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## World Development

journal homepage: [www.elsevier.com/locate/worlddev](http://www.elsevier.com/locate/worlddev)Food security and violent conflict: Introduction to the special issue <sup>☆</sup>Tilman Brück <sup>a,c</sup>, Marco d'Errico <sup>b</sup><sup>a</sup>IGZ – Leibniz Institute of Vegetable and Ornamental Crops and ISDC – International Security and Development Center, Auguststr. 89, 10117 Berlin, Germany<sup>b</sup>FAO, largo delle terme di Caracalla, 00100 Roma, Italy<sup>c</sup>Households in Conflict Network, University of Sussex, Falmer Brighton BN1 9RE, UK

## ARTICLE INFO

## Article history:

Accepted 16 January 2019

## Keywords:

Food security  
Nutrition  
Institutions  
Conflict  
Violence  
War  
Emergency

## ABSTRACT

We review briefly recent trends in food security and violent conflict and the quantitative literature discussing their interactions, as reflected by the papers in this special issue. We find a large diversity in experiences of food security and conflict, posing a challenge for causal identification which can be resolved by spatially disaggregated, high frequency micro-level data on both food security and conflict. We identify examples of strong individual and institutional capacities to cope with conflict, maintaining food security against the odds across very diverse settings, stressing the importance in accounting for the type of conflict at the micro-level. We also discuss how the concept of resilience is a useful lens for understanding household food security in conflict settings and we outline how food insecurity and conflict can lead to protracted crises. Finally, we identify future research topics in this field. Overall, the special issue contributes to the literature on food security and violent conflict by highlighting three insights: First, the need for adequate data to advance the analytical and policy agendas; second, the diversity of experiences of conflict and food security; and, third, the decisive role played by specific practices and policies in smoothing the negative effects of conflicts for food security.

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## 1. Recent trends in food security and violent conflict

Seen in historic perspective, food insecurity has fallen dramatically worldwide. In 1991–92, 1.2 billion people were undernourished globally, with that number declining to 991 million in the 2000s and 821 million in 2017 (FAO et al., 2018). However, the number of undernourished people (i.e. those facing chronic food deprivation) has increased over the last three years. Furthermore, over 124 million people were reported to face crisis levels of food insecurity in 2017, up from 100 million in the preceding year (FSIN, 2018). In early 2017, a famine was declared in South Sudan<sup>1</sup> and alerts went out to signal high risk of famine-like conditions in north-east Nigeria, Somalia and Yemen.

Similarly, the frequency of conflicts had decreased in recent decades, but increased recently. The number of violent conflicts and the number of conflict-related deaths have increased from their all-time lows of 33 and 19,601, respectively, in 2006, to 49 and 102,000, respectively, in 2016 (UCDP, 2018; Allansson et al., 2017).

While both food insecurity and violent conflict have declined in the long term and fluctuated more recently, the strong positive correlation between these variables is striking. For example, all nineteen countries classified by FAO as under “protracted crisis” conditions in 2017 were engaged in violent conflict at that time, too (FAO et al., 2017). Furthermore, all countries currently at high risk of famine also experience significant violent conflict, totalling over 9000 conflict deaths during 2017 in South Sudan, Nigeria, Somalia and Yemen (UCDP, 2018). Some conflict-affected countries also suffer from natural disasters (such as prolonged droughts in Mali, South Sudan or Syria), that are further undermining food production, livelihoods, markets and food consumption (Sneyers, 2017).

Violent conflicts (and especially spikes of violence) are also a driver of forced displacement (Brück, Dunker, Ferguson, Meysonnat, & Nillesen, 2018), further weakening food security in both countries of origin (where labour may be in short supply and rural markets collapse) and many host communities (which may face pre-existing strong pressure on limited arable land). The war in Syria, for instance, has caused more than 6 million people to flee their homes to other locations in the country, where they face severe food insecurity (Baliki et al., 2018a), while another 5 million people have fled to neighbouring countries and beyond (UNHCR, 2018). Globally, there were 11.6 million refugees in protracted crises in

<sup>☆</sup> We thank Agnese Loy for excellent research assistance.

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<sup>1</sup> Famine ended during 2017 and as per the latest reports (December 2018) is no longer currently ongoing in South Sudan. However, there remain many areas under IPC phase 4, which represents emergency conditions (IPC, 2018).

2016 and 13.4 million in 2017 (UNHCR, 2017a). Of these, 6.5 million have been displaced for more than ten years, many even for decades (UNHCR, 2017b: p. 22).

The disruptions from food insecurity, natural disasters and forced displacement are compounded by state fragility and weak institutions, yielding complex and persistent humanitarian emergencies. Consequently, people may experience both food insecurity and conflict traps. Analytically, it is extremely challenging to disentangle such a complex web of causalities.

## 2. Recent findings and the contribution of the special issue

Key findings are starting to emerge in the quantitative analysis on food security and violent conflict (as also discussed by Martin-Shields & Stojetz, 2018, this issue).

First, extreme volatility in food prices and acute food shortages have been found to trigger incidents of conflict (Arezki et al., 2011; Bellemare, 2015; Berazneva et al., 2013; Bessler et al., 2016; Bush et al., 2017).

Second, increases in food price levels, especially in urban areas, raise the risk of socio-political unrest (Smith, 2014) while anomalies in climatic conditions in rural areas increase the risk of violence and conflict, ranging from interpersonal to national inter-group levels (Hendrix et al., 2012; Hsiang, 2011).

Third, individual exposure to violent conflict events early in life may result in strongly adverse and often irreversible short-term and long-term effects, which may transmit across generations (Alderman et al., 2006; Akresh et al., 2012; Bundervoet et al., 2009; Singhal, 2018).

Fourth, households have a great capacity to adapt to very challenging circumstances, with varying outcomes. At times, coping comes at the cost of a loss of household welfare, as in the case of agricultural production adaptation to conflict in Colombia (Arias et al., 2018, this issue). In other settings, households receive direct transfers from relatives (in Gaza) or benefit from institutional transfers from NGOs or food assistance (in Gaza and Mali, respectively) (Brück, d'Errico, & Pietrelli, 2018, this issue; Tranchant et al., 2018, this issue).

Finally, fine-grained conflict and food security data are needed to advance the discussion of causality. At the same time, data and analysis are needed for improved targeting and programming. Evidence suggests that with good data it is possible to improve the targeting mechanisms; this will ultimately translate into better allocation of (limited) resources (Verme & Gagliarano, 2018, this issue).

Against this background, the special issue contributes to the literature by highlighting three insights, namely the need for adequate data to advance the analytical and policy agendas, the diversity of experiences of conflict and food security, and the decisive role played by specific practices and policies in smoothing the negative effects of conflicts.

## 3. Focus of this special issue

The more commonly studied causality in the academic literature on development looks at the role of conflict on explaining food insecurity (Martin-Shields & Stojetz, 2018, this issue). In comparison, the role of food insecurity (and especially severe forms such as hunger or famine) as a driver of violent conflict, i.e. the reverse causality, has not been explored in as much detail (Martin-Shields & Stojetz, 2018).

This special issue aims to analyse the causal relationships between various indicators of food security on the one hand and various forms of violent conflict, insecurity and fragility on the other hand. Recognising the large qualitative literature on this

topic, we draw on complementary quantitative case studies to expand our understanding of the interdependencies between these issues at the micro level. This special issue does not intend to “resolve” the issue of causality or endogeneity in one direction or another, but rather intends to shed light on the complexities of this two-way relationship. While identifying causality will be important in this undertaking, the main focus is on demonstrating how varying circumstances can shape the nature of the food security-violent conflict nexus.

The background to this special issue was a collaboration between the Food and Agriculture Organization of the United Nations (FAO)<sup>2</sup> and a group of researchers affiliated with the Households in Conflict Network (HiCN),<sup>3</sup> combining respective expertise on food security and conflict.

The remainder of this introduction identifies and discusses common cross-cutting themes of the papers in the special issue. We focus in particular on the role of the type of conflict, the issues of disaggregation and heterogeneity, the role of resilience, and protracted crises. We will conclude by identifying future research topics in this field.

## 4. Cross-cutting themes

### 4.1. Types of violent conflict

The special issue demonstrates that the type of conflict shapes very strongly how conflict impacts on food security. This insight requires a detailed look at the role of institutions in conflict settings. In violent conflicts, some institutions at least are weak or failing and the state is losing control of its monopoly of violence – or indeed the state is applying violence illegitimately against its own citizens (Justino et al., 2013). In either case, such breakdown of the state's legitimate monopoly of violence may lead to the emergence of different types of violence and violent conflicts.

Even in the absence of external aggression, there are states at risk of sliding into violent conflict. Such states are often called fragile states, though a recent literature casts doubt on this state-centric view of fragility and instead emphasises the heterogeneous experience of fragility across population sub-groups (Baliki et al., 2017). For example, a rich, ethnic-majority trader will experience a given ‘state fragility’ very differently from a widowed, ethnic-minority landless woman in the same village. In fact, the heterogeneous ‘exposure’ of individuals to weak state institutions also occurs with individual exposure vis-à-vis violent conflict. It is hence also likely that two individuals from the same village experience violent conflict very differently depending on their individual characteristics (Brück et al., 2016). Evidence from Burundi, for example, shows that a change in the nature of violence, from being relatively more labour-destructive to being relatively more capital-destructive, affects different groups of people (Mercier, Ngenzebuke, & Verwimp, 2016).

These considerations suggest three implications. First, conflicts are very different from each other – and even the same conflict can have highly variable impacts across different people, across time or across space. In this special issue, we hence consider what type of conflict we are studying and how its features are pertinent for food security. Higher-intensity conflicts, in terms of battle-related fatalities, and conflicts involving issues about government power may

<sup>2</sup> Recent studies by and for FAO on the food security and conflict nexus include Baliki et al. (2018a, b); d'Errico & Pietrelli (2017); Holleman, Jackson, Sánchez, and Vos (2017); Justino (2012).

<sup>3</sup> HiCN is a global research network dedicated to the micro-level, empirical analysis of violent conflict and its relationship with socio-economic development (see [www.hicn.org](http://www.hicn.org)). HiCN members have published nearly 300 working papers on all micro-level aspects of violent conflict, many of which also deal with food security.

be more disruptive, as illustrated by larger reductions in the average dietary energy supply. In contrast, conflicts where the territory is the main incompatibility may have little to no effect on the average dietary energy supply at the country level.

Second, it is not enough only to consider 'active' conflicts. Instead, it can also be fruitful to consider fragile states or fragile sub-state settings as possible precursors to violent conflicts – or to view fragility as a possible legacy of violence (e.g. in some rural areas of Colombia, as argued by [Arias et al., 2018](#), this issue). Either way, conflict and fragility are closely related, and a study of food security in fragile settings will be helpful for our understanding of food security in conflict settings and vice versa.

Third, institutions are a key issue, as they can help improve physical security and food security but may do so differently for different people. Informal local institutions as well as market-based and formal national institutions alike shape food and conflict outcomes across population groups (e.g. [Fatema & Kibriya, 2018](#); [Koren, 2017](#)). Given the challenge of measuring any type of institutions, especially at high temporal and spatial granularity to match food consumption and conflict event data, disentangling these interactions is a fruitful area of research. Additionally, a better understanding of these relationships will help guide more effective actions for the prevention and mitigation of the long-term adverse consequences of violent conflict on food security.

#### 4.2. Heterogeneity

The papers in this special issue map a large variability of both food insecurity and physical insecurity in many different settings. This heterogeneity has both methodological and analytical significance. In the microeconomics of violent conflict literature, causal identification is increasingly being achieved by using detailed, disaggregated analyses at the locality, household or individual level ([Verwimp et al., 2018](#)). Furthermore, geo-coded survey data or remote sensing data is used or added to analyses for the same purpose ([Bozzoli & Brück, 2010](#)). This revolution in micro-level conflict research has also led to the identification of interesting heterogeneity across distinct groups of people and across locations. Just as we know that hunger and starvation can co-exist with surplus food availability for a given location ([Koren, 2017](#)), war and peace can also be very proximate. Yet such a micro-level focus is also a methodological opportunity for resolving causality puzzles in our research field.

The literature review by [Martin-Shields and Stojetz \(2018, this issue\)](#) demonstrates that the strongest evidence around the food security-conflict nexus exists in studies focusing on individual and household-level food security outcomes. Anthropometric indicators of food security represent a useful proxy for measuring the impact of conflict on food access ([Maystadt & Ecker, 2014](#)). For the case of the humanitarian emergency in Northern Mali, [Tranchant et al. \(2018, this issue\)](#) find that food aid helps children's height, caloric consumption and micro-nutrient consumption most, if they live further away from the fighting and if households receive multiple interventions. The apparent heterogeneity of possible beneficiaries also leads [Verme and Gigliarano \(2018, this issue\)](#) to consider novel methods for targeting. Verme and Gigliarano propose the use of Receiver Operating Characteristic (ROC) curves and related indices to refine targeting when budgets are constrained, developing relatively simple graphs that can be used by policymakers for targeting based on welfare criteria.

#### 4.3. Resilience

The special issue indicates that conflicts also affect food security by reducing households' capacities to restore pre-existing living

conditions. We draw on the concept of resilience to illustrate this point. Resilience is a multi-faceted concept that can be broadly defined as "the capacity that ensures adverse stressors and shocks do not have long-lasting adverse development consequences" ([Constas, Frankenberger, & Hoddinott, 2014a](#): p. 6, [Constas, Frankenberger, Hoddinott, & Mock, 2014b](#): p. 4). Resilience requires 'agency' to absorb, adapt and transform livelihoods ([d'Errico et al., 2018](#)). This emphasis on agency is of relevance for the study of food security during wars. The literature increasingly recognises how people who used to be considered victims of war are also agents in their own right, co-determining their socio-economic coping strategies. The resilience perspective to food security hence suggests to support existing socio-economic potential and capacity, so people can deal more effectively with past or future crises and create more favourable medium- and long-term prospects. In this way, resilience protects whatever development progress has been achieved so far and contributes to preventing conflict and humanitarian emergencies.

In other words, the impact chain may run from conflict via resilience to food security. The importance of this relationship is key for the design of interventions looking at what dimension of resilience is particularly affected by a conflict. For instance, evidence from the Israeli-Palestinian conflict in Gaza ([Brück, d'Errico et al., 2018](#), this issue) identifies a causal chain from conflict via a deterioration of income stability and diversification to a reduction of adaptive capacity and hence to weakened food security. At the same time, and as a reaction to conflict, households exposed to the conflict experienced an strengthening of their social safety nets (such as cash, in-kind or other transfers received by the households) and greater access to basic services (mainly sanitation and health services). This is perhaps a rather unexpected finding and may not generalise to other conflicts, though [Arias et al. \(2018, this issue\)](#) also find a great capacity to adapt among rural, conflict-affected households.

#### 4.4. Protracted crises

As the papers in this special issue show clearly, when food security and conflict combine, protracted crises are very likely to emerge. Protracted crises are not all alike but tend to share some key characteristics, including their (long) duration, the existence of violent conflict, weak governance or public administration, unsustainable livelihood systems with poor food security outcomes, and the breakdown of local institutions. The distinction between "emergency/humanitarian" and "development" interventions may be very unhelpful in such settings, as it leads to short-term interventions curing the symptom of malnutrition without looking at the underlying causes ([Puri et al., 2017](#)). In contrast, a synthesis view proposes to address both emergency and development objectives in integrated interventions, e.g. by strengthening resilience ([Masten & Reed, 2002](#)). In fact, interventions to strengthen resilience aim to address the underlying causes of vulnerability to protect development ([Boto, Pandya-Lorch, & Biasca, 2013](#)). As [Brück, d'Errico et al. \(2018, this issue\)](#) show for the case of Gaza, such a resilience-focused approach can reinforce the coordination of humanitarian and development interventions. Consequently, interventions can respond to specific or immediate needs while strengthening the long-term development capacities of the population affected by conflict. While development interventions should incorporate vulnerability and resilience to crises, humanitarian actors should focus on how relief contributes to longer-term development ([Brück, Días Botía, Ferguson, Ouédraogo, & Ziegelhöfer, 2018](#)). What is yet understudied in this context is the question of how security interventions impact resilience and food security.



## 5. Looking ahead

Looking beyond the identification of causality, types of conflict, heterogeneity, resilience and emergencies, further knowledge gaps remain in the food security-violent conflict nexus. These relate, inter alia, to the design of policies assisting households and countries escape from what may be a combined conflict and food insecurity trap. While comparatively much research has been done on how to tackle food insecurity and how to end violent conflict, the specific challenges of how to do one in the context of the other have remained fairly under-researched (cf. Brück et al., 2016). This may be partly explained by a significant lack of quantitative data. However, the micro-data and geo-data revolutions alluded to above provide researchers with new opportunities to rigorously assess the impact of policies – and the mechanisms behind these impacts.

We therefore posit that, looking ahead, much will be achieved in delineating the impact mechanisms of interventions to reduce, simultaneously, food insecurity and violent conflict. These are challenging interventions requiring advanced research designs. However, we presume that the food security-violent conflict nexus will not be broken unless effective interventions tackling both sides of the equation can be found. In the future, we therefore expect to see much more rigorous research on the effectiveness of ending both hunger and war simultaneously.

### Conflict of interest statement

We wish to confirm that there are no known conflicts of interest.

### Acknowledgements

The authors are grateful to the editor for his support on the preparation of this special issue. The authors are likewise grateful to the Authors that have been involved in the studies and would like to especially mention those who attended and participated the workshop on food security conflict and resilience. Finally, they want to thank all the colleagues that have been providing support, comment and inputs.

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