

# Interaction between Food Prices and Political Instability

Zenobia Ismail

University of Birmingham

21 May 2021

## Question

*What is the evidence on the interaction between changes in global food prices and political instability (including protests, riots, state violence and armed conflict)?*

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## 1. Summary

Food shortages are historically associated with popular uprisings. Around 2008 there was a wave of protest and unrest in several low-and middle-income countries in the Middle East, Africa, Asia and Latin America (Smith, 2014). These incidents were widely reported under the guise of food related protests and uprisings in the mass media. Scholarly interest in the relationship between food prices and political instability was rekindled (Van Weezel, 2016).

This report reviews the literature on links between international food prices and political instability (including protests, riots and social unrest). The literature on food prices and protest, riots, unrest or violent incidents consists mainly of peer-reviewed scholarly articles that utilise econometric modelling. Some early studies examined the links between international food prices and political instability and found conflicting results. Some assessments concluded that there were links between international food prices or food insecurity and the number of violent incidents, while others found that such a link was tenuous. Subsequent work points out that international food prices do not always lead to increases in domestic food prices for a number of reasons (Van Weezel, 2016; Weinberg & Bakker, 2015). Scholars have moved away from using data on international food prices and tend to use data that is adjusted, to reflect the trends in domestic food prices or the variance between international and domestic food prices.

Recent studies have argued that the relationship between food prices and protest or violent incidents is very complicated, and therefore it is difficult to find evidence to support a causal link (Martin-Shields & Stojetz, 2019; Raleigh et al., 2015). The main difficulty is the endogenous relationship between food prices and conflict, and in particular reverse causation. Conflict can affect food prices and food prices can exacerbate conflict. Recent studies utilise more sophisticated theoretical reasoning and estimation techniques to better understand the links between food prices and protest or violent incidents. However, the results from different studies are still contradictory. Hence, scholars call for better information and more studies of the link between food prices and protest, social unrest and other forms of conflict.

This literature review covers some of the main arguments and findings in the recent literature on food prices and political instability or conflict. The majority of the econometric studies in this review find that there is a link between food price increases and a greater probability of protests, riots or social unrest. However, there are still a few studies that have contradictory results. So, the debate on the effect of food prices on political stability continues.

There is evidence from quantitative studies and observation that conflict can affect the prices of or access to food:

- Children in conflict zones have lower height for age and weight for age ratios while stunting and wasting is prevalent (Martin-Shields & Stojetz, 2019);
- Food prices rose in Darfur after the onset of conflict (Arezki & Bruckner, 2011);
- A study in Afghanistan found a negative association between conflict and food security; and (D'Souza & Jolliffe, 2013); and
- Conflict can lead to a decline in agricultural production and hence the availability of food (Brinkman & Hendrix, 2011).

A number of quantitative studies find evidence that higher food prices lead to a greater probability of protests or social unrest (Arezki & Bruckner, 2011; Smith, 2014; Raleigh et al., 2015; Bellemare, 2015; Weinberg & Bakker, 2015). More specifically:

- Most of these studies account for domestic variations in food prices and study the relationship between conflict and food prices over an extended period of time;
- There remains a small number of studies which find weak links between food prices and protests, riots or other forms of unrest (Hendrix et al., 2009; Buhaug et al., 2015; Van Weezel, 2016);
- A qualitative study on the motivations of protest in Bangladesh and India confirms the assertions made by some scholars that while food prices may trigger some form of unrest the underlying causes relate to long-standing economic or political grievances (Heslin, 2020);
- There is little mention of gender in the literature although there is a study which mentions that girls are more affected than boys when crop failure affects the availability of food. In addition, pregnant woman in conflict areas are more likely to give birth to underweight babies (Brinkman & Hendrix, 2011; Martin-Shields & Stojetz, 2019); and
- Disability was not discussed in the literature reviewed in this report.

Food subsidies, cash transfers, price controls and the elimination of trade barriers are some of the policy interventions that may address rising food prices and mitigate the rise of violent collective action (Brinkman & Hendrix, 2011). However, the literature questions the effectiveness of such policies in cases where violence or protest action stems from deeper, underlying economic or political grievances (Smith, 2014; Weinberg & Bakker, 2015).

## 2. Methodological issues relating to food prices and political instability

Countries that are affected by food shortages tend to be prone to conflict, violence or instability. Nineteen countries that the Food and Agricultural Organisation (FAO) classifies as being in a protracted food crisis are also affected by conflict and violence (Martin-Shields & Stojets, 2018). Thus, scholars have pondered about the relationship between the availability of food and probability of conflict, especially after 2008 when the media reported on many food related protests in low-and-middle-income countries (Van Weezel, 2016). Furthermore, Smith (2014, p. 679) states that “Dramatic weather events, diversion of crops for fuel production, and continuing volatility in international grain markets have led many to postulate that urban food riots will become more frequent, pervasive and disruptive in the future.”

There is a body of literature<sup>1</sup> which argues that grievances (or relative deprivation) lead to incentives for conflict. Literature in this vein argues that rising food prices increase the propensity for protests and food riots. Young men in particular may join rebel groups to gain access to food

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<sup>1</sup> See the work of Paul Collier and James Fearon.

(Brinkman & Hendrix, 2011, Raleigh et al., 2015). However, finding the evidence to support these assertions is difficult because the relationship between food prices (as an indicator of the availability or accessibility of food) and conflict is both complex and influenced by many other factors (Smith 2014, van Weezel, 2016, Martin-Shields & Stojets, 2018). Therefore, it becomes difficult to find evidence of causal linkages between food prices and conflict. Moreover, the evidence may be contradictory. This section explores the methodological issues that make the interaction between food prices and political instability difficult to conceptualise and assess.

## Endogeneity challenges

It is difficult to study the causal link between food prices and political instability because they are endogenous<sup>2</sup> and there is limited evidence. According to Martin-Shields & Stojets (2018) there are two key sources of endogeneity, which are (1) unobserved confounding factors and (2) reverse causality. Confounding factors are strongly correlated with both food insecurity and conflict. For example, there is much evidence which suggests that national income is negatively correlated with violent conflict and positively correlated with food security. Likewise, state capacity is also related to violence and food security. Reverse causality occurs when it is difficult to ascertain the direction of the causal links: does food insecurity exacerbate conflict or does conflict contribute to food insecurity? (De Winne & Peersman, 2021; Raleigh et al., 2015). Some scholars have dealt with reverse causality by focusing their analysis on international food prices. They argue that international food prices are unlikely to be unaffected by local conflicts and as such there is less need for concern about endogeneity. However, it is still possible that global food prices can be confounded by variables such as global economic activity or oil prices (Smith, 2014). Some quantitative studies address endogeneity by including fixed effects or instrumental variables in models, but De Winne and Peersman (2021) are not convinced that this approach eliminates endogeneity.

## International versus domestic food prices

There is notable disparity between international and domestic food prices, even when countries are net importers of food (Hendrix et al., 2009; Weinberg & Bakker, 2014; Bellemare, 2014). Governments can take actions to mitigate the impact of international shocks on local food prices by using agricultural subsidies, export restrictions and price controls to stabilise markets (Smith, 2014). Furthermore, local consumer food prices in individual countries do not always follow the trends in the FAO food price index. For example, in 2010 only Ivory Coast and Cameroon adhered to the trends in the FAO index. See figure 1. Hence, the connection between international and local food prices is not always straightforward. Smith (2014) and Weinberg & Bakker (2014) state that the assumption that changes in international commodity prices are directly related to domestic prices is flawed because there are a several other factors including domestic government policies which affect domestic prices of food. Moreover, country specific

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<sup>2</sup> Variables are endogenous when they are closely related and it is not feasible to distinguish which variable is the cause and which one is the effect.

shocks relating to floods, drought or war cannot be modelled with international food price data (Martin-Shields & Stojets, 2018).

**See Figure 1:** Domestic consumer food indices and the FAO Food Price Index, **Source:** Smith, 2014, p. 681, <https://journals.sagepub.com/doi/full/10.1177/0022343314543722>

## Definitions of conflict events

A wide variety of conflict -type events are often referred to as food riots in media reports and the scholarly literature. As such, the findings of various studies may not be comparable (Smith, 2014; Martin-Shields & Stojets, 2018). Most of the studies that find a robust link between food prices and violent incidents refer to protests, riots, or social unrest.

## Food prices as a trigger of deeper grievances

Food prices act as a stronger price signal to consumers than any other product (Weinberg & Bakker, 2014). “In general, food exhibits extremely low price and income elasticity of demand, owing to its necessity and the lack of any substitutable goods and the proportion of household income spent on food” (Weinberg & Bakker, 2014, p. 312). Consumers are forced to buy food regardless of price because they need to eat. Increases in food prices might be the trigger or catalyst for uprisings, but the root causes may be linked to long-standing economic or political grievances (Smith, 2014). For example, qualitative research undertaken by Heslin (2020) found that so-called food riots in Dhaka, the capital of Bangladesh, were driven by long-standing grievances relating to low wages and the withholding of wages by employers in the textile sector. Moreover, as income decreases food accounts for a larger share of spending and therefore assumes more importance for an individual consumer.

## Data problems

There is missing data on undernourishment for some countries, such as Libya, Somalia, South Sudan, Democratic Republic of the Congo and Syria, which undermines country comparisons (Martin-Shields & Stojets, 2018). Mobile phone-based surveys can bridge some of these data gaps, as has been done in Afghanistan and Zimbabwe. There is consensus in the literature that better data is needed. Hendrix et al. (2009) call for better information on country specific shocks which may or may not be correlated with international shocks.

## 3. The effect of violent conflict on food security

Due to the endogenous relationship between food security and violent conflict there are a number of pathways through which conflict can contribute to a decline in food security (Brück et al., 2019; Gates et al., 2016). It is beyond the scope of this literature review to provide a detailed overview of the impact of conflict on food security. However, some linkages are discussed to highlight the endogenous relationship between food prices and protests, riots and social unrest.

## **The impact of violent conflict on nutritional status**

Exposure to conflict has adverse effects on the nutritional status of children. An analysis of height for age Z score (HAZ) and weight for age Z score (WAZ) data from Burundi shows that children in the 0-5 age group who were born in regions affected by civil war or violence have significantly lower HAZ scores than those born in other regions (Martin-Shields & Stojets, 2018). Similar findings have been observed in Angola, Colombia, Côte d'Ivoire, Eritrea, Ethiopia, India, Iraq and Mexico. The civil war in Rwanda contributed notably to stunting among children. The effect is stronger among girls who are negatively affected when crop failure occurs. Moreover, the negative effects of conflict on nutrition among children may commence before the child is born (in utero). Evidence suggests that women who are exposed to conflict during pregnancy are more likely to give birth to children who are underweight. These findings have been observed in Colombia, Brazil, Mexico, Nepal, Kashmir and Palestine. There is a need for more robust evidence as well as evidence which focuses on acute malnutrition which may occur during a period of conflict (Martin-Shields & Stojets, 2018).

## **The effect of violent conflict on consumption of food**

Displacement due to conflict undermines productivity and food consumption. Groups may compete with the local population for access to food. Food and hunger can be used as weapons of war. There are very few studies on the direct and indirect impact of conflict on consumption (Martin-Shields & Stojets, 2018). Civil war can lead to an increase in domestic food prices. For example, in Darfur prices of the main staple foods increased rapidly after the onset of widespread violence in late 2003/early 2004 (Areski & Bruckner, 2011). Furthermore, low-income countries are especially vulnerable to food price increases or shocks because they have limited foreign-exchange reserves and less capacity to borrow (Hendrix et al., 2009).

### **Case Study: Afghanistan**

Food insecurity is a serious problem in Afghanistan where nearly 30% of the population do not obtain minimum daily food requirements (2,100 kcal per person) (D'Souza & Jolliffe, 2013). Furthermore 60% of children under five experience chronic malnutrition including stunting while 8% suffer from acute malnutrition and wasting. A quantitative study using regression analysis was conducted to determine if conflict and food insecurity were related in Afghanistan. This study made use of survey data from the National Risk and Vulnerability Assessment (NRVA) 2007/2008 and data on violent incidents compiled by the United Nations Department of Safety and Security. The main finding of the study is that there was a strong negative relationship between conflict and food security, suggesting that extended conflict can disrupt markets and influence the extent to which households are able to access food. The sharp rise in wheat prices in 2008 contributed to a drastic decline in purchasing power for Afghan households and subsequent deterioration of well-being (D'Souza & Jolliffe, 2013).

## **The effect of violent conflict on agricultural production**

There are many studies which investigate the effect of civil war on economic production and growth in a number of countries. The evidence suggests that agricultural production declines due to dwindling labour supply, access to land, access to credit, theft and destruction that occurs during violent conflict (Martin-Shields & Stojets, 2018). Even countries which are net exporters of

food may be at risk because rising food prices may encourage producers to shift output to export markets at the expense of the local market (Hendrix et al., 2009).

Agricultural production has a complex relationship with conflict. There are instances where rebel groups rely on the revenue from agricultural production and therefore increases in food prices can raise the incidence of small-scale conflict. For example, data from the Philippines show that increases in the price of major export crops can lead to an intensification of violence. Likewise, rebels in Colombia alter their tactics in line with trends in the price for coffee and cocoa (Martin-Shields & Stojets, 2018).

#### **4. The effect of food prices/security on violent conflict or protests/riots/unrest**

Food insecurity may create incentives for people to engage in violent behaviour. However, such motives are complex and very difficult to isolate from other factors which may be indirectly related to food insecurity such as ideology (Martin-Shields & Stojets, 2018). There is qualitative data which documents how civilians seek support from armed groups to protect their livelihoods and food security. Humphreys and Weinstein (2008) provide evidence that indicates that armed groups target recruits by providing food, shelter and physical security. However, it is very difficult to test the links in this causal chain. According to Brinkman & Hendrix (2011) causal arguments that link food insecurity to political violence fail to explain how food insecurity affects the decision to participate in violence on the part of individuals.

#### **Studies on the impact of food prices on protest, riots or unrest**

It is generally argued that rises in international food prices create consumer grievances that lead to conflict, usually in the form of protest, riots, violence and war. Hendrix, Haggard and Magaloni (2009) state that there has been rapid inflation in global food prices since 2000. Moreover, between 1961 to 2006<sup>3</sup> many countries moved from being net exporters of food to becoming net importers of food. Global food price shocks in 2007 and 2008 are widely believed to have contributed to food riots in the Middle East (Egypt, Jordan, Yemen and Morocco), sub Saharan Africa (Ethiopia, Burkina Faso, Senegal, Mozambique, Mauritania, Cameroon and Guinea), Asia (Bangladesh, India, Philippines, Cambodia, Thailand and North Korea) and Latin America (Honduras, Guatemala, Nicaragua, Peru, Bolivia, Argentina, and Mexico).

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<sup>3</sup> In 1960 developing countries had an overall agricultural trade surplus of almost USD7 billion per year. By 2000 the surplus had changed to a deficit of more than USD11 billion according to the United Nations Development Fund for Women in 2008 (Hendrix et al., 2009). This transformation is attributed to development policies which favoured industrialisation over agriculture, urbanisation and rising incomes in developing countries. In addition, trade liberalisation policies also undermined small-scale agricultural producers in developing countries (Hendrix et al., 2009). Over time, fragile states have experienced higher dependency on food imports compared with other developing countries (Brinkman & Hendrix (2011).

In poor countries food is the primary expense<sup>4</sup> and a rise in food prices is anticipated to have a detrimental impact on households (Bora et al., 2011). However rising food prices may have an uneven impact as they may “hurt urban consumers but help rural producers” (Hendrix et al., 2009, p. 10). It is therefore possible that consumers will protest when prices rise but that producers may protest when prices are falling. Martin-Shields & Stojets (2018) provide an overview of the studies on food prices and conflict which finds contradictory results. They note studies that use data relating to food prices that are orientated towards production or export shares tend to find that higher food prices lead to less unrest although there are exceptions. In contrast, studies that use food prices that are orientated towards imports or consumption share usually find that higher prices lead to more unrest. Furthermore, it must also be considered that incomes tend to be higher in urban areas whereas absolute poverty tends to be widespread in rural areas, and these factors may influence where and when protests arise (Martin-Shields & Stojets, 2018).

Hendrix et al. (2009) argue that protest is more likely to occur in hybrid regimes than in either democracies or autocracies. In democracies there are other outlets such as elections for citizens to voice their dissatisfaction with government. Hybrid regimes are likely to tolerate protests if they believe they can prevent them from becoming revolutionary movements that threaten their authority. Such governments are willing to make concessions as long as the demands are restricted to bread-and-butter issues that do not challenge the incumbent rule, for example tariffs, subsidies, wages and food. Hybrid regimes differ from hard autocratic regimes that do not leave any options for protest, and where any kind of anti-government mobilisation will be harshly repressed. Hybrid regimes may also use controlled protest as a tool of monitoring the state itself and collecting information. Hendrix et al. (2009) conducted a quantitative analysis of 55 major cities in 49 countries located in Asia or Africa during the period 1961 to 2006. They find that regime type is a significant determinant of protest. The relationship is not linear and protest is more concentrated in hybrid regimes than in democracies (Hendrix et al., 2009). Furthermore, using econometric modelling Hendrix et al. (2009) test the relationship between the world wheat price and the incidence of protest across different regime types. The following findings were observed in the study:

- There is no consistent relationship between the level of economic development and protest. Likewise there is no relationship between the level of the world wheat price and incidence of protest;
- GDP growth is strongly and negatively associated with the incidence of protests and riots;
- There is a curvilinear relationship between the wheat price change and protest in riots;
- There is a strong, positive relationship between democracy and protest;
- Hybrid regimes are sensitive to the level of wheat price. Higher prices are associated with more protest in hybrid regimes; and

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<sup>4</sup> The FAO estimates that households in fragile states spend on average 57.5% of their spending on food and as such they are very vulnerable to rises in food prices (Brinkman & Hendrix (2011).



- There is some support for the modernisation hypothesis in hybrid regimes. There is a significant positive and curvilinear relationship between GDP per capita and protest among hybrid regimes.

Van Weezel (2016) created a country specific food price index that weights the international food prices by the import level of the country. Civil unrest is measured by the number of violent events that happen in a month. It is expected that by focusing on African countries which are net importers of food, endogeneity may be less of a problem. Regression analysis was conducted for 45 countries from 1990 to 2011. The findings were as follows:

- Food prices (especially for wheat) are related to the probability of violent events but regime type was a stronger predictor of such violence than food prices;
- The magnitude of the food price effect is relatively modest; and
- Overall, the study does not find robust evidence that there is a link between food prices and civil unrest.

Smith (2014) conducted regression analysis with instrumental variables to test the relationship between domestic food price changes and the incidence of violence in several African countries. The dependent variable, urban socio-political unrest was based on the Social Conflict in Africa Database, which includes data on over 10,300 demonstrations, protests, strikes, riots and other communal conflicts in 48 African countries from 1990 to 2012. The results of the study provide robust evidence that there is a causal relationship between changes in domestic food prices and the probability of unrest. Furthermore, unrest is more likely to occur when there are larger food price spikes. The findings have an important policy implication because price stability in local markets may be used to maintain political and social stability. However, food price stability may not be sufficient to quell unrest in cases where more fundamental economic or political grievances are the underlying causes of the violent incidents (Smith, 2014).

Weinberg & Bakker (2014) examined the link between food prices and social unrest by focusing on factors that influence domestic food prices. They utilised the World Bank Consumer Tax Equivalent (CTE) index. The CTE is an assessment of the difference between international and domestic prices, and it is expressed as a percentage of the international price. It is able to capture the extent to which national policies relating to agriculture or trade influence domestic prices. The study measures social unrest as a count of the total instances of unrest in each country by year. This measure is based on 71 countries and 3,288 social unrest events from 1972 to 2007. The model was estimated using mixed effects panel Poisson regression. The results reveal that instances of social unrest were more frequent in years in which food prices had increased. Furthermore, larger food price increases resulted in higher counts of social unrest. Governments that were able to keep prices stable regardless of fluctuations in the market were able to safeguard against a higher risk of social unrest breaking out. The overall conclusion is that keeping all other variables constant, changes in food prices have a meaningful impact on the prevalence of social unrest.

Qualitative research undertaken by Heslin (2020) on so-called food riots in Dhaka, Bangladesh and West Bengal, India found that the protests were motivated by deeper grievances. Heslin (2020, p. 211) notes "The lack of access to food could serve as an entry point to make demands against political corruption and labour rights violations. In this way, the protesters are not

necessarily demanding lower prices but utilising the symbolic power of the commodification of a public good to mobilise resources against powerholders. Food has such symbolic power to mobilise populations against powerholders where its commodification is not fully accepted.”

Buhaug et al. (2015) undertook an ambitious quantitative analysis which tries to link climate events with food output and political violence in sub-Saharan Africa. They use estimates of food production from the United Nations FAO databank, various sources of data on conflict including the Social Conflict in Africa Database and rainfall variations. The models did not ascertain any links between food production and conflict. There were no significant links between climate variability and political violence using food production as an intermediary variable. However, Buhaug et al. (2015) point out that despite these findings it is unwise to dismiss possible links between food security and social unrest.

Bellemare (2014) studied the relationship between food prices and riots using monthly food price data, which he suggests is an improvement over earlier studies that used annual data since monthly data captures short-term price fluctuations. Furthermore, this study looks at the impact of food price volatility on violence as well. The study used the FAO's food price index, which is a monthly indicator of the price of food across the world for five food groups (meat, dairy, cereals, oil and fats and sugar). Violent events were counted using media reports and terms such as “demonstration, mob, protest, riot, strike, unrest or violence”. The study found that rising food prices appear to cause social unrest. Food price volatility was negatively associated to social unrest. There is also some evidence that food price volatility could decrease the number of food riots observed between 2010 and 2011.

Arezki & Bruckner (2011) studied the impact of international food price variations on political and social stability. They found that international food prices lead to a significant deterioration of democratic institutions in low-income countries. In contrast in high income countries increases in international food prices did not have a significant effect on internal stability. They also state that higher food prices significantly increase the probability of civil conflict in the country.

De Winne and Peersman (2021) undertook an analysis of food prices and conflict by attempting to avoid the endogeneity problems that affect the linkage by isolating strictly exogenous changes in international food prices. An instrumental variable which comprises the quarterly series of unexpected harvest shocks outside the African continent was created. The aim was to identify unexpected variations in harvests that were of sufficient magnitude to affect the global supply of food and shift international food prices. The instrument was derived by constructing a quarterly index of global food production for four crop types: wheat, maize, rice and soybeans. Annual harvest data from the FAO was used to estimate unexpected changes in global food production which also takes account of the time lapse between a poor harvest and its impact on prices. Data from harvests in Africa were excluded to avoid endogeneity issues. Another measure of food supply was created using data from newspaper articles and FAO reports as well as information from natural disaster databases. Data on conflict was obtained from databases compiled by various NGOs as well as the Uppsala Conflict Data Programme. The results of the regression models found that food price increases have a positive impact on conflict. However, the impact of rising food prices on conflict is relatively modest in the first year after the price shock, but will intensify approximately one year later. The impact of food prices tends to peak around six quarters after the price increase and dissipates after approximately two years. A 1% rise in food prices leads to an increase of 0.03 percentage points for conflict after six quarters. It is estimated

that a 10% increase in exogenous food prices leads to an increase in factor conflict probability of 52%. Furthermore, exogenous food price increases have a stronger effect for conflict types such as riots and protest than battles over land control. The effect is likely to manifest one year after the price increase.

Raleigh et al. (2015) conducted regression analysis to test the links between climate, food prices and conflict in Africa. They contend that in Africa food prices for basic commodities are largely locally determined. This view departs from other studies on Africa which assert that most countries are net importers of food and therefore assume that international food prices have an influence on domestic food prices. Conflict is assessed in terms of the number of violent conflicts that occurred in a given month from 1997 to 2010. Food prices are measured by the commodity price per kilogram for specific markets and months. The data come from USAID FEWS- Net and other reports of commodity prices in Africa. The climate is incorporated into the analysis through rainfall measures. It is argued that agriculture in Africa is mostly rain fed and therefore it is anticipated that rainfall has a notable impact on food production and output. The findings of this study are as follows:

- Higher rates of conflict were found in areas with higher food prices;
- Violence raises the average prices of commodities and markets;
- Dry weather conditions were associated with higher levels of conflict and hence decreased rainfall appears to have an indirect effect on conflict through its impact on commodity prices.
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## **Mitigating the impact on food prices on conflict**

The literature mentions the following policies and interventions which can be used to alleviate the impact of rising food prices and thus mitigate the likelihood that protest or social unrest will arise.

- Food price subsidies can be used to ensure that the real price of food is stable. Bellemare (2014) cautions that it may be ill-advised to curb food price subsidies especially in urban areas where food riots are most likely to erupt. If austerity policies necessitate a decline in subsidies for food then this should be done gradually;
- Trade barriers can be removed to increase the supply and lower the price of food (Brinkman & Hendrix, 2011).
- Price controls can be used to stabilise the cost of food (Brinkman & Hendrix, 2011);
- Government-controlled reserves of food can be utilised to stabilise prices (Brinkman & Hendrix, 2011). This type of system has been effectively used in Indonesia. An excellent market and production information system is necessary to effectively manage food reserves; and
- Social protection policies can be used as a buffer against rising food prices (Brinkman and Hendrix, 2011). This includes cash or food for work programmes, cash transfers and provision of meals at schools.

Raleigh et al. (2015) contend that in rural areas intervention may be necessary to mitigate the detrimental impact of climate conditions, which may undermine food production and heighten the possibility that violence will follow.

There is consensus in the literature that if rising food prices are the trigger of protest or social unrest rather than the underlying cause, then it is possible that policies which aim to stabilise food prices may not be sufficient for curbing violence (Smith, 2014; Weinberg & Bakker, 2014, Heslin, 2021).

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## Acknowledgements

We thank the following experts who voluntarily provided suggestions for relevant literature or other advice to the author to support the preparation of this report. The content of the report does not necessarily reflect the opinions of any of the experts consulted.

- Sian Herbert, University of Birmingham

## Suggested citation

Ismail, Z. (2021). *Interaction Between Food Prices and Political Instability*. K4D Helpdesk Report. Institute of Development Studies. DOI URL: <https://doi.org/10.19088/K4D.2021.091>

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