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Sowing the seeds of peace for food security

Disentangling the nexus between conflict, food security and peace

FAO AGRICULTURAL DEVELOPMENT ECONOMICS TECHNICAL STUDY

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Sowing the seeds of peace for food security

Disentangling the nexus between conflict, food security and peace

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Preface

Conflicts tend to have strongly adverse effects on hunger, nutrition and overall sustainable development. Notably, a majority of the world's hungry live in contexts where there is no peace. Conflicts reduce food availability, disrupt access to food, and undermine non-formal as well as established social protection systems. Most conflict events strike hardest in rural areas, with sharply negative consequences for agricultural production, rural livelihoods, and survival in general. Conflicts and violence cause vulnerable people and at-risk communities to lose access to the range of resources necessary for food and agriculture production.

At the same time, people may resort to violence when their human security – including food security – is threatened. Conflict may arise due to a loss of assets (including access to resources), threats to livelihoods, and/or other forms of economic and political marginalization. Food insecurity may be only one cause of conflict, and may become a channel through which wider socio-economic and political grievances are expressed.

The implications of conflict-induced food insecurity are no longer limited to specific countries or regions; they now have global impacts. In 2016, over 64 million people worldwide were forcibly displaced, with the majority of these experiencing protracted displacement. The direct effects of conflict are increasingly echoed across the broader global landscape, as people are forced to migrate across and within countries, regions and continents in a bid to escape the consequences of conflict. There is a deepening awareness of how food insecurity in one part of the world can influence social services, political systems and national security elsewhere.

The 2030 Agenda for Sustainable Development makes an explicit link between sustainable development and peace, and calls for more collaborative approaches to conflict prevention, mitigation, resolution and recovery. The 2030 Agenda recognizes peace as a vital condition for development as well as a development outcome in its own right. In April 2016, the General Assembly and Security Council adopted substantively identical resolutions (A/RES/70/262 and S/RES/2282), concluding the 2015 review of the United Nations peacebuilding architecture covering peace operations, peacebuilding, and the implementation of Resolution 1325. These comprehensive and far-reaching resolutions outline an ambitious new approach to addressing the root causes of conflict, with "sustaining peace" as a unifying framework, and encompassing activities aimed at preventing the outbreak, escalation, continuation and recurrence of conflict.

In times of both conflict and stability, FAO can contribute to protecting, restoring and improving the livelihoods of farmers, fishers, herders, foresters, and others who depend upon agriculture and natural resources for sustenance, security and prosperity. The Organization's efforts to both save lives and develop long-term resilience are important contributions to peace and stability within countries, across regions and beyond.

Clearly, there are strong links between conflict, food insecurity and peace. Yet the precise underlying causes and channels that determine these links are often not well understood. There is still a dearth of research and evidence to help guide both national and international responses. The present study aims to expand this knowledge. It comes at a time of enhanced risk of famine and severe food crisis in several parts of the world, with conflict as the common denominator. It also comes at a time when the total number of hungry people in the world appears to be on the rise again, after a prolonged decline. This worrisome reversal has prompted FAO, IFAD, UNICEF, WFP and WHO to focus the thematic part of *The State of Food Security and Nutrition 2017* on the nexus between conflict, food security and peace. The present publication was developed as a study that provides background analysis for

this flagship publication, and provides additional empirical material and technical assessments that could not be included in it. It aims to serve the same purpose: that is, to enhance the understanding of how conflict impacts on food insecurity and malnutrition, and how improvements in food security, nutrition and rural livelihoods can contribute to preventing conflict and sustaining peace.

Acknowledgements

This technical study was prepared to provide background analysis on the nexus between conflict, food security and peace, in support of the thematic part of *The State of Food Security and Nutrition in the World 2017* – a joint publication of the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), the United Nations Children's Fund (UNICEF), the World Food Programme (WFP) and the World Health Organization (WHO). As such, most of the substance and all of the key messages of the present study coincide with that of the flagship publication.

This study also provides additional evidence and analysis, including further conceptual elaboration on how to understand the nature of conflict in different settings. It presents case studies and other evidence of how different types of conflict impact on food security, and how food insecurity could add to grievances that are at the root of conflicts. The study also points out at greater length the data constraints and methodological hurdles hampering the proper understanding of the aforementioned nexus, and suggests possible ways to overcome some of these obstacles.

The editors have compiled and integrated a broad range of input from numerous contributors, as well as a wealth of information obtained from the literature, cross-country assessments, country case studies, and original narratives on the issues covered in the study.

Important background material was prepared by Tilman Brück and his team of experts at the International Security and Development Center (ISDC) in Berlin, Germany, including Negar Habibi, Charles Martin-Shields, Astrid Sneyers, Wolfgang Stojetz and Stijn van Weezel. Additional background papers were prepared by Marco D'Errico, Negar Habibi, Alex Segovia and Astrid Sneyers.

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Acronyms

3RP	Regional Refugee and Resilience Response Plan
AJOC	Abyei Joint Oversight Committee (the Sudan)
CAP	Consolidated Appeals Process
CFS-FFA	Framework for Action for Food Security and Nutrition in Protracted Crises
CILSS	Permanent Interstate Committee for Drought Control in the Sahel
CPIA	Country Policy and Institutional Assessment
DES	Dietary energy supply
FAO	Food and Agriculture Organization of the United Nations
FARC	*Fuerzas Armadas Revolucionarias de Colombia* (Revolutionary Armed Forces of Colombia)
FTS	Financial Tracking Service
GAM	Global acute malnutrition
GDP	Gross domestic product
GIEWS	Global Information and Early Warning System on Food and Agriculture
IASC	Inter-Agency Standing Committee
IFAD	International Fund for Agricultural Development
HAZ	Height conditional on age and gender
HFS	Harmonized List of Fragile Situations
HIIK	Heidelberg Institute for International Conflict Research
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
IDPs	Internally displaced persons
IMF	International Monetary Fund
iMMAP	Information Management and Mine Action Programs
IPC	Integrated Food Security Phase Classification
IRF	Immediate Response Facility
LRA	Lord's Resistance Army (Uganda)
NCP	National Congress Party
NGO	Non-governmental Organization
NUSAF	Northern Uganda Social Action Fund
OECD	Organisation for Economic Co-operation and Development
ODA	Official development assistance
P4P	Purchase for Progress
PBF	United Nations Peacebuilding Fund
PBSO	Peacebuilding Support Office

PRF	Peacebuilding Recovery Facility
RPF	Rwandan Patriotic Front
SAARF	Secretariat of Agriculture, Animal Resources and Fishery
SAFE	Safe Access to Fuel and Energy
SDGs	Sustainable Development Goals
SPDP	Sudan Peacebuilding and Development Project
SPF	State and Peacebuilding Fund
SPLM/SPLA	Sudan People's Liberation Movement/Army
UCDP	Uppsala Conflict Data Program
UN	United Nations
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	Office of the United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNISFA	United Nations Interim Security Force for Abyei
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNRCO	United Nations Resident Coordinator's Office
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
VASyR	Vulnerability Assessment for Syrian Refugees
ViEWS	Violence Early Warning System
WASH	Water, sanitation and hygiene
WAZ	Weight conditional on age and gender
WFP	World Food Programme
WHO	World Health Organization

Executive summary

Why are there still famines and food crises in a world of such affluence? Food crises are complex humanitarian emergencies, but a common factor among them is armed conflict and violence. All 19 countries classified by FAO as being in a state of "protracted (food) crisis" are experiencing conflict and violence. Their predicaments are typically compounded by climatic hazards, such as prolonged droughts, which severely affect food production and livelihoods. Conflict and violence also cause the displacement of millions of people within and between countries, jeopardizing the food security of host communities.

The nature of conflict has changed, and this matters for food security

Seen in historical perspective, the risk of famine has fallen dramatically as food security has improved worldwide. Also, the frequency of wars has decreased in recent decades, reaching an all-time low in 2005. Since then, however, the number of violent conflicts and conflict-related deaths has surged again. Today's conflicts tend to be complex, often involving not only state armies that fight across borders or with insurgents inside borders, but also paramilitary groups, ethnic militias, criminal gangs, mercenaries and/or international forces. By far, most of today's conflicts take the form of intrastate civil wars (with or without state involvement), with consequences that spill over borders as they disrupt livelihoods and force people to flee.

As this study shows, people living in countries affected by conflict are much more likely to be food-insecure and undernourished. After significant declines overall since 1990, the prevalence of undernourishment worldwide has recently begun to rise again. FAO estimates that the absolute number of people affected by chronic food deprivation began to rise in 2014 – going from 775 million people to 777 million in 2015 – and is now estimated to have increased further to 815 million in 2016. The vast majority of these – 489 million – live in countries struggling with conflict, violence and fragility, where the prevalence of undernourishment is higher than in countries not affected by conflict. The same holds for child malnourishment, as 122 million of the world's 155 million stunted children are found in conflict-affected countries. Equally striking, while most countries have marked significant 25-year gains in reducing hunger and undernutrition, such progress has stagnated or deteriorated in most conflict-affected countries.

Conflict is not the only factor. The analysis in this report shows that the impact of conflict on food security and nutrition is significantly worse where the conflict is protracted and/or compounded by weak institutional response capacity (fragility) and other stress factors, like vulnerability to droughts and other climatic hazards. The prevalence of undernourishment in 46 low- and middle-income countries that have been affected by conflict (as defined in this paper) is on average between 1.4 and 4.4 percentage points higher than for all other countries in the same income category. In contexts where conflict is compounded by conditions of fragility, however, the difference rises to between 11 and 18 percentage points, while people living in situations of protracted crisis are about two and a half times more likely to suffer from hunger than those living in places where there is no violent conflict. Today's conflicts also have a more localized nature, which implies that the impacts on food security and nutrition also tend to be more localized.

Without peace, the dream of a world without hunger may prove elusive

The challenges posed by conflict, violence and fragility to achieving food security for all have been recognized by the 2030 Agenda for Sustainable Development. As conflict tends to inhibit sustainable development, one of the goals is to significantly reduce all forms of violence by working with member states and communities to find lasting solutions to conflict and insecurity. The 2030 Agenda sees the eradication of poverty and hunger (Sustainable Development Goals [SDGs] 1 and 2) as preconditions to ensuring peaceful and inclusive societies (SDG 16); avoiding conflict and violence are seen as critical to achieving all of the other SDGs.

Although armed conflict and acute hunger often go hand in hand, past trends suggest that hunger can be averted and need not result from conflict. The design of effective responses and interventions requires deep insight into the nature of the presumed relationship between conflict and food insecurity. Even if conflict appears to be a main cause of persistent hunger and severe food insecurity, evidence to confirm this remains weak and fragmented, and the underlying mechanisms are not fully understood. Conversely, hunger – whether in the form of famine, chronic malnutrition or general deprivation – is often also seen as a possible cause of conflict, but the reasons why it is a trigger or contributing factor in some contexts and not in others are far from clear. The present study aims to shed further light on these channels of causation.

Conflicts affect livelihoods through a myriad of channels

The precise nature of conflict tends to differ depending on the context. Each conflict situation has its own local circumstances and reasons for taking up arms, which helps explain differences in outcome and the channels through which agriculture, food security and nutrition may be affected. Likewise, the capacity of people and communities to cope with threats to their livelihoods is specific to each setting. For these reasons, this study takes a case study approach to understanding these linkages.

A case study approach is further needed because it is difficult to ascertain the precise way in which conflict affects livelihoods and food security, as there may be multiple impacts occurring at the same time. For instance, conflict may affect incomes or disrupt food distribution networks, while at the same time disrupting health services and basic sanitation. Each of these factors will influence food security and nutritional outcomes. Furthermore, conflict impacts on food security can be direct, such as the forced displacement of people from their livelihoods, or the destruction of crops, food stocks and productive assets; but they can also be indirect, for example if disruption of economic activity and social service provision hampers people's incomes and access to food.

A review of case studies and available empirical evidence suggests that the following channels and coping mechanisms are most often at work:

- economy-wide impacts on production, trade and public finances;
- direct impacts on agricultural production and assets, food systems, and rural livelihoods;
- factors that determine the vulnerability or lack of resilience of households and communities when confronted by conflict-induced shocks to their livelihoods.

Destruction and disruption of productive capacity and economic activities from insecurity and civil strife may lead to full-blown economic crises that seriously undermine food availability in markets and people's access to food, as well as their health and nutrition. The example of Yemen reminds us that conflict-induced, economy-wide crises can result in lasting destruction of rural and urban livelihoods.

The impact on food systems tends to be significantly more severe when the economy and people's livelihoods rely significantly on agriculture, as the effects can be felt across the food value chain, including production, harvesting, processing, transportation, financing and marketing. In 2015, agriculture accounted for 23 percent of gross domestic product (GDP) in countries affected by conflict, and an average of 35 percent for countries in protracted crisis. The situation in South Sudan is an example of how conflict can affect the lives and livelihoods of the population in multiple ways. In 2017, lack of security in the country combined with drought has culminated in a famine, destroying livelihoods and disrupting food systems.

Given the impacts of conflict and violence on livelihoods, it is generally recognized that resilience and nutrition are strongly interlinked. If there is less access to basic services as a result of conflict, there can be particularly significant impacts on health. Furthermore, the economic impacts of conflict can severely undermine the capacity to diversify income sources, thereby undermining the ability to cope with conflict-induced shocks, as seen for instance in the cases of the Gaza Strip and Mali.

Conflict erodes coping capacity, which may further fuel conflict

Household resilience tends to be most limited where conflict and violence bring about asset destruction or dispossession, or where the struggle for assets is one of the triggers of conflict. In most conflict-affected contexts, government response capacity is often also weak. Conflict may disrupt the provision of basic services and social protection, thereby limiting people's capacity to cope and fuelling grievances and discontent among the population. People may feel forced to engage in reversible coping strategies with short-term effects, such as making modest dietary adjustments and skipping meals. However, when such coping mechanisms are exhausted and food insecurity worsens, households may shift to irreversible and more damaging survival strategies, such as distress selling of livestock or farm tools. During Colombia's lengthy civil war, for example, in areas where non-state armed rebel groups maintained control, farm households initially shifted to short-cycle crops with lower profitability. As violence continued and intensified, however, farmers focused more on mere subsistence activities to ensure basic food security.

The engagement of men in conflict and the increased risks to child well-being put greater responsibility in the hands of women for sustaining the household – in addition to their role as primary caregiver, in charge of providing for the food, nutrition and health care needs of household members. Evidence from country case studies in Bosnia and Herzegovina, Colombia, Kosovo, Nepal, Tajikistan and Timor-Leste shows that armed conflict can lead to an increase in female labour participation. Some of these cases also show, however, that most of the job increases for women are in low-paid, unskilled activities, often performed under unsafe and insecure labour conditions. Furthermore, in the case of rural women, because they often have less access to resources and income, they are more vulnerable and hence more likely to resort to riskier coping strategies as conflicts unfold.

In order to limit such human suffering and lasting damage to human well-being, lessons can be drawn from successful coping strategies for individuals, households and communities living in conflict areas. Such strategies for people living in rural and agriculture-based communities include: diversification of land holdings and crop cultivation; storage of grain from one year to the next; selling assets, such as cattle and land, instead of keeping them as a precaution against the occurrence of shocks; borrowing from village lenders or others; and receiving gifts and transfers from informal mutual support networks (such as family, friends, neighbours, funeral societies, and so forth). Shifting gender roles as a result of conflict may also have beneficial effects on household welfare if there is increased female labour participation: as women gain more control of resources, household food consumption

may increase and child nutrition may improve. Women's economic empowerment further gives them a greater voice in household and community decision-making.

Food insecurity may be a trigger of conflict, but never the sole cause

In many parts of the world, food price spikes have led to riots and violence, sometimes triggering political instability. Yet food price changes are poor predictors of the likelihood of violence and conflict occurring. Such outbreaks are more likely to happen in contexts marked by pervasive inequality and fragile institutions, and where grievances over dispossession or lack of voice already exist. Poverty, hunger and food insecurity, together with a highly unequal distribution of income, land and other material goods, can create feelings of anger, hopelessness and injustice among different sectors of the population. There may also be a perceived lack of support from formal and informal institutions in addressing the risks of human and food insecurity. These grievances can then be exploited by individuals and groups in order to take up arms in retaliation.

Such compounding factors are always at play. Yet, as most of today's conflicts are fought in rural areas, food insecurity, loss of agricultural assets, and disruption of rural livelihoods are more often than not among the multiple causes. Three triggers are most common:

- *Sudden spikes in food prices*, which tend to exacerbate the risk of political unrest and conflict, as witnessed in 2007–2008 when food riots broke out in over 40 countries. In several contexts the protests escalated to further violence and/or regime overthrow.
- *Climate-related events*, especially droughts, which tend to jeopardize food security in terms of availability and access. These have also been found to increase the risk of conflict particularly where deep divisions exist between population groups or where coping mechanisms are lacking. In agriculture-dependent communities in low-income contexts, droughts are more likely to increase the likelihood of violence and conflict at the local level.
- *Competition for natural resources*, which can be detrimental to the food security of vulnerable rural households, potentially culminating in conflict. This is especially true where poor governance leads to resources only benefitting a handful of corrupt politicians or certain ethnic or political groups, rather than the population at large. Competition over land and water has been identified as a potential trigger for conflict, as well as loss of land and livelihood resources.

Interventions to improve food security and nutrition can be essential for conflict prevention and peacebuilding

While each context presents its own challenges, in all conflict-ridden contexts it is fundamental to follow conflict-sensitive, rights-based and gender-sensitive approaches, guided by sufficient conflict analysis, in order to improve food security and nutrition.

Acknowledging the complexities surrounding the nexus between conflict, food security and peace – and the scarcity of evidence on this nexus – a number of possible pathways can be identified through which support to food security and livelihoods will also help build resilience against conflict and contribute to sustaining peace:

- livelihood support that addresses the root causes of conflicts and conflict stressors, and promotes re-engagement in productive economic activities, including cash transfers and safety nets;
- community-based approaches that help build relationships and social cohesion, improving aspirations, confidence and trust;

- interventions to build the capacity of institutions and improve governance, in order to deliver equitable services.

Some of these pathways interact and overlap. In most instances, combinations of these interventions will need to be considered. Furthermore, the interventions will need to be tailored to fit local conditions and stages of conflict. As conflict typically coincides with other shocks, it is also essential to build resilience towards those other shocks. The effectiveness of interventions will likely increase if, at the same time, the adverse impacts of climate change are mitigated and resilience towards economic shocks is enhanced, for example through social protection and safety nets. It is also important for natural resources access to be managed equitably. Food security and nutrition interventions will only have a sustainable impact on peace when implemented as part of a broader set of multisector developmental and peacekeeping interventions.

Given the re-emergence of conflict-driven famines, efforts towards strengthening resilience and peacebuilding need to be stepped up

The 2030 Agenda for Sustainable Development recognizes the importance of peace for food security, and of improving food security as a means to prevent conflict. Pursuing these goals is not easy in practice, especially in conflict-ridden contexts. It requires concerted efforts by many stakeholders across many areas of intervention.

At the same time, bringing antagonistic national actors and interests together most often requires strong international support. Closer partnerships between humanitarian and development actors and international financial institutions will be important to support communities affected by conflict and protracted crisis, and also to help address root causes, prevent further fragility and instability, and create durable solutions. Collaboration between UN agencies, including the World Bank, is already being strengthened in this regard. However, the mindset behind all efforts must adopt a more deliberate, preventative approach, steering away from short-term and output-based interventions towards long-term, sustainable and collective outcomes. There must also be a strategic focus on resilience building, in line with the "New Way of Working" across humanitarian, development and peace pillars.

Stepping up support for resilience and peacebuilding interventions through official development assistance (ODA) is also an imperative. In practice, however, most of the existing ODA for countries affected by conflict takes the form of humanitarian aid, leaving too little long-term investment in lasting resilience and preparedness. FAO calculations (based on data collected from the OECD-CRS database) show that the sectors of direct importance to food security and nutrition received relatively small shares of total developmental ODA between 2012 and 2015: 5.8 percent for agriculture; 3.8 percent for water, sanitation and hygiene; 7.4 percent for basic health; and 2.1 percent for education. Notably, the share for agricultural development was, on average, well below that for other developing countries (at 8.1 percent).

Better integration of humanitarian and developmental support in conflict contexts will require medium- to long-term donor commitment and a shift towards effective multiyear planning. Agriculture is the primary livelihood for most people living in situations of fragility, protracted crisis, and/or conflict; hence the importance of increasing the priority of and support to agricultural development in such contexts, in terms of contributing to recovery, building resilient livelihoods, and improving food security and nutrition as a cornerstone for peaceful and inclusive societies.

Greater research efforts are needed to inform concerted efforts at sustaining peace and ending hunger

It is necessary to substantially improve the evidence base to better inform the design, targeting and implementation of resilience- and peace-building interventions. Collecting data from fragile and conflict-affected countries presents substantial challenges, such as denied access to communities as well as the risks and costs associated with conducting surveys in these settings. One of the primary challenges in analysing the relationship between food security and conflict is finding ways to make the data from both fields of study (conflict and food security and nutrition) speak to each other. These issues present an opportunity to rethink data collection strategies in order to take advantage of interagency collaboration, new methodologies and new technologies. This will in turn require collaboration with research institutions and academia in measuring outcomes related to peace, which may, for example, be linked to building resilience to conflict, improving social cohesion, or reducing the propensity to engage with non-state armed actors. Furthermore, indicators assessing social cohesion among individuals and groups should be developed to monitor capacities to prevent, contain and de-escalate conflict.

1 Introduction

In 2016, over 100 million people were reported to be facing crisis-level food insecurity, up from 80 million in the preceding year (FSIN, 2017; FAO and WFP, 2017). In early 2017, a famine was declared in South Sudan and alerts went out to signal high risk of famine-like conditions in northeastern Nigeria, Somalia and Yemen. Conflict and civil war are common denominators in all these cases, as much as in most other countries facing food crises. In fact, all 19 countries classified by FAO as in a state of "protracted crisis" are experiencing conflict and violence. In these countries, conflict is typically compounded by climatic hazards, such as prolonged droughts, which severely affect food production and livelihoods. Conflict and violence also cause the displacement of millions of people within and between countries, thus exacerbating food insecurity in host communities. The civil war in the Syrian Arab Republic, for instance, has caused more than 6 million people to flee their homes to other locations in the country, and another 5 million to neighbouring countries (FSIN, 2017; FAO and WFP, 2017). Today, nearly 90 percent of displaced people have been living in camps or with host communities for ten years or longer (IDMC, 2015).

Seen in historical perspective, the risk of famine has fallen dramatically while food security has been improved worldwide. Also, the frequency of wars has decreased in recent decades. More recently though, the number of violent conflicts and conflict-related deaths has increased dramatically from an all-time low in 2005. While the numbers are still low by historical standards, much more must be done to eliminate war and hunger.

Today's food crises are complex humanitarian emergencies, in most cases occurring in contexts also characterized by armed conflict and violence. Today's violent conflicts tend to be complex as well, often involving not only state armies that fight across borders or with insurgents inside borders, but also paramilitary groups, ethnic militias, criminal gangs, mercenaries and/or international forces. By far, most of today's conflicts take the form of intrastate civil wars, but with consequences that spill over to neighbouring countries as livelihoods are disrupted and people are forced to flee their homes. Although armed conflict and acute hunger often go hand in hand, historic trends suggest that hunger can be averted and need not result from conflict.

The harmful effects of conflict and violence are predominantly felt by the poor, where the state, socio-economic systems and/or communities lack the capacity to prevent crises or to manage them once they have unfolded. More than 2 billion people live in countries affected by conflict, violence and fragility, of which around 17 percent lived in poverty in 2016.[1] The World Bank projects that because of high population growth rates and weak economic development, the poor could represent half or more of the total population living in fragile and conflict-affected situations by 2030.[2]

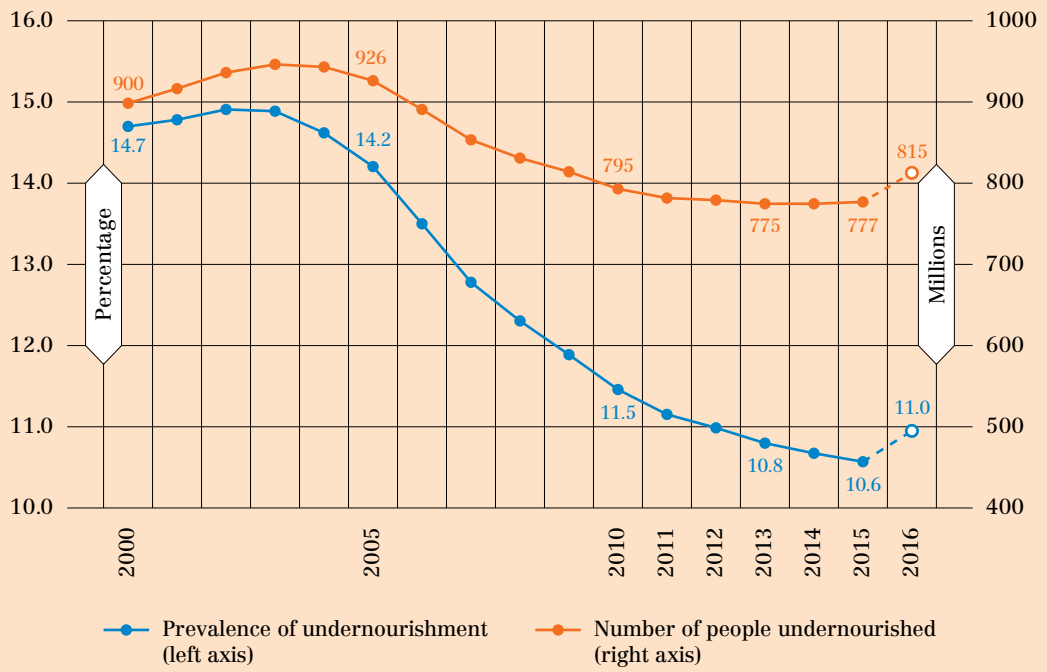
As this study shows, people living in countries affected by conflict are more likely to be food-insecure and undernourished. After declining significantly for most of the period since 1990, the prevalence of undernourishment has recently begun to rise again (Figure 1).

[1] See the World Bank Group on Fragility, Conflict and Violence, September 21, 2016 (available at www.worldbank.org/en/topic/fragilityconflictviolence/overview).

[2] The World Bank Group estimates that by 2030, the share of the poor in the global population living in fragile and conflict-affected situations will be 46 percent, while the OECD estimates it will be 60 percent. Estimates are different because the World Bank and the OECD use different definitions of fragility and violence. For the World Bank estimates, see www.worldbank.org/en/topic/fragilityconflictviolence/overview; for the OECD estimates, see OECD (2016).

The absolute number of people in the world affected by chronic food deprivation began to rise in 2014 – going from 775 million people to 777 million in 2015 – and is now estimated to have increased further to 815 million in 2016 (FAO, IFAD, UNICEF, WFP and WHO, 2017). The vast majority of these – 489 million – live in countries struggling with conflict, violence and fragility, where the prevalence of undernourishment is higher than in countries not affected by conflict. More strikingly, while most countries have marked significant 25-year gains in reducing hunger and undernutrition, such progress has stagnated or deteriorated in most countries experiencing conflict.

FIGURE 1 Number of undernourished people in the world



Note: Prevalence and number of undernourished people in the world, 2000–2016. Figures for 2016 are projected estimates.

Source: FAO, IFAD, UNICEF, WFP and WHO, 2017 (based on FAO estimates).

Conflict thus appears to be a main cause of persistent hunger and severe food insecurity. Is hunger – whether in the form of famine, chronic malnutrition or general deprivation – also a cause of conflict? Possibly, but the links are less clear. The pathways leading from food scarcity to protest and conflict are complex, and seem to be unique to each case. Yet a common thread is that people more likely resort to violence when their human security (including food security) is threatened, especially when there is a dearth of formal and informal institutions that are capable and willing to mitigate food security risks. For example, increases in food prices compounded the broader discontent leading up to the regime-toppling Arab Spring protests of 2011. Many of today's conflicts cause violence and disruptions in rural areas. Deliberate targeting of food production systems by fighting groups tends to deepen existing inequalities and increase poverty among vulnerable groups. The livelihoods of poor farmers with insecure land tenure and limited assets deteriorate catastrophically when disposed of their land or cattle, creating conditions which could enhance conflict, especially when governments and institutions fail to provide security and risk-coping mechanisms. Hence,

food insecurity can be among the causes for new conflicts or for intensifying existing ones, acting as a channel through which wider socio-economic and political grievances are expressed. Such grievances are more likely to lead to political violence where the capacity of governments and institutions to attenuate food insecurity is weak. In such contexts, achieving food security may be a critical precondition for sustained peace.

These considerations form the main motivation for the present study. While the evidence clearly shows there are significant adverse impacts of conflict on food security, the drivers and channels vary across contexts, and are often difficult to disentangle because of the complex dynamics between conflict and pre-existing conditions that determine food security. A better understanding of these relationships will help guide more effective preventative and mitigating actions to limit (and ultimately avoid) the long-term adverse consequences of conflict and violence on food security and nutrition. Much less is known about how food insecurity may trigger or prolong conflict, or how conflicts may be prevented through improving food security and rural development.

Three key notions emerge from the available evidence:

- *First*, the adverse impacts of conflict on hunger and food security tend to be strong; this finding is uncontested. However, the question of whether different types of conflict – as determined by their triggers, geographical scale, duration and intensity – lead to different kinds of food insecurity and whether the channels of impact influence the pillars of food security differently remains under-researched.
- *Second*, there is evidence that increases in food prices have contributed to political instability and urban civil strife. Nonetheless, the underlying mechanisms and relationships in rural areas need to be more carefully considered. Other factors that determine the role of food insecurity in triggering conflict also need to be taken into consideration.
- *Third*, there are indications that food security and improved rural livelihoods may contribute to the mitigation and prevention of conflicts and to securing sustainable peace. However, the nature and strength of this relationship is underexplored, and the factors that strengthen food security and resilience in conflict contexts need to be better understood.

The challenges posed by conflict, violence, and fragility to achieving food security for all have been recognized by the 2030 Agenda for Sustainable Development. As conflict can inhibit sustainable development in general, and food security and nutrition in particular, one of the goals is to significantly reduce all forms of violence, including working with member states and communities to find lasting solutions to conflict and insecurity. Hence, the 2030 Agenda sees achieving the eradication of poverty and hunger (SDGs 1 and 2) as a precondition to ensuring peaceful and inclusive societies (SDG 16). Conversely, avoiding conflict and violence are seen as critical to achieving all of the other SDGs.

This study tries to gain deeper insight into the nature of these presumed relationships, especially where evidence remains weak and fragmented and underlying mechanisms have not been adequately considered. Chapter 2 charts out how the landscape of conflict and violence has changed in recent decades, shows how food security and nutrition outcomes vary across different types of conflict, and identifies the conditions that seem to influence those outcomes the most. The study finds that food security and nutrition outcomes tend to be significantly worse where conflict is protracted and compounded by stress factors, such as weak institutional response capacity (fragility) and vulnerability to natural hazards. Also, as most of today's conflicts are characterized by localized violence and fighting, food security and nutrition impacts also have become more localized. Chapter 3 reviews the evidence on the channels through which conflict and violence affect food security and

nutrition across conflict areas, such as the disruption of food production and food systems, plundering of crops and livestock, loss of assets and incomes, and so forth. It concludes that the impacts on food security and nutrition through these channels are highly context-specific and dependent on the vulnerability of livelihoods as well as on the nature of the conflict. Chapter 4 summarizes available evidence on how food insecurity and other development deficiencies may trigger or compound other drivers of conflict. It finds that, indeed, food insecurity itself can be a trigger, particularly in contexts marked by pervasive inequality and fragile institutions. Climate-related events, especially droughts, tend to affect food availability and access, exacerbating the risk of conflict in such contexts. This is particularly the case where deep divisions exist between population groups or where coping mechanisms are lacking. Chapter 5 aims to understand what response mechanisms seem to have been most effective in minimizing the impacts of conflict on food security, and to what extent efforts at enhancing resilience and improving food security can contribute to avoiding conflict and helping build sustainable peace. A range of possible pathways exist, but evidence on these complex relationships is scarce, and further research is required to understand impacts on sustaining peace. Food security and nutrition interventions will only have a sustainable impact on peace when implemented as part of a broader set of multisector developmental and peacekeeping interventions. Since much of official development assistance to countries affected by conflict takes the form of humanitarian aid, the chapter concludes that more resources are needed to support long-term investment in lasting resilience and preparedness.

2 The landscape of conflict is changing: does it matter for food security?

KEY MESSAGES

- Conflicts within countries, with or without state involvement, have increased over the past decade and become the dominant form of conflict.
- Most chronically food-insecure and malnourished individuals live in countries affected by conflict: 489 million of 815 million undernourished people, and 122 million of 155 million stunted children.
- Impacts of conflict on food security and nutrition are significantly worse where conflict is protracted and compounded by weak institutional response capacity (fragility) and other stress factors, like vulnerability to climatic hazards.
- As most of today's conflicts are characterized by localized violence and fighting, food security and nutrition impacts also have become more localized.

2.1 The changing nature of conflict

Conflict can take various forms. Different types of violence may create different channels through which food insecurity is affected. A conflict of national scale, such as the current one in the Syrian Arab Republic, will affect all four dimensions of food security (availability, access, utilization and stability). On the other hand, more localized violence, such as that in northeastern Nigeria, will mostly affect food access and availability.

The landscape of conflict has changed notably over the years. In the twentieth century, especially the first half, devastating interstate wars defined most of the scene. Since then, intrastate civil wars and forms of violent conflict have taken more and more centre stage. In some cases, such conflicts have been internationalized, in the sense of spilling over into neighbouring countries or involving interventions by foreign powers.

Seen in a historical perspective, the frequency of wars has decreased in recent decades. More recently, however, there has been a resurgence in the number of violent conflicts, with conflict-related deaths increasing from an all-time low in 2005.[3] The increase has been accompanied by increasing numbers of displaced people, pointing to the fact that conflicts are no longer limited to specific countries or regions, but have global impacts. The number of refugees and internally displaced persons (IDPs) has increased significantly with the increase

[3] See for instance OECD (2016) and IEP (2016).

in conflicts, doubling from 2007 to 2015 to total approximately 60 million people. There are now nine countries with more than 10 percent of their population classified as refugees or displaced persons, with Somalia and South Sudan having more than 20 percent of their population displaced and the Syrian Arab Republic over 60 percent displaced (IEP, 2016: 3).

Conflict typologies

In order to analyse these trends and deepen the understanding of what they mean for food security and nutrition, it is first necessary to clarify some methodological considerations.

Conflict studies use various definitions of the term "societal conflict". This study uses a measurable definition taken from the Uppsala Conflict Data Program (UCDP), which classifies countries affected by conflict as per the following types of conflict:

- **State-based conflict:** The use of armed force by the government of a state, where a state is either an internationally recognized sovereign government controlling a specified territory, or an internationally unrecognized government controlling a specified territory whose sovereignty is not disputed by another internationally recognized sovereign government previously controlling the same territory.
- **Non-state conflict:** The use of armed force between two organized armed groups, neither of which is the government of a state, which results in at least 25 battle-related deaths in a year.[4]
- **One-sided violence:** The use of armed force by the government of a state or by a formally organized group against civilians which results in at least 25 deaths in a year.

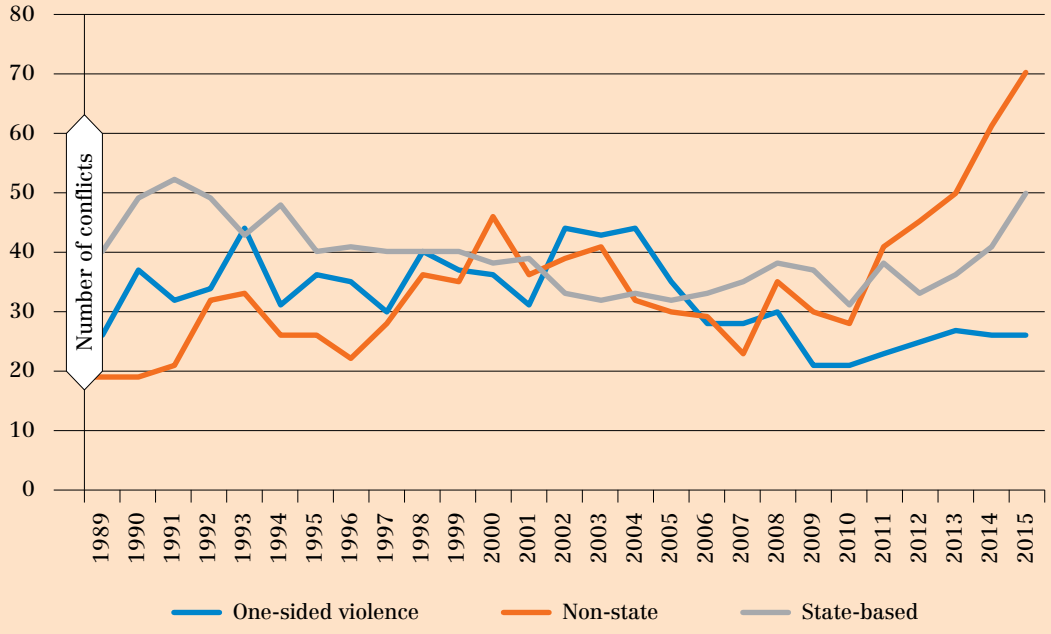
The number of conflicts falling into this classification has risen sharply over the past decade (Figure 1). Non-state conflicts show the starkest rise, from 23 in 2007 to 70 in 2015. The number of state-based conflicts also increased significantly from 35 to 50 in the same period. Data from the UCDP show that battle-related deaths increased fivefold from 19 030 in 2007 to 101 406 in 2015 (Pettersson and Wallensteen, 2015).

The number of countries experiencing one-sided violence was roughly the same in 1989 and 2015 (Figure 2). Compared with the previous decade, however, the number of instances identified as one-sided violence has decreased more recently. Examples of this type of violence include the Rwandan genocide of 1994, when members of the Hutu majority government and its affiliated militias massacred as many as 70 to 80 percent of the Tutsi population, but also targeted government-opposing Hutus. One-sided violence is a more common phenomenon than conflict *per se*, but the number of countries that actually experience episodes of one-sided violence remains small, at most 27 in any given year – and, as noted, this number has been decreasing. Also, instances of one-sided violence may precede or follow intrastate wars. In Rwanda, for example, the genocide was a culmination of the Rwanda civil war.[5]

[4] The number of battle-related deaths used in these definitions of conflict types and throughout this paper is taken from the UCDP datasets. See Melander, Pettersson and Themnér, 2016; Sundberg, Eck and Kreutz, 2012; and Eck and Hultman, 2007.

[5] The Rwanda civil war was a conflict between the Hutu-led government and the Rwandan Patriotic Front, which largely consisted of Tutsi refugees who had fled to Uganda after independence in 1962.

FIGURE 2 Total number of conflicts by type, 1989–2015



Source: Uppsala Conflict Data Program (UCDP).

The number of non-state and one-sided conflicts may be under-reported in existing databases. New forms of violence that have emerged in some parts of the world are difficult to categorize, and most are not recorded as conflict. Gangs in Central America such as the ***maras salvatrucha*** undertake organized extortion of and violence against local populations, and have taken de facto control of territories and communities, affecting livelihoods and food security and prompting many people to migrate (Box 1).

BOX 1 New forms of societal violence and conflict

The most widely used typologies of conflict do not adequately capture all forms of conflict. Gang-related violence is not typically coded in standard typologies. Gangs that mostly go by the name ***maras salvatrucha***, with origins in the United States of America and whose members were deported back to Central America, have been expanding their control of territory and communities in El Salvador, Honduras and Guatemala through extortion of and violence against the local population. The ***maras*** in El Salvador have taken de facto control of territories and communities, affecting livelihoods and food security, and causing many to migrate (Segovia, 2017b).

Mali is an example of another "atypical" conflict. Tuareg groups in the country have repeatedly organized rebellions against the government to demand an autonomous Tuareg state. One of the underlying objectives of the 1991 establishment of Mali's Third Republic was to respond to Tuareg appeals through a decentralization process intended to transfer administrative power to local authorities and empower local elites in Tuareg-majority regions (Sköns and Nyirabikali, 2016). In addition, the Tamanrasset agreement, signed in 1991 between the Government of Mali and Tuareg representatives, led to the demilitarization of northern Mali. Another peace agreement in 2006 resulted in the withdrawal of state military representatives from the Kidal region, thus limiting military presence to the city of Kidal (OECD and SWAC, 2014). Despite these agreements, the eruption of the 2012 crisis – with the return of heavily armed Tuareg militants from Libya, from 2011 onwards (Sköns and Nyirabikali, 2016) – indicated that these relations remained strained. The emergence of Al Qaeda and the pressure it exerted to the south (towards the capital of Bamako) called for the intervention of French troops, which changed the nature of the conflict.

The example of South Sudan also demonstrates the complexity of using existing conflict typologies. The issue of access to natural resources in the Abyei region has, for the last four decades, led to competition along an ethnic divide between "African" Dinka and "Arab" Misseriya. The situation is exacerbated by an ongoing power struggle at the national level (especially for oil revenues) between and within the ruling parties of the Sudan People's Liberation Movement/Army (SPLM/SPLA) and the National Congress Party (NCP) of the Sudan. In this case, it is difficult to disentangle the real motivations of conflict and the negative effects on food security between ethnic hate, political tensions, and use of natural resources.

In Karamoja, Uganda, it is also quite difficult to separate the inter- and intrastate conflict typologies. There are internal conflicts between ethnic groups and families which mainly revolve around cattle rustlings and thefts. The main drivers of these conflicts are in some cases related to seasonality, and to the diminished quantity and access to pasture and water (which are somewhat seasonally predictable); other drivers concern payments associated with blood feuds and other brides claimed by groups of youngsters. There are also traditional clashes across the border with Kenya between pastoralists in Karamoja and those in Pokot and Turkana, although the scale of these conflicts has been diminishing in recent years, due to the recent disarmament and the more effective regulatory mechanisms implemented on both sides of the border.

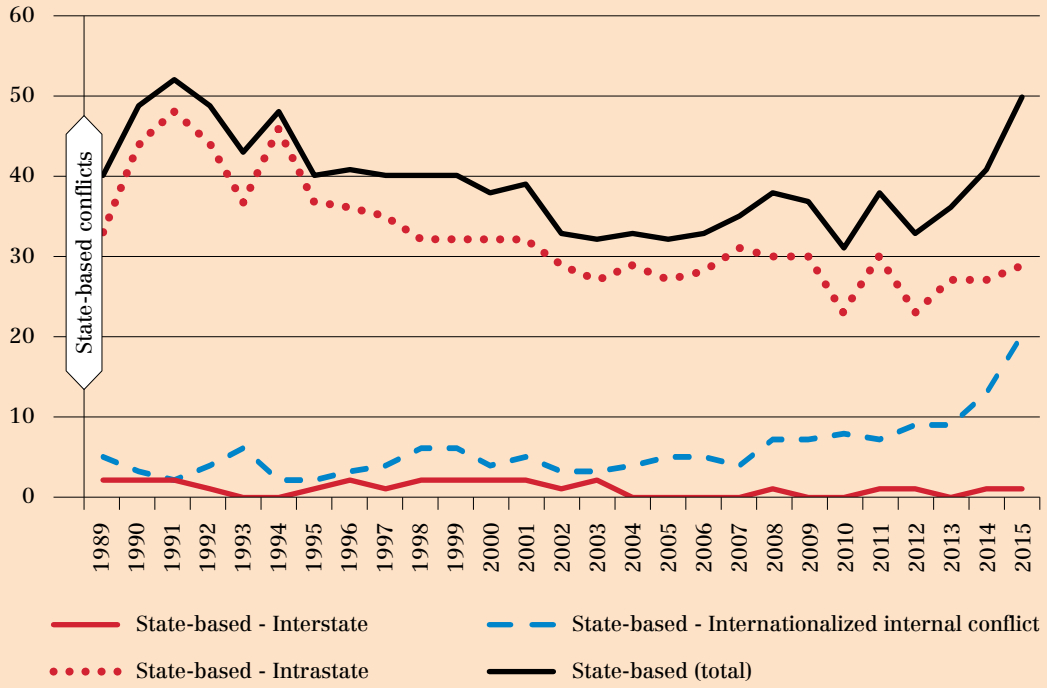
Less interstate wars, more intrastate strife

Just looking at state-based conflicts, nowadays there are far more intrastate conflicts or civil wars than interstate wars (Figure 3). Since 1996, there have been less than five conflicts defined as interstate in any given year, but the number of "internationalized intrastate conflicts" doubled from five to ten between 1996 and 2014. Examples of internationalized intrastate conflict include Rwanda's support for Tutsi rebel factions in the Democratic Republic of the Congo, and support from the United States of America for the Iraqi Government's counterinsurgency efforts against Al Qaeda in Iraq (IEP, 2016: 25). As internal conflicts have become more prominent, more external parties have become involved because of concerns over regional or global political stability; repercussions in access to natural resources; and/or impacts on migration, displaced people, and other humanitarian concerns.

As Figure 3 shows, globally the number of intrastate conflicts has declined somewhat over the past two decades. At the same time, however, many countries with intrastate conflicts have experienced such conflicts repeatedly and over prolonged periods of time. According to the UCDP, since 1990, 14 low- and middle-income countries have experienced more than 20 years of intrastate conflict, including Afghanistan, Algeria, Colombia, Ethiopia, India, Iraq, Myanmar, Pakistan, Palestine, the Philippines, the Russian Federation, the Sudan, Turkey and Uganda.

Many of today's intrastate conflicts are "localized" in the sense that they only affect certain areas or regions within a country. If also characterized by relatively low numbers of battle deaths, such conflict situations are sometimes characterized as "low-intensity" (see Brück *et al.*, 2016). Burundi, the Philippines and Senegal are some of the examples of countries with a history of low-intensity conflict, but with varying spill-over effects from the areas of conflict to the rest of the countries, for instance through mass displacements of people. The ongoing low-intensity insurgency in the Casamance region in Senegal, in contrast, is a highly localized conflict affecting only a very small portion of the country, though its intensity tends to vary from year to year (Brück *et al.*, 2016).

FIGURE 3 Total number of state-based conflicts, 1989–2015



Source: UCDP/PRIO Armed Conflict Dataset.

Conflict dynamics

The nature of conflict and violence may change over time from one type to the next, such as in Rwanda (as shown above) or in the case of El Salvador, where the civil war that ended through negotiation and the Peace Accord of January 1992 was followed by a wave of violence triggered by common delinquency crime, organized crime, and above all the ***maras salvatrucha***. The three types of conflict (state-based conflict, non-state conflict and one-side violence) may also occur simultaneously in the same country, making it more difficult to grasp the dynamics of conflict and the onset of developmental impacts, including those on food security and nutrition.

The dynamics of conflict becomes more difficult to understand when several conflicts are at work at the same time, or when they evolve sequentially within the same national territory. In Rwanda, for example, conflict began in 1990 with the civil war between the Hutu-led government and the Rwandan Patriotic Front (RPF), which later on led to the mass genocide that took place over a period of 100 days in 1994. This intrastate conflict turned into a more "internationalized" conflict when the RPF-led government began military incursions into Zaire, including the First (1996–1997) and Second (1998–2003) Congo Wars; this was followed by armed struggles between the Rwandan Government and their opponents in the Democratic Republic of the Congo, including the M23 rebellion (2012–2013).

The example of Iraq shows how conflict and violence becomes layered in a country, making concepts like onset and cessation of conflict analytically difficult to disentangle in practice. After the invasion led by the United States of America, Iraq's conflict turned from an interstate into an intrastate conflict, as fighting between the government and non-state factions increased. While this was going on, militant groups targeted civilians, committing acts of one-sided violence.

Another important aspect of the increasing levels of conflict and violence is that they are not evenly distributed around the world. Most situations are concentrated in four regions: the Middle East and North Africa, northern sub-Saharan Africa, Central America, and the countries dividing the Russian Federation from Europe (particularly Ukraine). The "entanglement" of external international actors in state conflicts, coupled with the large outflows of displaced people, show that even internal conflicts cannot be quarantined and their repercussions can be felt across borders and even continents.

Violence and conflict are increasingly a regional problem, as armed violence easily spills over national boundaries – where cross-border armed networks are ready to share resources and cooperate towards common goals. Conflict events in Africa, mapped across time and by magnitude, draw a startling picture of their cross-border and regional nature. These include some of the most protracted conflicts, including those in the Great Lakes region and in northern Nigeria, Cameroon and Chad across the Sahel, but there are also examples in other regions, such as in Pakistan, India and Afghanistan in Asia.[6]

Conflict and protracted crises

Conflict typologies such as those presented here are used in the literature on conflict. Chapter 3 discusses the extent to which the nature of the conflicts along these typologies is relevant for understanding their dynamics, and how different types of conflict influence the channels through which conflicts impact on the different dimensions of food security and nutrition. However, as the nature of conflict may change over time and different forms of conflict may coexist, it is difficult to predict the degree of impact on food security and nutrition based on type of conflict. Indeed, a recent cross-country assessment found no systematic relationship between type of conflict and the degree of impact on food security and nutrition, as measured by the prevalence of undernourishment and wasting and stunting among young children (see Brück *et al.*, 2016; and Chapter 3 below).

As analysed in Section 2.2, the degree of impact of conflict seems to be worse when it is compounded by: (a) weak capacity of government and non-government institutions to respond to crises and mitigate the risks for affected and vulnerable populations; and (b) other stress factors, especially vulnerability to natural hazards affecting agriculture (e.g. droughts, floods). When these factors combine, the likelihood of prolonged conflict and crisis situations increases.

Protracted crisis situations are those in which a significant proportion of the population is acutely vulnerable to death, disease and disruption of livelihoods over a prolonged period of time (see Annex for more details on this definition). Conflict, weak governance, the occurrence of natural disasters and/or breakdown of local institutions are all common characteristics of countries in protracted crisis.

In 2017, 19 countries were facing protracted crises (Table 1; see also Table A.1 in the Annex). Of these, 14 countries have been in this category since 2010, 11 of which are in Africa. All protracted crisis countries have experienced some form of conflict, and most have suffered multiple types of conflict over time. All but one have experienced periods of low-intensity conflict, often combined with periods of higher-intensity violent conflict (i.e. "war" or "limited war") involving higher deaths rates and more destructive consequences, in terms of refugees/internally displaced populations and destruction of infrastructure, housing, institutions, markets and social cohesion. During 2011–2015, most of the protracted crisis countries (12 out of 19) experienced the highest intensity of

[6] According to the situation in 2015, as reflected in the dataset of the Armed Conflict Location and Event Data Project (ACLED).

violent conflict. Countries currently in this category have faced, on average, 10.5 years of conflict during the past two decades. Six have been in a state of conflict for almost the full period.

In many cases, such as in Afghanistan, Burundi, the Central African Republic, the Democratic Republic of the Congo, Somalia, South Sudan and the Syrian Arab Republic, the conflict and violence is localized at a subnational level and can occur in several different locations, with different parties and intensities simultaneously.[7] In several of the protracted crisis countries, violence and conflict take on a regional nature, spilling into neighbouring countries and leading to cross-border conflicts and violence as well as displacing populations into neighbouring areas (e.g. Burundi – Democratic Republic of the Congo; Central African Republic – Democratic Republic of the Congo – South Sudan – Uganda; South Sudan – Sudan; Afghanistan – Pakistan; and Syrian Arab Republic – Turkey – Iraq).

[7] National and subnational conflict monitoring data and analysis by country and year, based on the HIIK's Conflict Barometer (www.hiik.de/en/konfliktbarometer).

TABLE 1 Countries in protracted crisis by conflict type, duration, intensity, fragility, and frequency of natural disasters

	Conflict type, 1996–2015[1]					Conflict duration[1]	Conflict intensity, 2011–2016[2]			Fragility[3]	Natural disasters[4]
FAO protracted crisis list 2017	Interstate	Intrastate	Int. interstate	One-sided violence	Non-state violence	Number of years in conflict (1996–2015)	Low-intensity	High-intensity "limited wars"	High- intensity "wars"		
Afghanistan		•	•	•	•	20	•		•	• *	•
Burundi		•		•	•	14	•	•		• *	•
Central African Republic		•	•	•	•	12	•	•	•	• *	•
Chad		•		•	•	16	•	•	•	• *	•
Democratic Republic of Congo		•	•	•	•	20	•	•	•	• *	
Democratic People's Republic of Korea[5]						0	•				•
Djibouti	•	•		•		3	•			•	•
Eritrea	•	•				6	•			• *	•
Ethiopia	•	•		•	•	19	•			• *	•
Haiti		•		•		2	•			• *	•
Kenya		•		•	•	18	•	•	•		•
Liberia		•		•	•	5				•	•
Niger		•	•	•	•	6	•		•		•
Somalia		•	•	•	•	20	•	•	•	• *	•
South Sudan	•	•	•	•	•	5	•	•	•	• *	•
Sudan	•	•	•	•	•	20	•	•	•	• *	•
Syrian Arab Republic		•	•	•	•	5	•		•	• *	
Yemen		•	•	•	•	7	•	•	•	• *	
Zimbabwe				•		1	•			•	•
Total	5	17	9	17	14	10.5	18	9	11	16	16

Source: FAO for classification of protracted crises; UCDP for conflict types and duration; Heidelberg Institute for International Conflict Research (HIIK) for conflict intensity; World Bank Group and OECD for fragility classification; FAO Global Information and Early Warning System on Food and Agriculture (GIEWS) for natural disasters data.

Notes: **1** Conflict types and conflict duration (UCDP 1996–2015). For conflict duration the total represents average duration.
2 High-intensity/"wars" and high-intensity/"limited wars" refer to the highest level of conflict intensity as defined by the HIIK Conflict Barometers 2011–2016; low-intensity refers to "violent crises" as defined by the HIIK Conflict Barometers 2011–2016.
3 Fragility refers to the definitions of the World Bank Harmonized List of Fragile Situations 2017 and extreme fragility classification as defined by the OECD (see OECD, 2016). Countries that are considered extremely fragile as per the OECD definitions are represented with an asterisk.
4 Countries which required external assistance for food, with natural disasters as the main driver of food insecurity (as reported by the GIEWS, Crop Prospects and Food Situation) from 2007 to 2016.
5 Although the Democratic People's Republic of Korea faces protracted crisis according FAO criteria, it is not considered to be affected by violent conflict (as it did not report more than 25 battle-related deaths – despite its frequent crises with its neighbours).

Conflict and fragility

In the literature on conflict, the terms "fragility" or "fragile states" are usually used to describe weak response capacity in responding to conflicts. These concepts are sometimes also used to identify countries in conflict or with a high risk of conflict.

Unless otherwise specified, this study uses the Harmonized List of Fragile Situations (HFS) of the World Bank Group, which defines fragility as a weak level of governance and administrative capacity, using the World Bank's indicator system for good governance (see Annex for more details). In 2017, 34 countries and one territory fell into this category. The World Bank's categorization of the quality of governance has been contested by a number of scholars for a number of reasons (see for example Kaufmann, Kraay and Mastruzzi, 2007; and Jomo and Chowdhury, 2015). The HFS responds to some of this criticism and, in its revised version, demonstrates its understanding of the development challenges in countries affected by violence and instability.[8]

The Fund for Peace defines a similar concept of fragility, but uses a different form of measurement for its fragility index. Using a conflict assessment system tool, the Fund for Peace combines data from millions of documents to calculate scores along 12 key political, social and economic indicators (which in turn include over 100 sub-indicators) that identify state and institutional weaknesses in responding to situations of stress and dealing with grievances.[9]

Both the HFS and the Fund for Peace's measure are imperfect indicators to define a state of extreme fragility given the variety of realities across countries – and so are the alternative indicators, such as that applied by the OECD (2016).[10] Yet the concept of fragility is theoretically important because it describes a country's institutional strength, and by extension its potential resilience to shocks that can cause outbreaks of violence.[11] It also captures existing violence or latent political instability in the overall definition of fragility. This variable, instead of indicating the existence of a conflict event (like the other categories), provides an indication of future risk of violence, as well as of the risk of prolongation of conflict and the likelihood of significant adverse impacts on livelihoods. The measures cited to identify fragility will be used with this connotation in mind.

2.2 Correlations between conflict and food security and nutrition

The shifting nature and complexity of conflict, and the dynamic interrelationships between it and poverty, hunger and governance, have significant implications for efforts and interventions aimed at reducing hunger and undernutrition. Recognizing the multidimensional, complex and evolving nature of conflict and violence is critical to effectively working in conflict-affected contexts to address the challenges of hunger and nutrition.

The analysis below focuses on a sample of 46 "countries" affected by conflict for at least one subperiod of five consecutive years, and which have suffered 500 or more battle-related deaths during that subperiod (see Annex for further details on the sample definition).

8 The World Bank first published the list in 2006 as the Low-Income Countries Under Stress List (2006–2009) but it changed one year later to the Fragile States List in 2010; today the list is known as, and is now the Harmonized List of Fragile Situations (2011–2015). See www.worldbank.org/en/topic/fragilityconflictviolence/brief/harmonized-list-of-fragile-situations

9 See http://fsi.fundforpeace.org

10 For more details, see www.oecd.org/dac/conflict-fragility-resilience/docs/Fragile-States-highlights-2016.pdf

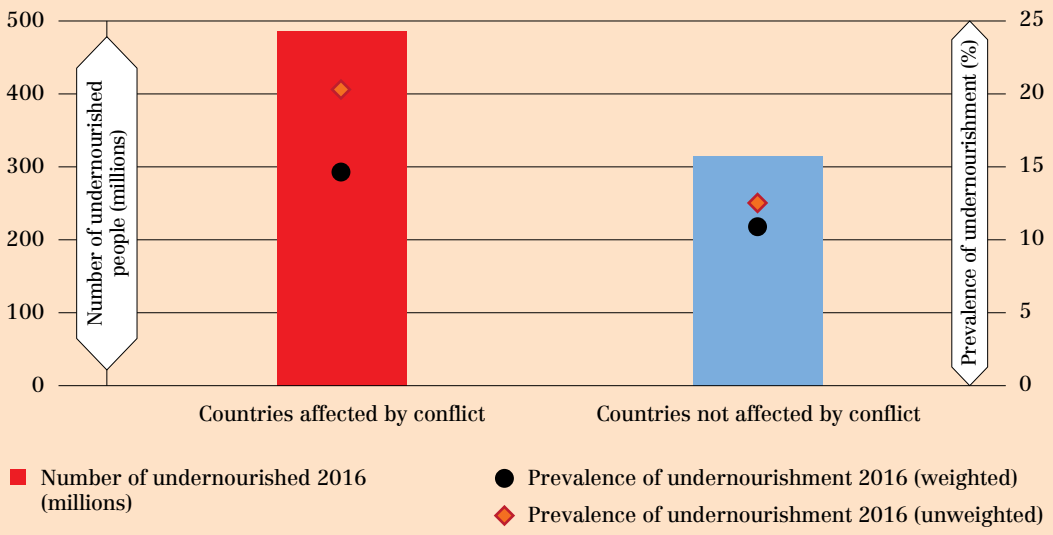
11 See for example Besley and Persson, 2014; Breisinger *et al.*, 2014; Acemoglu and Robinson, 2012; Brück *et al.*, 2016; d'Errico, Grazioli and Mellin, forthcoming; d'Errico and Pietrelli, 2017.

Forty-five are low- and middle-income countries and one is a territory. Of these, 13 are in protracted crisis and 20 are in fragile situations (see Table A.1 in the Annex).

When conflict hits hardest on food security and nutrition

Simple correlations show that levels of chronic and acute food insecurity and malnutrition are higher in countries affected by conflict. In 2016, for example, the unweighted average of the prevalence of undernourishment in countries affected by conflict was almost eight percentage points higher than in countries not affected by conflict (Figure 4).[12] (The difference is four percentage points when weighting for population size). A salient finding is that the majority of hungry people live in countries affected by conflict: 489 million out of a total of 815 million chronically undernourished in 2016.

FIGURE 4 Prevalence and number of undernourished people in low- and middle-income countries with and without conflict, 2016



Source: UCDP for classification of countries affected and not affected by conflict; FAO (2017c) for prevalence of undernourishment data.

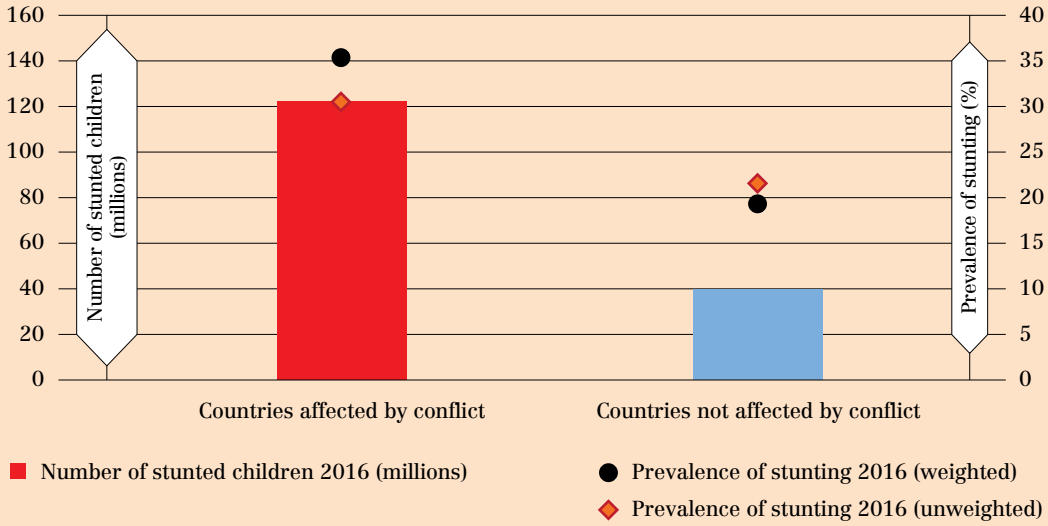
Note: See Annex for the list of countries defined as being affected by conflict.

This difference is even more pronounced for child undernutrition. Almost 122 million, or 75 percent, of stunted children under age five live in conflict-affected countries, with the difference in prevalence between conflict and non-conflict countries at nine percentage points if not weighted for population size (Figure 5).[13] (The difference is sixteen percentage points for the weighted average). These are national averages; the nutritional impact at the household level of directly affected populations tends to be even starker, with lasting adverse impacts on human development (see Box 2).

[12] The difference between the two country groups is statistically significant at a 99 percent level of confidence. The difference refers to the unweighted estimates of the prevalence of undernourishment (that is, not weighted for differences in population size across countries) between countries affected by conflict and those that are not.

[13] Likewise, the difference for the unweighted prevalence is statistically significant at a 99 percent level of confidence.

FIGURE 5 Prevalence and number of stunted children in low- and middle-income countries with and without conflict, 2016



Source: UCDP for classification of countries affected and not affected by conflict; UNICEF, WHO and World Bank (2017) for prevalence of child stunting; UNDESA Population Division for population of children under five years in 2016.

Note: See Annex for the list of countries defined as being affected by conflict. Region aggregates were calculated by population-weighting the latest available survey data (from 2010 to 2016); data were available for more than 50 percent of population in each region.

These are stark findings. Yet, given the potentially devastating impact of conflict on livelihoods, one might expect such differences to be even larger. However, conflict is but one factor that determines food security and nutrition outcomes, particularly when it occurs on a local scale. Hence, simple correlations between the level of food insecurity and the existence of conflict explain very little, requiring deeper analysis of the transmission channels (as done in Chapter 3).

BOX 2 Short- and long-term impacts of conflict on nutrition

The implications of conflict on nutrition are adverse in both the short and long term. There is growing literature – reviewed by Brück *et al.* (2016) and presented here – that has identified strongly adverse short-term effects of early-life exposure to conflict on children in terms of their nutritional status. The key challenge to assessing the causal chain of impact beyond existing data limitations is that nutritional status may be worse due to factors other than conflict, some of which are a correlate of conflict themselves. For instance, if poor households – whose children's nutrition is likely worse even in the absence of conflict – are disproportionately affected by conflict, a simple estimate of the relationship between conflict and nutritional status will be misleading.

Most evidence exists for anthropometric outcomes, which are directly associated with nutritional status. These are primarily height conditional on age and gender (HAZ) scores, which identify stunting – that is, the growth failure in a child that occurs over a slow, cumulative process. As stunting thus reflects episodes of sustained undernutrition, low scores are associated with chronic malnutrition. A second indicator is the weight conditional on age and gender (WAZ) score. Low WAZ scores are associated with general malnutrition. Third, weight-for-height measures, or "wasting", are often considered the most robust indicator for acute malnutrition.

Bundervoet, Verwimp and Akresh (2009) find that, in Burundi, children under five years of age that were born in regions affected by civil war violence have significantly lower HAZ scores than those born in other regions. Akresh, Verwimp and Bundervoet (2011) find very similar effects of civil war violence on child stunting in northern Rwanda, and contrast these effects with those of a contemporaneous crop failure in southern regions that were not affected by conflict. The analysis finds important differences between conflict and non-conflict shocks: war exposure affected all children equally, while in the case of crop failure only girls were negatively affected. This result suggests that during crop failure families could smooth boys' consumption, while during conflict exposure they could not. An important number of other studies report consistent, adverse effects on anthropometric outcomes among children from a range of conflict-affected contexts, including Angola, Colombia, Côte d'Ivoire, Eritrea, Ethiopia, India, Iraq and Mexico (see for example Arcand, Rodella and Rieger, 2015; Duque, 2016; Minoiu and Shemyakina, 2014; Akresh, Lucchetti and Thirumurthy, 2012; Akresh, Caruso and Thirumurthy, 2016; Tranchant, Justino and Müller, 2014; Guerrero-Serdán, 2009; Nasir, 2016).

In comparison with studies of HAZ scores, much less evidence exists for weight-based measures. The few existing studies suggest that violent conflict has strong negative effects on children's WAZ scores. Arcand, Rodella and Rieger (2015) find that in Angola, WAZ scores are substantially lower in areas with a high density of landmines. Tranchant, Justino and Müller (2014) also provide robust evidence that political violence in India has a direct negative impact on WAZ scores, although they recognize that the mechanisms underlying the strong link between conflict exposure and lower HAZ scores are likely context-specific. In contrast to WAZ, political violence in India is not found to have a direct effect on HAZ, but rather a negative effect is "activated" for those violence-affected children that are in addition exposed to drought. While speculative, these findings suggest that violence has a negative, indirect impact on

HAZ via a reduction in the ability of households to cope with drought. Perhaps the richest, most rigorous anthropometric study is the one by Guerrero-Serdan (2009), which considers the impact of violence on chronic, general and acute malnutrition in Iraq. It corroborates the dominant finding that conflict-affected children are shorter. By contrast, the impacts on WAZ and wasting are weak and inconclusive, providing support for the theory that the impacts on the different forms of malnutrition differ noticeably.

A recent study on stunting in Somalia found a strong statistical relationship between low-intensity conflict and anthropometric food security outcomes (Sneyers, forthcoming). This finding was derived from an analysis of household survey data that could be matched contemporaneously and geographically with data on events of violence. It further highlights the importance of analysing food security indicators at the household level in countries identified as being at risk of or experiencing low-intensity or geographically disaggregated violence.

A related body of evidence shows that adverse short-term effects of conflict on children through nutritional channels may already be activated before a child is born (*in utero*). Pregnant women who are exposed to (more) conflict give birth to children of lower weight – thus transmitting adverse effects of conflict across generations. The pioneering study by Camacho (2008) finds that exposure of women to violence across Colombia during the first three months of pregnancy resulted in lower birth weights. These effects have been confirmed by findings from diverse contexts, such as Brazil, Mexico, Nepal, Jammu and Kashmir, and Palestine (Foureaux Koppensteiner and Manacorda, 2016; Brown, 2015; Valente, 2011; Parlow, 2012; Mansour and Rees, 2012). While the relationship between conflict exposure *in utero* and birth weight is strong, questions about the underlying mechanisms – which are likely to be highly context-specific – and the impacts on measures (such as height as a child) have hitherto been only inconclusively debated (Akresh, 2016).

The famous "foetal origins hypothesis" posits that variation in access to nutrition in the womb codes long-term differences in health and well-being. The original hypothesis has been extended to early-life nutrition after birth and affirmed by a large body of empirical evidence, which has been reviewed by Almond and Currie (2011) and Currie and Vogl (2013).

A few recent studies have started to produce solid evidence showing the detrimental long-term impacts of conflict exposure early in life. Damaging effects on physical and cognitive development outcomes as an adult have been reported from various other conflict-affected settings, such as Cambodia, Germany, Mozambique and Zimbabwe (de Walque, 2006; Akbulut-Yuksel, 2014; Domingues and Barre, 2013; Alderman, Hoddinott and Kinsey, 2006). The study by Akresh *et al.* (2012) provides convincing evidence that the magnitude of the impact may vary significantly by age at exposure, even 40 years after the end of the conflict. They show, for instance, that women who had been exposed to the Nigerian civil war in Biafra between 0 and 3 years of age are, on average, 0.75 centimetres shorter than women of the same age who were not exposed. Women who were exposed when they were 13 to 16 years old are 4.53 centimetres shorter than non-exposed women of the same age. These strong heterogeneities have yet to be validated across other conflicts and contexts.

Source: Elaborated from literature review presented in Brück *et al.* (2016).

Response capacity, fragility and protracted crises

As indicated, most of today's conflicts are intrastate and localized. Hence, those impacts that exacerbate problems of hunger and malnutrition may not spread to the entire population, such that national averages of food security and nutrition may well underestimate the true impact on the affected population. In addition, as already discussed, the true impact of conflict is mediated further by other conditioning factors such as response capacity of governments and institutions and vulnerability to natural hazards.

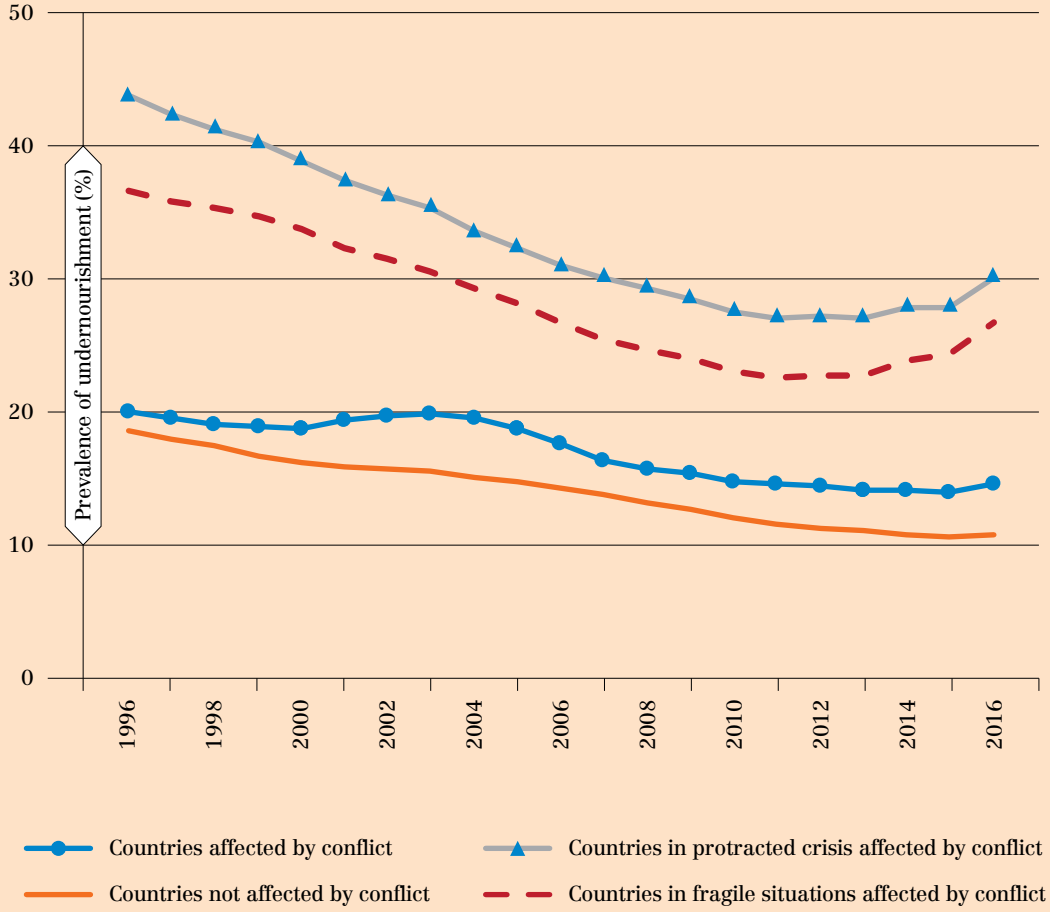
Figure 6 shows marked differences between the prevalence of undernourishment for the group of 46 countries affected by conflict and subsets of these countries also considered in a state of fragility and/or protracted crisis (as defined in the Annex) at any point during 1996–2016. It clearly shows that conflict compounded by fragility and other stress factors leading to protracted crises substantially increases the likelihood of chronic undernourishment. The prevalence of undernourishment in the 46 countries affected by conflict is on average between 1.4 and 4.4 percentage points higher than for all other countries. Where compounded by conditions of fragility, the prevalence is between 11 and 18 percentage points higher,[14] and for protracted crisis situations the prevalence is about two and a half times higher than for countries not affected by conflict.

Figures 7a and 7b confirm the strong correlation between the degree of fragility (this time defined by the Fund for Peace 2016 Fragility Index) and the prevalence of undernourishment and stunting, with most countries affected by conflict situated at the higher end of the curve.

Notably, though, Figure 6 also shows that the prevalence of hunger has, by and large, declined at a roughly similar pace across all country groupings – although a recent increase in 2016, after the decline had plateaued, may signal a reversal of this trend. This might suggest that it is possible to improve food security despite conflict and natural and human-made disasters and stress factors. By the same token though, it may also be that the changing nature of conflicts towards more localized violence and fighting means that impacts are also mainly local, and do not necessarily impede improvements for the rest of the population not immediately affected by the conflict. Indeed, countries which have been relatively free of conflict more recently (such as Cambodia, Ethiopia and Nepal) or that have witnessed low-intensity, localized conflict (such as the Philippines and Nepal) have made the greatest progress.

[14] A recent study confirms the strong correlation between the degree of fragility and the prevalence of undernourishment and stunting. See FAO (2017a).

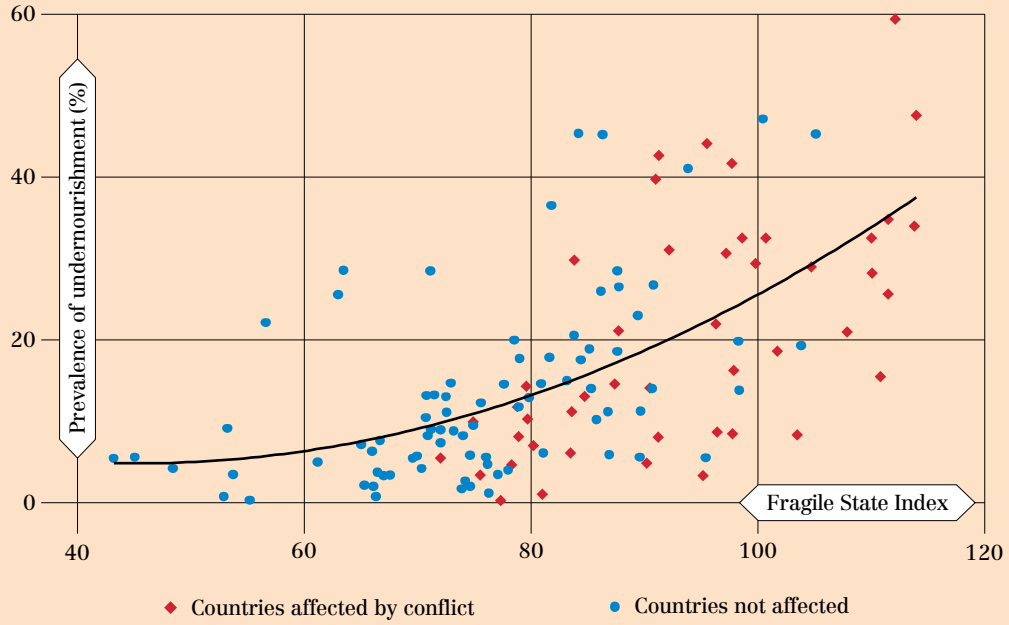
FIGURE 6 **Prevalence of undernourishment in countries affected by conflict, for all countries and for countries in protracted crisis or in the Harmonized List of Fragile Situations, 1996–2016**



Source: UCDP for classification of countries affected and not affected by conflict; World Bank for classification of countries in fragile situations; FAO for classification of countries in protracted crisis and for data on prevalence of undernourishment.

Note: The estimates in the graph refer to the population-weighted average of the prevalence of undernourishment in countries affected by conflict, for all countries, for countries with a protracted crisis or for those on the Harmonized List of Fragile Situations, 1990–2016. See Annex for the list of countries defined as being affected by conflict as well as other definitions.

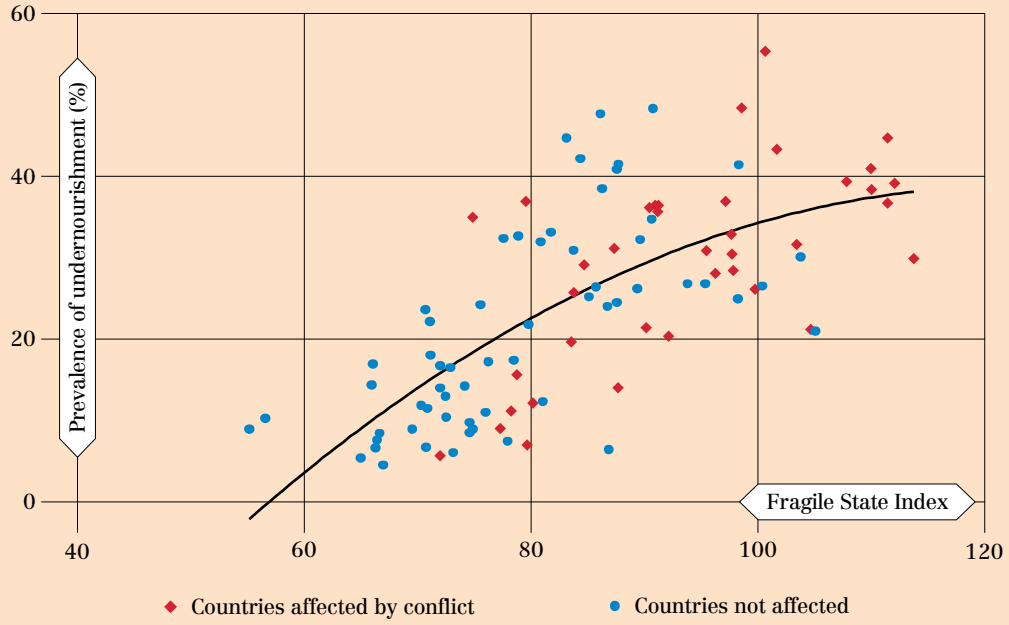
FIGURE 7a Prevalence of undernourishment and fragility in low- and middle-income countries affected and not affected by conflict, 2016



Source: FAO for prevalence of undernourishment data; Fund for Peace 2016 for fragile state index.

Note: See Annex for the list of countries defined as being affected by conflict as well as other definitions.

FIGURE 7b Prevalence of stunting and fragility in low- and middle-income countries affected and not affected by conflict, 2016



Source: UNICEF, WHO and World Bank (2017) for prevalence of child stunting data; Fund for Peace 2016 for fragility index.

Note: See Annex for the list of countries defined as being affected by conflict as well as other definitions.

Nonetheless, even violent conflicts concentrated in specific areas can lead to short-term impacts on food security and nutrition, which can then have devastating lifelong effects on health, well-being, productivity, and physical and cognitive development.[15] Conflict is often a leading cause of famine and food crises. The Global Report on Food Crises 2017 states that in 2016 alone, the far-reaching effects of violent conflict and civil insecurity left more than 63 million people in 13 countries facing severe levels of acute food insecurity and in need of urgent humanitarian assistance (FSIN, 2017).

In South Sudan, for example, famine was declared in February 2017. The level of food insecurity had already increased dramatically since the start of the civil conflict in December 2013, but it worsened further to crisis levels in 2016 and 2017 (FSIN, 2017). However, crisis-level food insecurity is not currently affecting the whole country, but rather is concentrated in rural areas where the conflict is most intense. This case reveals other aspects of the nexus between conflict, food security and peace that are further discussed in the remainder of the paper.

Thus, based on the evidence, a closer look at the nature of the conflict, its geographical scale, intensity and duration, and the channels through which it impacts on food security and nutrition is needed in order to draw more definitive conclusions regarding the trends and patterns described above.

Do the duration, intensity and scale of conflict matter?

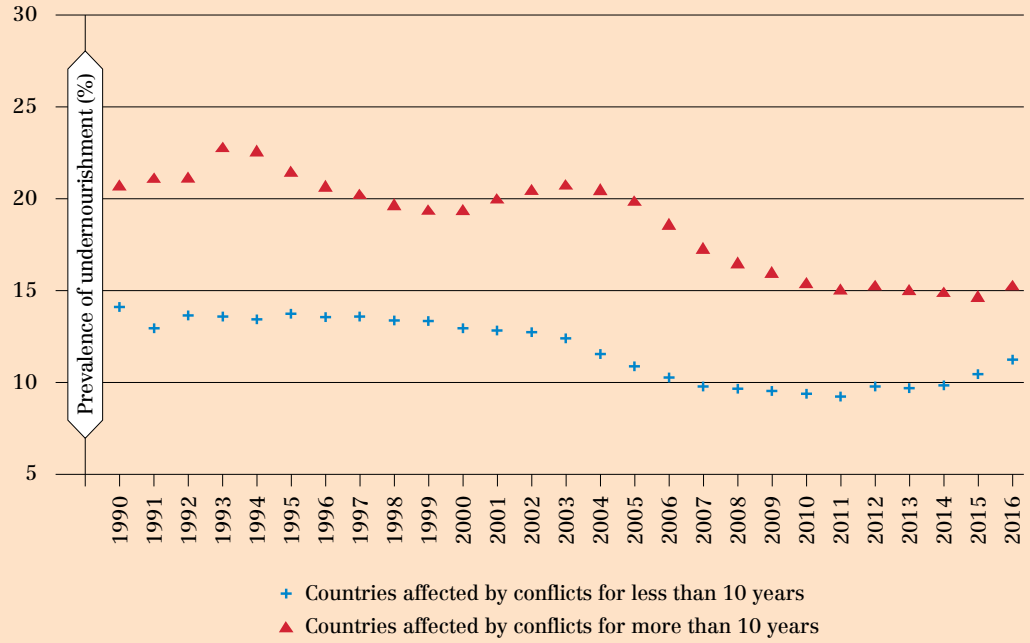
The evidence thus far suggests that conflict has a significant negative impact on food security and nutrition, whether measured in terms of access, utilization, stability or availability. A comprehensive survey of the empirical literature by Brück *et al.* (2016) corroborates this robust finding. At the same time, the type of conflict appears to be a weak predictor of the likely transmission channels and degrees of impact. More clearly distinguishable impacts of conflict on food security and nutrition may depend on the intensity, duration and geographical scale of the violence. A recent study by the International Monetary Fund (IMF) analysing annual data for 179 countries from 1970–2014 not only finds that impacts of conflict on economic growth are large, but that the impact increases with the intensity and duration of conflict (Rother *et al.*, 2016). There is less evidence, however, on how duration, geographical scope and intensity of conflict and violence affect food security.

Because of the dynamics of conflict, which may change in nature, comparing the influences of duration, intensity and scale of conflict on food security and nutrition outcomes is not straightforward. Even in post-conflict contexts, violence can simply change its form as settings, actors and drivers change (OECD, 2016). Sometimes the factors that lead to a conflict may not disappear when the conflict is seemingly over; what's more, conflicts can take on a cyclical nature if underlying factors are not addressed. In Africa and Asia, actors of violence during conflict and war often reconstitute themselves in post-conflict periods to take economic and political advantage of fragile and vulnerable environments. The Central African Republic is one example of the complexity and intractability of conflict and violence "traps" and their impact on food security and nutrition. Another example is the armed conflict in Colombia, which during a time span of 50 years showed different degrees of intensity and developed in different territories, as a result of which the degree and nature of the socio-economic impacts kept changing over time (Segovia, 2017a).

[15] See for instance Arcand, Rodella and Rieger, 2015; Duque, 2016; Minoiu and Shemyakina, 2014; Akresh, Lucchetti and Thirumurthy, 2012; Akresh, Caruso and Thirumurthy, 2016; Tranchant, Justino and Müller, 2014; Guerrero-Serdán, 2009; Nasir, 2016; Bundervoet, Verwimp and Akresh, 2009.

Despite these complexities, the broad picture based on a simple cross-country comparison for the sample of 46 countries affected by conflict suggests that, on average, food security conditions tend to be significantly worse the longer the conflict lasts (Figure 8). This difference has also become wider in recent years due to the deteriorating food security situation in countries that have only recently been affected by conflict – or where data permit to classify them as such since 2014 (i.e. the Syrian Arab Republic, Yemen, South Sudan, the Central African Republic, and so on).

FIGURE 8 Prevalence of undernourishment over time in countries affected by conflict considering duration of conflict, 1990–2014



Source: UCDP battle-related deaths dataset for conflict and non-conflict country classification and conflict duration; FAO for prevalence of undernourishment.

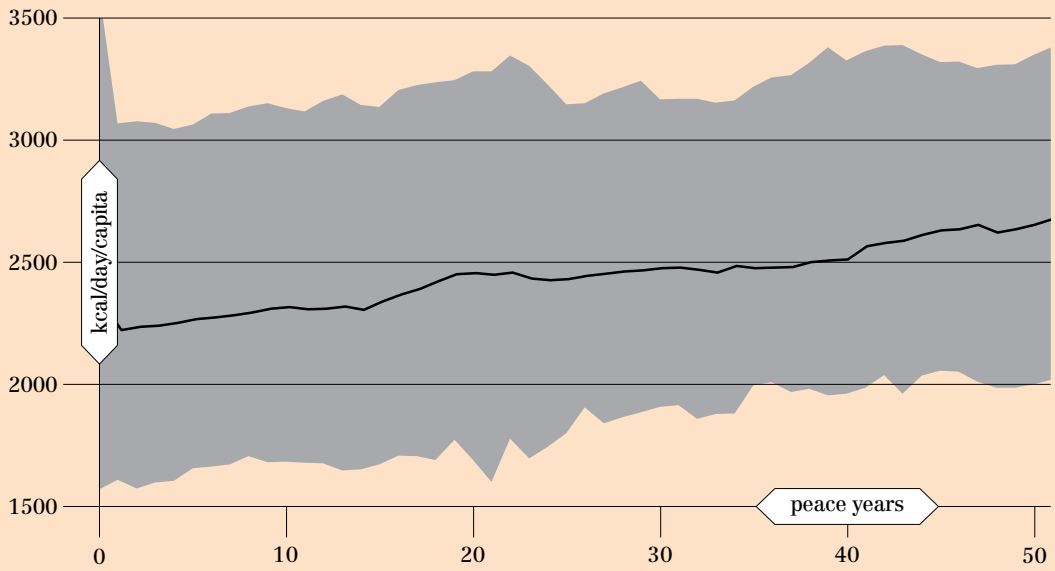
Note: See Annex for the list of countries defined as being affected by conflict as well as other definitions.

There is additional evidence from Brück *et al.* (2016), who examine the relationship between the duration of "peace spells" and the associated food supply levels.[16] Exploiting the time-series variation in the data for each unique duration length, they aggregate the data to arrive at an average level of food supply. The results are presented in Figure 9. The solid line in the graph indicates the average and the grey shaded area the 95 percent uncertainty interval. The average food supply level for zero peace years starts out relatively high due to the inclusion of countries like Turkey and Israel, which are both coded as conflict countries for the whole period but have relatively well-developed economies and high food supply levels, thus pushing the average upwards – which, again, reflects the challenges of using conflict typologies. The figure further illustrates that longer peace spell durations are associated with higher food supply levels, as is reflected in the interrupted upward annual trend. This is a very gradual process where on average each extra year of peace is associated with about a 9 kcal increase in the daily per capita dietary energy supply (DES). Moving from one year of

[16] In this context a peace spell is simply the duration of subsequent years without a recorded conflict, according to the armed conflict dataset.

peace to two corresponds to an average increase of 13 kcal/day/capita; moving from 5 to 10 corresponds to a 49 kcal/day/capita increase; and going from 10 to 20 brings an increase of 138 kcal/day/capita. An issue that needs to be kept in mind, though, is the amount of deviation as given by the wide uncertainty interval. This uncertainty likely reflects the complexity of the nexus between conflict, food security and peace.

FIGURE 9 Length of peace spells versus the average level of dietary energy supply



Source: Brück *et al.*, 2016 (Figure 4.1).

Note: Solid line indicates the average and the grey shaded area the 95 percent uncertainty interval.

How much the duration of a conflict will affect food security seems to depend critically on the extent to which food systems are disrupted; this tends to happen when conflict is more widespread geographically. In such cases, the impacts on food security are more likely to be felt across all dimensions of food security, with effects being channelled through disruption of production, trade and so forth (as discussed in Chapter 3).

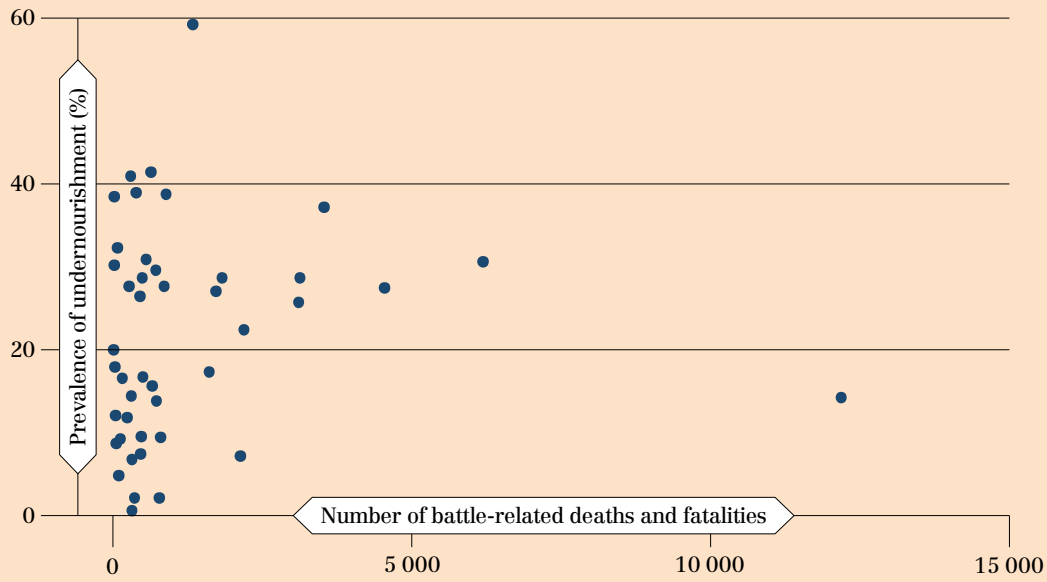
Brück *et al.* (2016) find strong – albeit contested – cross-country evidence that the reason for fighting has a statistically significant impact on the severity of conflict-induced food insecurity. They find that conflicts over who controls government tend to result in wider impacts on food insecurity than struggles over control of territory. This could be due to differences in how violence is distributed geographically: conflicts over control of the entire country will have larger effects on food systems than conflicts over a specific geographic region.

While food insecurity seems to be a greater concern overall where conflict lasts longer and where it has economy-wide effects (see Chapter 3), the impact may further depend on the intensity of the violence and whether this intensity changes during conflict. In Figure 10, battle deaths are presented on the x-axis and prevalence of undernourishment on the y-axis. No systematic relationship is immediately apparent, given the wide dispersion of rates of undernourishment across intensity levels of conflict. The graph does reflect the shift towards low-intensity conflicts (with fewer battle deaths) on average during the period 2000–2015;

the manifestation that, as indicated earlier, conflict has become more localized. This is visible in the higher concentration of cases (with a wider dispersion) close to the x-axis. During this period, a number of intense civil wars, in particular those in West Africa and the Balkans, were drawing to a close. Furthermore, by 2005, long-term civil wars in Nepal, India and Colombia were drawing down in intensity. By 2010, most conflicts had become low-intensity conflicts, as measured by the number of battle-related deaths. However, Afghanistan, Iraq and Yemen still stand out as cases with high battle death counts.

Hence, because conflicts have become less intense as they are more localized, one finds no clear correlation between the number of battle deaths and the level of food insecurity when using national averages for the prevalence of undernourishment. Moreover, while reflecting human suffering to the extreme, the number of battle deaths may not fully reflect how a conflict's intensity may affect food security. The degrees of destruction of rural infrastructure and forced displacement of people may also matter – and are not properly captured by the UCDP battle-related deaths dataset in Figure 10.[17] This further points to the need to take a closer look at transmission channels (see Chapter 3).

FIGURE 10 Prevalence of undernourishment and number of battle-related deaths and fatalities in 46 countries affected by conflict, 2000–2015 (average)



Source: UCDP for classification of countries affected by conflict, and for best estimates of battle-related deaths and fatalities; FAO for prevalence of undernourishment data.

Note: The country that experienced more than 10 000 battle-related deaths/fatalities on a year average between 2000 and 2015 is the Syrian Arab Republic. The country that reported the highest prevalence of undernourishment between 2000 and 2015 is Somalia. See Annex for the list of countries defined as being affected by conflict as well as other definitions.

[17] The incremental scale of conflict intensity of the Heidelberg Institute for International Conflict Research (HIIK) takes into account factors like material destruction and the number of refugees and internally displaced persons.

In sum, food insecurity tends to be greater where there is conflict; this is a solid and unambiguous finding. Certain types of conflict correlate with different dimensions of food security, but this finding cannot be generalized for all types of conflict and across all dimensions of food security. For example, it is possible to observe high levels of undernourishment where conflict is low in intensity (as measured by the number of battle-related deaths), but not in all cases. On the other hand, internationalized intrastate conflicts generally seem to have larger impacts on food availability and food price volatility. For other types of conflict, no distinguishable patterns are found from cross-country evidence.[18] Food security and nutrition outcomes tend to be significantly worse where conflict is protracted and compounded by weak institutional response capacity (fragility) and other stress factors, like vulnerability to natural hazards. As most of today's conflicts are characterized by localized violence and fighting, food security and nutrition impacts also have become more localized.

[18] A significant data problem is the relatively small number of countries affected by conflict. Brück *et al.* (2016) for example find that 17 countries were affected in the highest year for low-intensity conflict, while the most countries suffering intrastate conflict in any year was 25 in 1997. With 201 countries in their dataset, this means that at the highest level of intrastate conflict only 12 percent of total countries were affected. Therefore, in the analysis there are cases where countries affected by conflict performed poorly on food security indicators relative to countries not affected by conflict, but the difference is not statistically significant. The fact that countries affected by conflict may experience various types of conflict is also problematic for analysing causal directionality of conflict on food security (and vice versa), because there may be endogeneity and many intervening variables that make direct causal relationships between conflict and food security difficult to estimate at best.

3 The myriad ways in which conflict affects food security and nutrition

KEY MESSAGES

- Although some common transmission channels can be identified, the impact of conflict on food security and nutrition is highly context-specific, and dependent on the vulnerability of livelihoods as well as on the nature of the conflict.
- The destruction and disruption of productive capacity and economic activities due to conflict and civil insecurity causes economic crises that seriously undermine food access and availability as well as people's health and nutrition.
- The impact on food systems in predominantly agricultural areas can be severe and felt across the food value chain, including production, harvesting, processing, transportation, financing and marketing.
- Conflict undermines resilience and often forces individuals and households to engage in increasingly destructive and irreversible coping strategies that threaten their future livelihoods, food security and nutrition.

Populations affected by conflict are at greater risk of food insecurity than those living in more peaceful settings. However, conflict may affect livelihoods, and hence also food security, in a myriad of ways. The transmission channels are not likely to be the same, because (as already noted in Chapter 2) the nature of conflict tends to differ from context to context and, likewise, the capacity of people and communities to cope with threats to their livelihoods will also be specific to each setting. Yet a clear understanding of the transmission channels is essential to identify the options for people and communities to improve their resilience and safeguard their livelihoods.

The precise way in which conflict affects food security through livelihood changes can be difficult to ascertain, as various impacts can occur simultaneously: for instance, conflict not only hampers food availability and access (e.g. by affecting incomes or disrupting food distribution networks), but also disrupts health services and basic sanitation. Conflict impacts on food security can be direct, such as by forcing people to abandon their livelihoods and by destroying crops, food stocks and productive assets. They can also be indirect by disrupting economic life and hampering the functioning of social services and institutions, which in turn may affect people's incomes and access to food (Justino, 2012). Indirect impacts can also include disruptions to food systems and markets, leading to increased food prices or decreased household purchasing power; or reduced access to water and fuel for cooking, which negatively affects food preparation, feeding practices and food allocation within the household. Given the complexity of the transmission channels and the specificity of contexts, cross-country quantitative assessments of the importance of any of these channels have remained

rather inconclusive (Brück *et al.*, 2016). Hence, much of the analysis in this chapter builds on case studies.

Below, building on nine case studies prepared for this report,[19] as well as on other available empirical evidence, the following main channels and coping mechanisms are assessed:

a. economy-wide impacts on production, trade and public finances that also affect people's livelihoods and, hence, their food security and nutrition;

b. direct impacts on agricultural production and assets, food systems and rural livelihoods;

c. factors that determine the vulnerability or lack of resilience of households and communities when confronted by shocks to their livelihoods caused by conflict.

3.1 Impacts on economic production, trade and public finances

Conflict and civil insecurity can have immediate and long-term negative economic impacts through the destruction and disruption of productive capacity and economic activities at the national, subnational and sectoral levels. Conflicts tend to provoke economic crises, leading to sharp drops in output, incomes and employment; food price inflation; erosion of fiscal resources; and breakdown of social services and protection mechanisms. Such broader economic impacts can seriously affect food access and availability.

Economic contractions

There is extensive literature that has investigated the effects of civil war on economic production and growth across countries.[20] One of the more influential studies is the widely-cited paper by Collier (1999), which contends that during civil wars, gross domestic product (GDP) per capita declines at an annual rate of 2.2 percent. Since then, however, it has become apparent that civil wars have highly heterogeneous effects on economic production for each country. The case study analysis by Bove, Elia and Smith (2016) shows that civil war reduces GDP by 9.1 percent on average. Yet, in only 12 of the 27 cases studied were significant economic declines reported as the consequence of war. In fact, economic adjustments across all country cases range from -33 percent to +32 percent changes in GDP during episodes of civil war. A study by the IMF (cited earlier) analysing annual data for 179 countries from 1970 to 2014 found that conflict not only had a significant impact on economic growth, but that the impact increased with the intensity and duration of the conflict (Rother *et al.*, 2016). In countries affected by high-intensity conflict, GDP decreased by 8.4 percentage points per year on average, while the decline averaged 1.2 percentage points in countries with less intense conflicts (Rother *et al.*, 2016). Accounting for the duration of conflict, after three years countries suffered GDP losses of between four and nine percentage points on average per year. For countries in conflict in the Near East and North Africa region, the impact was greater, with an estimated GDP loss of between 6 and 15 percentage points per year. The study also found further spill-over effects in neighbouring economies.

[19] The case studies are for Colombia (Segovia, 2017a), Gaza Strip (Brück, d'Errico and Pietrelli, forthcoming), Ethiopia (Habibi, forthcoming), El Salvador (Segovia, 2017b), Mali (d'Errico, Grazioli and Mellin, forthcoming), Somalia (Sneyers, forthcoming), South Sudan (FAO, 2017b), Uganda and the Syrian Arab Republic. The information from Uganda is from a working note prepared at the FAO office in Uganda, and the information for the Syrian Arab Republic is based on materials from the Regional Food Security Analysis Network (RFSAN) – a partnership between FAO and iMMAP (an international NGO).

[20] For a survey on the economic costs of conflict, see for example de Groot, Bozzoli and Brück (2015).

Another recent study of 20 countries shows that armed conflict reduces the level of GDP per capita by 17.5 percent on average (Costalli, Moretti and Pischedda, 2017). Looking at the results by country, the impacts vary widely however: the Syrian Arab Republic's GDP fell by more than 50 percent between 2010 and 2015, Libya's by 24 percent in 2014 once the violence picked up, and in Yemen it dropped by an estimated 25–35 percent in 2015 alone.

Looking at conflict-affected areas within countries, a small body of recent work finds strong evidence that regional economic performance often quickly spreads to regions not directly affected by conflict.[21] As most of the evidence comes from variations in bombing intensity, these results have been interpreted as evidence that recovery from destruction, particularly that of infrastructure, is often rapid. In relation to this, a few studies have confirmed the hypothesis by Collier (1999) that sectors most dependent on either capital or transaction are the most vulnerable to conflict violence, but also recover quickly (see the district-level analysis for Indonesian industries by Vothknecht and Sumarto, 2011). By contrast, the study by Martinez-Cruz and Rodríguez-Castelán (2016) of Mexican homicide rates demonstrates that intense violence with a relatively low level of destruction of physical capital strongly increases the risk of chronic poverty at the district level.

Conflict-induced economic contractions can lead to substantial reductions in employment and income opportunities as well as increases in poverty, reducing the ability of households to meet their food and health needs. In addition, there is major divergence in poverty reduction between peaceful and stable countries and those affected by conflict. The former manage to reduce poverty at a steady pace, while the latter have poverty rates that are stagnant at best. Poverty rates are 20 percentage points higher in countries affected by repeated cycles of violence over the last three decades. The World Bank (2011) and Hong (2015) find that for each year of violence in a country, poverty reduction tends to lag by almost one percentage point.

An important consideration is that conflict does not always lead to economic collapse. For example, despite the upsurge in armed conflict in the Democratic Republic of the Congo beginning in 2012, the country's economy grew by 7.1 percent in 2012, 8.5 percent in 2013, 8.9 percent in 2014 and 6.9 percent in 2015, driven mainly by a thriving mining sector (World Bank, 2017a). However, this rapid growth has not led to improvements in social indicators: in 2013, 6.7 million people (almost 10 percent of the population) were facing severe levels of acute food insecurity (IPC Phase 3 Crisis and IPC Phase 4 Emergency) and were unable to access enough food to meet their basic needs (WFP, 2014a). In 2016, an estimated 5.9 million people were still considered acutely food-insecure and an estimated 3.9 million children were suffering from acute malnutrition, of which 1.9 million were severely malnourished (FSIN, 2017). Despite the strong economic growth, poor governance and insecurity have kept public expenditure and investment in economic development, road construction, drinking water systems and health care at low levels. Conflicts among armed groups in the eastern part of the country, intercommunity violence in other areas, and instability in neighbouring countries have led to recurrent, large-scale refugee migrations into the Democratic Republic of the Congo, further complicating the food security situation (FSIN, 2017).

Society may also organize itself differently as a result of conflict, and this may bring about economic benefits. A study by Dell and Querubin (2016) finds that bombing in Viet Nam increased sociopolitical collective action by local populations in the short term. Gáfaro, Ibáñez and Justino (2014) provide similar evidence of positive impacts on collective action in Colombian areas where armed groups were present. Increased collective action as a social

[21] See for example Davis and Weinstein, 2002; Brakman, Garretsen and Schramm, 2004; Lopez and Wodon, 2005; Miguel and Roland, 2011.

institution may improve productivity and food security when it helps to establish networks and to solve coordination problems. Sánchez de la Sierra (2016) shows that, under certain circumstances, bandits in eastern Congo establish institutions to stimulate local economic activity, at least temporarily. A different set of studies emphasizes that conflicts may have strong impacts on land use and tenure systems, although findings that can be generalized are to date scarce (see review in Baumann and Kuemmerle, 2016). Overall, however, institutional change (which characterizes most violent conflicts) and the impacts on production remain very poorly understood, both at the national as well as the local level.

Inflationary pressures and disruption of trade and markets

Conflict also may disrupt and restrict trade and movements of goods and services both within and between countries. When conflict disrupts export channels, it drains foreign exchange resources. In turn this limits import capacity, which may lead to shortages of commodity supplies and inflationary pressure. For food-importing countries, this can mean limited food supplies and increased food prices, affecting food security in all its dimensions. Import disruptions may not only lead to reduced food supply in markets, but also to reduced availability or affordability of non-food items necessary for food preparation (such as fuel for cooking).

Declining and/or more volatile exports have been identified as one of the channels through which civil strife has affected the availability and stability of food in Colombia and El Salvador (Segovia, 2017a, b). The Colombian case further shows that interruption of domestic trade flows can also be among the main causes of food insecurity.

Another example is South Sudan where, since 2015, levels of food insecurity have become progressively worse. Rising food prices caused by tight supplies and disrupted distribution systems have been an important factor. The food price rise has been compounded by a combination of a sharp devaluation in the local currency and high transport costs due to insecurity along major trade routes. Year-on-year inflation rose to 836 percent in October 2016, while the South Sudanese pound depreciated from SSP 16 per USD in August 2015 to SSP 74 per USD in November 2016. In July 2016, the conflict in Juba impeded inflows of imported food through the main southern supply coordinator from Uganda, reducing food supplies and driving up prices further. Cereal prices more than doubled during that month to a level almost ten times higher than in 2015. The repercussions for food security and nutrition, through the impacts on livelihoods, have been catastrophic (as further discussed below in Section 3.2).

Erosion of public finances and delivery of social services

Economic contractions tend to erode public finances, which in turn may diminish or in extreme cases fully disrupt social protection mechanisms and delivery of basic social services that are most needed precisely in times of conflict. The economic crisis that has unfolded in Yemen since March 2015, as a result of the most recent outbreak of conflict in the country, is triggering a collapse of the social protection system and is also negatively affecting basic social services that are critical to nutrition outcomes, including the availability of health care and clean and safe water (see Box 3).

BOX 3 New forms of societal violence and conflict

The most recent outbreak of conflict in Yemen (beginning in March 2015) has had devastating effects on livelihoods and nutrition in the country, most notably through the economic crisis now affecting the entire population. The crisis has brought food insecurity and undernutrition to unprecedented levels. Yemen's GDP dropped by 34.6 percent between 2014 and 2015, the public budget deficit almost doubled between the first half of 2015 and the first half of 2016, and the currency exchange rate in the parallel market has repeatedly fluctuated and diverged from the official rate (YER 250 per USD), reaching a record high of YER 315 per USD in September 2016 (WFP, 2016).

In July 2016, the Central Bank of Yemen suspended public budget expenditures and domestic debt servicing. As a consequence, civil servants – who make up 31 percent of the workforce in the country – have encountered irregular salary payments or complete salary cuts. The entire social protection system has collapsed, including a suspension of schemes designed to help the most vulnerable populations maintain a basic standard of living (i.e. the Social Welfare Fund, which has helped 1.5 million beneficiaries since the beginning of the crisis in 2015).

The public-sector crisis continues to escalate, creating a host of uncertainties and threatening a possible breakdown of the banking system. The government's inability to pay salaries is accelerating the economic collapse and sending large parts of the country into a downward spiral of extreme food insecurity and increasing poverty. The liquidity crisis has directly affected more than 7 million people who depend on government salaries, reducing not only their food purchasing power but also their access to basic goods and services such as health care.

Yemen relies on imports for more than 90 percent of its staple foods; restrictions coupled with fuel shortages have reduced the availability of essential commodities, causing prices to soar since the conflict escalated in March 2015. The annual inflation rate has increased to over 30 percent, pushing average consumer prices 70 percent above pre-crisis levels and heavily reducing purchasing power for many. With both urban and rural communities relying on markets on a daily basis (70 percent of people in the case of rural communities), increases in the cost of food, cooking fuel, water and medicine all heavily undermine food access and utilization. Due to the poor performance of the agriculture and fishery sectors, along with job losses and suspensions of salaries, people's incomes have been significantly reduced. The economic crisis has been further exacerbated by natural hazards, including plagues of locusts as well as flooding caused by unusually high rains and tropical cyclones in 2016.

The nutrition situation has been aggravated by the dramatic breakdown of the health care system; an outbreak of cholera, and other epidemics such as malaria and dengue, which affected several governorates in 2016 and have continued into 2017 (WHO, 2015); depletion of savings, caused by loss of safety nets and government salaries; distressed livelihood coping strategies; and reduced ability to access food, both physically and economically.

As of March 2017, an estimated 17 million people are experiencing severe food insecurity (IPC Phases 3 and 4) and require urgent humanitarian assistance. This represents 60 percent of the entire population – a 20 percent increase from June 2016 and a 47 percent increase from June 2015 (IPC, 2017a). Chronic child

undernutrition (stunting) has been a serious problem for a long time, but acute undernutrition (wasting) has peaked in the last three years. Out of 22 governorates, four have levels of global acute malnutrition (GAM) above the emergency threshold of 15 percent, while seven record acute malnutrition prevalence at "serious" (GAM between 10 percent and 14.9 percent) and eight at "poor" levels (between 5 percent and 9.9 percent).

Mali presents another example where conflict has reduced access to basic services such as safe water and toilets, and where populations are more exposed to diseases such as malaria and diarrhoea. This in turn is seriously threatening people's capacity to handle subsequent shocks (d'Errico, Grazioli and Mellin, forthcoming). Furthermore, the case of Mali's Tuareg rebellion (see Box 1) also reminds us that unequal basic service provision and weak institutional capacity can act as triggers of conflict when parts of the population perceive them as unsatisfactory policies for inclusion. The establishment of a non-democratic regime after the 2012 military coup is seen to have made governance in Mali even more disconnected from the population and their concerns (Marchal, 2012; Siméant and Traoré, 2012).

It is critical that basic services are delivered during conflict in order to avoid any harmful impacts on food security and nutrition. For example, due to the failed agreement between the Sudan and South Sudan regarding a temporary joint administration managed by the Abyei Joint Oversight Committee (AJOC), United Nations agencies and Non-governmental Organizations (NGOs) are delivering most of the needed public services to both Dinka Ngok and Mysseryia communities, covering approximately 160 000 people (FAO, 2017c).

Brück, d'Errico and Pietrelli (forthcoming) scrutinized results from a household survey data analysis for the Gaza Strip and found a negative and statistically significant effect of the conflicts in 2014 on household resilience – namely, a deterioration in adaptive capacity as a result of the limited sources of income. However, the study reports an increase in the delivery of three different instruments of social assistance (cash, in-kind and other) and of access to basic services. This finding may be related to the support provided to households in the Gaza Strip by national and international organizations after the end of the conflict.

3.2 Impacts on agriculture, food systems and rural livelihoods

Most conflicts mainly affect rural areas and their populations, with strong negative impacts on agricultural production, food systems and rural livelihoods. On average, 56 percent of the population in countries affected by conflict live in rural areas, where livelihoods largely depend on agriculture. For protracted-crisis contexts, the proportion of the population living in rural areas is 62 percent on average, but can exceed 80 percent in cases such as Burundi, Ethiopia and the Niger. In many countries affected by conflict, subsistence agriculture is still central to food security for much of the population.

In 2014, agricultural activity accounted for more than 37 percent of GDP in countries characterized by extremely fragile contexts, compared with about 23 percent in fragile contexts and 8 percent in the rest of the world (OECD, 2016). In 2015, agriculture accounted for 23 percent of the economy in countries affected by conflict, and an average of 35 percent of GDP for countries in protracted crises (FAO, IFAD and WFP, 2015).

Conflict negatively affects almost every aspect of agriculture and food systems, from production, harvesting, processing and transport to input supply, financing and marketing.

Although there are no recent, comprehensive global estimates of these effects, a number of food security and nutrition assessments and analyses demonstrate the significant impacts of conflict on agriculture production, food systems and rural livelihoods at national and subnational levels.

These impacts can be direct and indirect, and felt immediately as well as in the long term. Direct impacts can be significant, particularly as regards the destruction of agricultural assets (such as land, livestock, crops, seed stocks or irrigation infrastructure); the forced or corrupt seizure of natural resources; and displacement from land, livestock grazing areas and fishing grounds. Indirect impacts include macroeconomic shocks (as highlighted in the previous section).

Not only is the duration of a conflict important for determining its impacts, there can also be effects that endure long after the conflict has subsided. For example, the agriculture sector in the Central African Republic – including crop production, livestock rearing and fishing – has been severely affected by the long-running and cyclical waves of violence and conflict in the country. Despite a peace agreement in 2015 reached among various armed groups and a decline in the conflict level from the most intense periods in 2013 and 2014, the agriculture sector is struggling to recover. Many areas are still not secure, and armed groups continue to block and control trade routes. In 2015, cereal production was 70 percent lower than the pre-conflict average for 2008–2012, while significant declines have also been noted in the country's two most valuable cash crops, cotton and coffee (FAO and WFP, 2016).

Disruption of agricultural production and food systems

Impacts through destruction of assets and infrastructure can be particularly damaging to agricultural production and food systems. A few recent studies have used innovative farm-level and conflict data and modern techniques to analyse the causal impact of violent conflict in East Africa and Colombia on agricultural production, including livestock and a variety of crops (such as coffee). The findings suggest that production may drop substantially in regions affected by conflict, due to ***inter alia*** direct effects on capital such as theft and destruction (Nillesen, 2007; Verpoorten, 2009; Rockmore, 2015; Munoz-Mora, 2016; Blattman and Miguel, 2010).

Six years of civil war in the Syrian Arab Republic have led to massive losses in the agriculture sector estimated at USD 16 billion for the period of 2011–2016, including destroyed assets and infrastructure (FAO, 2017b). Despite this, agriculture is still an important sector in the Syrian Arab Republic, as it accounts for an estimated 26 percent of GDP and remains a source of livelihood for 6.7 million Syrians, including those internally displaced who remain in rural areas. Today agriculture production is at a record low in the country, with around half the population unable to meet their daily food needs. Agricultural infrastructure, including irrigation systems, wells, roads, storage, and seed facilities, has been damaged on a large scale; agricultural value chains have been disrupted as well. Essential agricultural inputs, such as seeds, animal feed and fertilizer, have become inaccessible and unaffordable for most farmers. Food chains have been disrupted further by the inability to repair equipment, restore standing cropland and access traditional supply lines. Resulting displacement of people (see below) has disrupted the labour markets of both host and evacuated communities, strained productive capacity and decreased household purchasing power.

Conflict may also compromise food storage, as facilities can become unsafe or at risk of destruction or looting. New market structures may also evolve, as the absence of functioning government institutions provides fertile ground for informal markets to flourish – but with the risk that some groups may benefit at the expense of others. For example, certain groups may control all parts of the food chain and charge inflated prices to other sectors of the population, or there may be a fully open black market through informal value chains.

BOX 4 South Sudan – crisis in agriculture, food systems and public health

South Sudan provides an example of how conflict can affect the lives of the population in multiple ways, resulting in a humanitarian catastrophe on an enormous scale with destructive, long-term impacts on livelihoods as well as agriculture and food systems. This is corroborated by different analyses based on the Integrated Food Security Phase Classification (IPC, 2013, 2015a, 2016, 2017b) as well as other sources cited in this box.

In December 2013, two and a half years after South Sudan gained its independence, large-scale violence erupted in the Greater Upper Nile region, and by 2016 had spread to Greater Equatoria and Western Bahr el Ghazal. The ongoing conflict caused acute food insecurity to increase dramatically, with famine declared in parts of Greater Upper Unity State in February 2017 (see figure below). More than 4.9 million people (over 42 percent of the population) are currently severely food-insecure (IPC Phases 3, 4 and 5), a number that is projected to increase to 5.5 million in 2017 if the situation is left unaddressed.

Widespread acute malnutrition is giving rise to a major public health emergency: one in three children are acutely malnourished in the southern part of Unity State, and 14 out of 23 counties have GAM at or above the emergency threshold of 15 percent. GAM rates of more than 30 percent in Leer and Panyijiar and of 27.3 percent in Mayendit have been observed. These high levels are caused by reduced food access and by child, maternal and public health factors. The situation is exacerbated by a number of other factors, including inadequate diets, low quality and scope of water and sanitation facilities, and poor quality of (and access to) basic health services.

Armed conflict and communal violence are destroying rural livelihoods, decimating assets, and increasing poverty and vulnerability for millions of people. Agricultural production and food systems have been disrupted, livestock production has declined significantly, and the spread of violence to cereal surplus-producing areas in Equatoria is severely affecting crop production. Violence is limiting market access and disrupting trade flows, affecting livestock producers, consumers and traders alike. The economic impact of the current conflict on the livestock sector – which constitutes 15 percent of GDP – has been extensive, as livestock have been direct targets of insurgency and counterinsurgency warfare. It is estimated that the loss of GDP attributed to the livestock sector is between USD 1.4 billion and USD 2 billion for 2014–2016 (Gebreyes, 2016).

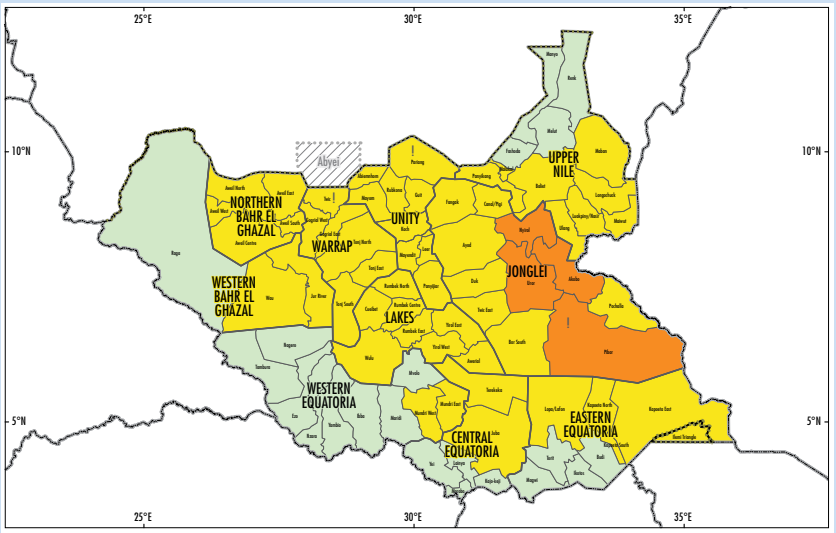
Food access has been hampered by sharp increases in prices as a result of shortages, currency devaluation, and high transport costs due to insecurity along major trading routes, as explained in Section 3.1 (FSIN, 2017). A lack of financial and physical access to food is limiting individual and household food consumption, with real labour incomes and the relative price of livestock falling dramatically. Meanwhile, violence and insecurity have depleted assets (such as livestock) and key household food sources (such as standing crops and grain stocks).

In the worst-affected areas food is being used as a weapon of war, with trade blockades and security threats leaving people marooned in swamps with no access to food or health care. Humanitarian access to the worst-hit areas is limited, as warring factions intentionally block emergency food deliveries, hijacking aid truck

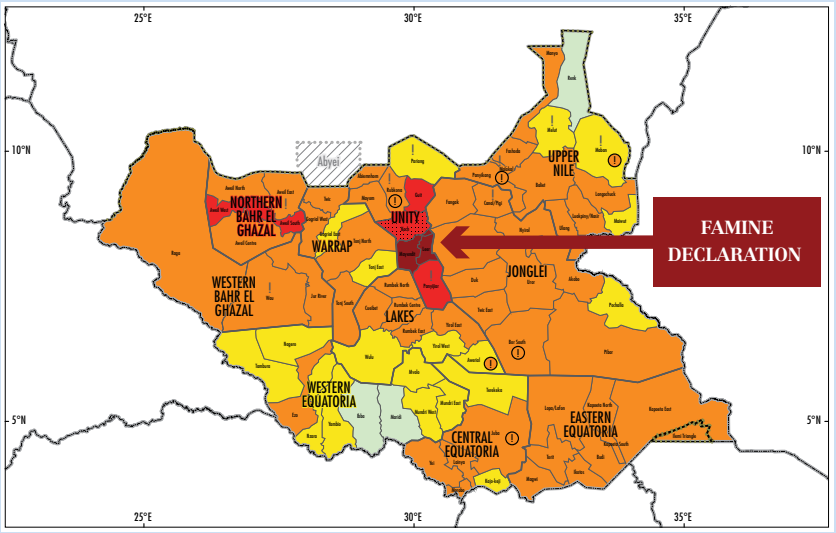
s and killing relief workers. A lack of protection for civilians has led to 1.9 million IDPs and more than 1.26 million refugees who have lost their livelihoods and are now dependent on support for their survival (Gebreyes, 2016).

South Sudan – acute food insecurity situation, before crisis and now

Pre-crisis: July 2013



Current situation: February – April 2017



Note: The map indicates the borders of the Republic of the Sudan for the period specified. The final boundary between the Republic of the Sudan and the Republic of South Sudan has not yet been determined.

Source: South Sudan IPC Technical Working Group (TWG), IPC Analyses for 2013 and 2017.

An example of this is in Iraq, where in 2016 production levels continued to fall as a large part of the cereal production belt was directly under the control of rebel forces, affecting access to agricultural inputs, cereal harvests and post-harvest activities (FAO, 2016a). Before the

conflict, the Ninewa and Salah al-Din districts produced nearly 33 percent of annual national wheat and 38 percent of barley. An assessment undertaken in February 2016 found that 70 to 80 percent of corn, wheat and barley cultivation was damaged or destroyed in Salah al-Din, while in Ninewa between 32 and 68 percent of land normally used for wheat cultivation, as well as 43 to 57 percent of barley cultivation, were either compromised or destroyed.

All factors that come into play and diminish the capacity of agriculture and food systems as a result of conflict ultimately challenge rural livelihoods. South Sudan provides another illustrative example of the destructive impact of conflict on agriculture and food systems and how this can combine with other factors, including public health, to undermine livelihoods and create a downward spiral of increased food insecurity and malnutrition as conflict intensifies (see Box 4).

Domestic and foreign private investment in agriculture and in regions with agricultural potential are also diminished, even after conflict and violence subside. This is especially the case when the root cause of the conflict is competition over natural resources, including productive land or water resources. In some instances, the conflict itself may trigger or intensify existing struggles over natural resources.

For example, the state of prolonged crisis and continuing uncertainty over the status of the Abyei Area in the Sudan has weakened the role of the traditional power structures of Dinka Ngok and Mysseryia communities, undermining their capacity to manage access to natural resources. Competition over natural resources, and the diminishing role of local leadership in coordinating access to those resources, have continued to erode the trust between the two communities, thus seriously jeopardizing their food security and traditional livelihoods (FAO, 2017c). The result is mounting social tensions and violent appropriation of assets, as well as limits on access to common resources in the area. All these processes have a potential impact on access to and governance of land and other land-based resources, as well as sustainable future development of these resources.

Displacement of people

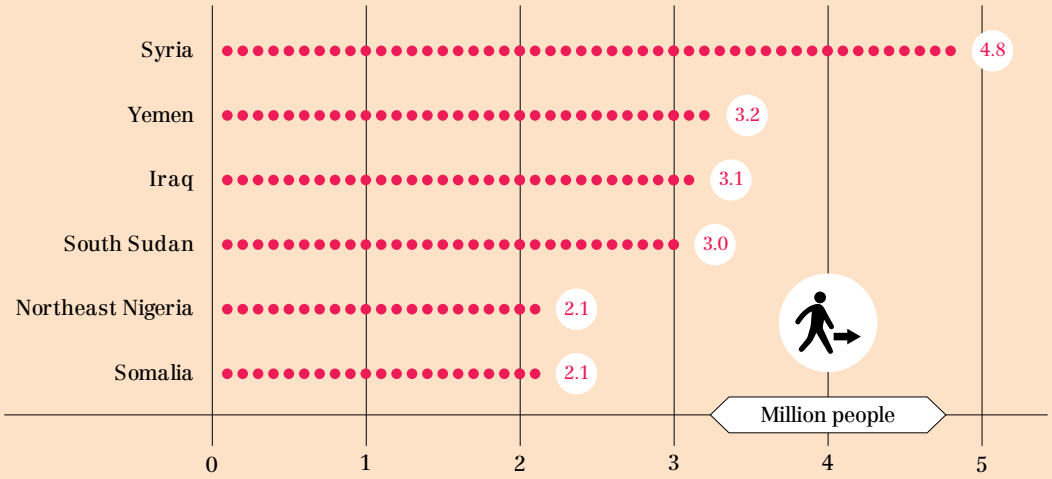
Conflict is a main driver of population displacement, and displaced populations are among the most vulnerable in the world, experiencing high levels of food insecurity and undernutrition. According to the UNHCR, there were an estimated 64 million displaced people worldwide in 2016, of which 16 million were refugees and 36.4 million IDPs. The majority of the forcibly displaced are concentrated in developing countries in Africa, the Middle East and South Asia. Over half of the world's refugees originate from countries affected by conflict. Displaced persons from the Syrian Arab Republic, Afghanistan and Somalia are hosted mainly in neighbouring countries, including (respectively): Turkey, Lebanon and Jordan; Pakistan and the Islamic Republic of Iran; and Ethiopia and Kenya. Most of the world's IDPs are concentrated in the Syrian Arab Republic, Colombia, Iraq, the Sudan, the Democratic Republic of the Congo, and Pakistan. Developing countries such as Lebanon, Jordan, Ethiopia and Kenya are now hosting more than 80 percent of all refugees in the world (UNHCR, 2016).

The number of displaced people worldwide is at an all-time high, as war and persecution continue to be on the rise. Currently, one in every 113 people is now either a refugee, internally displaced or seeking asylum. In the past five years, at least 15 conflicts have erupted or reignited, eight of them in Africa: Côte d'Ivoire, the Central African Republic, Libya, Mali, northeastern Nigeria, the Democratic Republic of the Congo, South Sudan, and Burundi (Sanghi, Onder and Vemuru, 2016).

The Global Report on Food Crises 2017 indicates that more than 15.3 million people were displaced by six of the worst food crises triggered by conflict in 2016 (Figure 11).

In addition to direct conflict-related displacement, violent conflict can lead to the collapse of livelihoods, forcing populations to move for survival. There is often also an increased risk of disease, as people are forced to live in unhealthy surroundings and overcrowded shelters with potentially poor access to water and sanitation and health services.

FIGURE 11 Population displacement caused by conflict in the countries that experienced global food crises in 2016



Source: FSIN, 2017.

A recent World Food Programme (WFP) study found that countries with the highest levels of food insecurity coupled with armed conflict also have the highest outward migration of refugees (WFP, 2017a). The study estimated that refugee outflows increase by 0.4 percent for each additional year of conflict, and by 1.9 percent for each additional year of food insecurity. The study also found that when coupled with poverty, food insecurity increases the likelihood and intensity of armed conflicts, thus creating a potential downward spiral of further refugee outflows.

Another WFP study, more focused on the Syrian refugee crisis, provides insight from the perspective of displaced Syrian populations on the impact conflict has had on their livelihoods and food security as well as the triggers for their migration (WFP, 2017b). Excerpts from this study point to conflict as the reason for Syrians leaving their homes, with the food security situation deteriorating as livelihoods and markets are disrupted. Families have been forced to eliminate protein-rich and dairy products from their diets, with most having to reduce portion sizes and eat only one or two meals a day.

Depending on the magnitude as well as the host community context, displaced populations can also place significant pressure on the resources of host communities and economies. The crisis in the Syrian Arab Republic, for example, has had an immense impact on Lebanon, which has experienced an economic slowdown and the arrival of over 1.5 million refugees. This has put an enormous strain on housing and labour markets and the quality and availability of public services (see Box 5).[22]

[22] For more details, see WFP (2014b) and UNOCHA (2017).

BOX 5 Lebanon – economic strain and public health challenges in countries hosting Syrian refugees

Lebanon has experienced an economic slowdown as a result of increased insecurity, disrupted trade routes, and declining confidence among investors and consumers. Its annual growth rates have plunged from almost 10 percent in 2009 to 1–2 percent in 2011–2014. Exports and foreign direct investment fell by 25 percent between 2013 and 2014, and tourism has dropped by 60 percent since the start of the slowdown. The cost of accommodating more than 1.5 million refugees from the Syrian Arab Republic likely has added to the economic strain.

Public debt reached 141 percent of GDP in mid-2014. The influx of refugees has had particular effects on the housing and labour markets and on the quality and availability of public services. Labour supply has increased by nearly 50 percent and the number of state-school students has risen by 30–35 percent. There has also been a surge in demand for public health care services.

The crisis is having a disproportionate impact on already vulnerable households, not only because of increased competition for unskilled labour and overloaded public services, but also because half of the refugees live in the poorest one-third of districts. Those who were already poor are likely to become poorer, and adverse impacts on food security and nutrition are to be expected.

Source: WFP, 2014b.

3.3 Resilience and coping strategies

Resilience, or the capacity of households to absorb and adapt to shocks, is of paramount importance in view of the potential impacts of conflict and violence on livelihoods. Hence some studies have specifically focused on the association between conflict and resilience.

Resilience can be defined as the capacity to ensure that shocks and stressors do not have long-lasting consequences on household food security (FSIN, 2014). Linked to this definition, resilience may be seen as a combination of three capacities: absorptive capacity (e.g. coping strategies, risk management, savings groups); adaptive capacity (e.g. use of assets, attitudes/motivation, livelihood diversification, human capital); and transformative capacity (e.g. governance mechanisms, policies/regulations, infrastructure, community networks, and formal safety nets).

Conflict–resilience–nutrition nexus

A number of studies provide empirical support for a nexus between conflict, resilience and nutrition. For example, analyses for the Gaza Strip (Brück, d'Errico and Pietrelli, forthcoming) and Mali (d'Errico, Grazioli and Mellin, forthcoming) have found that conflict and violence have a negative and statistically significant effect on household resilience. In the case of Mali, the most important impacts are observed for those regions in closest proximity to conflict. In both cases, conflicts have undermined different aspects of household resilience, but the effect through less access to basic services has been particularly significant for health outcomes. Reduced water services and public health care have affected many households, not only those whose residences have been damaged. There have also been important

economic impacts, particularly on employment and the capacity to diversify income sources in the Gaza Strip.[23]

Given the impacts of conflict on livelihoods, it is also generally recognized that resilience and nutrition are strongly interlinked (Dufour, Kaumann and Marsland, 2014; FAO, 2014). Nutrition is both a driver and an outcome of resilience; for example, malnutrition is both a risk factor for disease and mortality as well as a health outcome (Blössner and De Onis, 2005). As discussed earlier, the prevalence of child undernutrition in countries affected by conflict is a few percentage points higher than in countries at peace. It has also been observed that, in the case of Mali, for example, resilience is a determinant of child malnutrition (d'Errico and Pietrelli, 2017). Akresh, Verwimp and Bundervoet (2011) have not only found that civil war violence had effects on child stunting in northern Rwanda, but they further point to the limited capacity of households to smooth children's consumption amid the civil war violence, whereas in the instance of crop failure in southern regions, consumption could be smoothed at least for boys.

Based on the evidence, resilience is a critical channel through which conflict can affect food security and nutrition, and analysing it is important to developing policies for restoring livelihoods and meeting food security needs in conflict and post-conflict situations. In situations of conflict, people's resilience particularly depends on the type of coping strategies that they are able (or allowed) to access and the effectiveness of the strategies adopted to cope with the shocks that conflict and violence may bring about (Justino, 2012). Adaptive capacity may be limited, especially when there is asset destruction or dispossession. In most conflict-affected contexts, transformative capacity will be weak if government capacity is also weak and the provision of basic services and social protection has been disrupted. In this case, coping strategies become quite relevant and determine the impacts on food security and nutrition.

Costs and benefits of coping strategies

There is growing empirical evidence on the coping strategies used by conflict-affected individuals and households to protect their productivity, livelihoods and food security. In the case of Africa where 70 percent of the population rely on agriculture for their food supply, the literature tends to focus on agricultural coping strategies (Saumik, Shonchoy and Dabalen, 2015). At the same time, evidence indicates that most coping strategies are considerably restricted in situations of conflict and violence (Justino, 2012), forcing individuals and households to resort to increasingly destructive and irreversible options.

People typically first engage in reversible coping strategies with short-term effects, such as making modest dietary adjustments and skipping meals. However, as coping options are exhausted or disappear and food insecurity worsens, households are more likely to employ more extreme and damaging strategies that are less reversible and therefore represent a more severe form of coping, such as distress selling of livestock or productive assets (such as farm tools). Severe and/or persistent conflict can ultimately lead to the collapse of coping mechanisms, prompting migration, destitution, and in extreme cases death and starvation. Because of insecurity or disruption of services, households may also pull children from school, adding to the potential adverse impacts on child development stemming from the increased risk of malnutrition. Coping mechanisms and loss of livelihoods can in turn undermine local and national economies. Other coping strategies may also include fighting,

[23] Other studies found that the Second Intifada (2000–2006) in the West Bank had a negative effect on academic achievement of high school students (e.g. Brück, Di Maio and Miaari, 2014) and on the total and pre-worker output value of Palestinian establishments (Amodio and Di Maio, 2014).

looting, supporting armed groups, and participating in illegal activities in order to mitigate the loss of livelihoods.

However, there are many examples of individuals and households living in conflict areas employing coping strategies that enable them to survive the impacts of violence (Wood, 2003; Steele, 2007). Households in risky environments generally respond with a mix of ***ex ante*** risk management and ***ex post*** risk-coping strategies (Justino, 2009). Common strategies include: diversification of land holdings and crop cultivation; storing grain from one year to the next; selling assets such as cattle and land (which could have been accumulated, however, as a precaution against the occurrence of shocks); borrowing from village lenders or other money loaners; and receiving gifts and transfers from informal mutual support networks such as family, friends, neighbours, funeral societies, and so forth.

Although there is evidence that in some contexts households learn to live and cope with conflict, this is often at a lower income level (Arias, Ibáñez and Zambrano, 2017). For example, where non-state armed factions remained in Colombia, farming households shifted to activities with short-term yields and lower profitability. As violence intensified, however, farmers focused more on subsistence activities to provide basic food security. The reasons for this may be related to issues over access to productive land, the transition away from income-generating activities that were more vulnerable to conflict, or the avoidance of accumulating any assets that could become liabilities or targets (Segovia, 2017a).

These low-risk, low-return coping strategies may provide both immediate and long-term benefits. Brück (2003) and Bozzoli and Brück (2009), for instance, show that during the civil war in Mozambique, subsistence farming led to improvements in the economic security of households living in extreme poverty, because social and economic markets offered limited welfare benefits. However, the effects of these subsistence modes of production during conflict must be balanced against the long-term adverse effects of low productivity. In addition, the external validity of this finding is contested. Nillesen and Verwimp (2010), for example, show that many Burundian households exposed to high levels of conflict violence shifted their portfolios towards more sustainable and more profitable activities, and that incomes from export crop farming were higher in violence-affected regions (even though the causality in this case may have run from export cropping to conflict).

Gender dimensions of food security and nutrition during conflicts

Conflicts tend to alter gender roles and social norms. Men and boys are typically more likely to be engaged as fighters in conflicts and are at greater risk of being forcibly recruited into military groups and socialized into adopting violent concepts of masculinity (Brinkman, Attree and Hezir, 2013). Children are particularly vulnerable to the consequences of conflict, especially through the negative impacts on nutrition and health, the destruction of livelihoods, and the disruption of social services (including education, health care and basic services) (Breisinger, Ecker and Trinh Tan, 2015). The engagement of men in conflict and the increased risks to children's well-being put greater responsibility on women to sustain the livelihood of the household – in addition to their responsibility for ensuring household members' access to food, nutrition and health care.

Rural women often have less access to resources and income, which makes them more vulnerable and hence more likely to resort to riskier coping strategies when conflict unfolds. These strategies may affect their health, which in turn is detrimental to the food security of the entire household, as food production and the ability to prepare food decreases with illness (Brinkman, Attree and Hezir, 2013).

Conflict situations often create a context for increased sexual violence, mostly targeted at women. Such violence and trauma not only causes direct harm to women, but also tends to affect their ability to support their families. In crisis situations and among refugees, for example, one in every five women of child-bearing age is likely to be pregnant. Conflicts put these women and their babies at increased risk if health care systems falter and their food security situation deteriorates (UNFPA, 2017).

Shifting gender roles may also have beneficial effects on household welfare, depending on the nature of the conflict. Available evidence shows that conflict leads to increased female labour participation. This can be due either to the death or disappearance of male workers, or to the loss of income-generating assets (such as land or livestock that may have since been stolen or destroyed) that male household members relied on before the conflict (Justino, 2012).[24] If women gain more control of resources, household food consumption may increase and child nutrition may improve. Women's economic empowerment may further give them greater voice in household and community decision-making.

The experience in Somalia shows that, during conflict, women's contribution to household income generation increased along with their influence on decision-making (FSNAU, 2012). Likewise, comparative country case studies in Bosnia and Herzegovina, Colombia, Kosovo, Nepal, Tajikistan and Timor-Leste have found that armed conflict leads to an increase in female labour participation, albeit mainly in low-paid unskilled work in often unsafe and insecure labour conditions. Also, when self-employed as farmers, women's income opportunities are often limited when they do not have rights to own or inherit land and access input or credit markets. In these circumstances, and where conflict affects economic conditions more in general, increased female labour market participation will not likely improve household welfare and food security (Justino *et al.*, 2012).

Conflict impacts on traditional social networks and systems

Conflicts can undermine the effectiveness of traditional institutions and social networks, both within and between neighbouring communities. In many contexts, it is these support mechanisms that provide important safety nets and coping mechanisms to protect populations against shocks, and their collapse can be a critical pathway towards increased food insecurity. For example, in Ethiopia, Kenya and Uganda, pastoral communities have traditionally restricted access to strategic natural resources, especially in times of ecological stress; this is critical for sustainable rangeland and livestock management. However, conflict is leading to a breakdown of these traditional systems of social exchange and mediation, undermining pastoralists' coping mechanisms and degrading the rangelands upon which their livelihoods depend (see Box 6).

[24] Children's roles in the household and community can also be severely affected, as many are at risk of being pulled into child labour in its worst forms during times of conflict. For more details, see FAO (2017d).

BOX 6 Pastoralism in East Africa – breakdown of traditional systems and environmental degradation

Long-lasting and recurrent conflicts have altered the grazing patterns of affected pastoralists in Ethiopia, Kenya and Uganda, negatively affecting both their resilience and their coping strategies. The increased insecurity has limited mobility, forcing the community to concentrate livestock into reduced territory. The sustainable use of pastoral rangeland depends in large measure on mobility, which allows for rotational use of wet- and dry-season grazing areas. Loss of access to land and water sources puts the pastoral system under pressure and gradually reduces its self-sufficiency. This means that the existing land-use system is no longer able to respond to ecological and climatic variability, resulting in ecological degradation.

FAO has documented the impact of conflict and violence on the breakdown of traditional systems and how this has affected environmental degradation, undermining the long-term viability of pastoral livelihoods.

In Kula Mawe (Borana) in **Kenya**, livestock grazing is restricted to a radius of 15 kilometres for fear of raids orchestrated by either the Somali or Samburu. Concentrating livestock in limited areas results in overgrazing and general degradation of the environment.

In **Uganda**, pastoralists have been forced to settle in concentrated areas, leading to overgrazing and ecological degradation, which undermines their livelihoods and the community's ability to cope with droughts and other climate-related disasters. The overcrowded settlements are causing the soil cover to be eroded. Communities also suffer from water scarcity and overuse because of the larger numbers of people and livestock. Overcultivation and excessive pressure on soils have resulted in loss of soil fertility, deforestation, and depletion of biomass. This environmental degradation is exacerbated by the cutting down of trees and grass for use in construction, charcoal burning, as fuelwood, and in domestic and income-generating activities.

In **Ethiopia**, sporadic violent conflicts between the Borana, Garre, Guji and Konso have become commonplace. Although occurring at local levels, these conflicts involve complex legal, political and economic dynamics that extend to national and even regional dimensions, encompassing the communities and their allies elsewhere in Ethiopia and across the border in Kenya. Loss of access to grazing land and water sources due to conflict and other natural resource constraints puts the pastoral system under pressure and gradually reduces its self-sufficiency. This means that the land-use system is no longer able to respond to ecological and climatic variability, resulting in degradation that is evident in the level of bush encroachment. This in turn changes the structure and composition of the herbaceous vegetation, with undesired thorny and woody species encroaching on grazing areas. The result is an imbalance in the grass–bush ratio and a decrease in biodiversity and carrying capacity, which causes severe economic and ecological losses for pastoral communities.

Source: Odhiambo, 2012.

4 Food insecurity and undernutrition as triggers of conflict

KEY MESSAGES

- Food insecurity itself can become a trigger for violence and instability, particularly in contexts marked by pervasive inequality and fragile institutions.
- Sudden spikes in food prices tend to exacerbate the risk of political unrest and conflict, as witnessed in 2007–2008 when food riots broke out in over 40 countries.
- Climate-related events, especially droughts, tend to jeopardize food security in terms of availability and access, which has been found to increase the risk of conflict. This is particularly the case where deep divisions exist between population groups or where coping mechanisms are lacking.
- Competition for natural resources can be detrimental to the food security of vulnerable rural households, potentially culminating in conflict.

While conflict and violence have been identified as major drivers of food insecurity and undernutrition, the opposite causal link is much less clear. Food insecurity or undernutrition as such have not been found to be the sole causes of conflict, but they may compound other grievances or factors (political, social or economic) that trigger conflict. A vicious circle can then emerge when conflict leads to a worsening of the food security and nutrition situation, which in turn enhances the risk of deepening and prolonging the conflict (Simmons, 2013).

This chapter looks at evidence that helps identify the contributing factors to food insecurity and undernutrition that can trigger, fuel or sustain conflict, especially rising food prices, extreme weather events, competition over land or resources, and the anti-social behaviour that may emerge in association with all of these factors.

For a number of reasons, the analysis focuses on case studies. First, it is not likely that food insecurity and undernutrition single-handedly triggers conflict. It depends on the interplay between context-specific political and socio-economic factors. Second, quantitative assessments of the likelihood that food insecurity and undernutrition will trigger conflict are tricky because of data limitations. Standard measures of food security, such as national aggregates like the prevalence of undernourishment, tend to change only slowly, such that there may be a lack of variance in the data to demonstrate with any statistical significance that a change in the food security situation in fact influences the probability that conflict or events of violence will occur. Moreover, cross-country comparisons using nationwide averages for measures of both conflict and food insecurity tend to overlook subnational inequalities and the more localized nature of many of today's conflicts.

4.1 Food insecurity and violent behaviour

A number of econometric studies suggest that food insecurity, when coupled with other factors, indeed increases the likelihood of conflict. Furthermore, food insecurity may not only be a trigger of conflict but may also help to sustain existing conflicts: if post-conflict recovery proves difficult and food insecurity remains high, this can strengthen incentives for reigniting conflict (Pinstrup-Anderson and Shimokawa, 2008).

A recent study by WFP covering a span of 25 years suggests that undernourishment is among the most important determinants of the incidence of armed conflict; what's more, it increases the likelihood and intensity of armed conflict even more when coupled with poverty and food insecurity (WFP, 2017a). An analysis of socio-economic conditions prior to the outbreak of conflict also indicates that countries with higher rates of child mortality, poverty, food insecurity and undernutrition have a higher risk of conflict (Pinstrup-Andersen and Shimokawa, 2008). For the reasons mentioned above, such econometric assessments should be taken with extreme caution. Yet the factors identified as reasons why food security problems could provoke grievances culminating in conflict can serve as a guide for more context-specific assessments.

Poverty, hunger and food insecurity, together with a highly unequal distribution of income, land and other material goods, can create feelings of anger, hopelessness and unfairness among various population groups. Such grievances can then be exploited by individuals and groups with a desire to foment violence (Pinstrup-Andersen and Shimokawa, 2008). As analysed in chapters 2 and 3, conflict significantly affects food security and nutrition, especially when protracted and compounded by weak institutional response capacities (fragility). Fragile institutions and poor governance help explain why similar external shocks can produce violence in one country but not in another: studies have shown that during the 2007–2008 food price crisis, the likelihood of outbreak of protests was much higher in developing countries categorized as in fragile situations (World Bank, 2011).

People may resort to violence, which in this context the literature regards as anti-social behaviour, when their human security (including food security) is threatened – especially when there is a dearth of formal and informal institutions that are capable and willing to mediate such risks (Blattman and Miguel, 2010). Conflict may arise due to a loss of assets (including access to resources), threats to livelihoods, and/or other forms of economic and political marginalization. Food insecurity may be one of a number of causes for conflict, and may act as a channel through which wider socio-economic and political grievances are expressed. These grievances can be compounded by mistrust in the government, often originating from a feeling of a lack of state support when facing food insecurity (Wischnath and Buhaug, 2014).

In this context, the evidence most closely related to food security comes from studies that investigate individuals' reasons for joining armed groups. Some of the studies show that certain individuals choose to participate in and support armed groups because they may gain from the conflict in terms of improved economic opportunities, as well as looting and appropriation (Keen, 1998; Hirshleifer, 2001). In Mozambique, Sierra Leone and Peru for example, rebel fighters were remunerated via looting of civilian property. The pioneering studies of ex-combatants by Humphreys and Weinstein (2008) provide perhaps the most compelling empirical evidence. Using survey data, they show that armed groups sometimes target recruits by offering to provide basic needs, food, shelter and physical security.

More recently, a growing number of (mostly descriptive) accounts has emerged that documents how civilians survive and protect their livelihoods and food security through forms of support (voluntary or involuntary) for armed groups. These processes are determined by the "wartime governance" that is established by local ruling groups, and underline the

centrality of shelter, food and information to the fate of armed groups (Wood, 2003; Kalyvas, 2006; Arjona, Kasfir and Mampilly, 2015; Justino and Stojetz, 2016). There is scant evidence, however, that goes beyond descriptive and qualitative analyses.

Qualitative evidence (from individual interviews) exists of people declaring they have joined rebellions because they lacked a valid alternative to meet basic nutritional requirements. In the north of Mali where poverty is high, one study found that a pervasive sense of marginalization and a lack of livelihood opportunities for young men have fed into the region's recurrent conflicts (Haysom, 2014). Other studies have found that violent actors misappropriated food aid to satisfy their basic resource requirements, which added to the causes of political tension in the context of Tuareg uprisings in Mali in the early 1990s (see for example Hendrix and Brinkman, 2013).

However, caution is needed when drawing conclusions about any one driver that might motivate behaviour and conflict (von Grebmer *et al.*, 2015). In most cases multiple factors are at play, with three of the most commonly studied discussed below:

- sharp and increased food prices
- climate change and extreme weather events
- competition over natural resources

4.2 Food price spikes

In 2013, 767 million people in the world lived in extreme poverty (World Bank, 2016). As most poor people spend more than 50 percent of their income on food, even a slight increase in prices can severely affect their well-being. Food price hikes can then be an important contributing trigger of social unrest, including protests, riots, violence and war.

Historical accounts are replete with descriptions of how rising food prices breed violent conflict, including insurgencies, wars and revolutions (Rudé, 1964; Goldstone, 1991; Diamond, 2005). There is now a growing body of econometric evidence – broadly in the vein of Hendrix, Haggard and Magaloni (2009) – that supports this theory for the incidence of very different forms of social unrest, with most studies relying on the FAO price index of food commodities.

The dominant explanation for the link between food prices and conflict is consumer grievance: higher prices essentially create or increase economic constraints and/or sentiments of (perceived) relative deprivation, which nurtures grievances that in turn lead to conflict. Yet, this causal chain is very difficult to both measure and isolate empirically, for some of the reasons already noted above, which is why it is usually assumed rather than tested directly. In addition, most contributions have looked at the impact of international food prices on conflict at the national level, which is reasonable in principle, as many countries in fragile or conflict situations are net importers of food. A few recent studies, however, emphasize the need to use country-specific food price indexes to better understand the consumption patterns and constraints faced by vulnerable populations (e.g. Arezki and Brueckner, 2014; Cadoret, Hubert and Thelen, 2015; Weinberg and Bakker, 2015). In an innovative study using such an approach based on a country's food import pattern, Van Weezel (2016) provides three statistically sound and important findings: (i) the (previously documented) relationship between food prices and urban conflict is driven mainly by the prices of basic staples like wheat; (ii) this finding is predominantly supported in cases of high-intensity conflict; (iii) interestingly, the magnitude of the effect as well as the predictive power of food prices are both notably moderate.

A second set of explanations for the link between food prices and conflict emphasizes the breakdown of state authority and legitimacy when the state fails to provide food security, which may activate or exacerbate grievances against the state (see for example Lagi, Bertrand and Bar-Yam, 2011).[25] A few recent analyses have sought to document the related impact on state-level correlates of conflict. Arezki and Brueckner (2014), for instance, argue that the cohesiveness of political institutions in low-income countries deteriorates significantly when international food prices increase, while Berazneva and Lee (2013) show that rising food prices and riots in Africa are associated with more political repression.

Most evidence pointing to food price hikes as an important trigger of social unrest stems from studies of urban social unrest in contemporary Africa.[26] Several studies have identified high food prices as a possible factor that triggered the protests at the end of 2010 and early 2011, first in Tunisia and then in other North African and Middle Eastern countries.[27] All of the Arab Spring countries are net importers of food; thus their inhabitants were highly vulnerable to the global food price spikes of 2008 and 2011. Combined with high levels of unemployment, and in spite of significant food subsidy programmes in these countries, the price spikes resulted in increases in the cost of living as well as an erosion of living standards – but not in all cases. In the case of Tunisia, the GIEWS – the FAO on-the-ground early warning system – reported "relatively stable domestic prices despite high international food prices" in Tunisia's consumer food markets during the winter months of 2010 to 2011 (FAO, 2011a). In fact, Tunisia's consumer food price index declined slightly between November and December 2010. Hence, based on this evidence, it is unlikely that food price spikes triggered the beginnings of the Arab Spring in Tunisia.

So, do food prices undermine peace? They do – now, as in the past. Sudden spikes in food prices have exacerbated the risk of political unrest and conflict, as witnessed for instance in Egypt (1977), Morocco (1981), Tunisia (1984) and Jordan (1996) (Breisinger *et al.*, 2014). In October 1988, youth riots and demonstrations are said to have indirectly contributed to the fall of Algeria's one-party system and the introduction of democratic reforms, which later culminated in the country's civil war of 1991. Rising food prices, high youth unemployment, and fiscal austerity measures were identified as key factors triggering the protests and social unrest (Swearingen, 1990).

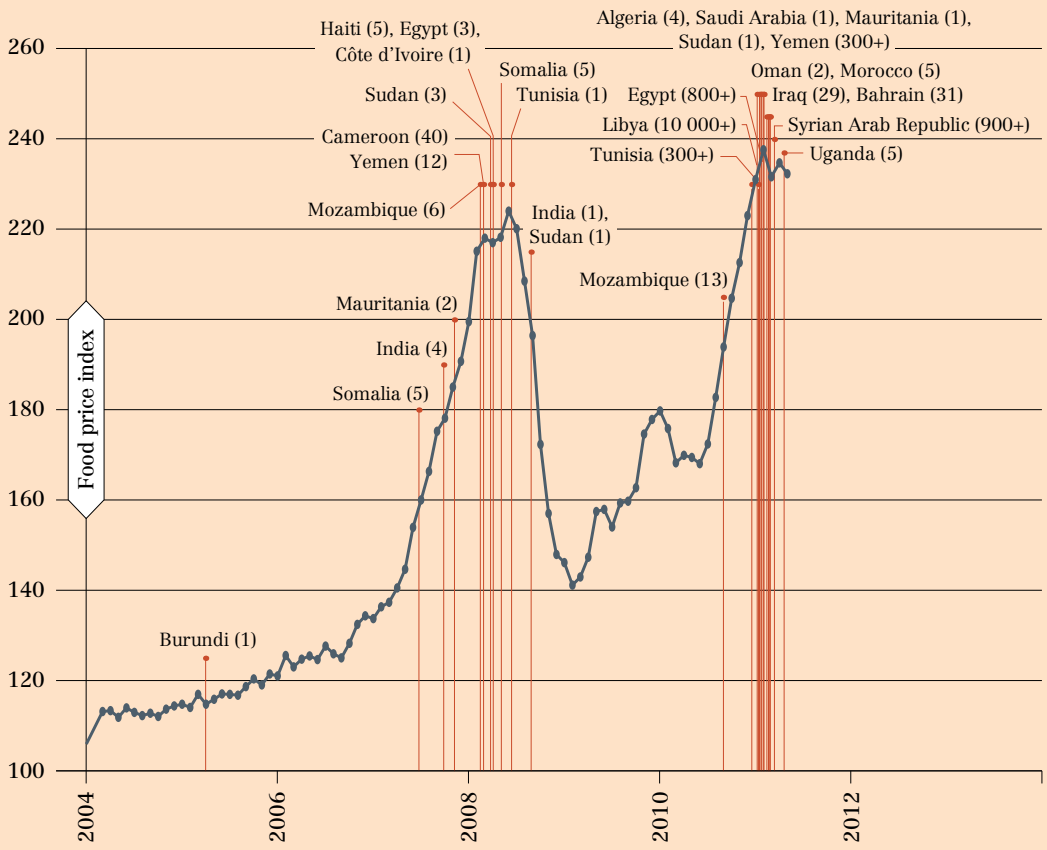
More recent studies suggest that the link between food prices and conflict may have global relevance (Cadoret, Hubert and Thelen, 2015). The global food price crises of 2007–2008 and 2011 triggered riots in over 40 countries, where the cost of imported basic goods increased, thereby eroding real incomes (Figure 12).

[25] More broadly, there may also be an association between increased international commodity prices (including agricultural commodities) and conflict, depending on who wins and who loses – i.e. depending on who captures the increased revenue, there may be grievances against the state. For more details on this discussion, see for example Brück *et al.* (2016).

[26] See for example Berazneva and Lee, 2013; Smith, 2014; Bellemare, 2015.

[27] See for example Johnstone and Mazo, 2011; Maystadt, Trinh Tan and Breisinger, 2012.

FIGURE 12 Time-dependence of FAO Food Price Index from January 2004 to May 2011



Source: Lagi, Bertrand and Bar-Yam, 2011.

Note: Time dependence of FAO Food Price Index from January 2004 to May 2011. Red dotted vertical lines correspond to beginning dates of "food riots" and protests associated with the major recent unrest in North Africa and the Near East. Overall death toll in parentheses. Price data are FAO Food Price Index from 2004 to 2011.

Other examples of severe political consequences of food riots include the resignation of Haiti's Prime Minister Jacques-Édouard Alexis in 2008 and the coup against President Marc Ravalomanana of Madagascar in 2009 (Brinkman and Hendrix, 2011). In the Bolivarian Republic of Venezuela, as the economy has plummeted with declining oil prices and revenues and foreign-exchange shortages have limited imports of food and basic goods, the resulting shortages of food and other essential items have escalated political tensions (The Economist, 2017).

Food riots often first erupt in urban areas, where households depend primarily on markets for accessing food and are thus extremely vulnerable to price changes. However, price shocks may not necessarily result in a marked increase in food insecurity before triggering a conflict. It is rather the perceived risk of a deteriorating food security situation that can increase affected groups' willingness to fight to protect their livelihoods, and hence changes in food security – rather than how high food insecurity might be – are probably the most influential factors (Brinkman and Hendrix, 2011). Incentives to join or support conflicts and rebellions stem from a number of causes, of which the protection of food security is just one.

4.3 Climate change and extreme weather events

Climate-related events can also be among the triggers of food insecurity, both in terms of availability and access and through a number of channels; as noted earlier, food insecurity may in turn ignite conflict. The leading perspective now is that the climate-conflict link is real, and is backed up by recent meta-analyses of over 50 prior studies that document substantial effects of temperature increases – mostly through the resulting precipitation changes – on the likelihood of interpersonal and intergroup conflict (Hsiang, Burke and Miguel, 2013; Burke, Hsiang and Miguel, 2015). Climate change and extreme weather events increase the likelihood of violence and prolonged conflict, particularly in agriculture-dependent communities in low-income contexts. Most available studies on the subject focus on sub-Saharan and Sahelian regions in Africa. Recently, von Uexkull *et al.* (2016) have argued that sustained drought is more likely to lead to conflict in locations with rainfed agriculture in sub-Saharan Africa.

The literature review by Burke, Hsiang and Miguel (2015) shows that the basic motivations underlying most studies can be classified into two categories. One large set of studies essentially seeks to understand the impacts of climate change and variation in climatic conditions, and are primarily interested in the "reduced-form" link between climatic variation and conflict outcomes.[28] The second category of studies originates from the question of how economic conditions and production affect conflict outcomes, and primarily study the impacts of climatic variation on economic variation as a first-stage process of the analysis. Reduced-form effects can thus be interpreted as the net impact of climate on conflict. The first step in the chain of causation via local economic conditions is that unusually high temperatures and low rainfall depress agricultural production and output – which, for Africa, is not disputed (see for example Barrios, Ouattara and Strobl, 2008; Schlenker and Lobell, 2010).

Whether as direct outcomes or indirectly channelled through local economic conditions and agriculture, the impacts are likely determined by the climatic phenomenon in question. Drought is a special case in the sense that it diminishes livestock and agricultural productivity, thus expanding the pool of potential combatants and giving rise to more broadly held grievances. Generally speaking, a severe drought tends to threaten local food security and aggravate humanitarian conditions, which in turn can trigger large-scale human displacement and create a breeding ground for igniting or prolonging conflicts (von Uexkull *et al.*, 2016).

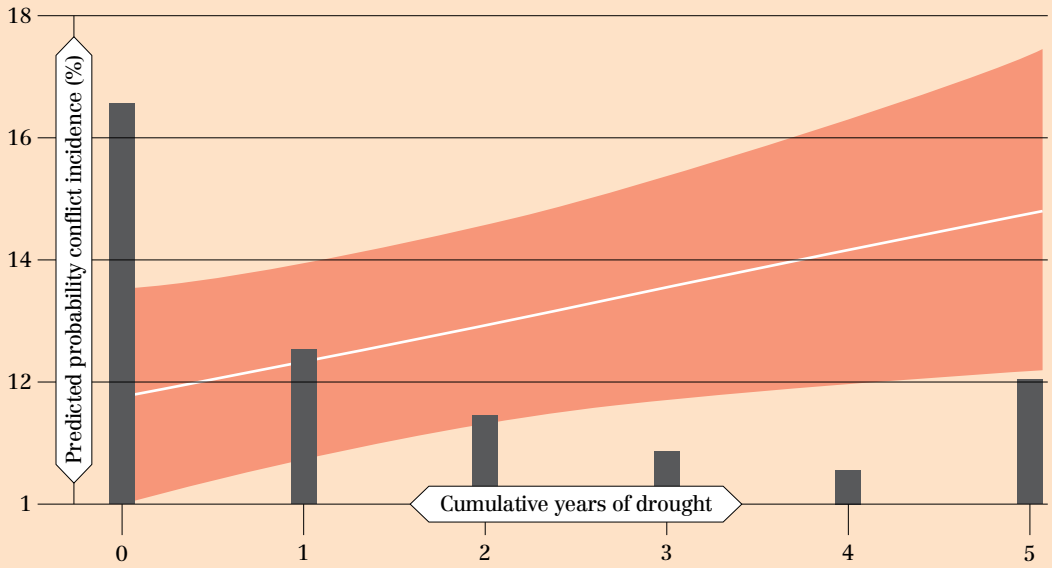
In most cases, droughts do not immediately increase the risk that specific population groups will challenge state power through military means. Yet in agriculture-dependent communities in low-income contexts, droughts have been found to increase the likelihood of violence and prolongation of conflict at the local level, which may eventually pose a threat to societal stability and peace.

Maystadt and Ecker (2014) and Sneyers (forthcoming) have found that in Somalia, the likelihood of conflict increases significantly as drought intensifies and is prolonged. Studies have also explicitly documented negative impacts of climatic variation on household food security in Ethiopia (see for example Dercon and Krishnan, 2000; Demeke, Keil and Zeller, 2011; Di Falco, Veronesi and Yesuf, 2011).

[28] In this case, the "reduced-form" of the link is established through a system of equations whereby conflict outcomes change "endogenously" as a result of changes in predetermined or exogenous variables representing climate conditions.

A study in Asia and Africa from 1989 to 2014 shows that the risk of conflict increases for each additional year of growing-season drought, and is even more pronounced for low-development countries (Figure 13). For the average politically excluded group, going from zero to five consecutive years of drought during the local growing season increases the estimated likelihood of conflict from 12 to 15 percent, other things being equal.

FIGURE 13 Length of drought and likelihood of conflict



Source: von Uexkull *et al.*, 2016.

Note: The figure shows the predicted risk of conflict incidence for each additional year of growing-season drought in the high infant mortality rate subsample (n = 2 733) out of a sample of ethnic groups in Asian and African countries. Superimposed bars represent the distribution of observations.

There is additional evidence of impacts through less agricultural activity and other factors such as migration. For example, a severe drought across the Syrian Arab Republic in 2006/07 had a significant adverse impact on the agricultural system, with most farmers and herders facing zero or negative agricultural production rates in 2008. Migration to urban areas became the only option for most of these farmers, as there was no safety net to protect them. As a result, an estimated 1.5 million Syrians joined the swelling Iraqi refugee population in the Syrian Arab Republic's largest cities, including Damascus, Aleppo, Homs and Latakia (Ali, 2010). Comprising as much as 20 percent of the population in these urban areas, the refugee and newly migrated communities lived in substandard housing, faced rampant unemployment and received little if any governmental support. Not surprisingly, the roots of the Syrian revolution can be found within these same communities. Of course, this description of food insecurity as leading to conflict through migration is not the whole story, as there were other more important political factors at play as well.

As the conflict in the Syrian Arab Republic has intensified, adverse weather conditions have continued to weaken food security. Precipitation during the cropping season has been inconsistent across the country (FAO and WFP, 2016). In 2015/16, the main growing area of Hasakeh in the east of the country received above average rainfall, while Aleppo, Idleb and Homs governorates received below-average precipitation, with large patches of cropland

affected by drought. The damage to irrigation infrastructure amplified the impact of the erratic rainfall on crop conditions and performance. As a result, prices of agricultural and livestock products increased. Although the upward pressure of tight supplies was partly offset by the low purchasing power (which depressed demand), prices of final products increased at a slower rate than prices of productive inputs, which soared due to economic sanctions, market disruptions, and the declining value of the Syrian pound (FAO and WFP, 2016). Overall, farmers have incurred heavy losses, further eroding their resilience after five years of conflict and fighting. Many more may abandon food production, with potentially grave consequences for food availability at the national level and for food security of farming households and beyond.

More generally, the risk of conflict related to weather shocks increases where people, in particular marginalized groups, lack coping mechanisms to avoid the harmful effects of events such as drought on their food security and livelihoods. Central factors that restrict coping capacity in such contexts include a low level of socio-economic development, history of conflict, and limited access to economic and social capital to facilitate alternative livelihoods. Climate-induced crop failure or loss of pasture can mean a dramatic drop in income, and limited material and human capital can aggravate the situation by narrowing the range of outside options.

The evidence above is compelling, but not conclusive. Better understanding of the ways in which natural hazards bring about food security challenges that prompt people to engage in conflict and violent behaviour will require analysis at the finest geographical levels. The analysis for Somalia by Sneyers (forthcoming) cited above shows that the impact of food production and availability stressors due to natural hazards on the likelihood of conflict is statistically significant at the household level and not at the district level. In a recent analysis, Habibi (forthcoming) finds that, in Ethiopia, at the level of geographic cells or clusters, variations in rainfall indicate the level of agricultural production, and these variations are significantly linked to events of conflict within corresponding cells. In this study subnational variation in food production and access was found to have a significant effect on the likelihood of violence in the corresponding geographic unit. While this does not constitute definitive evidence of the relationship between rainfall and conflict, these analyses underscore the need for better disaggregated data on climatic, food production and conflict variables. Temporally and geographically matched subnational data are necessary for better quantitative analysis of the relationship between food security and conflict.

4.4 Competition for and dispossession of natural resources

The link between competition for natural resources, particularly high-value ones such as oil and minerals, and conflict is well documented.[29] This is especially true of cases in which poor governance leads to resources only benefitting a handful of corrupt politicians or certain ethnic or political groups. Such a situation impedes a country's development, curtails investment in common services such as health and education, and leads to further marginalization of vulnerable households while increasing levels of inequality.

Competition over land and water has been identified as a potential trigger for conflict, as loss of land and livelihood resources, deteriorating labour conditions and environmental degradation negatively impact and threaten household and community livelihoods. Some sources estimate that over the past 60 years, 40 percent of civil wars have been associated with competition over natural resources. Since 2000, some 48 percent of civil

[29] See for example Humphreys, 2005; Bannon and Collier, 2003; and Auty, 2001.

conflicts have taken place in Africa, in contexts where access to rural land is essential to the livelihoods of many, and where land issues played a significant role in 27 out of 30 conflicts (Le Monde Diplomatique, 2016). In other contexts it was not so much competition for land but the dispossession of farmland or other natural resources by armed groups. In Colombia for example, farmers have suffered systematic strategies of eviction that have led to significant displacements of people (Box 7).

The conflict in Darfur is often referred to as having been caused in part by climate variability, and more specifically by drought. It is argued that declining rainfall and land degradation intensified struggles over access to pasture, farmland and water, culminating in civil war and the humanitarian crisis that unfolded in 2003 (UNEP, 2007).

In the Greater Horn of Africa, competition over water and pasture is a constant source of localized conflict between pastoralists and farmers in the region. Water, forests, land and minerals are in decline because of degradation, overuse and climate change threats, particularly temperature increases. Conflicts occur among communities as they compete for increasingly scarce resources, while desertification in the region has resulted in less available land suitable for agriculture and pasture. Consequently, competition has become fierce, particularly in years of drought when pastoralists are forced to use non-traditional migration routes to find water for their herds (AfDB, 2010). The poor rainfall seasons of 2015/16 and 2016/17 meant pastoralists had to bring their herds to natural reserves and farmland in Kenya, where they clashed with local populations.

In Mali, arid and semiarid conditions along with changing desert boundaries have often led to deadly clashes between agricultural farmers and pastoralists. Policies favouring agricultural expansion at the expense of pastoralists, restrictions on access to natural resources, and the use of repressive force by the government are all factors that have further exacerbated the grievances of pastoralists. A conflict that erupted in northern Mali in 2012 coincided with a region-wide drought; some 3.5 million people were affected. Combined with the political turmoil, this eventually led to the displacement of nearly 300 000 people, including more than 160 000 who fled to neighbouring Burkina Faso, the Niger and Mauritania (Breisinger, Ecker and Trinh Tan, 2015). With tens of thousands of cows and sheep wiped out by the drought and in the absence of any governmental relief for pastoralists, the livelihoods of many Tuaregs were devastated, leaving large numbers living in extreme poverty and food insecurity, which in turn swelled the ranks of armed rebel factions and enticed others to steal and loot.

As noted previously, gangs in Central America undertake organized extortion of and violence against local populations, not only taking de facto control of territories and communities but also disrupting agricultural activities. In El Salvador, for example, local gangs have limited the movements of fishers, forcing them to engage in illegal fishing practices (Segovia, 2017b).

Competition for water resources may trigger broader conflict; likewise, civil war and insecurity can threaten water provision and exacerbate the lack of access to water (HLPE, 2015). This two-way causal effect may trigger a cascade of effects in terms of disrupting and diverting established water management practices, ultimately resulting in hunger and water-borne diseases as well as fuelling further conflict. Water and agricultural projects are often either ignored or destroyed in situations of long-term conflict. This can lead, for example, to the salinization of once fertile irrigated lands after drainage systems have been destroyed or become derelict, and can ultimately exacerbate the adverse impacts of droughts (ICARDA, 2014).

Long-term conflict can weaken state capacity to oversee water management, including regulating community allocation post-conflict, which in some cases has led to corruption

and reinforced unequal access (Thomas and Ahmad, 2009). Insufficient attention to water in post-conflict situations can undermine peacekeeping efforts (Palmer-Moloney, 2011) and create opportunities for insurgent forces to destabilize fragile political environments (Centre for Policy and Human Development, 2011).

BOX 7 Dispossession of natural resources and land in Colombia

Drawing from the study of Segovia (2017a), one can understand the complexity of a long-lasting conflict and what it means for the use of natural resources and land. Colombia suffered a five-decade-long conflict that left up to six million people internally displaced – equivalent to 14 percent of the total population. This was the result of systematic strategies of eviction and dispossession by armed groups in their quest to seize rural territories, control valuable natural resources and land, and appropriate the rents associated with these resources. Strategies of forced displacement have also been associated with the economy of drug trafficking, the growth of which requires control over travel routes and land to cultivate illegal crops. Forced displacement is not only the main effect of armed conflict, but also the main source of food insecurity. The impact is most keenly felt by the poorest and most vulnerable populations, including ethnic communities.

The economic and social repercussions of Colombia's conflict were both short- and long-term in impact. The rebels' displacement of farmers and rural households helped concentrate land ownership in fewer hands; this ultimately resulted in lasting changes in land-use and agricultural production (from staple food crops to crops for industrial use, including palm oil and coca leaves). These impacts affected poverty and inequality as well as food production and access. For just the period from 1980 to 2010, it is estimated that 6.6 million hectares of land were abandoned as a result of displacement. This estimate would be even higher if the territories of ethnic communities were included. Dispossession involved mostly smallholdings and farms, particularly affecting the poorest and most vulnerable rural families. It became critical for Colombia to make up for the material losses experienced by displaced and rural populations as a result of conflict, by ***inter alia*** implementing land and housing restitution measures and improving access to working capital and capital goods.

Colombia is the only country in the world that has implemented a land restitution policy during conflict. Valuable lessons can be drawn from this, in particular regarding how to ensure the safe and sustainable return of land, beyond just securing the victims' land titles. Colombia possesses a solid legal framework to support populations displaced by conflict. The land restitution and territorial rights policy for ethnic peoples and communities is well aligned with the country's other current or planned social and political processes related to rural areas. By restoring not only people's land but also their dignity, this helps to sustain peace. The implementation of the peace agreement with the Revolutionary Armed Forces of Colombia (FARC) – which includes an Integrated Rural Reform – no doubt represents a unique opportunity to achieve long-lasting peace and address the important social challenges faced by rural populations.

In sum, there is evidence that food insecurity itself can become a trigger for violence and instability, particularly in contexts marked by pervasive inequality and fragile institutions. Sudden spikes in food prices may be one such trigger. During the food price crisis of

2007–2008 food riots broke out in over 40 countries, and in several contexts the protests escalated to further violence and/or regime overthrow. Likewise, there is evidence that food insecurity caused by climate-related events, especially droughts, significantly enhances the risk of the outbreak of conflict, especially in contexts where there are already deep divisions between population groups and/or where coping mechanisms are lacking. Competition for natural resources that is detrimental to the food security of vulnerable rural households has also been found to be a source of conflict in a number of contexts.

The review of the evidence also makes clear that it is difficult to establish a firm causal relationship, as food insecurity rarely single-handedly triggers conflict. Even so, it is clear that interventions to improve food security and nutrition while mitigating the adverse impacts of climate change and ensuring equitable access to natural resources can be critical to conflict prevention and peacebuilding.

5 Reaping peace dividends from improved food security and nutrition

KEY MESSAGES

- Implemented appropriately, conflict-sensitive and timely interventions aimed at improving food security and nutrition can contribute to sustaining peace.
- Strengthening resilience to conflict requires helping countries and households prevent, anticipate, prepare for, cope with and recover from conflicts.
- A range of possible pathways exist, but evidence around these complex relationships is scarce, and further research is required to understand impacts on sustaining peace.
- Food security and nutrition interventions will only have a sustainable impact on peace when implemented as part of a broader set of multisector developmental and peacekeeping interventions.
- Much of official development assistance to countries affected by conflict takes the form of humanitarian aid, leaving too little long-term investment in lasting resilience and preparedness.

Chapter 3 showed that conflict has strong adverse effects on food insecurity and malnutrition. While the evidence is more limited and weaker regarding the reverse causal relationship, Chapter 4 indicated that food insecurity may also trigger and perpetuate conflict under certain circumstances. The current chapter examines how food security and nutrition may help to prevent and mitigate conflicts and, possibly, contribute to sustaining peace. If food security and nutrition matter for peoples' resilience, can interventions and associated processes that enable food security and nutrition also prevent conflict and support peace processes? Are there specific pathways that can contribute to sustaining peace?

As argued here, this is possible with carefully designed interventions tailored to local circumstances. Improving food security and increasing resilience of rural livelihoods can contribute to preventing conflicts and supporting efforts at sustaining peace. This chapter reviews and validates concrete examples of such interventions. It also addresses the roles of different actors (especially women), how policies should complement community based-responses, and the role of specific interventions (such as social protection). Based on available evidence, the assessment leads into recommendations for better aligning humanitarian assistance and peacebuilding efforts with interventions aimed at strengthening long-term resilience and achieving sustainable food security. The analysis distinguishes between

interventions prior to, during, and after conflict situations. It also identifies best practice interventions related to each stage, bearing in mind the critical role of state capacity and governance for the nexus between conflict, food security and peace.

5.1 Harvesting peace from improved food security

It has been argued that, when implemented appropriately, well-timed interventions aimed at improving food security contribute to enhancing resilience to conflict, because they help countries and populations to cope with and recover from conflict. They may also contribute to preventing conflict, while supporting economic development more broadly (Breisinger *et al.*, 2014).

While intuitively this makes sense, there is only limited evidence as regards the role that food security and nutrition can play in preventing or mitigating conflict and in contributing to sustaining peace. Yet, the findings of the analysis so far suggest there could be a range of interventions that might support peace processes and help prevent conflicts from emerging.

First, interventions to improve food security could help to weaken some of the causes of conflict, including motives that may lead individuals to support or join armed groups or engage in illegal activities. Second, greater food price stability and the recovery of local agricultural and food markets could help vulnerable individuals and households mitigate the impacts of conflict, including by supporting conflict-affected people in regaining access to markets. This all depends largely on how local institutions affect the lives and livelihoods of populations in conflict-affected areas.

More studies are needed to better understand these pathways. Nonetheless, since agriculture is the dominant livelihood for the majority of households in countries affected by conflict (Chapter 3), efforts to revive the sector, foster economic growth, increase food security and improve the nutritional status of the population may also have positive effects on sustaining peace. It is important to rapidly re-engage smallholder farmers – men and women – in productive activities in the aftermath of shocks, particularly in fragile settings. Policies that strengthen local participation in decision-making processes on agriculture and food security are vital. Social protection, including in-kind and cash assistance, can offer valuable peace dividends and contribute to restoring trust in governments and rebuilding social capital (Brinkman and Hendrix, 2011).

Findings from a review of case studies indicate that social protection has the potential to directly address some of the underlying causes of conflict in affected communities (Frankenberger, 2012). Social protection through cash-for-work programmes can help create productive infrastructure and improve the technical capacity of governments and other local counterparts, which when combined create an enabling environment for nutrition and health. There are obviously substantial challenges to ensuring effective assistance in conflict and post-conflict settings; these are currently being addressed by UN agencies including FAO and WFP to identify how UN-wide efforts could help to reinforce peace (WFP, 2013).[30]

In 2006, the UN Secretary-General's progress report on the prevention of armed conflict stated that "…tackling food insecurity and related problems of agricultural underproduction and resource scarcity can do much to stabilize a fragile situation. A hungry person is an angry person" (United Nations, 2006). This perspective was more recently reinforced in the

[30] WFP's Executive Board has approved a policy on *WFP's Role in Peacebuilding in Transition Settings* (WFP, 2013). The Director-General of FAO has approved a *Corporate framework to support sustainable peace in the context of Agenda 2030* on 22 May 2017 (see FAO, forthcoming).

April 2016 Security Council and General Assembly resolutions on peacebuilding, where the concept of sustaining peace was introduced as a unifying framework to address the root causes of conflict (PBSO, 2017).[31]

In 2015, the Committee on World Food Security endorsed a Framework for Action for Food Security and Nutrition in Protracted Crises (CFS-FFA). The CFS-FFA included a specific principle for addressing food insecurity and undernutrition in a conflict-sensitive manner, and for contributing to peace objectives through food security and nutrition interventions (CFS, 2015).[32]

The concept of sustaining peace has gained further traction in recent international dialogues and policy discussions. It encompasses activities aimed at preventing the outbreak, escalation, continuation and recurrence of conflict, including by addressing root causes and moving towards recovery, reconstruction and development. While economic revitalization and resilient and sustainable livelihoods should be key elements of a coordinated and coherent approach to sustaining peace, they need to be combined with establishing political processes, improving safety and security, re-establishing the rule of law and respect for human rights, restoring social services, and supporting core government functions (PBSO, 2017). Opportunities thus exist for interventions in support of food security and nutrition and agricultural livelihoods that contribute to conflict prevention and sustaining peace, in order to address not only the symptoms but also the root causes of conflict.

5.2 Strengthening resilience to conflict in order to sustain peace

Broadly speaking, there are a number of food security interventions and measures that governments and international stakeholders can put in place to mitigate the risk of conflict and the related impacts on food security. Preventative interventions that can break the link between food insecurity and conflict include mechanisms that shield consumers and producers from food price shocks, including food price stabilization measures and safety nets. A different perspective, drawing on social-anthropological approaches, is that agriculture is not only an economic engine to drive recovery, but also a means to bring new life to shattered homes and communities, and a motivation for people to come together after a conflict that has destroyed social networks (Parker *et al.*, 2013).

Chapters 3 and 4 showed that conflict acts as a shock and stressor on food security and nutrition, often occurring in combination with other economic or weather shocks that can magnify the effects. Conflict undermines resilience by reducing the human, social, physical and natural capital of communities, and with it their capacities to cope with such shocks. It is therefore critical to build the food security resilience of populations towards conflict in areas at risk of conflict, where conflict is ongoing, or even where it is thought to have ended.

Post-conflict situations are typically fragile, with 40 percent reverting to conflict within ten years (Collier, Hoeffler and Söderbom, 2008). This is far higher than the risk of conflict faced by the typical low-income country. As other evidence above has shown, protracted crisis countries, for example, suffer multiple types of conflict over time. The international community should pay special attention to post-conflict situations when seeking to sustain peace. Nevertheless, there is an increasing recognition that peacebuilding is a necessity during all stages – before, during and after – of the conflict cycle. Conflicts are also rarely

[31] General Assembly Resolution 70/262, *Review of the United Nations peacebuilding architecture,* A/RES/70/262; and Security Council Resolution 2282 (2016) [on post-conflict peacebuilding], S/RES/2282 (2016). Both resolutions were adopted on 27 April 2016.

[32] See Principle 9 in CFS (2015).

(if ever) linear and sequential processes, but escalate and de-escalate in intensity and are often cyclical in nature, with periods and geographical areas of relative peace and stability (as noted in Chapter 2).

Acknowledging these complexities, several pathways can be identified to help build resilience against conflict and contribute to sustaining peace:

a. *livelihood support* that addresses the root causes of conflicts and conflict stressors, and promotes re-engagement in productive economic activities, including cash transfers and safety nets;

b. *community-based approaches* that help build relationships and social cohesion, as well as improving aspirations, confidence and trust;

c. *interventions to build the capacity of institutions and improve governance* in order to deliver equitable services.

Some of these pathways interact and overlap, and in most instances combinations of these interventions will likely need to be considered. Furthermore, they will also need to be tailored to fit local conditions and conflict stages (see Box 8).

Since conflict typically coincides with other shocks, it is also essential to build resilience to these other shocks (Breisinger *et al.*, 2014). Efforts to build resilience to drought may include the introduction of drought-resistant crops, water harvesting and livelihood diversification, as well as increased access to risk-based insurance. Resilience towards economic shocks may be enhanced through safety nets, as well as through livelihood interventions to increase purchasing power. Efforts to build resilience to multiple food security shocks must also include national-level interventions to enhance government capacity in critical areas such as food security, emergency preparedness and response, and delivery of basic services such as health, education, water and sanitation (see also Chapter 4).

Climate change impacts and extreme weather events increasingly coincide with and contribute towards conflict; these are expected to significantly increase the likelihood of conflict in the future. This is particularly true for agriculture-dependent and politically excluded communities in countries with low levels of socio-economic development, where conflict and climatic disasters interact in a vicious cycle, with each increasing the vulnerability to the other (von Uexkull *et al.*, 2016). In such contexts, efforts to support the coping capacities of communities should include climate adaptation measures, such as climate-smart agriculture and alternative livelihoods (Breisinger *et al.*, 2014).

BOX 8 Strengthening resilience to prevent, anticipate, prepare for, cope with and recover from conflict

Conflict resilience can be understood as the capacity of countries and households to prevent, anticipate, prepare for, cope with and recover from conflicts in order to "bounce forward" (Breisinger *et al.*, 2014). Below are some examples of practical measures that can address each of these five elements of resilience. Interventions should always be context-specific and conflict-sensitive, and should aim to support communities in their own existing strategies to strengthen resilience to conflict. Similarly, while the focus here is on food security and nutrition, these interventions should be complemented by broader efforts to improve livelihoods.

1. **Preventing conflict:** Collective efforts across multiple sectors at the humanitarian-development-peace nexus are needed to prevent conflict. This typically will require undertaking a range of efforts to address both root causes and proximate causes of conflict, such as economic exclusion, extractive or predatory institutions, inequitable social services, access to and use of natural resources, food insecurity, and climatic disasters.
2. **Anticipating and preparing for conflict:** Preliminary efforts are currently underway to develop conflict early warning systems; for example, Uppsala University is developing, testing and improving a pilot political Violence Early Warning System (ViEWS). These systems are intended to help governments and humanitarian organizations to plan and mobilize resources for timely responses, such as humanitarian assistance or shock-responsive social protection. At the community level, helping households to anticipate conflict may also help their own planning and preparation, for example through savings, livelihood adjustments or managed migration options. In addition, in contexts where there is a high risk of conflict, support can be provided to governments in preparing relief responses or designing shock-responsive social protection mechanisms, as well as in contingency planning to maintain delivery of services and social protection during a conflict. Again, communities can be given support for example in saving cash and storing food, or in developing skills for alternative livelihoods that are less likely to be sensitive to conflict.
3. **Coping with conflict:** Conflicts often reduce household access to food, prompting vulnerable households to resort to negative coping strategies that undermine their food security (Chapter 3). Acute household food insecurity may also increase incentives to participate in violence (Chapter 4). Timely, well-targeted humanitarian responses and shock-responsive social protection mechanisms are critical to enable continued access to food during a conflict, minimizing the risk that households may resort to such negative coping strategies. Cash-for-work or Food-for-Assets programmes can also provide temporary work opportunities while at the same time creating or rehabilitating critical productive infrastructure, such as roads or irrigation systems. Households can also be assisted in adapting livelihoods to new circumstances created by the conflict. For example, displaced farmers can be trained in new livelihood skills to earn income in refugee camp settings. Communities affected by violent cattle-raiding may be trained in livelihoods that are less exposed to conflict risks, such as raising poultry or

small ruminants. In pastoral regions, livestock watering points may be built in safe areas that enable pastoralists to avoid the risk of taking their livestock into conflict zones to access water.

4. **Recovering after conflict:** Post-conflict situations offer a critical window of opportunity to support governments and communities in restoring food security and "building back better". Support may be provided to IDPs, refugees and ex-combatants in returning home and resuming productive agricultural activities, for example through provision of seeds and tools or help in restocking livestock. Such interventions can form an important element of national peace and recovery plans or disarmament, demobilization and reintegration programmes. Support may also be provided to restore conflict-damaged infrastructure, such as roads and irrigation canals that are vital for food production and marketing. Opportunities may also arise in the post-conflict phase to use food security interventions as a platform for sustaining peace and mitigating conflict relapses, for example by bringing communities together to rebuild productive assets together. Progress towards peace is often fragile and easily reversible, and the impacts of conflict on food security may persist well beyond the end of active fighting. Therefore, even in the post-conflict phase, it will often be necessary to sustain investments that contribute to resilience through many of the measures outlined above.

Food security and agriculture-based livelihood support

Food security interventions can be designed to address possible causes of conflict in order to promote peace. These can include livelihood interventions that build resilience and address food insecurity, improve natural resource management, facilitate access to and use of land and water, and provide better income and employment opportunities. It can also include the repair of critical livelihood infrastructure damaged by conflict. Similarly, the provision of safety nets (e.g. cash or food assistance) may help households avoid resorting to violence to ensure their food security. Indeed, a review by the UN Peacebuilding Support Office (PBSO) clearly recognizes the potential contributions of improved basic service delivery, including education, food security, health, and water and sanitation services, to the process of peacebuilding (PBSO, 2012).

Livelihood-based peace dividends

A variety of programmes have enabled rural communities to create and restore critical infrastructure. For example, WFP's programme of Livelihood Asset Recovery in Liberia (2009–2012), supported by FAO, restored irrigation systems, local roads and agroprocessing facilities. This helped raise farm productivity and food availability, as well as improve households' incomes and their access to food. In the short term, the project provided work for unemployed rural youth, helping to defuse a proximate cause of conflict during a critical period of post-conflict recovery (PBSO, 2012). About 90 percent of surveyed participants believed that these short-term jobs helped to promote peace and reconciliation (Brinkman and Hendrix, 2011).

In 2011, FAO supported a cash-for-work programme in Somalia that provided immediate cash relief, while also establishing a base for medium-term, post-famine and post-conflict recovery by rebuilding both livelihoods and infrastructure. Work opportunities were provided to ensure vulnerable people would remain in their communities, thereby avoiding more

displacement and keeping social ties intact. Along with other interventions, the programme aimed to plant roots for stability in order to prevent crises and conflict from recurring. The intervention provided labour opportunities to poor and vulnerable households for a period of 54 days to rehabilitate selected community infrastructure. A daily rate of between 4 and 6 US dollars was provided to beneficiaries depending on location and the work involved. All beneficiaries also received allowances for transport; some received vouchers for the purchase of tools, or were given them through FAO procurement. An evaluation of the programme found that the cash-for-work money was used mainly for basic household consumption expenditures, especially for food that was normally purchased through repayment of credit from shopkeepers (Farhat, Kardan and Gure, 2014). Infrastructure was also improved, though possibly less than envisaged. The evaluation recommended that to further strengthen resilience of the community through the building of livelihood assets, a more bottom-up approach would be required that takes into consideration more localized needs and requirements (Farhat, Kardan and Gure, 2014: p. vii). However, this likely would be more resource-intensive and would require a broadening of stakeholders, including more engagement with district-level local authorities and NGOs, as well as alignment of the programme with broader district- and regional-level development plans (where they exist).

Following the end of Nepal's civil war in 2006, WFP's programme of Food Assistance for Conflict-Affected Populations in Nepal (2007–2010) supported interventions that helped restore productive agricultural infrastructure, combined with training of farmers on agricultural skills through farmer field schools. FAO also contributed to this programme. The interventions raised incomes of affected rural households and reduced income inequality, thereby addressing what were considered root causes for the conflict (PSBO, 2012).

Livelihood and economic development is also an aspect of the Sudan Peacebuilding and Development Project (SPDP), financed through the World Bank-managed State and Peacebuilding Fund (SPF). In Darfur, Western Sudan, conflict between different ethnic and livelihood groups over scarce natural resources continues to erupt, claiming dozens of lives every year. The SPF has supported a wide range of activities to improve livelihoods and promote peaceful coexistence between different groups living along livestock migration routes, including three water reservoirs built in Central Darfur, which have reduced tensions and conflict between pastoralists and farmers (Osman, 2016).

Access to traditional grazing land and water remain fundamental challenges to peace and livelihood development in many parts of Africa. In South Sudan, an assessment of livestock water harvesting structures in the Eastern Equatoria, Western Equatoria, and Lakes States noted the reduction in conflict between pastoralist communities in need of water during the dry season after enhancing their capacities in water harvesting and management (FAO, UNEP and PBSO, 2015). The United Nations Peacebuilding Fund (PBF) has supported interventions in multiple contexts to address tensions arising from competition over natural resources (see Box 9), while the Safe Access to Fuel and Energy (SAFE) programme has helped reduce such tensions by creating more resilient livelihoods and more interaction between displaced and host communities (see Box 10).

BOX 9 UN Peacebuilding Fund support for food security, agriculture and enhanced resilience

Managed by the PBSO, the United Nations Peacebuilding Fund (PBF) was created in 2006. Through two funding facilities, the Immediate Response Facility (IRF) and the Peacebuilding Recovery Facility (PRF), the PBF supports initiatives under one or more of the following criteria:

a. Respond to imminent threats to the peace process and initiatives that support peace agreements and political dialogue.

b. Build or strengthen national capacities to promote coexistence and peaceful resolution of conflict.

c. Stimulate economic revitalization to general peace dividends.

d. Re-establish essential administrative services.

Since 2009, the PBF has provided funding of just under USD 15 million to FAO projects in 12 countries (Burundi, the Central African Republic, Colombia, Côte d'Ivoire, Guinea-Bissau, Kyrgyzstan, Nepal, the Niger, South Sudan, Tajikistan, Uganda and Yemen) to support recovery and revitalization of the agriculture sector, increasing food production as well as income-generating opportunities for rural communities (including ex-combatants, women and youth). The rehabilitation of agriculture occupies a central role in consolidating peace while contributing to food security and rural development.

The PBF has also approved about USD 7 million of funding to interventions in eight countries (the Democratic Republic of the Congo, the Central African Republic, Uganda, Guinea, Kyrgyzstan, South Sudan, Yemen and Tajikistan) since 2010. These are generally Food-for-Assets interventions that provide short-term work opportunities (including for women and youth) while rebuilding or restoring productive assets (such as irrigation canals) and local feeder roads that help rural households to increase their production and incomes.

Source: FAO, FPMIS and WFP, 2017.

BOX 10 Safe Access to Fuel and Energy (SAFE) – reducing tensions over natural resources

The town of Kakuma in the northwestern region of Kenya has hosted a refugee camp since 1992. The camp hosts nearly 200 000 refugees from more than 20 countries. It is being expanded to the Kalobeyei area to accommodate the increasing influx of people fleeing regional conflicts, mostly from South Sudan but also from Ethiopia, Somalia and the Congo.

The area regularly faces severe weather and climate events, which have negative impacts on livelihoods and the provision of goods and services. Host community members, most of whom are former pastoralists, have been badly affected by droughts and often fall back on unsustainable charcoal production for short-term

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The area regularly faces severe weather and climate events, which have negative impacts on livelihoods and the provision of goods and services. Host community members, most of whom are former pastoralists, have been badly affected by droughts and often fall back on unsustainable charcoal production for short-term income generation. Women are often tasked with the arduous work of producing charcoal in addition to being responsible for cooking and fuelwood collection. Increasing deforestation, exacerbated by more frequent droughts, forces women to walk long distances in the dangerous border areas of Turkana, where they risk being attacked by other ethnic groups and wild animals. Refugees inside the Kakuma camp face similar challenges, as they often lack the means to cook their food rations and must venture outside the camp in search of fuelwood. This has given rise to tensions and conflict between the local communities, who are already suffering high rates of undernourishment, and the refugees who are viewed as competitors for scarce natural resources.

Against this backdrop, the "Strengthen linkages between refugee and host communities in Kakuma to improve incomes, food security and ultimately nutrition" project has supported the income, livelihood and energy access needs of both host communities and refugees. Implemented by FAO, this is one of a number of SAFE activities involving other agencies including UNHCR and WFP, coordinated and collaborated through a SAFE Working Group in Kakuma. FAO is working with host communities to produce charcoal sustainably through the use of efficient, mobile kilns that use biomass from alien invasive shrubs (Prosopis juliflora) and small branches, rather than the traditional method of chopping down whole trees. The improved kilns are much faster, taking less than 24 hours compared with four days when using traditional charcoal production methods. Women thus save time which can be spent on income-generating activities and child care. UN agencies are also promoting the local production and use of multipurpose fuel-efficient stoves, which use both charcoal and firewood, in both refugee and host communities.

The sustainable charcoal produced by the host communities will be sold to refugees through a voucher system linked to a mobile phone-based money transfer system. The development of this innovative cash-based intervention is geared towards creating socio-economic linkages between local communities and refugees, providing an avenue for conflict mitigation and improved intergroup trust.

Source: FAO Climate and Environment Division website (available at www.fao.org/land-water); FAO, 2016c.

Social protection

Food insecurity itself can be a conflict stressor (Chapter 4). In times of shocks, safety nets, humanitarian cash transfers and food assistance can mitigate their effects, for example by preventing people (especially youths) from resorting to violence or joining armed groups to secure food security for themselves and their families. At the same time, social protection mechanisms can contribute to rebuilding and rehabilitating key agriculture infrastructure impacted by crises. Flexible, regular, predictable and scalable social protection systems allow for a dynamic and adaptable response to fluid crises as they evolve. Even in contexts where systems do not exist or have limited capacity, cash-based humanitarian interventions can be used as building blocks for the development of nascent safety nets or social assistance systems. This can strengthen the self-reliance of communities, rather than simply providing for basic needs for years on end (FAO, 2017c).

Evidence from Latin America and sub-Saharan Africa shows overall positive impacts of social protection programmes in terms of improving food security, nutrition and human capital development (FAO, 2017c). Social protection impacts have also been seen as enhancing the economic and productive capacity of even the poorest and most marginalized communities. In the short run, access to predictable, sizeable and regular cash transfers helps poor households to cope with the impact of shocks and reduce negative coping practices, including erosion of productive assets. In the longer term, social protection can help to build capacity, smooth consumption and create space for investment in livelihoods that enhance resilience to future threats and crisis. In several countries, for example, school meal programmes have helped to contribute to sustaining peace, especially in the post-conflict phase. These programmes provide a regular meal for food-insecure school children, while contributing to a sense of structure and normalcy as well as enhancing equity and cohesion among conflict-affected populations (Brinkman and Hendrix, 2011).

Non-formal and community-based structures are in many settings the first place people turn to in time of conflict and crises. Shocks and protracted crises weaken the role of these structures. Evidence coming from rigorous impact evaluations in eight sub-Saharan African countries shows the impact of national cash transfer programmes on strengthening community-based reciprocity structures (FAO, 2015). Cash transfers have enabled beneficiaries to join or re-enter the circles of their extended families and communities, reducing the social divide between poor households and wealthier households and local institutions.

Persons displaced by the protracted conflict in the Syrian Arab Republic now make up one quarter of Lebanon's population. Most of them live in dire conditions.[33] The refugee influx has also created severe strains on Lebanese host communities. Critical economic and social issues (e.g. increased food prices, limited access to health care, labour shortages) are increasing poverty and food insecurity levels in Lebanon and undermining the capacity of local communities to withstand shocks and stresses (see Box 5 in Chapter 3). In response, international agencies and partners have focused on social protection to increase resilience and reduce rural poverty of both host communities and refugees alike. FAO, for example, works in close partnership with the Government of Lebanon to support host communities in improving local production, including that of poultry, so they can supply food distribution stores for refugees. The intervention also aims to prevent child labour among young Syrian refugees. The partnership provides an opportunity to discuss how best to accommodate the current influx of refugees and the demand for agricultural labour.

[33] The 2015 Vulnerability Assessment for Syrian Refugees (VASyR) found that 70 percent of Syrian refugee households live below the refugee poverty line. Of these, 50 percent of households live below the Survival Minimum Expenditure basket, and only 7 percent are food-secure. See http://reliefweb.int/sites/reliefweb.int/files/resources/VASyR2015_ExecutiveSummary.pdf

One recent study in the Philippines provides novel evidence of how a conditional cash transfer programme can help reduce the risk of civil conflict (Crost, Felter and Johnston, 2016). The study found that conditional cash transfers under the *Pantawid Pamilyang Pilipino* programme caused a substantial decrease in conflict-related incidents in treatment villages relative to control villages in the first nine months of the programme. The study also found that the programme reduced insurgent influence in treated villages, though it cannot be entirely ruled out that this was not the result of insurgents shifting the focus of their activity to control villages.

The delivery and design of social protection and safety nets needs to be carefully considered and tailored to the political and social context. When poorly designed, or when they are seen to be privileging one group over another, cash transfers may exacerbate existing tensions in conflict or post-conflict situations. Well-designed information campaigns, awareness raising, and transparency of targeting mechanisms are critical to avoiding such perverse effects.

Reducing price volatility and strengthening risk management capacities

Measures to stem agricultural and food price stability can help build resilience against human and weather-induced shocks to livelihoods, while mitigating the risk that food price spikes will become a trigger of conflict.

At the macro level, this may involve stricter rules on food commodity speculation and the institutionalization of grain reserves to stabilize prices in times of crisis. This also includes investment in price information systems, as well as expanding credit and insurance markets (World Bank, FAO and IFAD, 2009; Fan, Torero and Headey, 2011; Ecker and Breisinger, 2012).

Given the nexus between weather shocks, crop and livestock price collapses, and conflict outbreaks, the adoption of agricultural practices and livelihood strategies for climate change adaptation should be promoted as an integral part of conflict-prevention strategies. Here, pastoralist and semi-pastoralist livelihoods deserve special attention. Introducing and expanding credit and insurance markets may help herders to better cope with droughts by avoiding liquidation of their herds and, more importantly, by facilitating the restocking of these herds. In order to be better prepared for more frequent and intense droughts in the future, herders may need further financial and technical support to adjust the composition of their herds toward drought-resistant and marketable animals. In addition, to improve people's resilience to weather shocks and reduce the incentive to participate in conflict, promotion of income and livelihood diversification (along with the social protection mechanisms discussed above) would help strengthen the coping capacity of rural households (Calderone, Maystadt and You, 2013).

FAO, UNICEF and WFP have identified three interlinked groups of strategies that promote resilience in the Horn of Africa: (1) strengthening the productive sectors, (2) improving basic social services, and (3) establishing productive safety nets (FAO, UNICEF and WFP, 2012). In terms of service provision, there is evidence from the Sudan suggesting that the provision of basic services (health, education and physical security) in remote areas characterized by interethnic and cross-border violence as well as the chronic vulnerability to food insecurity can contribute to peace and longer-term resilience.

Gender-sensitive approaches and the role of women in securing peace and food security

Violent conflicts affect men and women differently (Chapter 3). The different impacts in terms of shifting roles and responsibilities should be recognized when designing policies for economic recovery and peaceful transition of countries or regions affected by conflict.

Women undertake daily activities that contribute to peace, most notably when they work together to bridge differences in religion, ethnicity, class, and between urban and rural divides. Working across these divides has allowed more robust organizations and networks to emerge, as well as preparing the ground for peace within the larger population. After the peace agreement in Burundi was signed in 2000, women's organizations created radio programmes to share concerns and information. They also offered training on conflict resolution which facilitated the creation of mutual-aid and conflict-resolution networks and female-run production cooperatives.[34]

Women's roles are also critical in keeping agricultural and rural livelihoods alive. Even in peaceful settings, they do so while facing hurdles in accessing inputs, credits and markets, with men controlling and owning the land. During civil strife and conflict, these constraints tend to be exacerbated because men have left to engage in the conflict or have fled in search of alternative livelihoods. Furthermore, evidence shows that women spend more of their household income on food, health care and education (FAO, 2011b). Hence, they are critical for survival during conflict, as well as being the drivers of post-conflict recovery (UN Women, 2012).

Targeting women as the first beneficiaries of food aid and social protection, as well as helping them and their communities to complete harvests, can therefore contribute significantly to household resilience and peacebuilding. Promoting women's economic empowerment and challenging discriminatory social norms that constrain their access to resources, services or decision-making power can help close the gender gap in agriculture, with long-term positive gains towards building peaceful and inclusive societies.

For example, Burundi continues to experience cycles of violence and political crisis that contribute to food insecurity and disrupt agriculture. These occur in a context where 75 percent of the population are food-insecure and 90 percent rely on subsistence farming. IFAD's programme in the country promotes nutrition-sensitive agriculture activities as a means to break out of the cycle, including nutritional education for mothers, vegetable production, livestock development, and creation of savings and loan schemes among community self-help groups. The programme targets households severely disrupted by conflict, also promoting literacy for women and providing access to legal advice on how to increase their economic engagement (IFAD, 2015).

The landmark United Nations Security Council Resolution 1325[35] addresses not only the inordinate impact of conflict on women, but also the pivotal role they should – and do – play in conflict management and resolution as well as sustainable peace. A study of the impacts of implementation of this resolution found significant progress in supporting women's participation in electoral processes, the security sector, and gender mainstreaming in policies. Only modest impacts were found in other areas however, including protection for women against conflict-related sexual violence and women serving in peacekeeping forces (DPKO, 2010). Interventions therefore seem most effective when simultaneously promoting women's economic empowerment, their right to access and use resources, and their participation in decision-making in natural resource management and community development.

[34] See, for instance, CDA (2012).

[35] See Security Council resolution 1325 (2000) [on women and peace and security], S/RES/1325 (2000). Adopted on 31 October 2000.

Community-based approaches to build trust and social cohesion

Traditional post-conflict policies and actions generally concentrate on reconstruction efforts, which are indeed important to increase agricultural production in a short period of time. However, recent analysis suggests that policies should also aim to create favourable conditions to reduce uncertainty (Arias, Ibáñez and Zambrano, 2017; Segovia, 2017a,b). For example, during the civil way in Colombia, farming households learned to live amid conflict and its inherent uncertainties. Where non-state armed actors remained present, farmers shifted to activities with short-term yields and lower profitability (e.g. from perennial crops to other agricultural activities). As violence intensified, farmers focused more on subsistence activities to provide basic food security. The reasons may have involved issues over access to productive land, to the transition away from income activities that were more sensitive to conflict, and to the avoidance of accumulating assets that could become liabilities or targets. Households appeared to "learn to live amid conflict, yet at a lower income trajectory" (Arias, Ibáñez and Zambrano, 2017: 32).

Reinforcing positive aspirations and improving well-being

Confidence, hope and dignity are all factors that shape people's aspirations about their future lives and relationships with others – including perceptions and attitudes towards social cooperation and social cohesion, both of which are arguably key to sustaining peace (Justino, Brück and Verwimp, 2013). Recent research on behavioural economics has shown that aspirations are crucial mechanisms shaping economic development and social interactions (see Bernard, Dercon and Taffesse, 2011; Parker *et al.*, 2013; Ray, 2006). Some of these findings have informed the development of social and individual skills training programmes among young people that were involved in violent conflicts, helping to reset and improve their aspirations.

Many ex-combatants are young men and women from rural areas. The agriculture-based Ex-Combatant Reintegration in Liberia programme has provided participants with meals, clothing, personal items and basic medical care, along with agricultural training, tools and supplies. An evaluation showed the programme led to increased engagement of youth in agriculture and reduced involvement in illicit mining. Participants were also much less likely to have joined local armed groups involved in the outbreak of violence in Côte d'Ivoire (Blattman and Annan, 2011). Enhancing skills and providing capital for agricultural livelihoods is as important for food security and income as it is for providing a more positive outlook.

Jobs can compensate for the loss of identity and status associated with the dissolution of armed forces and militias and associated income loss. Creation of youth employment was central to the PBF-FAO-ILO Jobs for Peace programme implemented in the insurgency-affected areas of Nepal from 2009 to 2012. Rural youth employment creation played an important role in enhancing social cohesion during the post-conflict process of reintegration and peacebuilding. It also provided remunerative alternatives for youth, thus discouraging them from re-engaging in violence. Similarly, an FAO-supported agricultural livelihood programme in the North Caucasus stimulated economic recovery, as well as social regeneration and an individual sense of well-being (Parker *et al.*, 2013).

Cash transfer programmes have also been found to improve mental health and reduce stress and anxiety among beneficiary populations. In the case of refugee groups in Jordan (Hagen-Zanker *et al.*, 2017), regular transfers and the ability to pay for critical expenditures increased their sense of self-esteem. One-third of respondents reported lower levels of stress and anxiety thanks to the cash transfers (Hagen-Zanker *et al.*, 2017).

Joint community planning and dialogue

Food security interventions may be more effective when they facilitate dialogue between groups from different sides of the conflict and engage them in the planning and implementation of programmes. Training and awareness raising on how to sustain peace equally can be critical as well.

The provision of community-based animal health services and livestock vaccinations to the Dinka Ngok and Misseriya communities in the contested Abyei area of South Sudan and the Sudan by FAO (working with local government bodies, UN peacekeepers and other UN entities[36]) has been an effective entry point for re-establishing intercommunity dialogue around land access and use, leading to a local-level peace agreement (FAO, 2017b). The contribution of this intervention in enhancing mutual trust and basic stability for sustainable recovery and development programming was recognized in the Security Risk Management Process for the Abyei area.[37] Interaction between groups addressing joint problems, such as environmental issues and livelihoods, is often a good starting point for enhancing trust, establishing habits of cooperation, and thereby facilitating further cooperation between conflicting parties on more sensitive topics.

The FAO Dimitra programme supports community listeners' clubs in Burundi, the Democratic Republic of the Congo, Ghana, the Niger and Senegal. The clubs are spaces for dialogue and action at a community level, where adult women and men and young people can decide how to organize to bring about changes in their communities. Qualitative assessments show changes in the behaviour, practices and perceptions of men and women in the rural communities. These include changes not only in access to information and knowledge but also in agricultural practices, in women's self-confidence and leadership, and in community social mobilization. Many assessments show how women have gained self-confidence and now play an active role in community life. After years of war and continuing insecurity in several parts of the Democratic Republic of the Congo, the information sharing on food security, agricultural practices, HIV/AIDS, and domestic violence have contributed to improvements in women's (and men's) livelihoods and strengthened women's roles in communities (FAO, 2016b).

An ongoing PBF-funded programme in Kyrgyzstan to improve cross-border cooperation brings ethnic Kyrgyz and Tajik groups together to restore irrigation canals through WFP's Food Assistance for Assets programme. The process of jointly managing and physically working together on the project provides space for interaction, dialogue, cooperation and building trust (WFP, 2016), particularly through regular intercommunity meetings. Other agencies, including FAO, UNDP, UNICEF and UN Women, are involved in other activities within this programme, promoting intercommunity dialogue and engagement.

Interventions to build capacity of institutions and improve governance

Poor governance is often a factor in conflict (Chapter 2), undermining the state-society compact and fostering a perception of discrimination and horizontal inequalities. Food security interventions that build the capacity of institutions to deliver equitable access to services may help to restore confidence in state effectiveness and legitimacy, while increasing incentives for the population to maintain peace and stability. This may equally be true when building

[36] Secretariat of Agriculture, Animal Resources and Fishery (SAARF), the Abyei Joint Oversight Committee (AJOC), the United Nations Resident Coordinator's Office (UNRCO), the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), and the United Nations Interim Security Force for Abyei (UNISFA).

[37] UNDSS Security Risk Management Process (Abyei Area of Operations), October 2016 to September 2017, internal UN document.

the capacity of non-state level institutions (farmer cooperatives, water user associations, women's groups, community grain banking groups, etc.) to provide better services for local communities. Building functioning and effective institutions is seen by many to be es¬sential for strengthening resilience to conflict (Breisinger *et al.*, 2014).

Poor delivery of basic services can undermine state legitimacy and perpetuate conflict. However, contrary to conventional wisdom, improved service delivery does not necessarily enhance state legitimacy (McLoughlin, 2015). Research by the Secure Livelihoods Research Consortium in the Democratic Republic of the Congo, Nepal, Pakistan and Uganda found that poor service quality indeed led to more negative perceptions of the state. But at the same time, it also concluded that improvements in service delivery only improved such perceptions if accompanied by improvements in other forms of societal trust, including community involvement in service delivery and in grievance mechanisms. This more nuanced relationship between service delivery and state legitimacy was also found elsewhere, such as in the provision of water services in Iraq (Denney, Mallett and Mazurana, 2015). At the same time, improved service delivery should not exacerbate inequalities in fragile situations, else there could be a risk of reigniting conflict.

Strengthening regional and national institutions is critical for the effective design and implementation of food security information systems and disaster risk prevention and reduction mechanisms. This is being done within the framework of the Global Alliance for Resilience Initiative and the United Nations Integrated Strategy for the Sahel. In addition, FAO with WFP and other partners supports the *Cadre Harmonisé*, an information and early warning system for food security and nutrition in the region. Established in 2008/09 by the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), the system can now be found in 17 countries of the region, yielding regular food security situation reports with timely warnings for decision-makers. As a result, governments and humanitarian actors in the region have access to reliable data to take informed decisions on how to prevent, anticipate, mitigate and respond to recurrent food crises. For example, the *Cadre Harmonisé* provides regular updates on the food security crisis stemming from the Boko Haram-related violence in northeastern Nigeria.

FAO has recently provided support to Côte d'Ivoire in developing and adopting a strategy and policy for land tenure security in post-conflict rural areas, where land tenure issues risk sparking or exacerbating conflicts between communities. Developed through a participatory and inclusive approach involving communities, traditional and administrative authorities, NGOs, development partners and the government, an autonomous agency was created to implement the policy, and a communication strategy on rural land tenure security subsequently rolled out. Collective land ownership certificates have been agreed, encouraging agro-enterprises to return to business, as conflict over land is no longer a major issue.[38]

Food insecurity has been identified as one trigger of Liberia's civil war.[39] Undernourishment is still a concern, however, in the present post-conflict period. Between 2008 and 2014, WFP supported the Liberian Government in strengthening the service-delivery capacity of farmer cooperatives. WFP's Purchase for Progress (P4P) programme trained cooperatives in the processing, marketing and procurement of agricultural produce. Cooperatives are now more able to help farmers improve their incomes, and this in turn has provided incentives to the population to maintain peace and stability (PBSO, 2012). Together with school feeding and livelihood asset recovery programmes, the P4P support is aligned with

[38] FAO Field Programme Management Information System (FPMIS), project UNJP/IVC/033/PBF.

[39] There is a common perception in Liberia that the 1979 "Rice Riots" over the high price of rice triggered the chain of violence that culminated in its civil war.

the programmes of the relevant line ministries in Liberia. The tangible results have helped enhance the legitimacy of government institutions at both national and subnational levels, which in turn has contributed to sustaining peace.

5.3 Official development assistance in support of food security and sustaining peace

Many of the aforementioned examples of resilience and peacebuilding interventions are supported by both official development assistance (ODA) and national efforts. Yet, the support funded through ODA for such purposes remains limited.

From humanitarian to developmental support

Much of the ODA flowing to countries in conflict or protracted crisis takes the form of humanitarian aid. Seven protracted crisis countries received on average more than 30 percent of their ODA receipts in the form of humanitarian aid during 2012-2014, while four countries received more than 45 percent of ODA in this way, rising to 79 percent in the case of the Syrian Arab Republic. These shares are even higher (by almost 20 percent) when disaggregated for conflict-ridden developing countries. Compared with countries not in conflict, humanitarian aid to countries affected by conflict is three and a half times higher as a proportion of total ODA.[40]

Approximately 80 percent of humanitarian appeals are conflict-related, and most of these conflicts are now protracted in nature. There have been calls in recent years for longer-term and more dependable funding in order to enable a sustained response to chronic or recurrent needs in protracted crises situations, and to help boost the resilience of crisis-affected communities.[41] The data cited above, however, indicates that in protracted crises and conflict situations, the integration of humanitarian and development assistance in the context of long-term policy and planning frameworks may not have changed substantially over the past decade, despite continued increases in overall levels of humanitarian assistance. The highest ever amount of international humanitarian assistance was recorded in 2015, estimated at USD 28 billion – the third consecutive annual increase in overall spending. Over the past decade, the total volume of humanitarian assistance has increased steadily, with significant increases in protracted crisis contexts (almost 60 percent) and in countries affected by conflict (almost 49 percent).

Towards multiyear planning and financing

Better integration of humanitarian and developmental support in conflict contexts would require longer-term donor commitment. Such a shift towards multiyear planning is already a reality in a number of protracted crisis and conflict contexts: by 2015, some 15 consolidated appeals or humanitarian action plans had adopted more than the traditional one-year length. In 2017, Cameroon, the Central African Republic, Chad, the Democratic Republic of Congo, Somalia and the Sudan will receive multiyear planning and financing, in some cases for a second three-year cycle. The Syrian Regional Refugee and Resilience Response Plan (3RP) also includes appeals for 2017 and 2018.

40 Estimates based on OECD-DAC Creditor Reporting System (https://stats.oecd.org/Index.aspx?DataSetCode=CRS1).

41 For example, agreement around the Grand Bargain within the context of the World Humanitarian Summit in 2016; and the Committee on World Food Security's Framework for Action for Food Security and Nutrition in Protracted Crises (CFS-FFA).

While the argument for multiyear cycles appears to be prevailing, the issue now at stake is how to plan these cycles effectively. Concerns remain as to how much ODA-funded support is subjected to actual multiyear programming and multiyear financing. For example, in 2015, UNOCHA estimated that only 9 percent of the 527 projects under the Sahel Humanitarian Response Plan 2014–2016 could be legitimately considered part of a multiyear cycle (UNOCHA, 2015). Yet other evidence is more encouraging: in 2014, multiyear contributions to WFP increased to over USD 600 million, representing almost 11 percent of total contributions received. This total represents a three-fold increase since 2010/11, building on an expanding base of multiyear agreements with donors (WFP, 2015).

ODA support for agriculture development in conflict contexts

Agriculture is the mainstay of livelihoods for most people living in situations of fragility, protracted crisis, and/or conflict (see previous chapters, in particular Chapter 3). Increasing support for agricultural development in such contexts is crucial to building resilient livelihoods, improving food security and nutrition, and contributing to recovery as a cornerstone for peaceful and inclusive societies.

It is not feasible to analyse existing ODA data to assess in detail the amount of international support for specific interventions towards enhanced resilience in conflict-affected contexts. Broadly speaking, in those contexts the sectors of direct importance to food security and nutrition received relatively small shares of total developmental ODA between 2012 and 2015: 5.8 percent for agriculture; 3.8 percent for water, sanitation and hygiene (WASH); 7.4 percent for basic health; and 2.1 percent for education. Notably, the share for agricultural development was, on average, well below that for other developing countries not in conflict (8.1 percent).[42]

On the humanitarian side, despite huge increases in funding, it still falls short of what is required. Analysis of the UNOCHA Financial Tracking Service (FTS) shows that the percentage of support received versus requirements under the Consolidated Appeals Process (CAP) for the agriculture sector in 2016 was 27 percent, a dramatic decline from 2011 when support was at 58 percent. In protracted crises, funding levels were marginally better at 31 percent. A similar trend can be seen in the food sector where funding declined from 77 percent of requirements in 2011 to 51 percent in 2016 – with the same level both globally and for protracted crisis contexts only. A decline in percentage of requirements met was also seen in the health sector between 2011 and 2016. Other key sectors, such as water and sanitation and education, received less than 50 percent globally of assessed needs (Figure 14). Given the myriad factors underlying conflict and the multiple interventions required, there must be adequate funding for all sectors (including governance support) in order to achieve sustainable peace.

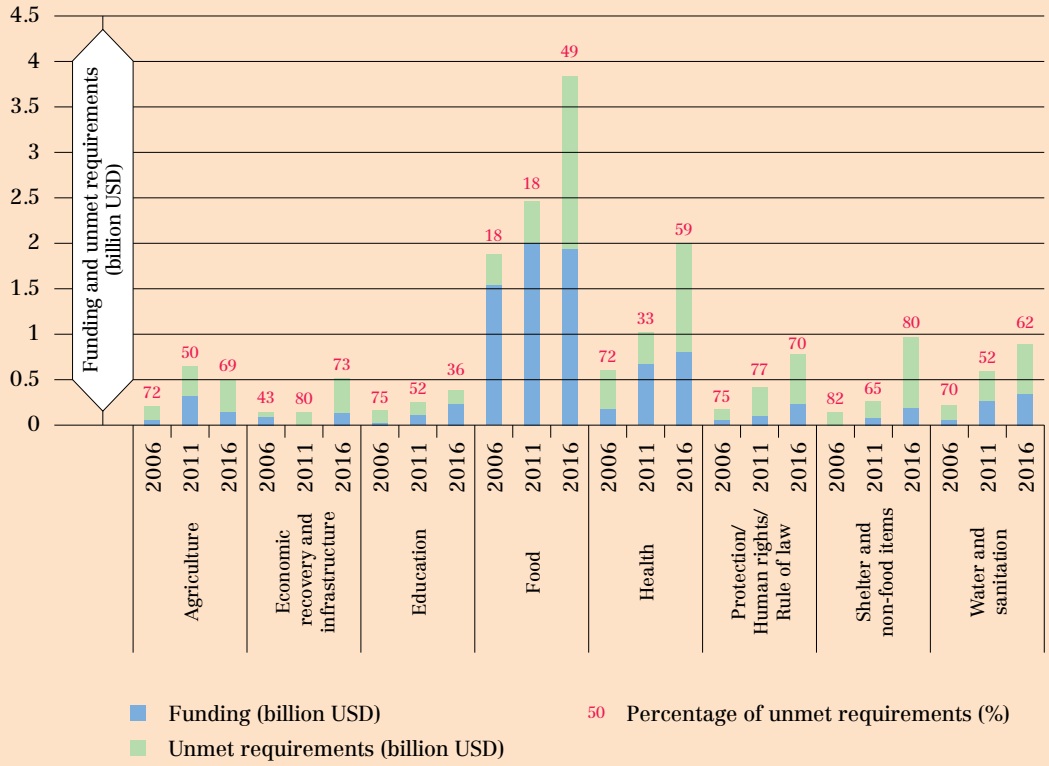
Such interventions should also include peacekeeping operations. Numerous studies have demonstrated that UN peacekeeping expenditures help reduce the risk of renewed conflict after it has ended. When estimating the determinants of post-conflict risk, a doubling of peacekeeping expenditure may reduce the risk of recurrence from 40 to 31 percent, keeping in mind that economic recovery is the best way to achieve a stable peace (see for example Collier, Hoeffler and Söderbom, 2008). An analysis of northern Uganda illustrates how a combination of peace processes and investments in peace and recovery led to significant gains in food security and nutrition in a post-conflict situation, within a relatively short period of time (see Box 11).

[42] FAO calculations based on data collected from the OECD-CRS database, downloaded on 13 March 2017 (https://stats.oecd.org/Index.aspx?DataSetCode=CRS1).

Implications for ODA contributions to sustaining peace

Despite recent initiatives and a shift toward multiyear planning and financing in humanitarian appeals, this limited analysis suggests there is still a need to better "layer" different financing tools and resources to ensure food security and nutrition, create resilient livelihoods, and contribute to sustaining peace in protracted crisis and conflict-affected contexts. This needs to be reflected across the humanitarian, development and peace pillars, and could include *inter alia* risk financing; peace operations; multilateral, bilateral, private sector and technical cooperation loans; and domestic tax revenue.

FIGURE 14 Requirements and funding levels in UN appeals by sector, in countries in protracted crisis in 2006, 2011 and 2016



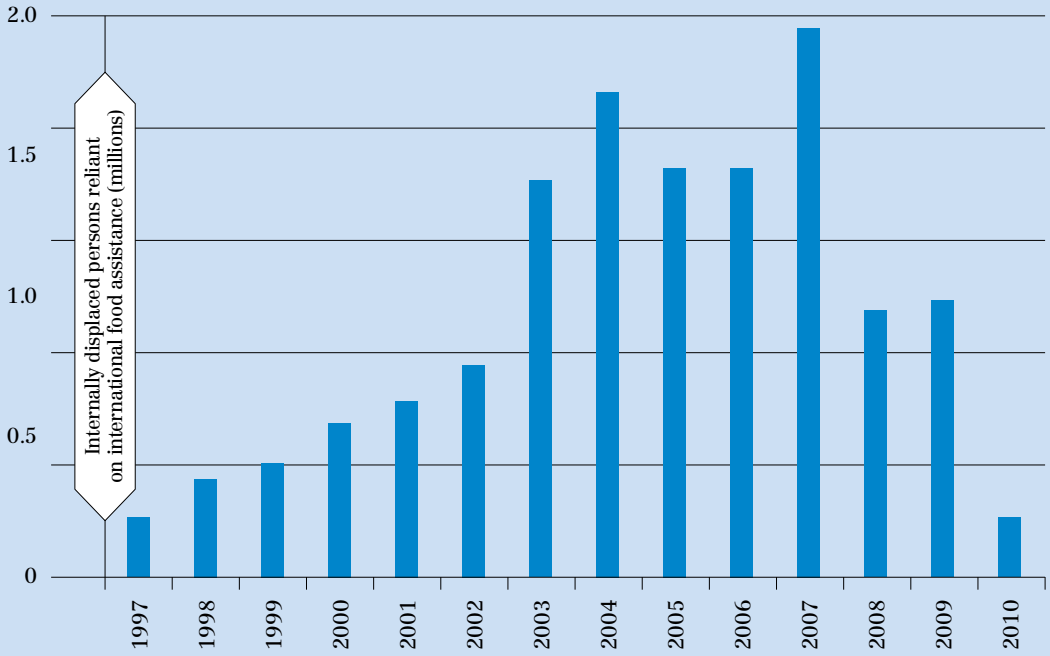
Source: UNOCHA Financial Tracking Service - archives.

BOX 11 Northern Uganda – investing in peace and improving food security and nutrition

The post-conflict recovery of northern Uganda is a positive example of how sustained investments in peace and recovery can contribute towards dramatic improvements in food security and nutrition in a former conflict zone.

Two decades of conflict between the Government of Uganda and the Lord's Resistance Army (LRA) in northern Uganda led to mass displacement and a surge in poverty and food insecurity and malnutrition, particularly in the formerly agricultural Acholi region. Forced to live in camps, the Acholi population, which had previously been largely food-secure, became almost entirely reliant on international food assistance. WFP food assistance in northern Uganda was initially provided to 210 600 IDPs in 1997, rising to 1.4 million in 2003 and reaching a peak of 1.9 million in 2007 (WFP, 1997, 2003, 2007).

FIGURE 15 IDPs assisted by WFP in Northern Uganda



Source: WFP, 1997, 2003, 2007.

Following the retreat of LRA forces from northern Uganda in 2006/2007, IDP camps were disbanded and their residents returned to their places of origin over the following years. Significant investments were made both in sustaining peace and promoting recovery under the framework of the government-led Peace, Recovery & Development Plan for Northern Uganda. For example, combined contributions of USD 51.5 million were made in the Uganda Peace and Recovery Facility (2011–2012) and the Multi-Country Demobilisation and Reintegration Program (2002–2009) (Rohwerder, 2014). The World Bank provided credits of USD 100 million each for the first two phases of the Northern Uganda Social Action Fund (NUSAF I and II) (World Bank, 2009).

The Government of Uganda identified agriculture as a priority for post-conflict recovery. Multiple organizations supported IDPs and ex-combatants in resuming their livelihoods by providing inputs, such as seeds and tools, as well as livestock restocking and cash/food for work, complemented by national-level efforts to enhance food security and nutrition governance. An estimated 32 percent of funding for NUSAF I went to agriculture (Birner, Cohen and Ilukor, 2011). Meanwhile, WFP phased out relief food assistance to IDPs in Acholi in 2010, explaining that "…a sustained peace has facilitated a dramatic improvement in the food and nutrition situation of formerly IDPs, who have now opened up a vast acreage of fertile land that had been fallow for decades" (WFP, 2010).

Food security and nutrition in northern Uganda has improved substantially since the end of the conflict. No further food assistance has been required in Acholi since the end of 2011. In the country as a whole, the prevalence of wasting in children declined by almost a third, from a high of 6.3 percent in 2006 to 4.3 percent in 2012 (UNICEF, WHO and World Bank, 2017). Meanwhile, the percentage of the population below the national poverty line declined from 31.1 percent in 2005 to 19.5 percent in 2012 (World Bank, 2017b).

The case of northern Uganda demonstrates how timely and substantial post-conflict investments in peace and recovery, with a strong emphasis on agriculture, can contribute towards significant food security and nutrition improvements. However, continued support is still required to address underlying conflict stressors, such as grievances over land and ethnic divisions, in order to avoid relapsing into conflict (USAID, 2017).

Both development and humanitarian assistance to agriculture in conflict and protracted crisis situations are below the average for developing countries in non-conflict situations, despite the fact that investments in this sector are crucial for rebuilding and promoting livelihoods, and also given that agriculture contributes a consistently high level of GDP in these contexts. Some possible pathways between policies and actions that support improved food security and nutrition and agricultural livelihoods, and how these may contribute to sustaining peace, are examined in the next section. This may warrant a new look at how these sectors are to be funded in the future.

The international community has a responsibility to help address the root causes of conflict, which may also relate in part to disputes over agricultural and other natural resources and deteriorated food insecurity and malnutrition. Measures aimed at strengthening resilience and sustaining peace can also support a sustainable shift from providing humanitarian assistance to those in need, to reducing those needs and the related humanitarian costs.

This will mean working better together across traditional organizational boundaries, and the humanitarian-development-peace nexus, in pursuit of collective outcomes. This has recently been articulated as the "New Way of Working"[43] and is being taken up as a priority across the UN system, in both the Inter-Agency Standing Committee (IASC) and the United

[43] The New Way of Working was adopted in May 2016 in a Commitment to Action signed by the former UN Secretary-General and eight UN humanitarian and development entities (FAO, UNOCHA, UNCHR, UNDP, UNFPA, UNICEF, WFP and WHO), and endorsed by the World Bank and the International Organization for Migration. It is framed as enabling humanitarian, development and peace actors to engage meaningfully in support of conflict- and protracted crisis-affected people through collective action to reduce risk, need and vulnerability based on context. It therefore contributes to sustainable development, including as it relates to sustaining peace.

Nations Development Group. This represents a huge challenge both operationally and in terms of policy, and will be a gradual process; but it will be essential to realizing improved food security and nutrition and improving contributions to sustaining peace.

5.4 Recommendations for improving contributions to sustaining peace

There is a global consensus, reinforced by the 2030 Agenda, the New Way of Working and the "Peace Promise",[44] among others, that in order to achieve the SDGs all pillars of sustainable development (humanitarian, development and peace) must work together to prevent conflict and sustain peace. Peace and stability can both enable and be a result of development. Among the most effective policies and strategies for restoring peace and stability are those which can reduce development stresses and mitigate risks of conflict simultaneously, gradually building a virtuous cycle between peace and sustainable development. Fostering economic development and greater equity within and between countries while strengthening good governance can also help address the root causes of conflict (von Grebmer *et al.*, 2015).

Food security and nutrition interventions are generally only likely to have a sustainable impact on peace when implemented as part of a broader set of mutually reinforcing efforts (ideally nationally owned) across multiple sectors by multiple actors. These may include formal political peace processes, building and supporting institutions, justice and security, economic growth and employment, and provision of equitable services.

There is clear potential for practical interventions at the field level that strengthen the long-term resilience of households and communities both to achieve sustainable food security and nutrition outcomes and to underpin sustainable peace. As illustrated above, this can include livelihood support to address conflict stressors and promote productive economic activities; community-based approaches that help build relationships and social cohesion, improving aspirations, confidence and trust; and interventions that contribute to building the capacity of institutions and improving governance to deliver equitable services.

Given the re-emergence of conflict-driven famines (Chapter 2), it is time to take advantage of this growing momentum and recognition, as outlined in the recommendations below.

Recommendations on conflict sensitivity

- While each context presents its own challenges, in all conflict-ridden contexts it is fundamental for all approaches to be conflict-sensitive, rights-based and gender-sensitive, as well as being guided by sufficient conflict analysis.[45]
- Interventions supporting food security and nutrition can help build resilience to conflict not only by assisting people and systems to cope with and recover from conflict, but also by helping to prevent conflicts and build peace, while supporting economic development more broadly.
- When not properly designed, implemented, or coordinated in accordance with local contexts, support for food security and nutrition can exacerbate underlying causes of

[44] The Peace Promise consists of five commitments as a framework for new ways of working together: (a) coherent objectives; (b) analysis; (c) developing capacities, tools, partnerships and learning; (d) conflict sensitivity; and (e) financing. It states that the international community has a responsibility to work together across traditional organizational boundaries and at the peace-humanitarian-development nexus in addressing the drivers of violent conflict; delivering humanitarian assistance; and developing institutions, resilience and capacities simultaneously in a complementary and synergetic way in order to end humanitarian needs.

[45] Such approaches would also include preventing specific harm, such as increased use of child labour, which could emanate from conflict. For guidelines on this, see FAO (2017d).

conflict and instability, undermining investments in both local food production and in building resilience through the development of local capacities.

- Actors should undertake conflict analysis and apply a conflict-sensitive approach in the design and delivery of interventions so as to avoid any negative effects. These interventions can have positive impacts by ***inter alia*** developing capacities and institutions, enhancing social cohesion and trust, strengthening resilience, promoting and protecting human rights, and reducing the risk of violence.
- Where the context allows, actors can build on conflict-sensitive programming and look to identify opportunities that can contribute to or support sustaining peace. Using health, WASH, and livelihood projects as a means to provide platforms for mediation and reconciliation may be a viable path to addressing underlying conflict drivers and stressors.
- A resilience-based approach, drawing on existing capacities for peace in society, has value as a useful complement to conflict analyses in the design of conflict-sensitive and context-specific programming.

Recommendations on research and analysis

- Substantially improving the evidence base to better inform the design, targeting and implementation of food security and nutrition interventions will require collaboration with research institutions and academia in measuring outcomes related to peace, such as resilience to conflict, improved social cohesion, or reduced propensity to engage with non-state armed actors. Indicators assessing social cohesion among individuals and groups should be reinforced as a measurement of capacities to prevent, contain and de-escalate conflict.
- The role of individual aspirations and perceptions in shaping how people make choices and decisions in conflict-affected and protracted crisis contexts holds promise. Examples include using people's perceptions to measure household resilience,[46] or exploring how small behavioural changes that enhance positive aspirations and perceptions could be included within food security and nutrition interventions to potentially generate positive outcomes in terms of sustainable peace.
- By disaggregating data on agricultural and non-agricultural incomes, conflict analysis might better predict how food insecurity related to crop failure or persistent low productivity could affect the incentives of rural households to support armed non-state actors, for example. Microlevel analyses and case studies are crucial to better understanding these relationships.
- Development of a Violence Early Warning System (ViEWS) is underway to provide humanitarian communities with useful and accurate forecasts of the timing and location of different forms of political conflict. This can highlight the underlying structural causes of violence, including food security drivers. Most existing systems fall short in terms of transparency, public availability and replicability, which greatly hampers their usefulness. The aim with this new system is to assess the risk that new conflicts will erupt, continue or spread to new locations involving new actors, or start targeting civilians. It can also help assess whether a recent cessation of hostilities will continue, or if they will flare up again. This work is currently underway through the leadership

[46] There is emerging cross-country evidence from the FAO-led resilience index measurement and analysis (RIMA) methodology on the relationship between resilience and the subjective perceptions of well-being and social inclusion in Matam (Senegal) and the Triangle of Hope (Mauritania). In the case of Matam, for example, results indicate that people are more resilient when they perceive that they can actively contribute to community life.

of Uppsala University (Colaresi, Hegre and Nordkvelle, 2016). These efforts should also facilitate better alignment of information about food security and nutrition with that on conflict and violence. See Box 12 and Brück *et al.* (2016: Chapter 5) for additional recommendations for rethinking and improving data collection methods and information systems, including the need for enhancing subnational-level data availability given the often localized nature of conflicts and food insecurity.

Recommendations on better ways of working

- In order to generate positive pathways to peace, it is important to think, invest and act over the long term. The interaction of food security and nutrition interventions, with their complex processes of social change, shape (and are shaped) by individual and household behaviour, social norms, institutions, the operation of markets, and collective action. These involve processes of change that operate over the long term, requiring a serious time commitment.
- Closer partnerships between humanitarian and development actors and international financial institutions will be important to support conflict- and protracted crisis-affected communities and help address root causes, prevent further fragility and instability, and create durable solutions. Collaboration between UN agencies and the World Bank is already being strengthened in this regard.
- Contributing to food security and sustaining peace will require a more deliberate, preventative approach, moving away from short-term and output-based interventions to longer-term, sustainable and collective outcomes, with a strategic focus on resilience building in line with the New Way of Working across humanitarian, development and peace pillars.
- In conflict and protracted crisis contexts, a boost in development action to help people become self-reliant as quickly as possible and build resilience to future shocks (including conflict) is vital. This will require more risk tolerance; earlier engagement; more flexible financing; and context-adaptable, conflict-sensitive programming. Successfully implementing the New Way of Working should contribute to sustaining peace, but will not be its fundamental or primary purpose.

BOX 12 Rethinking food security data collection to be conflict sensitive*

Collecting data from fragile and conflict-affected countries presents substantial challenges, such as the lack of access to communities and the risks and costs associated with conducting surveys in these settings. Innovative techniques such as mobile phone reporting, text message surveys and satellite data analysis now provide promising and viable new options for data collection.

One of the primary challenges in analysing the relationship between food security and conflict is finding ways to make the data from both fields of study speak to each other. Currently, there is data on food security and data on conflict, but what these data represent and are designed for do not always match; on top of this, they mostly represent national-level averages. This creates challenges when going beyond descriptive statistics and attempting to make policy-relevant causal inferences.

When looking at the data on their own terms, some issues that emerge include:

- *New forms of violence:* Existing databases do not properly report new forms of violence that have emerged in some parts of the world. The UCDP reports criminal organizations and gang-related violence only partially. There is information on the inter-cartel wars in Mexico in the non-state conflict dataset, and the ***maras*** are also mentioned in the one-sided violence and non-state conflict databases (although only in the cases of Guatemala and Honduras). There is no information on violence that occurred in El Salvador after 1992.
- *Temporal issues:* Food security data in the FAOSTAT database is captured annually at the national level, and submitted by governments. Many food security indicators are averages of three years of observations, which is done to account for outliers in the data. Conflict data in the UCDP database is updated annually, but in a given year there can be multiple events of a given conflict type in a country, which would ideally be recorded and included in the database as they occur.
- *Scale issues:* Most food security data is captured at the national level, while food systems and economies at the local level are often very relevant. This is particularly true for fragile and conflict-affected regions where governance and control are often fragmented. Conflict data increasingly captures subnational and local-level events. Even if localized conflict events are aggregated into a national total, information on the idiosyncrasies of each event is very valuable, and will often have different effects on local food security.
- *Outbreak and cessation issues:* One problem that remains challenging in any inferential analysis of conflict processes is identifying the beginnings and endings of conflict. This is partially dealt with by differentiating between various types of conflict, for example intrastate versus low-intensity, but becomes problematic when trying to identify how a peace agreement affects food security. This is because a peace agreement in many modern conflicts does not mean a complete cessation of violence, or the establishment of administrative capacity.
- *Conflict event issues:* While collecting event data on violence, such as battles and casualties, is important, non-violent aspects of conflict are not systematically measured. Systematic information on governance and the local political economy of food systems in conflict zones is virtually absent.

- *Coverage issues:* Both conflict and food security data may have gaps, in part as a direct result of weak capacities in conflict-affected and fragile countries. By averaging values, actual spikes of outcome values may be hidden. Having said that, "administrative" data from programmes operating in conflict-affected or fragile areas may contain a wealth of data that hitherto have not been studied systematically.
- *National vs subnational issues:* Because most of today's conflicts are intrastate and localized, those impacts aggravating problems of hunger and malnutrition may not spread to the entire population. Hence, available national averages of food security and nutrition may well underestimate the true impact on the affected population. Data at the subnational level for both conflict and food insecurity is necessary to improve the analysis of the nexus between the two phenomena.

These issues present an opportunity to rethink how to undertake data collection strategies that take advantage of interagency collaboration, new methodologies and new technologies. One strategy could be to identify countries that specifically deal with low-intensity conflict and direct resources into collecting food security data at the subnational level several times a year. Another proven approach is to focus on case studies by gathering conflict and food security data from other, ongoing microlevel surveys (Brück, 2013; Brück *et al.*, 2016). Specifically, many people experience various aspects of violent conflict (or indeed of fragility) in different ways, and these exposures to conflict can be captured by thoughtful surveys, even if their main focus is on a different subject (say on health or livelihoods). From such conflict modules in general surveys we can, incidentally, also deduce significant information on conflict dynamics and legacies.

If information from active war zones is required, then remote data collection techniques can help collect real-time information on conflict dynamics and key socio-economic outcome indicators (Baliki, 2017). In addition, using remote sensing data may help identify food security status, especially in areas traditionally dependent on local food production for food security (Baumann and Kuemmerle, 2016).

* This box draws extensively from Brück *et al.* (2016: Chapter 5).

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Annex Definitions and lists of country groups

Countries in protracted crisis

The State of Food Insecurity in the World 2010 defines protracted crisis situations as "characterized by recurrent natural disasters and/or conflict, longevity of food crises, breakdown of livelihoods and insufficient institutional capacity to react to the crises." There are three criteria used to define a country in protracted crisis: (i) longevity of the crisis; (ii) humanitarian aid flow to the country; and (iii) the country's economic and food security status.

Specifically, the list of countries identified in situations of protracted crisis includes those that meet the following three criteria:

1. The country is among the low-income food-deficit countries, as defined by FAO in 2015.
2. The country has faced a shock – either natural or human-induced – for four consecutive years between 2013 and 2016, or for eight out of ten years between 2007 and 2016, and is reported in the list of countries requiring external assistance for food (see www.fao.org/giews/country-analysis/external-assistance).
3. The country received more than 10 percent of total ODA in the form of humanitarian assistance between 2006 and 2014 (see http://devinit.org).

As of 2017, there are 19 countries that meet the above criteria for protracted crisis (see Table A.1, column A).

Countries affected by conflict

Table A.2 presents a list of 46 countries affected by conflict, a sample that is used extensively in this document. The list includes low- and middle-income countries and territories affected by conflict for at least one subperiod of five consecutive years and having suffered 500 or more battle deaths during that subperiod. The time frame ranges from 1996 to 2015, with four periods of five years: 1996–2000, 2001–2005, 2006–2010 and 2011–2015. The table presents the number of subperiods where these criteria are met, by country. The Uppsala Conflict Data Program (UCDP) dataset is used to establish battle deaths and country lists (see http://ucdp.uu.se). There are 45 low- and middle-income countries and one territory (total 46) that meet these criteria.

Countries in fragile situations

Unless otherwise specified, this report uses the World Bank Group's 2017 Harmonized List of Fragile Situations. The World Bank methodology on "Fragile Situations" includes countries or territories that meet three criteria: (i) having a harmonized Country Policy and Institutional Assessment (CPIA) rating of 3.2 or less; and/or (ii) having the presence of a UN and/or regional peacekeeping or political/peacebuilding mission during the last three years; and (iii) being an IDA-eligible country, or a non-member or inactive territory/country without CPIA data. The list excludes International Bank for Reconstruction and Development (IBRD) countries (for which the CPIA scores are not publicly disclosed) unless there is the

presence of a peacekeeping or political/peacebuilding mission, in which case the country is included on the harmonized list with the exclusion of its CPIA score. As of 2017, the Harmonized List of Fragile Situations has registered 34 countries and one territory (for a list, see http://pubdocs.worldbank.org/en/154851467143896227/FY17HLFS-Final-6272016.pdf).

Countries that meet several criteria

There are 13 countries that have experienced conflict resulting in a high level of battle deaths and that therefore meet both the criteria of protracted crisis and countries affected by conflict. These are referred to as countries in protracted crisis affected by conflict (see Table A.1, column C). There are 20 countries that are both part of the Harmonized List of Fragile Situations and are also affected by conflict as defined above, which are referred to as countries in fragile situations affected by conflict (see Table A.1, column D).

TABLE A.1 Countries in protracted crisis and countries and territories affected by conflict[1]

A. Countries in protracted crisis	B. Countries affected by conflict		C. Countries in protracted crisis affected by conflict	D. Countries in fragile situations affected by conflict
Afghanistan	Afghanistan	Pakistan	Afghanistan	Afghanistan
Burundi	Algeria	Palestine[2]	Burundi	Burundi
Central African Republic	Angola	Philippines	Central African Republic	Central African Republic
Chad	Burundi	Russian Federation	Chad	Chad
Democratic People's Republic of Korea	Cambodia	Rwanda	Democratic Republic of the Congo	Côte d'Ivoire
Democratic Republic of the Congo	Cameroon	Senegal	Eritrea	Democratic Republic of the Congo
Djibouti	Central African Republic	Serbia	Ethiopia	Eritrea
Eritrea	Chad	Sierra Leone	Liberia	Guinea-Bissau
Ethiopia	Colombia	Somalia	Somalia	Iraq
Haiti	Congo	South Sudan	South Sudan	Liberia
Kenya	Côte d'Ivoire	Sri Lanka	Sudan	Libya
Liberia	Democratic Republic of the Congo	Sudan	Syrian Arab Republic	Mali
Niger	Egypt	Syrian Arab Republic	Yemen	Myanmar
Somalia	Eritrea	Tajikistan		Palestine[2]
South Sudan	Ethiopia	Thailand		Sierra Leone
Sudan	Georgia	Turkey		Somalia
Syrian Arab Republic	Guinea-Bissau	Uganda		South Sudan
Yemen	India	Ukraine		Sudan
Zimbabwe	Indonesia	Uzbekistan		Syrian Arab Republic
	Iraq	Yemen		Yemen
	Liberia			
	Libya			
	Mali			
	Myanmar			
	Nepal			
	Nigeria			
Total: 19	Total: 46		Total: 13	Total: 20

1 For definitions and data sources see above.

2 The only territory that meets the criteria used to cluster countries as affected by conflict, as explained above.

TABLE A.2 Low- and middle-income countries and territories affected by conflict

Countries/territories affected by conflict	Affected by more than 500 battle-related deaths			
	1996–2000	2001–2005	2006–2010	2011–2015
Afghanistan	•	•	•	•
Algeria	•	•	•	•
Angola	•	•		
Burundi	•	•		
Cambodia	•			
Cameroon				•
Central African Republic[1]			•	•
Chad	•	•	•	
Colombia	•	•	•	•
Congo	•			
Côte d'Ivoire		•		
Democratic Republic of the Congo	•		•	•
Egypt				•
Eritrea	•			
Ethiopia	•		•	
Georgia			•	
Guinea-Bissau	•			
India	•	•	•	•
Indonesia	•	•		
Iraq		•	•	•
Liberia		•		
Libya				•
Mali				•
Myanmar	•	•	•	•
Nepal	•	•		
Nigeria				•
Pakistan	•		•	•
Palestine[2]		•	•	•
Philippines	•	•	•	•
Russian Federation	•	•	•	•
Rwanda	•	•	•	

Countries/territories affected by conflict	Affected by more than 500 battle-related deaths			
	1996–2000	2001–2005	2006–2010	2011–2015
Senegal	•			
Serbia	•			
Sierra Leone	•			
Somalia			•	•
South Sudan				•
Sri Lanka	•	•	•	
Sudan	•	•	•	•
Syrian Arab Republic				•
Tajikistan	•			
Thailand			•	•
Turkey	•	•	•	•
Uganda	•	•	•	•
Ukraine				•
Uzbekistan	•			
Yemen				•
Total: 46	Total: 33		Total: 31	

Source: UCDP; see above for definition and criteria for countries affected by conflict.

1 For definitions and data sources see above.

2 The only territory that meets the criteria used to cluster countries as affected by conflict, as explained above.

It is generally assumed that there are strong links between conflict, food security and peace. However, the precise underlying causes and channels that determine these links are often not well understood. More research and data are required to generate the evidence base that helps guide both national and international responses.

The present study aims to add to this knowledge. It comes at a time of enhanced risk of famine and severe food crisis in several parts of the world, with conflict as the common denominator. It also comes at a time when the total number of hungry people in the world appears to be on the rise again after a prolonged decline.

The present publication was developed to provide background analysis for the purposes of the thematic part of *The State of Food Security and Nutrition 2017*. It provides additional empirical material and technical assessments that could not be included in the flagship report. It aims to serve the same purpose: that is, to enhance the understanding of how conflict impacts on food insecurity and malnutrition, and how improvements in food security, nutrition and rural livelihoods can contribute to preventing conflict and sustaining peace.

The FAO Agricultural Development Economics Technical Study series collects technical papers addressing policy-oriented assessments of economic and social aspects of food security and nutrition, sustainable agriculture and rural development.

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