



Food Security and Resilience: The Potential for Coherence and the Reality of Fragmented Applications in Policy and Research

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INTRODUCTION

Climate change dynamics, stressed agro-ecological systems, political conflicts, mass migrations, and volatile economic conditions are commonly viewed as risks that threaten food security and damage the elements of a given food system on which food security depends (Bernard de Raymond et al., 2021; Hasegawa et al., 2018; Martin-Shields & Stojetz, 2019; Von Braun, 2009). In studies that emphasize

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capacity-building to enable households and communities recover from risk-exposure events, the concept of resilience has frequently been paired with that of food security. This is evidenced by large-scale food resilience-oriented food-security initiatives led by major donors, including the United States Agency for International Development (USAID), the United Kingdom's Department for International Development (DFID),¹ and the European Union (EU).² As a topic of research, the surge of activity occurring at the intersection of food security and resilience has been marked by the recent publication of a series of review articles in the peer-reviewed literature (e.g., Ansah et al., 2019; Béné, 2020; Bullock et al., 2017; Serfilippi & Ranmath 2018; Tendall, 2015). As an indicator of broad adoption, the appearance of review articles suggests a high level of sustained activity for given concept (Keathley-Herring et al., 2016). This appears to be the case for resilience, suggesting that a considerable body of work has been amassed.

Although resilience has been cited as having a long and varied history (see Alexander, 2013; Cicchetti & Garnezy, 1993; Vernon, 2004), that history was not initially connected to development. While seminal discussions of food security are based in agricultural production (Botero, 2012/1588; Malthus, 1798), interest in resilience has separate origins. Early work on resilience focused on subjects such as optics and acoustics in connection with reflection and echoes, respectively (Bacon, 1625). Other examples of early work on resilience by physicists focused on the elasticity of gases (Gott, 1670) while mechanical engineers modeled the rigidity and ductility of steel beams (Rankine, 1858).³ What some have called the renaissance of resilience (Bahadur et al, 2010; Béné et al., 2016) is grounded in the frequently cited work of Holling (1973), who studied the resilience of ecological systems.⁴ Not surprisingly, the initial uptake of

¹ In 2020, DFID was merged with the Foreign and Commonwealth Office to create the Foreign, Commonwealth and Development Office (FCDO).

² Examples of early initiatives that helped to build this connection include USAID's Partnership for Resilience and Economic Growth (PREG) and Resilient, Inclusive, and Sustainable Environments (RISE) Challenge, DFID's Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED), and the EU's Global Alliance for Resilience Initiative and Supporting the Horn of Africa's Resilience.

³ For a detailed history of resilience as a concept, see Gößling-Reisemann et al. (2018).

⁴ While focused mainly on resistance, earlier work by Lewontin (1969) on the stability of ecological systems may also be viewed as a seminal reference for resilience.

resilience in the period following Holling's seminal work is most evident among those working on ecological problems (Pimm, 1984; Walker, 1992) or environmental problems (Timmerman, 1981; Tobin, 1999). While physicists and engineers have long made use of resilience, applications to humans are relatively recent. As noted by Gößling-Reisemann et al. (2018), psychological ideas such as "mental elasticity" (Miles, 1935) and "psychological equilibration" (Bentley, 1938) first appeared well in the twentieth century.

The application of resilience to food security is even more recent than its application in psychology, with the work of Pingali et al. (2005) cited frequently as one of the earlier contributions. The record of empirical research is extraordinarily young in comparison with that devoted to food security. In a recent review of the resilience of local food systems (Béné, 2020), for example, the earliest resilience-related study cited was Fafchamps and Lund (2003), who examined how households in rural Philippines use risk-sharing networks to cope with income and expenditure shocks. One empirical study that is regularly cited as marking the early stages of resilience work in development is Alinovi et al. (2008). A paper by Ansah et al. (2019) that reviewed resilience also cited Alinovi et al. (2008) but included Keil et al. (2008) as another resilience-focused paper that was published in the same year.

While the concept of food security has circulated far longer than the concept of resilience, differences are apparent in how each is featured in development work. As a vital indicator of well-being, food security is at the center of work in development and humanitarian assistance. This is evidenced, for instance, by the fact that Zero Hunger is one of 17 goals that comprise the Sustainable Development Goals of the 2030 Agenda. Whereas food security is an outcome, the focus on resilience capacities helps us understand how threats to and losses of food security can be managed (Constas et al., 2014). From a modeling perspective, the resilience of an outcome like food security can be presented as a variable to be predicted. Resilience can also be treated as a dependent variable in cases where the goal of an intervention is to build resilience capacity (Béné et al., 2012; d'Errico et al., 2020).

Assumptions about the benefits of combining food security and resilience provide no guarantee of complete application or coherent integration. This uncertainty is tied in part to the fact that each concept is inherently multidimensional with multi-level manifestations. The conception of food security that has thus far been most broadly accepted is

structured around four components or pillars (FAO, 1996): availability, access, utilization, and stability. This conceptualization, which presents its own challenges, does not make explicit reference to food sovereignty or agency. As an expansion of and reaction to conventional notions of food security, food sovereignty emphasizes the right to food. Moving beyond the 1996 World Food Summit (WFS), the Nyéléni Declaration for Food Sovereignty introduced six pillars that could be considered as central to food security (Via Campesina, 2007).⁵ This suggests that describing food security in terms of the original four pillars or dimensions provides at best a partial account of food security.

By focusing on absorptive capacities, adaptive capacities, and transformative capacities, resilience also exhibits multidimensionality (Béné et al., 2012, 2014, 2016; Walker, et al., 2004). Other sources have included anticipatory capacity (Weingärtner et al., 2020) or resistance and adaptive preference (Béné & Doyen, 2018) as fourth and fifth capacities, adding further complexity to the concept of resilience. Like the call for food sovereignty in connection with food security, questions about social inclusivity and equity have also been raised when contemplating resilience (Forsyth, 2018). Examples of such work, which might be viewed as extensions of Sen's (1999) capability approach, can be found in Bohle et al. (2009) and Coulthard (2012).⁶

Additional dimensions of resilience can be added if one considers the scale of (idiosyncratic or covariate) shocks and their origins (e.g., weather, social unrest or conflict, failed government, and weak institutions). Furthermore, both food security and resilience may be observed and studied at multiple levels/scales. Policies, programs, and units of analysis for measurement and research may focus on individuals, households, communities, or higher-level units. Extending questions about scale beyond households or communities, the concept of food systems has steadily gained momentum. While reviews of the literature (Pingali & Sunder, 2017; Reardon & Timmer, 2012) have demonstrated that a focus on food systems does not represent a particularly new strand of discussion

⁵ As an expansion of and reaction to conventional notions of food security, the concept of food sovereignty emphasizes the right to food in virtue of the six pillars of the Nyéléni Declaration for Food Sovereignty (see Via Campesina, 2007; HLPE, 2017). These pillars are discussed in a subsequent section of this chapter.

⁶ A concise discussion of early work that considers the overlap between resilience and power may be found in Béné et al. (2014).

in food-security, the United Nations' Food Systems Summit in September 2021 has elevated interest and spurred activity.

Underlining the importance of commensurability (Kuhn, 1982) and the consistency of associated propositions (Thagard, 2000, 2007), coherence is fundamental to advancing knowledge within a given domain of understanding. As separate ambitions, the desire to achieve coherence *within* food security or resilience presents a pair of significant challenges. Yet, the desire to achieve coherence *between* food security and resilience requires an even more ambitious effort. Despite the challenges involved in building food security–resilience connections, it appears that applications in policy, programming, and research have taken hold (Brown, 2016) and continue to expand (UNDRR, 2021).

The conceptual complexity that exists *within* and *between* the concepts of food security and resilience raises questions about the nature of what might be possible. With this in mind, in the present chapter I sought to: (1) *Explore the potential for conceptual coherence*—how might the concepts of food security and resilience be integrated into a coherent form? (2) *Explore applications*—how have the concepts of food security and resilience appeared together in policy and in research? To examine how food security and resilience might be integrated, a conceptual model is offered that suggests points of intersection. The model is then used to explore applications through examination of a high-profile policy document and a sample of peer-reviewed articles, using lexical analysis and content-analysis methods. The lexical analysis portion of the study, which counted joint occurrences of food security and resilience, revealed simple usage trends over time. The content analysis examined how the concept of resilience has been applied to that of food security.

TOWARD AN INTEGRATED CONCEPTUAL MODEL OF FOOD SECURITY RESILIENCE

To motivate the effort to build a conceptual model that promotes integration between food security and resilience, two questions are introduced: (1) *How are distinct aspects of food security—based on distinct perspectives of food security—affected by shocks and stressors at varying scales?* (2) *How do distinct resilience capacities help households or higher-level units (e.g., communities, regions, countries) anticipate, manage, and recover from exposure to shocks and stressors?* Considered together, these two questions

help in identifying intersections where integration between food security and resilience is possible. To add substance to these questions, the concepts of food security and resilience are considered. The aim of this brief discussion is to identify the dimensions around which a model can be constructed.

Food Security: From Pillars to Systems and the Importance of Agency

The emergence and evolution of food security as a focal point for development work is noteworthy in its own right (see Shaw, 2007). The objective here is to briefly summarize three perspectives on food security—the 1996 WFS perspective, the food sovereignty perspective, and the food systems perspective. These three perspectives represent, respectively, the dominant approach, a counterpoint to the dominant approach that introduces agency as an important feature of food security, and an approach that captures a broad array of elements that contribute to food security.

As noted above, the 1996 WFS definition of food security (i.e., availability, access, utilization, and stability) (FAO, 2008a, 2008b) is perhaps the most familiar. Availability is a function of agricultural production, food trade, and net food stocks when considering import–export dynamics. Food accessibility reflects resources provided by food that is produced for self-consumption, market access, and the ability to purchase food at the household level (also known as affordability). Food utilization highlights the importance of feeding practices, including preparation and consumption behaviors. As a cross-cutting pillar, stability draws attention to periodic fluctuations in availability, access, and utilization.

Although the four pillars of food security have been used widely, agency and power are not explicit parts of the 1996 WFS conception. A more recent FAO discussion document points out this gap (Gordillo, 2013, p. vi), stating that “[t]he concept of food security—adopted by FAO member states—is somehow a neutral concept in terms of power relations. It does not prejudice the concentration of economic power in the different links of the food chain and in the international food trade, or the ownership of key means of production such as land, or more contemporarily, access to information.” Gordillo then added that “the concept of food sovereignty begins precisely with noting the asymmetry of power” (Gordillo, 2013, p. vi). Attention to food sovereignty as an element of food security has been discussed on many occasions. More than 20 years before the 1996 WFS, for example, the 1974 World

Conference on food insisted that “every man, woman and child has the inalienable right to be free from hunger and malnutrition” (FAO, 1974). By 1996, the version of food security put forth by WFS did not highlight the importance of food sovereignty or power as an element of food security. Food sovereignty was emphasized again in 2006 (FAO, 2006) in a report titled *The Right to Food Guidelines: Information Papers and Case Studies*. It is unclear why interest in food sovereignty and power relations as an element of food security within FAO’s writings has been inconsistent.⁷

As an overarching framework, the food systems perspective can serve as a heuristic device that may help in unifying the various elements on which food security depends. A conceptual framework of food systems offered by HLPE describes how the food security pillars of availability, access, and utilization are supported by three main food systems components—*food supply chains*, *food environments*, and *consumer behaviors* (HLPE, 2017). The *food supply chain* includes production systems, storage and distribution, processing and packaging, and retail trade and markets. The *food environment* reflects the role of physical access to food (e.g., distance to markets), economic access (e.g., affordability), promotion (e.g., food messaging and advertising), and food quality and safety. Acknowledging the importance of context, the HLPE also describes drivers of food systems. Food systems drivers, which can influence one or more components of a food system, include biophysical and environmental drivers, innovation and technology drivers, political and economic factors, socio-cultural drivers, and demographic drivers.

While not featured in Fig. 5.1, a more recent model offered by the HLPE (2020) includes the right to food. As pointed out in a review of food systems frameworks (Brouwer et al., 2020), a wide selection of food systems representations can be found. In the same review, Brouwer et al. (2020) summarize the drivers, components, and outcomes associated with 32 reports and studies that feature food systems. While considerably diversity can be found across the reviewed systems, most representations are similar (or close) to the HLPE’s conception that focuses attention on the inputs to and processes involved in food supply chains, food environments, and consumption (consumer behavior). Introducing greater

⁷ The addition of sustainability and agency as core components of food security, noted in a report by the High-Level of Panel of Experts (HLPE), may indicate that food security is a concept that is undergoing a transition (HLPE, 2020).

complexity, some have called for an expanded conception of food systems. Caron et al. (2018, p. 38), for example, note that a food system should be conceived broadly as a “nexus that links food security, nutrition, and human health, the viability of ecosystems, climate change, and social justice.” One of the compelling qualities of a food systems perspective is that it approaches the problem of food insecurity in a comprehensive manner.

To summarize the above discussion, food security can be conceptualized according to one or some combination of three versions. The first, and perhaps most widely subscribed to, is based on the 1996 WFS. This version (henceforth referred to as “WFS Food Security”) is represented by the four dimensions of availability, accessibility, utilization, and stability. A second version of food security is based in the notion of food sovereignty. With its emphasis on power and agency, the food sovereignty perspective on food security emphasizes the right to food, the role of local food providers, and tension between community needs and corporatist approaches to food production. Finally, the food systems perspective represents the aspiration to integrate all factors and processes that contribute to food security, including everything from ecological inputs to production methods, post-harvest food processing, supply chains, markets, and consumption.

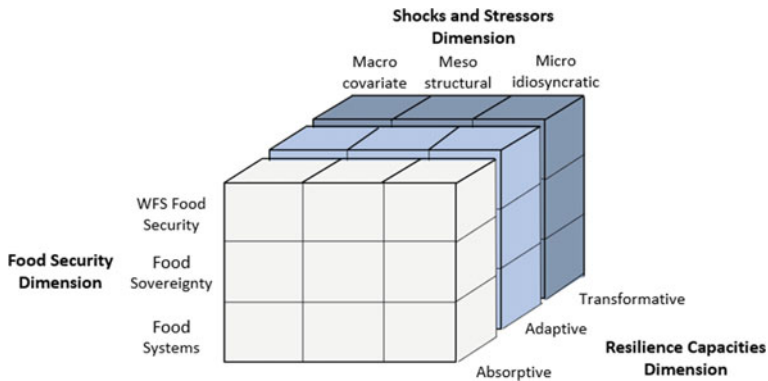


Fig. 5.1 Integrated food security and resilience model (Source Author)

Resilience: Shocks, Stressors, and Resilience Capacities

As noted earlier, awareness of the complex risk landscape faced by the world's most vulnerable populations explains largely why resilience has captured the attention of the community of donors, policymakers, and nongovernmental organizations working in development assistance or humanitarian aid. Drawing attention to this awareness highlights the chief defining quality of resilience work—increased sensitivity to shocks and stressors (Choularton et al., 2015; Zselezky & Yosef, 2014).

While the phrase “*shocks and stressors*” is sometimes invoked without definition, we must distinguish between shocks and stressors as well as between types of shocks. Shocks, which are thought to be more pronounced and more conspicuous than stressors, may arise from various sources (e.g., weather, political conflicts, earthquakes, economic crises, and health shocks—including epidemics and pandemics). Shocks may have widespread or macro-level effects that threaten the welfare of large geographic areas or a significant proportion of a population (these are known as covariate shocks). Shocks at the micro-level are typically highly localized (these are known as idiosyncratic shocks), affecting individual households (e.g., the death of a family member). While the effects of stressors are often viewed as less pronounced than those of shocks, their negative impacts may be just as corrosive to household and community welfare. Stressors include events or factors such as a family member's prolonged illness, poorly functioning governments and weak institutions, lack of physical infrastructure, inadequate provision of education, socio-political unrest, ethnic tensions, and gender inequality. Such stressors frequently undermine food security and general well-being.

Although it is a long-standing practice to describe shocks and stressors as disturbances that are categorized as local covariate or idiosyncratic (e.g., Deaton, 1997; Dercon, 2002), it is also useful to understand that shocks and stressors can be characterized as meso-level disturbances. Such shocks and stressors may, for example, affect villages or districts. It is important to highlight here that shocks and stressors can exert negative impacts at one or more levels, from microscale to mesoscale to macroscale effects.

Awareness of a more complex configuration of shocks and stressors has spurred an array of funded programs designed to help build households and help communities manage and recover from various risk exposure

events and/ conditions that undermine well-being.⁸ Such programs and interventions have been designed to build absorptive, transformative capacities. Consistent with earlier work by Walker et al. (2004), Béné et al., (2012) described absorptive capacity as a factor that enables households (or other entities) to persist in the face of shocks and stressors, while adaptive capacity makes it easier to adjust one’s livelihood or to maintain an acceptable level of food security. Béné et al., (2014, 2016, 2012) also highlighted the importance of transformative capacity as a factor that enables significant shifts in governance, policies, systems of social protection, and/or systemic change. Béné et al. (2014) noted that resilience capacities may overlap in a temporal sense; they may be drawn upon to manage a given shock or stressor or a collection of shocks or stressors.

Toward an Integrated Model of Food Security and Resilience

The above discussion suggests that an integrated approach to food security and resilience can be expressed using a three-dimensional model that illustrates potential points of intersection between food security, shocks and stressors, and resilience capacities. The *food security dimension* highlights the WFS approach (FAO, 1996), the food sovereignty approach (via Campesina, 2007), and the food systems approach (HLPE, 2017) as perspectives that constitute—either separately or in some combination—how food security is conceptualized. The *shocks and stressors dimension* highlights three categories of disturbances that may undermine food security at three different scales. The *resilience capacities dimension* lists three types of capacities which may be drawn upon to deal with shocks and stressors. The *integrated food security resilience model*, presented in Fig. 5.1, illustrates how food security, shocks and stressors, and resilience capacities intersect.

With 27 “cells” as points of intersection, the model illustrates the complexity involved in bringing food security and resilience into conversation with each other. Bearing in mind that each of the elements within each dimension is also multidimensional, the model offers a simplified representation of how food security and resilience may be integrated. This

⁸ Much of the work on resilience has been concerned with household- or community-level dynamics. Work on country-level resilience, focused on macroeconomic indicators, can be found in Boorman et al. (2013), Briguglio et al. (2009), and Kose and Prasad (2010).

model, like any model, is necessarily incomplete and somewhat reductionist. It is presented here to convey what might be involved in such an integration. The model is offered as a heuristic on which further expanded conceptualizations may be based. The main point here is that considering food security and resilience jointly introduces a certain set of demands, demands that could plausibly give shape to policy and define the focus of empirical work. In the next section, the ways in which these demands are enacted in policy discourse and in research are considered.

A CASE STUDY: LEXICAL ANALYSIS AND CONTENT ANALYSIS OF FOOD SECURITY AND RESILIENCE

An investigation of connections between food security and resilience that focus on the State of Food Security Insecurity (SOFI) and two peer-reviewed journals (details provided below) was conducted by combining elements of a lexical analysis (Laver & Benoit, 2003; Tausczik & Pennebaker, 2010) with a scoping review (Arksey & O'Malley, 2005). The lexical analysis was used to examine the occurrence of the term “*resilience*” in a sample of food security-focused publications. Based on examining documents over an extended period of time, the lexical analysis provided some form of reconnaissance view of food security–resilience connections over time. Moving beyond basic frequency counts that record the appearance of “*resilience*” in food security publications, scoping methods were applied to investigate the specific ways in which food security and resilience are connected to one another. Drawing on these methods, two questions drove the analysis: (1) *Simple trend analysis*—What is the broad trend in the inclusion of resilience in food security discussions? (2) *Content analysis*—How has resilience been used in and integrated into policy and research work on food security? Applying these two questions to both the policy literature and the research literature generates four questions. Table 5.1 summarizes the analytical focus of the study.

Methods

Two procedures jointly comprise the methods for the present study. (i) *Document selection* describes the rationale that was used to decide which documents would be examined. (ii) *Analytic methods* describe how lexical analysis and content analysis methods were performed.

Table 5.1 Logic of the review

<i>Analysis of food security and resilience</i> <i>Focus on trends and applications</i>		
<i>Type of analysis</i>	<i>Object of analysis</i>	
	<i>Policy</i>	<i>Research</i>
Trend Analysis	1. To what extent has resilience been featured in policy discourse on food security?	2. To what extent has resilience been featured in the research literature on food security?
Content Analysis	3. In what ways have resilience and food security been applied in the policy discourse?	4. In what ways have resilience and food security been applied in the research literature?

Document Selection

A single policy-oriented document and a sample of research articles focused on food security were the objects of analysis. The policy document selected was the *State of Food Insecurity* (SOFI), for two reasons. First, SOFI is a highly visible publication on food security. Second, SOFI is published under the auspices of multiple United Nations agencies, most of which (the FAO, the World Food Programme, and the International Fund for Agriculture) place food security at the center of their work.⁹ For the simple trend analysis, the entire set of SOFI reports was considered (1999 through 2020).¹⁰

For the research literature, two leading peer-reviewed journals with a food security focus were selected—*Global Food Security*, and *Food Policy*. The time-period reviewed for these journals was shorter than that for the trend analysis. Using a high-profile policy statement from USAID (USAID, 2012) as a temporal marker, 2012 was treated as the baseline year for the trend analysis of the peer-reviewed literature. To analyze the conceptual integration of food security and resilience in the peer-reviewed literature, articles from just one of the two journals, *Global Food Security*, were considered. As will be reported, *Global Food Security* published a

⁹ SOFI was published from 1999 through 2008 by the FAO only. In 2009, the WFP and the IFAD joined as partners in SOFI. This arrangement continued through 2015. From 2016 forward, the United Nations Children’s Fund and the World Health Organization joined as partners in producing SOFI.

¹⁰ No SOFI reports were published in 2007 or 2016.

higher proportion of articles featuring the concept of resilience. The other justification for selecting *Global Food Security* was its comparatively higher impact factor and cite score.¹¹

Procedures for the Lexical Trends Analysis

The lexical trend analysis documented any occurrence of “*resilience*” in SOFI reports and in the two peer-reviewed journals included in the study as the unit of analysis. For SOFI, this involved a search for “*resilience*” and its cognates (i.e., “*resilient*,” “*resilience*,” “*resiliency*”) in any part of a report for a given year. This search excluded reference listings, figures and table headings, report titles, and titles of sections and subsections. Occurrences of the unit of analysis in a given year and in sentences were treated as data points. This meant that repeated use of “*resilience*” within a single sentence was not counted as multiple instances of use. The relative prevalence of use was computed by simply dividing the number of pages that included “*resilience*” by the total number of pages (excluding front matter, references, and annexes) and was also recorded for a given year.

The search for “*resilience*” in journal articles was limited to titles, abstracts/keywords, highlights, and the main texts of the articles. With the intent of maximizing inclusion, only one condition needed to be met for a given article to be recorded as an instance that included the use of “*resilience*.” For SOFI, where each report covered a broad range of issues, assessing the relative prevalence of use made sense. The selection criteria for the peer-reviewed articles implied that any item included in the frequency count involved some kind of discussion (however passing or superficial) of resilience. The unit of analysis was one journal year with occurrences of “*resilience*” aggregated across all volumes to obtain a frequency count of articles for a given year. Unlike with SOFI, here multiple occurrences within a given article were not considered as part of the frequency count.

Procedures for Content Analysis

Content analysis of both SOFI volumes and *Global Food Security* articles was organized to document how “*resilience*” was deployed in the context of food security. This stance was taken because food security was

¹¹ While *Food Policy* outperforms *Global Food Security* in the H-Index, the H-index is upwardly biased by the age of the journal. As of 2021, *Food Policy* had been published for 19 years compared with 10 years for *Global Food Security*.

viewed as the “*incumbent concept*” in reference to resilience. This seems like a reasonable assumption to make for SOFI and for the peer-reviewed journal included in the review; indeed, food security is, and has been, at the center of SOFI and a central focus of research published in *Global Food Security*.

Applying the relevant part of the above conceptual model, the content analysis of SOFI was structured around two questions: (1) Which version of food security (following the above discussion) was featured? (2) How frequently and in what ways was resilience connected to food security? Each *Global Food Security* article that was identified as having a resilience focus was carefully read to document: (1) the version(s) of food security that was (were) used, (2) the “*shocks and stressors*” context that was highlighted, (3) the definition of and/or the topic to which “*resilience*” was applied, and (4) the extent to which resilience was included in the substantive conclusions that were offered. In addition to these four points, details regarding the country(ies) of study and the type of study conducted (quantitative, qualitative, mixed methods, or policy paper) were recorded.

Results of the Lexical Trend Analysis of SOFI Reports

For the first eight years of SOFI (1999–2008), with the exception of 2004, “*resilience*” did not appear at all in the texts of the reports. In 2005 and 2006, occurrences returned to zero and SOFI was not published in 2007. From 2009 through 2015, the use of “*resilience*” remained consistently low with occurrences in each report ranging from three in 2009 and 2013 to a high of 14 in 2010. In 2017, the theme of the SOFI report was *Building Resilience for Peace and Security*. Not surprisingly, a notable increase in the use of “*resilience*” was evident for that report, with 51 occurrences. This represented an approximate tripling over the previous high in 2014 and a nearly fivefold increase over the most recent year of publication, 2015.¹² In 2018, there were 119 occurrences of “*resilience*.” Here again, the spike in the use of “*resilience*” reflected a thematic focus of SOFI for that year’s report, *Building Climate Resilience for Food Security and Nutrition*. Figure 5.2 displays the frequency with which “*resilience*” occurred in SOFI reports (the solid line) and the linear

¹² As noted earlier, no SOFI reports for 2007 and 2016 were published.

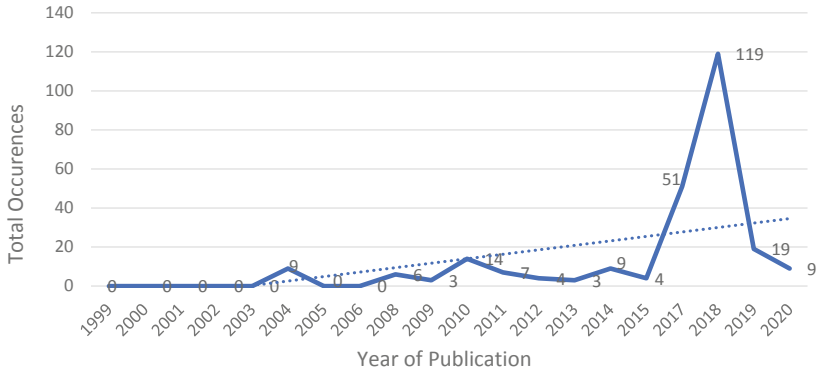


Fig. 5.2 Appearance of “*resilience*”: trends in SOFI, 1999–2020 (Source Author)

trend (the dotted line) for the entire period covered by the lexical trend analysis.

The graph lines in Fig. 5.2 show clearly that 2017 and 2018 did not mark the beginning of a trend but rather were idiosyncratic events. This is evidenced by the return to a low level of occurrence in 2019 and a yet lower level in 2020, with occurrences falling to 19 and nine, respectively, in those years.

The second stage of the lexical trend analysis focused on the relative prevalence of “*resilience*” within a given report. Looking beyond the absolute value of occurrences for a given year of SOFI, prevalence indicates whether “*resilience*” occurred on only a few pages or appeared across many sections of a SOFI report. In this way, data on prevalence revealed the consistency with which “*resilience*” appeared throughout a given SOFI volume. Figure 5.3 graphically depicts the relative prevalence of “*resilience*” within a given report and across years. The solid line traces occurrences for a given year and the dotted line represents the linear trend across the 17 years of observations.

As reflected in Fig. 5.3, the prevalence-based results paint a different picture from that represented by the absolute number of occurrences shown in Fig. 5.2. While the trend lines suggest an overall increase in relative occurrence, the change over time is erratic in comparison with the

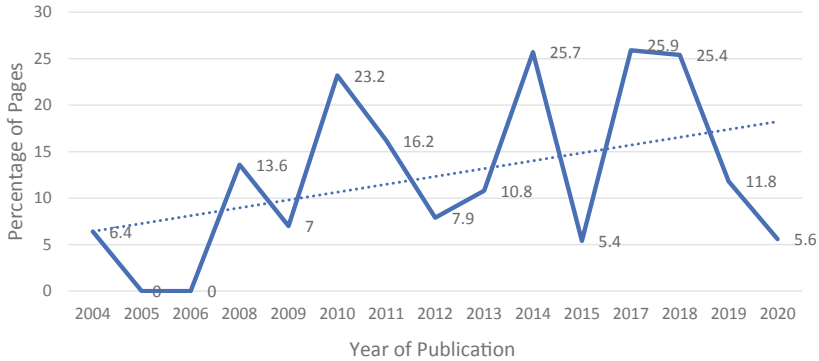


Fig. 5.3 Appearance of “resilience”: trends in SOFI (2004–2020) (Source Author)

results obtained from simple frequency counts of articles within a given year.

The increase observed for the lexical presence of “resilience,” followed by a marked descent, raises questions about the durability of resilience as a concept around which ongoing policy discussions on food security might be structured. In principle, resilience is a cross-cutting topic. It has, for example, been suggested as a perspective that could support efforts to build the humanitarian-development-peace (HDP) nexus (e.g., Béné et al., 2018; EU, 2021; Hilhorst, 2018; Howe, 2019). The original motivation that drove researchers and policymakers to focus on resilience was grounded in shared recognition of a more complex risk landscape. As noted above, shocks and stressors have become more pronounced and less predictable. With COVID-19 as a massive global shock, the motivation to draw on resilience should be amplified. If this is the case, one would expect resilience to exhibit a certain durability in discussions of food security. In the two periods following the SOFI that was thematically oriented toward resilience, dramatic decline in the appearance of “resilience” occurred. This decline may simply reflect the fact that SOFI is organized around themes that change from year to year. The designation of SOFI themes for each year may, in and of itself, generate discontinuities or discursive shifts in what is emphasized. In its first three years (1999–2002), SOFI was published under a single title, *Food Security When People Live with Hunger and Fear Starvation*. For the next two years (2003

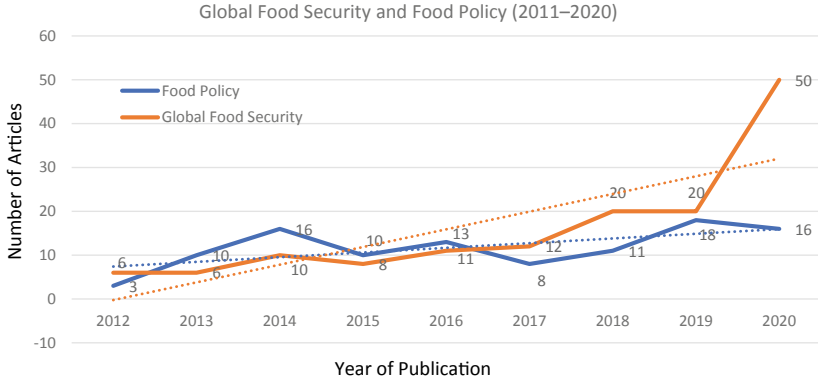


Fig. 5.4 Appearance of “resilience” in the research literature (Source Author)

and 2004), another title was used: *Monitoring Progress Towards the WFS and the Millennium Development Goals*. From 2005 onward, SOFI was published under a different title or theme each year.¹³

Results of Lexical Trends in Representative Peer-Reviewed Journals

The lexical search, covering nine years of articles in *Global Food Security* and *Food Policy*, revealed an overall pattern of increase in the appearance of the term “resilience.” The graph lines shown in Fig. 5.4 display the relative frequency of the appearance of “resilience” in the two peer-reviewed journals from 2012 through 2020. Following the same format as above, the solid lines depict actual occurrences in a given year and the dotted lines show linear trends in use over time.

For *Global Food Security*, the pattern of increase was consistent, starting with a low of six articles in 2012 and increasing to 50 articles in 2020. The rate of increase varied, with the most dramatic increase occurring between 2019 and 2020, where the number of articles containing “resilience” more than doubled, from 20 to 50. The period with the next largest increase occurred between 2017 and 2018, when the number of articles increased from 12 to 20. The pattern of increase for *Food Policy* was less consistent and less dramatic. From 2012 through 2020, the number of

¹³ A complete listing of SOFI titles is provided in Appendix 5.1.

articles with the term “resilience” increased from six to 16. The largest increase occurred between 2012 and 2014, when the number of articles increased from three to 10. The doubling observed is largely inconsequential in light of the small base number and the absence of an overall consistent increase.

The observed trends are shown as simple frequencies (absolute values) of journal articles over time, so it is important to consider the possibility that the results become distorted by year-to-year fluctuations in the number of articles published. To account for differences in articles published per year, the number of articles containing “resilience” in any given year was divided by the overall number of articles published in that same year. Figure 5.5 graphs trends in the appearance of “resilience” that are not biased by differences in the number of articles published in a given year by each journal. The figure also allows for a fair comparison between journals for any given year.

The trends displayed in Fig. 5.5, based on prevalence, are not as pronounced as the trends based on absolute occurrences shown in Fig. 5.4. The relative differences between journals regarding prevalence is, however, roughly consistent with results of the simple frequency count. While the presence of an overall pattern of increase for *Global Food Security* is reflected in both Figs. 5.4 and 5.5, the absence of clear evidence of a pattern of any kind is suggested for *Food Policy*. A comparison of the

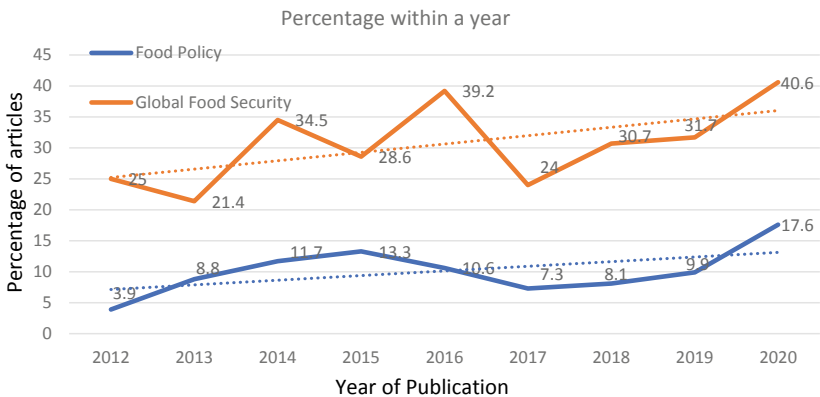


Fig. 5.5 Relative prevalence of “resilience” in the research literature: Food Policy and Global Food Security (Source Author)

occurrences of “resilience” in the initial time period (2012–2014) with such occurrences in the most recent time period (2018–2019) suggests a modest pattern of increase in both *Food Policy* and *Global Food Security*. While these findings are less dramatic than those based on the simple frequency count of articles, the trend lines (the dotted lines) shown in Fig. 5.5 reveal a modest pattern of increase in relative frequency.

Results from the Content Analysis of the Use of “Resilience” in SOFI

Using the results of the lexical trend analysis as a point of departure, the content analysis offers a more detailed view of how the concepts of food security and resilience were discussed in SOFI. Following the categories included in the food security dimension of the conceptual model (Fig. 5.1), each occurrence of “resilience” was reviewed to see if and how the concept was discussed in connection with food security. Any mention of “food security” was examined to categorize it as a general reference (i.e., “food security” mentioned but not differentiated), as a specific reference to one or more of the 1996 WFS pillars (availability, access, utilization, or stability), as a reference to food systems, or as a reference to food sovereignty (including references to power dynamics and the right to food). In those cases where resilience was connected to something other than food security, food systems, or food sovereignty, the connection was recorded as “Other or General.” The year-by-year results are displayed in Table 5.2 with the most dominant pairing with “resilience” for any given year highlighted in yellow.

In addition to a year-by-year analysis, the column totals shown in Table 5.2 provide an aggregate picture of combinations for the 13 years of SOFI reports that were analyzed. On those occasions when resilience was discussed in a SOFI report, 11 of 13 years were categorized as referring to resilience under the heading “Other or General.” Examples of occurrences that fall into this category include phrasing such as “build on a foundation of resilience” (FAO, 2004, p. 26), “many countries remain on the list for several years owing to the lingering effects of drought and/or conflict and low resilience” (FAO, 2008b, p. 19), “-; reduce risk and increase the resilience of the most vulnerable” (FAO, 2012, p. 33), and “build lasting climate resilience” (FAO, 2018, p. 94). When “resilience” was mentioned, it was paired with “food security” or “food systems” but rarely with both. Of the 110 instances where “resilience” was mentioned, only two involved a pairing with “food security” and “food systems” at

Table 5.2 SOFI—resilience, food security, and food systems

Co-occurrences among “Resilience,” “Food Security,” and “Food Systems” ⁽¹⁾ SOFI reports with resilience occurrences (1999–2020)				
Year of SOFI	Connection between Resilience, and Food Security–Related Concepts			
	Food and Nutrition Security	Food Systems	Food Sovereignty*	Other or General
2004 (9)	2	1	0	6
2008 (6)	1	3	0	2
2009 (3)	0	0	0	3
2010 (14)	2	0	0	12
2011 (7)	1	1	0	5
2012 (4)	1	1	0	2
2013 (3)	0	0	0	3
2014 (9)	4	0	0	5
2015 (4)	0	1	0	3
2017 (51)	19	1	0	31
2018* (119)	23	29	0	70
2019 (19)	2	7	0	11
2020 (9)	0	9	0	0
Total (257)	55	50	0	153

Note (1) Numbers indicate whether occurrences were discussed in connection with food and nutrition security, food systems, or food sovereignty (*Source* Author)

the same time. Both instances were found in the 2018 SOFI report when the theme was *Building Climate Resilience for Food Security and Nutrition*. Somewhat surprisingly, no explicit pairing was found in the 2020 SOFI report, when the title and theme for that year was *Transforming Food Systems for Affordable Healthy Diets*. Most noticeable in the results is the complete inattention to food sovereignty in SOFI reports for any year.

One notable observation that emerged from the SOFI content analysis was the lack of conceptual clarity. In not a single case where resilience was mentioned did such a mention include a definition or conceptual discussion of the meaning of “resilience.” No clear distinction was made between resilience as a capacity and resilience as an outcome or property of an outcome, such as food security. It follows from this point that no distinctions were made between distinct types of resilience capacities and the relationship between resilience capacities and food security was not discussed.

Overall, the results of the SOFI content analysis reveal that connections between resilience and food security and between resilience and food systems are typically low. SOFI 2017 featured the greatest co-occurrence of “food security” and “resilience,” with 23 co-occurrences

recorded. This, however, was to be expected when considering the theme and title of SOFI 2017—*Building Resilience for Peace and Security*. The same lack of connection found between “resilience” and “food security” was observed between “resilience” and “food systems.” While SOFI 2008 included more references to food systems in connection with resilience, only three co-occurrences of the terms were identified in that period. Only once did SOFI (FAO, 2018) connect “resilience” and “food systems” at an appreciable level, with 23 occurrences. Interestingly, this occurred in a year when the food systems concept was not an explicit focus of the 2018 report. That report, titled *Building Climate Resilience for Food Security and Nutrition*, did not highlight food systems in its forward or key messages. It appears, however, that challenges associated with climate change provide a compelling case for exploring points of intersection between the concepts of resilience and food systems.¹⁴ This is a plausible explanation, as climate change is frequently identified as a driver of many kinds of shocks to which the development of more resilient food systems is a needed response. The complete lack of connection between resilience and food sovereignty presents a starkly contrasting picture. This finding is somewhat surprising when one considers that the FAO, as one of the organizations leading SOFI, has a history of drawing attention to food sovereignty and the right to food (Gordillo, 2013).

Content Analysis Results: The Use of “Resilience” in Global Food Security Articles

Because the lexical analysis of the journal articles included articles in which “resilience” occurred in any part of an article in the frequency counts for a given year, the first stage of the content analysis required a culling of articles from the 143 articles that were selected from 2012 through 2020. One criterion for narrowing this set of articles was based on article type. The focus was on research articles, while reviews were excluded. To ensure that the concept of resilience was an actual focus in any given article, only articles that included “resilience” in the title or the abstract were included.

Of the 143 articles in the inclusive set for the lexical search, 12 included “resilience” in the title, the abstract, or keywords/highlights.

¹⁴ Connections among climate change, resilience, and food security are examined in detail by De Pinto, Islam, and Katic (Chapter 7 in this volume) in an analysis of 12 Adaptation Fund projects.

It should be reiterated here that the original set of 143 articles was based on “generous” inclusion criteria. For an article to be selected, “resilience” needed to appear at least once anywhere in the article. At this stage, no additional criteria were applied to determine whether an article actually focused on resilience in any part. Table 5.3 lists the titles of the 12 articles from *Global Food Security* that were included in the content analysis.

As shown in Table 5.3, 11 of the 12 selected articles were published in 2020 and one was published in 2019. Thus, prior to 2019 no articles included “resilience” in the title, abstract, or article highlights. While one might argue that this temporal bunching is an artifact of the inclusion criteria, the criteria were applied consistently over the nine-year search period (2012–2020). With 12 articles as a sample of peer-reviewed research articles with a focus at the intersection of food security and

Table 5.3 *Global Food Security* articles examined for content analysis

“Resilience” Appeared in Titles, Abstracts, or Highlights

1. Small farms’ resilience strategies to face economic, social, and environmental disturbances in selected regions in Poland and Latvia (Czekaj et al., 2020)
 2. Interplay of trade and food system resilience: Gains on supply diversity over time at the cost of trade independency (Kummu, et al., 2020)
 3. A brighter future: Complementary goals of diversity and multifunctionality to build resilient agricultural landscapes (Frei et al., 2020)
 4. Choosing awareness over fear: Risk analysis and free trade support global food security (Adamchick & Perez, 2020)
 5. Policy options for mitigating impacts of COVID-19 on domestic rice value chains and food security in West Africa (Arouna et al., 2020)
 6. Filling knowledge gaps to strengthen livestock policies in low-income countries (Serra et al., 2020)
 7. Global changes in crop diversity: Trade rather than production enriches supply (Aguilar et al., 2020)
 8. Food policy and the unruliness of consumption: An intergenerational social practice approach to uncover transforming food consumption in modernizing Hanoi, Vietnam (Wertheim-Heck & Raneri, 2020)
 9. Perspective article: Actions to reconfigure food systems (Loboguerrero et al., 2020)
 10. Food securers or invasive aliens? Trends and consequences of non-native livestock introgression in developing countries (Leroy et al., 2020)
 11. Alternative discourses around the governance of food security: A case study from Ethiopia (Jiren et al., 2019)
 12. Using local initiatives to envision sustainable and resilient food systems in the Stockholm city region (Sellberg et al., 2020)
-

Source Compiled by the author

resilience, the content analysis proceeded to a stage that entailed a more carefully detailed reading.

Before discussing the main findings from the content analysis, several basic qualities of the papers should be discussed. Regarding study types, four of the studies (Adamchick & Perez, 2020; Arouna et al., 2020; Loboguerrero et al., 2020; Serra et al., 2020) categorized as policy papers were non-empirical studies. Of the remaining eight studies, four were quantitative, three were qualitative, and one was a mixed methods study. The question regarding how resilience is defined in research articles revealed that the majority of the articles did not provide explicit definitions or conceptions of resilience. Of the 12 articles examined, only two (Adamchick & Perez, 2020; Czekaj et al., 2020) offer explicit definitions or conceptions of resilience. Czekaj et al., (2020, p. 2) state that resilience “refers to the capacity and ability of physical or socio-ecological systems to recover from a disturbance of any type and maintain the original function.” As part of their definition, Czekaj et al. (2020) also note that resilience includes elements of persistence, adaptability, and transformability. Adamchick and Perez (2020, p. 3) state that “[r]esilience includes the readiness to anticipate and mitigate the impact of epidemic events that are expected to happen without knowledge of when or where they will occur.” Four out of 12 articles (Frei et al., 2020; Jiren et al., 2019; Loboguerrero et al., 2020; Sellberg et al., 2020) offer what can be interpreted as implied definitions that reveal varying perspectives on resilience. In these cases, one can deduce the intended meaning of resilience even though no explicit definition was provided. Sellberg et al. (2020), for example, note that “enhancing resilience requires substantial innovation, experimentation and transformation.” In work that was based on the stakeholder view of food security in Ethiopia, Jiren et al. (2019) state resilience “typically takes a complex adaptive systems perspective, emphasizing feedbacks, slow drivers of systems behavior, and emergent system dynamics resulting from self-organization.”

None of the remaining articles among the selected 12 provide either an explicit or an implied definition of resilience (Aguiar et al., 2020; Arouna et al., 2020; Kummu, et al., 2020; Leroy et al., 2020; Serra et al., 2020; Wertheim-Heck & Raneri, 2020). Arouna et al. (2020) state that the aim of their study was “to reduce the current and potential impact of the COVID-19 pandemic on domestic rice value chains’ resilience and their capacity to sustain food security in West Africa.” Loboguerrero et al. note that “[f]ood systems need to shift towards more sustainable, inclusive,

healthy and climate-resilient futures.” In these cases, and others where no definitions are offered, resilience as a concept is mentioned but not developed. Such usage suggests that, as a concept, resilience stands in need of definition rather than being used simply as a “*buzzword*” (Béné et al., 2017; Staal, 2016).

Regarding instances where resilience might be connected to food security and/or food systems, eight of the 12 selected articles focus on food security alone. In several articles that highlight food systems, references are general and specific definitions or conceptions of food systems are not included. This is true for five of the eight articles that make reference to food systems (Czekaj et al., 2020; Kummu, et al., 2020; Adamchick & Perez, 2020; Leroy et al., 2020; Loboguerrero et al., 2020).

Discussions of the shocks-and-stressors context are similarly mixed and typically general. It appears that most of the work was motivated by shocks and stressors, but the references are not accompanied by associated empirical work that involved corresponding metrics or analyses. This is true for all 12 articles examined. The conclusions that are offered highlight resilience only occasionally. The three articles that do reference resilience in their conclusions (Adamchick & Perez, 2020; Arouna, et al., 2020; Czekaj et al., 2020) do so on a conceptual level with limited detail. Table 5.4 synthesizes the content analysis findings from the 12 resilience-oriented articles that were examined in *Global Food Security*.

Perhaps, the most basic finding to highlight is that, over a nine-year period, only 12 of 143 articles met the criteria for inclusion (i.e., “resilience” or “resilient” in the title, abstract, or keywords/highlights). While the results of the lexical analysis suggest increasing interest in resilience over time, there is also little evidence of evolution. Referring back to the three dimensions that were part of the conceptual model presented earlier, a lack of detailed conceptions was found for food security, for the discussion of shocks and stressors, and for the description of resilience capacities. Most concerning was a marked tendency to use “resilience” without defining the concept.¹⁵ On the whole, there is no basis for concluding that progress has been made regarding how resilience is being used research or in policy. The 2020 surge in resilience-related publications in *Global Food Security* may suggest that an inflection point has been reached. Time will tell if such an inflection point will be marked

¹⁵ This finding aligns with the results obtained by De Pinto, Islam and Katic (Chapter 7 in this volume).

Table 5.4 Summary of findings of the content analysis of *Global Food Security*

<i>Research Articles from Global Food Security, 2012–2020</i>		
<i>Food Security Focus, Location & Study Type</i>	<i>Shocks and Stressor Context</i>	<i>Definition and/or Application of Resilience</i>
<i>Czekaj et al. (2020) Small farms' resilience strategies to face economic, social, and environmental disturbances in selected regions in Poland and Latvia [empirical]</i>		
Food systems (GR) ¹ <ul style="list-style-type: none"> • Poland & Latvia • Qualitative 	Economic, social, and environmental disturbances	Definition: capacity and ability to recover and bounce back, with specific references to different re capacities Application: farms' resilience, resilience strategies of small-scale farmers (SSFs) in relation to disturbances Conclusion: “[The study] illustrates the overall spectrum of strategies employed by SSFs in these two countries, thereby providing a basis for further analysis of the differences in, and prevalence of, specific resilience strategies of SSFs in different countries”
<i>Kummu et al. (2020) Interplay of trade and food system resilience: Gains on supply diversity over time at the cost of trade independency [empirical]</i>		
Food security, WFS with nutritional focus and food systems (GR) <ul style="list-style-type: none"> • Multi-country, global • Quantitative 	Trade shocks, food shocks, unanticipated shocks, production shocks, import shocks	Definition: None provided Application: Applied resilience principles to food production diversity, food supply diversity, independence of food imports, import connections Conclusion: “Our findings thus highlight the interconnected trade-offs between trade-related aspects of food system resilience, and provide important information for global actors, as well as national policy makers”
<i>Frei et al. (2020) A brighter future: Complementary goals of diversity and multifunctionality to build resilient agricultural landscapes</i>		
Food security (production) emphasis <ul style="list-style-type: none"> • Quebec, Canada • Quantitative 	Environmental and socioeconomic stressors, unpredictable stressors and change	Definition: None provided Application: Resilience of socio-ecological systems and agrobiodiversity Conclusion: “Managing agricultural landscapes for ES [ecosystem services] multifunctionality, including multiple facets of food production as well as regulating and cultural services, enables the dual goals of feeding the world and conserving a diversity of ecosystem functions”

(continued)

Table 5.4 (continued)

<i>Research Articles from Global Food Security, 2012–2020</i>		
<i>Food Security Focus, Location & Study Type</i>	<i>Shocks and Stressor Context</i>	<i>Definition and/or Application of Resilience</i>
<i>Adamchick and Perez (2020) Choosing awareness over fear: Risk analysis and free trade support global food security [non-empirical]</i>		
Food security WFS Food systems (GR) ¹ • Global • Policy paper	Population growth, public health risks, global spread of pathogens, reference to COVID-19	Definition: Defined in terms of readiness to anticipate and mitigate Application: Risk analysis capacity and use increases local and global food system resilience
Conclusion: “The capacity and use of risk analysis coupled with sound understanding of underlying system dynamics will contribute to resilient and enduring food systems”		
<i>Arouna et al. (2020) Policy options for mitigating impacts of COVID-19 on domestic rice value chains and food security in West Africa [non-empirical]</i>		
Food security WFS • West Africa • Policy paper	Trade disruptions, zoonotic pathogens, rice prices	Definition: None provided Application: Resilience of domestic rice value and rice value chains
Conclusion: “[The study] assess[ed] the potential impact of the COVID-19 pandemic on domestic rice value chains’ resilience and their capacity to sustain food security in the region”		
<i>Serra et al. (2020) Filling knowledge gaps to strengthen livestock policies in low-income countries [non-empirical]</i>		
Food security -WFS • Global • Policy paper	Market shocks, climate, disease, conflict, demand and pricing of animal source foods	Definition: None provided Application: The use of data-based models to assess livestock’s contribution to the economy, trade, food security and resilience
Conclusion: “It is imperative to consider which type of data collection and modeling ought to be prioritized in low-income, livestock-rich countries to strengthen livestock policies and enhance the positive impact on household incomes and dietary diversity”		

(continued)

Table 5.4 (continued)

<i>Research Articles from Global Food Security, 2012–2020</i>		
<i>Food Security Focus, Location & Study Type</i>	<i>Shocks and Stressor Context</i>	<i>Definition and/or Application of Resilience</i>
<i>Aguiar et al. (2020) Global changes in crop diversity: Trade rather than production enriches supply</i>		
Food system -GR • Multiple countries (N=152) • Quantitative	Crop production shocks linked to droughts, floods, pests, and wars	Definition: None provided Application: Resilience of global food systems and the diversity of crop production globally
Conclusion: “Our results indicate that the expansion and diversification of crop trade was the main driver of the global diversification of supply since within-country production slightly increased”		
<i>Wertheim-Heck and Raneri (2020) Food policy and the unruliness of consumption: An intergenerational social practice approach to uncover transforming food consumption in modernizing Hanoi, Vietnam</i>		
Food security (ND) • Vietnam • Qualitative	Market transformation away from traditional healthy diets, coping with altered food retail market	Definition: None provided Application: No references to resilience in body of the article
Conclusion: “...Traditional shopping and food preferences is strong; creative agency results in food security resilience; and pester power is driving food preparation and subsequently dietary changes at the home dinner table”		
<i>Loboguerrero et al. (2020) Perspective article: Actions to reconfigure food systems [non-empirical]</i>		
Food systems • Global • Policy paper	Climate change, global warming, extreme events	Definition: None provided Application: Reconfiguring food systems; resilience of food systems’ agents under rapid change and
Conclusion: “Food systems need to shift towards more sustainable, inclusive, healthy and climate-resilient futures”.		
<i>Leroy et al. (2020) Food securers or invasive aliens? Trends and consequences of non-native livestock introgression in developing countries</i>		
Food Security & Food systems (ND) reference to sustainable • Multi-country (N = 83) • Quantitative	Resilience to climate change, resistance to endemic diseases, consequences of genetic erosion	Definition: None provided Application: Resilience of livestock production systems (i.e., resilience of livestock from varied production systems)

(continued)

Table 5.4 (continued)

<i>Research Articles from Global Food Security, 2012–2020</i>		
<i>Food Security Focus, Location & Study Type</i>	<i>Shocks and Stressor Context</i>	<i>Definition and/or Application of Resilience</i>
<p>Conclusion: “Animal genetic resources can be regarded as the centre of a complex social, environmental and economic system, so policies need to address the challenges related to sustainability in a holistic manner, accepting trade-offs where necessary, and considering, at different scales, the relationships and dynamics between the animals, their herders, the production systems, agroecosystems, and the market”</p>		
<i>Sellberg et al. (2020) Using local initiatives to envision sustainable and resilient food systems in the Stockholm city-region</i>		
Food systems-socio-ecological systems <ul style="list-style-type: none"> • Sweden • Qualitative case study 	Uncertain change	<p>Definition: None provided</p> <p>Application: Food system resilience and transformation</p>
<p>Conclusion: “We found that the Seeds of Good Anthropocene scenario methodology helped to understand more of the dynamics and divergent views in a transformation process in a specific social-ecological context”</p>		
<i>Jiren et al. (2019) Alternative discourses around the governance of food security: A case study from Ethiopia</i>		
Food security, food system & biodiversity (GR) <ul style="list-style-type: none"> • Ethiopia • Mixed methods 	Resilience to shocks and uncertainties	<p>Definition: None provided</p> <p>Application: Resilience as an approach to food security</p>
<p>Conclusion: “Adaptive co-management of food security—that is, collaboration among stakeholders with diverse interests across governance levels ... could be one way to harmonize contradictions, integrate divergent discourses and interests, bridge current gaps and incorporate multiple framings to open a new pathway for sustainability”</p>		

Notes (1) “GR” denotes general reference only; (2) “ND” denotes not defined

as only a shallow rhetorical shift that fails to apply the concept of resilience in a meaningful way, or as a shift that draws on foundational work on resilience (Holling, 1973), resilience thinking (Walker & Salt, 2006), resilience theory for development (Barrett & Conostas, 2014), or resilience for food security (Béné et al., 2016).

CONCLUSION

Ongoing applications of resilience to food security make it clear that the initial interest in resilience is not ephemeral. The effort to integrate food security and resilience, however, represents a new challenge. In response to this challenge, the present chapter offers a conceptual model, the *integrated food security resilience model*, that highlights possibilities for integration. The model can be used as a heuristic to explore how resilience and food security may be combined. It may also support work toward a data architecture to develop a more comprehensive set of indicators for resilience analysis that is concerned with food security. Guided by the model, the review of a sample of policy documents revealed uneven application of the resilience concept over time, with very little evidence of the adoption of an integrated perspective at any given point in time. The peer-reviewed articles that were reviewed exhibited greater consistency in the use of resilience, but with little evidence of integration. In both reviews, neither food security nor resilience was conceptualized effectively. The findings compel us to consider a more basic question of how food security and resilience, as standalone concepts, are defined and used in research and policy.

In closing, the findings presented in this chapter suggest that there is room for improvement in work that aims to integrate resilience and food security in policy discourse and in research. If resilience is to be a meaningful addition to our understanding of food security, the specific requirements introduced by resilience need to be explored (see Constas et al., 2020). Growing attention to food systems as a means of understanding the challenge of food security (HLPE, 2017; Pingali & Sunder, 2017; Reardon & Timmer, 2012) must be given closer attention. Building on both the early work of Via Campesina (2007) and the more recent work of the HLPE (2020), greater attention must also be paid to agency and food sovereignty as emerging elements of food security. The ways in which resilience and food security may be integrated to reflect the full complexity of each concept need further attention. Future work will reveal whether the aspiration for integration will remain an undeveloped effort that lacks precision or will be realized as a true substantive shift that leads to greater conceptual coherence.

APPENDIX

See Table 5.5.

Table 5.5 SOFI titles/themes 1999–2020

<i>Year</i>	<i>Title/theme</i>
1999	Food Insecurity: When People Live with Hunger and Fear Starvation
2000	Food Insecurity: When People Live with Hunger and Fear Starvation
2001	Food Insecurity: When People Live with Hunger and Fear Starvation
2002	Food Insecurity: When People Live with Hunger and Fear Starvation
2003	Monitoring progress towards the World Food Summit and Millennium Development Goals
2004	Monitoring progress towards the World Food Summit and Millennium Development Goals
2005	Eradicating World Hunger—Key to Achieving the Millennium Development Goals
2006	Eradicating World Hunger—Taking Stock Ten Years After the World Food Summit
2007	No SOFI report published
2008	High Food prices and Food Security—Threats and Opportunities
2009	Economic Crises—Impacts and Lessons Learned
2010	Addressing Food Insecurity in Protracted Crises
2011	How Does International Price Volatility Affect Domestic Economies and Food insecurity?
2012	Economic Growth is Necessary but Not Sufficient to Accelerate Reduction of Hunger and Malnutrition
2013	The Multiple Dimensions of Food Security
2014	Strengthening the Enabling Environment for Food Security and Nutrition
2015	Meeting the 2015 International Hunger Targets: Taking Stock of Uneven Progress
2016	No SOFI report published
2017	Building Resilience for Peace and Security
2018	Building Climate Resilience for Food Security and Nutrition
2019	Safeguarding Against Economic Slowdowns
2020	Transforming Food systems for Affordable Healthy Diets

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