross-scale dynamics make a final or most effective solution to food (in)security impossible (Rittel & Webber, 1973; Termeer, Dewulf, Breeman, & Stiller, 2015a). Instead, formulating the problem *is* the problem, as actors disagree about key challenges and desirable directions, and because today's problem definitions arise from attempts to solve yesterday's perceived problems (Head, 2008). The latter means that policies and interventions deployed to address wicked problems themselves contribute to a continuous evolution of problem definitions and understandings (cf. Newman & Head, 2015).

1.1.2   Three challenges to the EU governance of food security

Characterizing food security as a wicked problem poses specific challenges to its governance. The EU, and particularly the European Commission, have been criticized for their ability to deal with wicked problem characteristics (for overviews of these critiques, see: Jordan & Schout, 2006; Kassim et al., 2013). At the same time, both the ways in which the EU governs food security and its ability to address wicked problems

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1   In line with the food security literature, the actual policy problem here is lack of security, i.e. food *in*security. Unless indicated differently, when referring to the policy problem of food security I mean food insecurity.

in general have hardly been studied systematically. This dissertation therefore aims **to explore whether and how the EU is capable of governing the wicked problem of food security**. By combining initial empirical observations with knowledge gaps following from the lack of theorization about the EU governance of wicked problems in general and food security specifically, I have identified three particularly critical challenges to the EU governance of food security: (i) the difficulty of defining the problem of food security; (ii) the European Commission's alleged incapability of governing wicked problems; and (iii) the problem of overcoming policy incoherence and inconsistencies vis-à-vis food security in the stovepiped EU governance system. These three challenges follow a consequential order: the first challenge involves the diversity of meanings and interests associated with food security (in EU policymaking), thus *the manifestation* of food security as a wicked problem; the second challenge questions *the potential or latent ability* of the Commission to deal with the wicked problem of food security; and the third challenge focuses on (changes of) *actual food security governance practices*.

Regarding the first challenge, the previous section showed that food security concerns have emerged in a wide array of EU policy domains and debates. Because these domains entail different policy subsystems and associated ideas and interests (Peterson, 1995; Sabatier, 1998), the question of what constitutes food security and how it could best be pursued is approached and answered in many different ways, both within and between domains. Such 'frame diversity' surrounding food security is not unique to the EU level as it has also been observed in other governance contexts, such as the United States (U.S.) (Mooney & Hunt, 2009) and the United Kingdom (U.K.) (Kirwan & Maye, 2013). The simultaneous pervasiveness of the notion of 'food security' and diversity of food security frames in the U.S. context have led scholars to classify food security as a 'consensus frame', i.e. a goal or idea that finds wide resonance among stakeholders and is collectively agreed upon (Gamson, 1995), behind which may lie considerable 'dissensus' about problem definitions and possible solutions (Maye & Kirwan, 2013; Mooney & Hunt, 2009). Initial empirical observations suggest that a similar dynamic has occurred at the EU level, implying that a shared and agreed-upon problem definition is lacking. Moreover, the polarized debate between proponents of different types of (sustainable) farming, both inside and outside the EU governance context, suggest that governing food security has stranded in what has been referred to as a 'dialogue of the deaf' (van Eeten, 1999; Wildavsky & Tenenbaum, 1981); a stagnated interaction pattern in which various groups of actors interact without truly listening to each other, while invoking arguments that are each scientifically valid on their own terms. This combination of frame diversity and contested knowledge claims seriously complicates the EU governance of food security. The literatures on frame controversies and wicked problems have put forward suggestions for dealing with such challenges (e.g., Bryson, 2004; Koppenjan &

Klijn, 2004; Schön & Rein, 1994). However, the constellation of food security frames and associated stakeholders in EU policy debates must first be identified.

The second challenge to the EU governance of food security involves the European Commission's ability to govern wicked problems in general. Frame diversity is a crucial element of wicked problems and being able to deal with frame conflicts is therefore an indispensable quality for governing wicked problems. Wicked problems however go beyond frame controversies in that they also involve high degrees of complexity and uncertainty and crosscut spatial, temporal, and jurisdictional scales (see section 1.2.2 for a conceptualization of wicked problems). EU governance scholars have predominantly argued that the EU institutions, and particularly the Commission, are incapable of coping with these wicked characteristics simultaneously. The Commission's rigid jurisdictions and compartmentalization, limited capacity and resources, and lack of coordinative instruments would have resulted in a general inadequacy to govern wicked problems satisfactorily (Ellinas & Suleiman, 2012; Jordan & Schout, 2006; Laffan, 1997; Metcalfe, 1996; Peters & Wright, 2001; Spence & Edwards, 2006; Stevens & Stevens, 2001). Kassim et al. (2013, p. 75) summarize these critiques as follows:

> [T]he Commission is highly 'stove-piped', its administrative code is burdensome, it is resource-poor, and it is heavily dependent for its success on its relationship with other EU institutions. And still it is tasked with trying to solve 'wicked problems', whose very nature makes it unlikely that they can be solved by administrations that strictly observe their own administrative code, especially one as cumbersome as the one under which the Commission operates.

At the same time, recent insights suggest that the Commission may be more capable of coping with wicked problems than is commonly assumed. Kassim et al. (2013), for example, show that by drawing upon their personal networks, Commission officials manage to circumvent many of the more formal and structural constraints. These contrasting perspectives in the literature illustrate the lack of systematicity with which the wicked problems research agenda has been applied to studies of EU governance; existing studies have pointed at single factors and have put forward partial explanations to account for the Commission's ability to govern wicked problems, but comprehensive analyses have been lacking so far.

The third challenge to the EU governance of food security involves the organization of policy integration within the EU governance system to overcome jurisdictional fragmentation and consequent incoherence and inconsistency of policies (cf. Hovik & Hanssen, 2015; Howlett & Rayner, 2007; Rayner & Howlett, 2009; Termeer et al., 2011). As elaborated in section 1.1, decision-makers in the EU and elsewhere

have argued that the 2007-8 and 2010 world food price crises showed the need for more holistic approaches to food security. Initiatives such as Policy Coherence for Development (PCD) show that the EU actively attempts to enhance policy integration in the governance of wicked problems, including food security (cf. Carbone, 2008; Hartlapp, Metz, & Rauh, 2010; Hustedt & Seyfried, 2015; Kassim et al., 2013). At the same time, accounts of high degrees of compartmentalization within the EU institutions (e.g., Hooghe, 2005; Kassim et al., 2013; Stevens & Stevens, 2001) seem to suggest that actual integration between domains is limited at best, and virtually absent at worst. More in general, previous research has shown that commitments to strengthened policy integration do not necessarily result in actual substantive governance changes, i.e. changes of policy instruments and subsystems involved (Jacob, Volkery, & Lenschow, 2008; Jordan & Lenschow, 2010; Mickwitz & Kivimaa, 2007).

Having set out the three challenges to the EU governance of food security that are central to this dissertation, this introductory chapter proceeds in section 1.2 by elaborating the key concepts used throughout the dissertation: (i) food security, (ii) wicked problems, and (iii) the EU governance of food security. The central research question, sub-questions and research objective are presented in section 1.3. Section 1.4 sets out the methodological approach and underpinnings of the research project. The introductory chapter ends with an outline of the dissertation.

1.2   Key concepts

1.2.1   Food security

Although dealing with hunger and guaranteeing a stable food intake is probably the oldest policy problem that mankind has had to deal with (Diamond, 2005; Fresco, 2015), the concept of food security was only introduced in an international setting during the World Food Conference of 1974, at which it was defined as:

> [A]vailability at all times of adequate world supplies of basic food-stuffs … to sustain a steady expansion of food consumption … and to offset fluctuations in production and prices (United Nations, 1975; cited in: Maxwell, 1996).

The World Food Conference and the associated definition of food security followed on subsequent major famines and shared concerns about the potential to keep food production levels up with population growth, which explains its focus on global production and availability.

Already before its introduction, this definition of food security was considered to be too narrow as food insecurity prevailed even in countries that had reached national self-sufficiency in food production (e.g., Berg, 1973; Joy, 1973). This line of thinking culminated in the influential work of Nobel Prize laureate Amartya Sen (1981), who argued that individual food insecurity is often related to a lack of access to food, which he referred to as 'food entitlements'. The inclusion of the dimension of access extended understandings of food security towards the social domain by raising questions about issues such as social inequality and gender differences.

In the years that followed, food security came to be understood and defined in many different ways, as was illustrated by Smith et al. (1992), who provided a list of 194 existing definitions of food security. During the World Food Summit of 1996, however, a definition came to be adopted that has become the most commonly used and cited since then:

> Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 1996).

Apart from availability and access, this definition includes two additional dimensions of food security: utilization and stability. Utilization involves the nutritional value of food as well as the required water sanitation, health, and cultural acceptability required for a nutritious diet. The fourth dimension refers to the stability of availability, access and utilization over the longer term. These four components have become the established food security dimensions or food system outcomes (Ingram, 2011).

In spite of the presence of an agreed-on definition, food security is still subject to a 'cornucopia of ideas' (Maxwell, 1996), because different actors emphasize and focus on varying underlying problems and possible solutions. Maxwell (ibid.) identified three broad paradigm shifts in thinking about food security between the 1970s and early '90s. The first shift is that the focus of both scholars and policymakers shifted from global and national to household and individual food security, which corresponds with the inclusion of the dimension of access. Second, food security understandings developed from a 'food first' perspective, i.e. a narrow focus on food production and availability, towards a broader livelihoods perspective. Third, food security increasingly came to be assessed by studying subjective perceptions, in addition to objective quantifiable indicators.

Since Maxwell's publication, the broadening of food security understandings has further advanced to include environmental and social considerations. Lang and Barling (2012)

describe this trend as the emergence of a 'second perspective' on food security. In contrast to the older perspective's focus on agriculture and raising production, with which Maxwell also started, this second perspective focuses on the sustainability of the food system as a whole, thereby including social, ecological and economic criteria. The food system involves the whole array of activities, most notably food production, processing, packaging, distribution, retailing, and consumption, that affect food security outcomes (Ericksen, 2008; Ingram, 2011), which also interact with social and environmental factors.

Approaching food security through a food systems lens enables a more holistic understanding of the concept, thereby recognizing its many facets and the complexity of interactions by which it is affected. The implication of such a holistic understanding is that food security is no longer restricted to specific research fields or policy domains, such as development cooperation, agriculture, or social policy (Ingram et al., 2013; Lang, Barling, & Caraher, 2009). Instead, food security comes to function as a cross-scale problem, spanning the boundaries of governance levels and policy domains and associated advocacy coalitions and epistemic communities. Therefore, throughout this dissertation food security governance involves the whole array of policies and domains that influence food security outcomes, i.e. the dimensions of food availability, access, utilization, and stability. Section 1.2.3 elaborates further on what is meant by the EU governance of food security.

1.2.2   Food security as a wicked problem

The dominant rational policy-planning paradigm in the 1970s assumed that societal problems could be solved by selecting the most appropriate policy alternative. Practice, however, showed that many policies and programs failed in delivering the outcomes they promised (Pressman & Wildavsky, 1984). A major shortcoming in this respect was that existing theories did not or hardly consider the role of societal norms, values, and power (Stone, 2012). Building forth on these critiques, Rittel and Webber (1973) introduced the concept of 'wicked problems' as opposed to 'tame problems'. Whereas for tame problems it is clear when a problem is solved or not, wicked problems are ill-defined and they "rely upon elusive political judgement for resolution" (ibid., p. 160). Rittel and Webber oppose *re*solutions to solutions, because, by definition, wicked problems can never be solved. This is also how wicked problems differ from other types of complex or unstructured problems (Hoppe, 2010), for which the assumption is that, although it may be very difficult, they can ultimately be solved. Wicked problems, on the other hand, may only be temporarily settled or resolved, often as the result of a trajectory of

'small wins' (Bryson, 1988; Weick, 1984) or the introduction of clumsy (re)solutions (Verweij et al., 2006).

Rittel and Webber provided a list of ten characteristics of wicked problems. Newman and Head (2015, p. 2) recently synthesized these characteristics into three interconnected dimensions:

> [F]irst, wicked problems are complex, in that they have shifting boundaries and moving parts as well as far-reaching and cascading negative externalities. Second, the information available to help resolve wicked problems is finite: uncertainty about the effects of a problem on society, who the relevant stakeholders are, and what consequences will follow any particular strategy is a major contributing factor to the wickedness of the problem. Third, wicked problems arise when there is a high level of disagreement among stakeholders, to the extent that consensus or even compromise is unlikely.

Although these interconnected dimensions may seem rather self-evident to most public administration and public policy scholars, the merit of the concept of wicked problems lies in its recognition that these dimensions may occur simultaneously and interact, which explains the recent increased popularity of the concept. Head (2008, p. 103) stated that studying these dimensions together may provide additional insights in "why many policies and programs generate controversy, fail to achieve their stated goals, cause unforeseen effects, or are impossibly difficult to coordinate and monitor."

Examples of policy problems that have been characterized as wicked in recent research include fisheries and marine policy (Jentoft & Chuenpagdee, 2009), natural resources management (Chapin et al., 2008; Lach, Rayner, & Ingram, 2005; Lachapelle, McCool, & Patterson, 2003), health care policy (Blackman et al., 2006; Kreuter, De Rosa, Howze, & Baldwin, 2004), business management (Camillus, 2008), and climate change adaptation (Termeer, Dewulf, & Breeman, 2013; Vink, 2015). Various scholars have suggested that food security can also be typified as a wicked problem (Anthony, 2012; Breeman, Dijkman, & Termeer, 2015; Dentoni, Hospes, & Ross, 2012; Hamann, Giamporcaro, Johnston, & Yachkaschi, 2011; Hamm, 2009; MacMillan & Dowler, 2012). However, most studies have thus far provided limited insights into how exactly the dimensions of wicked problems apply to food security. Comparing the existing food security literature with the three wicked problem dimensions provided by Newman and Head, I arrive at the following characterization of food security as a wicked problem, whereby I discuss the dimensions of complexity and uncertainty together. It is important to stress that it is not the individual dimensions but their simultaneous occurrence that lead to food security being typified as a wicked problem.

The first and second dimensions of Newman and Head's wicked problem definition, *complexity and uncertainty*, became very clear in respect to food security during and following the food price crises of 2007-8 and 2010 and consequential outbreaks of conjunctural food insecurity in large parts of the world. Although these crises were preceded by many small signals, to most policymakers and scholars they came as a surprise. In the years during and following the crises, scholars heavily debated the factors that caused food prices to peak, including the development of biofuels, rising oil prices, climate change, financial speculation, depleted stocks, and trade measures. It is now generally agreed that the crises resulted from a complex interplay between several of these factors, some of which allegedly had a greater impact than others (Headey & Fan, 2008; High Level Panel of Experts, 2011; Tadesse, Algieri, Kalkuhl, & von Braun, 2014). Although states of food security are affected by more factors than just food prices, the crises illustrate the uncertain and sudden contextual changes that policymakers need to cope with in food security governance. In addition, the crises showed how food security is interconnected with other (wicked) policy problems and associated policy domains, including climate change, the development of renewable energy sources, and financial markets. Interventions in these other domains, such as the setting of biofuels targets, have been shown to produce major and often unexpected externalities. As a consequence, the boundaries to governing food security are unclear and shift over time, resulting in considerable overlap with adjacent governance arrangements and communities. This complexity and uncertainty also imply that it is very difficult, if not impossible, to oversee the effects of interventions targeted at strengthening food security outcomes or reducing externalities.

An element that Newman and Head do not mention explicitly but that could be gathered under wicked problems' complexity is the tendency of wicked problems to *cut across temporal, spatial, and jurisdictional scales* (cf. Cash et al., 2006). Regarding the temporal scale, whereas some food security concerns manifest themselves within a relatively short and immediate time frame, such as price volatility and financial speculation, others span a longer time frame and are less visible, e.g., soil fertility, climate change, and social inequality. Similarly, a distinction can be made between long-term structural and short-term or occasional conjunctural food insecurity. On a spatial scale, food insecurity occurs and is governed at global, regional, national, local, household, and individual levels. Sometimes the level at which food insecurity primarily manifests itself and the level at which it is governed show a mismatch (Termeer & Dewulf, 2014). For example, whereas most food security governance arrangements are situated at national, regional, and global levels, many of the problems and manifestations of food insecurity occur at local and household levels (McKeon, 2011). And following from the above-mentioned argument that governing food security has no clear boundaries, food security transcends jurisdictions, for example of national ministries (iPES Food, 2015; Lang et al., 2009).

The third dimension of wicked problems as distinguished by Newman and Head, *high levels of disagreement between stakeholders*, was already extensively described in section 1.1, where the assumption was raised that food security functions as a consensus frame behind which considerable dissensus lies hidden in EU policy debates. A result of this dissensus is that there is no 'stopping rule' to food security (Rittel & Webber, 1973). As Maxwell (1996, pp. 162-163) argues, there is "no overarching theory, applicable to all situations: no "meta-narratives" about food security, whether derived from modernization, dependency or neo-liberal perspectives", and argued that "[p]olicy will instead need to recognize the diversity of food insecurity causes, situations and strategies, and be contingent on particular circumstances."

These examples of how food security meets the three wicked problem dimensions of Newman and Head are not exclusive; many other examples of wickedness could be identified across food security governance settings. The paragraphs above *do* however illustrate why and how the wicked problem heuristic is valuable to understanding food security governance. This heuristic will therefore be further applied, elaborated, and extended in the various chapters of this dissertation.

1.2.3   EU governance of food security

The concept of governance has become very popular among both scholars and policymakers in the last two decades. Because the concept has been studied and conceptualized by a broad range of academic disciplines, and schools of thought, a plethora of definitions exists (for overviews, see: Kjaer, 2004; Torfing, Peters, Pierre, & Sorensen, 2012). It is important to note that I restrict myself here to understandings of public governance, thus excluding notions and schools of corporate or 'good' governance (for a discussion of these, see: Kjaer, 2004). In general, public governance refers to forms of societal steering that differ from traditional government-centered approaches and that include interactions between a wide array of both public and private actors when addressing societal problems. Public governance scholars have emphasized different aspects of these emerging forms of societal steering, including focuses on self-organization (Jessop, 1998, 2002), interactions in network configurations (Klijn, 2008; Kooiman, 1993; Scharpf, 1994), and neo-liberal discourse (Bevir & Rhodes, 2003). Building forth on the observation that many of these accentuations have either been too narrow or too open (Torfing et al., 2012), I here adopt the broad but bounded governance definition by Termeer et al. (2011) in defining food security governance (in general) as *the formal and informal interactions across scales between public and/or private entities ultimately aiming at the realization of the food security dimensions of food availability, access, utilization, and the stability of these three dimensions over time.*

The definition I propose provides a general understanding of what is meant by food security governance. This dissertation, however, focuses on food security governance *at the EU level*, which requires a further delineation. In addition to international relations and comparative politics theories, the governance research agenda has become particularly influential in studying EU integration and policymaking over the last two decades, resulting in an emerging body of EU governance literature (Jachtenfuchs, 2001). At the same time, multiple governance theories and perspectives have also been applied at the EU level (Pollack, 2015). In this dissertation, EU governance is intimately bound up with cross-sectoral policymaking and coordination through networks *within* the EU institutions (cf. 6, Leat, Setlzer, & Stoker, 2002; Jordan & Schout, 2006). The EU governance of food security then refers to how the EU's policy subsystems more or less holistically cope with the wicked problem of food security. The research presented in this dissertation thus concentrates on actors and activities at the EU level and excludes those at member state, global, and other governance levels. In addition, the research focuses primarily on governance activities of the EU institutions and of policymakers working within these institutions, i.e. on public actors and institutions. Actors and activities that are external to the EU institutions are, where relevant, included in the analyses when they interact with the EU institutions and officials. The focus on cross-sectoral coordination and holism corresponds with the broad approach to food security (section 1.2.1) and implies that all policy efforts of the EU institutions are included in the analyses, possibly in interaction with other public and/or private entities that either positively or negatively affect the food security outcomes of food availability, access, utilization, and the stability of these three dimensions over time. Food security outcomes can hereby apply to the EU and its member states, but also externally, for example to developing countries.

Within such a broad perspective to the EU governance of food security, the EU's explicit food security efforts are naturally also taken into account. The EU has deployed various initiatives to address food insecurity directly, particularly in developing countries. The main outlines of the EU's approach are laid down in its 2010 communication on food security (European Commission, 2010c). Since the food price crises, the EU has deployed various policy instruments to assist developing countries with addressing food security, the most notable of which have been the €1 billion Food Facility and the expanded Food Security Thematic Programme. Interventions explicitly targeted at food security within the EU have been more limited in number and magnitude. This can be largely explained by the limited social policy competences that the EU possesses. Nevertheless, the EU has deployed the relatively substantial Fund for European Aid to the most Deprived (FEAD), which is used to help the most deprived European citizens with their basic needs, including food. In addition to these direct interventions, the EU has undertaken initiatives to reduce externalities and thus increase the coherence

of its other policies vis-à-vis food security outcomes. An important instrument in this respect is Policy Coherence for Development (PCD); a commitment to minimize contradictions and enhance synergies that has been reinforced in the Treaty of Lisbon and has been institutionally embedded within the EU institutions.

Summing up, the EU governance of food security is understood as all policy efforts of (subsystems within) the EU institutions that either intentionally or unintentionally and more or less holistically affect food security outcomes.

1.3   Research questions

The central research question that this dissertation aims to address is: ***how does the European Union govern the wicked problem of food security?*** To address this question, four sub-questions are defined. Questions 2, 3, and 4 each correspond with one of the three challenges to the EU governance of food security identified in section 1.1.2. These questions are preceded by a research question that aims to elucidate the current state of knowledge about food security governance in general.

1. What insights does the existing body of food security governance literature provide about governing the wicked problem of food security?

To be able to study the *EU* governance of food security, it is first necessary to more deeply understand food security governance and associated manifestations of its wickedness in general. Synthesizing the fragmented body of literature on food security governance will provide a better insight into the challenges inherent in governing food security. Such an insight helps determine both the validity of the initial conceptualization of food security as a wicked problem and the context in which EU institutions and policymakers govern food security.

2. Which food security frames can be distinguished in EU policymaking and how do the EU institutions deal with this diversity?

This research question addresses the first challenge to the EU governance of food security. Addressing this research question can provide a better understanding of the conflicting meanings attached to food security in EU policy debates. In addition the question focuses attention on how the EU institutions deal with food security frame conflicts, e.g., by analyzing which food security frames (actors within) the EU institutions deploy themselves.

3. What conditions enable or constrain the European Commission in coping with the wicked problem of food security?

This research question addresses the second challenge to the EU governance of food security. The ability of the Commission to govern wicked problems has been subject to contradictory accounts and arguments within the EU governance literature (Jordan & Schout, 2006; Kassim et al., 2013). This research question aims to investigate the potential or latent ability of the Commission as a whole, including its procedures, structures, resources, and dependencies in coping with the wickedness of food security.

4. To what extent has the EU realized a shift towards strengthened policy integration in the governance of food security?

This research question addresses the third challenge to the EU governance of food security. Calls for the realization of more holistic approaches and policy coherence have been the dominant perspective on strengthening food security governance within the EU in recent years. The main focus here is on whether an actual shift towards strengthened policy integration has been realized and thus on whether food security governance practices have altered.

By answering these four research questions I aim to also contribute to theoretical debates within the public policy and governance literatures, most notably on food governance, the (EU) governance of wicked problems, and policy integration. In addition, the dissertation seeks to identify opportunities and provide suggestions for strengthened EU food security governance.

1.4   Methodology

1.4.1   An exploratory research design and multi-theoretical approach

The (EU) governance of food security and the EU governance of wicked problems are phenomena that have hardly been studied systematically. This is not to say that scholars have paid no attention to these governance fields and associated challenges and dilemmas at all, but existing accounts predominantly take the form of (partial) narratives that lack substantive empirical foundations. Although there certainly is merit in such narratives, the goal of this dissertation is to *empirically* explore the EU governance of the wicked problem of food security. The research presented in this dissertation has therefore been conducted through an *exploratory research design*.

Exploratory research is generally used to study phenomena about which no or only sparse systematic knowledge exists (Kumar, 2011; van Thiel, 2007). It is an approach that can be used to gain more familiarity with a phenomenon that is not clear or contrived enough to make conceptual distinctions or posit explanatory relationships beforehand (Shields & Rangarajan, 2013). Exploratory research would therefore lend itself well for investigating the 'virgin territory' of the EU governance of food security; it can provide in-depth knowledge about the unique case of the EU, which is a highly relevant and underexplored food security governance setting. Additionally, it is a type of research that is often used for studying processes of meaning-making by actors, for example to analyze how meaning is given to a particular concept or notion in policy debates (van Thiel, 2007). This fits well with the second research question of studying the meanings that EU policymakers and stakeholders attach to food security and how these play a role in EU governance processes.

An implication of such a research design is that the final conclusions are typically not one-on-one generalizable to other governance settings (Stebbins, 2001). The findings can, however, be used to identify relevant dynamics that could serve as starting points for additional research, for example by producing hypotheses and tentative generalizations that can be tested or extended in following research (Babbie, 2010; Glaser & Strauss, 1967).

The adoption of an exploratory research design does not mean that the research lacks theoretical points of departure or theoretical ambitions. This is where the research in this dissertation differs from purely inductive or 'grounded' theory (e.g., Charmaz, 2006). Instead, for each of the research questions 2, 3 and 4, I have selected a theoretical approach from the public governance and policy literatures that seemed most appropriate and potentially insightful. The research can thus be qualified as following a reasoned exploratory design. Apart from enabling the individual research questions to be addressed purposively and systematically (cf. Stebbins, 2001), such a design allows for a more comprehensive understanding of the dimensions of the wicked problem of food security set out in section 1.2.2 (cf. Termeer & Dewulf, 2012).

The theories that have been used in the various chapters of this dissertation are: framing and consensus frames for research question 2, a governance capabilities framework for research question 3, and a policy integration framework for question 4. Question 1, on the existing body of knowledge about food security governance, was the only question that was addressed inductively, although critically appraised through the perspective of wicked problems and governance philosophies. Each of these theoretical approaches and associated questions and expectations are extensively discussed within the individual research chapters.

Apart from using theories to explain empirical dynamics in the EU governance of food security, I also hope to contribute to these theoretical debates themselves. As a consequence of this dual ambition, the EU governance of food security is both the focus and the locus of the research presented in the various chapters. Whereas in some chapters the emphasis lies on empirical questions related to the EU governance of food security (chapters 3 and 6), in others the main argument revolves around contributions to a theoretical debate for which the EU governance of food security is used as an in-depth single-n case study (chapters 4 and 5). All chapters, however, directly or indirectly address one of the four research questions. This also means that, although the dissertation's overall nature is explorative, various parts of the dissertation have a more explanatory or theory-testing character.

1.4.2   Ontological and epistemological position

A common denominator throughout the research presented in this dissertation is a realist ontological point of departure. Drawing from Brewer and Hunter (2006) and Pawson (2006), Biesbroek (2014, p. 9) defines a realist ontology as "the middle ground between the positivist paradigm and interpretative research in which social reality is seen as locally constructed and in which all research findings are considered to be situated rather than universally true (i.e. the constructivist paradigm)." Realists thus share a recognition of the value of meaning-making, emotions, norms, and values with interpretive researchers, but simultaneously argue that this does not mean that it is not possible to discern and describe general patterns of behavior and structural change (Sayer, 2000).

Following from this realist understanding, the epistemological position adhered to can be qualified as a pragmatist mixture between relatively more interpretivist and relatively more positivist perspectives, without every fully matching these research paradigms. Whereas chapters 3, on food security framings, and 4, on the Commission's ability to cope with food security's wickedness, can be characterized as taking a relatively interpretivist approach, chapters 2 and 5 are more focused on developing and testing generally applicable theories about (EU) food security governance. These different focuses allow for varied understandings of both how the wickedness of food security manifests itself and is experienced in every-day policymaking, and how this wickedness is understood and coped with in broader governance patterns. I shall further reflect on this in section 7.3 in the concluding chapter.

1.4.3   Methods of data collection and analysis

The multi-theoretical approach and realist perspective have implications for the choice of methods for addressing the various research questions in that they make a mixed set of methods most desirable. The exact methods of data collection and analysis as well as reflections on their validity and limitations are extensively elaborated within the specific chapters. Table 1.1 summarizes the research design and methods that were used for addressing each of the research questions. It is important to note that the research chapters do not necessarily provide insights into one question only. Therefore, chapter 7 synthesizes the combined insights to answer the research questions.

The multi-method approach is also used as a tool to validate insights and findings within the individual chapters of this research, thereby applying the principle of triangulation – although methodological puritans would not refer to the approach as triangulation in the strict sense (Jick, 1979). For example, the food security frames that are presented in chapter 3 were initially identified through an analysis of official documents. Subsequently, the results of this initial analysis were compared to observations made at various practitioner conferences to see whether the frames made sense in actual policy debates.

Table 1.1 Overview of research design and methods per research question

Research question	Research design	Methods
1	Review of existing grey and academic literature about food security governance. The literature was synthesized for its theoretical and empirical insights, which were then critically appraised.	Systematic review methods.
2	Analysis of food security frames in the reform debate of the Common Agricultural Policy post-2013. This case was chosen for the pervasiveness of different food security arguments within the debate.	Qualitative content analysis of stakeholder input, EU documents, and media coverage; Conference observations.
3	Interview round at the European Commission in which policy officers working in a broad range of directorate-generals were asked about how food security (concerns) is governed within the Commission and what the main enabling and constraining conditions are.	Semi-structured interviews at the European Commission, which were analyzed both deductively and inductively.
4	I designed an innovative policy integration framework, which was then applied to the EU governance of food security in the period 2000-2014 by translating it into specific indicators.	Quantitative content analysis of EU documents, complemented by a secondary analysis of interview data.

1.5   Outline of the dissertation

The following five research chapters all address one of the research questions presented in section 1.3. These chapters have all been published in or submitted to peer-reviewed

scientific journals. Chapter 2 synthesizes the fragmented state-of-the-art on food security governance by presenting the results of a systematic literature review. The synthesis identifies seven overarching themes within the literature. The current state of knowledge is critically appraised from the perspective of wicked problems and governance philosophies. Chapter 3 disentangles the consensus frame of food security by identifying the various food security frames in the policy debate surrounding the reform round of the Common Agricultural Policy post-2013. The framing analysis also includes the various actors invoking specific frames, including the EU institutions. Chapter 4 presents the results of a study of the European Commission's governance capabilities for dealing with wicked problems. In this chapter, the governance of food security serves as a case study for systematically investigating the contradictory claims within the EU governance literature regarding the Commission's ability to govern wicked problems. The analysis is based on an extensive interview round at the European Commission. Chapters 5 and 6 should be read together because they together address research question 4. Chapter 5 proposes a conceptual framework that can be used to study the development of policy integration vis-à-vis a crosscutting policy problem within a governance system over time. Such a conceptual framework is currently lacking within the political sciences. Chapter 6 applies the framework to the EU governance of food security, addressing the question of whether policy integration has increased during and following the 2007-8 and 2010 global food price crises. The dissertation ends with a concluding chapter in which the research questions are answered and an overarching conclusion is presented. In addition, this chapter reflects on the main contributions to scholarly debates and on the methodology applied in this dissertation and presents some recommendations for EU policymakers. The concluding chapter is followed by various supplementary materials and a list of references.

CHAPTER 2

Food security governance: a systematic literature review

Abstract[2]

The role of governance has been receiving increasing attention from food security scholars in recent years. However, in spite of the recognition that governance matters, current knowledge of food security governance is rather fragmented. To provide some clarity in the debate about the role of governance in addressing food (in)security, this chapter reports the results of a systematic review of the literature. The synthesis revolves around seven recurring themes: i) the view of governance as both a challenge and solution to food security; ii) a governability that is characterized by high degrees of complexity; iii) failures of the current institutional architectures; iv) the arrival of new players at the forefront; v) calls for coherency and coordination across multiple scales; vi) variation and conflict of ideas; and vii) calls for the allocation of sufficient resources and the integration of democratic values in food security governance. Two lines of discussion of this synthesis are raised. First, the researcher argues that a large proportion of the food security governance literature is characterized by an optimist governance perspective, i.e., a view of governance as a problem-solving mechanism. Complementing this body of literature with alternative governance perspectives in future research may strengthen current understandings of food security governance. Approaching food security as a 'wicked problem' could provide valuable insights in this respect. Second, food security governance as a research field could make headway by engaging in further empirical investigation of current governance arrangements, particularly at sub-national levels.

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2   This chapter is published as: Candel, J.J.L. (2014) Food security governance: a systematic literature review, *Food Security*, 6(4), 585-601.

2.1   Introduction

Food security has received much attention in recent years, from both academics and non-academics (Allen, 2013; Lang & Barling, 2012). This increase in attention is particularly noticeable after the 2007–8 and 2010 world food price crises and the 2008 World Development Report, which called for greater investment in agriculture in developing countries. These events made clear that, in spite of decades of efforts to eradicate hunger and malnutrition, food insecurity is still a significant problem. Furthermore, it has become increasingly clear that food security is strongly interlinked with other issues, such as global environmental change and energy markets, and that its policy environment is undergoing transformation and globalization (Ingram, Ericksen, & Liverman, 2010; Lang et al., 2009). For those reasons food security has become a concept that finds wide resonance among academic institutions and in policy considerations (Candel, Breeman, Stiller, & Termeer, 2014; Mooney & Hunt, 2009).

Within these recent food security debates, the role of governance has been attracting increasing attention. This development stems from the often-heard notion that food security solutions or approaches should not only address the technical and environmental dimensions of the issue, but also take social, economic, and political aspects into account (FAO, 2012; Maye & Kirwan, 2013; von Braun, 2009, p. 11; Wahlqvist, McKay, Chang, & Chiu, 2012). Katrien Termeer (in: Kropff, van Arendonk, & Löffler, 2013, p. 128), for example, stated that "food security cannot be realized by means of idealistic plans or new technologies only. It requires advanced steering strategies that involve governments as well as companies, NGOs and citizens."

The concept of governance has been used and developed in a broad range of academic disciplines, resulting in a plurality of definitions and applications (for an overview, see: Kjaer, 2004). Here, I follow Termeer et al. (2011, p. 160) in choosing a broad definition of governance as "the interactions between public and/or private entities ultimately aiming at the realization of collective goals." *Governance* is generally differentiated from *government*, which is associated with more hierarchical and state-centred modes of managing public issues (e.g., Kersbergen & Waarden, 2004; Pierre & Peters, 2000). As the above quote illustrates, in recent years the concept of governance has been increasingly applied to the notion of food security,[3] which is most often defined as "all people, at all times, having physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 2003) and which is constituted by the elements food availability, food access, and food utilization, and their stability over time (FAO, 1996). These interactions take place both

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3   Food security governance here refers to the governance of food security, and not to a specific type or mode of governance. Food security governance and governance of food security are used interchangeably in this chapter.

within and outside food systems (cf. Ericksen, 2008; Ingram, 2011), and cover factors such as food prices, agricultural trade, poverty reduction, infrastructure, education, and crisis management. In addition to interactions aimed at improving food security, food security governance is about man- aging the context in which these interactions take place (cf. Jessop, 2003).

What is striking is that, in spite of these various calls for food security governance, it is not very clear yet what food security governance entails, what its essential characteristics or features are, and how it could be enhanced. The aim of this chapter is therefore to: i) provide a state-of-the-art of the current state of knowledge about food security governance, ii) provide a critical appraisal of this state of knowledge, and iii) lay out an agenda for future research.

These research objectives were addressed by performing a systematic review of both academic and grey literature elaborating on food security governance. This chapter presents the synthesis that resulted from this review as well as the researcher's critical appraisal of the state of the research field. Here, it is important to note that, although many concrete global, national, and local food security initiatives, programs, and projects have been both developed and studied, the focus of this chapter is primarily on that part of the literature, which studies these initiatives and interactions through an explicit governance lens, in which governance is both study objective and theoretical perspective. Also, although this study focuses explicitly on the relatively recent literature on food security governance, this is not to say that there was no governance of food security before the introduction of the notion. On the contrary, governance of food and food security are probably as old as man (cf. Diamond, 2005).

The reason for choosing a systematic review method is the assumption that bits and pieces of knowledge regarding food security governance already exist, but that these have only sparsely been linked to one another. In other words, there is no clear overview of the food security governance literature. On the one hand, this has proved to be an advantage, because, as shown in the fourth section, it has resulted in complementary insights from various schools, disciplines, and approaches. On the other hand, however, it has prevented the realization of a combined understanding up to now. This chapter aims to fill this gap.

The chapter proceeds in section 2.2 with a description of the systematic review methods used. In section 2.3, the data, i.e., the body of included literature, are described. Section 2.3.1 sets out the key characteristics of the literature, 2.3.2 gives an overview of the various conceptualizations of food security governance in the literature. A synthesis of the literature is presented in section 4 along seven recurring key themes. This synthesis

is reflected upon by the researcher in the discussion section, which revolves around two lines of discussion: section 2.5.1 elaborates on the dominant governance perspective within the literature and 2.5.2 on the current state of the research field. The chapter ends with some brief conclusions.

2.2   The systematic review process

The advantage of using systematic review methods over other review types is that researcher bias can be limited and made visible (Petticrew & Roberts, 2006). Systematic methods require a certain structured way of working, the use of clear inclusion and exclusion criteria to select eligible literature, and a positive attitude towards transparency, in both doing the analysis and reporting findings. They urge the researcher to take the reader by the hand and walk him/her step by step through the procedures followed and the choices made during the research process. Thus, systematic review methods can enhance the trustworthiness of the conducted research, and, consequently, the legitimacy of claims being made (Gough, Oliver, & Thomas, 2012).

2.2.1   Data collection

The data collection process is depicted schematically in Fig. 2.1.

First, an initial assessment of the literature was performed in Scopus to develop a query. Besides governance, similar concepts that are more common in specific academic communities, such as stewardship and management, were included. The resulting query, consisting of the terms 'food (in)security' and (synonyms of) 'governance' (Supplementary Material (SM) A), was used to search academic articles, reviews, articles in press, and conference papers in two digital bibliographical databases: Scopus and Web of Science. Scopus and Web of Science were both chosen to prevent either European (Scopus) or American (Web of Science) bias. Grey literature was retrieved by searching Google Scholar, and the websites of five organizations. Although Google Scholar has some serious limitations in relation to performing a systematic review (cf. Anderson, 2013), it did provide two relevant documents that could not have been retrieved otherwise. I therefore chose to accept this impurity for the sake of the comprehensiveness of the included body of literature. The organizations whose websites were searched were the UN Food and Agriculture Organization (FAO), the World Food Programme (WFP), the World Trade Organization (WTO), the International Fund for Agricultural Development (IFAD), and the World Bank. These organizations were selected on the basis of a Google Scholar search using the query 'food security governance.'
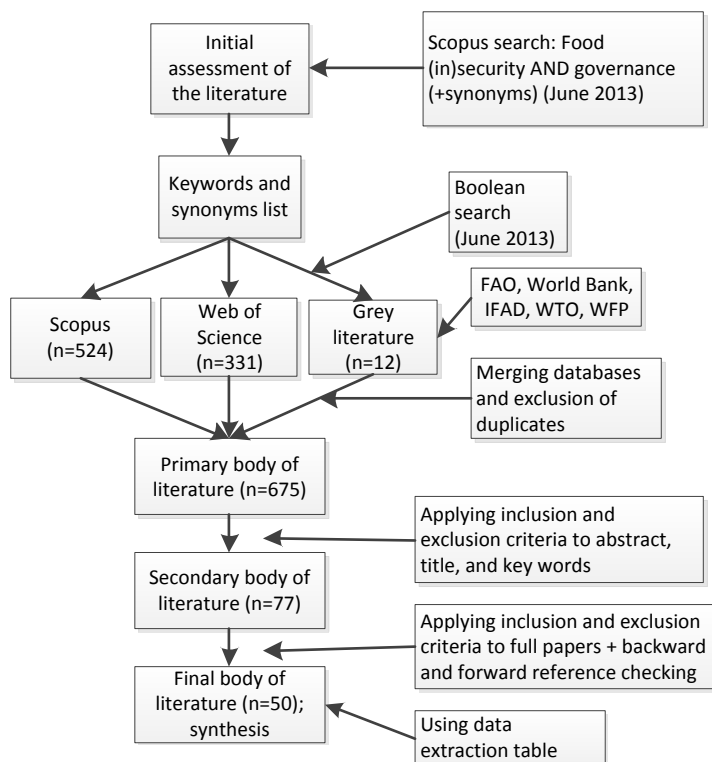
Figure 2.1 Data collection process, based on (Biesbroek, Klostermann, Termeer, & Kabat, 2013a)

For the academic databases, this query was restricted to the titles, abstracts, and keywords of articles. The first search led to 663 academic articles,[4] 2 additional academic publications on Google Scholar,[5] and 10 texts from global organizations, of which 2 were academic publications.[6] All abstracts were loaded in Endnote and read. Academic articles were judged potentially relevant when they matched the inclusion criteria (SM A) (n=65). Reflections were included on both concrete food security governance arrangements and food security governance in general. Also, both empirical and theoretical or conceptual articles and documents were considered potentially relevant.

Full papers were read and judged again using the inclusion and exclusion criteria. This led to a final body of academic literature of 30 articles. Backward and forward

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4   Duplicates excluded
5   I scanned the first twenty pages of results. All other relevant results had already been retrieved by searching Scopus and Web of Science, global organizations' websites, or reference checking.
6   Eight from the FAO website, two from IFAD. Searches on the other websites did not lead to relevant results.

reference checking led to 8 more articles (SM A). Including the 2 Google Scholar and 10 international organization articles this led to a total of 50 documents.

2.2.2 Data analysis

All articles and other documents were read again, and the data were collected in a data extraction table (SM A). The data extraction table presents the results literally, without interpretation by the researcher, and includes the following categories: governance level, governance locus, type of document, method, theoretical orientation, conceptualization of food security governance, core argument and insights into the nature of food security governance, and recommendations made to improve food security governance. The table is a summary of the key insights into food security governance that each document provided, and it served as the basis for the synthesis.

Before the synthesis was written, the various insights in the table were compared to one another and grouped under the main themes that recurred throughout the literature. This provided the opportunity to identify differences and similarities between the data, and to interpret these. The resulting seven themes eventually became the headings of the synthesis. The synthesis is thus the researcher's endeavour to bring together the core observations and arguments throughout the data extraction table and associated literature.

2.2.3 Limitations

Despite its attempt to provide a review of a body of literature that is as comprehensive as possible, this review has some serious limitations. First, only documents written in English were included. The initial search led to several results in other languages, such as French, Spanish, and Portuguese, that could be highly relevant for the purposes of this review but were excluded nevertheless (e.g., Lerin & Louafi, 2012; Postolle & Bendjebbar, 2012; Soula, 2012). Second, the review is heavily skewed towards academic peer-reviewed articles. Although some book chapters, conference proceedings, and grey literature documents were included, complementing the body of literature with books, dissertations, and more grey literature could lead to additional insights. This is especially true for books and book chapters, which proved difficult to retrieve by searching digital databases. Third, the academic literature was searched using the two biggest databases, Scopus and Web of Science. Although these two databases together cover a significant majority of international peer-reviewed journals, other, more specialized databases might cover other potentially relevant journals. In addition, new

journals are often not (yet) covered by either Scopus or Web of Science. It also means that the body of literature is dominated by publications from the Western hemisphere, whereas publications from other parts of the world, such as India, Brazil, and China, are relatively underrepresented. Finally, both food security and governance are labels that have become particularly popular in recent decades, whereas the combination of the two has only emerged in recent years, as shown in the next section. Many issues and domains that touch upon food security have been studied for a much longer time, and these research lines hold potentially highly relevant insights with respect to food security governance. In other words, there has been governance of food security for a much longer time than the notion itself has been used. The scope of this chapter was restricted to studies and articles that focus explicitly on the notion of governance in combination with food security, and not agriculture, rural development, or other related issues. In future research or reviews, this review could be complemented with insights from these specific domains or disciplines. Some studies, books and chapters that were not included in this review because of one or more of the limitations mentioned, and that could be particularly relevant additions to this review's synthesis are an edited volume by Barrett (2013) on food security in relation to socio-political stability, a chapter by Schilpzand et al. (2010) on the role of private sector involvement and a book by Barrett and Maxwell (2005) on governance issues in food aid.

2.3 A description of the data

2.3.1 Characteristics of the body of literature

The food security governance literature can be categorized along various characteristics. This section presents a 'map' of the body of literature included (see: Gough et al., 2012).

The ISI Web of Knowledge *Journal Citations Report* indicates that the various journals in which the 33 included academic articles were published cover a broad range of disciplines within both the natural and the social sciences. Among these fields[7] are International Relations (*n*=5), Food Science & Technology (*n*=4), Sociology (*n*=4), and Economics (*n*=3). Of all the journals that included articles on food security governance, only one journal had more than two articles (*Food Security*, *n*=3), which, together with the journal categories, indicates the spread of academic attention across various disciplines and communities.

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7   Based on journal subject categories in *Journal Citations Report*. Only ISI-indexed journals were included in the analysis. Ten articles were not published in an ISI-indexed journal. If journals were ascribed to multiple categories, all categories were included.

Regarding the years in which the documents were published, an upward trend can be seen from 2009 onwards (Figure 2.2). Whereas none of the years before 2009 includes three or more documents, this increases to five and four in 2009 and 2010, respectively, and ten, twelve, and nine in 2011, 2012, and 2013,6 respectively. This observation confirms the notion that the recent food crises formed the impetus for an increase in research on food security in general (Rockson, Bennett, & Groenendijk, 2013).

Figure 2.3 shows that a large proportion of the included documents focus on the global governance level. The concept of food security governance seems most integrated in the discourse of, and research on, global organizations, such as FAO, the Committee on World Food Security (CFS), and the G20. Nevertheless, more than a fifth dealt with national food security governance. Countries covered range from developed countries like Canada and Japan, to developing countries such as South Africa, Malawi, the Philippines, and Brazil. Only a relatively small proportion of the literature covered governance of food security at sub-national levels.
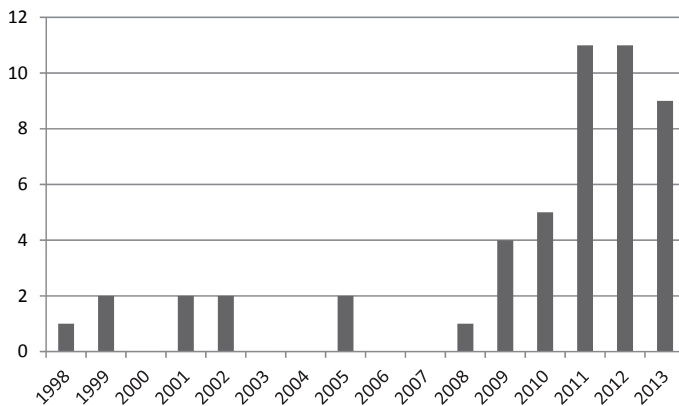
Figure 2.2 Number of publications per year

Finally, the data extraction table indicates that 69 % (n=29) of the 42 academic publications did not collect data, or did not justify the methods used. Those that did mention the methods most often used interviews (n=8) or documents analysis (n=6).

2.3.2   Food security governance conceptualizations in the literature

Of the 50 included documents, 8 provided a conceptualization of food security governance, or mentioned what food security governance comprises (Table 1). The remainder of the articles and documents either discussed food security governance
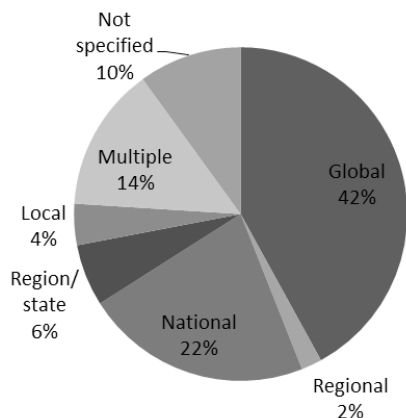
Figure 2.3 Governance levels on which documents focused

without explicitly defining the notion, or did not have food security governance as their core focus but provided some insights on the margins.

As Table 2 shows, the six conceptualizations differ considerably regarding the elements of food security governance that they underline or deem crucial. Also, various nomenclatures are used, such as 'food security governance,' 'governance of food security,' and 'good governance for food security' (FAO, 2011a).

A recurring element in most definitions is 'steering,' which refers to the exercise of power through the design and enforcement of interventions aimed at improving food security conditions. Although this can be done by both public and private actors, most conceptualizations are relatively government-centred.

Apart from steering, elements that are mentioned repeatedly are 'deliberation,' 'formal and informal,' 'democratic values,' 'institutions,' 'multi-levelness,' and 'nutrition.' Deliberation is particularly pervasive in the three FAO definitions, which all emphasize the articulation of views and/or ideas. This could be due to FAO's closeness to the CFS, which primarily aims to stimulate and facilitate deliberation. The formal–informal nexus suggests that these deliberations do not necessarily take place in formal institutional settings, but that both exchanges of ideas and steering can also occur through informal pro- cesses and institutions.

In two of the conceptualizations of food security governance, the authors find it essential that these steering and/or deliberative activities are grounded in societal support and respect democratic values, such as legitimacy, accountability, and transparency. Two other conceptualizations underline the importance of nutrition, which can be traced

Table 2.1 Food security governance conceptualizations

1.	a mechanism that will facilitate debate, convergence of views and coordination of actions to improve food security at global but also at regional and national levels (FAO, 2009, p. 1).
2.	the exercise of power within institutional contexts, particularly crafted to direct, control, and regulate activities concerned with food security whereby these institutions are viewed by citizens as legitimate, accountable, and transparent (Mohamed Salih, 2009, p. 501).
3.	Good governance for food and nutrition security is fundamentally about national governments prioritizing policies, plans, programs and funding to tackle hunger, malnutrition and food insecurity in the most vulnerable populations, whether it be through humanitarian or development assistance, nationally, bilaterally or multilaterally (High-Level Task Force on the Global Food Security Crisis, 2010, p. 3).
4.	relates to formal and informal rules and processes through which interests are articulated, and decisions relevant to food security in a country are made, implemented and enforced on behalf of members of a society (FAO, 2011a, p. 17), also used in (Colonelli & Simon, 2013; Pérez-Escamilla, 2012).
5.	governance for food and nutrition security relates to formal and informal rules and processes through which public and private actors articulate their interests, and decisions for achieving food and nutrition security (at local, national and global level) are made, implemented and sustained (FAO, 2011b).
6.	there are over a dozen international institutions active in the field of food security. Working alongside these institutions are numerous regional, non-governmental and private organizations. This decentralized patchwork of institutions constitutes what may be best described as global food security governance (Margulis, 2012, p. 231).

back to wider support within the food security academic community to include the nutritional dimension in measures of food insecurity.

Two final elements of food security governance mentioned more than once were 'institutions' and 'multi-levelness.' Regarding the first, a good example is Margulis' equation of food security governance with the global constellation of institutions and organizations. This description differs from the five others in the sense that it does not mention the role of agency or interactions. Regarding the element of multi-levelness, it is not self-evident whether this refers to multiple levels of governance, or to merely aiming to have an impact on multiple levels of food security. These conceptualizations do seem to imply, however, that food security is an issue that spans spatial and jurisdictional scales.

Table 2.2 Elements of the various conceptualizations

Definition elements	FAO 2009	Mohamed Salih 2009	High-Level Task Force 2010	FAO 2011a	FAO 2011b	Margulis 2012
	Global governance of food security	Governance of food security	Good governance for food security	Food security governance	Governance for food and nutrition security	Global food security governance
Coordination	X	-	-	-	-	-
Convergence	X	-	-	-	-	-
Deliberation	X	-	-	X	X	-
Democratic values	-	X	-	X	-	-
Formal and informal	-	-	-	X	X	-
Institutions	-	X	-	-	-	X
Multi-level	X	-	-	-	X	-
Nutrition	-	-	X	-	X	-
Public and private	-	-	-	-	X	-
Steering	-	X	X	X	X	-

Finally, three elements mentioned only in a single conceptualization were 'coordination,' 'convergence,' and 'public and private.' However, as can be seen in the following section, these are all themes that recur frequently throughout the literature.

Food security governance is thus conceptualized in various ways, whereby each description highlights different elements. Moreover, rather than reflecting a current regime, most conceptualizations sketch an ideal state of (good) food security governance.

2.4   Synthesis of the literature

The synthesis presented in this section is divided along seven interrelated key themes that recur throughout the literature. For each theme, the central insights and arguments are presented. These insights and arguments are reported as they are raised in the literature and do not necessarily reflect the viewpoint of the researcher. It is important to note that the boundaries between these seven themes are relative, and consequently there is some substantive overlap between themes.

The synthesis starts with the broad views of governance as both a challenge and a potential solution to food security. Themes 2 through 5 show that the potential positive contributions that governance arrangements can make to food security are argued to be complicated by the high degrees of complexity that characterize the issue (theme 2), failures of current institutional architectures to address this complexity (theme 3), and the arrival of new types of actors in food security governance (theme 4), but could arguably be stimulated by a stronger focus on coherency and coordination across scales (theme 5). However, apart from complexity, the literature shows that food security governance involves various, sometimes conflicting, ideas about the way(s) in which to address food insecurity, as is set out under theme 6. Theme 7 adds two more factors

that should be taken into account according to the literature: resources and democratic values.

Theme 1: the view of governance as both a challenge and a solution to food security

Throughout the literature, governance is considered as both a potential driver of, and a potential solution to, situations of food insecurity. Regarding the former, Boyd and Wang (2011) clearly show that, in some situations, poor governance, rather than natural conditions, constitutes the main driver of food insecurity. Conflict, lack of institutional capacity, poor policy design, and lagging implementation can inflict serious harm to the production and distribution of healthy food. Boyd and Wang, in this respect, refer to Peter Bauer's earlier example of North and South Korea, which have similar natural conditions but big differences regarding their levels of food security, which can be traced back to differences in the quality of governance. Note that, in this example, poor governance does not necessarily refer explicitly to governance of food security, but rather to a country's governance system in general.

Other authors stress that, even when poor governance is not the main cause of food insecurity, it can be a significant contributory factor when it fails to effectively address natural, economic, or social drivers of conjunctural or structural hunger (Committee on World Food Security, 2012; Pereira & Ruysenaar, 2012; Sahley, Groelsema, Marchione, & Nelson, 2005). For example, in a food security assessment of Malawi, Sahley et al. (2005) argue that the limited capacity of the Malawian government to implement its own policies and programs formed a significant constraint to tackling the country's development challenges. Likewise, Pereira and Ruysenaar (2012) contend that governments often fail to respond to crises because of poor decision- making, limited coordination, weak institutions, and scarce resources.

At the same time, it is underlined throughout the literature that, whereas bad governance often has a significant negative impact on food security, the opposite is true for good governance. Although often overlooked, well-developed governance arrangements that are able to respond effectively to both crisis situations and structural concerns are key to eradicating hunger (Galiè, 2013; Haddad, 2011; High-Level Task Force on the Global Food Security Crisis, 2010). Pereira and Ruysenaar (2012), for example, show how the extension of South-African business' 'good corporate governance' principles to the inclusion of stakeholders in decision- making has resulted in an improved ability to respond to changes in the food system. Similarly, Haddad (2011) argues that the creation of a new social policy program and a ministry, which has been tasked with coordinating the work of other ministries toward a number of food security goals, has had a significant positive impact on Brazil's food and nutrition security.

Theme 2: a governability that is characterized by high degrees of complexity

Although the importance of food security governance is increasingly acknowledged, the literature indicates that food security is not an issue that lends itself to being 'governed' easily. It is recognized that food security is a highly complex and multi-dimensional issue that is impacted by a broad range of drivers and food system activities, stretches across various scales, and involves multiple sectors and policy domains (Behnassi & Yaya, 2011; Colonelli & Simon, 2013; Drimie & Ruysenaar, 2010; Duncan & Barling, 2012; Makhura, 1998; Maluf, 1998; Margulis, 2011, 2013; Marzeda-Mlynarska, 2011; McKeon, 2011; Pereira & Ruysenaar, 2012). Regarding the last point, food security is not so much approached as a domain in itself, but, rather, as an issue affected by a wide array of domains, such as agriculture, trade, fisheries, environment, development cooperation, and energy, as a result of which many actors and institutions are involved in food security governance (Mohamed Salih, 2009). Consequently, it is difficult to identify the main drivers of food insecurity, the more so because there is a distinction between structural food insecurity and associated drivers, and conjunctural food insecurity, such as hunger related to sudden food price spikes (Clapp & Murphy, 2013; High-Level Task Force on the Global Food Security Crisis, 2010). Margulis (2013) argues that there is, nevertheless, increased awareness of the structural factors that play a role.

The body of literature shows that food security governance is spread not only across domains and sectors, but also across spatial scales. States of, as well as challenges to, food security can be considered on a global, regional, or national level, but have also been increasingly studied and addressed at local, community, household, or individual levels over the last decades. Whereas Robert Paarlberg (2002) argues that the main drivers and solutions should primarily be sought at national level, recent food crises have shown that ongoing globalization and the associated entanglement of world food systems have led to a situation whereby food insecurity drivers increasingly lie outside the scope of national governance (McKeon, 2011).

Theme 3: failures of the current institutional architectures

Addressing an issue as complex as food security thus requires a sophisticated governance system. Nevertheless, the majority of the reviewed literature is highly critical of the current institutional architecture and practices of food security governance and offers recommendations for a more effective and/or democratic future governance system.

Most of this critique is focused on the global level of food security governance (e.g., Colonelli & Simon, 2013; Global Forum on Food Security and Nutrition, 2011; Margulis, 2011; McKeon, 2011). However, to a large extent this can be attributed to

the lack of national and sub- national governance arrangements and associated studies, especially in developing countries (Thomson, 2001). The main critique of the global governance of food security is that there is no truly authoritative and encompassing body or institution with a mandate to address food security concerns across sectors and levels (Amalric, 2001; Behnassi & Yaya, 2011; Colonelli & Simon, 2013; Margulis, 2011; McKeon, 2011; von Braun, 2009). Instead, responsibilities, jurisdictions, and foci are spread across a broad range of international organizations and forums, which all have their own core business, but none of which deals with food insecurity in a holistic and inclusive manner (Committee on World Food Security, 2012; Global Forum on Food Security and Nutrition, 2011). Margulis (2013) and Orsini et al. (2013) have termed this the shift from an international food security regime towards a regime complex for food security, in which food security is affected by a wide array of governance regimes that are all constituted by distinct sets of actors, forums, discourses, interests, and so forth. As a result, there is a considerable overlap of mandates and actions, in the best scenario resulting in duplicate actions, but in the worst in conflict between interests, visions, and paradigms (Margulis, 2011, 2012, 2013; McKeon, 2013). Moreover, as the CFS (2012) argues, this fragmented effort has resulted in a large number of projects that lack the scale to make a real difference. This vacuum of global governance has therefore led to a general inadequacy in tackling effectively both structural hunger and sudden food crises (McKeon, 2011). Many authors see a potentially important role for the recently reformed Committee on World Food Security in filling this vacuum, but state at the same time that the CFS still needs to prove its effectiveness (Clapp & Murphy, 2013; FAO, 2010, 2012; Global Forum on Food Security and Nutrition, 2011; High-Level Task Force on the Global Food Security Crisis, 2010).

In addition to the occurrence of conflict between international bodies, the literature also gives examples of how these bodies affect one another through their norm-setting tasks, the creation of rules, and diffusion of paradigms. This effect is reinforced by the participation of actors in several of these bodies at the same time, all of which attempt to pursue their interests through various channels (González, 2010). Clapp and Murphy (2013), for example, argue that the G20's unwillingness to address the root causes of price volatility has had a chilling effect on the discussions taking place in other organizations, such as the CFS. For this reason, and because of an arguable lack of legitimacy of the G20, they plead for the G20's withdrawal from food security governance and for other organizations to take back the helm.

Although a large proportion of documents focus on the global level, some of the literature describes similar dynamics in national or local governance. Sahley et al. (2005), for example, observe that policy formation in Malawi was ad hoc and resulted in a plethora of policies and programs that were sometimes disconnected and contradicted

one another, and were spread across central government agencies. Similarly, Drimie and Ruysenaar (2010) argue that the South African Integrated Food Security Strategy (IFSS) was poorly executed and had too strong an emphasis on agriculture. There was a lack of coordination between departments, sub-programs were weakly integrated, and supportive legislation was lagging behind.

Theme 4: the arrival of new players at the forefront

Part of the complexity and the difficulties with the design of institutional structures stems from an increase in the number of actors involved in food security approaches, or that have a direct or indirect impact on food security (Behnassi & Yaya, 2011; Duncan & Barling, 2012; Edwards, 2012; Koc, Macrae, Desjardins, & Roberts, 2008; Margulis, 2012; McKeon, 2011; Pereira & Ruysenaar, 2012; Seed, Lang, Caraher, & Ostry, 2013; von Braun, 2009). This increase in stakeholders can be reduced to three types in particular: international organizations, civil society organizations (CSOs), and private sector corporations. These actors are active on all governance levels and within international organizations or government agencies, whereby they often 'shop' between forums or venues, depending on where they perceive their interests to be best represented (Duncan & Barling, 2012; McKeon, 2011).

The increase in international bodies, in particular, followed the 2007–8 world food crisis. After the crisis, the CFS was thoroughly reformed, the UN installed a High-Level Task Force, the World Bank renewed its focus on agriculture and food security, and the G8/G20 became increasingly involved (Clapp & Murphy, 2013; Jarosz, 2009; Jarosz, 2011; Margulis, 2012). However, as the above section on the global institutional architecture has made clear, this increase in organizations has not been without criticism.

Civil society participation has not only increased in recent years, but is also considered crucial for effectively addressing food insecurity on all levels (FAO, 2009; Global Forum on Food Security and Nutrition, 2011; High-Level Task Force on the Global Food Security Crisis, 2010; Jarosz, 2009; Makhura, 1998; Margulis, 2012; Rocha & Lessa, 2009; Seed et al., 2013; Thomson, 2001; von Braun, 2009). The literature indicates a broad range of advantages that CSOs could provide to more traditional government-centred approaches. First, civil society can provide the policymaking process with valuable information. Local, bottom-up knowledge creation may contribute to identifying food insecurity problems and response gaps of which policymakers are often unaware (Bastian & Coveney, 2012; Brownhill & Hickey, 2012; Koc et al., 2008; Seed et al., 2013). Second, CSO participation brings food security governance closer to those who are hungry. It therefore enhances the legitimacy of, and public support for, food security interventions, which, together with the resources that CSOs can bring

in, stimulate effective implementation (Behnassi & Yaya, 2011; Edwards, 2012; Koc et al., 2008). Third, CSOs can form bridges between government agencies that did not previously cooperate, or between various governance levels (global – national, national – local, global – local), and thus contribute to a multi-sector and multi- scalar approach (Edwards, 2012; McKeon, 2011). Fourth, CSOs frequently operate as co-workers of government agencies and can offer the capacity that government often lacks (Seed et al., 2013).

In spite of these potential advantages and a handful of best practices, the inclusion of CSOs in food security governance is not self-evident. Both Seed et al. (2013) and Koc et al. (2008) show that these forms of collaborative governance call for appropriate structures, capacity, and political will, which are not always at hand. In addition, involving civil society actors entails a shift in bureaucratic philosophies, and this requires time and continuous effort. Moreover, some actors may benefit from the exclusion of others, because it enables them to satisfy their own agendas. The inclusion and exclusion of actors influences the structures and mechanisms of food security governance as well as the substance of decisions made, and is therefore important to take into account when setting up or evaluating arrangements (Duncan & Barling, 2012).

A third group of actors who are increasingly involved in food security governance are private corporations and related associations. Compared to CSOs, this group has received relatively limited attention. This is partly because, although private corporations do participate in global forums and organizations, most of their activities and impacts remain relatively hidden. This has led to critiques about the lack of regulation and democratic control of private sector interests (Behnassi & Yaya, 2011; McKeon, 2011), but others have argued that this new reality should be accepted and that these players should be further embedded in food security governance (von Braun, 2009).

Theme 5: calls for coherency and coordination across multiple scales

To overcome the identified problems of fragmentation, overlap, conflict, increasing numbers and types of stakeholders, and ineffectiveness that characterize current food security governance, the literature almost unanimously calls for an enhanced institutional capacity that could contribute to realizing higher degrees of coherence and coordination.

A central argument is that addressing the complex food insecurity drivers requires policies and programs that mutually reinforce one another, thereby contributing to shared goals and outcomes. The individual actions of (international) organizations, countries, donors, corporations, and other private actors can address various drivers and aspects of food insecurity but would, together, have to result in a coherent and holistic

approach, whereby trade-offs and duplicated efforts are minimized and one actor's course of action does not impair that of others. This calls for high degrees of coordination, both between the currently fragmented institutions and between governance levels, and integration of food security concerns into other policy domains or sectors (Clapp & Murphy, 2013; Drimie & Ruysenaar, 2010; FAO, 2009, 2012; High-Level Task Force on the Global Food Security Crisis, 2010; MacRae, 1999; Maluf, 1998; Margulis, 2011, 2013; McKeon, 2011; Rola, 2013; Seed et al., 2013). This would imply that, on each governance level, regimes, sectors, policy domains, and associated actors and institutions would have to be brought into line; but this can only be realized by active coordination on the one hand, and the inclusion of multiple public and private actors and decentralized initiatives on the other (Behnassi & Yaya, 2011; Committee on World Food Security, 2012; Drimie & Ruysenaar, 2010; Edralin & Collado, 2005; FAO, 2009; High-Level Task Force on the Global Food Security Crisis, 2010; Lang & Barling, 2012; Marzeda-Mlynarska, 2011). At the same time, it is argued that coordination between governance levels would have to be stimulated, so that drivers of food insecurity are addressed at the appropriate level, thereby complying with the principle of subsidiarity (Global Forum on Food Security and Nutrition, 2011; McKeon, 2011). According to Misselhorn et al. (2012), 'boundary organizations' can play an important role in this respect. As the term indicates, these organizations operate on the boundaries between sectors or governance levels and thus have the potential to stimulate coordination. Regional organizations, such as the European Union or ASEAN, or their divisions, provide promising opportunities in this regard (FAO, 2011b).

These last examples point to the issue of institutional capacity, which is deemed essential to organize sustained coordination (Haddad, 2011; Margulis, 2011; Thomson, 2001). As the example of Malawi shows, a lack of institutional capacity can lead to lagging implementation, and it may also hamper the quality of policy formation and integration with multiple policy sectors and governance levels (Sahley et al., 2005). Moreover, it is not only the capacity itself that matters, but also where this capacity is situated institutionally. Drimie and Ruysenaar (2010) show that, although there was a certain amount of capacity to implement the South African IFSS, this capacity was mainly positioned at the Department of Agriculture, and this led to a neglect of non-agricultural issues and actors related to food security. For that reason, the researchers plead for a concerted effort by departments and other actors to harness available expertise and to initiate and coordinate food security efforts across sectors. Here, the importance of boundary organizations, such as interdepartmental committees, becomes clear again. Various authors have either shown the effectiveness of these kinds of organizations, or plead for their creation (FAO, 2011b; Maluf, 1998; Misselhorn et al., 2012). Both Misselhorn et al. (2012) and Pereira and Ruysenaar (2012) argue that creating such capacity demands a different governance perspective, in which states shift from a

predominantly mono-centric governance perspective to governance arrangements that stimulate and facilitate interactions across multiple levels and scales.

Theme 6: variation and conflict of ideas

An issue identified in the literature as a major challenge to institutions' coordinative efforts is the plurality of ideas around food security in general, and food security governance more specifically (González, 2010; Jarosz, 2009; Lang & Barling, 2012; Margulis, 2011, 2013; McKeon, 2011; Seed et al., 2013). This multitude of ideas comes on top of the varying formal definitions, which are set out in section 2.3.2, and is a result of the variety of sectors, countries, governance levels, and associated actors and interests that are involved in, or have an impact on, food security governance. Idea, here, is an umbrella concept for ideational concepts used in the literature on food security governance, such as discourse, paradigms, norms, governmentality, or philosophies.

Some ideas are deeply embedded in the culture or administrative philosophy of organizations, countries, or other actors. Barclay and Epstein (2013), for example, explain how Japan's approach towards food security is firmly grounded in ways of thinking about the protection of national culture and social and environmental responsibility. This governmentality led the Japanese government to support both free trade and protectionist policies at the same time. Similarly, Edwards (2012) empirically showed that collaborative governance had become deeply institutionalized in the administrative philosophy of various U.S. state agencies. Edwards' results form an interesting contrast to Seed et al. (2013), who reveal that bureaucratic cultures in state agencies in British Columbia were strongly dominated by ideas of top-down policymaking. A third example is provided by M. Haddad (2012), who by analyzing the Quran shows that Islam champions a state-centred perspective on food security.

Lang and Barling (2012) show that, on an aggregate level, these perspectives or modes of thinking may result in encompassing discourses or paradigms that can have a significant impact on how food security is approached, on the distribution of power and resources, and on which governance or policy options are considered. Often, various discourses or paradigms exist at the same time and compete for domination; this leads to conflicts between their proponents about the courses of action to follow and about who is to decide (Lang & Barling, 2012). These conflicts in food security governance become most visible in the work of Matias Margulis (2011, 2013), whose central argument is that diverging rules and norms (paradigms) across the global regimes of agriculture and food, international trade, and human rights concerning the appropriate role of states and markets in tackling food insecurity cause conflict and have a detrimental effect on policy coherency. Before global food security governance became a regime complex,

assumptions and principles were more shared within the food security regime (Coleman & Gabler, 2002; Margulis, 2013).

Similar ideational conflicts can also occur with- in organizations. Both González (2010) and Jarosz (2009) argue that the FAO is subject to conflicting discourses. According to Jarosz, the FAO's ineffectiveness can, to a large extent, be traced back to a conflict between a discourse that centres on free trade and productivity, and one that is more concerned with shared moral responsibility and human rights. Stakeholders in these organizations play active roles in protracting these conflicts by actively framing food security (governance) according to their views and interests (Barclay & Epstein, 2013; Clapp & Murphy, 2013; McKeon, 2011).

How are these ideational conflicts to be re- solved? The literature provides no silver bullet solutions in this respect, but both Margulis (2013) and McKeon (2011) argue that a first step would be to increase awareness and understanding of the multitude of ideas, and to agree on some basic principles and values.

Theme 7: calls for the allocation of sufficient resources and the integration of democratic values in food security governance

As repeatedly stated in the above sections, most of the literature focuses primarily on what food security governance should ideally look like, thus on what good food security governance entails. The previous themes have already shown that coherency, coordination, and dealing with ideational pluralism and a broad range of actors are widely considered to be crucial elements of a good governance approach. Here, two more criteria that are repeatedly mentioned in the literature are added: resources and democratic values.

Various types of resources that are essential to create and maintain responsive and effective governance arrangements are underlined in the literature. Many of these articles share the concern that governance arrangements have often failed to effectively address hunger because most energy was expended on shaping their architectural features without sufficiently thinking out the sustainable resource allocation that these institutional architectures need to be effective in the long term. A first type of resource required is finance, i.e., a sufficient budget (FAO, 2009). Edralin and Collado (2005), for example, argue that, although decision-making authority was decentralized in the Philippines, the effectiveness of these measures was hampered by a lagging decentralization of financial resources. A second crucial resource is political will, leadership, and prioritization (Committee on World Food Security, 2012; Global Forum on Food Security and Nutrition, 2011; Haddad, 2011; High-Level Task Force on the Global Food Security

Crisis, 2010; Makhura, 1998; Sahley et al., 2005). The success of an approach often relies on the sustained efforts of one or more actors. Of particular concern in this regard are political shifts, such as changes of office. Such shifts can lead to a discontinuation of political efforts (Rocha & Lessa, 2009). A third resource often mentioned is knowledge. Knowledge can come, inter alia, from stakeholders who are active on the ground, from the experience and expertise of policymakers, or from research institutes in the form of scientific evidence (Behnassi & Yaya, 2011; FAO, 2009; Global Forum on Food Security and Nutrition, 2011; Koc et al., 2008; Rocha & Lessa, 2009).

Besides resources, other elements that are generally considered essential for good food security governance are good governance and democratic values. Good governance, here, does not necessarily refer to effective governance. It is indeed conceivable that governance arrangements are effective in addressing food insecurity without fulfilling particular democratic values. Values repeatedly mentioned are accountability, transparency, legitimacy, inclusiveness, and responsiveness (FAO, 2011a; Global Forum on Food Security and Nutrition, 2011; Haddad, 2011; McKeon, 2011; Mohamed Salih, 2009; Pérez-Escamilla, 2012; Rocha & Lessa, 2009). These values are applicable not only during policy formulation, but throughout all governance processes, including implementation and evaluation (FAO, 2011a). Regarding this last point, an important issue is how to measure the effectiveness of interventions and how to determine an intervention's success (Pérez-Escamilla, 2012). Apart from these values, good food security governance relies on a general supportive environment in which human rights are respected and in which the provision of basic public goods is guaranteed (FAO, 2011a; Global Forum on Food Security and Nutrition, 2011; Paarlberg, 2002).

2.5   Discussion

The synthesis presented in the previous section has shown that the emerging literature on the governance of food security has already provided some highly relevant, albeit non-cohesive, insights and recommendations. Nevertheless, as a research field, food security governance is still in its infancy and many questions and challenges remain unanswered and unaddressed. In this section, the synthesis is critically reflected upon. Two lines of discussion are raised: the first concerns the dominant governance perspective in the literature, the second, the current state of the research field.

2.5.1 Dominant perspective: governance as problem-solving

Governance has become a popular and much supported notion in food security communities. This is well reflected by the rather recent emergence of the body of literature synthesized in the previous section. What is striking is that, although different parts of the literature have different emphases, the perspective on governance that emerges seems relatively consonant. In the governance literature, this perspective has been termed an 'optimist philosophy on governance' or a 'problem- solving governance lens' (Biesbroek, Termeer, Klostermann, & Kabat, 2013b; Bovens & 't Hart, 1996). This perspective is particularly clear in the third and fourth themes of the synthesis. From this perspective, food security is recognized as a highly complex issue that cannot be dealt with effectively by the current fragmented institutional architecture. Therefore, the governance system should be made more coherent, better integrated and coordinated, and more inclusive. The general underlying argumentation is that, if governance regimes were further integrated on multiple scales, more knowledge and information would be acquired and shared; and if all relevant stakeholders were able to engage in collective rational deliberations, it would ultimately be possible to overcome the complexity of food security and to develop a holistic approach that would enable food insecurity to be addressed in the most effective way. Governance is thus approached as a concerted effort to solve (complex) societal problems (Bovens & 't Hart, 1996). A clear exponent of this line of reasoning is the recently reformed Committee on World Food Security, which now portrays itself as "the most inclusive international and intergovernmental platform for all stakeholders to work together in a coordinated way to ensure food security and nutrition for all" (Committee on World Food Security, 2013). However, as some included authors – particularly under the fifth theme – made clear, inclusion of actors and coordination are not always sufficient to overcome conflicting ideas and interests, and do not necessarily lead to an effective food security approach.

Therefore, notwithstanding the merits of the optimist governance philosophy for understanding and designing food security governance arrangements, the dominance of this perspective has led to a rather narrow, normative, and simplistic view of governance within a large proportion of the food security community, and particularly in the included publications of global organizations. This is so for at least two reasons. First, both Bovens and 't Hart (1996) and Biesbroek et al. (2013b) have shown that, apart from the optimist philosophy, at least two other governance perspectives can be applied, termed by Bovens and 't Hart as the 'realist' and the 'pessimist' philosophies. Whereas the optimist philosophy approaches governance as problem solving, the realist philosophy centres on a view of governance as the whole of interactions between actors in a particular institutional context through which they identify and address problems. These interactions may be characterized by various degrees of conflicts of

interest, ideational struggles, and institutional deadlocks, as studies in the fields of public administration and policy studies have extensively shown (e.g., March & Olsen, 1989; Schön & Rein, 1994; Stone, 2012). In the pessimist philosophy, governance is approached as a complex system in which societal problems are interrelated and nested in a 'locked- in' society, in which power plays between actors take place (Biesbroek et al., 2013b). Although it is beyond the scope of this chapter to elaborate much further on the differences between these philosophies, it goes without saying that the perspective through which governance arrangements are studied has important implications for the dynamics that are considered vital as well as for consequential policy recommendations. The perspective through which governance is studied influences not only the answers or solutions proposed, but also the very research questions and problem definitions that are considered essential (cf. Allison & Zelikow, 1999; Biesbroek et al., 2013b). As a consequence, the dominance of the optimist philosophy in a large proportion of the food security governance literature may lead to a process of theory development that overlooks dynamics that might have been considered crucial if a different perspective had been applied. As a result, policy recommendations that stem from the body of literature might result in interventions that are not necessarily effective. Therefore, a diversity of perspectives and comparisons of understandings may have a healthy impact both on acquiring a better theoretical understanding of food security governance and on plans and practices deriving from this knowledge. The recent attention paid by some food security governance scholars included in this review to interactions between actors and institutions, power plays, ideational struggles, and to notions of adaptive and collaborative governance, is a promising development in this respect (e.g., Margulis, 2013; Misselhorn et al., 2012; Pereira & Ruysenaar, 2012).

A second reason why a broader governance perspective might contribute to a better understanding of food security governance is closely related to the first and concerns the very nature of food security. A large majority of the literature, especially that part which adheres to the optimist philosophy, approaches food (in)security as a complex problem. This complexity originates from the interplay of technical, environmental, economic, and social drivers across various scales. As elaborated above, a core assumption is that, although difficult, this complexity can ultimately be overcome by designing and implementing 'smart' governance arrangements. This idea of solubility is severely challenged by a concept that builds further on complexity theory, i.e., that of wicked problems, which has been repeatedly applied to food security (Anthony, 2012; Hamann et al., 2011; MacMillan & Dowler, 2012; Termeer et al., 2015a). Wicked problems are policy problems that are not only complex, but also ill-defined, ambiguous, contested, and highly resistant to solutions (Head & Alford, 2015; Rittel & Webber, 1973; Termeer et al., 2015a). This resistance to solutions results from the dynamic that "today's problems emerge as a result of trying to understand and solve yesterday's problems" (Termeer et

al., 2015a, p. 2). Wicked problems therefore require a different governance perspective from that propagated by the problem-solving lens. The literature on the governance of comparable wicked problems may prove a valuable source from which to obtain a better understanding, for instance, of climate change adaptation (e.g., Biesbroek et al., 2013b; Huitema, Aerts, & van Asselt, 2008; Stripple, Rayner, Hildingsson, Jordan, & Haug, 2009; Termeer et al., 2013; Vink, Dewulf, & Termeer, 2013). One of the insights from this community, for example, is that fragmentation is not necessarily a negative condition in the attempt to govern wicked issues. Fragmented networks may be better able to provide capacity, to adapt to unexpected circumstances, and to create space for variability and learning than mono-centric governance systems (Termeer et al., 2011). In this review, Pereira and Ruysenaar (2012) and Misselhorn et al. (2012) make similar arguments with respect to food security. The challenge, then, is to organize the fragmented governance system in such a way that it works collectively towards a shared goal. Termeer et al. (2011) have identified three challenges with respect to the wicked issue of climate change adaptation: i) to organize connectivity between policy domains, scale levels, leadership, and the 'old' and the 'new,' ii) to (re) allocate responsibilities and costs and benefits, and iii) to deal with controversies, in particular frame conflicts and contested knowledge. More is to be said about how these challenges apply and could be addressed in food security governance, but they offer a refreshing alternative to the current dominant mono-centric problem-solving paradigm within the literature.

2.5.2   The current state of the research field

Although research on food security governance is rapidly developing, a number of issues still need to be addressed in the near future. Here, we highlight four such issues.

First, as section 2.3.2 has shown, it is not yet very clear what is actually meant by food security governance. Definitions vary and emphasize various elements of the notion. One could argue that the absence of a clear definition is not troublesome because it has not hampered the amount of research being done on food security governance so far, which has, on the contrary, been increasing in recent years. However, at the same time, the lack of clarity regarding what food security governance is – and what it is not – makes it hard to determine what constitutes the dependent variable, i.e., the indistinctness of the phenomenon that is being studied, i.e. food security governance research, and this complicates meaningful comparisons and theoretical advancement (Dupuis & Biesbroek, 2013). For that reason, a new definition, combining Termeer et al.'s (2011, p. 160) broad definition of governance given in the introduction with the three core dimensions of food security and some main elements mentioned in previous definitions, is proposed:

The formal and informal interactions across scales between public and/or private entities ultimately aiming at the realization of food availability, food access, and food utilization, and their stability over time.

Second, in spite of the rising attention on food security governance, a majority of the reviewed publications were of a conceptual or normative nature. As section 2.3.1 has shown, it seems that not many empirical studies have been conducted,[8] although it could be the case that some researchers did use empirical methods but did not explain them. Our knowledge of food security governance is thus to a large extent dependent on narratives. Although these narratives have contributed to the rise in attention on governance in food security approaches, this lack of empirical foundations is somewhat worrying. Not only does it hinder obtaining a sound academic understanding of the governance issues at hand, it also weakens the strength of recommendations made to policymakers and stakeholders involved in designing food security governance arrangements. Food security governance is therefore in need of further empirical investigation and theory testing as well as of the development of a conceptual framework or indicators to do so.

Third, a large proportion of the current literature focuses on what food security governance should ideally look like, instead of how the governance system is functioning at present. Food security governance is often used as a synonym for *good* food security governance, meeting particular effectiveness and democratic criteria. Notwithstanding the importance of good governance, more is to be told about current governance (best) practices. In particular, more research should be done on sub-national governance levels and initiatives, and how these are linked to global initiatives, as these have been largely neglected in the literature so far. It is not clear whether this is due to a lack of sub-national governance initiatives or to a blind spot in the research being done.

A last point is that although 'food security governance' is a convenient heading and perspective under which to study the steering processes and interactions through which food (in)security is addressed, too rigid an approach should be avoided in future research. As indicated in the limitations section, whereas both food security and governance are powerful and widely shared notions, much can be learned from other research fields. This chapter should therefore be considered as a first attempt to provide an overview of the relatively recent body of literature on food security governance, aiming to serve as a stepping stone for further research in which insights from adjacent research fields could be integrated.

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8   Nota bene: this refers to empirical studies on governance (arrangements) on a more meta-level, not on particular food security solutions, projects, or programs.

2.6   Conclusions

Although the importance of governance for effectively addressing food insecurity has increasingly been recognized, the knowledge about, and definitions of, food security governance have been rather fragmented up to now. The synthesis presented in this chapter therefore aimed to provide a first state-of-the-art. A systematic review of the food security governance literature led to the identification of seven main themes that recur throughout the literature.

Nonetheless, food security governance is still very much virgin territory that offers a lot of potential for further research. In particular, the researcher pleads for the inclusion of alternative governance perspectives or paradigms in future research. Approaching food (in)security as a wicked problem could provide valuable insights in this respect. Additionally, there is a need for further empirical investigation of current governance arrangements, particularly at sub-national levels. Eventually, this line of research should contribute to the design of smart governance arrangements that are capable of addressing food insecurity in more effective ways than are possible at present.

Acknowledgements

**Disentangling the consensus frame of food security:
the case of the EU Common Agricultural Policy reform debate**

Abstract[9]

This chapter addresses which food security frames can be identified in the Common Agricultural Policy (CAP) post-2013 reform process, and which actors deploy particular food security frames. The concept of frames refers to relatively distinct and coherent sets of meaning attributed to a concept, such as food security. The chapter shows that in the European Union (EU) food security is a consensus frame which can be broken down in six conflicting and overlapping sub-frames and which has complicated the debates about the future of the CAP. We demonstrate that during the CAP-reform debates of 2009–2012 a variety of food security arguments were deployed by a broad range of stakeholders, who attached different meanings and made different claims about the relationship between the CAP and food security. Inductive frame analysis reveals that the consensus frame of food security can be broken down into six conflicting and overlapping sub-frames: (1) the productionist frame, (2) the environmental frame, (3) the development frame, (4) the free trade frame, (5) the regional frame, and (6) the food sovereignty frame. Each of these frames was invoked by a specific group of stakeholders, whereby the productionist and environmental frames were deployed most often. The European Commission, meanwhile, invoked various frames at the same time in its communications. As a result of these various framings of the relationship between the CAP and food security, a clear political vision on this relationship is lacking. We conclude that politicians and policymakers may need to develop a coherent vision on what food security entails, and on how the CAP could contribute to both European and global food security.

3.1 Introduction

The attention paid to food security has risen considerably in European agricultural policymaking, but the content of food security policy remains ambiguous. Generally ignored for decades, food security regained a prominent position in the public debate about how the European Union (EU) should organize its main agricultural steering device, the Common Agricultural Policy (CAP). The CAP is being reformed in the period from 2009 through 2013, and should become effective by 2014 (Grant, 2012b; Zahrnt, 2011).

The pervasiveness of food security in the European context is remarkable. Even though the CAP's initial objectives that were set out in the 1958 Treaty of Rome have never been formally re- vised in any of the following EU treaties, food security was only of minor importance in the various reforms since its creation. Additionally, although guaranteeing European food provision is often mentioned as one of the reasons for the introduction of the CAP in 1962, the EU currently produces much more food than it can consume, and most of its citizens have never experienced any food shortage (Zahrnt, 2011). This is also reflected by most research on food security. Food security has received extensive attention in academic journals in recent years, but only a fraction of these studies has paid attention to the EU context (Brunori, Malandrin, & Rossi, 2013; Fish, Lobley, & Winter, 2013; Grant, 2012b; Kirwan & Maye, 2013; Tomlinson, 2013).

What makes the use of food security in the CAP post-2013 debate interesting is the ambiguity of the concept. Food security arguments have been raised by a broad range of stakeholders in the CAP reform debate (Zahrnt, 2011). The meanings that these stakeholders attach to food security, however, and the claims they make by invoking food security show big variations. Previous studies have argued that this 'fractured consensus' (Maye & Kirwan, 2013) about the meaning of food security results from the different interests and policy positions of stakeholders using the concept (Lang & Barling, 2012; Mooney & Hunt, 2009). In this chapter, we analyze the extent of the variation in the use of food security arguments and which actors deploy these different meanings.

Building on the work of Mooney and Hunt (2009), we start from the assumption that food security functions as a consensus frame. A consensus frame is a concept or term that finds broad resonance and consent, but which is used to make diverging, and sometimes conflicting, claims. Or, in other words, a consensus frame may in practice be constituted by various slumbering frames lying behind the term. Frames, here, refer to relatively distinct and coherent sets of meaning attributed to a concept (cf. Dewulf et al., 2009; van Lieshout, Dewulf, Aarts, & Termeer, 2012). Recognizing these frames is

important, because the ideas they contain can have a considerable impact on processes of policy formation and institutionalization (e.g., Béland, 2009; Béland & Cox, 2011; Campbell, 2002; Feindt & Oels, 2005, pp. 161-162; Grant, 2012a; Schmidt, 2008).

Consequently, we address two research questions here. The first is: *which food security frames[10] can be identified in the CAP post-2013 reform process?* The aim of this question is to validate whether the use of food security in the CAP debate is indeed subject to various frames about what food security entails and about how the CAP could most effectively contribute to food security. The second research question is: *which actors deploy food security frames?* Frames result from actors' discursive practices. The aim of this question is to identify the stakeholders who deploy specific frames.

To answer these two research questions, we performed an inductive frames analysis on both policy and consultation documents and on conferences to analyze the use of food security in the public debate about the CAP post-2013 reform.

The chapter proceeds with a theoretical section in which we briefly expound the literature on framing, and consensus frames in particular. In the third section, we describe our inductive frame analysis. In section four, we present the results of this analysis, by first describing the various frames identified, and then the stake- holders associated with these frames. Regarding the latter, we specifically consider the European Commission's frames. In the final section, we present our discussion and conclusions.

3.2   Framing and consensus frames

3.2.1   Framing

Framing has gained wide popularity in multiple academic disciplines over the last decades. This has led to confusion regarding the exact meaning of the concept and its key assumptions (Entman, 1993; van den Brink, 2009). A common denominator, however, is that frames result from processes through which people make sense of particular issues and situations (Termeer & Werkman, 2011). Frames structure the way in which people perceive reality and communicate about it. Through these acts of communication, people add meaning to physical or social phenomena (van den Brink, 2009).

The definition of framing used in this chapter originates from communication science. Framing implies "to select some aspects of a perceived reality and make them more

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10   By food security frames, we mean frames regarding the relationship between the CAP and food security.

salient in a communicating context, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/ or treatment recommendation for the item described" (Entman, 1993, p. 52). Following this definition, framing activities presuppose the presence of actors who are behaving strategically. On the basis of their particular position towards a policy issue, actors express both cognitive and normative ideas about the issue at hand. Through these ideas, actors attach meaning to a problem, lay causal relationships, and propose solutions, by '"highlighting particular aspects of a perceived reality, while simultaneously occluding or downplaying other aspects" (van den Brink, 2009, p. 35).

A focus on framing, thus, implies studying the processes through which people make sense of or interpret the "world out there", and communicate about it. In this chapter, we merely focus on the latter; we do not study the cognitive processes through which people make sense of particular phenomena, but limit ourselves to how people, intentionally or unintentionally, communicate about these phenomena. These forms of communication we refer to as frames: relatively distinct and coherent sets of meanings (cf. Dewulf et al., 2009; van Lieshout et al., 2012).

The reason why stakeholders engage in framing in policy formation processes is to portray a current policy issue in such a way that it supports the interests of a particular actor or a coalition of actors (cf. Meijerink, 2005). Sometimes, frames obtain wide sup- port and enable the institutionalization of a particular ideational constellation. In the 1950s and 1960s, European agricultural policy was, for instance, framed mainly in terms of food security and a steady income for European farmers. This enabled the introduction of a CAP that was primarily focused on the special needs and interests of the agricultural sector (cf. Skogstad, 1998).

At other times, however, policy issues can be subject to various, potentially conflicting, frames at the same time. This is particularly true when multiple actors are involved. In such cases, framing can lead to counter-framing by other actors, who, based on different interests, attach different meanings to the issue at hand. These types of policy issues may be called 'wicked problems', which are "ill-defined [problems that.. .] rely upon elusive political judgment for resolution" (Rittel & Webber, 1973, p. 160). Food security is often classified as a wicked problem (c.f., Anthony, 2012; Hamann et al., 2011; MacMillan & Dowler, 2012; Termeer et al., 2015a). A good example of framing and counter-framing in the context of food security is the invocation of food sovereignty. Both non-governmental organizations, such as via Campesina – representing small farmers – and academics (e.g., Fairbairn, 2012), use food sovereignty as an alternative for food security. According to them, food security is associated with neo-liberal and agri-industrial interests, whereas food sovereignty offers a more inclusive approach to

issues of food provision, such as regional and cultural aspects of food production. Food sovereignty is thus a counter-frame to food security in the context of food provision debates (cf. Lang & Barling, 2012).

3.2.2 Consensus frames

Consensus frames are a specific type of frame. Sometimes, particular terms or concepts are widely shared and accepted in terms of their values and objectives. A typical example is sustainability: it is a concept that no one can be against and finds wide resonance, and therefore is used by a broad range of actors, even though many of them hold contradictory policy positions. Gamson (1995) calls such terms 'consensus frames'.

However, as Gamson points out, behind this apparent consensus, dissensus, in the form of different frames and corresponding claims, may lie hidden. Although many actors use the concept of sustainability, what they mean by the term, their causal analyses, and which forms of action they champion differ strongly. The frames behind a single consensus frame can thus be used to construe a wicked problem in different ways.

Mooney and Hunt (2009) were the first to approach food security as a consensus frame. Since the publication of their study, several other articles have adopted this approach (Brunori et al., 2013; Hinrichs, 2013; Maye & Kirwan, 2013). Mooney and Hunt (2009) argued that, although food security finds wide resonance in general in the United States, meanings attached to the concept vary between discursive contexts. They identified three distinct frames (which they call framing, accentuating the discursive processes through which they are created) behind the food security consensus frame in the American context, namely, Hunger Framing, Community Framing, and Risk Framing. In the first frame, food security is primarily viewed as an issue of hunger. Community framing revolves around a view of food security as a component of a community's development. The risk frame has to do with minimizing the risks "with respect to an industrialized food system's vulnerability to both 'normal accidents' as well as the 'intentional accidents' associated with agri-terrorism" (Mooney & Hunt, 2009, p. 469). At the same time, Mooney and Hunt state that their three frames are a minimum number of food security frames (Mooney & Hunt, 2009). Because of the conceptual nature of their paper, their frame identification lacks an empirical basis. The same holds for later articles that approach food security as a consensus frame (Brunori et al., 2013; Hinrichs, 2013; Maye & Kirwan, 2013). All of these studies are reported in the form of a narrative or conceptual paper. In this chapter, we therefore aim to provide an empirical basis for approaching food security as a consensus frame.

Food security frames vary not only between discursive contexts, but also potentially within such contexts because actors have their own interests and associated policy positions. From these various policy positions, actors attach different meanings to issues or phenomena, such as food security (Lang & Barling, 2012). Agricultural policy formation involves a broad range of different actors and interests (Termeer & Werkman, 2011), and hence we expect these actors to frame the relationship between the CAP and food security in different ways.

3.3 Methodology

We applied an inductive frames analysis to identify the different frames and the actors who apply them. More specifically, we used a frame package analysis. This type of analysis is a heuristic tool suitable for identifying the variation of frames behind the – expected – consensus frame of food security. The methodological concept of a frame, or interpretive, package originates from communication and media studies (e.g., Gamson & Lasch, 1983; Semetko & Valkenburg, 2000; van Gorp, 2005, 2007; van Gorp & van der Groot, 2012), and can be described as a "cluster of logical organized devices that function as an identity kit for a frame" (van Gorp, 2007, p. 64). Put differently, a frame package is a frame that is operationalized into various categories of signifiers (Gamson & Lasch, 1983). These signifiers are particular elements of a sentence or symbols that suggest the presence of a frame.

The devices or categories of signifiers in Van Gorp's definition of frame packages can be divided into framing and reasoning devices. Framing devices consist of "manifest elements in a message that function as demonstrable indicators of the frame" (van Gorp & van der Groot, 2012, p. 131). These elements can be specific words, catchphrases, or images. Reasoning devices, on the other hand, are "explicit and implicit statements that deal with justifications, causes, and consequences in a temporal order" (van Gorp, 2007, p. 64). These devices indicate what is conceived as the problem – the diagnosis – and which solutions are possible – the prognosis (cf. Verloo & Lombardo, 2007, p. 33). Reasoning devices, in other words, are a frame's causal line of arguing. An essential difference between the two types of devices is that framing devices are directly visible in a text, whereas reasoning devices can lie hidden behind the formal wording and must therefore be distilled by the researcher through careful reading and through analyzing the context in which a message is communicated.

In this study, we used policy documents and conference observations to discern framing and reasoning devices. Policy documents consisted of stakeholders' input into the CAP consultation round, European Commission Communications, European

Parliament (EP) motions, coverage by the journal *Agra Europe*, and national member state communications and documents. For triangulation purposes, we observed four conferences attended by a wide range of actors from various countries and sectors (Table 3.1). During the conferences we made field notes that we used to determine whether the frames found in the document analysis could also be identified in personal communications. In addition, we collected documents during conferences and from websites to obtain a clearer view of specific stakeholders' positions. The period covered by these documents started on January 1, 2009 and continued through August 15, 2012. The starting date was chosen because it marked the end of the previous CAP reform round, the 2008 Health Check, and the start of the upcoming reform round of the CAP 2014–2020. For the EC and EP documents we included all documents that mentioned both the terms 'food security' and 'Common Agricultural Policy'. Applying these two criteria to *Agra Europe* coverage led to too many irrelevant articles, so we decided to add the search term 'reform'. All stakeholder input into the consultation round by definition concerned the CAP, so here we used only 'food security' as selection term. For an overview of all documents and selection criteria see Table 3.1.

We analyzed the data using the coding program Atlas.ti. In the first round of coding, we focused primarily on the reasoning devices that actors used to elaborate on the relationship between the CAP and food security. In other words: we looked at the causal stories that actors told regarding the linkage between food security and the CAP. With a slight adjustment of the reasoning devices used by Van Gorp and Van der Groot (2012), we coded problem definitions, proposed solutions, non-solutions, and upon which moral bases to act. Subsequently, these quotations and codes were compared to one another and the codes were made uniform. This comparison led to initial causal frames, which were put in separate frame matrixes (Figure 3.1). In a second round of coding, we coded for the framing devices belonging to these causal frames. Drawing on the studies of Gamson and Lasch (1983) and Van Gorp and Van der Groot (2012), we focused on three types of framing devices that we deemed most relevant: i.e. key concepts, verbal devices, and metaphors. Key concepts are specific words that actors repeatedly use in their argument, such as 'productivity', 'greening', or 'trade'. Verbal devices consist of repeatedly used word combinations or catchphrases that often have a normative overtone, such as 'do-not-harm', 'immediate and continual action', or 'one billion people starving'. Metaphors are figures of speech in which a comparison is used to strengthen an argument, such as 'the CAP is the cornerstone of EU food security' or 'sustainability is the key'. From this second round of coding, the initial frame matrixes were filled in further (see Supplementary Material (SM) B). These frame matrixes formed the basis for the description of the various frames in the results section.

To address the second research question, we aimed to identify the specific (groups of) stakeholders deploying the frames, so as to get a view of who are actually engaged in food security framing. We did this by reading all documents again to determine which actors deployed which frame. Because actors can be active in various discursive settings or contexts, so-called multiple inclusion (Termeer & Werkman, 2011), some stakeholders framed food security in various ways. Where possible, we constructed categories of actors. For example, the European Heart Network, the European Public Health Alliance, and the Royal College of Physicians of Edinburgh were combined as public health organizations. A country's frame is based on statements of a country's ministers in *Agra Europe* and on national position documents retrieved from governments' websites. Although food security could also function as a consensus frame, behind which various sub-frames lie hidden, within a country, in the EU arena, national governments tend to speak with one voice, which is normally that of the minister that is primary responsible for the CAP reform (mostly the minister of agriculture). A country's frame is thus not the same as the whole of frames within a country on the relationship between the CAP and food security, but refers to the one that is most dominant in the central reform debate. An overview of the actors we found deploying particular frames is given in section 3.4.2.

Table 3.1 Documents used as data (N = 280)

Type	Number of documents	Selection method
European Commission communications	16	"Food security" AND "Common Agricultural Policy"
Stakeholders' input into the CAP consultation round	148	Mentioning "food security" (or the German, French, or Spanish equivalent)[11]
European Parliament motions	42	"Food security" AND "Common Agricultural Policy"
Agra Europe articles	26	"Food security" AND "Common Agricultural Policy" AND "reform"
National documents and communications	25	Both official and unofficial documents, about position nine countries: France, Germany, UK, Spain, The Netherlands, Poland, Bulgaria, Estonia, Sweden[12]
Stakeholders' documents collected at conferences and from websites	19	-
Conference observations	4	International Conference on the CAP at the Goethe University in Frankfurt am Main, March 2012; Forum for the Future of Agriculture in Brussels, March 2012; CAP Conference of the Dutch Ministry of Economic Affairs, Agriculture and Innovation, September 2012; Forum for the Future of Agriculture in Madrid, October 2012

	Reasoning devices				Framing devices			
	Definition of food security	Problem definition	Solution/ perspective for action	Non-solution	Moral basis	Key concepts	Verbal devices	Metaphors
Name of frame								

Figure 3.1 An empty frame matrix

3.4   Results

In this section, we describe the various frames found lying behind the food security consensus frame. These descriptions are based on the frame matrixes in Supplementary Material B.

3.4.1   Food security frames

The productionist frame

The productionist frame revolves around a story line that considers food security as one of the key goals of a future Common Agricultural Policy. The line of argumentation that the frame uses is well portrayed by the following quote:

> It is the EU's responsibility to produce more food – shortages have seen commodity prices rocket ... The disarming of food output is a nonsense. Simon Coveney, Irish Minister of Agriculture, Food and the Marine *(Agra Europe, 2011)*

The quotation shows the frame's emphasis on stimulating production and increasing productivity. Through its focus on food production, the CAP is considered the cornerstone of EU food security policy. This function is deemed even more important in times of worldwide food crises, such as the 2007–8 world food price crisis to which Minister Coveney refers. Proponents of the frame state that European food security should not be considered self-evident and that the EU has a moral duty to produce more food. The precariousness of EU food security is accentuated by the fact that about 16 million Europeans rely on food aid.

Several challenges regarding EU production and food security are identified by the productionist frame. One of the challenges most often mentioned is severe price volatility. Other threats that are foreseen by the frame are a dependence on imports for some goods, especially protein-rich livestock feed, and impacts of climate change.

The solution proposed by this frame to secure European food provision and, if possible, to contribute to global food security, is a CAP that maintains a strong first pillar. According to the frame proponents, agricultural production and increased productivity should be stimulated, and should be considered to be a form of public goods provision, for which a financial compensation is justified. Farmers' competitiveness could be safeguarded through continued income support and market measures that can be deployed in times

of price crises. The demand for public good provision, other than food production, is generally considered acceptable, but these arrangements should not lead to decreasing production and should be financially compensated for. Moreover, because of the strict requirements that European farmers have to meet, proponents of the productionist frame argue that the same requirements should be applied to imported goods.

To strengthen the productionist line of argument, two verbal devices are used particularly often, i.e. statements that the need to deal with existing problems is of "utmost urgency" and requires "immediate and continuous action".

The environmental frame

In the environmental frame, the issue of food security is seen as inextricably bound up with the environment. This frame argues that traditionally the CAP has focused too much on increasing food production, thereby paying insufficient attention to the negative effects of intensive agriculture on nature, the countryside, and on the land itself. Therefore, proponents of the environmental frame argue that the CAP needs to be re-focused, and should consider both food production and the provision of environmental services as integral parts of European agriculture. Fertile soils, clean and sufficient water, and a flourishing biodiversity are perceived as preconditions for safeguarding productive capacities in the long term. Food security is thus associated with sustainable agricultural practices, as is well summarized by the following quote:

> First, there is the fact to acknowledge food security as an issue and EU role. The sustainability is the key to food security. Greening measures become even more important as they underpin long term ability to produce food. (ASBL NATAGORA, 2011)

Apart from the issue of sustainability, the quote shows another characteristic feature of the environmental frame, namely, its focus on the long term. Food security is considered a goal that should be guaranteed for the long term, for which sustainable agriculture is seen as an essential precondition.

To achieve long-term food security, the proponents of this frame argue that some challenges should be addressed, most importantly climate change and environmental degradation. Note that climate change is one of the threats identified by the productionist frame also. However, whereas the productionist frame suggests increasing production in order to address the negative effects of climate change on food availability, proponents of the environmental frame argue that the impact of agriculture on the environment

and climate should be addressed. This impact includes, among others, the unsustainable use of natural resources and energy, the excessive usage of pesticides and fertilizers, the degradation of ecosystems, and the emission of greenhouse gasses. Most proponents of the frame find that the EC does not go far enough in tackling these challenges in its proposals for the future of the CAP, as is for example argued by the Greens in the European Parliament:

> Whereas the current Commission and European Council positions on the EU 2020 strategy show a clear unawareness of the need to substantially reform the Common Agricultural Policy and rural development policies in order to ensure food security, establish sustainable practices through water and soil management, reduce dependence on oil, preserve biodiversity and diversify employment in agriculture and the rural economy in a sustainable way. Motion of the Greens in the European Parliament (Verts/ ALE Group, 2010)

According to the Greens, and the environmental frame in general, the European Commission should include in its proposals far-reaching greening measures as well as a better targeting of income support, innovation incentives, and the polluter pays principle. A continuation of the current policy is seen as a non-solution, because of its over-emphasis on short-term challenges and solutions. Also, the frame does not seem to support the development of biofuels, as these lay a further claim on European agricultural lands and the landscape. Third, current European consumption patterns are not considered sustainable, having detrimental effects on both the environment and public health. Therefore, a change towards more plant-based diets is considered desirable.

The environmental frame uses multiple recurring framing devices, such as the statement that this is a 'critical time', or that a future CAP should be 'ambitious and relevant', should guarantee 'meaningful environmental commitment', and safeguard the 'heritage of environmental assets'.

The development frame

The focus of the development frame lies on the impacts of the CAP on food security in developing countries. This frame argues that these impacts have been generally negative so far, and have limited the opportunities of these countries to realize autonomy or self-sufficiency regarding their food provision. According to proponents of this frame, the EU, and the CAP in particular, not only has a role in safeguarding European food security, but also should acknowledge its wider responsibility in the world. The following

quote shows the – shared – disagreement with the extent to which food security concerns in developing countries are worked out in the EC proposals:

> The CAP should take into account its impacts on developing countries, especially on marginalized producers and workers, and demonstrate that it does not generate negative effects. ... The importance of addressing food security .. . is highlighted but only as far as EU citizens, farmers and workers are concerned. Nothing is said about the need to address these issues in the South as well. (Fair Trade Advocacy Office, 2011)

Not only are food security issues in the South left unaddressed, some elements of the CAP even have a detrimental effect on these countries' food security. One of the main problems the frame identifies is the income support the CAP offers to European farmers. This support makes it hard for non-EU parties to enter the European market and leads to the dumping of cheap European agri-industrial products, such as poultry, on developing countries' markets, especially in Africa. A second issue is the negative socio-environmental effects of European imports of protein-rich livestock feed. European dependence on these commodities has changed land use in certain parts of the world, leading to diminished food production opportunities for local communities and to environmental hazards. A third problem mentioned is the occasional use of export refunds, which lead to the same type of unfair competition as income support.

The solutions proposed in the development frame are to eliminate arrangements that distort developing countries' market development, to allow these countries to protect their own markets in certain situations so that they can develop their agricultural sectors, and to achieve more coherence between the CAP and EU development policies. A better alignment of internal and external policies is deemed necessary, including food security, trade, agricultural, and humanitarian policy programs.

To underline its arguments, the frame uses verbal devices that emphasize the EU's moral responsibility, such as 'do-not-harm', and 'take responsibility'.

The free trade frame

The free trade frame is comparable to the development frame in the sense that it focuses on long-term and global food security. However, the two frames differ in their causal analysis and consequential claims.

The main line of argumentation underlying the free trade frame is that food security is best served by facilitating free trade. Free trade gives farmers from all over the world an opportunity to enter commodity markets and allows consumers to buy products at the lowest price. Thus, market access should be equal for all. The following quotation, derived from a motion of the Liberals in the EP, expresses this argument well:

> 21. Believes that free and fair trade should be ensured; calls for balanced trade agreements to be reached, as they are an essential element of a global food security response. ALDE motion in the European Parliament (Alliance of Liberals and Democrats for Europe, 2011)

Free trade frame proponents do not agree with those of the development frame that developing countries should be protected or be allowed to protect their markets in particular circumstances. According to the free trade frame, food security would be best served if governments, and intergovernmental organizations, refrained from imposing trade-distorting measures. In the CAP case, income support that is not fully decoupled, export subsidies, and other market measures can have negative consequences for the trade position of other countries and producers, and should therefore be eliminated.

Contrary to some other frames, the free trade frame does not consider liberalization to be a threat, but rather sees it as an opportunity for the European agricultural sector to develop itself and to broach new markets. To achieve this, proponents of this frame argue that the CAP should be much more integrated with EU trade policies. The following quote from the commodity trade association Coceral is a good example of how agricultural and trade policies are seen by the free trade frame as intrinsically linked:

> The future CAP aims at responding to EU and global food security problems. In order to achieve this goal, EU's agricultural trade policy has to be further facilitated and supported. (Coceral, 2011)

The free trade frame is attended by recurring framing devices such as 'free and fair trade', 'open up markets', and 'trade as opportunity'.

The regional frame

The regional frame is primarily concerned about the impact of the CAP on regional differences in food security. Proponents of the frame are not necessarily pleading for

regional or European self-sufficiency, but seek to attract attention to the position of rural areas, less-developed regions, and subsistence farming.

The underlying rationale of the frame is that the market alone will not compensate farmers in certain regions, as they are not able to produce at world market prices. This may for example be caused by a backlog in technological innovation, or because of unfavourable geophysical conditions. The disappearance of these farmers would be highly undesirable as they provide regional food security but can also be considered caretakers of the countryside, fulfilling an important socio-cultural function, as underlined by the Assembly of European regions:

> The presence of agriculture in all our European regions is a strong illustration of the identity of our continent and a significant component of the landscape in our territories. Questions of autonomy, food quality and security are a priority for all citizens in Europe as elsewhere. (Assembly of European Regions, 2011)

The Scottish Highlands and Islands are a good example of such a region that is highly dependent on the CAP for its regional food security:

> A "No policy" scenario would therefore be disastrous for fragile rural economies such as the Highlands and Islands. Farmers could no longer make a living, resulting in closure of farms, loss of live- stock, loss of food security, loss of biodiversity. (Highland and Islands of Scotland European Partnership, 2011)

Although proponents of the regional frame thus support a continuation of the CAP, the current distribution of CAP funds is seen as unfair because it is partly based on historical claims and because it favours big companies. In addition, recent EU members do not yet get a fair share of the budget. A redistribution of the CAP is therefore supported, enhancing the position of small- and middle-sized farmers in less favourable regions. In addition, a broader and coherent policy framework is advocated to help these regions develop on several fronts.

A mere focus on increasing production is seen as a non-solution. According to the regional frame, food security is not so much an issue of availability of food as of access and distribution, which are not always warranted for remote regions. Investment in small-scale farming and regional development are considered more effective means of guaranteeing food security.

The food sovereignty frame

The perspective of the food sovereignty frame is also regional, but this frame is more radical than the regional frame. The food sovereignty frame is highly critical of the term 'food security', which is seen as primarily used in favour of neo-liberal interests, by governments, and agri-industrial and trade-centred actors. Food sovereignty forms an alternative interpretation of food security and focuses attention on people's right to food and to decide about the modes of production, entailing local or regional self-sufficiency.

Food sovereignty proponents signal a seeming contradiction in the EC proposals, namely, a focus on food security on the one hand, and enhancing competitiveness on the other. Friends of the Earth Cyprus, one of the national food sovereignty movements, describes this tension as follows:

> The Commission outlines food security as a key challenge while at the same time seeks increased competitiveness of Europe's agricultural sector. European agricultural model depending only on the international market is vulnerable to price volatilities of the world market and would easily feel the impacts of a worldwide food and economic crisis. (Friends of the Earth Cyprus, 2011)

To overcome this tension, the food sovereignty frame advocates a full and comprehensive CAP reform. Proponents of this frame identify a wide array of food security problems in current European agricultural practices, including the position of small farms and rural areas, environmental impacts, conjunctural crises, the import of low-cost products, and the effect of the CAP on developing countries. This last point may seem contradictory, because food security is primarily framed at regional level, but at the same time the frame revolves around a moral basis that emphasizes worldwide solidarity among peoples. Policies, including the CAP, should be directed towards the needs and preferences of people, in particular consumers and farmers, rather than articulating the interests of agri-industry. The frame is ill-disposed toward liberalization, global trade flows, industrial farming, and genetically modified organisms (GMOs). Instead, food should be produced locally, be of high quality, and take both environmental and socio-cultural concerns into consideration. This type of production is characterized by terms such as 'organic', 'local', 'diversity', 'quality', and 'fair'.

The solution championed by the food sovereignty frame is a CAP that prioritizes regional food provision through public regulation of production modes and markets. Local food and food that is produced in a sustainable way, such as by agro-ecological methods, should be promoted, while regional stocks should be used as emergency tools. Payments

ought to be directed towards small farmers and to those characterized as active famers, providing specific public goods, such as greening services.

3.4.2   Actors deploying food security frames

Frames do not stand alone; they are actively deployed by actors. In our analysis, we found a wide variety of actors invoking food security. These actors, both public and private, come from the local, regional, national, and European level. They are politicians and policymakers, entrepreneurs and lobbyists, as well as scientists. At the same time, however, not all actors use food security arguments, or not at all times. In this section, we provide an overview of the persons, organizations, member states, or parties behind the six frames. The findings are summarized in Table 3.2.

The two frames most frequently used were the productionist and the environmental frame. The productionist frame was predominantly deployed by private stakeholders, such as farmers' organizations, and food-associated industries. In addition, some member states, most notably France, Ireland, and, to a lesser degree, Germany, and two groups in the European Parliament, the European People's Party and the European Conservatives and Reformists Group, frequently underlined the importance of increasing production in order to safeguard EU food security.

The environmental frame, on the other hand, primarily enjoyed popularity among environmental and nature organizations, and health organizations. The latter organizations pointed at the detrimental effects of current consumption patterns on human health and the environment. Most of them used almost exactly the same wording in their inputs to the consultation round. In addition, the frame was invoked by a couple of companies working on sustainable farming techniques, whereas some of their colleagues used a more productionist discourse. In the European parliament, the environmental frame was particularly popular among the Greens. The four other frames were deployed by a smaller number of actors. The development frame was used by development organizations and institutes, emphasizing the impacts of EU agriculture on global food security. Most of these actors were fair trade organizations. Trade is also the central issue in the free trade frame, but here, actors related it primarily to the importance of free trade for EU production and food processing, and, consequently, for EU food security. This view was supported by the United Kingdom, and by the Alliance of Liberals and Democrats for Europe in the European Parliament. The nine actors evoking the regional frame were mainly local authorities and regional development organizations. The latter include organizations that carry out and advise on the European LEADER regional development policy. The food sovereignty frame

was particularly deployed by the right-to-food and farmer-rights NGO via Campesina, and its European branches, as well as the European United Left/Nordic Green Left party in the European Parliament.

Some actors did not deploy one single frame, but combined elements of various frames; or they invoked different frames over time and for different audiences. This was for example the case in some countries' communications, noticeably The Netherlands (development and free trade) and Poland (productionist, environ- mental, and regional). In the European Parliament, the use of elements of various frames was particularly clear in motions of the Socialists and Democrats group and in joint resolutions involving multiple parties. And, finally, a variety of frames could be identified in the influential parliamentary Lyon report regarding the future of the CAP after 2013.

3.4.3 Food security frames of the European Commission

A most important actor that did not deploy one single food security frame, but, instead, invoked elements of multiple frames was the European Commission. Depending on the subject of a communication and the Directorate-General responsible for it, the Commission communicated various stories. The following two quotes illustrate this:

> Ensuring global food security: taking account of the international dimension, including developing countries' needs in EU policies. (European Commission, 2009)

> A sustainable EU economy needs a thriving agricultural sector making its contribution to a wide variety of EU objectives – including cohesion, climate change, environmental protection and biodiversity, health and competitiveness, as well as food security. (European Commission, 2010b)

Although these quotations are not incompatible with each other, they have a different focus. The first quotation focuses on global food security and stresses the importance of addressing developing countries' needs in EU policies. The second quotation focuses on the EU economy and emphasizes the need of a thriving and competitive agricultural sector to enhance food security, while at the same time underlining sustainability and environmental goals. The second quotation, thus, bears elements of both the productionist and the environmental frame.

Table 3.2 Stakeholders associated with the frames

Frame	Number of actors (percentage of total of actors)	Types of actors
Productionist	41 (37,3%)	Agri-chemical industry (3)
		Farmers' organizations (10)
		Other food producers and processers' organizations (11)
		Agri-technological organizations (4)
		Member states (4)
		EP groups (2)
		Academia (2)
		Others (5)
Environmental	36 (32,7%)	Environmental and nature organizations (11)
		Health organizations (13)
		Sustainable agriculture businesses and organizations (3)
		EP groups (1)
		Others (8)
Development	6 (5,5%)	Fair trade organizations (3)
		Associations of churches (1)
		NGOs (1)
		Research institutes (1)
Free trade	5 (4,5%)	Food producers and processers' organizations (2)
		Trade organizations (1)
		EP groups (1)
		Member states (1)
Regional	9 (8,2%)	Local authorities (5)
		Regional development organizations (3)
		Farmers' organizations (1)
Food sovereignty	8 (7,3%)	Food sovereignty organizations (6)
		Labor unions (1)
		EP groups (1)
Multiple	5 (4,5%)	Member states (2)
		EP groups (1)
		EP Lyon report
		European Commission

The same pattern occurs within the Commission's most important communication regarding the CAP reform, preceding the public consultation round, in which it sets out its broad vision for the future of European agriculture. In the communication, elements of the productionist, environmental, regional, and development frames could be identified, without one frame being particularly dominant. This variety of frame elements is clearly visible in the description of food security as a strategic aim for a future CAP:

> To preserve the food production potential on a sustainable basis throughout the EU, so as to guarantee long-term food security for European citizens and to contribute to growing world food demand, expected by FAO

to increase by 70% by 2050. Recent incidents of increased market instability, often exacerbated by climate change, further highlight these trends and pressures. Europe's capacity to deliver food security is an important long term choice for Europe which cannot be taken for granted. (European Commission, 2010a)

This quotation highlights the importance of the CAP for both European and global food security. In addition, food security is considered from a long-term as well as a short-term (focus on incidents) perspective. Agricultural production is needed and should be stimulated, but this should be done 'on a sustainable basis'. Further on in the document, the Commission again stresses the importance of European production to meet the growing world demand for food but notes that this should be done through simultaneously respecting international trade and development commitments.

It is important to note that these various frames within a single Commission communication are the result of the way in which these communications are produced. Commission communications are often preceded by political struggle between various directorate-generals, each of which champions one or more different frames. Therefore, although the Commission is portrayed as a single actor in Table 3.2, it should be considered as an actor that is constituted by and embodies the compromise between various sub-entities.

3.5   Discussion and conclusions

The research questions in this chapter were: which food security frames can be identified in the CAP post-2013 reform process and which actors deploy these food security frames? We draw three general conclusions.

First, food security is a consensus frame, as initially proposed by Mooney and Hunt (2009). It is a concept that is both pervasive and generally accepted in the CAP debates. Additionally, although a broad range of stakeholders deploy food security arguments, our data suggest that the meanings the different stakeholders attach to food security, and the claims they make, show great variation. As stated in Section 3.1, Maye and Kirwan (2013) termed this 'fractured consensus': although there is consensus among stakeholders that food security should be a primary strategic objective for the CAP, they disagree about the appropriate course of action and how a future CAP should facilitate such action.

Second, this fractured consensus masks six distinct frames behind the food security consensus frame within the discursive context of the CAP post-2013 reform. We have named these the productionist frame, the environmental frame, the development frame, the free trade frame, the regional frame, and the food sovereignty frame. Each of these frames has its own focus regarding the relationship between the CAP and food security, resulting in different causal analyses and claims about action to be taken. In some cases, these causal elements conflict with one another. Conflict particularly arises when solutions proposed by one frame are identified as the main problems or challenges to food security by another group of stakeholders. The matrix in Supplementary Material B gives an overview of the potential conflict between the frames. Here, we pick out three examples. As a first example, intensification of production as proposed by the productionist frame is seen as a non-solution and even a challenge to long-term food security by environmentalists. Productionists argue that greening is not defensible in times of food shortages. Second, the free trade frame's focus on trade liberalization is tantamount to everything that is wrong about food production according to the food sovereignty frame; but the food sovereignty frame's emphasis on local production is seen as insufficient to feed a growing world population by most other frames. A third example of such a causal conflict revolves around income support for farmers. Productionists argue that income support is essential for European farmers to be able concurrently to both compete with world prices and deliver public goods, such as food security. The same income support is seen as a key factor of food insecurity in developing countries by the development frame, because it hinders farmers in those countries from both entering the European market and developing viable local markets.

A third general conclusion is that the six frames are deployed by specific (groups of) stakeholders. Although we did not analyze this, we believe this to be the case because stakeholders frame the relationship between European agriculture and food security on the basis of their policy position and interests (Lang & Barling, 2012). This would confirm Tomlinson's (2013) argument that actors choose a particular framing of the food security issue that best matches their prior ideological commitments. It is not surprising that representatives of farmers, whose core business is to produce food, deploy the productionist frame, and environmental NGOs primarily the environmental frame. That these two frames were found most in our data cannot be a surprise either. Agricultural and, increasingly, environmental interests are traditionally the most dominant interests in European agricultural policy formation (Lynggaard & Nedergaard, 2009; Termeer & Werkman, 2011). What is remarkable is that, in contrast to recent critiques on the invocation of food security to defend productionist or neo-liberal interests (e.g., Fairbairn, 2012; Fish et al., 2013; Jarosz, 2011; Rosin, 2013), our results show that a food security discourse is deployed by a much broader array of stakeholders.

In fact, virtually all types of actors involved in agricultural policy formation (Termeer & Werkman, 2011, p. 288) engage in food security framing.

Together, these three conclusions support the theoretical assumption that food security functions as a consensus frame behind which various frames lie hidden. These frames, in turn, are deployed by specific actors. But what are the implications of our findings? What does the finding that food security functions as a consensus frame mean for the practice of policy formation?

It has been argued that food security, in its function of a consensus frame, can serve as a lynchpin for the post-2013 CAP (MEP Diane Dodds in Agra Europe, 2010b). Food security arguments resonate among a broad European audience. Although most Europeans have never suffered from a lack of food, hunger is still part of collective memory in many member states. References to the Irish Potato Famine, the Dutch Hunger Winter of 1944, and the hunger in post-World War II Germany account for powerful and emotion- laden arguments (Ó Gráda, 2011) that may be triggered by current developments (cf. Zahrnt, 2011). At the same time, the invocation of food security has been criticized as scaremongering (CAP transparancy campaigner Jack Thurston in Agra Europe, 2010a). Additionally, it has been argued that the CAP food security rhetoric is out of place because the traditional CAP instruments are an extremely inefficient, if not detrimental, way of enhancing *global* food security (Zahrnt, 2011).

Irrespective of whether this criticism is justified or not, our results indicate that stakeholders indeed portray food security as a lynchpin of the CAP. Although stakeholders disagree about how a future CAP could most effectively contribute to food security, they find common ground in the goal of food security itself. This is particularly the case for the European Commission. The European Commission has been typified as a policy entrepreneur (Lynggaard & Nedergaard, 2009) that needs to broker between stakeholders with very diverse interests. Therefore, the Commission is subject to the phenomenon of multiple inclusion (Termeer & Werkman, 2011); the Commission is active in various discursive contexts in search of public support for the new CAP. In food security, the Commission has found a term that it can use in these various contexts to get a broad range of actors behind a shared goal for a future CAP. Thus not only is food security a widely shared and accepted consensus frame, it is also actively used to create consensus.

A downside of this use of food security as a consensus frame is that the relationship between the CAP and food security remains ambiguous. There is little elaboration, let alone consensus, about how a future CAP could most effectively contribute to food security. By applying the consensus frame, the Commission acknowledges that food

security is a multidimensional issue that requires a holistic approach, but it does not make explicit how various ideas and claims relate to one another. On the one hand, highlighting various frames may have served the Commission to appeal to a variety of audiences. On the other hand, it has led to the critique from stakeholders in the consultation round that the Commission's strategic aims and proposals lack detail. In order to develop a coherent food security strategy, both policymakers – including the Commission – and scientists will therefore need to start questioning the frames that undergird the political debate. At the least, as has been suggested in the 3rd Foresight Report of the European Commission's Standing Committee on Agricultural Research (Freibauer et al., 2011), this would require using the various frames to identify possible trends and courses of action. The authors of the report argue that it might be possible to develop a synthesis between narratives that seem to conflict at first sight. It is a task for those who are truly engaged in enhancing global food security to navigate through the labyrinth of food security frames and to establish a holistic and coherent vision in the European food security debate. Such an exercise would largely depend upon the ability of those actors to align the wide array of interests and ideas, and to increase the political priority that is given to the issue. Only when key actors, such as the Commission, the Council of Ministers, and the European Parliament are disposed not only to name food security as a strategic goal, but also to actively form policies on it, can such a vision be created.

Acknowledgments

CHAPTER 4

The European Commission's ability to deal with wicked problems: an in-depth case study of the governance of food security

Abstract[11]

The European Commission's ability to cope with wicked problems is generally viewed as inadequate because of its hierarchical and inflexible modus operandi. Recent research suggests, however, that the Commission may be better equipped to deal with wicked problems than is commonly assumed. To elucidate these contradictory viewpoints, we analysed conditions that enable or constrain the Commission in dealing with wicked problems. To do so, we applied a framework consisting of five governance capabilities required to deal with wicked problems (reflexivity, responsiveness, resilience, revitalization and rescaling) to a case study of how the Commission deals with the wicked problem of food security. Although our results confirm some of the earlier critiques, we have also identified various enabling conditions, most notably inter-service and inter-institutional procedures and structures, boundary arrangements and a widespread tolerance of frame conflicts, uncertainty and cross-scale dynamics. However, the Commission lacks a mechanism to continuously monitor and adjust its capabilities, thereby running the risk of challenges remaining unforeseen and unanticipated.

4.1   Introduction

The European Commission deals with some persistent policy problems that continuously require the attention of policymakers and pose serious challenges to the governance system. Many of these persistent policy problems can be regarded as 'wicked'. Examples of such problems are sustainable development (Jordan & Schout, 2006), realizing sustainable food systems (Termeer et al., 2015a), climate change (Jordan, Huitema, van Asselt, Rayner, & Berkhout, 2010) and energy security (Chester, 2010). In contrast to 'tame' problems, wicked problems are ill-defined, ambiguous, contested, and subject to multi-layered interdependencies and complex social dimensions (Rittel & Webber, 1973; Termeer et al., 2015a). Wickedness goes beyond complexity in the sense that, as a rule, wicked problems can never be solved, although they may be temporarily fixed or settled, but often only as a result of a tedious trajectory of small wins (Bryson, 1988; Termeer et al., 2015a; Weick, 1984). This insolubility results from continuous disagreements on problem definitions and solutions and because today's problems have emerged out of the attempts to address yesterday's problems (Head, 2008).

Wicked problems present policymakers with five specific governance challenges (Head & Alford, 2015; Rittel & Webber, 1973; Termeer et al., 2015a):

1. Unstructuredness and frame diversity, referring to the wide array of perspectives and views on the problem. There is no consensus on problem definitions and possible solutions. Instead, formulating the problem *is* the problem (Rittel & Webber, 1973). The result is a seemingly 'confusing mess of interrelated problems' (Termeer et al., 2015a, p. 5).

2. Frequent and uncertain changes, referring to the continuously changing problem characteristics and contextual conditions. Because of high complexity and interconnectedness with other issues, both the causes of the problem and the effects of possible interventions are unpredictable. Consequently, wicked problems involve sudden changes and surprises, and irreducible uncertainty.

3. Unlimited demands and concerns, which differ and change over time and keep pressing on decision makers' agendas. This pressure is reinforced by (social) media. As a result, there is no final solution to the problem (Rittel & Webber, 1973).

4. Stagnating and unproductive interaction patterns, referring to the counterproductive blockades, stagnations and deadlocks that can occur when actors become frustrated about the absence of satisfying solutions and revert to more defensive positions and strategies (Termeer et al., 2015a).

5. Scale interactions, referring to the various (temporal, spatial, jurisdictional) scales involved (Cash et al., 2006). Mismatches can occur between the scales on which problems occur and the scales on which they are governed.

Most of these challenges are not exclusively features of wicked problems, but may also occur in other types of complex policy problems (cf. Hoppe, 2010). What defines wicked problems, however, is that they entail all these challenges at the same time and have no stopping rules (Rittel & Webber, 1973).

The European Commission is criticized for its inability to deal with these governance challenges. The critiques focus mainly on the Commission's compartmentalization, its rigid jurisdictions, its lack of adequate resources and its dependency on the other European Union (EU) institutions (cf. Ellinas & Suleiman, 2012; Kassim et al., 2013; Metcalfe, 1996; Spence & Edwards, 2006; Stevens & Stevens, 2001). In contrast, however, other EU studies suggest that the Commission may be more capable of dealing with wicked problems than often is assumed. Kassim et al. (2013), for instance, show that the officials who work in the Commission manage to break through the compartmentalization of policy sectors through prevalent personal networks. These contradictory views in the literature show the need for a systematic analysis of whether and how the Commission is capable of dealing with wicked problems. Apart from contributing to the debate in the EU literature, such an analysis would also be interesting from the perspective of the governance of wicked problems literature, because, as Peters and Wright (2001, p. 158) argue, although 'managing the problems of fragmentation, sectorialization and policy interdependence is not peculiar to Brussels … the extent and nature of those problems in Brussels is of a different order from that prevailing in the member states'.

Against this background, this chapter aims to elucidate the presence (and absence) of capabilities that enable the Commission – which we approach as an internally differentiated arena or governance system (Cram, 1993; Hooghe, 2001; Kassim & Dimitrakopoulos, 2007) – to deal with wicked problems. Capabilities are defined as 'the ability of policy makers to observe wicked problems and to act accordingly, and the ability of the governance system to enable such observing and acting' (Termeer et al., 2015a, p. 4). We focus particularly on the last dimension: the presence of conditions that enable or constrain the Commission's overall ability to deal with wicked problems. Our research question interrogates the extent to which the European Commission possesses the capabilities required to deal with wicked problems, and how these capabilities are deployed to resolve such problems.

We applied a capabilities framework to a case study of a wicked problem that has been particularly pervasive in recent years: food security (Candel et al., 2014; Grant, 2012b).

We consider food security a 'typical case' that can be used to generate insights regarding the Commission's general ability to deal with wicked problems (Section 4.3) (Gerring, 2007).

4.2 Theoretical framework

4.2.1 Conflicting views on the Commission's ability to cope with wicked problems

Hierarchical and monocentric governance systems face great difficulties in dealing with wicked problems (cf. Folke, Hahn, Olsson, & Norberg, 2005; Head & Alford, 2015; Koppenjan & Klijn, 2004; Termeer & van den Brink, 2012; Weber & Khademian, 2008). Because of high degrees of compartmentalization, rigid rules and jurisdictions, closed networks and top-down decision-making patterns, they often lack the reflexivity needed to recognize the wickedness of particular problems and the flexibility to respond to sudden changes, risks or new problem definitions (Hoppe, 2010; Termeer et al., 2015a). In many Western states, this inability was reinforced by the introduction of New Public Management in the mid-1990s, whose ideas about clear objectives, performance targets and efficiency are by definition in conflict with the cross-scale and insoluble nature of wicked problems (Christensen & Lægreid, 2007; Verhoest, Bouckaert, & Peters, 2007).

The dominant image that has arisen in the literature regarding the Commission's ability to cope with wicked problems is that it lacks the organizational capacity and tools that are necessary to address the five governance challenges (Kassim et al., 2013; Schout & Jordan, 2005). Particular constraints are its organization along sectoral silos, rigid and often restricted mandates, scarcity of coordination mechanisms, and lack of financial and human resources (Ellinas & Suleiman, 2012; Jordan & Schout, 2006; Laffan, 1997; Peters & Wright, 2001; Spence & Edwards, 2006; Stevens & Stevens, 2001). Put differently, whereas wicked problems require new ways of organizing horizontal and vertical interdependencies, the Commission is allegedly restricted by relatively rigid formal procedures and jurisdictions (Jordan & Schout, 2006; Metcalfe, 1996). Kassim et al. (2013, p. 75) summarize these critiques as follows:

> [T]he Commission is highly 'stove-piped', its administrative code is burdensome, it is resource-poor, and it is heavily dependent for its success on its relationship with other EU institutions. And still it is tasked with trying to solve 'wicked problems', whose very nature makes it unlikely that they can be solved by administrations that strictly observe their own administrative code, especially one as cumbersome as the one under which the Commission operates.

Some issues identified in the EU literature as further complicating the Commission's ability to address wicked problems are: i) the EU's joint-decision trap and inter-institutional power struggles, which limit the possibilities for innovative policies (Falkner, 2011; Scharpf, 1988); ii) the different positions and frames of services, some of which are more likely to be adopted in policy proposals than others (Hartlapp et al., 2010); iii) New Public Management reforms that reinforce policy silos and reduce desired redundancy (Bauer & Knill, 2007; Cini, 2007); and iv) Commission officials' different views on the role of their institution (Hooghe, 2012).

At the same time, other parts of the EU literature portray the Commission as an actor that is not so incapable of dealing with wickedness at all. Various studies have found the Commission to act and behave as a policy entrepreneur or broker that regularly manages to foster change in circumstances of rapidly changing contexts, frame diversity and multi-actor and multi-level playing fields (Cram, 1993, 1994; Hooghe & Keating, 1994; Pollack, 1997; Wendon, 1998).

Others, such as Hartlapp (2011; Hartlapp et al., 2010), have pointed to various initiatives that the Commission under Barroso has taken to address some of its shortcomings, such as the Secretariat-General's more prominent role with respect to the co-ordination and coherence of policy proposals, the use of extensive policy impact assessments, and the increasing number of inter-service consultations and inter-service groups.

Kassim et al. (2013) recent extensive study is particularly interesting in this respect. Their argument is that the Commission's success in dealing with wicked problems and manoeuvring itself into a favourable position vis-à-vis the Council and the Parliament depends on 'the capacity of its own officials to navigate "the house" and produce unified, well-informed and fully prepared positions that have the backing of the administration as a whole' (82), and thus on the ability of its officials to maintain effective personal networks.

4.2.2   Governance capabilities for dealing with wicked problems

A general shortcoming in previous studies is that most of them focused primarily on one or more reasons why the Commission might or might not be good at dealing with wicked problems, rather than studying the variety of factors and processes that enable or constrain this ability. To address this lack, we apply the governance capabilities framework previously developed by Termeer et al. (Termeer & Dewulf, 2014; 2015a).

The development of the framework followed from a critique on the literature regarding the governance of wicked problems, which contended that it was too focused on 'how-to-act strategies' without satisfactorily addressing the question of how governance systems could be adjusted or designed to enable such acting. Alternative strategies, such as reframing policy debates and organizing experiments, may conflict with existing formal and informal rules and values and are therefore not always easy to implement in existing governance systems (e.g., Edelenbos, 2005). It may therefore be necessary to change the governance system itself to enable these strategies (Hendriks & Grin, 2007). Additionally, the framework developers argue that coping with wickedness requires different ways of observing policy problems.

To address these shortcomings, the framework synthesizes insights about coping with wicked problems from various governance and public administration theories, such as social-ecological systems theory (e.g., Folke et al., 2005), network, collaborative, multi-level and adaptive governance (Ansell & Gash, 2008; Hooghe & Marks, 2003; Koppenjan & Klijn, 2004; Termeer, Dewulf, & van Lieshout, 2010), punctuated-equilibrium theory (Baumgartner & Jones, 2009), framing theory (Schön & Rein, 1994) and organizational psychology (Weick, 1984), to suggest observations, strategies and enabling conditions that facilitate coping with the challenges of wicked problems. These observations, strategies and enabling conditions are clustered in governance capabilities.

We have already defined governance capabilities as the 'ability of policy makers to observe wicked problems and to act accordingly, and the ability of the governance system to enable such observing and acting' (Termeer et al., 2015a, p. 4). The latter ability is determined by the presence of certain enabling conditions, consisting of 'skills, repertoires, capacities, commitments, and readiness' (ibid.: 5, drawing from Huxham, Vangen, Huxham, & Eden, 2000; Weber & Khademian, 2008). These enabling conditions thus consist of both institutional and agency-centred properties. Each capability listed hereunder is focused on one of the five governance challenges mentioned in the introduction:

i) Reflexivity: the capability to understand and handle the variety of frames surrounding a policy problem;

ii) Resilience: the capability to adapt flexibly to uncertainties and constantly changing conditions surrounding wicked problems;

iii) Responsiveness: the capability to observe and respond effectively and in a timely fashion to issues that are pressing in politics and society;

iv) Revitalization: the capability to unblock unproductive patterns in the governance process;

v) Rescaling: the capability to observe and address cross-scale interactions and mismatches.

Table 4.1 provides an overview of the key observations, strategies and enabling conditions as provided by Termeer et al. (2015a) and Termeer and Dewulf (2014). Because our research concentrated on the extent to which the Commission as a whole is capable of dealing with wicked problems, we focused primarily on the enabling conditions, which are further elaborated in Supplementary Material (SM) C.

Table 4.1 Governance capabilities: key observations, strategies and enabling conditions

Capability	Key observations	Strategies	Enabling conditions
Reflexivity	One's own and other people's frames Processes of framing and its effects	Seducing people into frames Connecting frames Negotiating despite frame differences	Tolerance of ambiguity Embedding reflexive activities Process skills
Resilience	Weak signals Varied observations Threshold and cascading effects	Learning by doing Simulating and experimenting Taking robust or flexible measures Linking developments across scales	Tolerance of uncertainties Bridging arrangements Flexible institutions Redundancy Improvisation skills
Responsiveness	Media attention Different venues Focusing events Stories behind dramas and hypes Windows of opportunity	Deciding when to dive under the wave and when to react Communicating sensitively	Tolerance of information overload Be present where the attention is Parallel structures Political-sensitivity skills
Revitalization	Symptoms Interlocking interaction patterns System archetypes Third eyes	Animating people Interventions to unblock stagnation Addressing dysfunctional interactions Counterintuitive intervention	Tolerance of disappointments Readiness to introduce third actors and contents Postponements of judgments Intervention skills
Rescaling	Cross-level issues on the problem scale Interdependencies between levels on the governance scale Fit or mismatch between the governance scale and (multiple) relevant problem scales	Strategies to decouple levels on the problem scale Strategies to remodel the governance scale Strategies to match existing cross-level interactions in the problem scale with cross-level interactions in the governance scale	Openness for multiple scale logics Flexible institutions to create and recreate fit Tolerance for redundancy and blurred responsibilities

The positive impact of enabling conditions may be undone by constraining factors and processes, which we therefore included in the analysis of the European Commission's overall ability to deal with wicked problems (cf. Edelenbos, 2005; Scott, 2008). Because the original framework revolves solely around enabling conditions, we approach constraints as the absence of enabling conditions or any limitation to them. These

limitations are studied inductively (Section 4.3.2). The strength of an overarching capability is determined by the ratio between the presence and absence of skills, repertoires, capacities, commitments and readiness enabling governance systems to deal with wicked problems.

The rationale underlying the capabilities is that they 'help manage wicked problems through repeated small wins, based on careful observation and targeted actions, rather than through comprehensive plans or heroic deeds' (Termeer et al., 2015a, p. 24). Dealing with a particular wicked problem does not necessarily require *all* capabilities to be manifest to the same extent. Rather, they should be considered as tools and mechanisms that governance systems can possess and develop to enhance policymakers' range of understandings and action repertoires needed to deal with the inherent variety of wicked problems (Termeer et al., 2015a). One capability may therefore curtail another. Stimulating (too) many reflexive activities, for example, can result in inertia and a consequent inability to respond quickly to pressing concerns and demands. At the other extreme, policymakers and governance systems should not rely on a single capability because that would result in the inability to deal with the other governance challenges. Termeer et al. therefore plead for a meta-capability, i.e. applying the capabilities in a balanced manner by continuously monitoring and adjusting enabling conditions, so that these can be deployed in situations that call for action. However, what this meta-capability would look like concretely remains unclear. We reflect on this in the discussion.

4.3   Case description and methods of data collection and analysis

4.3.1   The case of food security in Commission policy formation

Food security is commonly defined as 'all people, at all times, hav[ing] physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life' (FAO, 1996). In spite of the existence of this agreed definition, food security can be characterized as highly wicked, because of: i) numerous conflicting problem definitions and solutions; ii) high degrees of uncertainty about the factors that influence food insecurity; iii) rapidly changing economic, environmental, and social conditions; iv) interrelatedness with other wicked problems; and v) the transcendence of temporal, spatial and jurisdictional scales (Candel, 2014; Candel et al., 2014).

Food security has been high on the EU agenda since the 2007–8 and 2010 food price crises, after which the Commission took various food security initiatives, such as

the € 1 billion Food Facility and the expanded Food Security Thematic Programme. Furthermore, food security concerns have come to play a role in a broad range of policy domains, such as agriculture, fisheries, energy and the environment. Therefore, we adopt a holistic view of food security, including all policy domains and efforts in which concerns about food availability, accessibility, utilization and stability play a role.

4.3.2 Data collection and analysis

To obtain a better understanding of the Commission's use of the five capabilities, we asked Commission officials about their experiences with the wickedness of food security and whether and how they felt enabled to cope with this wickedness. We thus used an interpretive approach, i.e. one that seeks to understand the governance context by focusing on understandings and experiences of people working in that context (Yanow, 2000). The advantage of such an approach is that it provides the opportunity to obtain an in-depth understanding of conditions that influence everyday work practice.

We conducted an interview round at the Commission in spring 2014, in which we talked to a total of 20 Commission officials who worked in the various services in which food security concerns played a role. Interviews were semi-structured and lasted one hour on average. Most interviews were with individual respondents, but two interviews were with two or more people. Respondents were selected on the basis of the services and units in which they worked, their function or alleged experience with food-security-related issues, whereby we aimed for as much diversity as possible (for an overview, see: SM C). Although many respondents agreed to participate when first approached, availability and willingness were constraints in the case of Commissioners' cabinet members. Therefore, we asked high-positioned Commission officials, including a former cabinet member, about dynamics at cabinet level.

We first asked respondents about their function and to what extent and how food security concerns played a role in their work and domain. The second part of the interviews was structured along the five governance challenges, whereby we asked respondents to what extent and how they experienced these challenges (observations), how they dealt with them (strategies), and whether and how they felt enabled or constrained to act (enabling and constraining conditions) (SM C). For this part of the interview, we referred to the observations, strategies and conditions in Table 4.1, which we translated to the respondents' frames of reference by using concrete examples. Respondents were given the opportunity to complement enabling conditions with additional conditions specific to the EU context.

The interviews were transcribed and coded. Subsequently, these codes were interpreted and compared, resulting in the categories of conditions reported in the results section (cf. Charmaz, 2006). Enabling conditions were interpreted by comparing these categories to Table 4.1 and the associated capabilities framework, although some categories were found to be specific to the EU context and therefore described in new terms. Constraints were all studied and interpreted inductively, whereby we synthesized similar observations into overarching categories. It is important to point out that respondents may have experienced the governance challenges and presence of capabilities and enabling conditions or constraints in different ways. We describe the dominant views and experiences, but also elaborate on any significant differences between respondents.

4.3.3   Limitations

Because the enabling conditions and constraints we identified were not specific to food security but to the functioning of the Commission in general, we believe that our findings could well be extended to the way in which the Commission deals with other wicked problems. Nevertheless, some case-specific characteristics should be pointed out. First, although we applied a holistic view of food security, it is a policy problem that has traditionally been dealt with mainly in the EU domain of development co-operation. This is a domain in which the Commission has relatively limited jurisdiction and resources vis-à-vis the member states, and this makes it more difficult to respond proactively. Second, it is an issue that is widely recognized as a problem in urgent need of attention, as opposed to slumbering or unattended wicked problems. This implies that capabilities have had some time to develop. Third and conversely, although food security has received policymakers' attention for decades, it only came centre stage after the 2007–8 and 2010 food price crises, because of which responses and developments are still very much in progress.

Regarding the analysis, our interpretive approach by definition involves a double hermeneutic (Giddens, 2007). Both the researcher and respondents are subject to bias, which we have aimed to: i) limit by preparing each interview with a desk study and by comparing respondents' experiences with each other; and ii) make transparent by presenting the interpretive scheme and using illustrative quotations throughout the results section. Throughout the results section, references to the interview transcripts are made, so that it is clear to the reader which findings can be traced back to the interviews directly.

4.4 Results

4.4.1 Reflexivity

Reflexivity is the ability to deal with frame controversies that surround wicked problems. We found that respondents evaluated the Commission's reflexivity relatively positively, mainly because of the presence of two enabling conditions: i) a widespread tolerance of frame diversity and conflicts; and ii) various inter-service procedures and structures that stimulate reflexive activities. Nevertheless, we also found some constraints, most notably a relatively firm belief in objectivity.

The widespread tolerance of frame diversity and conflicts became apparent through the wide recognition among respondents of the presence of various problem definitions, principles, ideologies and interests amongst external stakeholders, including the Council and the Parliament. They observed similar diverging perspectives within the Commission, especially between services but also between units within Directorates-General (DGs) and within international fora. Regarding the content of these frame differences, respondents noted that, whereas virtually all stakeholders, both within and outside the Commission, share food security as an important value and policy objective, there tends to be disagreement about the ways in which food security could best be addressed and, consequently, about what types of policies are needed. For example, the reform of the Common Agricultural Policy was characterized by debates over whether food security would be ensured best by increasing productivity and safeguarding farmers' incomes or by implementing far-reaching climate and environmental measures. These conflicting views are well illustrated by the following quote from a senior official in DG Agriculture and Rural Development (AGRI):

> Food security is in the eye of the beholder. Everybody threw whatever they wanted. They used it as slogan totally delinked from any policy measure and objective. That's why at end of the day, okay, food security is an objective, but what does it mean? I'm pretty sure you heard different answers from us all. (I- 5)

This example illustrates that, whereas there is awareness and tolerance of frame conflicts, these diverging views are often taken for granted and hardly negotiated.

The tolerance of frame diversity is enhanced by a second enabling condition, the various structures and procedures that enable collective reflexive actions. The most notable of these are the inter-service consultations, public consultations, Policy Coherence for Development (PCD) and impact assessments, which according to the respondents all stimulate approaching issues from various perspectives and thus enhance mutual

understandings. Some services have built in units that incorporate other sectors' concerns and that function as boundary entities aiming at developing synergies, such as the unit ACP, South Africa, FAO and G8/G20 in DG AGRI, which links international development concerns to agricultural policy development. The Commission's mobility policy, which encourages officials to change jobs once in a while, was also reported to accustom officials to approach issues from various perspectives (I-2, I-3). Sometimes, officials are exchanged between services with this explicit aim. Fisheries experts were for example stationed in DG Development and Cooperation (DEVCO) to revive food security efforts in that sector.

Apart from these enabling conditions, we found three constraints. A first constraint is the competition between units about jurisdictions. Units sometimes intentionally avoid reflexive co-operation because they fear losing a policy to another unit or DG when the policy becomes framed in a different way (I-12). A second constraint applies to global negotiations, in which officials experience less freedom to manoeuvre, speak out and change frames because they are tied to a mandate given by the member states (I-3, I-10). A third constraint, that particularly hinders the tolerance for frame diversity, is that there seems to be quite a firm belief in 'objectivity'. A number of respondents argued that, although food security issues were recognized as being surrounded by controversy, the Commission bases itself on 'facts' and can place itself outside these polarized debates (I-1, I-2, I-5, I-10), as is illustrated by the following quote by a policy officer:

> It's about sensitive topics. Which is not easy to deal with based on facts. … But for our work, our work is based on facts. … For us it's very important to see the difference between the statements and what are the facts. (I-10)

There is a tendency within the Commission to approach policy issues in a technocratic way. Conflicting values and views are often circumvented by focusing on technical arguments and drawing on scientific evidence and expertise (I-6A, I-6B, I-10, I-11, I-13, I-16). This can be a deliberate and strategic choice that makes it easier to make deals despite frame differences, as respondents frequently noted, but this is not always the case. Some respondents found it frustrating or upsetting when their objective stance was not acknowledged by external stakeholders (I-1, I-5). For example, one respondent indicated that she did not understand why controversy continued to dominate the policy with which she dealt, while information, research and impact assessments were openly shared and showed positive outcomes (I-1).

4.4.2   Resilience

Resilience is the ability to deal with the frequent and uncertain changes that characterize wicked problems. We found that the Commission's resilience in the case of food security is experienced equivocally. On the one hand, there is a widespread tolerance of uncertainty and changing circumstances, and various procedures exist to observe and address these shifts. On the other hand, the Commission is hindered in acting upon these observations by some constraints, the most significant of which lies outside its influence.

To start with the enabling conditions, we observed various bridging arrangements between policy sectors. These bridging arrangements are often the same procedures and structures that enhance the Commission's reflexivity, but here the accent lies on the ways in which they facilitate the exchange of information and consequently contribute to signalling new pressures, trends and developments. The most notable arrangements in this respect are impact assessments, public and inter-service consultations, boundary units and staff mobility. These arrangements thus not only facilitate reflection on diverging perspectives, but also allow officials to update one another on relevant trends and signals. This ability to signal is further enhanced by the many modelling exercises, foresight studies, informal meetings with stakeholders and the use of insights from EU-funded research. Also, some services, such as Humanitarian Aid and Civil Protection (ECHO), use experts in the field, strikingly called the 'antennas' by one respondent (I-7), to update them about developments. As a result of these combined tools and procedures, officials are generally well aware of changing circumstances.

Nevertheless, many respondents indicated that the availability of relevant data and information remains problematic, as the following quote illustrates:

> With respect to food security and sustainable production in the EU, we know the slogans we want to exchange and the overall orientation, but we miss hard data, facts, that would allow us to see what happens and what role it plays. (I-5)

This lack of information results from the Commission's relatively limited human resources. There are various reasons why limited capacity negatively affects the Commission's monitoring abilities. First, capacity pressures force services and units to focus on the most obvious issues and developments, and consequently smaller issues or signals cannot be picked up (I-2, I-9). One respondent, for example, argued that services that are particularly tasked with responding to soaring crises, such as DGs ECHO and Health and Consumers (SANCO), sometimes have insufficient capacity to study contextual developments and therefore operate reactively more often than proactively

(I-9). Second, a lack of in-house expertise may result in blind spots. Respondents for example mentioned that DG DEVCO for a long time lacked fisheries expertise. This has improved in recent years, leading to a better co-ordination of fisheries and food security efforts (I-2, I-3).

A second constraint is the Commission's dependence on other actors, both within and outside the EU. Within the EU, in most policy sectors the Commission is only one of three EU institutions involved. Consequently, whereas the Commission can, in principle, largely decide about its policy proposals, it has only a limited influence on final policy outputs. For food security this means that, even if concerns are satisfactorily addressed in the Commission's proposal, the other EU institutions can decide to ignore these in favour of other priorities. This restricts the Commission's flexibility to act and improvise if circumstances suddenly change. Respondents described these deviations as 'a mess' (I-2, I-12) and 'an outcome of last-minute bargaining' (I-12), but also as a political reality (I-12, I-11, I-14, I-16) and democratically legitimate (I-2, I-16).

Similar dependence-based restrictions exist in external action and multi-lateral negotiations. Regarding the former, the Commission is mainly dependent on partner countries and their prioritizations; regarding the latter, on the member states that closely monitor the Commission's position. A respondent described this as a 'balancing act':

> Is it an out-of-the-box approach? Certainly not. Can we be more adventurous? Yes. Are we going to be more adventurous? Yes, if member states let us. Are we entering into an adventurous mode? No, we are not, because we are entering an era of scepticism, of Euroscepticism, of cautiousness, of anti-European feelings. … I'm balancing externally and internally. … It's complicated, it's 80 per cent of my work, every day the balancing act. (I-10)

A factor that can have both a positive and a negative impact on the Commission's ability to act upon changing circumstances are commissioners' prioritizations. Whereas some respondents said that the DEVCO and AGRI commissioners considered food security as a high priority (I-2, I-6C, I-10, I-11), one respondent critiqued a particular commissioner for being more eager to reach agreements than to take in-house experience into account (I-5). Commissioners' influence is also affected by the Commission's financial periods, which last seven years (I-11). If a commissioner is unlucky, he/she will have to work within the financial framework determined before his/her five-year term.

In spite of these restrictions, the Commission has proved able to deploy robust or flexible measures in emergency situations when the EU institutions share a sense of urgency. An example is the robust € 1 billion Food Facility rapid response mechanism that the

Commission launched shortly after the 2007–8 crisis. An example of a flexible (or robust) measure was the adjustment of the biofuels policy. Following critiques about the land-use implications of its earlier biofuel targets, the Commission limited to 5 per cent the amount of food-crop-based biofuels that can count towards the EU's 10 per cent target for renewable energy in the transport sector by 2020 (European Commission, 2012).

4.4.3 Responsiveness

Responsiveness refers to the ability to deal with unlimited demands and concerns. It is important to note that for the Commission these demands and concerns can come from both internal – i.e., other services, member states and members of the European Parliament (MEPs) – and external actors, such as civil society and businesses. One of the main differences described between the EU and national level is the relatively smaller influence of mass media (Princen, 2011). As a consequence of the more hidden interest representation, public communication plays a smaller role for most administrators (I-1, I-2, I-6A, I-6B, I-10, I-13, I-16).

Nevertheless, we found that, although compared to national administrations the expression of demands and concerns by external actors tends to be more hidden at EU level, there are quite a number of channels through which the Commission interacts with actors and attempts to address their concerns.

A first enabling condition is the relative ease for stakeholders, including researchers, to approach the Commission. This accessibility is particularly structured by the many formal and informal stakeholder and public consultations. In fact, the Commission relies on these interactions to draw up balanced proposals that will manage to gather sufficient political support. They are therefore described as a win-win: stakeholders can bring forward their demands and concerns, whereas Commission officials can draw from stakeholders' knowledge and expertise and get an overview of the positions around a proposal (I-2, I-3, I-7, I-12, I-13). Within the Commission, inter-service contacts provide the opportunity to get to know the various societal and political demands and concerns with respect to a particular issue, and this enhances the ability to respond accordingly.

Similar formal and informal interactions take place with actors from the Parliament and the Council, who try to pursue their interests and views within the Commission policy formation process even before the official inter-institutional negotiations and trilogues. Respondents argued that the best way to meet these pressures is by providing

well-formulated arguments, facts and data that help to win their support (I-9, I-12, I-14). Also, formal communications from the Commission to the Parliament and other EU institutions are used to gather support and legitimization by deliberately choosing wordings that reflect terms and objectives that find wide resonance in public and political spheres. 'Food security' was mentioned as a particularly good example of such a term, because it is a 'buzzword' that, according to Eurobarometer, finds wide resonance among European citizens (I-10, I-11 -12). Other examples given of these sorts of consensus frames were 'sustainable intensification' (I-5) and the 'blue economy' (I-3). Other discursive devices mentioned that appeal and contribute to gathering support from wide ranges of stakeholders are the use of positive narratives and success stories to sell a policy (I-2, I-6C, I-9), and the ability to steer debates away from short-term policy proposals towards long-term developments and trends. According to one senior official, this allows most controversies and nested interests to be dismissed and a more open discussion about the direction in which future policy should develop (I-9).

The above observations and examples show that the Commission can be considered to be relatively tolerant of information overloads. A second enabling condition found is the regular presence of Commission representatives at public meetings, conferences and seminars. These provide the opportunity to get a good view of political and societal demands and concerns and to simultaneously create awareness and support .

A constraint to the Commission's responsiveness is, again, its capacity. In this case also, a lack of capacity is a problem because it forces some services to deal with concerns and demands in a reactive way, i.e. they can only address concerns and demands that are dominant at a specific moment. This weakens the institution's ability to monitor and detect concerns that may be on the policy agenda in the (near) future.

The scrutiny of the other EU institutions, particularly the member states, also limits the extent to which Commission officials can be responsive towards the outside world. One respondent said:

> In external meetings and conferences it's mostly fluffy statements about food security. I can't go too far, because member states are watching over my shoulder. So, I'm also cognizant of the fact that I can't go outside of the contours. Because it's not the first time, the moment I got out of the contours I have a member state coming and blasting at me. And that I can't afford. (I-10)

Nevertheless, most respondents nuanced this by saying that, although the inter-institutional frictions often result in the watering down of the Commission's proposals, this does not mean that evolving demands and concerns are not taken into account at

all in the policy process(I-3, I-10, I-12), as described by a respondent in the context of the Common Agricultural Policy (CAP) reform:

> If you look at the bigger picture, I mean it's still a lot more that was achieved than one would have thought five years ago. So it's really a question of whether you accept the fact that this was a strong political choice to make, and if you would accept that it was politically difficult to get something through, then you might appreciate that, okay, it's a step in the right direction. It might not be a step big enough than what you would have thought to or liked to have, but still it's an incremental change which might open the door for something bigger later on. (I-12)

4.4.4 Revitalization

Revitalization is the capability to unblock stagnations and to reanimate policy processes. We found that, although the Commission largely lacks the ability to revitalize wider societal impasses, stagnations hardly ever block the EU policy process entirely.

Many respondents indicated that they hardly experience any lasting stagnations or deadlocks with respect to food-security-related issues, and those stagnations that *were* identified were mostly located in global negotiations; for example, about fishing quotas or the Sustainable Development Goals (I-3, I-17). This does not mean that other food security-related issues are free of societal and political controversies and deadlocks, but these are overcome in the Commission's policy process through two institutional mechanisms: i) a technocratic fragmentation of policy problems; and ii) a policy process design that works towards compromises. It would therefore make sense to speak of the continuation of the policy process in spite of stagnations and deadlocks, rather than of revitalization in a broader sense.

The first enabling condition here is the organizational compartmentalization of food security into multiple sub-issues, such as food assistance, fisheries in development policy and biofuel policy impacts, which are each dealt with in a specific DG or unit or by a single policy officer. There is no organizational entity that truly keeps the overview and attempts to co-ordinate or to integrate this broad range of efforts. These sub-issues are then dealt with in a highly technocratic way. This way of working both reduces the number of stakeholders actively involved in policy formation and bypasses much of the controversy by focusing on technicalities.

The second enabling condition consists of the whole system of inter-service consultations, impact assessments and trilogues that are designed to keep the policy process going by forcing units, services and the EU institutions to reach agreements. Although intra- and inter-institutional bargains and negotiations are often experienced as tough and slow, they nevertheless normally result in compromises. Respondents noted that, if they did not come to an agreement at technical level, they would run the risk of losing a bargain at the level of their political masters in subsequent stages of the policy process (I-6C, I-10, I-16). These compromises do not necessarily resolve or unblock wider societal value conflicts and deadlocks, but they do settle political disagreements.

Disagreements are thus mostly settled through technocratic deliberations or political deals, both of which more often result in incremental policy development than in radical shifts of policy directions. Various respondents said that there is only limited space to introduce very innovative policies or instruments to break through deadlocks (I-2, I-10), principally because the Commission will not propose any innovative proposals on which it knows that the member states will disagree with them. Therefore, officials apply a certain degree of 'self-censorship'. One respondent said: 'I can't be super innovative because it will not fly. It's useless having an innovative policy which never flies, if it remains in the drawers' (I-10).

Despite this dependence on the other EU institutions, occasionally innovative approaches *are* possible. One respondent mentioned the example of chartering European fishing vessels to African countries, which resolved a conflict about African states wanting to expand their fishing capacity without having sufficient expertise to do so sustainably. She argued that it is sometimes possible to alter policy instruments within one's policy objectives and that this may help accommodate the concerns of other actors and consequently to realize breakthroughs:

> There are objectives that we cannot forget. But the means it depends, yes. If we
> have to change some modalities to attain the same objectives and that are more
> in conformity with other parties' objectives, we have to adapt. Or to innovate.
> (I-3)

Furthermore, the Commission can also initiate innovations in its working procedures, such as the introduction of Policy Coherence for Development, which help to integrate development concerns and therefore prevent possible stagnations within the Commission. However, respondents indicated that these kinds of new practices require a cultural change and therefore take time to succeed (I-2, I-3).

4.4.5   Rescaling

Rescaling is the capability to deal with the relation between problem and governance scales. Here, we focus on a temporal scale, ranging from short to long term, and a spatial scale, ranging from local to global. We found that, although there is widespread awareness of the different scales at which problems occur and on which they are governed, the Commission is restricted in its possibilities to adjust governance scales, especially spatial scales.

An enabling condition with respect to the temporal scale is a general sensitivity regarding the relation between short- and long-term dimensions of food security. Examples of short-term dimensions include the incomes and livelihoods of farmers and fishermen. Typical long-term elements include climate change, environmental conditions and sustainable economic growth (I-17). Some Commission sectors and policies are mostly relevant for short-term or conjunctural aspects of food insecurity, whereas others focus more on long-term or structural aspects. Sometimes, Commission officials face seeming trade-offs between both. One respondent gave the example of an international negotiation in which a choice had to be made between protecting fish stocks to safeguard long-term food security and the incomes and livelihoods of fishermen fishing these species (I-3).

The ability to rescale is well illustrated by the Commission's 2012 Resilience Communication, which aims to connect short- and long-term policies and interventions, particularly in the fields of humanitarian aid and development co-operation (I-2, I-7). Additionally, most services also actively engage in foresight studies to anticipate future trends and developments and think about how these relate to short-term actions.

The spatial scale was described as more sensitive (I-2, I-3, I-5, I-10, I-11, I-17). Although respondents proved sensitive of the multi-levelness of both problems and governance, the subsidiarity principle forms a major constraint in adjusting governance levels when deemed appropriate. Respondents argued that in recent years they had to exercise even more constraint with respect to policy initiatives because of increased Euroscepticism and scrutiny by member states (I-5, I-10). They also indicated that they were therefore operating less proactively than they deemed desirable. Nevertheless, on various issues, such as humanitarian aid, respondents did experience close co-ordination between the Commission and member states, either through the Council or directly (I-7, I-13, I-17).

A second constraint to the Commission's ability to adjust governance scales is its dependence on other actors in its external actions, such as partner countries (I-2, I-3, I-10, I-13). Respondents involved in external actions argued that the Commission has

relatively limited leverage to make food security interventions outside its territory when partner countries are not supportive.

In spite of these difficulties in adjusting spatial scales, Commission staff still saw opportunities for being active on other governance levels (I-3, I-17). Various food security aspects, such as global warming, sustainable development goals and fisheries quotas, are dealt with in global organizations and negotiations, and respondents indicated that they use these global venues strategically to push for some of the Commission's main objectives, such as healthy oceans and the importance of agriculture in sustainable development. The reason behind this is that these multilateral platforms offer the opportunity to address problems with a wide array of countries and stakeholders.

Table 4.2 Enabling conditions and constraints for the Commission's governance of food security

	Reflexivity	Resilience	Responsiveness	Revitalization	Rescaling
Enabling conditions	- Widespread awareness and tolerance of frame diversity and conflicts - Cross-sectoral and cross-institutional structures and procedures that enable collective and reflexive actions	- Widespread awareness and tolerance of uncertainty and changing circumstances - Bridging arrangements that facilitate information exchange and contribute to signaling function - Information gathering through modelling, research, meetings, i.a. - Ability to deploy robust and flexible measures when pressure is high - Commissioners' prioritizations	- Reasonable tolerance of an overload of pressing demands and concerns - Channels that facilitate the exchange of demands and concerns within the Commission and with the Council, EP, and external stakeholders - Presence at public meetings	- Compartmentalization that enables technocratic approaches - Structures and procedures that are designed to work to compromises	- Widespread temporal and spatial scale-sensitivity - Policies that align short- and long-term efforts - Close co-ordination with member states in some fields - Sensitive of opportunities at global level
Constraints	- Competition between DGs and units about jurisdictions - Relatively little freedom to maneuver in global settings - Relatively firm belief in 'objectivity'	- Limited capacity to monitor signals - Limited freedom to act upon signals as result of dependence on third actors - Commissioners' prioritizations	- Limited capacity to observe potential agenda issues - Limited freedom to react to external demands and concerns as a result of scrutiny by Parliament and member states	- Limited latitude to intervene in wider societal deadlocks as a result of scrutiny by other EU institutions - Limited space to introduce innovative (re)solutions	- Constrained in adjusting spatial scales as a result of subsidiarity principle - Dependence on third actors for external action

4.5   Discussion

4.5.1   Discussion of the results from the perspective of the EU literature

As Kassim et al. (2013) have suggested, personal networks matter. Interactions within the Commission, and with external stakeholders from both within and outside the EU polity, play a great role in the exchange of perspectives, relevant information about trends and signals, and demands and concerns, and thus particularly enhance the Commission's reflexivity, resilience and responsiveness. However, our study reveals that the Commission's institutionalized norms, values and practices enable these networks to flourish. Factors such as the Commission's staff mobility policy, the emphasis on stakeholder consultations, and inter-sectoral and inter-institutional compromises within its procedures are crucial for the development of staff's personal networks. The image that the Commission is able to cope with the governance challenges of wicked problems because its staff manages to maintain extensive networks *in spite of* severe structural constraints is therefore incorrect, or at least incomplete. Instead, the fact that personal networks are *enabled by* institutions – and sometimes constrained by others – makes the Commission more successful in dealing with wicked problems than often portrayed. One could therefore argue that the Commission has, at least partly, progressed towards functioning as a 'network organization' (Metcalfe, 1996). This is not to say that the Commission has already fully evolved into such an organization. As others have pointed out, this would require further investments in the Commission's coordinative and integrative administrative capacities (Laffan, 1997; Metcalfe, 2000; Schout & Jordan, 2005). In this light, it is interesting to monitor whether President Juncker's reform plans will further enhance these forms of co-ordination.

The effects of Juncker's reforms on the Commission's capacity are also relevant for its ability to monitor weak signals and to proactively scan demands and concerns that might put pressure on political agendas in the (near) future. We found that this ability is currently underdeveloped. This finding sheds a new light on the various reform initiatives undertaken since the late 1990s to make the Commission more efficient (e.g., Ellinas & Suleiman, 2008; Metcalfe, 2000). Although increased efficiency and clear responsibilities may be politically desirable, from a governance of wicked problems perspective they can be detrimental, because they reduce redundancy and the blurred responsibilities within a governance system that enable enhanced resilience and rescaling.

Dependence on the other EU institutions appeared to be a constraint to some of the capabilities. Our analysis has revealed various situations where the Commission proved relatively capable of dealing with food security challenges but where this was less certain for the EU as a whole. At the same time, a fragmentation of powers and responsibilities

among the Commission, Council and Parliament does not necessarily diminish the chances of settling wicked problems. When co-ordination is organized well, such power sharing may actually result in more holistic and democratically legitimate approaches (Termeer et al., 2011). Future research could elucidate the degree of, and space for, co-ordinated efforts between the institutions.

In addition, future research could provide more insights into the potential for developing a meta-capability within the Commission. In the case of food security, such a meta-capability seemed largely absent. This finding contrasts with accounts in the literature that stress the enhanced coordinative role of the Secretariat-General (SG) under Barroso. Although the SG has the potential to embed the meta-capability, its role in the governance of food security proved limited. The potential for accommodating the metacapability within the SG fits in with Jordan and Schout's (2006, p. 18) plea for the Commission to function as a 'central coordinator or manager' within the EU to cope with wicked problems. Assigning this task to the SG could institute a mechanism to reflect on the balance between the different governance capabilities, and to invest in complementary enabling conditions when necessary.

4.5.2 Discussion of the results from the perspective of the literature on the governance of wicked problems

One major addition to the governance capabilities framework is the identification of constraints to dealing with wicked problems. Future research could provide a better understanding of the extent to which these constraints are generalizable and could be complemented.

A second contribution is that we showed some concrete examples of interactions between the governance capabilities. According to the original capabilities framework, trade-offs may occur between the capabilities. However, until now, such trade-offs had not been shown empirically. The most striking of these trade-offs involves compartmentalization. Whereas we found that compartmentalization contributes to the ability to break through protracted stagnations because it enables breaking a wicked problem into multiple smaller problems that can be addressed by specialized subsystems, it has a negative effect on the ability to observe diverging frames, signals of change, and emerging demands and concerns. A second example is the regular trade-offs between providing policymakers with the latitude to act upon new signals and to be responsive in public meetings on the one hand and legitimacy on the other. Although resulting in diminished decisiveness, limiting this latitude may be rational from a democratic perspective.

Our last point concerns a critique on the capabilities framework. Although the framework pleads for a meta-capability, it does not clarify how such a meta-governance capacity could be realized and institutionalized. We believe the framework would benefit from integrating the emerging literature on policy integration and boundary-spanning policy regimes, as these could provide more insights into the emergence of governance structures around cross-cutting policy problems.

4.6   Conclusions

Is the European Commission capable of coping with wicked problems? Whereas the EU literature has provided equivocal viewpoints, our study of the Commission's capabilities suggests a nuanced answer to this question. We showed that, for each of the five governance challenges that wicked problems pose, the Commission has enabling conditions at its disposal, but also faces constraints. These are summarized in Table 4.2. The way in which the capabilities manifested themselves in the governance of food security gives rise to a more optimistic view of the Commission's ability than currently prevails within the literature. On balance, the Commission seems to possess all five capabilities to some extent, but some are more developed than others:

1. The Commission possesses a relatively high degree of reflexivity. Its staff is well aware and tolerant of frame differences, and various procedures and structures stimulate reflexive actions. Nevertheless, there is a widespread belief in 'objectivity' and the ability to develop technocratic solutions, thereby obscuring value conflicts.

2. The Commission enjoys various conditions that enable resilience. Respondents proved tolerant of uncertainty and sudden change, and various boundary arrangements and activities enable signalling changes in problem characteristics and contextual conditions. Nevertheless, the Commission often lacks the latitude to respond rapidly to new signals.

3. The Commission is tolerant of, and actively stimulates, engagement with a plurality of demands and concerns. However, this well-developed responsiveness is somewhat constrained by its limited capacity to proactively scan for potential new concerns and by its limited latitude in formulating responses in public performances.

4. The Commission does not score well on its ability to enable the revitalization of wider societal and political deadlocks and stagnations. However, through compartmentalization, technocratic approaches, and various procedures and

structures that force compromise-seeking, the Commission manages to circumvent these stagnations within the EU policy process.

5. Commission officials proved to be well aware of temporal and spatial scale dynamics, but face difficulties in adjusting governance levels when mismatches occur. This is particularly caused by the subsidiarity principle.

In spite of relatively well-developed capabilities, the Commission seems to lack a meta-capability that would enable a continuous monitoring and adjustment of these capabilities. We would argue that this meta-capability requires at least a deliberate reflection on the system's ability to cope with a wicked problem in all its facets. We did not find such a mechanism in the case of food security. Instead, actors reflected on, and dealt with, specific elements of the wicked problem. By doing so, they can and do reshape the governance system in a way that could further enable coping with specific governance challenges, but the compartmentalization of these efforts runs the risk of keeping particular challenges unmonitored and unanticipated. The very nature of wicked problems implies that tomorrow may pose different challenges than today, requiring a continuous evolution of governance capabilities. We believe that the most pressing question for future research would be to examine whether the Commission possesses mechanisms that enable such evolution or, if these are lacking, how they could be embedded.

Acknowledgements

Toward a processual understanding of policy integration

Abstract[12]

The role of policy integration in the governance of cross-cutting policy problems has attracted increasing scholarly attention in recent years. Nevertheless, the concept of policy (dis)integration is still under theorized, particularly regarding its inherent processual nature. The main argument of this chapter is that policy integration should be understood as a process that entails various elements that do not necessarily move in a concerted manner but may develop at different paces or even in different directions. To study such dynamic integration pathways, the chapter proposes a multi-dimensional framework. Drawing on existing literature, the framework distinguishes four dimensions of integration: (i) cultures of beliefs, (ii), subsystem involvement, (iii) policy goals, and (iv) policy instruments. For each of these dimensions we describe different manifestations that are associated with lesser or more advanced degrees of policy integration within a governance system. Additionally, the framework suggests various indicators through which these dimensions can be studied. Apart from offering a theoretical approach that does justice to the dynamic and oftentimes asynchronous nature of integration processes, the framework allows for holding decision makers accountable for promises they make about enhancing policy integration. Simultaneously, it is argued that the merit of lower degrees of integration should not be underestimated, as these may sometimes be the most feasible or appropriate for the governance of a cross-cutting problem.

5.1   Introduction

Many of today's most pressing societal challenges including terrorism, food security, climate change, involuntary migration, or underemployment (WEF, 2015), are crosscutting the boundaries of established jurisdictions, governance levels, and policy domains. While it is recognized that these problems require some level of policy integration, severe integration challenges to policymakers and their institutional surroundings continue to exist (Briassoulis, 2004; Geerlings & Stead, 2003; Hovik & Hanssen, 2015; Jochim & May, 2010; Jordan & Schout, 2006; Kettl, 2006; Tosun & Lang, 2013). Examples in the literature are abundant, including the problems of compartmentalization, fragmentation, competing and incoherent objectives, policy under- and overreaction, competing issue-attention, and inconsistent instrument mixes. These integration challenges emerge particularly when complex societal issues are confronted with traditional forms of subsystem policymaking within hierarchic governance systems (Jochim & May, 2010; May, Sapotichne, & Workman, 2006). In these governance systems (sub-)sectoral policy is made by relatively stable actor configurations, each of which is characterized by specific sets of associated interests, belief systems, and problem perceptions (Baumgartner & Jones, 2009; Sabatier & Jenkins-Smith, 1993). Differences between subsystems generally do not allow for the coherent or holistic approaches that are needed to satisfactorily deal with problems of a cross-cutting nature (Jochim & May, 2010). Rhodes (1991, p. 212) therefore aptly characterized the governance of these 'cross-cutting problems' through sectoral subsystems as resulting in 'policy messes'. What makes the governance of cross-cutting problems even messier is that many are 'wicked'; in addition to cross-scale dynamics, these problems involve high degrees of ambiguity, controversy, uncertainty and deadlocked interaction patterns (Rittel & Webber, 1973; Termeer et al., 2015a).

To overcome these integration challenges, governments and international organizations have introduced various initiatives to stimulate cross-sectoral policy integration between subsystems. Many of these initiatives, such as joined-up-government and whole-of-government, were developed as an answer to New Public Management (NPM) principles that had further worsened governance systems' abilities to deal holistically with cross-cutting policy problems (Christensen & Lægreid, 2007; Halligan, Buick, & O'Flynn, 2011). Various scholars argue that it is somewhat surprising that this range of governance initiatives has not yet led to a general theory of policy integration in the political sciences (Geerlings & Stead, 2003; Lafferty & Hovden, 2003; Tosun & Lang, 2013). Instead, the governance of cross-cutting policy problems has been studied through a plethora of approaches and schools of thought, all of which have distinct backgrounds and foci but also share considerable overlap (for overviews, see: Geerlings & Stead, 2003; Tosun & Lang, 2013).

Our aim in this chapter is to theorize and bring some conceptual convergence in the debate on policy integration for the governance of cross-cutting policy problems. The concept of 'policy integration' was first used by Arild Underdal (1980) in the context of integrated marine policy. He argues that an 'integrated policy' is one in which the 'constituent elements are brought together and made subject to a single, unifying conception' (ibid., p. 159). After his publication, the notion has primarily been used in the context of sustainable development, where it is referred to as Environmental Policy Integration (EPI) (e.g., Jordan & Lenschow, 2010; Lafferty & Hovden, 2003; Runhaar, Driessen, & Uittenbroek, 2014), and, more recently, as Climate Policy Integration (CPI) (e.g., Adelle & Russel, 2013; Dupont & Oberthür, 2012; Nilsson & Nilsson, 2005). The principle of policy integration, however, remains the same: the objective of EPI is to incorporate, and, arguably, to prioritize, environmental concerns in non-environmental policy domains[13], with the purpose of enhancing environmental policy outcomes.

Whereas much of the early EPI literature understands the concept as a governing 'principle' or desired policy outcome, more recently scholars have directed their attention towards the ways in, and extents to which, EPI has become adopted within various political systems and policy processes, and the factors that facilitate or hinder this adoption (for an overview of this literature, see: Jordan & Lenschow, 2010). These recent studies mark the shift towards a more processual approach to policy integration, i.e. one that proceeds beyond studying whether EPI has been implemented or not towards the dynamics and reasons behind (dis)integration. However, as Adelle and Russel (2013) put it, existing typologies have been mainly used to evaluate progress *towards* EPI (for example in: EEA, 2005; Jordan & Schout, 2006; Mickwitz et al., 2009) , rather than approaching integration as an inherently dynamic concept in itself (i.e. as a derivative of the verb 'to integrate'). As a result, integration just comes in one flavour: it is a desired state that is reached, or else we do not speak of policy integration at all. In this paper, we aim to reconceptualise policy integration by adopting a processual understanding of integration. The shift from a relatively static (desired) outcome centred approach towards a differentiated processual understanding of integration raises interesting questions about when integration is fully realized, what elements constitute integration processes, and how these may develop over time, inter alia. To address these questions coherently and to align integration studies with adjacent theories on policy dynamics, we propose a conceptual framework that unpacks the notion of policy integration (Hogan & Howlett, 2015). We thereby view policy integration as a multi-dimensional and 'ongoing process' (EEA, 2005; Jordan & Schout, 2006; Keast, Brown, & Mandell,

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13   We use both the concepts of policy domains and subsystems in this chapter. Here, a policy domain refers to a substantive field of policymaking within a broader governance system, for example agriculture, foreign trade, or health. We use the concept of subsystems to signify the associated, relatively stable configurations of actors and institutions that are involved in the policy process within these domains, whereby a domain may comprise one or more subsystems.

2007). This differentiated view recognizes that policy integration '...potentially has many various aspects which may not always 'move' in parallel or at the same speed' (cf. Bauer & Knill, 2012, p. 31). Through this pursuit, the framework aims to contribute to the advancement of the study of policy integration beyond the dominant domains of environment and climate change towards more general theorization.

5.2 Shortcomings of existing processual conceptualizations of policy integration

In the introduction, we already touched upon the EPI and CPI literatures and concluded that these literatures do not elaborate on the inherently processual nature of policy integration as a concept. At the same time, we acknowledge that a focus on the processual nature of integration is not entirely new to the public policy literature. Here, we discuss two notable examples of frameworks that *have* provided processual conceptualizations of similar notions: Metcalfe's (1994) coordination scale and the cooperation, coordination and collaboration hierarchy proposed by several authors, including Geerlings and Stead (2003), Keast et al. (2007) and McNamara (2012). However, as we will discuss, both approaches have their shortcomings.

First, Metcalfe (1994) focuses on degrees of (organized) coordination ranging from independent decision-making by ministries to a shared government strategy, in between which seven other steps are distinguished (for a variation on this scale, see: Braun, 2008). The scale is still popular, as is illustrated by its use in recent extensive studies of coordination between public organizations and organizational entities (Bouckaert, Peters, & Verhoest, 2010; Jordan & Schout, 2006). Its main merit lies in that it provides a logical order of how coordination may increase (or decrease) over time, and as such provides a tool for comparison. However, the scale presents integration scholars with conceptual and methodological challenges, because it does not provide clear criteria or elements on the basis of which degrees could be distinguished. As a result, it is impossible to apply the scale systematically (compare, for example, applications in: Bolleyer, 2011; Pelkonen, Teräväinen, & Waltari, 2008; World Bank, 2006). Differences between studies that apply the scale make it difficult to identify and compare patterns and mechanisms of integration that occur across cases. This point of critique is not restricted to the Metcalfe scale; most of the literature on policy integration discusses the elements that constitute integration processes in isolation, providing limited basis for theory building. One of the goals of our approach is to bring some systematicity by synthesizing these isolated accounts. A second point of critique regarding the Metcalfe scale is that it suggests a consequential order of various elements of integration that do not necessarily follow upon each other. For example, various scholars of sustainable

development policy have showed that overarching strategies are not always preceded by instruments that substantially increase coordination and convergence between policy domains (e.g., Jacob et al., 2008; Jordan & Lenschow, 2010).

A second approach within the public policy and management literature covers a similar proposal for a hierarchy ranging from cooperation to coordination to collaboration or integration (e.g., Geerlings & Stead, 2003; Keast et al., 2007; McNamara, 2012). Although the basic outlines are similar, small differences exist between the hierarchies of these authors in this approach. We believe such a hierarchy to be a promising way of conceptualizing policy integration as a process. However, existing hierarchies do, as with Metcalfe's scale, not entail clear constituting elements. In addition, these frameworks are generally developed in the context of social services provision (e.g., Keast et al., 2007; McNamara, 2012) rather than that of studying the policy process and therefore omit dimensions that are crucial within a public policy perspective, such as policy instruments or subsystems involved.

What is more, both the Metcalfe scale and the integration hierarchy lack a clear theorization of the nature of change over time. As a consequence, policy integration appears to advance or diminish in a linear manner. Recent empirical accounts of integration processes, however, show that this is hardly ever the case and that, instead, dimensions of policy integration move at different paces (Adelle, Jordan, & Benson, 2015; Howlett, 2009; Jacob et al., 2008; Jordan & Halpin, 2006).

5.3   Starting principles of a processual approach

We propose to addresses the shortcomings of existing processual approaches to policy integration by putting the multi-layered and asynchronous nature of integration processes at its conceptual core. To do so, our framework builds around four dimensions of integration: cultures of beliefs, subsystem involvement, policy goals, and policy instruments. These dimensions will be elaborated in section 5.4. We first elaborate our four theoretical starting principles that underlie the dynamics of the framework.

First, we pose that *dimensions of integration do not necessarily move in a concerted manner*. In fact, virtually all integration processes will show some differentiation in the advancing of dimensions, which may increase or decrease at various paces and even in opposite directions. As a consequence, policy integration configurations are generally characterized by discrepancies or time lags regarding the degree or phase in which the dimensions of integration are to be found. We cannot talk about degrees of policy integration without understanding and appreciating these dynamics. Moreover, dimensions of integration

do not necessarily 'catch up' with each other. A well-documented example of non-linear integration are the approaches to sustainable development that many countries and international organizations have deployed after committing themselves to international agreements. Jacob et al. (2008) show that whereas many governance systems design sustainable development policy objectives and frameworks, most do not come up to the mark with developing supportive instrument mixes that could realize the initially defined sustainable policy outcomes. There are various reasons for the occurrence of such partial or nonlinear integration; we mention three main reasons. First, lock-in effects may occur resulting from path dependency (Pierson, 2000) and consequential policy layering. Pre-existing elements, such as dominant subsystems or policy instruments, are often remarkably resilient (Mahoney & Thelen, 2009; Streeck & Thelen, 2005). Even though they are complex and their inconsistent nature makes them costly to administer, they often remain in place because they serve vested interests (Rayner & Howlett, 2009). There needs to be a strong and convincing case to change such existing elements. Second, connected to the previous, it is well known that certain aspects of the policy process are easier and more likely to change than other parts. For example, it is easier to change policy instruments than to change policy paradigms or core belief systems (Hall, 1993; Pierson, 1993). Third, governments or organizations may lack the political will or resources to proceed beyond discursive or symbolic action (Jacob et al., 2008; Jordan & Lenschow, 2010). Mickwitz and Kivimaa (2007) put this even stronger in arguing that integration strategies that are '...merely cosmetic or introduced in order to diffuse attention and resist change should be distinguished from genuine policy'. Howlett (2014) shows that for new cross-cutting policy issues, such as climate change, governments are often risk averse and use blame avoidance tactics, including reverting to discursive forms of integration, thereby seriously hampering policy success. In addition to willingness, both administrations and individual policy officers may lack the capacity and skills to work in an integrative manner, for example to facilitate linkages with new subsystems or to pursue overarching goals (Bardach, 1998; Hoppe, 2010; Jordan & Schout, 2006). In sum, asynchrony between different dimensions of policy integration is the rule, rather than the exemption when we consider policy integration as a process.

A second principle of our framework is that *integration is as much about positive (i.e. more integration) as it is about disintegration*. So far, most of the existing conceptual frameworks have focused on accounting for increasing policy integration, or on capturing the reasons for the lack or failure thereof. However, the literature provides various empirical examples of regime configurations with relatively high degrees of policy integration that weakened or collapsed in the past, such as the 'boundary-spanning policy regimes' around community empowerment and pollution abatement in the United States (Jochim & May, 2010), the discontinuation of EPI efforts in Norway, Sweden and the EU (Jordan & Lenschow, 2010; Nilsson & Persson, 2008; Pallemaerts et al., 2006), or

the dismantling of the intergovernmental Dutch Spatial Planning to Climate Change (ARK) program (Biesbroek et al., 2013b). Even the most advanced regimes in terms of integration can go out of fashion (Jochim & May, 2010), often because the issue has been pushed off the macropolitical agenda by other policy problems that are perceived as more pressing (cf. Downs, 1972). Or simply because the integrative efforts have served their purpose and the policy problem is (sufficiently) addressed. Policy integration efforts may also fall apart as a result of internal processes, such as frictions between supporting actors and institutions, changing ideas, or when they become self-undermining for other reasons (Keast et al., 2007; Rayner & Howlett, 2009). Furthermore, integrative governance arrangements may be scaled down or dismantled intentionally (cf. Bauer & Knill, 2012), for example as a result of a collaboration fatigue (Halligan et al., 2011) or because political actors replace existing paradigms, such as joined-up-government, by new ones (Wilson, 2000), as has happened in the UK and the Netherlands (Karré, van der Steen, & van Twist, 2013). Jordan and Lenschow (2010) argue that the political color of governments can play a role in this by showing that well-developed environmental policy integration regimes were scaled down when a number of European left-wing governments were replaced by right-wing governments. Again, this disintegration process is not static and parts might disintegrate faster than others.

Our third starting principle is that *mutual dependencies exist and interactions take place* between dimensions. Advancing insights from public policy studies have taught us that different types and levels of policy elements and contextual conditions can affect each other in numerous ways (e.g., Hall, 1993; Howlett, 2009; March & Olsen, 1989; Sabatier & Jenkins-Smith, 1993). Studying these interdependencies and interactions in the context of policy integration is a crucial next step for integration research. Based on recent understandings in policy studies we formulate two hypotheses regarding the relation between dimensions of integration. The first hypothesis relates to the idea that there is a hierarchic and consequential order between the advancement of dimensions related to policy regimes, such as actor configurations and undergirding beliefs, and those related to concrete sets of policies, e.g., goals and instruments (cf. Hall, 1993). Changes of the former are then a precondition for changes of the latter (Baumgartner & Jones, 2009; Howlett & Ramesh, 2003), implying that they advance at an earlier stage within an integration process. In concrete, this would mean that the advancement of policy goals and policy instruments towards enhanced or weakened policy integration is informed by and follows on shifts in the configuration of subsystems and associated prevalent cognitive and normative beliefs about the nature of the problem and its governance (Howlett, 2009). A second and partly competing hypothesis is that dimensions of integration have a dialectic interaction effect. For example, a change of dominant societal and political frames provides the opportunity for new subsystems to get involved in the governance of a particular cross-cutting issue. The reversed logic may

also apply in that the in- or exclusion of new actors within a governance process can result in a change or adoption of beliefs (e.g., Baumgartner & Jones, 2009). Similarly, the success of a policy integration instrument may lead to fundamentally rethinking the culture of beliefs on how to tackle the cross-cutting issue. For example, the introduction of the Open Method of Coordination in European Union employment policy led to a new view on possibilities for EU integration in policy domains for which the member states felt reluctant to transfer jurisdictions to the EU-level, such as for health policy (de la Porte, 2002; Princen, 2009).

The fourth and final starting principle is that *policy integration is a process of institutional change and design in which actors play a pivotal role*. We argue that to capture the process of policy integration, we should focus on the institutional conditions, manifestations of which determine the amount of policy integration within a governance system. However, it is through agency that these institutional manifestations are created, reaffirmed and changed. Agency-centred mechanisms help to explain why and how dimensions of integration change towards enhanced or weakened policy integration within governance systems, i.e. within and in interaction with an institutional context. The most notable agency-centred mechanisms of policy integration include social learning, coalition building and policy entrepreneurship (Jochim & May, 2010). Social learning requires that learning between agents does not only take place within one or more subsystems within a governance system, but across subsystems (Jones & Jenkins-Smith, 2009). Learning then, does not only follow from the emergence of new knowledge, information and experiences, but, more importantly, from agents' recognition of mutual dependencies between subsystems involved and of an associated variety of frames and perspectives on problems and solutions (Mickwitz et al., 2009; Nilsson & Nilsson, 2005; Termeer, 2009). Learning across subsystems generally goes hand in hand with the mechanism of coalition building. Coalition building involves agents' attempts to align powers within and between subsystems, which may result in new network configurations in the governance of a particular problem, possibly allowing for more integrative approaches (Jochim & May, 2010). Finally, policy entrepreneurship refers to the ability of individual actors to recognize or create windows of opportunity and to actively couple more integrative approaches to a perceived problem (Dowd et al., 2014; Mickwitz et al., 2009). By doing so, they may give way to new subsystem interactions and alliances. These agency-centred mechanisms have mostly been discussed in relation to increasing policy integration. Mechanisms of disintegration have received hardly any consideration until now, although the same observation can be made for the collapse or scaling back of public policy in general (Bauer, Jordan, Green-Pedersen, & Héritier, 2012). The mechanisms pushing enhanced policy integration may also play a role in its demise, for example when coalitions fall apart, when negative feedback loops feed learning processes, or when policy entrepreneurs push for sectoral solutions.

In addition, policy dismantling has been put forward as a mechanism that could explain disintegration (ibid.). However, understandings of dismantling processes have only recently started to develop and it may well be that policy dismantling in itself encompasses multiple agency-centred mechanisms.

Having elaborated the four starting principles of our processual approach to policy integration, we can now define the concept. We define policy integration as *an agency-driven process of asynchronous and multi-dimensional institutional change within an existing or newly formed governance system that shapes the system's and its subsystems' ability to address a cross-cutting policy problem in a more or less holistic manner.* Tracking such a process in a systematic manner requires a more concrete conceptualization of the various dimensions of integration. The goal of the remainder of the paper is to set out these dimensions.

5.4   Four dimensions of policy integration

We distinguish four dimensions that constitute policy integration: (i) cultures of beliefs, (ii) subsystem involvement, (iii) policy goals, and (iv) policy instruments. These dimensions have been elaborated in one or multiple of the political science and public policy literatures upon which we base our processual understanding. Subsystems and beliefs (ideas), for example, play an important role in the writing of Jochim and May (2010) on boundary-spanning policy regimes. Policy instrument mixes and policy goals form the corner stone of the Integrated Policy Strategies and New Governance Arrangements described by Rayner and Howlett (Howlett & Rayner, 2007; Rayner & Howlett, 2009). We discuss each of them here in relation to the key processual assumptions of policy integration as discussed in the previous section. It is hereby important to emphasize that each of the dimensions should be understood and studied in relation to a specific cross-cutting policy problem that a governance system seeks to address. For example, the dimension of policy goals refers to the inclusion of concerns *about a specific problem* within a governance system, its subsystems and associated policy goals. Thus, the dimensions do not necessarily describe the whole spectrum of general institutional characteristics within a governance system.

5.4.1   Cultures of beliefs

The first dimension consists of the *cultures of beliefs* within a governance system and associated subsystems regarding integration in the policy process. The literature on policy integration has coined various concepts to emphasize the role of ideas in integration

processes, such as frames, discourses, ideas, paradigms, and cultures. We refer to these ideas as the cultures of beliefs toward policy integration, as beliefs are particularly decisive in how the nature of a policy problem and its implications for more concrete policies and programs are understood within a policy subsystem (Sabatier, 1988; Sabatier & Jenkins-Smith, 1993). We hereby make a distinction between the culture of beliefs of a governance system as a whole and the cultures of beliefs within individual subsystems. For this dimension, it is particularly relevant to what extent both these types of cultures entail the recognition of the cross-cutting nature of a particular problem and of the consequential integration challenges that follow thereof.

The culture of beliefs at governance system-level is what the European Environment Agency (2005) refers to as the 'administrative culture' within a governance system, although the EEA operationalizes administrative cultures mainly in instrument choices rather than in more commonly used notions of belief systems, shared values, and institutional ideology (cf. Cini, 1995). Here, it is particularly relevant whether a governance system entails an administrative culture that promotes integration with respect to a particular cross-cutting problem, both amongst macro-level decision-makers and across the system's subsystems. Peters (2005, p. 13) argues that if governance systems want to move toward more integrated forms of governance, '...they will have to develop and propagate ideas, or policy frames, that can guide and justify the development of common approaches to governing.' Such common approaches help to promote cross-sectoral cooperation and a systematic dialogue between different subsystems that contributes to the strengthening of policy coherence (Geerlings & Stead, 2003). Some administrative cultures have hereby been shown to be more open towards integration than others and this differs across countries (Hoppe, 2010). For example, Anglo-Saxon countries are more likely to adopt integrative approaches compared to Napoleonic countries (6, 2004). The absence of an administrative culture that fosters a common approach can pose serious risks. Gieve and Provost (2012) for example show how the lack of awareness and promotion of the need to coordinate between monetary and regulatory policy subsystems resulted in the collapse of the U.S. subprime mortgage market and eventually in the 2007-2009 financial crises.

Apart from the administrative culture at system-level, amounts of integration are constituted by cultures of beliefs within individual subsystems. Over time, subsystems develop their own culture, style and tradition, and actors operating therein are often biased by the dominant discourses on how policymaking ought to take place. This has been referred to as the policy style of a subsystem (Freeman, 1985; Richardson, 2013). The question here particularly is to what extent a subsystem considers an issue to be of its concern as well as its recognition of the issue's cross-cutting nature and governance implications thereof. A good illustration of how such beliefs within subsystems can change

over time is the adoption of fisheries concerns within EU development cooperation policies. For a long time, the potential role of fisheries for improving livelihoods and food security had been overlooked, until some policy entrepreneurs within the development cooperation and fisheries subsystems realized that mutual synergies could be realized (Candel, Breeman, & Termeer, 2015).

Both types of cultures of beliefs are difficult to study. As Rayner and Howlett (2009, pp. 101-102) argue, key governance beliefs are sometimes articulated in a foundational document or statement, but they eventually become 'taken-for-granted elements that constitute the substantive basis of the goal structure of a particular strategy'. As a result, most of these beliefs are not easily identifiable. Retrieving them requires an extensive discourse analysis, including both communicative discourses and social practices (for example as suggested by: Arts & Buizer, 2009; Panizza & Miorelli, 2013).

We distinguish four manifestations of cultures of beliefs in policy integration processes, which are presented in the following table:

Table 5.1 Manifestations of cultures of beliefs

	Low amounts of policy integration	← →		High amounts of policy integration
Beliefs within subsystems	Culture of inward orientation to tackle problems. Cross-cutting nature of problem not recognized. Problem defined in narrow terms.	Culture of inward orientation to tackle problems. Failure of dominant subsystem in managing problem and externalities recognized (Bryson, Crosby, & Stone, 2006; Feiock, 2013). Results in realization that mutual policy concerns should be thought over within subsystems.	Culture of outward orientation to tackle problems. Awareness of cross-cutting nature of problem.	Culture of outward orientation to tackle problems. Cross-cutting nature of the problem is recognized. All possibly relevant subsystems have developed ideas about their role in governance of problem.
Beliefs across governance system	Problem is considered to fall within boundaries of specific subsystem. Efforts of other subsystems are not understood to be part of the governance of the problem. No push for integration.	Awareness that policy outputs of different subsystems shape policy outcomes, notion of externalities and do-no-harm. Problem is still predominantly perceived of as falling within the boundaries of particular subsystem. No strong push for integration.	Understanding that governance of problem should not be restricted to single domain. Notions of coordination, coherence emerge.	View that problem is and should not solely be governed by subsystems, but by system as a whole. Subsystems are desired to work according to shared, 'holistic' approach, which is particularly recognized within boundary-spanning structures.

5.4.2   Subsystem involvement

The second dimension of policy integration is *subsystem involvement.* This dimension captures the range of actors and institutions involved in the governance of a particular cross-cutting policy problem. The rise of a cross-cutting problem on the political agenda, is often followed by an increase in the number of subsystems that are formally or informally involved (cf. Peters & Hogwood, 1985). This has been shown to be particularly the case when two or more subsystems share beliefs and functional overlap (Zafonte & Sabatier, 1998). Actors within subsystems often play an active entrepreneurial role in involvement by trying to expand their subsystem's jurisdiction over such broad issues (Jones & Strahan, 1985). These expansions of jurisdictions are not only relevant from the perspective of who decides what, they also affect the way in which a problem and, consequentially, the range of possible solutions and approaches get framed (Baumgartner & Jones, 2009).

It is hereby important to note that the exact boundaries of subsystems may be difficult to determine, because they are analytical constructs rather than firm demarcations (Nohrstedt & Weible, 2010). However, it is generally possible to identify relatively stable groups of actors and institutions involved in making a specific policy (Sabatier, 1988). In addition, it is not necessarily entire subsystems that are raising or addressing an issue. Sometimes, individuals, or groups of actors within a subsystem may draw attention to a particular concern and as such come to function as policy entrepreneurs (Jochim & May, 2010). By redefining a problem as a cross-cutting policy problem, these actors may realize the incorporation of the problem within a subsystem, resulting in a broadening of the subsystems involved in the governance of the problem.

We conceptualize subsystem involvement along two indicators. The first indicator consists of *which* subsystems are involved in the governance of the cross-cutting issue. Subsystems are considered to be involved when they explicitly address a particular problem within their policy process - thus when they label policy efforts, i.e. activities involving agenda-setting, preparatory debates, policy design, or internal and external communication, inter alia, in terms of the problem - regardless from whether these efforts substantially contribute to addressing the problem or not (Dupuis & Biesbroek, 2013). Apart from those subsystems that *are* involved, it is important to account for those that are not yet but could be (Dupuis & Biesbroek, 2013; Sabatier, 1988). Drimie and Ruysenaar (2010) for example show how the impact of South Africa's Integrated Food Security Strategy remained limited due to the failure to include subsystems other than the agricultural subsystem. As a result, the implementation of the strategy was dominated by agricultural policy efforts, while matters of health, nutrition, access, and social inequality remained largely unaddressed. Involvement of other subsystems could

have led to new information, perspectives, and resources (Jack, 2005). The indicator can therefore best be assessed through a proximity to target measure, determining how many of the potentially involved subsystems are involved.

The second indicator refers the density of interactions between subsystems in a network configuration. As not all subsystems are involved to the same extent, a distinction can be made between subsystems in which a problem is primarily embedded, and subsystems that are only indirectly involved in a problem's governance and function as part of a 'loosely coupled system' (Orton & Weick, 1990). For relatively higher amounts of policy integration we would, apart from a larger number of subsystems involved, expect a set of dominant subsystems, i.e. subsystems characterized by high intentionality, that engage in frequent interactions with each other, while maintaining less frequent interactions with a loosely coupled set of subsystems. A possible manner of measuring these interactions lies in determining how often subsystems, e.g. departments, have the lead in developing policy proposals regarding a particular problem and how often other subsystems have an input through procedural instruments such as impact assessments and inter-departmental taskforces and consultations (for example as in: Hartlapp, Metz, & Rauh, 2012).

Using these two indicators, we distinguish four possible manifestations of subsystem involvement within a policy integration process, ranging from low to high integration, see Table 5.2.

Table 5.2 Manifestations of subsystem involvement

	Low amounts of policy integration	⟷		High amounts of policy integration
Subsystems involved	One dominant subsystem, which governs the issue independently (Metcalfe, 1994). Formally, no other subsystems are involved, although they may be in terms of substantial, non-intentional policymaking.	Concerns emerge in one or more additional subsystems.	Two or more subsystems have formal responsibility for dealing with the problem.	Number of subsystems that are formally involved is equal to or higher than at previous manifestations, but complemented with loosely coupled set of alternative subsystems.
Density of interactions	No interactions.	Infrequent information exchange with dominant subsystem (Geerlings & Stead, 2003).	More regular and formal exchange of information and coordination, possibly through coordinative instruments at system-level.	High level of interaction between formally involved subsystems, that maintain infrequent interactions with loosely coupled set of subsystems.

5.4.3   Policy goals

Each governance system and associated subsystems have several short-, medium- and long-term policy goals to pursue, some of which are directly impacting, or are impacted by, the cross-cutting problem. A policy goal here refers to the explicit adoption of a specific concern within the policies and strategies of a governance system, including its subsystems, with the aim of addressing the concern. We recognize that policies can be rather abstract and set out strategic lines, or take the shape of concrete programs entailing specific interventions (Howlett & Ramesh, 2003). The dimension of *policy goals*, here, focuses on two aspects: (i) the range of policies, both at system-level and within subsystems, in which (concerns about) a cross-cutting problem is adopted as a goal, and (ii) the coherence between the consequential diversity of policy goals.

First, as higher degrees of integration involve a relatively high density of subsystems, they also encompass a broader range of policies. Ideally, concerns about a cross-cutting problem would be adopted as a goal in all these policies. However, our starting principle of asynchronous integration implies that this does always happen in practice. Here too, a proximity to target measure could be used, assessing the number of potentially relevant policies in which these concerns are adopted. Whereas at low degrees of integration we would expect policy goals regarding a cross-cutting problem to be restricted to one or a few domains and associated policies, shifts toward enhanced policy integration are accompanied by a diversification of policy goals across domains (cf. Peters & Hogwood, 1985). Stead (2008) provides an example of low integration in terms of policy goals by arguing that the integration of transport policy is hindered by the autonomous and sectoral goal-setting by other subsystems. An example of enhanced integration of policy goals is given by Hustedt and Seyfried (2015), who show how enhanced internal coordination of climate change policies within the European Commission resulted in the adoption of climate change mitigation and adaptation goals in the policies of a number of non-traditional domains, such as energy and maritime affairs.

One of the main integration challenges found in the literature is that there are often fundamental differences in the way in which various policy goals get framed and perceived, also in terms of temporality or geographical scale (Adelle, Pallemaerts, & Chiavari, 2009). A second indicator therefore involves the degree of coherence within a governance system vis-à-vis a cross-cutting policy problem (Rayner & Howlett, 2009). Coherence can be achieved and measured within a policy domain (May et al., 2006), but for cross-cutting policy problems it is particularly relevant how the goals of various domains and associated subsystems relate to each other. In other words, coherence relates to whether a governance system's policies contribute jointly to – or at least do not undermine – specific objectives (e.g., food security, employment or

sustainable development) (OECD, 2013, p. 7). However, the operationalization and measurement of horizontal coherence within a governance system vis-à-vis cross-cutting issues is understudied at best and highly controversial at worst (Nilsson et al., 2012). The progress of policy integration studies will largely depend on whether conceptual and methodological agreements for studying policy coherence can be found. Here, we confine ourselves to a simple binary distinction between strong and weak coherence. Weak coherence exists when attuning of policy goals between subsystems does not or hardly take place. Strong coherence exists when subsystems attune their policy goals to jointly address a cross-cutting problem, which they can do by mitigating externalities, searching for synergies, or even working toward a system-wide 'integrated policy strategy' (Rayner & Howlett, 2009). Whereas the first is achieved by 'negative coordination', i.e. one subsystem formally has the lead in drafting policy proposals and monitors other subsystems for possible negative effects by applying the 'do-no-harm' principle (OECD, 2014), the latter two take the shape of 'positive coordination', i.e. subsystems jointly work together towards a comprehensive approach (Scharpf, 1994). A good example of an integrated policy strategy are the sustainable development strategies that many governments have adopted to integrate economic, social, and environmental development objectives (Meadowcroft, 2007).

Table 5.3 Manifestations of policy goals

	Low amounts of policy integration	← →		High amounts of policy integration
Range of policies in which problem is embedded	Concerns only embedded within the goals of a dominant subsystem.	Concerns adopted in policy goals of one or more additional subsystems (Keast et al., 2007; McNamara, 2012).	Possible further diversification across policy goals of additional subsystems.	Concerns embedded within all potentially relevant policy goals.
Policy coherence	Very low or no coherence. Occurs when cross-cutting nature is not recognized, or when subsystems are highly autonomous in setting (sectoral) goals.	Because of rising awareness of externalities and mutual concerns subsystems may address these to some extent in their goals.	Coordinated sectoral goals, which are judged in the light of coherence (Geerlings & Stead, 2003). Subsystems attempt to develop synergies (Metcalfe, 1994).	Shared policy goals embedded within an overarching strategy (Geerlings & Stead, 2003; Jochim & May, 2010; Keast et al., 2007; McNamara, 2012; Metcalfe, 1994)..

5.4.4 Policy instruments

The fourth dimension of policy integration consists of the substantive and/or procedural *policy instruments* within a governance system and associated subsystems. Substantive instruments allocate governing resources of nodality, authority, treasure and organization (Hood, 1983) to directly affect the 'nature, types, quantities and distribution of the goods and services provided in society'. Procedural instruments are designed to 'indirectly

affect outcomes through the manipulation of policy processes' (Howlett, 2000, pp. 413-415). Procedural instruments can also be deployed at a governance system-level, for example to facilitate the coordination between subsystems (Jordan & Schout, 2006). Within a policy integration process we distinguish three types of indicators related to policy instruments for policy integration: i) subsystems' deployment of instruments, ii) procedural instruments at system-level, and iii) the consistency of substantive and procedural instruments.

First, as higher amounts of policy integration are characterized by a wider range of subsystems involved and of associated policies in which the problem is adopted as a goal, they ideally also include supportive instruments within subsystems' policies to pursue the more or less coherent sets of goals. In other words, we would expect a diversification of instruments addressing the problem across subsystems' policies. These instruments can be both substantive or procedural, depending on the nature of the problem and the governance philosophies within a subsystem (Howlett, 2009).

Second, enhanced amounts of policy integration are characterized by the deployment of procedural instruments at governance system-level to coordinate subsystems' policy efforts and to enforce and safeguard the consistency of the instrument mix as a whole (Jordan & Lenschow, 2010). Examples of such instruments include overarching plans and strategies, constitutional provisions, legislative standards-setting, overarching funding programs and financial incentives, consultation mechanisms, impact assessments, interdepartmental working groups, and (green) cabinets, inter alia (e.g., Adelle et al., 2009; EEA, 2005; Feiock, 2013; Jacob & Volkery, 2004; Jacob et al., 2008; Karré et al., 2013; Ross & Dovers, 2008). At the highest degree of integration, organizational procedural instruments will take the shape of a boundary-spanning structure or overarching authority that oversees, steers and coordinates the problem as a whole (Jochim & May, 2010; Lafferty & Hovden, 2003). Jochim and May (2010) provide various examples of such boundary-spanning policy regimes in the United States. One example is the Community Empowerment regime in the 1960s and '70s, targeting urban unrest. In this regime subsystems of economic development, housing, education, employment, social welfare, and transportation worked together to realize urban renewal. This mutual effort was facilitated by the creation of overarching inter-agency review teams. Pelkonen et al. (2008) give another example of a boundary-spanning structure by showing how the Finnish Science and Technology Policy Council, a governmental advisory body, fosters the integration of science and technology policies between domains. Although it should be noted that this body does not have the steering authority that would be associated with the highest level of integration.

Third, higher amounts of integration are characterized by a stronger consistency of policy instrument mixes, i.e. the sets of instruments that subsystems have developed incrementally in an ad hoc fashion over a longer course of time (Gunningham & Sinclair, 1999; Howlett & Rayner, 2007). This consistency is relative to the (more or less) coherent goals that a set of instruments is meant to help procure (Howlett, 2009; Howlett & Rayner, 2007; Rayner & Howlett, 2009). Thus, an appropriate instrument mix effectively realizes certain integration objectives (Adelle & Russel, 2013). As with policy goals, the consistency of instrument mixes should, in case of a cross-cutting policy problem, be assessed for the governance system as a whole, thus between subsystems. It is hereby not only the types of instruments that matter, but also their magnitude and whether they are targeted to the appropriate audiences (EEA, 2005). Although the public policy literature has provided various arguments for why inconsistencies may arise and how they could be overcome (on paper) (e.g., Gunningham, Grabovsky, & Sinclair, 1998; Rayner & Howlett, 2009), as with coherence an univocal and agreed-on operationalization of the consistency of instrument mixes is lacking. For the sake of our theoretical argument it suffices to distinguish between weak and strong consistency. Within strong consistency, a further distinction can be made between negative coordination of instruments, i.e. mitigating the externalities of subsystems' instruments, and positive coordination, i.e. seeking synergies between instruments or even developing a unified instrument mix at system-level (cf. Scharpf, 1994). The latter has also been referred to as a 'new governance arrangement' and involves the replacement of subsystems' existing instrument mixes that resulted from an incremental process of policy layering with an entirely new and consistent instrument mix (Howlett & Rayner, 2006; 2007).

Table 5.4 presents the four manifestations of policy instruments associated with relatively stronger or weaker degrees of policy integration:

Table 5.4 Manifestations of policy instruments

Low amounts of policy integration ⟷ High amounts of policy integration

Range of subsystems' policies that contain policy instruments	Problem only addressed by the substantive and/or procedural instruments of a dominant subsystem.	As a result of increased awareness of externalities one or more additional subsystems (partially) adapt their instruments to mitigate negative effects.	Possible further diversification of instruments addressing the problem across subsystems.	Instruments embedded within all potentially relevant subsystems and associated policies.
Procedural instruments at system-level	No relevant procedural instruments at system-level.	Some procedural information sharing instruments at system-level (cf. Metcalfe, 1994).	Increasing number of system-level procedural instruments that facilitate subsystems to jointly address the problem.	Broad range of procedural instruments at system-level, including boundary-spanning structures that coordinate, steer and monitor subsystems' efforts.
Consistency	No consistency. Sets of instruments are purely sectoral and result from processes of policy layering (Rayner & Howlett, 2009).	Subsystems consider externalities of sectoral instrument mixes in light of internal and inter-sectoral consistency.	Subsystems seek to jointly address the problem by adjusting and attuning their instruments. Consistency becomes an explicit aim.	Full reconsideration of subsystem instrument mixes, resulting in a comprehensive, cross-subsystem instrument mix that is designed to meet a set of coherent goals.

5.5   Discussion

Although policy integration seems to be the politically preferred option nowadays to solve pressing societal issues, various scholars have pointed out that (full) policy integration is no panacea for a more satisfactory governance of cross-cutting policy problems. Mickwitz et al. (2009), for example, argue that a focus on coherence and consistency of policy approaches with regard to climate change must not be at the expense of diminished attention for and devotion to ambitious climate change mitigation and adaptation programmes at subsystem level. This remark corresponds with the argument in the literature on boundary-spanning policy regimes that substantive policy efforts within subsystems should be coordinated, not replaced, by procedural instruments at a governance system level (Jochim & May, 2010). This argument runs counter to the idea that the highest degree of policy integration is the creation of a new policy domain (Massey & Huitema, 2013). We follow Adelle et al. (2009) in arguing that creating a new policy domain on a cross-cutting issue with tailor-made institutions, policy goals and instrument mixes, may seem to lead to improved coordination and coherence, but that this new regime could well be achieved at the cost of wider cross-sector coordination. In other words, it could result in the same silos, albeit on a different level, from which an integration process started.

Furthermore, as a result of political and administrative realities full policy integration may not always be feasible. Underdal (1980), for example, points out that enhancing integration around one issue often requires transferring resources from other areas, possibly resulting in a loss of performance elsewhere. He also argues that an increase of coordination may conflict with other political values such as decentralization and broad participation. Jordan and Halpin (2006) arrived at similar conclusions in their study of attempts to develop a unified rural policy in Scotland. They suggest that as a result of competing priorities between sectors and stakeholders, imperfectly coordinated rural policy may be inevitable and, even stronger, that the '...project to rid policy practice of incoherence is too heroic' (ibid.: 21). Therefore, they plead for a revaluation of bargaining and incremental politics.

We would add that proponents of enhanced integration should not oversee and underestimate the merits of relatively lower degrees of integration, such as policy cooperation and coordination. Referring to Metcalfe's (1994, p. 288) comment that 'the more basic but less glamorous aspects of the policy coordination process' are vital, Jordan and Schout (2006, p. 43) phrase this as 'the underlying capacities – the mechanisms to exchange information, consult, and arbitrate, etc. – need to be in place *before* [their accent] political energies are invested in setting strategic objectives and defining mission statements.' Thus, it is not only the case that lower amounts of policy

integration are sometimes the maximum of what is politically feasible, they are also an essential foundation for enhanced integration. Furthermore, the nature of a cross-cutting problem does not always require the most advanced form of integration to be addressed satisfactorily. Sometimes, all that is required is the sharing of information, or a once-only coordinated action (Keast et al., 2007).

At the same time, situations in which the need for policy integration is not recognized can be dangerous when integration is required to deal with a pressing and potentially destructive problem. Gieve and Provost (2012) provide the example of the financial crisis of 2007-2009, which, they argue, at least partly resulted from the lack of coordination between bank regulation and monetary policy. This implies that although full policy integration may not always be feasible or needed, there is at least need for a reflection mechanism that signals gaps or tensions in the governance of cross-cutting problems and that informs decision makers so that proactive adjustments can be made to avoid or anticipate to crises (Candel et al., 2015).

The ambition of this chapter has been to draw policy integration out of the domain of environment, and to make it a subject of general theorizing in the political sciences as more and more problems are perceived as "wicked" and cross-cutting. Although debates on EPI in the early 2000s have certainly set the agenda and have provided a firm foundation for thinking about integration, expanding the integration debate and agenda to other domains and (associated) scholarly communities could provide new perspectives on mechanisms of stability and change, interactions and possible trade-offs between parallel integration processes, and normative implications of (the absence of) policy integration. We believe the framework presented in this chapter provides a more refined lens for studying these mechanisms and patterns systematically and in more detail, although this requires further testing. Also, furthering the framework would require a more concrete operationalization of the various dimensions and indicators. In a separate paper, in which we apply the framework to a concrete case at European Union level, we offer some suggestions for how this could be done (Candel & Biesbroek, In Review-a). For example, we suggest studying subsystem involvement by determining which departments or directorate-generals are principally responsible for developing a specific policy proposal and which are providing input or opinions, for example through inter-departmental consultations. This allows for identifying both the network of subsystems involved in the governance of a particular cross-cutting problem as well as the interactions between these subsystems.

Two additional directions in which the framework could be furthered are by expanding it to studying vertical governance levels and to the integration of policy outcomes. Regarding the first, although the current policy integration body of literature primarily

focuses on horizontal integration between domains or services (Tosun & Lang, 2013), similar integration challenges arise in multi-level governance contexts (Briassoulis, 2011). A promising way of expanding the framework in this respect, is by linking it to the notion of 'functional regulatory spaces', which span several policy sectors, governance levels and institutional territories (Varone, Nahrath, Aubin, & Gerber, 2013). Regarding the integration of policy outcomes, as Jordan & Lenschow (2010) observe, relatively little research has been conducted on the effects of better integrated policy approaches on actual practices on the ground. It is not straightforward that full policy integration at governance system-level does necessarily result in more integrated outcomes compared to lesser degrees of integration. Specific challenges can occur in the implementation of integrated strategies, for example in the cooperation between public service agencies, which may prevent the realization of better outcomes. Furthermore, studying better outcomes or policy success is in itself conceptually and methodologically challenging, as different types of success exist, conceptions of success may vary, and agreed-on measurements of policy influence are lacking (McConnell, 2010). Further research and conceptualizing is needed to address these challenges and gaps.

The relevance of the framework to policymakers and political leaders lies in three contributions. First, the framework offers an assessment tool to evaluate current degrees of policy integration in the governance of a particular cross-cutting problem. In addition, it can be used for comparing these degrees over time, between issues, or between governance systems to address the normative question if integrative progress is enough. A second contribution is what we argued in the first half of this section, namely that the framework implies that these actors should not oversee the merits of lesser degrees of policy integration. Thirdly, the framework shows that actors should think about the four dimensions as conditions that they need to invest in simultaneously, if they want to realize a mutually supportive interplay across the four degrees that enables full policy integration. The challenge then, is to overcome the asynchronous nature of most integration processes by investing sufficient capacity and resources, including will, into synchronization efforts.

For those out of government office, the framework may be a helpful tool to monitor whether political promises to invest in more integrative approaches are kept and, consequentially, to hold decision-makers accountable to the commitments they make. Such accountability measures may be the first step towards integration beyond mere discursive levels for a range of issues that lie waiting to be addressed.

Acknowledgments

CHAPTER 6

**Policy integration in the EU governance of food security:
do actions speak louder than words?**

Abstract[14]

The global food price crises of 2007-8 and 2010 led to European Union (EU) policymakers becoming more aware of the importance of better integrated approaches to address food insecurity. However, policy integration scholars have showed that such awareness and associated discourse do not always result in an actual change of governance. This chapter addresses the question of the extent to which the EU governance of food security became more integrated into the aftermath of the food price crises. We address this question by applying an innovative framework that acknowledges the asynchronous and multi-faceted nature of policy integration processes and that distinguishes four integration dimensions: (i) cultures of beliefs, (ii) subsystem involvement, (iii) policy goals, and (iv) policy instruments. An extensive analysis of EU documents complemented with interview data shows an overall advancement towards increased policy integration in the EU governance of food security. However, significant differences in dimensions exist between domains, particularly regarding new substantive policy instruments. Our findings suggest that integration has not (yet) much moved beyond discursive levels for the EU governance system as a whole. We identify various blind spots and opportunities for further integration. The authors argue that the policy integration framework offers a sophisticated and nuanced understanding of how integration proceeds over time and enables decision-makers to be held responsible for the policy intentions they express.

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6.1   Introduction

Since the 2007-8 and 2010 global food price crises, food security has received increasing political attention in European Union (EU) policy arenas (Candel et al., 2014; Grant, 2012b; Zahrnt, 2011). The food price crises showed that states of food (in)security are affected by a broad range of factors and associated policies, not all of which are yet well understood (Headey & Fan, 2010; Rapsomanikis & Sarris, 2010). Consequently, the peak of attention has been accompanied by the rising awareness of the 'wicked' or 'cross-cutting' nature of the policy problem of food (in)security (Brooks, 2014; Candel, 2014; Misselhorn et al., 2012). At the EU level, this awareness is reflected by two developments. First, food security concerns have been raised in a wide array of policy debates, such as in the reforms of the Common Agricultural Policy (CAP), the Common Fisheries Policy (CFP), the EU's biofuels policy, and the Doha trade round negotiations. This has led to an expansion of meanings attached to food security (Candel et al., 2014). Second, new ideas have emerged about how food security *ought* be governed, including calls for more 'coherence' (e.g., Council of the European Union, 2013; Piebalgs, 2013), 'integration' (e.g., European Commission, 2010c; Red Cross EU Office, 2013), a 'holistic' approach (Caritas Europa, 2014), and a common 'food policy' (European Green Party, 2008; Marsden, 2015).

Public policy scholars have observed that political commitments to enhanced policy integration to address cross-cutting problems do not always proceed beyond discursive levels (Jacob et al., 2008; Jordan & Lenschow, 2010). This may result from resilient existing policy structures and institutions, but also from a lack of political will, capacities or resources (Mickwitz & Kivimaa, 2007; Rayner & Howlett, 2009). Consequently, the question can be raised whether actions speak louder than words in the case of the EU governance of food security. The EU governance of food security is here understood as all policy efforts at the EU level that either positively or negatively affect food security outcomes, i.e. food availability, access, utilization, and stability. This chapter aims to systematically assess to what extent political claims about enhanced policy integration were accompanied by an actual change of the EU governance of food security.

The chapter also aims to make a theoretical contribution to the literature about policy integration. While policy integration has been hallmarked as the solution to governing cross-cutting policy issues, until recently no framework existed to disentangle and study changes of policy integration systematically. As a result, politicians' claims about (the need for) enhanced policy integration were difficult to assess. In earlier work, we addressed this omission by developing an innovative 'policy integration' framework (Candel & Biesbroek, In Review-b). The framework defines policy integration as "an agency-driven process of asynchronous and multi-dimensional institutional change within an existing

or newly formed governance system that shapes the system's and its subsystems' ability to address a cross-cutting policy problem in a more or less holistic manner" (Candel & Biesbroek, In Review-b). Within such an understanding, the framework distinguishes four dimensions of policy integration: i) cultures of beliefs, ii) subsystem involvement, iii) more or less coherent policy goals, and iv) more or less consistent policy instruments. Both these dimensions and the definition of policy integration are further elaborated in section 6.3. We applied the framework to the EU governance of food security by conducting a quantitative study of EU legislation and preparatory acts, complemented with qualitative data from a previous study (section 6.4). Because this study is the first empirical application of the framework, we allocate some space to reflect on its usability in the Discussion section of this chapter.

6.2 Calls for enhanced policy integration in EU food security governance

The EU, and particularly the European Commission, have traditionally been characterized as hierarchical and inflexible governance systems that are generally incapable of coping with cross-cutting and 'wicked' policy problems (Adelle et al., 2015; Jordan & Schout, 2006; Kassim et al., 2013; Peters & Wright, 2001). Nevertheless, the Commission has developed a range of tools and approaches to strengthen its ability to foster cross-sectoral policy integration over the last decade (Lang, Radaelli, & Tosun, 2015; Sabel & Zeitlin, 2010). Examples thereof are the reinforced coordinative role of the Secretariat-General, the growing importance of impact assessments and inter-service consultations, the Open Method of Coordination (OMC), and Policy Coherence for Development (PCD) (Hartlapp et al., 2010; Kassim et al., 2013). The focus on enforced governance of cross-cutting policy problems has been an important feature of the Lisbon and Europe2020 strategies, both of which greatly emphasized the need for horizontal integration (Borrás & Radaelli, 2011; Lang et al., 2015). The rationale underlying these strategies and initiatives is that policy problems that transcend the boundaries of traditional policy domains can only be satisfactorily dealt with through coherent policy goals and mixes of supportive consistent policy instruments (Rayner & Howlett, 2009), both of which require a certain degree of meta-governance to facilitate coordination (cf. Jochim & May, 2010).

During and after the food price crises of 2007-8 and 2010, a similar line of reasoning emerged in policy debates about the EU governance of food security. Food security is commonly defined as 'all people, at all times, having physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life' (FAO, 1996). The food price crises directed attention to the broad range of causes of and influences on (conjunctural) food insecurity, including

climate change, international trade agreements, national market measures, biofuels production, financial speculation, armed conflict, and a general lack of good governance (Headey & Fan, 2008; Piesse & Thirtle, 2009). This led to a widespread recognition that food (in)security is a cross-cutting policy problem that touches upon the jurisdictions of a wide array of policy domains. Food governance scholars have therefore stressed the need for enhanced connectivity within food systems (e.g., Ingram, 2011; Lang & Ingram, 2013; Pereira, 2014; Termeer, Drimie, Ingram, Pereira, & Whittingham, 2015b) and -chains (e.g., Barling, 2007; Tallontire, Opondo, Nelson, & Martin, 2011). At a political level, decision-makers have argued that food security should be governed in a more coordinated, coherent and/or holistic manner (Candel, 2014; Drimie & Ruysenaar, 2010; Margulis, 2013). The following quotes illustrate these arguments at the EU level:

> [D]evelopment aid alone is not sufficient to effectively fight hunger. We need to look at all the available options and PCD is one critical tool to improve global food security. […] I will personally pay a strong attention to the impact of EU policies on the rest of the world to ensure a maximum coherence between its internal and development policies. Andris Piebalgs, then EU Commissioner for Development (2013)

> The Council stresses that good governance for food and nutrition security at all levels is essential, and that coherence between policies should be pursued in cases of negative effects on food and nutrition security. Council of the European Union (2013)

These calls were accompanied by the invocation of food security concerns across a broad range of policy debates, most notably the reform of the Common Agricultural Policy post-2013 (Candel et al., 2014; Grant, 2012b). Apart from the CAP, food security arguments also played a role in discussions about issues such as the Common Fisheries Policy reform, biodiversity and soil fertility, international trade agreements, and renewable energy (Candel et al., 2015).

Both the prevalence of food security concerns in a range of policy domains and the attention of EU institutions and high-level decision-makers to the shortcomings of existing governance practices indicate that there is a strong ambition towards strengthening policy integration in the EU governance of food security. However, various scholars have pointed out that such a discursive shift does not necessarily go together with the inclusion of alternative actor configurations or actual reconsiderations and adjustments of policy goals and instrument mixes (Candel & Biesbroek, In Review-b; Jacob et al., 2008; Jordan & Lenschow, 2010; Mickwitz & Kivimaa, 2007). In other words, policy

integration does not always exceed symbolic or discursive levels. Various reasons for this have been mentioned in the literature (Candel & Biesbroek, In Review-b). First, pre-existing policy elements, such as instruments, institutions or capacities, often prove remarkably resilient as a result of lock-in effects following from path-dependent processes of policy layering (Pierson, 2000; Rayner & Howlett, 2009). Second, the problem may be replaced on the political agenda by competing issues that are perceived as more pressing, hence reducing the political pressure to invest in policy integration efforts (Downs, 1972). Third, integration is no easy task, and many examples of failure exist (6, 2004). As politicians are known to avoid risk (Hood, 2010), it is unlikely that they will invest serious time and resources in policy integration (Howlett, 2014). Fourth, the invocation of particular concerns or calls for integration may merely serve the purpose of window dressing, enhancing the legitimization of a specific policy proposal or direction while lacking the accompanying political will or resources (Mickwitz & Kivimaa, 2007). Various scholars and commentators have argued that the latter has been the case with food security's pervasiveness in global policy debates in recent years. According to some particularly critical scholars, invoking 'food security' merely suits proponents of intensifying food production (Fish et al., 2013; Rosin, 2013; Tomlinson, 2013) or of a neoliberal trade agenda (Jarosz, 2011; Koc, 2013). Other scholars make the similar argument that food security arguments have primarily been used to strengthen the legitimacy of stakeholders' desired policy directions, but show that virtually the whole political spectrum uses such 'framing' strategies (Candel et al., 2014). Both groups of scholars however point at the legitimizing function of food security frames.

6.3   A policy integration framework

To study the dynamics of policy integration in the EU governance of food security, we applied a policy integration framework that we developed and presented elsewhere (Candel & Biesbroek, In Review-b). The framework synthesizes various fragmented literatures about integration and coordination, such as the literatures on environmental policy integration (e.g., Jacob & Volkery, 2004; Jordan & Lenschow, 2010; Lafferty & Hovden, 2003), boundary-spanning policy regimes (Jochim & May, 2010), and integrated policy strategies (Rayner & Howlett, 2009).

In contrast to frameworks that consider policy integration to be a governing principle or final outcome that can be reached by making policy goals coherent and policy instruments consistent, we approach policy integration as inherently processual (cf. United Nations, 2015). By distinguishing four dimensions of policy integration, the framework allows for a more nuanced understanding of the continuous dynamics of

policy integration. Such an understanding rests on four starting principles (Candel & Biesbroek, In Review-b):

(i) Dimensions of policy integration do not necessarily move in a concerted manner. Instead, dimensions may move at different times and paces, and even in opposite directions. Jacob et al. (2008) for example showed that, in the case of sustainable development approaches, governments have often initiated shared goals and strategies, while lagging behind in developing supportive instrument mixes.

(ii) Policy integration is as much about positive integration, i.e. an advancement of the amounts of (dimensions of) integration, as it is about disintegration.

(iii) Mutual dependencies exist and interactions take place between the four dimensions of policy integration. A change in one dimension of policy integration can result in a change in another dimension. However, these influences may work in multiple directions and under different mechanisms, which have not yet been systematically studied.

(iv) Policy integration is a process of institutional change and design in which actors play a pivotal role. Whereas policy integration itself refers to a certain set of institutional conditions, changes in these conditions can be explained by focusing on actor-centred mechanisms.

The four dimensions of policy integration that we discern are: i) cultures of beliefs, ii) subsystem involvement, iii) policy goals, and iv) policy instruments (Candel & Biesbroek, In Review-b). Each of these dimensions consists of two or more indicators (Table 6.1).

The first dimension of policy integration consists of the *cultures of beliefs* within a governance system and associated subsystems. The former refers to the extent to which the administrative culture of a governance system promotes integrative approaches to the governance of food security (cf. EEA, 2005). The latter involves the extent to which individual subsystems believe food security to be of their concern and recognize the governance implications of the cross-cutting nature, for example in terms of strengthened policy coherence or coordination.

The second dimension, *subsystem involvement*, revolves around the range of subsystems involved in the governance of food security. Subsystems refer to relatively stable and closed configurations of actors and institutions that govern a specific policy problem or domain within a broader governance system (cf. Howlett & Ramesh, 2003). Apart

from subsystems that are actively involved, the dimension also includes those that are not but could be in the future because their decisions affect policy outcomes (Dupuis & Biesbroek, 2013). The degree of subsystem involvement is thus relative to the number of potentially relevant subsystems for food security. Additionally, this dimension also covers the density of interactions between subsystems on food security. The assumption here is that higher amounts of policy integration are characterized by a number of subsystems that frequently interact with each other and that maintain relatively more infrequent interactions with a wider set of 'loosely coupled' subsystems (cf. Orton & Weick, 1990).

The dimension *policy goals* refers to: (i) the range of policies across subsystems in which (concerns about) food security is (explicitly) adopted as a goal, and (ii) the coherence between a governance system's diversity of policy goals. These goals are pursued through a mix of *policy instruments*, which constitutes the fourth dimension. Policy instruments can be deployed within subsystems, but also at the level of the governance system, for example in the case of interdepartmental working groups. We make a distinction between substantive and procedural policy instruments. Substantive instruments allocate (financial, informational, regulative or organizational) resources to directly affect the 'nature, types, quantities and distribution of the goods and services provided in society' (Howlett, 2000, p. 415); procedural instruments are designed to 'indirectly affect outcomes through the manipulation of policy processes' (ibid.: 413). Three indicators are relevant to this dimension: (i) the range of policies that explicitly adopt policy instruments to address food security, (ii) the deployment of overarching procedural instruments to facilitate coordination between subsystems, and (iii) the consistency of the policy instrument mix as a whole.

For each of these dimensions we distinguish four ideal-type manifestations, which are presented in Table 6.1. The table lists both the brief descriptions of the dimensions' manifestations as set out in the original framework as well as concrete expectations of manifestations in the EU governance of food security (italicized).

6.4   Methodical approach

To study the development of policy integration in the EU governance of food security, we operationalized each of the four dimensions into specific indicators. Our primary source of data for studying these indicators were EU documents, which we retrieved by systematically searching EU search engines (for search criteria, see Supplementary Material (SM) D). Subsequently, data was coded by using the coding program Atlas. ti, resulting in the data extraction tables and figures presented in SM D. Table 6.2 presents the specific indicators and modes of data collection and analysis for each of the

Table 6.1 Dimensions of policy integration (adopted from Candel & Biesbroek, In Review-b)

1. Cultures of beliefs:				
Within subsystems	Culture of inward orientation to tackle problems. Cross-cutting nature of problem not recognized. Problem defined in narrow terms.	Culture of inward orientation to tackle problems. Failure of dominant subsystem in managing problem and externalities recognized. Results in realization that mutual policy concerns should be thought over within subsystems.	Culture of outward orientation to tackle problems. Awareness of cross-cutting nature of problem.	Culture of outward orientation to tackle problems. Cross-cutting nature of the problem is recognized. All possibly relevant subsystems have developed ideas about their role in governance of problem.
	Food security is defined in narrow terms, for example as solely an issue of development cooperation.	*Realization that externalities of policies of various domains influence food security outcomes.*	*Awareness that food (in)security is affected by a broad range of factors and influences.*	*All potentially relevant subsystems[17] have developed ideas about their role in the governance of food security.*
Across governance system	Problem is considered to fall within boundaries of specific subsystem. Efforts of other subsystems are not understood to be part of the governance of the problem. No push for integration.	Awareness that policy outputs of different subsystems shape policy outcomes, notion of externalities and do-no-harm. Problem is still predominantly perceived of as falling within the boundaries of particular subsystem. No strong push for integration.	Understanding that governance of problem should not be restricted to single domain. Notions of coordination and coherence emerge.	View that problem is and should not solely be governed by subsystems, but by system as a whole. Subsystems are desired to work according to shared, 'holistic' approach, which is particularly recognized within boundary-spanning structures
	Food security considered to fall within the boundaries of one domain, e.g. development cooperation. Efforts of other domains, e.g. agricultural or fisheries policy, not understood in terms of food security.	*Food security considered to fall within the boundaries of one domain, but some attention to potential contributions of other domains*	*Food security is viewed as a policy problem that spans the boundaries of various policy domains, which therefore need to coordinate their policy efforts.*	*Realizing food security considered to be a challenge to the EU as a whole.*
2. Subsystem involvement:				
Subsystems involved	One dominant subsystem, which governs the issue independently. Formally no other subsystems are involved, although they may be in terms of substantial, non-intentional policymaking	Concerns emerge in one or more additional subsystems.	Two or more subsystems have formal responsibility for dealing with the problem.	Number of subsystems that are formally involved is equal to or higher than at previous manifestation, but complemented with loosely coupled set of alternative subsystems.
	Food security falls within jurisdiction	*Idem, but one or more additional*	*Food security (in a broader sense)*	*Food security is embedded within*

[17] For the EU governance of food security we consider the following subsystems potentially relevant (based on mandates of the Commission's directorate-generals): development cooperation, external affairs, humanitarian aid, agriculture, fisheries, energy, trade, health, environment and climate, budget, research, information and technology, competition, economic and financial affairs, education and culture, employment and social affairs, internal market and industry, justice, migration, transport, and regional policy.

of a dominant subsystems, e.g. development cooperation.	*subsystems may touch upon food security concerns.*	*embedded within more domains, e.g. trade or agriculture.*	*all potentially relevant subsystems.*
Density of interactions — No interactions	Infrequent information exchange between dominant subsystem and one or more alternative subsystems.	More regular and formal exchange of information and coordination, possibly through coordinative instruments at system-level.	High level of interactions between formally involved subsystems, that maintain infrequent interactions with loosely coupled set of subsystems.
	Some interaction with other subsystems. For example between development cooperation and trade.	*Interactions between various subsystems, whereby some interactions occur more frequently than others.*	*All possibly relevant subsystems interact with each other to a more or lesser degree about food security efforts.*
3. Policy goals: **Range of policies in which problem is embedded** — Concerns only embedded within the goals of a dominant subsystem's policies.	Concerns adopted in policy goals of one or more additional subsystems.	Possible further diversification across policy goals of additional subsystems.	Concerns embedded within all potentially relevant policy goals.
Sector-specific food security goals in one specific subsystem. For example: food security as priority in development cooperation policy.	*Idem, though in addition food security concerns may be embedded to some extent in other subsystems' policies.*	*Various subsystems adopt food security concerns in their policy goals, some subsystems may develop comprehensive sectoral food security strategies.*	*All potentially relevant subsystems have adopted food security concerns in their policy goals.*
Policy coherence — Very low or no coherence.	Because of rising awareness of externalities and mutual concerns, subsystems may address these to some extent in their goals.	Coordinated sectoral goals, which are judged in the light of coherence. Subsystems attempt to develop synergies.	Shared policy goals embedded within an overarching strategy.
	Externalities of some policies may be addressed to some extent.	*Food security efforts come to be viewed in terms of coherence and potential synergies.*	*An overarching comprehensive EU food security strategy.*
4. Policy instruments: **Range of subsystems' policies that contain policy instruments** — Problem only addressed by the substantive and/or procedural instruments of a dominant subsystem.	One or more additional subsystems (partially) adapt their instruments to mitigate negative effects.	Possible further diversification of instruments addressing the problem across subsystems.	Instruments embedded within all potentially relevant subsystems and associated policies.
Sector-specific food security instruments in one specific subsystem. For example: food aid or a food security budgeting line in development cooperation	*Idem, though some subsystems may adjust their instruments to address food security concerns.*	*Various sectoral instruments and instrument mixes that aim to contribute to food security.*	*All potentially relevant subsystems have adopted food security instruments in their policies.*
Procedural instruments at system-level — No relevant procedural instruments at system-level.	Some procedural information sharing instruments at system-level.	Increasing number of system-level procedural instruments that facilitate subsystems to jointly	Broad range of procedural instruments at system-level, including boundary-spanning

	structures that coordinate, steer and monitor subsystems' efforts.	address the problem.	
	Coordinative food security structure(s) at system-level, e.g. inter-institutional or inter-sectoral taskforce(s).	*Range of cross-sectoral instruments, such as impact assessments or coherence mechanisms.*	Full reconsideration of subsystem instrument mixes, resulting in a comprehensive, cross-subsystem instrument mix that is designed to meet a set of coherent goals.
		Subsystems seek to jointly address the problem by adjusting and attuning their instruments. Consistency becomes an explicit aim.	*Previous instruments of subsystems are replaced by or aligned towards a consistent mix.*
Consistency	No consistency.	*Attempts to reduce all externalities and to realize synergies and positive food security spin-offs.*	
	Some information sharing instruments, such as inter-service consultations or impact assessments, may be initiated.		
	Subsystems consider externalities of sectoral instrument mixes in light of internal and inter-sectoral consistency.		
	Some obvious externalities, e.g. of agricultural or trade policies, may be reduced.		

four dimensions. The analysis covers the period from 2000 through 2014, which allows comparing the governance of food security in the period before the food price crises (up to mid-2007) with that in the period of mid-crises (2007-10) and post-crises (2011-14).

The specific indicators at points differ from the framework's indicators as set out in Table 6.1. The reason for this divergence is that information and documents about the internal EU policy process are difficult to systematically access and analyze. We therefore had to use proxy data for most dimensions. Limited access to quantifiable data also forced us to complement the dimensions of cultures of beliefs and (procedural) policy instruments with qualitative data collected through interviews with twenty senior policymakers involved in the EU governance of food security. Interview data was collected in Spring 2014, coded and analyzed, see (Candel et al., 2015)[15]. Due to a lack of qualitative data we had to leave the EU institutions' overarching administrative cultures out of the analysis, though (proxies for) beliefs at subsystem-level were included. Furthermore, because the operationalization and measurement of policy coherence and consistency is understudied at best and highly controversial at worst (Nilsson et al., 2012), these were not measured directly. Instead, they were included by looking for explicit references to linkages between goals and by the researchers' interpretation in the Results section.

It should be noted that we studied the development of policy integration by focusing on the number and types of goals and instruments, without differentiating the weight or potential impact of specific goals and instruments. Hence, our findings only allow us to make statements about how policy integration within the policy process advanced, not about the success of these more or less integrated policy processes in reducing food insecurity. This is further reflected on in section 6.6.

6.5   Results: policy integration in the EU governance of food security

This section presents the main findings of the analysis. Each subsection first summarizes the general findings for a particular policy integration dimension, followed by a more detailed interpretation of the results.

6.5.1   Cultures of beliefs

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15   For this study, 20 Commission officials were interviewed in Spring 2014 about whether and how the Commission is capable of dealing with the 'wickedness' of food security. See the original paper for more information about the scope of this study and the selection criteria that were used.

Table 6.2 Methodical approach

	Indicators	Data collection	Data analysis	Explanation
Cultures of beliefs	i) References to food (in)security in EU Commissioners' speeches; ii) Insights of Commission officials regarding sectors' policy efforts vis-à-vis food security.[19]	i) Speeches (n=369) were collected by searching the Commission's press releases database RAPID (see SM D for search terms); ii) Interview round with Commission officials conducted for previous study.	i) Speeches were coded in Atlas.ti for policy domains, the context in which references to food security concerns were made and any comments about the functioning of the EU governance system in accommodating these concerns; ii) Secondary data analysis by rereading interview transcripts and coding them for insights they provided in the extent to which (governance) of food security was considered relevant to the subsystem.	We looked for indicators that could provide insights about subsystems' beliefs vis-à-vis food security without having to engage in a full ethnographical study. The assumption here is that attention that Commissioners give to food security in their speeches (in terms of both the intensity and content of attention) indicates both the priority and the perceived role of a subsystem in food security governance. Because these speeches do not necessarily fully correspond with priorities in everyday policymaking, they were complemented with data obtained through in-depth interviews with policy officials across subsystems.
Subsystem involvement	i) Configuration of European Parliament (EP) committees that refer to food security in EP committee reports[20]; ii) Configuration of Commission directorate-generals (DGs) that refer to food security in COM- and JOIN-documents[21].	i) EP reports (n=316 after coding for eligibility) were retrieved by using the EP search engine (SM D); ii) COM- and JOIN-documents (n=327 after coding for eligibility) were retrieved by using the search engine EUR-Lex (SM D).	i) For each report we noted which committee(s) referred to food security and how. They also allowed for identifying interactions between committees by reporting the number of times in which an opinion-giving committee and lead committee both referred to food security within a report[22] (cf. Hartlapp et al., 2012); ii) COM- and JOIN-documents were coded for the service(s) that were responsible. Because for most documents only the lead service was given, it proved impossible to identify interactions between services.	Determining the parliamentary committees and directorate-generals that are responsible for drafting preparatory legislative documents containing food security ideas provides an indication of the subsystems involved in food security governance in both EU institutions. For studying interactions between subsystems (in the EP), we assume that an interaction takes place when different committees refer to food security ideas in a single report.

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[19] We limited the analysis of cultures of beliefs to the European Commission. The Commission has the right of initiative for proposing new policies and is responsible for managing and implementing existing policies. As such, a change in the Commission's cultures of beliefs is a prerequisite for a general change at the EU level.

[20] EP reports are the result of a process of deliberations regarding a specific policy or issue within a parliamentary committee and can be considered the final opinion of a committee on the issue at hand. They typically include a motion for a European Parliament resolution, an explanatory statement, and, often, opinions of other parliamentary committees that did not have the lead on the issue.

[21] COM-documents are all the preparatory legislative documents that are communicated by the European Commission (hence COM). JOIN-documents are joint-declarations, written together with other states or organizations[21]. The majority of COM-documents consist of communications from the Commission to the European Parliament, the Council, the European Economic and Social Council, and the Committee of the Regions. In addition, COM-documents include green and white papers, reports, and budgetary documents. Henceforth, when we refer to COM-documents, we mean both COM- and JOIN-documents.

[22] For example, when the Committee on Development gives an opinion on a draft resolution of the Committee on Agriculture and Rural Development and both committees refer to food security, this indicates a tie between both committees in the governance of food security.

Policy goals	Food security goals in EU hard and soft law.	**i)** Hard law: three main types of legislation, retrieved via EUR-Lex: regulations (n=110 after coding for eligibility), directives (n=1) and decisions (n=35); **ii)** Soft law: same COM-documents as in analysis of subsystem involvement.	Both hard and soft law were coded for the types of goals, any comments about the coherence and/or coordination of goals, and for mentioned linkages with other policies or domains.	Legislation and preparatory acts were analysed for explicit food security goals. Goals can be linked to a whole policy or piece of legislation, but also to specific elements.
Policy instruments	i) Policy instruments explicitly linked to food security in EU hard and soft law; ii) Internal procedural instruments deployed to facilitate integration regarding food security.	Same data as for the analysis of policy goals, complemented with interview data to provide insights about internal procedural instruments.	Hard and soft law were coded for any instruments that were explicitly linked to food security. The periods over which instruments were actively used was determined by searching official EU web pages.	Legislation and preparatory acts were analysed for explicit food security instruments. Because internal instruments are not necessarily embedded within such documents, complementary interview data was used.

For the dimension of cultures of beliefs, we observe both an overall growth and diversification of awareness about food security in Commissioners' speeches as well as among officials working in a broad range of policy domains (Figure 6.1). However, food security is still primarily perceived as a development concern, whereby awareness in many other domains does not proceed beyond managing externalities and the principle of do-no-harm. Many of the ideas and actions in these domains are a reaction to the work of the DG Development Policy Coherence for Development (PCD) unit rather than a more proactive view of addressing food security as being part of subsystems' mandates or jurisdictions.

More careful analysis of the findings suggests that there was a clear increase in Commissioners' attention to food security for four domains (Development and Humanitarian Aid, Science and Research, Environment, and the Presidency), but Commissioners' attention remained stable or even decreased for all other domains. The two directorate-generals for which the Commissioners most frequently referred to food security are Development Cooperation (and Humanitarian Aid; 79 references in total) and Agriculture (and Fisheries; 74 in total). In the case of Development, food security was addressed frequently over the whole period of analysis. The increase in the period 2010-2014 that is shown in Figure 6.1 is likely due to the separation of the DG in two new DGs, one for development cooperation and the other for humanitarian aid[16]. Interestingly, Development Commissioners Michel and De Gucht, who led the DG during the first price crisis, paid relatively little explicit attention to food security in their speeches. The awareness of the importance of coherence and coordination was clearest in the speeches of Development Commissioner Nielson in the period 2000-2004, although subsequent Commissioners continued subscribing to the importance of aligning humanitarian aid and development cooperation efforts in the context of food security. Widespread attention to food security within the DG Development and DG Humanitarian Aid was confirmed by interview data, which showed that food security concerns were well-embedded within these domains (SM D). This is particularly the case for the Policy Coherence for Development unit, which is responsible for aligning the policy efforts of other services vis-à-vis food security concerns.

Commissioners of Agriculture also paid attention to food security over the whole period of analysis, whereby Commissioners Fischler and Fischer Boel touched upon the topic more often than the late-Commissioner Cioloş. All Commissioners invoked food security particularly in the context of the Common Agricultural Policy, and the multifunctionality of agriculture engrained therein, and in food security exemption clauses in (agricultural) trade agreements. Respondents working in DG Agriculture

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16   The latter is now officially called DG Humanitarian Aid and Civil Protection
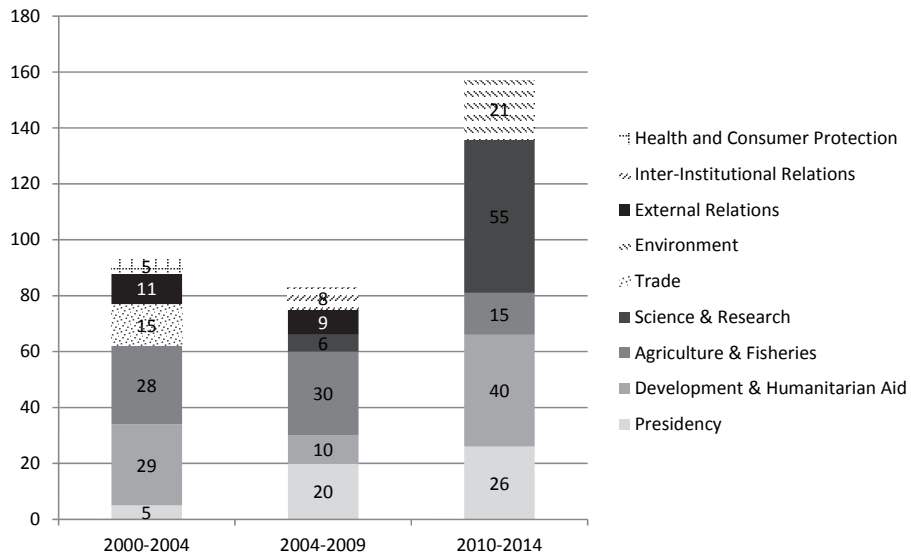
Figure 6.1 Attention to food security in Commissioners' speeches per domain

(DGs were included for a Commission term in this graph only when a Commissioner referred to food security five or more times in a particular term.)

argued that, although food security was one of the Common Agricultural Policy's initial objectives and as such engrained within agricultural policy making, it re-appeared as a concern after the food price crises (SM D). Recently, food security ideas have become institutionally embedded within the DG Agriculture by the creation of the unit 'ACP, South Africa, FAO and G8/G20'. Fisheries and the Common Fisheries Policy were linked relatively rarely to food security.

Two domains in which the Commissioners paid increasing attention to food security after the food price crises are Research and Environment. For Research this was due to the various food security research programs and calls as well as the emphasis on international scientific cooperation to address food security. For Environment, Commissioner Potočnik started referring to food security in the context of sustainable development and agriculture, the Rio+20 conference, and biodiversity. Interviews showed that the cross-cutting nature of food security seemed widely recognized within DG Environment, although respondents working in that DG often perceived food security as part of overarching themes, such as sustainable development and the green or blue economy (SM D). Our findings also show increased attention after president Prodi was succeeded by Barroso, and within the Barroso presidency during and following the

food price crises. This suggests that the presidency and Secretariat-General came to view food security as a relatively more important EU concern after the crises.

Trade and External Relations are two domains in which the Commissioners regularly touched upon food security over the whole period, but where attention was more frequent before compared to during and after the food price crises. The Commissioners of Trade made these references primarily in the context of food security exemption clauses in trade agreements and with respect to the multifunctionality of agriculture. The Commissioners and High Representative of External Relations mainly referred to existing assistance programs.

In addition to these domains, there are a number of domains in which the Commissioners referred to food security only a couple of times, the most notable of which is Health and Consumer Protection. For some domains, Commissioners started mentioning food security only during and after the food price crises, but the number of invocations is too low to be able to signal a trend.

6.5.2 Subsystem involvement

Before the food price crises, the subsystem Development, complemented with the related subsystems of Humanitarian Aid and External Affairs, was clearly the most dominant subsystem in the EU governance of food security. Other subsystems made infrequent references to food security. During and after the food price crises, and particularly after the food price peak of 2010, new subsystems were involved more systematically, particularly the Agriculture, Trade, and Environment subsystems. However, there is a range of subsystems, such as Fisheries and Energy, whose involvement could be relevant in the context of food security, but that were not or hardly involved in the period under analysis.
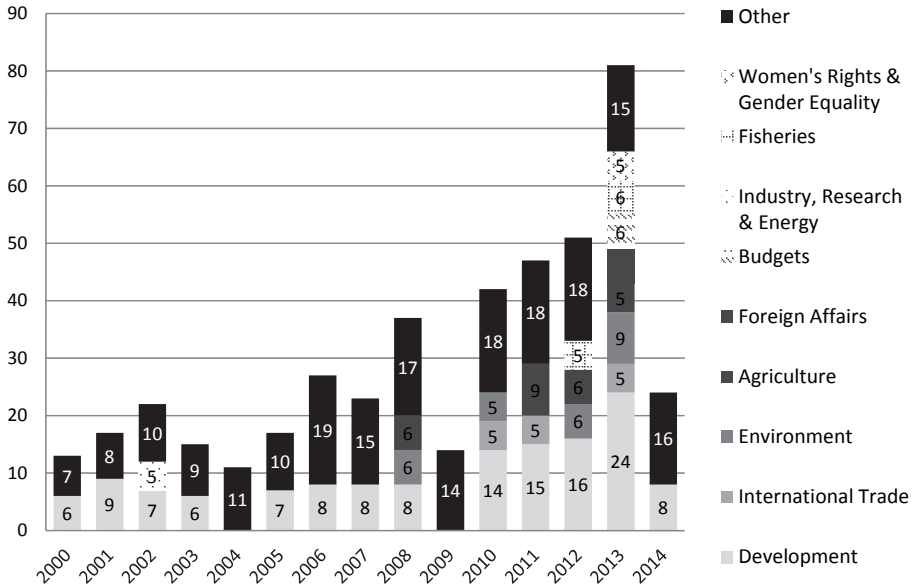
Figure 6.2 Parliamentary committees that invoked food security five or more times in parliamentary reports within a year

(note: all committees that referred to food security less than five times within a year are under 'Other')

Figure 6.2 shows both an increase and a diversification of references to food security across committees in the EP. Before 2008, only the Committee on Development frequently addressed food security, and once, in 2002, the Committee on Industry, Research and Energy. All other committees invoking food security, such as those on Foreign Affairs, Environment, and Agriculture, did so fewer than 5 times per year. From 2008 onwards, more committees started referring to food security (concerns) on a regular basis, including the committees on Agriculture and Rural Development, Environment and International Trade. The year 2013 showed a clear peak in the number of referrals. Part of this peak can be explained by an increase in the number of references by the 'traditional' Committee on Development, but most of the increase follows from the involvement of new subsystems. The years 2009 and 2014 are remarkable for their relatively low numbers of referrals, which could be explained by the EP elections held in these years.

We used the number of interactions between parliamentary committees per parliamentary term to assess the interactions between subsystems, see Figures 6.3a-d.

5th EP: 2000 (1999) - 2004
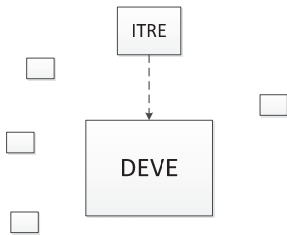
6th EP: 2004 -2007

Figure 6.3a Subsystem involvement
during 5th EP 2000-4

Figure 6.3b Subsystem involvement
during 6th EP: 2004-7

6th EP: 2008 -2009
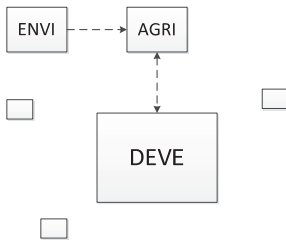
7th EP: 2009 -2014

Figure 6.3c Subsystem involvement
during 6th EP: 2008-9
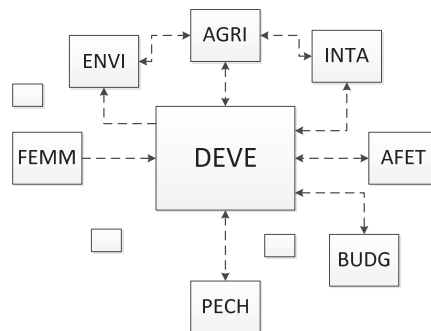
Figure 6.3d Subsystem involvement
during 7th EP: 2009-14

(Arrows between subsystems indicate that they interacted multiple times within a year and/or within a parliamentary term, whereby the direction of the arrows indicates which of the interacting committees is the opinion-giver.)

The figures show that in the years during and following the food price crises, the constellation of parliamentary committees developed into a relatively more complex network. Whereas in the years up to 2007, the Committee on Development was the dominant subsystem with no or hardly any interactions with other subsystems, in 2008 and 2009 the committees on Agriculture and Rural Development and on Environment became more actively involved in food security. The network became even

more complex in the seventh term of the European Parliament, when a whole range of committees became involved, most with two-way interactions with the Committee on Development. The Committee on Agriculture and Rural Development played a more central role, interacting with both the Committee on Environment and that on International Trade. These interactions are mostly related to the reform of the Common Agricultural Policy and the role of food security ideas therein. However, in spite of the increased role of these new committees, the Committee on Development remained by far the most dominant subsystem in the absolute number of interactions.

Similar patterns can be observed when looking at the directorate-generals of the Commission. Figure 6.4 shows an increase in references to food security in COM-documents, particularly in the years following the 2010 food price peak. Here too, diversification toward new domains is visible, albeit to fewer than in the case of the EP, and in a later stage[17]. The results show that the increase in references is almost exclusively the result of 'new' DGs starting to invoke food security, whereas references by DG Development, even in combination with DG Humanitarian Affairs and Civil Protection, remained at roughly the same level. Two DGs that became particularly active were DG Agriculture and Rural Development and the European External Action Service (EEAS). For DG Agri this was primarily related to the reform of the CAP, whereas most references by the EEAS were made in the context of foreign affairs and international cooperation. Apart from these DGs, the group "Other" is relatively big, both before and after the crises. This indicates that there was a whole range of DGs that infrequently mentioned food (in)security concerns in COM documents.

6.5.3   Policy goals

The inclusion of food security policy goals cautiously diversified across 'new' policies from the 2007-8 food price crisis onwards. A parallel development is the increase in (notions of) coherence of policy goals. However, policy goals were often incidental, limited to soft law, and did not include all potentially relevant domains.

Supplementary Material D provides an overview of the policies and programs that explicitly mentioned food security as one of their policy goals. A general pattern that emerges from the findings is that before 2010 almost all key policies are related to development cooperation, humanitarian aid, and external assistance to neighbouring or partner countries and regions. A major policy in this respect was the 2008-10 Food Facility, which was set up to help countries and populations adapt to peaks in food

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17   Note that because of the lower overall number of references, Figure 4 mentions those DGs that refer to FS 4 or more times in a year, whereas this was 5 or more times for the parliamentary committees in Figure 2.
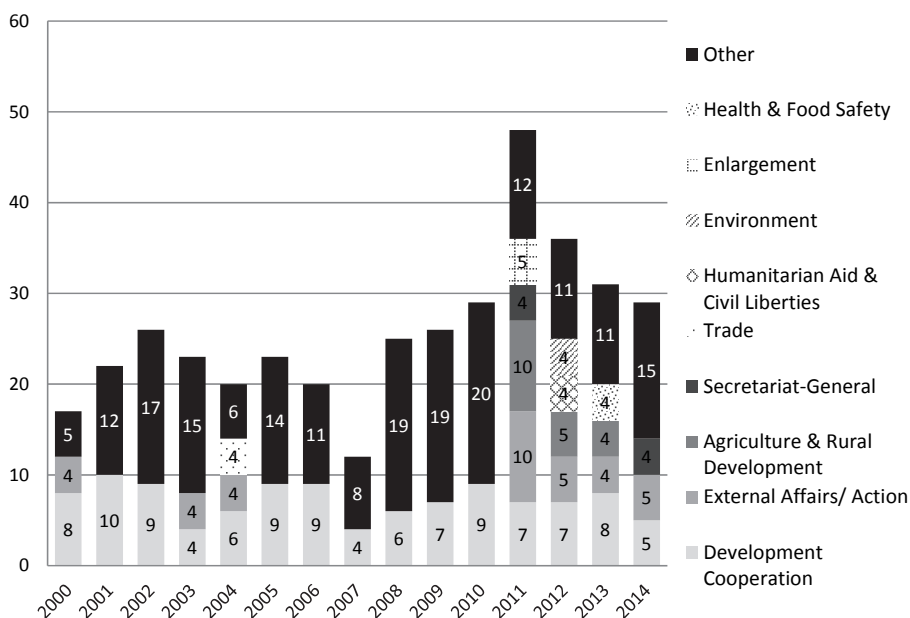
Figure 6.4 Commission services that invoked food security four or more times in COM-documents within a year

(note: all services that referred to food security less than four times within a year are under 'Other')

prices. Although food security goals were linked to a wide array of concerns, such as water, climate and health, this was principally done in the context of external assistance. Two exceptions to this observation were several bans on the import of various fish species, which were justified by the argument that they were important for global food security, and the Treaty on Plant Genetic Resources intended to safeguard future food security. Additionally, food security clauses were included in a number of trade and fisheries treaties. The only program targeted at food security within the Union is the scheme of distribution of food to the most deprived persons, which for a long time reallocated surpluses created by the CAP, but which has been separately financed since intervention stocks diminished.

From 2010 onwards, food security policy goals were defined and included in a wide array of other policies, most notably the CAP and the Common Fisheries Policy, soil and bio-economy strategies, and Horizon2020. Combined with additional development and humanitarian aid goals, this resulted in an overall increase of the number of policies that have food security as an objective. However, it is important to note that for several of these 'new' policies, such as the CAP, food security was mentioned as a policy goal in soft laws, green and white papers, but did not recur as such in final legislation.

Before 2007-8 notions of the coherence and coordination of policy goals in hard and soft laws were mostly restricted to the mutual coherence of development aid instruments and to attuning development and humanitarian aid efforts. From then onwards, references to a coherence of policy goals increased and food security concerns came to be linked, albeit incidentally, to a more varied range of issues, such as the development of biomass, health, and trade. Two important mechanisms to strengthen the coherence of food security goals were the introduction of PCD and embedding coherence in the development goals of the Lisbon Treaty. Despite these developments, however, we did not find empirical evidence that coherence and coordination were put into legislation for many policies relevant to food security outcomes. Nor did the EU create a shared, system-wide strategy of how the whole range of its policy domains could contribute to food security.

6.5.4 Policy instruments

We find that since the outbreak of the food price crises, 'traditional' food security instrument mixes were expanded, made more consistent, and complemented with some new types of instruments. In addition, the coordination and coherence of instruments were increasingly facilitated within the Commission, most notably by impact assessments, inter-service consultations, and Policy Coherence for Development (PCD). Nevertheless, the large majority of instruments were still development-driven. Many subsystems outside of external assistance developed no or only limited instruments explicitly addressing food security concerns.

Supplementary Material D provides an overview of EU food security instruments engrained in hard and soft law from 2000 through 2014. The most substantial instruments before the crises were the provision of food aid and actions supported through the food security program, both embedded in the 1996 regulation on food aid policy and special operations in support of food security. As of 2007, this regulation was adopted within the Financing Instrument for Development Cooperation, which merged various geographic and thematic development instruments into a single development instrument. Another key instrument is the European Development Fund, which is the main cooperation instrument for ACP-countries and Overseas Countries and Territories. Similarly, various neighbourhood assistance instruments, such as TACIS and MEDA, were used to provide assistance to countries and regions neighbouring the EU. More specific instruments that were already used before the crises were the Technical Centre for Agriculture and Rural Development (CTA), food distribution to the most deprived persons within the Union, several bans on the import of particular fish species, and efforts to fix export refunds.

Most of these instruments continued to exist during and after the crises, sometimes in a different or expanded form. A major expansion of food security efforts in development cooperation was realized by the temporary Food Facility, which was created to help countries and regions become more resilient. Although we did not observe a full reconsideration and alignment of instruments, in some sectors instruments were combined or adapted in more consistent instrument mixes, such as the previously mentioned Financing Instrument for Development Cooperation and the new European Neighbourhood (and Partnership) Instrument. In addition, new instruments were developed and food security concerns became embedded in instruments that were previously not intentionally targeted at food security, for example the Instrument for Stability (later: Instrument contributing to stability and peace) used to provide external assistance in cases of political instability or major disasters. This instrument replaced the previous Rapid Response Mechanism, which, although it may have contributed to food security, did not explicitly take food security concerns into account.

A number of new food security instruments originate from subsystems other than development cooperation and external assistance. Examples hereof are the prominent position of food security within the Horizon2020 research framework, including the Joint Research Centre's activities on food security, monitoring the impact of biofuels, and the Copernicus earth observation program. The EU also appointed a special representative to the African Union. In spite of this increase in the density and intensity of policy instruments, we find that the majority of instruments are still development-related. For many of the subsystems and policy goals identified in the previous two sections we found either no or only minor associated substantive instruments. For example, in spite of pervasive food security invocations and food security policy goals, the final versions of the Common Agricultural Policy and the Common Fisheries Policy did not contain any explicit food security instruments to implement the objectives.

This finding is supported by our qualitative data. Regarding the EU's internal procedural instruments in the governance of food security, interviews with Commission officials revealed that quite a number of instruments had been used to ensure and enhance coordination and coherence within the Commission (SM D). Although interviews were only held in 2014, respondents indicated that these instruments had become more important in recent years. Two of the Commission's most common internal procedural instruments, impact assessments and inter-service consultations, were reported to be important tools for addressing food security-related concerns, for example in the biofuels development policy, the Common Agricultural Policy, and trade agreements. In practice, these concerns were raised mainly by officials working in the domains of development cooperation and external assistance. Another key instrument in this respect is PCD, with food security as one of the five key priorities. PCD enables DG

Development to screen the Commission's work program for initiatives that may have an impact on food security and, consequentially, to have a say in the policy process regarding a broad range of issues. However, respondents argued that because of the limited capacity of the PCD team, efforts were limited to major policies and programs that might have a detrimental effect on food security, such as the Common Agricultural Policy and trade agreements. PCD is therefore still primarily used according to the 'do-no-harm' principle, rather than to realize synergies. Three other types of instruments that respondents mentioned to be relevant were: i) foresight studies performed by the Commission's Joint Research Centre, which help put food security on the agendas of various services and provide scenarios for courses of action, ii) the Commission's staff mobility policy, which facilitates a circulation of perspectives and expertise, and iii) the creation of 'boundary units', i.e. units created to address external concerns within a domain, e.g. the previously mentioned unit 'ACP, South Africa, FAO and G8/G20' within DG AGRI.

6.6   Discussion: do actions speak louder than words?

Our findings suggest that each of the policy integration dimensions in the EU governance of food security advanced to at least some degree in the aftermath of the food price crises, see Figure 6.5. For none of the dimensions we found evidence of disintegration. Food security concerns became more prominent within a wider array of subsystems; food security goals diversified somewhat and there was an increased awareness of coherence and linkages with other issues; existing instruments, including internal procedural instruments, were expanded and made more consistent; and new types of instruments were developed. Whereas food security remained an important issue in development cooperation, it also spread to new domains and policy debates, such as those on biofuels, environmental programs, and trade. At the same time, integration proved much more substantial in some dimensions than in others. We will here elaborate on two lacunas that make us answer the initial question of whether actions speak louder than words with a 'not really'; the development of policy integration remained largely restricted to discursive levels and did not involve any substantial change of governance.

First, although a number of food security instruments were merged into more consistent instruments in 2006-2007, most notably the financing instrument for development cooperation and the European Neighbourhood and Partnership Instrument, the more recent development of new instruments, such as Horizon2020 and the monitoring of biofuels, leads to new consistency challenges. Moreover, because these new food security instruments no longer solely originate from the dominant domain of development cooperation (and external assistance), the consistency of the food security instrument

	2000	2008	2010	2014
Cultures of beliefs	Food security primarily seen as a development concern, though some awareness in agriculture and trade.		Growth and diversification of food security concerns among domains. Food security still mainly perceived as development concern. Awareness in many domains does not proceed beyond managing externalities and do-no-harm.	
Subsystem involvement	One dominant subsystem, development cooperation and humanitarian aid. Only in 2008 and 2009 some involvement of Agriculture and Environment.		Increase of subsystem involvement, mainly by 'new' subsystems, such as agriculture, trade, and environment. Shift towards a more complex network of subsystems that interact with each other, in which Development still has a central role.	
Policy goals	Food security goals primarily embedded within development and external assistance policies and programs.		Diversification of food security policy goals to alternative domains. Increase of (notions of) coherence and linkages with other issues. Often limited to soft law.	
Policy instruments	Various food security instruments, mainly in development cooperation and external assistance. Some internal procedural instruments, such as impact assessments and inter-service consultations, not used to full potential.		Development and external assistance instruments are embedded within more consistent mixes. Food security concerns are adopted within a number of existing and new instruments, most of which are related to new domains, although number of new substantive instruments is limited. Use of internal procedural instruments is strengthened to some extent.	

Figure 6.5 Dimensions of policy integration in the EU governance of food security

mix has become a challenge to the EU governance system as a whole. We did not observe any attempts to embed the plethora of instruments (or goals for that part) into an overarching EU food security strategy and associated instrument mix.

Second, although cultures of beliefs, subsystem involvement, policy goals, and policy instruments diversified, food security concerns became more strongly embedded in some domains than in others. We observe that there are still a number of subsystems that could play a role in the governance of food security, but that have not or hardly been involved up to now. Examples hereof are the subsystems involved with migration, competition, social affairs and regional policy. Subsequently, we also see that relatively many 'newer' subsystems are aware of food security concerns and have developed some policy goals, but have not yet embedded these in formal policies or legislation and supportive instruments. For example, although food security concerns were pervasive in the reforms of the CAP and the CFP and food security was mentioned as a goal in both EP reports and preparatory COM documents, final legislation did not contain explicit food security policy goals or instruments. More in general, in contrast to the recent expansions and enhancements of the EU's internal procedural instruments, there were relatively few new types of substantive instruments. Thus, whereas policy integration for the three other dimensions advanced clearly, the dimension of policy instruments lagged somewhat behind, and for some domains integration did not even proceed beyond discursive levels. This was also confirmed by respondents in the interview round at the European Commission. In the case of the CAP, for example, respondents claimed that food security is a good 'buzzword' for enhancing the legitimacy of policy proposals because it is an acceptable issue for to a wide array of stakeholders, but it does not necessarily result in substantive actions (Candel et al., 2015).

It is important to note that discursive or symbolic policy integration is not necessarily an undesired condition (cf. Edelman, 1985). Symbolic integration can play an important agenda-setting role in the sense that it draws subsystems' attention to particular food security concerns (Candel & Biesbroek, In Review-b). Consequentially, learning processes may occur within subsystems, resulting in strengthened awareness of the cross-cutting nature of food security and governance implications thereof. Such awareness generally is a prerequisite for governance changes to occur. However, the last point implies that, from a problem perspective, not much changes by discursive integration as such. Eventually the introduction or an adjustment of policy instruments will be necessary to realize improved food security outcomes.

Undeniably, the relationship between strengthened policy integration in governance processes and eventual (food security) outcomes remains understudied and therefore unclear. Although policy integration scholars assume that more integration would result in better outcomes, studying such impacts is both a conceptual and methodological challenge (Jordan & Lenschow, 2010). We consider overcoming these challenges through conceptual and methodological innovation as a vital next step in future research on integrative food security approaches. The policy success and failure heuristic of McConnell (2010, 2015) could be useful in this respect, as it enables distinguishing various types of policy impacts, e.g., programmatic, process, and political success.

Our second ambition in this chapter is to reflect on the policy integration framework we used for this study. Our analysis shows that the multi-dimensional approach can result in a sophisticated understanding of the various dynamics through which integration proceeds. This makes it possible to examine whether politicians' claims and policy goals are being followed up by actual policy changes, i.e. changes of policy instruments, and to thus hold decision-makers accountable for their pursuit of policy integration. However, we encountered two problems. It was difficult to access the documents that could provide an insight into the EU's internal policy process, forcing us to use proxies that were far from ideal. Moreover, implementing the framework is time-consuming, and substantial resources are needed for an in-depth study of the EU institutions' administrative cultures and embedded food security concerns. The framework, and research on policy integration in general, would therefore benefit from continued methodological creativity and innovation.

The policy integration framework allows for more refined studies on the interactions between the governance of crosscutting policy problems, such as possible trade-offs resulting from the enhanced policy integration of the governance of a particular problem. Not only do higher degrees of integration require more resources, including institutional capacity, that cannot be used elsewhere, but a focus on the coherence of

goals and the consistency of instruments with respect to food security may diminish the coherence and consistency of the governance of other issues (Adelle et al., 2009; Lagreid & Rykkja, 2015). These are everyday choices in the working practice of decision-makers. It is generally not the case that subsystems do not want to address 'external' concerns such as food security, but they often simply lack the resources or have other policy priorities. The framework offers openings to start exploring these interactions and the integration priorities within a governance system to better understand why the four dimensions of policy integration do not always proceed synchronously.

In this respect it could be interesting to also include the mechanisms that drive policy (dis)integration on food security, such as policy entrepreneurship, social learning processes, and coalition building (Bauer et al., 2012; Candel & Biesbroek, In Review-b; Jochim & May, 2010). Studying these mechanisms may answer the 'why-question' behind changes in degrees of integration. Some of our results suggest the presence of integration mechanisms. For example, the rather symbolic use of food security arguments in the CAP and CFP reforms suggests forms of (ideational) entrepreneurship, whereas the work of the PCD unit may be considered coalition building across jurisdictional boundaries. However, these examples would need to be studied more systematically to make any scientific claims.

We conclude with our concrete recommendations on how the EU governance of food security could be advanced further. As Table 6.1 elaborates, full policy integration into food security governance would implicate the involvement of all possibly relevant subsystems, some of which we mentioned earlier in this discussion. Subsystems would then need to get involved beyond 'do-no-harm', aiming to create synergies between policy efforts. In addition, full integration would require the design and implementation of an overarching EU strategy, which elaborates the role of each of these subsystems in addressing food insecurity, thereby ensuring the coherence of policy efforts. The PCD commitment to food security would be a good starting point for doing so, but would have to be extended from development cooperation to other fields of EU policymaking. Such an extension would require coordinative policy instruments at the system-level. These coordinative instruments do not necessarily have to be created anew; existing coordinative entities, such as the Secretariat-General in the Commission, could serve as boundary-spanning structures that take the lead in developing a holistic approach and facilitating coordination between subsystems (cf. Candel et al., 2015; Hartlapp et al., 2012; Kassim et al., 2013). The consistency of subsystems' instrument mixes is a key challenge in realizing such a boundary-spanning policy regime.

An important question is of course whether further policy integration is politically feasible or desirable in the current political landscape (Jordan & Halpin, 2006). Member

states have been reluctant to hand over jurisdictions to the EU institutions, especially regarding domains related to external affairs and issues for which the EU has no formal competence, which has been reinforced by the rise of Euroscepticism over the last years. It may therefore be more realistic to strive for the optimization of lower degrees of policy integration, for example by attempting to reduce the clearest externalities. Although high policy integration ambitions help picturing the desired path forwards, in the short-term it may be more productive to harvest the low-hanging fruit to ensure that actions do speak louder than words.

Acknowledgements

CHAPTER 7

Conclusions and reflection

This dissertation was prompted by the observation that food security has recently reappeared on the political agendas of the European Union institutions. Since the 2007-8 and 2010 world food price crises, notions of and concerns about food security have been pervasive in a wide range of EU policy debates and communities. This increase in and diversification of attention to food security has not been without considerable criticism and controversies. Decision-makers, stakeholders, and academics have blamed each other for 'hijacking' the term food security to pursue vested interests and have disagreed about the policy directions that should be followed to effectively address food insecurity.

The increased attention to and ideas about food security has been accompanied by calls for a change in how food security is governed at the EU level. The food price crises resulted in new insights into the complexity of the drivers of food insecurity as well as a recognition that food security is inherently intertwined with other (wicked) policy problems, such as climate change, social inequality, energy policy, and agricultural policy. This improved understanding has resulted in pleas for strengthened policy coherence and integration and for more comprehensive and holistic approaches to EU food security governance.

Starting from the above observations, this dissertation conceptualized food security as a wicked policy problem that, by definition, cannot be solved permanently (section 1.2). Instead, wicked problems rely on elusive political judgement for realizing temporal resolutions or settlements (Rittel & Webber, 1973). Such an approach to food security differs from most of the literature and commentaries, which share an assumption that, although food insecurity is a complex and contested problem, it can ultimately be solved.

The EU, and particularly the European Commission, have been criticized for their inability to govern wicked problems (for overviews, see: Jordan & Schout, 2006; Kassim et al., 2013). In this respect, three critical challenges to the EU governance of food security were identified (section 1.1.2): (i) the difficulty of defining the problem of food security; (ii) the Commission's alleged incapability of governing wicked problems, and (iii) the problem of overcoming policy incoherence and inconsistencies in the stovepiped EU governance system. At the same time, both the EU's ability to address wicked problems in general and its governance of food security specifically have hardly been studied systematically. Therefore, the central question of this dissertation is: **_how does the European Union govern the wicked problem of food security?_** To address this question, the three challenges were translated into three research questions. These questions were preceded by a research question that aimed to provide a deeper understanding of food security governance and associated manifestations of wickedness in general:

5. What insights does the existing body of food security governance literature provide about governing the wicked problem of food security?

6. Which food security frames can be distinguished in EU policymaking and how do the EU institutions deal with this diversity?

7. What conditions enable or constrain the European Commission in coping with the wicked problem of food security?

8. To what extent has the EU realized a shift towards strengthened policy integration in the governance of food security?

Section 7.1 will provide answers to each of these questions and to the central question. Following from the ambition to also contribute to theoretical debates within the public governance and policy literatures, section 7.2 reflects on the main contributions of my research to the academic literature. Subsequently, section 7.3 concisely reflects on the methodological choices made in the research. Section 7.4 reflects forward by setting out three major directions for future research. The chapter ends with some implications and recommendations for EU policymakers.

7.1 Synthesis of the research: answering the research questions

7.1.1 The current state of knowledge about food security governance

Research question 1: What insights does the existing body of food security governance literature provide about governing the wicked problem of food security?

To be able to study the *EU* governance of food security, it was necessary to first better understand food security governance and associated manifestations of wickedness in general. So far, the food security governance literature has been fragmented, containing multiple definitions, and entailing different epistemologies. Therefore, a systematic literature review of the food security governance literature was conducted and presented in chapter 2. The main finding of the review is that, although the emerging body of literature provides many relevant insights into the wicked characteristics of governing food security, it does so implicitly. In addition, the majority of the literature adheres to a rather simplistic governance perspective that runs counter to the governance assumptions within the governance of wicked problems literature. The literature

recognizes characteristics of wickedness, but the governance implications thereof are hardly acknowledged.

Chapter 2 presented four insights that are particularly relevant in the light of the wicked problem governance challenges of food security. First, the literature portrays food security governance as highly *complex*; there are many determinants affecting food security outcomes, and their individual influence as well as the effects of interactions between them are not yet well understood. Moreover, these determinants develop in unpredictable ways, resulting in high *uncertainty*. Second, because the determinants of food security entail ecological, economic, social, and political factors, and thus multiple policy domains, food security governance *spans the boundaries of jurisdictions*. The literature shows that this awareness has led to the inclusion of new types of actors as well as to increased calls for policy coordination and coherence. Third, the literature provides a number of accounts of *ideational conflicts* about problem definitions and proposed courses of action, particularly at the global governance level. Fourth, the literature is highly critical of existing governance arrangements, arguing that these are too *fragmented, underresourced and characterized by a democratic deficit*. This critique particularly applies to global governance, as food security governance at national or local levels has hardly been studied. These insights confirm and expand the initial conceptualization of food security as a wicked problem provided in the introduction of the dissertation. In addition, they contributed to a better understanding of the contextual conditions that EU policymakers need to deal with in everyday food security governance and, as such, they informed the following analyses.

My research shows that the food security governance literature hardly links up to nor draws from public governance and policy theories. As a result there is only limited explicit reflection on the nature of food security as a (wicked) policy problem and the ensuing governance challenges. Instead, the literature can be characterized as adhering to a dominant optimistic understanding of governance as a problem-solving mechanism (Biesbroek et al., 2013b; Bovens & 't Hart, 1996). The key assumption of such an understanding is that if governance arrangements and practices are optimized, for example through more coordination between governance arrangements, policy coherence, and stakeholder participation, it would ultimately be possible to effectively solve food insecurity. Chapters 5 and 6, however, showed that the inclusion of new subsystems and enhancing coordination between them does not necessarily result in actual changes of governance practices (section 7.1.4). More in general, the public administration and policy literatures have shown that, even when optimizations of governance processes can be successfully implemented, eventual solutions often fail to appear, precisely as a result of the wicked characteristics that the food security governance literature puts forward (Pressman & Wildavsky, 1984; Stone, 2012; Termeer et al., 2013). Chapter 2 argued

that this paradox of the food security governance literature - simultaneously recognizing and overlooking the wicked problem characteristics of food security - could be overcome by more explicitly reflecting on its conceptual and ontological underpinnings and by including a wider variety of governance understandings (Bovens & 't Hart, 1996). The framing, governance capabilities, and policy integration lenses adopted in this dissertation are examples of such alternative understandings.

7.1.2 Framing food security in EU governance

Research question 2: Which food security frames can be distinguished in EU policymaking and how do the EU institutions deal with this diversity?

Following the theoretical expectation that food security serves as a consensus frame behind which considerable dissensus lies hidden (Mooney & Hunt, 2009), the second research question aimed to distil the various EU food security frames. This question was addressed by analyzing the debate surrounding the reform of the Common Agricultural Policy post-2013, in which food security arguments proved particularly pervasive. Chapter 3 presented six food security frames that were found by extensively analyzing stakeholder and EU documents, complemented with four conference observations. Additionally, together with chapter 4, the research suggests that the EU institutions made strategic use of the fractured consensus surrounding food security in the CAP post-2013 debate to find resonance among stakeholders with diverging interests.

I revealed that there are six food security frames in the EU context, which have been referred to as: (1) the productionist frame, (2) the environmental frame, (3) the development frame, (4) the free trade frame, (5) the regional frame and (6) the food sovereignty frame. These six frames fundamentally conflict with each other in their definitions of food security, problem definitions, and proposed solutions. The food security frames that were found exceed and differed from the number and types of frames that were previously put forward in the literature (Mooney & Hunt, 2009). Moreover, each of the frames was shown to be invoked by a specific set of actors whereby many frames were supported by a configuration of private stakeholders, member states, and European Parliament political groups. This finding shows that frame conflicts also occurred within the EU institutions. The productionist frame and, to a much lesser extent, the environmental frame proved to be the most dominant frames in terms of the number of invocations. This is in line with previous studies of EU agricultural policy discourse (Feindt, 2010; Lynggaard & Nedergaard, 2009; Termeer & Werkman, 2011).

However, it might be possible to distinguish alternative frames that would be more influential in other food governance debates and venues, both within and beyond the EU. Regarding the latter for example, it has been shown that the food sovereignty frame is relatively well represented in the reformed Committee on World Food Security (CFS) (Duncan & Barling, 2012).

These findings empirically confirm the dissensus lying hidden behind the consensus frame of food security. At the same time, however, chapters 3 and 4 suggest that the consensus frame was deliberately kept intact and used strategically by the EU institutions. This becomes clearest in the analysis of the Commission's framing efforts, which contain elements of multiple food security frames. Putting food security forward as one of the strategic objectives of the CAP post-2013 may have served the EU to regain some of the legitimacy that was lost as a result of heavy criticism of the CAP's trade-disturbing effects and the heavy burden that agricultural subsidies put on the EU budget, inter alia (cf. Swinnen, 2015). Dianne Dodds, member of the European Parliament, put this more explicitly by publicly naming food security as a new lynchpin for the CAP post-2013 (Agra Europe, 2010b). Although not shown directly, the findings also suggest that EU actors used the dissensus lying behind food security to target different audiences adhering to different food security frames, thereby attempting to find resonance among the whole spectrum of stakeholders. In other words, the EU institutions benefitted from maintaining the 'fractured consensus' (Maye & Kirwan, 2013) around food security in their communications and public performances as it provided a way of reconciling competing interests and perspectives and allowing for a continuation of the policy process (cf. Majone, 2005). This suggestion is enforced by the statement of various respondents from the European Commission that they used the Eurobarometer as an indicator of food security's resonance (chapter 4). I found that food security is considered an effective 'buzzword' in interactions with the Council and Parliament to find support among different constellations of interests within these institutions.

7.1.3   The Commission's capabilities for governing the wicked problem of food security

Research question 3: What conditions enable or constrain the European Commission in coping with the wicked problem of food security?

The third question aims to unravel whether the Commission possesses conditions – skills, repertoires, capacities, commitments, and readiness – that enable them to cope with the wicked problem of food security as well as possible constraints to this ability.

Chapter 4 addressed this question explicitly by focusing on the Commission's governance capabilities. Contrary to the expectation raised by the dominant view within the EU governance literature that the European Commission is incapable of satisfactorily dealing with wicked problems (for an overview of these critiques, see Kassim et al., 2013), the chapter shows that the Commission is relatively well capable of addressing several of the challenges that result from food security's wickedness. At the same time, these capabilities tend to be ad hoc and are not governed at the meta-level.

Applying the governance capabilities framework to the EU governance of food security confirms some of the major constraints to the Commission's ability to govern wicked problems that have been mentioned throughout the literature. Conditions that were found to have a major constraining effect were the Commission's relatively limited human capacity, its lack of latitude following from its dependence on the other EU institutions, and a relatively firm belief in objectivity. At the same time, my findings nuance the image that the Commission is too inflexible, underequipped, and dependent to realize (temporal) resolutions. The Commission 'scores' particularly well on reflexivity and, to a somewhat lesser extent, resilience, responsiveness, and rescaling. These capabilities are enabled by various previously underappreciated factors and properties, including the widespread awareness and tolerance of frame conflicts, uncertainty, and scale dynamics among Commission staff, cross-sectoral and -institutional structures and procedures that enable the exchange of views, information and concerns, and bridging arrangements, such as thematic units. The only capability on which the Commission did not perform well at all is its ability to revitalize societal and political deadlocks. However, EU rules and procedures are so organized that they work towards reaching compromises within and between the EU institutions. As a result, the policy process almost always continues, even when deadlocked societal interaction patterns cannot be overcome.

While the majority of the Commission's capabilities to cope with wickedness are quite well developed, they simultaneously tend to be ad hoc and to rely on individuals' skills and commitments. Although a number of enabling conditions are facilitated by formal structures and procedures, such as inter-service consultations, impact assessments, and Policy Coherence for Development (PCD), the success of these procedural instruments eventually relies on individual efforts. For example, whereas the role of fisheries had long been neglected in development cooperation efforts, renewed efforts of two or three persons within the directorate-generals of Maritime Affairs and Development Cooperation led to renewed commitments. Of course one could argue that these individual commitments are also facilitated by the institutional context; for example, officials who had worked in different units or DGs seemed more receptive to external concerns, and the prioritizations of Commissioners proved to matter as well. At the

same time, the fisheries example makes clear that food security commitments are not self-evident and differ across subsystems as well as over time. This was also found in the analysis of policy integration (chapter 6), which showed that the substantiality of policy efforts differs considerably across subsystems. In addition to this ad hocery and reliance on individuals, the capabilities are precarious as a result of the Commission's scarce resources and capacities, which need to be deployed judiciously. My study, for example, showed that for both the capabilities of resilience and responsiveness, the Commission largely has to restrict itself to observing and reacting to existing signals, trends, demands, and concerns, rather than proactively scanning for potential new threats and issues requiring attention. The need to allocate resources and capacities to the most pressing or prioritized issues leaves the governance system vulnerable and dimensions of the problem of food security potentially unattended to. The combination of these challenges is further worsened and remains unaddressed by the Commission's lack of a *metacapability*, i.e. a meta-governance mechanism or approach that could maintain the capabilities and balance resources within and between them (see section 7.2). At the same time, whereas a metacapability may safeguard the Commission's ability to successfully cope with the many dichotomies and seemingly conflicting properties of food security governance, its proposals and actions can generally be overruled by the other EU institutions. Although in times of sudden crises the institutions have been able to deploy substantial measures, it is unclear whether the EU polity as a whole is also successful in coping with the wickedness of food security.

7.1.4   Horizontal policy integration in the EU governance of food security

Research question 4: To what extent has the EU realized a shift towards strengthened policy integration in the EU governance of food security?

The fourth research question aims to unravel whether the EU has adopted more comprehensive or holistic governance approaches, as propagated by various EU decision-makers and commentators. This question proceeds beyond the Commission's capabilities for governing wicked problems (chapter 4) in that it asks whether these capabilities have actually been deployed within a more or less holistic approach. The question was addressed by developing and adopting a policy integration heuristic and associated framework (chapter 5), which provide an alternative to existing static policy integration approaches (section 7.2). The approach recognizes the asynchronous and multi-faceted processes of integration over time as well as the sub-optimal governance practices and outcomes that these can result in. Applying the framework to the EU

governance of food security led to the insight that, although overall policy integration increased, substantive integration efforts remained limited to a number of domains and did not entail large changes in the types of policy instruments deployed (chapter 6).

Applying the framework demonstrated that policy integration has increased in the EU governance of food security, particularly in the period following the 2007-8 and 2010 global food price crises. In chapter 6 I discussed the increase in the number of EU subsystems within the European Parliament and the Commission that were involved in the governance of food security. In addition, relatively more subsystems were found to have cultures of beliefs that were open to addressing externalities and achieving coherence. Also, policy goals in which food security concerns were adopted increased in number and diversified over domains, particularly in soft legislation. Lastly, a number of new or expanded substantial and procedural policy instruments were deployed.

However, we can ask whether policy integration of food security at the EU level truly proceeded beyond discursive levels. Significant differences can be observed between policy domains in terms of the substantiality of food security policy efforts. I found an increase of intentional policymaking across subsystems that was hardly accompanied by a diversification of actual, on the ground, policymaking. Instead, most new or expanded substantive instruments were deployed within the 'traditional' domains of development cooperation, humanitarian aid, and external assistance. A few exceptions were the increased funding for research on food security in the EU's research frameworks, the monitoring of the impacts of biofuels production, and the new Fund for European Aid to the most Deprived (FEAD) within the Union. In most other domains, integration remained restricted to discursive utterances without accompanying instruments. Moreover, these discursive utterances were often only made in preparatory acts and soft legislation and did not always recur in final legislation. For example, preparatory acts of the reformed Common Agricultural Policy contained many references to food security concerns, but these did not recur in the final CAP regulations, nor were food security instruments incorporated. This finding supports the argument in chapter 2 that food security was used as a buzzword to gather support and legitimacy. It seems that the effect of new or enforced procedural instruments at the system level, such as PCD and impact assessments, have mainly resulted in increased awareness, but only in limited actual policy change to deal with food security more holistically.

7.1.5   Answering the main question

How does the European Union govern the wicked problem of food security?

Taken together, the framing analysis (chapter 3), the analysis of the Commission's capabilities (chapter 4), and the study of policy integration (chapters 5 and 6) provide a mixed view of how the EU governs the wicked problem of food security. Although they illustrate that, in principle, the EU is quite capable of dealing with the challenges inherent to the wicked characteristics of food security governance, they simultaneously show that EU food security governance is characterized by relatively high degrees of symbolic or discursive policymaking (cf. Edelman, 1985).

Summing up the main findings of chapters 3 and 4 shows that that the EU possesses a relatively well developed potential or latent ability to deal with the wicked problem characteristics of food security. There is indeed a wide range of conflicting food security frames, resulting in unstructuredness, continuously evolving demands and concerns, and deadlocked societal interaction patterns. However, policymakers within the EU institutions are generally well aware of these frame conflicts and manage to make strategic use of them by exploiting the ambiguity surrounding the consensus frame of food security to gather support among different audiences. More in general, the Commission possesses more enabling conditions and strategies than was commonly assumed within the academic literature. Apart from revitalizing societal deadlocks, the Commission generally appears to cope relatively well with the properties of wicked problems. In addition to these latent capabilities, Commissioners and Commission officials have stressed that food security is a holistic issue that needs to be addressed accordingly. For that reason, they have propagated strengthened coherence and policy integration. Although the advancement of policy integration was shown to be far from optimal, it did improve in the years during and following the 2007-8 and 2010 food price crises.

At the same time, it was shown that actual governance changes in terms of policy integration remained largely restricted to discursive levels. This leads to the more general question of why although food security concerns were pervasive and capabilities to address food insecurity were largely present, new or enhanced policy commitments remained essentially absent. In this respect, the combined insights of chapters 3, 4, and 6 offer the plausible explanation that whereas in some domains genuine food security concerns prevailed, eventually resulting in the deployment of substantial policy instruments, in many domains notions of food security primarily served to pursue or legitimize existing interests. Just like concepts such as 'sustainability', 'green growth',

or 'sustainable intensification' (chapters 3 & 4), food security served policymakers as a discursive device that could be used to bridge both internal and external divides within stagnated or contested policy processes. Consequently, whereas the food price crises certainly led to renewed food security efforts within some domains, in many other domains these crises opened a 'policy window' (Kingdon, 1995) for deploying new (food security) ideas to revive, alter, or legitimize ongoing policy processes. This conclusion suggests that food security has largely been used symbolically; it is a strong symbol that EU policymakers have used to represent various desired courses of political action (cf. Edelman, 1985).

In terms of agenda-setting, food security has been high on the agenda of the subsystems of development cooperation and humanitarian aid, and, for a short time, on that of high-level EU decision-makers (the governmental agenda). However, it does not seem to have developed from the phase of 'idea' to that of 'issue' on other specialized agendas, i.e. it has not become subject to a genuine conflict of ideas between actors within alternative subsystems that would be prerequisite to adopt food security concerns in new or existing policies (cf. Cobb & Elder, 1972; Princen, 2007). When there is no disagreement within a subsystem about food security or no pressure of high-level decision-makers to address food security concerns, food security will simply not be a point of discussion at the negotiation table. The CAP reform round proved illustrative in this respect; Commission officials at DG Agriculture indicated that they were aware of food security concerns and that these were taken seriously, but when pushed by asking whether these concerns played a role in the actual negotiations about the new CAP they all admitted that this was not the case.

An implication of this conclusion is that although both food governance scholars and societal stakeholders and commentators have stressed the importance of and potential for more holistic approaches to food security, e.g., an EU common food policy (Marsden, 2015), the renaissance of food security in EU governance does not yet seem to have resulted in a more comprehensive European approach to food security. Instead, even though new food security framings emerged, the crises were followed by a mere 'traditional' upscaling of development cooperation efforts. Even innovative procedural instruments, such as PCD, do not seem to have had a major integrative effect in this respect. From a wicked problems perspective, the limited success in integrating food security concerns into new domains and associated policies, and thus to truly attempt to address these concerns and associated controversies in some way (nota bene: that does not mean solving them), raises the question whether the EU institutions have managed to realize temporal resolutions (cf. Bryson, 1988; Termeer et al., 2015a; Weick, 1984). These are further reflected on in section 7.5.

7.2   Theoretical contributions

The research chapters in this dissertation entail various smaller and larger contributions to theoretical debates within the public governance and policy literatures. This section concisely elaborates six main contributions of the research: (i) an innovative framework to study policy integration, (ii) a nuancing of the European Commission's ability to govern wicked problems, (iii) the introduction of consensus frames as a valuable perspective on framing in the EU, (iv) insights into the limited effect of the Commission's strengthened coordinative procedural instruments, (v) a more concrete conceptualization of the metacapability, and (vi) the inclusion of constraints in the analysis of the governance of wicked problems.

A first and clearest contribution is the development of an *innovative framework to study policy integration processes*. Although various approaches to studying horizontal policy coordination and/or integration already existed, these were rather fragmented and did not prove helpful to study the development of policy integration within a governance system vis-à-vis a specific wicked problem over time. In addition, existing approaches tended to consider policy integration as a 'mere' desired outcome of policy processes. Policy integration is then understood as something that can be achieved or not. Such approaches do not acknowledge the inherently processual nature of policy integration as a concept; amounts and dimensions of policy integration can change across governance systems and over time. The framework that was proposed in chapter 5 *does* embrace this processual nature and conceptualizes policy integration as an asynchronous and multi-faceted process. Policy integration can hereby be subdivided into four constitutive elements: cultures of beliefs, subsystem involvement, policy goals, and policy instruments. These dimensions do not necessarily move at the same pace, or even in the same direction. For example, this study showed that in the EU governance of food security discursive dimensions of integration, i.e. cultures of beliefs, advanced further and at a faster pace than policy instruments. In addition, the framework also includes processes of disintegration, which have been argued to be essential to any comprehensive policy integration approach. The framework furthers the debate on policy integration in that it provides a tool for systematically analyzing the development of policy integration across governance systems as well as over time. As such it provides opportunities for more advanced understandings of policy integration patterns and associated mechanisms.

Second, this dissertation proves that *the European Commission is more capable of governing wicked problems* than the dominant view within the EU governance literature assumes (section 7.1.3). Applying the governance capabilities framework offers a way of more systematically analysing the Commission's enabling and constraining conditions than was done in previous studies. Although the outcomes of the analysis confirm some

of the Commission's major restrictions mentioned throughout the literature, various enabling practices, procedures, and structures that had previously been overlooked or underestimated were identified. These findings give rise to a further nuancing of the Commission's reputation with respect to governing wicked problems (Kassim et al., 2013).

A third contribution concerns the introduction of consensus frames as a valuable perspective to framing processes within the EU. Scholarly attention to framing processes and their impact on policy change and stability within the EU polity is relatively recent (e.g., Baumgartner & Mahoney, 2008; Daviter, 2011; Klüver, Mahoney, & Opper, 2015; Princen, 2011) and can be broadly divided into two perspectives: one that tries to explain the diversity of frames within and between the EU institutions, and one that focuses on how particular frames become dominant as a result of policy entrepreneurship within or by the EU institutions (cf. Daviter, 2007). These perspectives seem somewhat paradoxical at first sight: the former implies a continuous struggle between (proponents of) frames, whereas the second acknowledges that specific frames can come to dominate others. Chapter 3 provides a valuable addition to these broad perspectives by introducing and analyzing the use of *consensus frames at the EU level* (Gamson, 1995; Mooney & Hunt, 2009). The consensus frame of food security was shown to function as a dominant discursive device that simultaneously embeds a wide range of underlying frames that conflict with each other. As such, consensus frames provide an explanation for the simultaneous occurrence of frame diversity and dominating frames at the EU level. This contribution corresponds with previous accounts of deliberate ambiguity in EU governance (e.g., Majone, 2005; Treib, 2008). These accounts show that the use of 'vague' and widely resonating concepts and wordings has been deployed as an intentional strategy to provide diverging stakeholders with an opportunity to communicate compromises to their constituencies in a way that is favourable to them as well as to provide member states with some latitude in implementing controversial legislations.

Another contribution to the EU governance literature are the insights into *the functioning of relatively recently deployed or expanded instruments targeted at strengthening policy integration within the EU*, particularly within the Commission. Scholars have noted the potential of integrative commitments under the Barroso presidency of the Commission, such as the enforced role of the Secretariat-General in safeguarding the coherence of policies, the growing importance of impact assessments and consultations under the Better Regulation agenda, the Open Method of Coordination, and Policy Coherence for Development (Hartlapp et al., 2010; Kassim et al., 2013; Lang et al., 2015). This study, however, shows that such a configuration of instruments is insufficient on its own, at least for the EU governance of food security. In spite of discursive commitments

and enhanced coordinative instruments, very few food security goals and instruments were embedded in final legislation. This could be because procedural instruments were too weak to significantly impact the policy processes within subsystems (cf. Kassim et al., 2013), and/or that commitments and initiatives in general did not proceed beyond discursive levels (cf. Jordan & Lenschow, 2010; Mickwitz & Kivimaa, 2007). This connects to the policy integration framework's assumption that dimensions of policy integration are interconnected; without a shared vision or an administrative culture that stimulates integrated food security approaches, subsystems' efforts will likely remain fragmented and contradictory.

A fifth theoretical contribution involves the provision of a more concrete conceptualization of a metacapability for governing wicked problems. The metacapability forms an important element in the recently developed governance capabilities framework, but so far it has remained unclear what it could look like or entail in practice. For example, would it need to be formally embedded within a governance system, or does it rely on decision-makers' intuition and vision? So far, the literature has not proceeded beyond the point that a metacapability has to do with balancing (resources between) capabilities. Chapters 4 through 6 have brought this discussion further by implicitly and explicitly *conceptualizing the metacapability as a procedural policy instrument* that spans the boundaries of a governance system's subsystems to monitor, coordinate, and, if necessary, intervene in individual policies and processes. This institutionally embedded metacapability is similar to concepts such as 'boundary-spanning policy regimes' (Jochim & May, 2010) or 'central authorities' (Lafferty & Hovden, 2003) and fits within the broader notion of 'meta-governance' (Jessop, 2003). Concretely, such a metacapability could be embedded within inter-departmental taskforces, an ombudsman, or within the cabinets of decision-makers. At the EU level, the Commission's Secretariat-General, the PCD-unit and -coordinators, or a new inter-institutional consultative body similar to the trilogues could potentially fulfil such a role.

Another contribution to the capabilities framework and evaluations of governance systems' ability to govern wicked problems in general is *the inclusion of constraining conditions*. Most existing wicked problem frameworks and approaches focus solely on enabling 'capabilities' (and related enabling constructs) and can therefore not be used to conduct systematic analyses of governance systems' overall capability to govern wicked problems. I have expanded the governance capabilities framework by defining constraining conditions as the absence of skills, repertoires, capacities, commitments, and readiness that enable governing wicked problems or any limitations to these. Major constraints that were found in this study were the limitations that the Commission's limited resources put on its signalling and response capacities, its dependency on the other EU institutions, and the reliance on the prioritizations of individual decision-makers.

Although these constraints largely correspond with previous accounts of traditional governance modes and do not offer very new insights in that respect (e.g., Koppenjan & Klijn, 2004; Roberts, 2000), they need to be included to obtain a comprehensive understanding of a governance system's functioning vis-à-vis wicked problems as well as to carry out interventions to ameliorate this functioning.

7.3   Reflecting backwards: strengths and limitations of the research

7.3.1   Reflecting on the exploratory research design

Recent years have witnessed the relatively rapid development of food (security) policy and governance as a distinct research field within the political sciences. This rapid development of the field is well illustrated by the steady increase of publications on the theme, an increasing number of food policy and governance sections at academic conferences, and the establishment of a food governance research network under the auspices of the European Consortium for Political Research (ECPR). Nevertheless, until now relatively little empirical research had been conducted on existing food security governance arrangements (but see: Duncan, 2015; Oosterveer, 2007; Sonnino, Lozano Torres, & Schneider, 2014) and virtually none about the EU governance of food security. The focus and timing of my dissertation therefore fit in well with the rise of food governance research. This dissertation is one of the first attempts to systematically analyse how governance systems, in this case the European Union, govern food security and the specific challenges associated with it. The virgin territory of EU food security governance was studied by adopting an exploratory research design throughout the dissertation (see section 1.4). Within this exploratory design, the best fitting public governance and policy theories were selected to study the three challenges to the EU governance of food security. Over the course of the research, I experienced that this approach had both advantages and disadvantages.

The exploratory approach allowed me to follow where the research findings led me. It enabled identifying and studying the most pressing governance challenges and theoretical gaps that appeared in the research, in commentaries of the EU governance of food security, and in the emerging literature on food (security) governance. As such, all research chapters have a direct relevance to both EU (and) food security practitioners and academics. At the same time, the choice for such an iterative approach and the lack of a single conceptual framework may attract criticism for being too concept-heavy or incoherent (cf. Evans & Davies, 1999). Moreover, readers may wonder why these research questions were asked and these challenges and gaps were studied and not others. Indeed, many other relevant questions could be thought of. I put forth two

arguments to defend this eclecticism. First, this research was driven by a desire to better understand the EU governance of food security. It is difficult, if not impossible, to adopt an explanatory, evaluative, or other type of research design to study a phenomenon about which so little initial knowledge exists. The exploratory approach adopted instead resulted in better insights into (the challenges of) everyday food security governance (section 7.1). The consequent research directions that are identified in the research chapters and in section 7.4 can be the impetus to following studies, which may adopt a different research design. Second, the research conducted *did* follow a consequential order and thus restrained the exploratory nature. In section 1.4 this was referred to as a *reasoned* exploratory design. The focus successively shifted from the manifestation of food security as a wicked problem, to the general ability (within the Commission) to govern this wickedness, to actual governance shifts in the EU governance of food security.

Chapter 2 showed that it is too soon to speak of food security governance as an established field of research. Instead, it can be considered as an emerging field that is characterized by a wide diversity of schools of thought and conceptual approaches. The consequential lack of a shared set of ontological and epistemological understandings is not strange and has been shown to occur in other emerging academic communities as well (such as that on climate change adaptation: Swart, Biesbroek, & Capela Lourenço, 2014). I contributed to furthering this research field by informing ongoing debates through multiple theoretical lenses and different empirical cases. In doing so, it proved challenging to strike a balance between contributing to the domain of food security and food governance on the one hand and to theoretical debates within the public governance and policy literature on the other within individual research chapters. Eventually, I decided to target half of the chapters to a food governance audience and the other half to a public governance and policy readership. This is not to say that these two are mutually exclusive: the chapters targeted at the food security community also offer valuable theoretical insights, e.g., about the use of consensus frames and policy integration processes, and the theoretical chapters say much about food governance. However, the ambition to contribute to different types of debates required different accentuations. This also shows in (dynamics within) the EU governance of food security being the main object of some chapters, whereas it serves as a case for theoretical investigation in others.

Finally, the choice for multiple methods, both within and between research chapters, contributed to the increased validity of the research conducted. Variety of methods served as a triangulation tool and resulted in drawing balanced conclusions that take different types of knowledge into account. Throughout the research, I have attached much importance to applying methods of data collection and analysis systematically and

transparently. These methods have therefore been extensively discussed in the chapters and associated supplementary materials. A method that particularly deserves mentioning in this respect is the systematic literature review, which strongly shaped my view on how good scientific research ought to be conducted and presented.

7.3.2 Limitations of the research

Throughout the research chapters various methodological limitations were mentioned. Three recurring limitations require further elaboration. First, although the research centres around the EU governance of food security, its primary focus is on the European Commission and, to a lesser extent, the Parliament. Apart from the study on food security frames in the CAP reform debate, the Council has hardly or only indirectly been taken into account. This choice was made for two reasons. First, the Commission is the EU institution that is responsible for initiating, monitoring the implementation of, and overviewing the coherence and consistency of food-security-related policies at the EU level. It is therefore the EU policy arena in which the wickedness inherent to food security governance is most likely to become manifest and to pose challenges to policymakers and their institutional surroundings. A second reason is more practical; the policy process within the Commission and Parliament is relatively much more transparent and accessible for researchers than that within the Council, allowing for more systematic modes of data collection and analysis. Public documents published by the Council are sparse in terms of the information they provide, and it is almost impossible to identify relevant documents and, consequentially, relevant actors and working parties. Although the influence of the Council was to some extent studied through the perspective of the Commission, there is need for studies that further explore the Council's role in food security governance.

A second limitation is that the interviews at the European Commission were only conducted at one moment in time, in spring 2014. As a consequence, statements about the development of capabilities are often based solely on accounts of Commission staff in retrospect. In addition, in spite of repeated attempts, it proved impossible to talk to representatives of the political component of the Commission, i.e. Commissioners and their cabinets. This was largely due to the upcoming elections of the European Parliament in 2014. Although I attempted to partly overcome this inaccessibility by asking directors-general about the political dimension of their work, it implies that the research, particularly the study of the Commission's capabilities, has a slight bias towards the administrative, technocratic component.

The final limitation is that even for the Commission and Parliament, proxies had to be used to study the internal policy process. It proved impossible to attend meetings in which 'real-life policymaking' takes place, e.g., inter-service consultations or meetings with lobbyists. Instead, these were studied through secondary accounts and public documents. Although, as elaborated in the introduction, systematic research methods and triangulation were used to enhance the reliability of data, the question remains of whether ethnographic or participatory research methods would have resulted in different or additional insights.

7.4   Reflecting forward: three directions for future research

Throughout the research chapters of this dissertation, I made various specific suggestions for future research. This section reflects on three overarching directions for further research that follow from the dissertation: (i) comparative studies to study general patterns of stability and change in food security governance, (ii) the operationalization of the governance capabilities framework, and (iii) the 'policy success' of enhanced food security governance approaches.

First, while I have argued that changes of EU governance settings and practices have remained relatively limited in the aftermath of the food price crises, future comparative studies could provide further insights into whether this also applied to other national and international food security governance arrangements. As was shown in the systematic literature review, recent years have witnessed the initiating and reviving of a wide array of governance arrangements, at global, regional and (sub-)national levels, accompanied by new understandings of how food security ought to be governed, e.g., through more coherent and comprehensive approaches. At the same time, not much is known about whether food security governance arrangements have truly incorporated these governance principles or whether they have proceeded beyond discursive levels. Scholars of global food security governance have noted that substantial changes seem limited so far (Alves Zanella & Duncan, 2015), or have even been deliberately obstructed (Clapp & Murphy, 2013). It would be valuable to both the academic community and practitioners to track the advancement of (different forms of) food security governance, particularly also in the light of attempts to pursue the recently adopted Sustainable Development Goals, as well as to explain changes and differences in policy integration adoption patterns. The policy integration framework proposed in chapter 5 would be a good perspective for analyzing such advancements.

Second, future research would need to strengthen the systematic applicability of the governance capabilities framework. The research presented in this dissertation is one

of the first attempts to empirically apply the framework. Whereas the framework provides a more systematic tool for analyzing governance systems' ability to govern food security (and other wicked problems), I have identified various opportunities for further development and fine-tuning throughout the dissertation. A most critical challenge in this respect would be the operationalization of the framework into univocal and measurable indicators that could be used to conduct comparative studies over time and between governance systems. Although the framework's indicators proved adequate for the purposes of this research, they are rather general, possibly resulting in different interpretations and consequent variance in applications of the framework. The latter makes it difficult, if not impossible, to discern broader patterns or identify similarities and differences across cases. To come to such an operationalization, I would recommend a systematic evaluation of empirical applications of the various public governance and policy theories that the framework draws from and synthesizes. Many of the individual components of the framework have already been studied extensively in various governance settings. Determining, synthesizing, and, if necessary, complementing the best methodological practices could result in a more rigorous approach accompanying the framework.

Third and last, it remains an open question of whether and under what conditions further integrated food security approaches, or enhanced governance capabilities for that part, result in better food security outcomes. Despite the widespread assumption that reducing externalities and creating synergies has positive effects on the ground, these impacts have hardly been studied systematically (Jordan & Lenschow, 2010). Part of the reason is that there are significant conceptual and methodological challenges in studying the effects of public policies in general. In addition, various types of policy integration success can be distinguished, e.g., success in terms of process, programs and politics, and actors have different conceptualizations of whether a policy has been successful or not (Bovens, 't Hart, & Peters, 2001; McConnell, 2010). In spite of these constraints, I believe creative conceptual approaches and research designs *could* further the debate about the impacts of integrated (food security) governance approaches. I consider McConnell's (2010) policy success heuristic as a promising way of doing so.

7.5   Policy implications and recommendations

This section sets out the dissertation's main implications and recommendations for EU policymakers involved in the governance of food security. Most of the argument may also be relevant to policymakers and practitioners in different food security governance contexts. The argument consists of two steps. First, I argue that *in principle* there are opportunities for major enhancements of the EU governance of food security. This part

of the argument serves as a spot on the horizon that is worth pursuing. Second, however, given current political and administrative realities, it may be most opportune to strive for '*good enough governance*' and '*clumsy solutions*' in the short term.

7.5.1   A spot on the horizon: opportunities for enhanced EU food security governance

Based on the research presented in this dissertation several rather straightforward recommendations can be made. I will here focus on two types of improvements that directly follow from governance shortcomings or gaps signalled in the research chapters: (i) a strengthening of EU governance capabilities, and (ii) augmented food security policy integration.

First, while the European Commission's capabilities to deal with the wickedness of food security proved to be further developed than expected, there is still room for improvement. This is particularly the case for the capabilities of resilience, responsiveness, and rescaling. Reflexivity is already well developed and would therefore initially require fewer investments. Revitalization was almost fully absent, but one wonders whether it can ever be expected of a highly technocratic institution such as the Commission, which also has to tread lightly towards the other, internally fragmented, EU institutions, to revitalize societal and/or political deadlocks. Table 4.1 provided an overview of several general enabling strategies and conditions that could be pursued to strengthen resilience, responsiveness, and rescaling. Based on the immediate outcomes of the analysis of the Commission, three specific interventions can be identified as the most pressing or desirable. First, investing in *strengthened (human) capacity* would enable the Commission to focus more on small signals, threats, demands, and concerns that are not yet on its radar or that may develop unexpectedly. The EU's support of the UN Agricultural Market Information System (AMIS) is a good recent example in this respect. In general though, this study found that the Commission has to allocate most of its scarce resources to monitoring or responding to already well-known threats and pressures. This leaves the EU exposed to 'unknown-unknowns' (Termeer & van den Brink, 2012; Wintle, Runge, & Bekessy, 2010), regarding both sudden changes to food security's properties and to political forces. Strengthened capacity could reduce this vulnerability, and as such enhance the Commission's resilience and responsiveness. Second, a particularly contributive strengthening of capacity would lie in *increasing redundancy*. Intentional overlap of tasks and jurisdictions can serve as a back-up within the Commission and other EU institutions in terms of signalling externalities, new threats, or particular concerns (cf. Perrow, 1994). An example of such redundancy is the unit 'ACP, South Africa, FAO and G8/G20' in the Commission's DG Agriculture and Rural Development (chapter 4). The creation of more such boundary-units within various directorate-generals could

further enhance the Commission's redundancy. At the same time, more redundancy increases the risk of unclear responsibilities and consequent inertia in decision-making (Termeer et al., 2015a) and would therefore have to be well balanced and accompanied by clear rules or agreements (cf. Pahl-Wostl, 2009). Third, a highly controversial way of enhancing the EU's ability to govern food security more comprehensively would be by pooling the efforts of individual member states at the EU level, i.e. *to rescale food security governance from national to EU policy arenas*. Various member states, such as the Netherlands and the United Kingdom, have allocated relatively many resources to enhancing food security, particularly in developing countries. Pooling these efforts at the EU level could enable a better targeted and more comprehensive allocation of resources as well as an enhanced awareness of changing problem properties and contexts.

Strengthened capabilities are insufficient if they are not actively deployed within the EU's policy subsystems. Chapter 5 sketched various possibilities for increased policy integration across subsystems. At the moment, the EU lacks an *overarching vision or strategy* on how all potentially relevant policy domains and associated subsystems could contribute to food security in the broadest sense. Such a vision would be a major step in aligning subsystems' efforts and enhancing policy coherence between policy goals, at least on paper. This would also imply that *policy domains* that are currently not or hardly involved in the governance of food security, such as those on economic and financial policies, social policy, or health policy, would need to take a seat at the figurative negotiation table. Furthermore, the EU lacks *inter-institutional and inter-sectoral procedural policy instruments* that could monitor subsystems' policy efforts and intervene if they threaten the coherence of the EU's food security strategy. Such procedural instruments could take the shape of an inter-institutional taskforce, inter-service groups, and/or could be embedded within the Commission's Secretariat-General.

The realization of a *European Common Food Policy*, as has been propagated by various commentators and civil society organizations (e.g., Marsden, 2015; Slow Food; Via Campesina et al., 2010), would *not* be the way forward in terms of enhanced policy integration. A Common Food Policy would merge various existing food policies, such as the Common Agricultural Policy and the General Food Law, into a new framework and de facto create a new, more holistic, policy domain. However, one of the essential characteristics of wicked problems is that they lack clear boundaries and therefore largely overlap with other wicked problems. It is very difficult to determine where the wicked problem of food security ends and that of climate change, or social inequality, begins. This is especially the case in the light of new attempts for synergetic approaches, such as climate-smart agriculture (Scherr, Shames, & Friedman, 2012). In this respect, a parallel can be made with a similar discussion within the climate change adaptation community. Whereas some scholars have argued for the development of climate change

adaptation into a new policy domain (Massey & Huitema, 2013), others have pointed at the risk for renewed compartmentalization, albeit at a different level, that this would entail (Adelle et al., 2009). Chapter 5 followed the latter argument in pleading for maintaining individual (food) policy domains and associated subsystems. Instead of establishing a new policy domain, enhanced policy integration would then be realized by synergizing subsystems' food security efforts and by creating coordinative procedural instruments at the governance-system level. Food security would then still be governed in individual subsystems, but the efforts of these would be coordinated centrally and would all contribute to a shared strategy.

7.5.2 Good enough governance and clumsy solutions

Realizing the changes recommended in the previous section would require major political support throughout the EU institutions and consequential high prioritization of food security commitments over a longer course of time. In the current political contexts in which both the EU institutions and the (EU) governance of food security find themselves, such prioritization is not realistic. In times of consecutive economic and political crises and increased Euroscepticism, it is unthinkable that member states would hand over food security competences to the EU level or allocate more financial resources to the EU institutions. Moreover, in times of receding attention to food security, it is improbable that the EU institutions will give much priority to and make major investments in developing overarching food security strategies and substantial procedural policy instruments. This research showed that even when attention and priority to food security was at a higher point in the immediate aftermath of the food price crises, priorities and investments were not significant enough to realize a substantial holistic approach to food security. Most of the recommendations made in the previous section can therefore serve as a long-term strategy, but not as practical short-term advice.

Rather than trying to pursue the most advanced form of policy integration or the best developed governance capabilities, it may be more opportune to first focus on less ambitious but more feasible and therefore potent integration steps and enhancements of capabilities. This does not mean that long-term reforms and interventions should be dismissed altogether, but making explicit that other efforts are initially more essential and feasible helps setting priorities and allocating resources. This recommendation is similar to what scholars have referred to as 'good enough governance' (Grindle, 2004, 2007; Purdon, 2014). Contrary to good governance criteria put forward by international development organizations and donors, good enough governance involves a focus on determining which governance enhancements are essential and which are not, which should come first and which could follow later, which are feasible and which are not

(Grindle, 2004, 2007). Thinking in terms of good enough governance requires being explicit about priorities and trade-offs and focusing on those governance practices and institutions that work rather than on those that do not. This dissertation does not provide univocal answers to exactly *what* governance reforms are most essential or work best from a food security perspective. Further research would need to explore the impacts of specific policy interventions on food security (cf. ibid.), which is a methodological challenge in itself (Engel, Lein, van Helden, & van Seters, 2013; Jordan & Lenschow, 2010). The European Commission has already started such a trajectory by allocating a prominent role to food security in its Policy Coherence for Development approach and individual impact assessments. However, significantly more resources and methodological innovation would be required for these assessments to convincingly inform decision-making; the realization of such resources and innovation would be a first step.

At the same time, it should be recognized that how one perceives and evaluates what works depends on one's (or subsystems') frames and associated interests (McConnell, 2010). New knowledge obtained through impact assessments and other types of studies may lead to shifts in these perceptions but will *alter* uncertainties rather than reduce them (Koppenjan & Klijn, 2004). It may therefore be productive to think about good enough governance in terms of 'clumsy solutions'. Clumsy solutions are policy approaches that recognize the inherent frame conflicts and competing knowledge claims that characterize wicked problems and therefore entail creative and flexible combinations of different social realities (Verweij et al., 2006). Consensus frames like 'food security', 'sustainable food systems' or 'sustainable intensification' could be considered as attempts of offering such clumsy solutions (chapter 3). They try to combine efforts targeted at alleviating the vulnerable position of European farmers, at safeguarding environmental conditions such as soil fertility, at creating a level playing field for developing countries, and at enhancing production and productivity, all at the same time. Although seemingly conflicting in terms of policy coherence or consistency, such clumsy solutions acknowledge that food security spans temporal, spatial, and jurisdictional scales and simultaneously leave space for different types of approaches and underlying rationales. This does not mean that anything goes; although there is no objective truth, some sets of arguments and knowledge claims are more convincing or internally coherent than others. It would therefore still be necessary to make political choices, but these can combine elements of different frames. As such, these kind of sub-optimal approaches not only do justice to the multi-dimensional nature of food security, but they are also more democratic than approaches that consist of only one dominant problem understanding (Verweij et al., 2006). Eventually, good enough governance through clumsy solutions will not solve food insecurity permanently, but EU governance processes and outcomes that are more acceptable and credible to all stakeholders are within reach.

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Supplementary Material A

Belonging to chapter 2 'Food security governance: a systematic literature review'

Content

Part A: search strategy

Part B: inclusion and exclusion criteria

Part C: reference checking

Part D: data extraction matrix

Part A: search strategy

'Food security'	'Governance'	Search terms
'Food insecurity'	'Government' 'Administration' (synonym, although not matching exactly) 'Handling' (idem) 'Management' (idem) 'Stewardship' (idem) 'Superintendence' (idem) 'Policy-making' 'Policy formation'	*governance*; government*; administration*: handling: *management*; stewardship; policy-making; "policy formation"; superintendenc*

When possible, I searched databases for an occurrence of "food (in)security" and (synonyms of) "governance" within a distance of five terms from each other. For Scopus and Web of Science, the search was restricted to titles, abstracts, and keywords of articles.

The exact queries were:

Scopus, performed on June 26, 2013:

(TITLE-ABS-KEY(**"food *security"** W/5 (***governance*** OR **government*** OR **administration*** OR **handling** OR **stewardship** OR **policy-making** OR **"policy formation"** OR **superintendenc***)) OR TITLE(**"food security"** W/5 ***management***) OR ABS(**"food security"** W/5 ***management***)) AND DOCTYPE(**ar**)

Results: 396

(TITLE-ABS-KEY(**"food *security"** W/5 (***governance*** OR **government*** OR **administration*** OR **handling** OR **stewardship** OR **policy-making** OR **"policy formation"** OR **superintendenc***)) OR TITLE(**"food security"** W/5 ***management***) OR ABS(**"food security"** W/5 ***management***)) AND DOCTYPE(**re**)

Results: 65

(TITLE-ABS-KEY(**"food *security"** W/5 (***governance*** OR **government*** OR **administration*** OR **handling** OR **stewardship** OR **policy-making** OR **"policy formation"** OR **superintendenc***)) OR TITLE(**"food security"** W/5 ***management***) OR ABS(**"food security"** W/5 ***management***)) AND DOCTYPE(**ip**)

Results: 6

(TITLE-ABS-KEY(**"food *security"** W/5 (***governance*** OR **government*** OR **administration*** OR **handling** OR **stewardship** OR **policy-making** OR **"policy formation"** OR **superintendenc***)) OR TITLE(**"food security"** W/5 ***management***) OR ABS(**"food security"** W/5 ***management***)) AND DOCTYPE(**cp**)

Results: 57

Because the keyword "management" led to too many irrelevant results, we restricted the combination of "food security" and "management" to the abstracts in Scopus (this was not possible in Web of Science).

Web of Science, performed on June 26, 2013:

(TS=("food *security" NEAR/5 (*governance* OR government* OR administration* OR *management* OR handling OR stewardship OR policy-making OR "policy formation" OR superintendenc*))) AND Document Types=(Article OR Editorial Material OR Proceedings Paper OR Review)

Databases=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH Timespan=All years

Google Scholar, performed on July 5, 2013:

"food security governance"

Part B: Inclusion and exclusion criteria

Inclusion criteria:

1. In English

2. Both empirical and theoretical

3. Papers that reflect on concrete food security governance arrangements, or papers that provide insights into food security governance in general

Exclusion criteria:

1. Language: Not in English

2. Food security: Paper is not about food security, or no part of the paper is about food security

3. Governance: Paper does not reflect on either concrete food security governance arrangements or on food security governance in general.

Part C: reference checking

Publication	Backward (B) or Forward (F) reference checking[25]	Found via	Reason for not showing up in search results
McKeon 2011	B	Clapp, Murphy 2013	Not covered by databases
Duncan & Barling 2012	B	Lang, Barling 2012	Not covered by databases
Margulis 2012	B	Margulis 2013	Book chapter
Drimie, Ruysenaar 2010	B	Pereira, Ruysenaar 2012	Use other terms (institutional arrangements)
Mohamed Salih 2009	B	Pereira, Ruysenaar 2012	Not covered by databases
Sahley et al. 2005	B	Pereira, Ruysenaar 2012	Not covered by databases
Misselhorn et al. 2012	F	Gonzalez 2010	Uses other terms
Jarosz 2011	F	Jarosz 2009	Governance link mainly in full paper (lacking in abstract)

Forward references were checked in both Scopus and Web of Science.

Part D: data extraction matrix

	Author(s)	Focus Level	Locus	Type of FS document	Method	Theoretical orientation	FS governance conceptualization	Argument & Insights in FS Governance	Recommendations
1	Amalric 2001	Global	WFS	Academic article; narrative	None	None	None	Analyses why the World Food Summit of 1996 did not lead to significant outcomes, i.e. an effective food security approach. It argues that this was the case because the WFS has no competence over the global economy (regulation), over national policies, and over national political processes.	Two options are open: to fight for greater influence over national policies internationally (a stronger position of FAO vis-à-vis World Bank and IMF, and engagement in national politics by supporting particular initiatives or stakeholders. The latter is not seen as a very realistic option.
2	Barclay & Epstein 2013	National	Japan	Academic article; narrative	None	Governmentality	None	Explains Japan's approach towards food security using the notion of governmentality, answering the question why Japan supports free trade and trade protection at the same time. Argues that the protection of domestic food production, particularly fisheries, is the result of deeply embedded in ways of thinking about protection of national culture, and social and environmental responsibility, which, in its turn, affect policy. In Japan, discussions of food security are always about self-sufficiency, and it actively frames food security as such internationally. Differences in definitions of food security reflect different policy positions. Applying governmentality highlights how the Japanese approach is entrenched through a range of apparently unrelated institutions and areas as different as whaling and tuna fishing.	A change to the approach could not occur simply through altering policies, or breaking up the entrenched interests. It would involve a fundamental rethinking of government obligations to the population regarding food as a whole and of Japanese diplomacy, thus in popular understandings of the way food production and food security should be

	Author(s)	Focus Level	Locus	Type of FS document	Method	Theoretical orientation	FS governance conceptualization	Argument & Insights in FS Governance	Recommendations
									done.
3	Bastian & Coveney 2011	Regional (sub-national)	South Australia	Academic article, empirical	Interviews	None	None	The article aims to examine realist policy options for the South Australian government to improve food security. It argues that food security policies can better fit to local contexts by drawing on local knowledge. Local stakeholders can 4provide evidence and insight into the f5easibility of implementing certain policy options and strategies and thus increase their effectiveness. The researchers therefore asked local stakeholders what they thought would be realistic policy options. Four categories of policy options are distinguished: 1) policy to create supportive environments, 2) to strengthen community action, 3) to support individual food security, and 4) to improve coordination and capacity for FS. Within these categories 44 policy options are presented.	44 policy options. Use of local knowledge.
4	Behnassi & Yaya 2011	Local, national and global	None	Academic book chapter	None	None		Argues that at root of the failure to effectively reduce hunger the failure of the global food security governance and architecture is a key factor. It is therefore necessary to develop adequate global food governance arrangements from a North-South redistribution perspective, with the active involvement of major stakeholders and support of sound scientific evidence. Food insecurity drivers are complex and play at different levels. Governance arrangements should therefore be set up at local, national and the global level. Weak institutions and lack of effective coordination and participation at all these levels impede the implementation of sound policies. At the global level, a truly representative, action-oriented body with strong political support, a credible scientific basis and financial support is lacking, at national levels, good governance and right to food principles are not promoted. Analyzes the actors, powers and dynamics of the global food governance regime. Notices a shift from a governance regime dominated by powerful states and agriculture corporations to one dominated for most part by corporations, mainly food retail companies, which are increasingly independent from governmental power and control. The regime is fragmented, incoherent, and far removed from daily struggles of hungry. Food security governance should be a domain of governance in its own right.	Improving governance at national level is highest priority. However, global governance remains crucial to address some of the main drivers of food insecurity.
5	Boyd & Wang 2011	Not specified	None	Academic article; narrative	None	None	None	Article is not really about food security governance, but briefly refers to work of Bauer, who argues that good governance could bring about food security, and that famines are often the result of ill-advised government policy. Bauer held that famines are often created or perpetuated by human	

#	Author(s)	Focus Level	Locus	Type of FS document	Method	Theoretical orientation	FS governance conceptualization	Argument & Insights in FS Governance	Recommendations
								beings and governments, rather than natural forces. Illustrated with the example of the two Koreas.	
6	Brownhill & Hickey 2012	National, local	Wote, Kenya	Academic article, empiric	Interviews	None	None	The article presents a study that used key informant interviews of respondents from three interlinked institutions to provide a multi-perspective lens through which Kenya's food security policy barriers could be examined. The assumption is that mobilizing different parties' knowledge results in new syntheses of information, which can be used to enhance policy-making. "Bottom-up" knowledge creation can lead to greater public ownership of policies, and combining sources of knowledge has the potential to provide a deeper, richer and more integrated understanding of the existing institutional and communication factors affecting food security policy outcomes in a range of contexts.	
7	CFS 2012	Global	CFS	Strategic framework	None	None	None	Provides a global strategic framework for food security and nutrition and particularly the position of the CFS within this framework. Framework is not explicitly focused on governance. States that the ambitious reform of the CFS was a way to address the fragmented governance of food security, so that the CFS could come to play its vital role in the area of food security and nutrition, including international coordination. Further argues that (the lack of) governance was/is one of the root causes of hunger: *Lack of good governance to ensure transparency, accountability and rule of law; *Lack of high-level political commitment and prioritization, including failure to fully implement pas pledges and commitments and lack of accountability; *lack of coherence in policy-making within countries, but also globally and regionally; *war, conflict and lack of security; *weak international governance of FS, resulting in fragmented cooperation and financing, dispersion of assistance in large numbers of projects that lack scale to make significant impact and add to high administration costs.	Good governance needed at country level; peace and the rule of law, to provide tenure of assets and a conductive business environment, are essential; foster coordination at national, regional and global level. Good governance requires governments to prioritize strategies, policies, programs, and funding to tackle hunger, and the int. community to coordinate and mobilize meaningful support. A challenge is also to limit the administrative burden of all these partnerships, especially to LDCs.
8	Clapp &	Global	G20	Academic	None	None	None	Analyses the engagement of the G20 with food security	Global governance

	Author(s)	Focus Level	Locus	Type of FS document	Method	Theoretical orientation	FS governance conceptualization	Argument & Insights in FS Governance	Recommendations
	Murphy 2013			article; narrative				issues. Argues that the G20 has shown it's not the most appropriate forum, because: 1) it didn't tackle structural FS problems, 2) it had a chilling effect on other forums (CFS), 3) small and import-dependent countries are not members, 4) its decision-making process, based on consensus, is inappropriate, 5) it lacks expertise, and 6) CSOs have been shut out. Learns that: *Food crisis has various economic dimensions. *Forums affect each other, and can undermine each other. *Forums involve questions of inclusion and exclusion, and thus of legitimacy. *Structural solutions vs. coping measures. *Forums/venues each have a certain range of instruments and jurisdictions. *Not every global organization's involvement in dealing with FS is appropriate or desirable. *There's a call for (and thus a lack of) coordinated action between GOs. *FS can get redefined/reframed in forums. The discourse of forums has an impact on debates elsewhere. *As definitions FS have evolved, the complexity of policy challenges has grown.	of FS should be placed within the UN, above all within the CFS. The G20 should limit its role in FS arena to supporting organizations that are specifically focus on FS, particularly through regulatory reforms.
9	Coleman & Gabler 2002	Global	Multiple	Academic paper; narrative	None	International regimes & Normative-institutional arrangements	None	Shows that biotechnology is surrounded by four normative-institutional arrangements that are organized around distinct general principles, of which one is "world food security and safety". Main part is not about food security governance, but outlines the core principles, norms, and institutions of this arrangement. The 10 principles include, inter alia, that biotechnology is crucial but potentially risky, state sovereignty remains primary in governing, liberalized trade is positive, sustainability, and that GMOs are a threat to biological diversity. The norms are, inter alia, that agriculture should become more productive, health has priority above other things, measures should be science-based, international standards should be harmonized, genetic resources should be available without restriction, measures should have a minimal effect on trade.	
10	Colonnelli & Simon 2013	Global	Multiple	Academic paper; narrative	None	None	Working definition FAO Good Food Security Governance: relates to formal	Provides a historical overview of both the definition of food security and FS governance. There is no authorative body that can take the lead, could be the CFS, although is still in its starting phase. Such a body should be inclusive. Goes further into the development of the CFS and HLPE.	Need for effective and inclusive governance. CFS fulfils requirements. CFS should not avoid addressing

Author(s)	Focus Level	Locus	Type of FS document	Method	Theoretical orientation	FS governance conceptualization	Argument & Insights in FS Governance	Recommendations
						and informal rules and processes through which interests are articulated, and decisions relevant to food security in a country are made, implemented and enforced on behalf of members of a society.	Important test to CFS is represented by the consideration that will be devoted to its guidelines by policy makers and their incidence on the ground.	controversial issues, and aim to have an impact on a wide range of topics, given the multi-sectoral and cross-cutting issues having an impact on FS.
11	Drimie & Ruysenaar 2010	National	South Africa	Academic article; narrative	Documents analysis and interviews	None	None	Examines the disjuncture between South Africa's Integrated Food Security Strategy under the leadership of the National Department of Agriculture and the reality of food security. This disjuncture is demonstrated by two arguments. First, the level of understanding of complexity of food insecurity, its causal factors, preventative measures and its very nature as it occurs in S-A. The second is that the response strategy is inadequate to engage this complexity. The institutional arrangements are insufficient in terms of engaging food insecurity at national and local levels. The article shows the importance of institutional arrangements, coordination of activities, and alignment of sectors at all levels. The institutional arrangements in the design of the IFSS were poorly executed, and had an emphasis on agriculture and productivity as the solution to food security. Coordination lacked, sub-programs were weakly integrated, stakeholders were not involved, and legislation lacked.	Necessary institutional framework needs to be put in place. Requires concerted effort and recognition of issues within wider array of government departments, and elsewhere.
12	Duncan & Barling 2012	Global	CFS	Academic article; narrative	Not specified (interviews ?)	Global governance (neoliberal); civil society participation	None	The widening and strengthening of civil society participation is a trend in (UN) global governance, including FS global governance. Examines the case of the CFS and Civil Society Mechanisms in order to identify challenges/ lessons learned. Further: *CFS shows that changing who is engaged in debate influences mechanisms and structures that are shaping the way food security policy is debated. *Multi-dimensionality *Actors (CSOs) choose platform because of strategic reasons; platform shopping.	Address challenges identified.
14	Edralin,	Local	Municipa	Academic	Survey and	None	None	Analyses the impact of a decentralization of authority and	Although

	Author(s)	Focus Level	Locus	Type of FS document	Method	Theoretical orientation	FS governance conceptualization	Argument & Insights in FS Governance	Recommendations
	Collado 2005		lities in Bulacan Province, the Philippines	article; empirical	interviews			responsibility for food security from the national government to local government units by conducting a survey and interviews among local stakeholders. Argues that decentralization has led to an improvement of local food security. Devolution has empowered local communities to address their own basic needs, and led to greater involvement of local stakeholders	responsibilities have been decentralized, budgets have to a great extent not. Doing this would lead to a better functioning of local governance. Authors provide eight other specific policy recommendations.
13	Edwards 2012	State	Multiple US states	Academic article; empirical	Interviews	Collaborative governance	None	Article examines the collaboration between state agencies and non-profit organizations in tackling domestic food insecurity, using the concept of collaborative governance. It empirically shows that collaboration has increasingly increased and that it goes beyond deliberations. Anti-hunger nonprofits have functioned as co-workers as experts on policy implementation, organizational efficiency and access to services, data managers and analysts and as bridges between government agencies that did not cooperate before. This increased cooperation resulted from a sense of emergency after a 1996 welfare reform, and has now been deeply institutionalized in the administrative philosophy of government. Although the data cannot show whether greater levels of collaboration yields better outcomes, anecdotal evidence seems to support such a claim.	
15	FAO 2009	Global	Multiple	Public communication	Not relevant	Not relevant	Refers to a mechanism that will facilitate debate, convergence of views and coordination of actions to improve food security at global but also at regional and national levels.	The presence of high levels of hunger points to a serious need for reform of global food security governance. A more coherent and effective response is required. Progress has been slowed down because of neglect by governments and a lack of coherence and convergence among policies and programs of countries, donors and other stakeholders. Over last years number of national and regional efforts have been developed, while regional responses promote integration, coherence and consistency of national level efforts. The same is necessary on the global level, including the UN. Greater coherence is still needed to encourage convergence of policies and actions taken by all stakeholders. The reform of the CFS is a first step in this.	Effectiveness can be ensured by greater integration and coordination of reform initiatives horizontally and vertically. A challenge is how to facilitate and accelerate such integration and guarantee that the ongoing reform in practice effectively serves the hungry. Food security policies need to be

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									fully integrated into national development priorities and strategies. The new governance system should be inclusive, considerate of members' views, flexible and able to mobilize political consensus, scientific expertise and financial and other resources as needed.
16	FAO 2010	Global	CFS	News article	None	None	None	News article about the reformed CFS. Sees CFS as the cornerstone of the global governance of agriculture and FS, which, after the reform, can face challenges to FS more effectively.	
17	FAO 2011a	Global - national	None	Background paper workshop	None	None	Defines "good food security governance" as: Food security governance relates to formal and informal rules and processes through which interests are articulated, and decisions relevant to food security in a country are made, implemented and enforced on behalf of members of a society.	Paper explores what (good) food security governance is, and develops a country-level framework for analyzing and integrating governance in food security interventions. Good governance of food security can have a positive effect on twin-track food security programs. The concept of food security governance recently emerged, but even within FAO it is not very clear what it means. Different nomenclatures have been used, such as governance of FS, FS governance or good governance for FS, of which the first two are most used in context global governance. Although these global governance regimes should also comply with a number of good governance principles, the paper primarily develops a framework for the country level. Good food security governance at the country level matters because it forces governments to respond to the needs of the final users and beneficiaries. Nevertheless, food security governance does not stand on its own, and is dependent on general good governance and socio-political contexts at national, regional and global levels. The proposed framework is organized around four stages of the food security policy cycle: policy and legal framework, coordination and coherence, implementation and enforcement, and information, monitoring and evaluation.	

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							These stages can be analyzed using the good governance quality criteria of effectiveness and efficiency, equality and fairness, accountability, responsiveness, transparency, participation, and rule of law. It should be noted that what makes good food security governance is highly contextual. Different mix of governance dimensions and different forms of institutions may be needed across countries.	
18	Global	Multiple	Workshop Report	None	None	Governance for food and nutrition security relates to formal and informal rules and processes through which public and private actors articulate their interests, and decisions for achieving food and nutrition security (at local, national, regional and global level) are made, implemented and sustained.	Follow-up of FAO 2011a, after workshop. Some points it adds: *Regional organizations hold a key place in the reformed FS governance structure as they perform essential functions that guarantee the smooth linkages between global and national levels. These organizations are critical to ensure that polices at national, regional and global level are coherent and adhere to the right to food. *National food security bodies ensure that national responses to food insecurity target the most vulnerable and are well coordinated among stakeholders that bear responsibility for a component of the FS response. *Regarding the language, the workshop considered "governance for FS" more appropriate than "FS governance", as FS is an outcome, not a sector or goal in itself. Food security governance could still be used to refer to the institutions that comprise the governance regime for FS at global level. *Governments and development agencies have to go beyond the recognition that governance matters. It does five recommendations in this respect.	Inter alia: R1: Learn from experiences about which principles are most relevant. R3: work more systematically towards improved governance as a means to achieve improved FS outcomes. R4: participation and inclusion.
19	Global	Multiple	News article	None	None	None	News article about a ministerial meeting. They agreed that continuing food price volatility requires improved global governance of FS. Graziano da Silva: "In this context, it is important to improve governance of FS. In the globalized world we live in, it's not possible to have FS in one country alone. [...] The new global governance system of FS that we are building together, that has the CFS as its cornerstone and AMIS as one of its components, is part of a new world order that needs to emerge." Advances are already made: the reform of the CFS, the most inclusive intergovernmental platform on FS and nutrition, the establishment of the High Level Task Force on Global Food Security, and the creation of the Agricultural Market Information System (AMIS).	
20	Not specified	Syria, but not regarding	Academic article; empiric	Interviews; documents analysis;	None	None	Paper is about seed governance, not so much about food security governance. Has a very small paragraph about "food security and governance", which states that good governance	

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			FS governance		participatory methods			is the most important factor in eradicating food insecurity, and that grand statements about reducing hunger need to be translated into specific actions "on the ground".	
21	Global Forum on Food Security and Nutrition 2011	Global, national, local	Multiple, including CFS	Discussion summary	None	None	None	Paper presents the outcomes of a discussion on global governance for food security, asking the question whether the current arrangements are fit for the job. It was underlined that food security needs a multi-disciplinary approach. Also, because of the spread of responsibilities amongst a number of international organizations that generates overlaps, conflicts and incoherence, a refocusing of roles is needed. Solution should primarily be sought locally, thereby respecting the subsidiarity principle, whereby methods and practices are exchanged. A State approach is essential for realizing this, whereas international support is needed to address factors that occur beyond the control of local and national institutions. The governance system should also ensure that governments adhere to food as a fundamental human right for everyone. The participants called for: *Information by the global governance structures. *Stronger civil society representation. *Assistance to countries in the form of advice, advocacy, and capacity building. *Monitoring of progress and compliance. *Promotion of accountability and sharing of best practices. The reformed CFS has already addressed most of these issues, but still needs to prove its effectiveness. Also, political will must be mobilized at national levels, and, at the international level, a stronger sense of solidarity must emerge.	
22	González 2010	Global	FAO	Academic article; narrative	None	Justification regimes	None	Argues that there have been three wide ranging debates on world FS, each with its own justification regime. These three regimes are the scientific, the political-ideological, and the ethical regime. The FAO does not play a neutral 'scientific' role in these debates, but chooses particular ideologies above others. FAO itself is also characterized by ideological struggle within the organization, whereby it's influenced by the interests of governments, GO's, NGO's and corporations.	
23	Haddad 2011	National	India	Academic article; narrative	None	None	None	Pleads for a national nutrition strategy in India. Argues that stronger governance is needed to effectively address undernutrition. These governance arrangements would need high levels of capacity to invest coherently in reducing undernutrition, need to well-coordinated, should include high levels of accountability and transparency, and should be	See left

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							responsive towards rapidly emerging shocks. Successful governance requires a national nutrition strategy backed by strong national leadership.	
24	Haddad 2012	Not specified	Islamic world	Research paper; empirical	Analysis of Quran texts	None	None	Examines and evaluates the Islamic perspective of FS management by analyzing Quran verses. The Quran states that Moslems in Islamic states or societies conduct their affairs by mutual consultation, and that they should refer matters related to public safety, or the handling or management of fear, to those charged with authority amongst them i.e. the Islamic State leadership. The main responsibility for FS falls thus on the State, which should therefore establish an efficient administrative/ institutional setup. The author proposes an institutional structure to do so.	
25	High Level Task Force on the Global Food Security Crisis 2010	Not specified	None	Updated framework for action	None	None	Good governance for food and nutrition security is fundamentally about national governments prioritizing policies, plans, programs and funding to tackle hunger, malnutrition and food insecurity in the most vulnerable populations, whether it be through humanitarian or development assistance, nationally, bilaterally or multilaterally.	Global governance mechanisms have shown to be fragile. Existing systems of resource mobilization do not respond rapidly, predictably, or adequately enough to the food and nutritional needs of poor people when they are affected by substantial external shocks. Tackling the structural causes of food insecurity calls for convergent policies, strategies and programs that give urgent priority to meeting both long-term needs and emergency requests for food and nutrition security. This requires across-government support, political will, and long-term coordinated actions. The need to strengthen FS governance has now been recognized and is receiving attention at global, regional and country levels. Its reform must build on the best of existing structures. This includes the search of multiple stakeholders for stronger institutions, partnerships and renewed governance. The CFS, which provides the highest level of global governance, can play an important role in this respect.	Foster strategic coordination at national, regional and global level to improve governance, promote better allocation of resources, avoid duplication of efforts and identify response gaps.
26	Jarosz 2009	Global	FAO	Academic article; narrative	None	Political economy	None	Examines the global responses to world hunger through an analysis of the political economy of global governance between 1945 and the present (2008) food crisis. The FAO has been critiqued for being ineffective in addressing food crises. Jarosz argues that this is not solely based upon its	Despite decades-long assertions that only global institutions and organizations can

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							massive bureaucratic structure, but, more importantly, the result of a steady process of erosion of FAO's influence, that come from the tensions within the organization. These tensions are evident in discourses and practices that respond to world hunger, in which two assumptions can be identified. The first is that world trade, the ability to buy food, and productivity is the most effective approach. The second is that reducing world hunger is a collective moral, ethical, and social responsibility, and that people have a right to food. These two conflict with each other, whereby the first is mainly used by grain exporting countries, particularly the West, and the second by grain importing countries. These tensions have led to charges of incoherence and ineffectuality as FAO tacks between these positions.	eliminate world hunger, the analysis demonstrates their inability to do so. The hope lies in social movements that emphasize food sovereignty and food justice.
27	Global	World Bank & FAO	Academic article; empirical	Documents analysis	Scale	None	Explores the changing definitions FS in its relation to scale in global governance. Definitions of FS are multiple, continuously evolving and contested. Over time, the definition has moved from one of national levels of production to a multi-faceted issue involving access, control, governance, poverty, gender, and HRs across geographic scale. The scaled definitions move from an early emphasis at international and national levels, to micro-level focus upon households and gendered individuals, to link individuals and global modalities of governance. In the current debate, different emphasis are laid, as has been set out in Jarosz 2009.	
28	National	Canada	Academic article; narrative	None	None	None	Examines how civil society, particularly Food Secure Canada-Sécurité Alimentaire Canada, can make an impact within the increasingly reregulated policy decision system. In the article, FS and Community FS are subsumed under the term sustainable food systems. The article argues that shifts in decision-making authority and policy instruments (from parliament to government agencies) have profound implications for the future of civil society-federal government relations. In theory both have much to offer each other: creativity, information, on-the-ground successes, legitimacy from CS, and decision-making power, financial resources, and scaling-up capacity from government. In reality it is currently not obvious that either has the will, knowledge, structures, or capacity to work in loose networks of collaboration. The challenge for CSOs is how to get into the policy decision system. An opportunity is to interact more with middle and senior management and less to try influence parliamentarians.	Provision of high-quality info, creativity and analysis is a starting place. Subsequently this cooperation could gradually be institutionalized. For both sectors, embracing regulatory pluralism will likely be essential.

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29	Lang & Barling 2012	Global	Multiple	Academic article; narrative	None	Discourse	None	The paper explores the diversity of perspectives on what is meant by FS, concluding that the core 21st-century task is to create a sustainable food system. It is not primarily about governance, but provides a couple of insights in it. It argues that the policy responses to FS are fractured and contested, as is reflected in the definitional fluidity. The authors identify two encompassing food security discourses, which they term 'old' food security analysis and 'emerging' sustainable food analysis. These discourses conflict with each other. Such fluidity of debate is normal for food policy. The juggling of evidence, interests, challenges and policy responses is inevitably messy.	Policy-makers need to explore, at global, regional, national and local levels of governance, how policy forums could better include ecological and social considerations into a discourse that is still shrouded by neo-Malthusian assumptions that production and demography are the key factors and that the solutions lie in producing more food.
30	MacRae 1999	National	Canada	Academic article; narrative	None	None	None	Agriculture has been successful in terms of production but agricultural and food policy have failed to deliver sustainability and food security. The paper lays out some concerns and makes proposals for the transition to a policy making system that would be better equipped to address the complex problems facing the Canadian food and agriculture system. A viable policy making system must focus on the creation of food security and agricultural sustainability, and built on principles that contradict the current problems: *Integrated responsibilities and activities. *An emphasis on macro-policy *Transdisciplinary policy development *Policy makers are close to the diverse groups affected by problems needing resolution. *Food systems policy. To ensure this the paper proposes the creation of new units at the municipal level, and provincial and federal departments of Food and Food Security, which' functions are worked out in the paper.	See left
31	Makhura 1999	National	South Africa	Academic article; empirical	Practical experience / action research	None	None	Describes the process of developing the Food Security Policy for South Africa. During the process it was recognized that food security is of multi-disciplinary nature, because of which the choice was made to develop the policy through a participatory consultative approach. The negotiations involved meetings and workshops where members and	

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							groups could debate proposals, before reaching compromise. The involvement of experts and (local) stakeholders is seen as key factor in the success of developing the policy. In addition, the political will within various departments was essential.	
32	Maluf 1998	Latin America	Academic article; narrative	None	Development economics	None	Examines the main conditions for achieving economic growth with increasing social equity and with a special focus on FS. Argues that the multi-dimensional character of FS demands special political and institutional requirements, in which government and civil society partners. In addition, intra-governmental, i.e. inter-ministerial, coordination is needed.	
33	Margulis 2011a	Global	Multiple	Research paper; narrative	None	Regime complexes	None	See Margulis 2013 for general argument. *No single international institution responsible for management FS. Responsibility spread among number of IO's, which causes overlap rules and norms (paradigms). Challenge to achieving coherence. *Continuing hunger shows the failure of world food security governance so far. *Rule and norm conflicts are heightened by lack of coordination or coherence at the national level, especially between ministries. Also diversity of state interests represented at institutions within regime complex. *Food security multi-dimensional	States principal actors to mitigate conflict. More effective governance requires mechanisms to promote greater internal policy coherence within states and between multiple international institutions.
34	Margulis 2012	Global	CFS, CFA, G8/G20	Academic book chapter; narrative	None	None	Does not give a definition, but states that global food security governance is constituted by the over a dozen international institutions and numerous regional, non-governmental and private organizations active in the field of FS.	Chapter analyses key, recent institutional developments in global FS governance and particularly focuses on three institutional responses to the 2008 global food crisis, i.e. CFS, CFA and G8/G20. Argues that the architecture of global FS governance has evolved over time along four connected dimensions: 1) An increasing density of international institutions, which occurred through a punctuated pattern, primarily in four key periods; 2) variation in institutional forms, including, more recently, transnational networks of government officials and NGOs; 3) increased awareness of the causes and effects of food security, which has influenced governance practices; 4) diffusion of FS across global governance, resulting in a wider spread of responsibility and disaggregation across many institutions. Argues that the 2008 global food crisis was the catalyst for the development of new governance institutions. CFS, HLTF/CFA and G8/G20 vary significantly in their memberships, mandates and sources of authority and legitimacy. They each claim a central position. Despite sharing policy objectives and engaging in formal, informal and ad hoc	Improving global governance FS requires consensus among all the actors that are involved to be truly effective. Broad-based consensus, cooperation and participation among states and non-state actors is an increasingly accepted global approach to FS.

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							coordination there is considerable contestation among three institutions over direction of global FS governance. These contests cannot be resolved through state consensus alone and the CFA and CFS provide significant scope for non-state actors to exert influence and claim legitimate roles in global FS governance. Global FS governance thus appears to be shifting towards greater pluralism.	
35 Margulis 2013	Global	Multiple	Academic article; narrative	None	Regime complexes	None	There is wide acceptance that global FS governance should be reformed and acknowledged that global scale, drivers, and complexity food insecurity are beyond capacity individual states. Reform drive includes cooperation and coherence across UN system, Bretton Woods, regional bodies, G20. However, the international food security regime has shifted in a regime complex for food security, which has implications for efforts to improve coherence and architecture. Diverging rules and norms across the elemental regimes of agriculture and food, international trade, and human rights concerning the appropriate role of states and markets in addressing food insecurity produced conflict, which makes a coherent approach more difficult. Further learns that: *History has shown that countries have a strong influence on the mandate of GO's. *Overlapping rules may increase both problems and coherence. Regarding the former they can be the source of transnational conflict between states and IO's. *IO's affect each other, and can have a "chilling effect" on each other (WTO). *Regime complexes can produce transnational political conflicts related to actors' perceptions of hierarchy. *Norms can diverge between IO's, between old and new powers, etc. They engender problems of trust among actors. Also positive signals: food insecurity is now a priority issue, and there's increasing cooperation.	Understanding conflict rules and norms.
36 Marzeda-Mlynarska 2011	Multiple	None	Academic paper; narrative	None	Multi-level governance	None	Paper deals with the question whether food security governance can be considered a form of multi-level governance. It concludes that states are not willing to share power in the areas of trade and agriculture, but that there are some examples where multi-level governance does occur. At the same time, the paper argues that food security governance takes place at three levels: global, regional and national. Food security governance is typified as complex, multi-dimensional, and subject to institutional incoherence.	

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37	McKeon 2011	Global	Multiple	Academic paper; narrative	None	None		Provides a historical overview of food security governance, looks at institutions, paradigms and actors and interests. 3 aspects mal-governance: 1) Current architecture fragmented, incoherent, opaque, and unaccountable, 2) it is strongly conditioned by unregulated weight of private sector interests, 3) policies it proposes are inadequate, if not counterproductive. Argues that the food crisis provides a window of opportunity for change. New concepts are now seriously considered. New actors, such as CSO's, who provide the essential link between national and global level. Further: *FS governance increasingly difficult in globalized world: multiple layers decision-making, FS households affected by development from local to global, even nation-states losing control. There is a vacuum in global governance, in absence of an authoritative and inclusive global body. *FS governance has become increasingly complex. Overlapping and contradictory policies and regulations, complicated by unwritten rules and practices not subject to political oversight. *Governance FS is much-contested terrain: multiple actors, paradigms, and power differences. *Frames fighting hunger change over time. *Actors shop between venues/forums. *The food crisis shows systemic failure. *Private vs. public regulation. *National interests vs. global commons. *Important to look at who's on the table in IO's.	Prerequisites better global governance system: set of basic values and principles; inclusive, legitimate, and democratic political process; effectiveness; multi-sectoral and holistic; principle of subsidiarity. Better system cannot be invented at drawing board, but reformed CFS potentially fulfils characteristics. Important to bring CFS to the regions.
38	McKeon 2013	Global	CFS	Academic article; narrative	None	None	None	Article is not really about food security, but about access to land/ land rights. However, it briefly elaborates on global FS governance, stating that the global food crisis revealed a global policy vacuum. In the absence of an authoritative and inclusive body deliberating on food issues, decision-making was being carried out by institutions that did not have FS as their core business as well as by groups of the most powerful nations and private corporations that are not subjected to any political control. A strong confrontation emerged between different approaches to filling the governance gap, illustrated by controversies around the establishment of the HTLF's CFA and the reform of the CFS.	
39	Misselhorn et al. 2012	Multiple	None	Academic article;	None	Food system	None	Reviews current thinking to first identify some challenges facing global food security, and then some key elements that	

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			narrative				might support a successful food system. Argues that food security demands a cross-sector and cross-scale approach. Such an approach could come from institutional participation at the local level, boundary organizations, and governance arrangement that enable adaptation and resilience at multiple scales.	
40 Mohamed Salih 2009	Not specified	None	Academic book chapter; narrative	None	None	Is about the exercise of power within institutional contexts, particularly crafted to direct, control, and regulate activities concerned with food security whereby these institutions are viewed by citizens as legitimate, accountable, and transparent. No clear distinction between food security and food safety.	Analyses governance of food security in the 21st century. Argues that FS governance has been strongly affected by globalization and is entangled with other (security) domains. Food security governance has a low profile compared to other global governance debates, there is no 'good governance' regime in food security yet. Also includes food safety issues in food security governance. Food security governance is part of a broader context, and has linkages with other aspects of society, as a result of which many stakeholders are involved. Poor governance is partly result of two competing definitions of security. Security was for long time predominantly defined as national security, while food security is essentially part of human security, which demands a different approach.	Food security should not be a periodic concern, but an integral part of the overall governance debate. The article pleads for guaranteeing democratic values in FS governance.
41 Orsini, Morin & Young 2013	Global	Not relevant	Academic article, editorial	None	Regime complexes	None	Editorial of issue on regime complexes. Repeatedly refers to Margulis 2013. States that Margulis deals with a fragmented complex, demonstrating that fragmented complexes could be detrimental to governance outcomes. Problem solving is enhanced in a context of regime complexes, even if complex is fragmented, because the existence of a complex means that potential problems are likely to be sorted out.	
42 Paarlberg 2002	National & global	Multiple	IFPRI discussion paper; narrative	None	None	None	Argues that, even in an age of globalization, problems of hunger and food insecurity require a national, not a global focus. Although global initiatives should be supported, the main governance deficits are still at the national level. Global institutions cannot fill these gaps to full extent. National governments should be persuaded to deliver minimal public goods needed at the national level.	National governments should be persuaded to deliver minimal public goods needed at the national level.

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							Learns that: *FS governance is related to public good provision. *Debate about global governance response vs. localization. *Continuing centrality nation-states. *Concept of adequate governance for FS based on public goods provision. Institutions can be judged on this. *Contrary to view that food insecurity in developing countries is related to external forces it argues that most important forces tend to be local or national, rather than global.	It is necessary for the state to adapt its monocentric model to enable it to get involved and ensure that the outcomes are fair for the most vulnerable in society. A shift to adaptive food governance across all actors within the food system needs to happen sooner than later.
43	Pereira & Ruysenaar 2012	National	South Africa	Academic article; narrative	None	Adaptive governance; complex adaptive systems	Mainly refers to food governance, although paper deals exclusively with food security.	Tackling the complexity of FS requires a new form of adaptive governance. The paper provides a review of various conceptions of governance from a monocentric or politicotechnical understanding of governance through to adaptive governance, which is grounded by a critique of the existing institutional structures responsible for FS in South Africa. The current strategy and departments are not sufficiently flexible or coordinated to deal with an issue as multi-scalar and multidisciplinary. Actions taken in the non-governmental sector signal the emergence of a new type of governance, hinting a changing governance structure including collaboration between diverse stakeholders. The state should adapt and get involved in these new forms of governance. Further: *Poor governance exacerbates food insecurity because governments are unable to respond effectively to crises due to poor decision making, limited coordination, weak institutions, and scarce resources as well as the influence of neo-patrimonial politics. *Despite increasing recognition of the need for adaptive governance, we still face the inst. Barriers that plagued earlier state-based responses to food insecurity, grounded in government's culture.	
44	Pérez-Escamilla 2012	National	Brazil	Academic article; narrative	None	EBFSS	Uses the FAO definition: relates to formal and informal rules and processes through which interests are articulated, and decision relevant to FS in a country are made, implemented and	Socially progressive countries like Brazil as well as the FAO and other UN agencies strongly embrace and promote the idea of FS governance. One of the key conditions that must be met for attaining FS governance is the capacity to measure household FS. Without this information it is simply not possible to develop responsive, accountable, and transparent FS governance. The article argues that Experience-based FS Scales (EBFSS) have the potential to assist with evidence-based decision making from the national to the local level, and demonstrates this with the case of Brazil. Further:	

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						enforced on behalf of member of society.	*FS governance is a relatively new concept that builds upon the idea of good governance.	
45 Rocha & Lessa 2010	Urban	Belo Horizonte	Academic article; empirical	Document analysis, interviews	None	None	Argues that Belo Horizonte presents a unique example of urban food security governance in the creation of an alternative food system. The mode of food security governance is different from those being attempted in Europe and North America because it is government-driven. The program entails, inter alia, subsidized food sales, food and nutrition assistance, supply and regulation of food markets, support to urban agriculture and education for food consumption. It's legitimacy is derived from a consistent preoccupation with quality, thereby achieving trust in government's efforts. Other success factors are the competence, expertise, and expediency of government officials as well as the participation of civil society. Its vulnerability lies on the vagaries of political changes. Although some of its features could be reproduced as market-based, decisive public intervention is essential.	
46 Rola 2013	National	Philippines	Academic article; empirical	Literature review	Regime complexes	None	Analyzes the institutional and governance issues that confront agricultural development and food security in the Philippine uplands by examining the literature. Theoretical framework draws on Margulis 2011. Argues that the implementation of FS programs and projects in the Philippines has failed, and that best governance arrangements should be put in practice. These governance arrangements should go beyond single policies, and require understanding of institutional and governance structures and change processes. The paper identified and found out that critical institutional and governance issues have been influenced by Philippine laws, policies and programs. These issues include decentralization and multiplicity of agencies, under-investment, lack of institutional capabilities, weak collective action and security of tenure.	FS stakeholders should craft a Research Development and Extension agenda that directly support achievement of FS challenges by providing knowledge and tools to support a policy and inst. Environment to address a sustainable upland development.
47 Sahley et al. 2005	National	Malawi	Assessment report	Interviews	None	None	Report of a governance and food security assessment of Malawi. Argues that poor governance is not the primary causal factor for food insecurity in Malawi, but can be considered a contributing factors, particularly regarding the limited capacity to implement effective policy and program responses to address vulnerability and meet development challenges. Food security is a politically charged policy issue in Malawi, but despite that, there remains a lack of consensus on the proper course of action. Policy formulation has been	Donors need to recognize that their actions carry political and social consequences, and need to be sensitive to allowing government, private sector interests, and

Author(s)	Focus Level	Locus	Type of FS document	Method	Theoretical orientation	FS governance conceptualization	Argument & Insights in FS Governance	Recommendations
							ad hoc, and resulted in a plethora of policies and programs, sometimes disconnected from and contradictory to each other, spread over central government agencies. The lack of common cause has led to incoherent implementation. There is a lack of clear leadership in the FS policy arena. Given Malawi's traditional reliance on external funding, donors have a big influence. The twists and turns of policy formulation mirrors the ebb and flow of resources as well as international donor trends. Government does not have the capacity to implement policies. This has been filled up by donors, raising sustainability issues. Central level commitment to implementing decentralized local governance has been lackluster.	CS to establish their vision for Malawi. They should stimulate a feeling of ownership among implementers, (local) government actors, and other stakeholders, and, third, contribute to strengthening accountability mechanisms.
48	State	British Columbia, Canada	Academic article; empirical	Interviews, documents, observations	Community Food Security, Lang's food policy triangle, Ritchie & Spencer's categories of applied policy research, regulatory pluralism	None	Analyses the integration of food security policy into Public Health and examines the results within the context of historic and international trends and theoretical models of food policy, community FS, and applied policy research. While Public Health's lead role supported an increase in legitimacy for FS in BC, interviewees described a clash of cultures occurred partly as a result of Public Health's limited FS mandate and top down approach. Consequently civil society voice at the provincial level was marginalized. The paper proposed a new, emerging policy map. Further: *Resolving FS is a clear example where solutions need to be sought at both centralized and decentralized levels. *Inclusion/exclusion of stakeholders. *Within a context of globalization, civil society has an increasing understanding and awareness of the impacts of broader, centralized decision on their personal and community FS. Shrinking governments may increasingly recognize the need to utilize CS capacity in offering programs to fulfil population needs. *Illustrates that agendas are more salient than definitions in the design and implementation of FS initiatives. Further suggests that aligning FS agendas with agendas of other sectors may be helpful in forwarding FS issues. Attention to competing agendas is essential in understanding the key priorities of stakeholders, evaluating initiatives within a broader context, and understanding barriers to achieve FS.	
49	National	None	Academic article; narrative	None	Sustainable livelihoods	None	Argues that FS is now generally recognized as an issue of household access to food rather than national food production levels. This raises issues of how to address this at	

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	Author(s)	Focus Level	Locus	Type of FS document	Method	Theoretical orientation	FS governance conceptualization	Argument & Insights in FS Governance	Recommendations
								the policy level. Too often in the past, FS has been dealt with through project, mainly by FAO and WFP. Few attempts have been made to address household FS in national and international policies in a coherent matter. In developing countries the sub-national level has often been overlooked, capacity in departments/ units has been lacking, and FS has been marginalized to the main sectoral concerns of ministries. A multi-sectoral, holistic approach is needed, which can only be realized by increasing the level of participation of the poor and food insecure in the policy process.	
50	Von Braun 2009	Global	Multiple	Academic article; narrative	None	None	None	Argues that establishing a global governance architecture for governing food, nutrition, and agriculture will be critical for addressing food insecurity. The current architecture has not been able to do this adequately. Global organizations addressing food, agriculture, and related health issues, all serve important functions, but collectively they may now require rethinking and adjustment to meet new and emerging challenges in a comprehensive fashion in the coming decades. The broad outlines of options for change in global governance and coordination of the agricultural system include three potentially complementary options for change: 1) to improve existing institutions and create an umbrella structure for food and agriculture, 2) to form an innovative government network, 3) to expand the current system to explicitly engage the new players in the global food system – the private sector and civil society, including large private foundations – together with national government in new or significantly reorganized international organizations and agreements.	

Supplementary Material B

Belonging to chapter 3 'Disentangling the consensus frame of food security: the case of the EU Common Agricultural Policy reform debate'

Content

Part A: frame matrixes

Part B: frame conflict matrix

Part A: frame matrix

	Reasoning devices					Framing devices (selection)		
	Definition of food security	Problem definition	Solution/ perspective for action	Non-solution	Moral basis	Key Concepts	Verbal devices	Metaphors
Productionist frame	Primarily domestic (European), security of food sources, public goods provision, securing supply	Dependence on imports, climate change, lower incomes, 16 million Europeans receive food aid, price volatility	Strong first pillar, agricultural production, increasing productivity, revenue support, market measures as safety net, safeguard competitiveness, sustainable intensification, same standards imports, agricultural research	Diminishing direct payments, arrangements that lead to less productivity	Europe has a moral duty to ensure food security; food security should not be taken for granted, EU producers have suffered enough	Production, productivity, public goods, innovation, support, uncertainty, volatility, protect, dependency, obstacles, supply	"utmost urgency", "immediate and continual action", "secure food supply since 1962", "demands European citizens", "one billion people starving", "85% self-sufficiency rate", "penalizing sector"	CAP is cornerstone EU food security policy, boomerang effect, strong agricultural sector

	Reasoning devices					Framing devices (selection)		
	Definition of food security	Problem definition	Solution/ perspective for action	Non-solution	Moral basis	Key Concepts	Verbal devices	Metaphors
Environmental frame	Long term, in close relation with environmental and health dimensions	Climate change, weather impacts, diseases, resource inefficiency, degradation ecosystems, industrial livestock production, consumption patterns	Keep land in good condition, sustainable farming, greening measures, better targeting, changing consumption patterns, polluter pays principle	Over-emphasis short term, increasing production	Europe should protect its environmental assets and natural heritage to safeguard food security in the long term	Climate, uncertainty, disasters, sustainability, impacts, ecosystems, biodiversity, natural resources, heritage, consumption, weather, diseases	"Demands European citizens", "in good agricultural and environmental condition", "meaningful environmental commitment", "long term ability", "ambitious and relevant", "critical time", "heritage of environmental assets"	Support well-being society, sustainability is the key

		Reasoning devices				Framing devices (selection)		
	Definition of food security	Problem definition	Solution/ perspective for action	Non-solution	Moral basis	Key Concepts	Verbal devices	Metaphors
Development frame	Global, autonomy or self-sufficiency developing countries	Impact protein imports, lack coherency with development policies, income support has distortive effect, trade liberalization	Eliminate trade-distorting measures, alignment internal and external policies, allow developing countries to protect their markets, policies based on lessons learned from CAP	More detrimental effects, further liberalization	Wider role in the world, obligation to do no harm, responsibility to contribute to global food security	Global, impact, coherency, distorting, alignment, autonomy, responsibility, developing countries, negative consequences	"do-not-harm", "incoherence", "take responsibility"	-

		Reasoning devices				Framing devices (selection)		
		Definition of food security	Problem definition	Solution/ perspective for action	Non-solution	Moral basis	Key Concepts	Verbal devices	Metaphors
Free trade frame		Long-term, global	Trade-distorting measures, negative consequences export subsidies on income of producers in developing countries	Trade, eliminate trade-distorting measures, liberalization is opportunity, innovation, trade agreements, some market measures as emergency tools	Further distorting trade	Access to market should be equal for all, free market leads to optimal food security	Trade, market, liberalization, free, agreements, Distorting, access, global, competitiveness, Doha round, export, supply, competition, R&D, innovation	"trade as opportunity", "free and fair trade", "rational exploitation of own productive potential", "open up markets"	"open approach", "trading blocs", "safety net"

	Reasoning devices					Framing devices (selection)		
	Definition of food security	Problem definition	Solution/ perspective for action	Non-solution	Moral basis	Key Concepts	Verbal devices	Metaphors
Regional frame	Regional, but not self-sufficiency, European	Unfair distribution between farmers and regions, position subsistence farming, people not being able to buy food	Better distribution, redistribution towards new member states, development regions, more efficient use of certain areas	Produce more, regional self-sufficiency, intensification agriculture in fertile areas	Market alone will not compensate farmers in certain regions, regional diversity should be safeguarded and promoted	Region, access, fair, rural, community, redistribute, countryside, local, viable, sustainable, development, identity	21 million, provide added value, territorial cohesion, added value	-

	Reasoning devices						Framing devices (selection)		
	Definition of food security	Problem definition	Solution/ perspective for action	Non-solution	Moral basis		Key Concepts	Verbal devices	Metaphors
Food sovereignty frame	Should be considered as, or replaced by, food sovereignty; both global and regional	Position small farms and rural areas, impact on developing countries and environment, conjunctural crises, import products low cost	Regional food provision, organic farming, local products, regional stocks, agro-ecology, public (but capped) support for active farmers, specific payments small farmers, eliminate export subsidies, constrictions free trade	GMOs, liberalization, relying on food imports and exports, industrial farming	Right to food, CAP should enhance food security by focusing on consumers and farmers, not on agri-industry, solidarity		Organic, local, regional, diversity, multifunctionality, equilibrium, quality, fair	"Demands European citizens", "in good agricultural and environmental condition", "meaningful environmental commitment", "long term ability", "ambitious and relevant", "critical time", "heritage of environmental assets"	Equilibrium regions

Part B: frame conflict matrix

	Food security solutions												
Food security problems and non-solutions	Better targeting	Constrictions free trade	Free trade	Income support	More efficient use of specific areas	Policy coherency	Production/ productivity	Protection markets developing countries	Redistribution subsidies	Regional development	Regional food production	Stocks	Sustainable farming
Ability to buy food													
Climate change													
Consumption patterns													
Dependence on imports													
Diminishing direct payments				X									
Distribution subsidies (unfair)													
Environmental impacts agriculture							?						
GMOs													
Impact agricultural policy and imports on developing countries				X									
Import inexpensive commodities			X										
Income support				X					X				
Increasing production							X						
Industrial production							X						
Intensification							X				X		
Lack coherency with development goals				?									
Liberalization/ Free trade			X										
Position small and subsistence farmers													
Self-sufficiency											?	?	
Trade measures		X						X			X		
Volatility													

Supplementary Material C

Belonging to chapter 4 'The European Commission's ability to deal with wicked problems: an in-depth case study of the governance of food security'

Content

Part A: overview of enabling conditions to deal with wicked problems

Part B: overview respondents

Part A: overview of enabling conditions to deal with wicked problems based on Termeer et al. (2013) and Termeer & Dewulf (2014)

Reflexivity:

Tolerance of ambiguity: noticing and accepting the variety of perspectives through which a problem is approached. Can be enhanced by boundary-spanning organizations or structures between policy sectors or governance levels.

Embedding reflexive activities: the embedding of temporary reflexive arrangements in the broader socio-political context, so that the co-ordination of frame differences also becomes acceptable to others who are not involved in the reflexive activities themselves. Both relevant for within organizations and for the relation between organization and their broader environment.

Process skills: the ability of individuals to stimulate reflexive activities. This can be done by hiring a process manager or facilitator.

Resilience:

Tolerance of uncertainties: a culture that tolerates continuous processes of change in unpredictable directions

Bridging arrangements: bridging arrangements between scientists and policymakers, or between different sector, networks, levels, etc. enable linkages between different types of actors and knowledge, which enhances the system's adaptability.

Flexible institutions: institutional adjustments are often required to mobilize the necessary actors and enable them to adapt quickly. Includes flexible legislation that allows for experiments and tailor-made solutions, decentralizing decision-making authority, and room for self-governance.

Redundancy: the reliability of the systems improves with high levels of redundancy, i.e. through back-up systems.

Improvisation skills: the ability of individuals to improvise when faced with change and surprises.

Responsiveness:

Tolerance of information overload: being capable of monitoring attention and filtering relevant information, for example through corporate communication departments. Should detect issues that will potentially be high on the agenda in the near future.

Be present where the attention is: being present in venues where attention is being produced, such as public debates, press releases, social media.

Parallel structures: dividing system in various subsystems that communicate with different target groups. Can help to cope with variety of audiences, but may also result in compartmentalization.

Political-sensitivity skills: the ability to 'know' when to engage responding to extreme calls for attention and when not. For example through developing response strategies or prepare policy solutions that are feasible and acceptable in case of a media hype. This requires political-sensitivity skills.

Revitalization:

Tolerance of disappointments: ability of actors not to be overwhelmed by disappointments but to try to step out of stagnated patterns and to understand what is going on in terms of interactions patterns.

Readiness to introduce third actors and contents: bringing in someone who is not part of stagnated interaction patterns, and who has a fresh perspective on the process, and is in the position to intervene even in power structures. An alternative is bringing in new ideas and innovative approaches, that were not thought of before.

Postponements of judgments: willingness to postpone disqualifying judgments and conspiracy

narratives, and to tolerate conflicts as vital elements of policy processes.

Intervention skills: ability of individuals to intervene in stagnated interactions and to introduce new perspectives, innovations, etc.

Rescaling:

Openness for multiple scale logics: openness to the scale logics of different perspectives and thus leaving behind scale as a dogmatic concept

Flexible institutions to create and recreate fit: between problem and governance scales.

Tolerance for redundancy and blurred responsibilities: matching existing cross-level interactions in the problem scale with cross-level interactions in the governance scale will often require some redundancy in the system, e.g. in the form of polycentric institutional arrangements, with nested quasi-autonomous decision-making units operating at multiple levels. This requires tolerance for redundancy and blurred responsibilities.

Part B: overview respondents

Directorate-General	Number of respondents	Unit(s) or directorate(s) in which respondents work	Types of respondents
Agriculture and Rural Development (AGRI)	6	A3 ACP, South Africa, FAO and G8/G20	Director (2)
		B2 Analysis of trade and international policies	Head of unit (2)
		C Single CMO, economics and analysis of agricultural markets	Policy officer (2)
		E Economic analysis, perspectives and evaluation; communication	
		E1 Agricultural policy analysis and perspectives	
Development and Cooperation (DEVCO)	5	A1 Development and coherence	Head of sector (1)
		C1 Rural development, food security, nutrition	Policy officer (4)
Energy (ENER)	1	C1 Renewables and CCS Policy	Policy officer (1)
Environment (ENVI)	2	B1 Agriculture, forests and soil	Deputy head of unit (1)
		E2 Sustainability, trade and multilateral agreements	Policy officer (1)
Health and Consumers (SANCO)	1	-	Deputy director general (1)
Humanitarian Aid and Civil Protection (ECHO)	1	A4 Specific thematic policies	Policy officer (1)
Maritime Affairs and Fisheries (MARE)	1	B3 Bilateral agreements and fisheries control in international waters	Policy officer (1)
Secretariat-General (SEC-GEN)	1	D3 Resource efficiency	Policy officer (1)
Trade (TRADE)	2	D3 Agriculture, fisheries, sanitary and phytosanitary market access, biotechnology	Head of unit (1)
		F1 WTO coordination, OECD, export credits and dual use	Policy officer (1)

Supplementary Material D

Belonging to chapter 6 'Policy integration in the EU governance of food security: do actions speak louder than words?'

Content

Part A: data search strategies

Part B: data matrixes and figures

Part A: data search strategies

Search strategies				
Dimension	Database	Type(s) of document(s)	Search terms	Additional info
Cultures of beliefs	Press releases database RAPID (http://europa.eu/rapid/search.htm)	European Commission – speeches	Food security, food insecurity, hunger, malnutrition	-
Subsystem involvement	EP search engine (http://www.europarl.europa.eu/plenary/en/texts-submitted.html)	EP parliamentary reports	Food security, food insecurity, hunger, malnutrition	-
	Eur-Lex (http://eur-lex.europa.eu/advanced-search-form.html)	COM- and JOIN-documents	Food security, food insecurity, hunger, malnutrition	Selected 'European Commission' for the category 'author'
Policy goals and instruments	Eur-Lex	Regulations, directives, decisions	Food security, food insecurity, hunger, malnutrition	-
	Eur-Lex	COM- and JOIN-documents (see subsystem involvement)	Food security, food insecurity, hunger, malnutrition	-

Part B: data matrixes and figures

This Supplementary Material presents the aggregate of source data that were used for our analysis. The data is presented per dimension of policy integration. Section 1a presents the references of European Commissioners to food security and synonyms in their speeches. Section 1b shows the insights into cultures of beliefs from the interview data. Section 2 provides an overview of all legislation and policies that have food security as a policy goal as well as how notions of coherence and coordination are embedded within these. Section 3 elaborates food security instruments found in hard and soft legislation and internal procedural instruments that were mentioned in interviews. The data figures for the dimension of subsystem involvement is presented in the chapter itself.

1a Cultures of beliefs: attention to food security in Commissioners' speeches

Table 1 Attention to food security in Commissioners' speeches

DG	Commissioner (period)	Number of speeches in which they referred to FS or synonym	Main context of use
Presidency	Prodi (00-04)	5	Important policy goal; EU action
	Barroso (04-14)	48 (of which 20 from 05-09 and 28 from 10-14)	Important policy goal; EU action; cooperation with international organizations
Development cooperation and Humanitarian Aid/ International Cooperation and Development/ International Cooperation, Humanitarian Aid and Crisis Response/ Humanitarian Aid and Civil Liberties	Nielson (00-04)	29	Important policy goal; coherence with other policies; EU action; improved coordination within Commission
	Michel (04-09)	8	Important policy goal
	De Gucht (09-10)	2	Important policy goal; EU action; link humanitarian aid and development aid
	Piebalgs (10-14)	19	Important policy goal; EU action; link humanitarian aid and development aid
	Georgieva (10-14)	21	Important policy goal; EU action; link humanitarian aid and development aid; cooperation with international organizations
Agriculture and Fisheries/ Agriculture and Rural Development/ Maritime Affairs and Fisheries	Fischler (00-04)	28	Multifunctionality agriculture; CAP; special treatment FS in trade negotiations; coherence trade and aid
	Fischer Boel (04-09)	28	Multifunctionality agriculture; CAP; Health Check; cooperation with international organizations
	Borg (04-10)	2	Fisheries
	Cioloş (10-14)	12	CAP; Trade; special treatment FS in trade negotiations
	Damanaki (10-14)	3	
	Hogan (14)	1	Coherence FS and climate change objectives
Science and Research/ Research, Innovation and Science	Potočnik (04-10)	6	Scientific cooperation; innovation; research calls
	Geoghegan-Quinn (10-14)	55	Horizon2020; societal challenges for research
Trade	Lamy (00-04)	15	Multifunctionality agriculture; special treatment FS in trade negotiations
	Mandelson (04-08)	3	
	Ashton (08-09)	1	Multifunctionality agriculture
	De Gucht (10-14)	3	Special treatment FS in trade negotiations
			Special treatment FS in trade negotiations
Environment	Wallström (00-04)	3	
	Dimas (04-10)	3	
	Potočnik (10-14)	21	(Sustainable) agriculture; biodiversity; Rio+20
External Relations/ External Relations and Neighborhood Policy/ High Commissioner	Patten (00-04)	11	EU action
	Ferrero-Waldner (04-09)	9	EU action ; important policy goal
	Ashton (09-14)	4	EU action
Inter-Institutional Relations and Communications Strategy/ Inter-Institutional Relations and Administration	Wallström (04-09)	8	
	Šefčovič (10-14)	1	
Health and Consumer Protection/ Health/ Health and Consumer Policy	Byrne (00-04)	5	
	Vassiliou (08-10)	1	
	Dalli (10-12)	3	
Enlargement	Verheugen (00-04)	1	
Employment and Social Affairs	Diamantopoulou (00-04)	3	
Climate Action	Hedegaard (10-14)	1	
Regional Policy	Hübner (04-09)	1	EU action
Energy	Piebalgs (04-10)	3	Biofuels should not harm food security

1b Cultures of beliefs: synthesis of insights from interviews with Commission officials

Table 2 Synthesis of coding interviews with Commission officials for views on cross-cuttingness of (governance of) food security

Category/Domain/policy	Insights	Respondent nr.[26]
Agriculture/CAP	Ciolos jumped on FS after food price crises	15
	Already under Fischer Boel, Food Facility was set up together with DG Development, now international dimension institutionalized in unit	11
	Reflection of fear after crisis	5
	CAP priority of PCD	2, 11, 12
	Awareness that agriculture can play a role	7, 13
	Different visions on what food security means in context CAP/Agriculture	5
	FS one of initial objectives CAP, after that reorientation	7
	Looked at externalities, no more direct negative impact on developing countries	7
	Also FS from an EU perspective on agenda: stability, access, availability, nutrition	16
	Longer term: sustainability, greening	20
	CAP has different objective/ priority, but recognize that they can contribute to food security. DG Agri very active.	7
	Tensions, but in general good cooperation and similar ideas	11

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[26] Each number represents a respondent. Due to an agreement of anonymity with respondents the full names are not given.

Biofuels	DG Energy considers externalities existing legislation	1, 7
	Before crises biofuels were solution to all kinds problems, now other extreme	1
Fisheries/ CFP	Priority PCD	2
	Food security element that was not there in past, e.g. certain share to local populations	13
	Sustainability/ long-term	20
	Fisheries was for long term ignored in development/ fs policy, now more attention. More expertise in DEVCO, and more attention to FS in MARE, though still with only few persons, no unit.	3
Environmental concerns	Integration of environmental concerns in other policies, such as CAP, to guarantee long-term food security	19, 20, 21
	International for a: sustainable development goals	21
	Environment tends to be more holistic	21
Food price crises triggered awareness	In general	7, 11
	In case of biofuels, agriculture	1, 11, 15, 16, 18
	In trade already before 2008 concern	17
	Resulted in awareness of inter-connectedness, need to address in more comprehensive way	7
Food safety	Cannot speak about food safety without FS considerations. Started to think about it in DG SANCO	10
Humanitarian Aid	DGs ECHO and DEVCO close to each other in terms ideas. Thinking about aligning short- and long-term, resilience	2, 8
	From food aid to food assistance, more holistic, multi-sector	8
Research	Horizon2020 food security	9
	FP7 projects	16
Sec-Gen	Keeps overview, coherence with overall goals	20
Trade	Priority PCD	2
	Big issue in WTO, EU very open to these concerns	4, 11, 15, 17
	Already before food price crises	17

2 Policy goals: overview of policies and programs that have food security as a policy goal and of embedded coherence

	2000	2001	2002	2003	2004
Hard law					
Regulation on food-aid policy, food-aid management and special operations in support of food security					
Regulation financing instrument for development cooperation					
Cooperation with ACP and OCT/EDF	Cotonou				
Food Facility					
Policy Coherence for Development					
Distribution of food to most deprived persons in the Union					
International Treaties (in effect)					1
Ban import fish					
Cooperation Agreements					Tajikistan
Fishing agreement with Guinea					
Research framework					
Common Fisheries Policy					
Environment Action Programme					
Position multilateral trade negotiations					
Soft law					
Guidelines and policies Development		4	5	6	
Environmental guidelines and policies					
COMs CAP					
COMs neigbourhood policy					
Research policy					

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| 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |

Revised Cotonou

Revised Cotonou

2

3

Algeria

EPA Cariforum

7

8

9

COM Agenda for Change

COM Plant Health Regime

12

COM CAP

13

14

2011	2012	2013	2014

			Regulation 2014-2020

			New regulation
3	Food Assistance Convention		

	Vietnam; Mongolia		Greenland; ECOWAS & WAEMU

			Horizon2020 & JRC
		WTO	

COM Agenda for Change	COM Resilience	10	11
12			
13	13	13	
14			15
			16

1 = International Treaty on Plant Genetic Resources for Food and Agriculture

2 = Nagoya Protocol on Access to Genetic Resources

3 = Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing

4 = COM on partnership with UN in Development and Humanitarian Affairs; COM on use of ICTs in development policy

5 = COM on water management in developing countries; COM on rural development and sustainable management natural resources in developing countries

6 = COM on climate change in context development cooperation; COM on Global Monitoring for the Environment and Security (GMES)

7 = COM thematic strategy for food security; COM framework country strategy papers; COM regional policy partnership for Horn of Africa

8 = COM Tackling the challenge of rising food prices

9 = COM food security framework; COM Humanitarian food assistance; COM EU role in global health

10 = COM Enhancing Maternal and Child Nutrition in External Assistance; COM Comprehensive EU approach to Syrian crisis

11 = COM Water and Sanitation; COM A decent life for all

12 = Report implementation Soil Strategy; COM bioeconomy strategy

13 = Proposals regulation CAP

14 = COM A new response to a changing neighbourhood

15 = COM ENP for Agriculture and Rural Development

16 = COM indicating scientific cooperation with Australia and NZ

Figure 1 Overview of policies and programs that have food security as policy goal

Table 3 Coherence and policy linkages engrained in legislation

Year	Type of legislation	Remarks on coherence and coordination of goals:
2000	Hard law (regulations, directives, decisions)	
	Soft law (COM documents)	- Coherence and consistency aid instruments - Policy coherence - Attuning FS and food aid policies
2001	Hard law	
	Soft law	
2002	Hard law	
	Soft law	- Attuning FS and food aid policies
2003	Hard law	
	Soft law	
2004	Hard law	
	Soft law	- Linkage with energy
2005	Hard law	
	Soft law	
2006	Hard law	
	Soft law	- Biomass
2007	Hard law	
	Soft law	- Attuning FS and humanitarian aid - Biofuels - PCD
2008	Hard law	
	Soft law	- Biofuels
2009	Hard law	
	Soft law	
2010	Hard law	
	Soft law	- Attuning FS and humanitarian assistance - Linking health and nutrition
2011	Hard law	
	Soft law	- Lisbon Treaty: take development cooperation objectives into account in all policies - Coordination with Joint Programming Initiative Agriculture, Food Security and Climate Change - Aligning pre-accession assistance innovation, research, ICTs - Linking human rights, democracy and development
2012	Hard law	
	Soft law	- Interlinkage trade and food security - Reconciling use biomass with food security
2013	Hard law	
	Soft law	- Link animal health and FS - Reconciliation biomass and food security - Trade in line with FS
2014	Hard law	- Reconciliation biomass and food security
	Soft law	- Linkage with water

3 Policy instruments: overview of food security policy instruments

	2000	2001	2002	2003	2004	2005
Food assistance		1				
Food Facility						
Instrument for Stability/ Instrument contributing to stability and peace (B)	Rapid response mechanism, no references to FS ←					
Food security programme		1				
Financing instrument for development cooperation						
European Development Fund	Cotonou: 9th EDF					
Technical Centre for Agriculture and Rural Cooperation	Cotonou					Revised Cotonou
Special Representative to AU						
PCD	Coherence hardly institutionalized ←					5
TACIS						
MEDA						
ENPI/ ENI						
Economic cooperation (except ACP & OCT)				Tajikistan		
Food distribution programme for most deprived						
Research calls and funding						
International scientific cooperation		7				
JRC actions						
GMES/ Copernicus						
Fixing export refunds	Cotonou					Revised Cotonou
Exemption clauses trade agreements						
Ban import fish						————
Fishing agreement						
System for conservation and multilateral access plant genetic resources					12	
Commission tasked with monitoring impacts biofuels						
KIC Food4Future						⟫⟫

2006	2007	2008	2009	2010	2011	2012
				2		
	3					
	10th EDF					
				Revised Cotonou		
					Agenda for Change	
				6		
	8					
	8					
				Revised Cotonou		
		CARIFORUM	9			

→ Continue

						11

⫸

2013   2014

	B

	4
	11th EDF

	Greenland
	Horizon2020

10	

1 = Alignment of food aid and food security regulation with Food Aid Convention; suspension of food aid to Haiti

2 = Humanitarian Food Assistance Policy

3 = Food Security Thematic Programme

4 = DCI 2014-2020, food security part of Global Public Goods and Challenges programme

5 = EU Consensus on Development

6 = Joint Programming Initiatives under 7th Framework; call on water and food security in Africa

7 = Embedded within European Research Area (02-06)

8 = 7th Framework Programme

9 = In EPA's with Ivory Coast, Central Africa Party and SADC and in IPA with pacific states; regulation allowing for public stockholding for food security purposes

10 = Position at WTO negotiation: food security exemption clauses should be allowed

11 = Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean: food security one of criteria that determines participation in fishing

12 = International Treaty on Plant Genetic Resources

Figure 2 Overview of food security policy instruments

Table 4 Synthesis of coding interviews with Commission officials for views on internal procedural instruments

Instrument	Insights	Respondent(s) nr.
Foresights	Food safety foresight, including food security considerations. Developing scenarios	10
	Foresight JRC on global food security	16
	Are generally done in collaboration with other DGs	
PCD	Mostly do-no-harm, but attempt to also use for synergies. Positive narrative can bring PCD further. However, capacity problems.	2
	More positive responsiveness	7
	Screening and work program	2, 7
	PCD inter-service group	2
	Relatively new policy, implementation has been quite long, requires cultural change	2
	Mostly do-no-harm, also synergies, need positive narrative	2
	Informal inter-service group, e.g. around Indian Ocean	3
	Obligatory for DGs	6, 16
Impact assessment	Biofuels	1
	Constant struggle to reinforce control of development analysis in IAs	2
	PCD uses IAs to emphasize development concerns, fs	2
	PCD assists other DGs with IAs, create awareness	2
	Trying to fight that what can't be measured doesn't exist	2
	CAP: 20 DGs involved	5, 13, 7
	Proposed to enlarge IA to impacts on third countries.	7
	Horizon2020	9
	IAs used to present supportive data by various DGs	16, 18
Inter-service consultation	Biofuels	1
	Used to raise concerns of other domains	
	Relatively many inter-service contacts in Commission compared to other administrations	2
	Pushing other DGs to include development, happening more	2
	CAP	7, 11, 16, 19
	Trade	15, 17
	SG keeps overview, checks for coherence with overall goals	20
JRC	Doing foresights	6, 16, 10

Mobility	Good for awareness and exchange expertise, e.g. fisheries	2, 3
Research focus areas	DGs engaged in setting up research focus areas, bring themes together, e.g. societal challenge 2 in Horizon2020 together with Agri	9
Units	DG Agri has concerns institutionalized in unit	11
	MARE not, though would be wish for future	3

Summary

Food security concerns have made a revival in European Union (EU) governance since the 2007-8 and 2010 world food price crises. This revival has manifested itself through the pervasiveness of food security arguments in a broad range of policy debates as well as through calls for strengthened policy coherence and coordination. This dissertation explores **how the EU governs the wicked problem of food security**. Contrary to the dominant perspective among EU policymakers and within the food security literature that food (in)security is a complex but ultimately soluble problem, characterizing food security as wicked implies that there are no definite solutions. Instead, formulating the problem *is* the problem and today's problem perceptions arise as the result of attempts to solve yesterday's. This wickedness follows from the simultaneous occurrence of high complexity and uncertainty, frame controversies, stagnated interaction patterns, and cross-scale dynamics. Consequently, food security relies on elusive political judgment and can only be temporarily resolved or settled. Recognizing the wicked problem nature of food security poses specific challenges to its governance. At the same time, both the EU governance of food security and the EU governance of wicked problems have hardly been studied systematically. By combining initial empirical observations with theoretical gaps and expectations, I have identified three critical challenges to the EU governance of food security: (i) the difficulty of defining the problem of food security; (ii) the European Commission's alleged incapability of governing wicked problems; and (iii) the problem of overcoming policy incoherence and inconsistencies vis-à-vis food security in the stovepiped EU governance system. The central question of how the EU governs the wicked problem of food security is addressed by three research questions that each cover one of these governance challenges. These questions are preceded by a question about the current state of knowledge about governing the wicked problem of food security:

1. What insights does the existing body of food security governance literature provide about governing the wicked problem of food security?

2. Which food security frames can be distinguished in EU policymaking and how do the EU institutions deal with this diversity?

3. What conditions enable or constrain the European Commission in coping with the wicked problem of food security?

4. To what extent has the EU realized a shift towards strengthened policy integration in the governance of food security?

These questions are addressed by following a reasoned exploratory research design; the dissertation aims to explore the virgin territory of EU food security governance but does

so by selecting the most relevant public governance and policy theories to answer the research questions. Multiple methods were used to obtain complementary insights and to ensure the validity of findings. The dissertation consists of five publications that both empirically investigate the EU governance of food security and, while doing so, also contribute to theoretical debates and provide practical recommendations.

Chapter 2 addresses the question of what food security governance entails and what insights the state-of-the-art provides into the wicked characteristics of governing food security. Because I found the emerging literature on food security governance to be rather fragmented, I undertook a systematic literature review of both grey and academic literature. The chapter presents the synthesis of this review along seven recurring themes: (i) the view of governance as both a challenge and a solution to food security; (ii) a governability that is characterized by high degrees of complexity; (iii) failures of the current institutional architectures; (iv) the arrival of new players at the forefront; (v) calls for coherence and coordination across multiple scales; (vi) variation and conflict of ideas; and (vii) calls for the allocation of sufficient resources and the integration of democratic values in food security governance. These seven themes are critically discussed along two lines. First, I argue that the literature is characterized by a dominant problem-solving governance perspective. The chapter suggests the inclusion of a wider array of governance perspectives to obtain a more refined understanding of food security governance changes and political struggles over time. A second argument is that it would be a valuable addition to the literature to approach food security as a wicked problem. The seven recurring themes all touch upon characteristics of wicked problems; explicitly acknowledging this wicked problem nature could help to include alternative governance understandings as well as to develop more appropriate policy recommendations.

Chapter 3 addresses the question of what food security frames can be distinguished in EU policy debates as well as how the EU institutions themselves deal with such frame diversity. The central theoretical expectation in the chapter is that food security serves as a consensus frame behind which considerable dissensus lies hidden. The chapter presents the results of a qualitative content analysis of EU, stakeholder, and media texts covering the reform round of the Common Agricultural Policy (CAP) post-2013, in which food security arguments were observed to be particularly pervasive. This content analysis was complemented by observations during four practitioner conferences. The analysis shows that, although virtually the whole array of stakeholders involved in the CAP reform debate deployed food security arguments, these fundamentally conflicted in terms of food security understandings, problem definitions, and proposed solutions. A total of six food security sub-frames were identified, which were referred to as: (i) the productionist frame; (ii) the environmental frame; (iii) the development frame; (iv) the free trade frame; (v) the regional frame; and (vi) the food sovereignty frame. Each of these frames

was found to be supported by a specific group of actors, whereby the productionist frame and, to a lesser extent, the environmental frame proved most dominant. European Parliament groups and member states could also be linked to particular frames. On the other hand, the European Commission simultaneously invoked different frames in its communications. The chapter makes the argument that the Commission strategically maintained the fractured consensus surrounding food security to find resonance among a broad range of diverging stakeholders. This served to strengthen the support for and legitimacy of its proposals for a new CAP.

The fourth chapter presents the findings of a study of the European Commission's potential abilities and constraints for governing wicked problems; the EU governance of food security served as a single-n case study of this issue. The EU governance literature provides mixed views about the Commission's ability to deal with wicked problems; whereas the dominant image is that the Commission's rigid jurisdictions, compartmentalization, limited resources, and dependence on the other EU institutions render the Commission incapable of addressing wicked problems, more recent findings nuance this image by pointing at the role of informal networks. Based on an extensive interview round at the Commission, the chapter analyzes to what extent the Commission possesses the capabilities of reflexivity, resilience, responsiveness, revitalization, and rescaling, each of which consists of particular sets of skills, repertoires, capacities, commitments, and readiness. The findings give rise to a further nuancing of the Commission's ability to govern wicked problems; the Commission performs relatively well regarding its reflexivity and, to a bit lesser extent, resilience, responsiveness, and rescaling capabilities in the governance of food security. Revitalization is the only capability that the Commission does not score well on. Whereas the analysis confirms some of the earlier critiques by identifying serious constraints, its relatively good performance follows from the occurrence of various enabling conditions that were previously overlooked or underestimated, most notably inter-service and inter-institutional procedures and structures, boundary arrangements, and a widespread tolerance of frame conflicts, uncertainty, and cross-scale dynamics. At the same time, the chapter argues that these enabling conditions as well as the overarching capabilities are precarious due to the lack of a meta-capability, i.e. a form of meta-governance that functions to balance (resources between) the capabilities. Additionally, the dependence on the other EU institutions leaves open the question of whether the EU polity as a whole is as capable of governing wicked problems as the Commission. As a result of these two points, the EU remains vulnerable vis-à-vis the wicked characteristics of food security.

Chapters 5 and 6 together answer the question of the extent to which the EU has realized a shift towards strengthened policy integration in the governance of food security. Chapter 5 proposes a conceptual framework to study shifts of policy integration

within a governance system over time; chapter 6 presents the findings of the framework's application to the EU governance of food security. The framework differs from existing approaches to policy integration and coordination in that it conceptualizes policy integration as an inherently asynchronous and multi-faceted process, rather than a mere desired principle or outcome of policymaking. The framework distinguishes four dimensions of integration: (i) cultures of beliefs; (ii) subsystem involvement; (iii) policy goals; and (iv) policy instruments. These dimensions do not necessarily develop in a concerted manner but may move at different paces or even in opposing directions. Applying the framework helps to better understand how policy integration vis-à-vis a cross-cutting policy problem develops over time, and as such, it enables to hold decision-makers responsible for the political promises they made.

The application of the framework results in a mixed view of the development of policy integration in the EU governance of food security in the aftermath of the 2007-8 and 2010 food price crises. Chapter 6 shows that, on the one hand, food security concerns became embedded within a wider array of the Commission's and European Parliament's subsystems, food security goals diversified, and various policy instruments were introduced or expanded. However, considerable differences exist between policy domains, particularly regarding the amount of new or expanded policy instruments deployed to actively address food security, most of which remained restricted to the 'traditional' domains of development cooperation and humanitarian aid. In addition, food security goals were often embedded only within soft law and did not recur in final legislation. This was the case of the reforms of the CAP and the Common Fisheries Policy. The chapter concludes that policy integration into the EU governance of food security did 'not really' proceed beyond discursive levels and elucidates various blind spots and opportunities for strengthened policy integration. At the same time, I argue that the most advanced forms of policy integration may not be feasible or opportune in the current political context of the EU governance of food security; it may actually be more productive to strive for the optimization of lower levels of policy integration.

Chapter 7 synthesizes the outcomes of the five chapters into an overarching conclusion. I argue that although the EU seems relatively capable of coping with frame diversity and the Commission possesses latent abilities to govern the wicked problem of food security, the lack of substantial policy integration suggests that actual changes in the EU governance of food security have remained very limited. This finding suggests that, whereas in some domains genuine food security concerns prevailed, in other domains food security frames were primarily used to find support or legitimization for existing policy processes or preferences. The EU governance of food security has thus been subject to relatively high degrees of symbolic policymaking, although it should be noted that in the domains of development cooperation and humanitarian aid substantial efforts *were*

initiated. Consequently, the renaissance of food security concerns in EU governance does not seem to have resulted in a more comprehensive or holistic EU food security approach. Instead, a 'mere' upscaling of traditional policy instruments has occurred. It is doubtful whether major governance changes are realistic in the short-term. Whereas the chapter provides various suggestions for strengthened capabilities and increased policy integration that can be used as a long-term vision for the EU governance of food security, realizing such ameliorations is probably unfeasible in times of increased Euroscepticism, sparse resources, and declining attention to food security. I therefore argue that it may be more opportune to strive for good-enough governance of food security, i.e. to focus on those interventions that work and are feasible instead of on those that are not. Because what works also depends on one's frames and associated interests, it may be productive to think about good-enough governance in terms of clumsy solutions. Clumsy solutions to food security entail creative and flexible combinations of EU policy efforts that are seemingly incoherent and inconsistent but that do more justice to the different rationales, complexities, and uncertainties underlying the wicked problem of food security. Such policy approaches will not permanently solve food insecurity, but may be more acceptable and credible to all stakeholders involved in the EU governance of food security.

Curriculum Vitae

Jeroen Candel was born in Oosterhout (NB), the Netherlands, on 3 September 1989 and grew up in the nearby town of Dongen. After finishing secondary school, Sint-Oelbert gymnasium in Oosterhout (*cum laude)*, he obtained his Bachelor of Arts in Public Administration and Organizational Science at the Utrecht School of Governance of Utrecht University, the Netherlands, in 2010. He completed his Master of Arts in Public Governance at the same institute in 2011 (*cum laude*). His master thesis concentrated on the European attitude of Dutch police officers in border regions, for which he worked as a research intern at a national police service (voorziening tot samenwerking Politie Nederland, vtsPN).

Jeroen started his PhD research at the Public Administration and Policy group of Wageningen University, the Netherlands, in February 2012. During his PhD trajectory he stayed as a guest PhD candidate at the Antwerp Centre for Institutions and Multilevel Politics (ACIM) of the University of Antwerp, Belgium, for four months in 2014. Beside his PhD research on the European Union governance of food security, he was involved in research consultancy assignments about food security and food wastage policies for the Netherlands Ministry of Economic Affairs (EZ) and the Food & Business Knowledge Platform. In addition, he was chair of the Wageningen PhD Council (WPC) and has coordinated and taught Bachelor and Master courses on public governance and European Union politics. Jeroen is still active as a volunteer at the food bank of Wageningen and as a participant of the Route66 talent program of the Dutch social-liberal party D66. He will continue to teach and do research on public administration and policy, with a specific focus on food governance, at the Public Administration and Policy group of Wageningen University.

Refereed journal publications

Candel, J.J.L., Breeman, G.E., and Termeer, C.J.A.M. (2015) The European Commission's ability to deal with wicked problems: an in-depth case study of the governance of food security. *Journal of European Public Policy*, DOI: 10.1080/13501763.2015.1068836.

Candel, J.J.L. (2014) Food security governance: a systematic literature review. *Food security*, 6 (4), 585-601.

Candel, J.J.L., Breeman, G.E., Stiller, S.J., and Termeer, C.J.A.M. (2014). Disentangling the consensus frame of food security: The case of the EU Common Agricultural Policy reform debate. *Food Policy, 44*, 47-58.

Princen, S., Geuijen, K., **Candel, J.**, Folgerts, O., and Hooijer, R. (2014) Establishing cross-border co-operation between professional organizations: Police, fire brigades and emergency health services in Dutch border regions. *European Urban and Regional Studies*, DOI: http://dx.doi. org/10.1177/0969776414522082.

Candel, J.J.L. and Princen, S.B.M. (2013) De normaalste zaak van de wereld? Grensoverschrijdende attitudes van Nederlandse politiefunctionarissen. *Bestuurskunde*, 22 (2), 58-66.

Jeroen Johan Louis Candel

Wageningen School of Social Sciences (WASS)

Completed Training and Supervision Plan

Name of the learning activity	Department/Institute	Year	ECTS*
A) Project related competences			
Research Methodology, From Topic to Proposal	WASS	2012	4
Systematic Literature Reviews	WASS	2013	2
Hunger Defeated, Long-term Dynamics of Global Food Security	WASS, PE&RC	2013	2
Interpretive Methods and Methodologies	WASS	2013	4
Masterclass on Conceptual Foundations of modern Environmental Governance	WASS	2014	1
B) General research related competences			
Advanced Social Theory (RSO 32806)	WUR	2011	6
Law and Public Power (LAW 21306)	WUR	2011	6
Scientific Writing	WGS	2012	1.8
Information Literacy including Endnote introduction	WGS	2012	0.6
Lecturing	ESD, WU	2012	1
"Event driven diversification of policy attention: The scattering of issue attention across different policy domains after an incident with a big amount of public attention"	Annual Conference Comparative Agendas Project (CAP), Antwerp, Belgium	2013	1
"The Rise of Food Security Governance: a Synthesis of its Key Features and Challenges"	International Conference on Global Food Security, Noordwijkerhout, NL	2013	1
Organizing and chairing sections and panels at ECPR conferences	European Consortium for Political Research (ECPR)	2013-15	2
"The ability of the European Commission to deal with wicked problems: the case of food security"	General Conference ECPR, Glasgow, UK	2014	1
Organizing and chairing a methodology workshop at the IPA conference	IPA	2014	1
Reviewed 4 papers for various journals	-	2014-15	2

"Policy integration in the EU governance of food security: do actions speak louder than words?"	International Conference on Public Policy, Milan	2015	1
Reviewing a Scientific Paper	WGS	2015	0.1
"Policy integration in the EU governance of food security: do actions speak louder than words?"	Poster at WASS Peer Review	2015	0.5
C) Career related competences/personal development			
WASS PhD Council (member and chair)	WASS	2012-14	3
Coordinated and lectured in BSc and MSc courses	WU, UA, UCR	2012-15	4
Research Consultancy Ministry of Economic Affairs	Ministry of Economic Affairs (EZ)	2013	1.5
Wageningen PhD Council (chair)	WU	2013-15	3
Research Consultancy Knowledge Platform Food & Business	Knowledge Platform Food & Business	2014	3
Career Perspectives	WGS	2014	1.6
Total			**54.1**

*One credit according to ECTS is on average equivalent to 28 hours of study load