



## JRC TECHNICAL REPORT

# The Granary in Flames

*Linking Russia's war in  
Ukraine with food insecurity  
and migration in Africa*

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2022



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JRC130534

EUR 31256 EN

Print ISBN 978-92-76-57690-7 ISSN 1018-5593 doi:10.2760/701647 KJ-NA-31-256-EN-C

PDF ISBN 978-92-76-57689-1 ISSN 1831-9424 [doi:10.2760/59846](https://doi.org/10.2760/59846) KJ-NA-31-256-EN-N

Luxembourg: Publications Office of the European Union, 2022

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How to cite this report: Kalantaryan, Sona and McMahon, Simon, *The granary in flames. Linking Russia's war in Ukraine with food insecurity and migration in Africa*, Publications Office of the European Union, Luxembourg, 2022, doi:10.2760/59846, JRC130534.

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## **Abstract**

Since its beginning in February 2022, the Russian war in Ukraine has threatened to have a dramatic impact on global food insecurity. Public statements from political representatives and international organisations have also made a connection between food insecurity caused by the war and migration flows, especially from Africa to Europe. The study explores the relationship between food insecurity and international migration in general, and in Africa in the period preceding Russia's invasion of Ukraine specifically. The study does not find strong evidence of a direct relationship between international migration and food insecurity either in the existing literature or through conducted statistical analysis based on Afrobarometer survey data. Rather, it highlights how migration flows are shaped by multiple drivers and while declining access to adequate food may lead to some people migrating, who moves and where depends on how a range of other factors interact. These findings suggest caution and nuance are necessary when referring to the potential of food insecurity to drive mass migration.

## **Authors**

Kalantaryan, Sona

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## Executive Summary

Since its beginning in February 2022, the Russian war in Ukraine has threatened to have a dramatic impact on global food insecurity. Public statements from political representatives and international organisations have also made a connection between food insecurity caused by the war and migration flows, especially from Africa to Europe. In this study, we respond to these concerns regarding some of the potential implications of the Russian invasion of Ukraine through an exploration of the relationship between food insecurity and international migration in general, and in Africa in the period preceding Russia's invasion of Ukraine specifically. The study does not find strong evidence of a direct relationship between international migration and food insecurity either in the existing literature or through conducted statistical analysis based on Afrobarometer survey data. The findings call for caution and nuance when referring to mass migration as a result of food insecurity.

Specifically, the report shows that:

Previous research demonstrates that there is a varied and complex relationship between food security and migration. Some researchers argue that food insecurity does not drive migration, or that food insecurity increases how many people wish to emigrate but does not result in more people actually making a journey. Others find that food insecurity can be a driver of migration, but the extent of this varies according to context and for different socio-economic groups.

Using nationally representative Afrobarometer survey data covering 34 African countries for the period 2016-2018 (45 000 observations), we analyse the relationship between going without food and considering, planning or preparing to migrate. Across African countries, there are diverse patterns and contexts of food insecurity and intentions to migrate. Although a large proportion of the population in African countries reports having gone without enough food to eat at least once or twice, there are significant variations between countries. And even though over one-third of the respondents to the survey also consider moving to another country, only 9 per cent of them were actually preparing to do so and there were large variations across countries.

The results of statistical analysis of the data suggest that there is no statistically significant relationship between people in African countries going without food and also planning or preparing to migrate. Food insecurity alone (defined in Afrobarometer as 'frequency of going without food to eat over last year') does not make it more likely that people plan or prepare to make a move. This is despite there being a positive and statistically significant relationship between people reporting going without food and expressing a wish to migrate in the future. The obtained results underline the fact that wanting to migrate does not necessarily result in moving. We also compare the relationship between food insecurity and migration intentions (considering, planning and preparing) across African countries through the use of country-level composite indicators. Also at the macro level, no positive relationship is revealed.

In the study we review the findings of research papers and case studies. Case studies from three African countries highlight how migration is just one of many potential adaptation or coping strategies in response to food insecurity. The choice of whether to migrate or adopt other strategies tends to be influenced by resources, assets and social networks available to individuals and households. Richer households tend to invest in other adaptation strategies *in situ* and migrate only as a last resort. Poorer households are more likely to migrate rather than adapt in other ways, but they tend to move temporarily to relatively nearby destinations.

Migration flows are shaped by multiple drivers and while declining access to adequate food may lead to some people migrating, who moves and where depends on how a range of other factors interact. Whether food insecurity makes people migrate to another country depends on the severity of the particular crisis they face, their ability to adapt to it, the situation elsewhere within the country, and on the intentions, resources and capabilities available to them to migrate.

Rather than migrating, when faced with food insecurity, it is likely that people use the resources available to them for other adaptation strategies rather than funding a journey. Hence, it is important to focus on the humanitarian impact of food insecurity and to implement measures aiming to increase people's and countries' adaptive capacity. With fewer resources to mitigate sudden changes in food availability, those who cannot adapt or migrate become even more vulnerable. While this study provides the policy makers concerned with the consequences of possible food insecurity in African countries with insights on how to better tailor the humanitarian responses, the full understanding of the relationship between food shortages and migration would require looking at more comprehensive indicators of food insecurity capturing the duration, severity and prevalence as well as at its drivers (i.e. climatic events, protracted conflicts, increasing food prices, etc.).

# 1 Introduction

Since its beginning in February 2022, the Russian war in Ukraine has threatened to have a dramatic impact on global food insecurity. Both Ukraine and Russia are important exporters of crucial commodities such as wheat and sunflower oil, and Russia is also the main exporter of agricultural fertilisers worldwide (FAO 2022). Much of Ukraine's agricultural land will be unharvested and crops will not be planted this year. According to the Food and Agriculture Organization (FAO), international wheat prices have already risen amidst the significantly reduced exports from Ukraine. Based on reports from the World Bank, global fertilizer prices have increased by 30 per cent since the start of 2022 (World Bank 2022). The extent to which the Russian war in Ukraine might affect countries depends on the degree of their dependence on commodities coming from the conflict affected region and the availability of alternative sources. In fact, the war is 'endangering crucial wheat supplies in many of the least developed countries in the world'.<sup>1</sup> About a quarter of agrifood commodities and 82 per cent of wheat in Egypt originates from Russia and Ukraine, Benin and Somalia received all of their wheat from Ukraine and Russia (UNCTAD 2022)<sup>2</sup>.

Public statements from political representatives and international organisations have also made a connection between food insecurity caused by the war and migration flows, especially from Africa to Europe. The International Monetary Fund (IMF) notes that Africa's economic outlook in particular is being hit hard by large rises in food and fuel prices (IMF 2022). Many countries in Africa are also highly dependent on imports from Russia and Ukraine and a decline in fertilizer use could harm their own food production as well. The UN's International Fund for Agricultural Development (IFAD) has stated that the war caused rising food prices and shortages of staple crops in the Near East and North Africa region, spreading to the Horn of Africa (IFAD 2022). As a result, at the World Economic Forum, the President of Poland Andrzej Duda whose country has received more than five million Ukrainians during the first six months of the war stated 'If it turns out that there is hunger in North Africa... both Spain and the whole of southern Europe will have a huge migration problem.'<sup>3</sup> A more dramatic tone has been struck by David Beasley, the Executive Director of the World Food Programme which receives 40 per cent of its wheat supplies from Ukraine.<sup>4</sup> He is reported to have said 'failure to provide this year a few extra billion dollars means you're going to have famine, destabilization and mass migration' and 'if you think we've got hell on earth now, you just get ready ... If we neglect northern Africa, northern Africa's coming to Europe. If we neglect the Middle East, [the] Middle East is coming to Europe.'<sup>5</sup> To address the growing concerns and to help partner countries to cope with the adverse consequences of the war, in September 2022, the European Commission announced the allocation of '€600 million of European Development Fund to finance immediate humanitarian food aid, food production and resilience of food systems in the most vulnerable countries in Africa, the Caribbean and Pacific'.<sup>6</sup>

In this study we conduct a rapid assessment to respond to these concerns regarding some of the potential implications of the Russian invasion of Ukraine through an exploration of the relationship between food insecurity and international migration, particularly in Africa. Specifically, we find that food insecurity or even famine does not automatically lead to mass migration. According to our analysis, whether food insecurity makes people migrate to another country depends on the severity of the particular crisis they face, their ability to adapt to it, and on the intentions, resources and capabilities available to them to migrate. Migration flows are shaped by multiple drivers and while declining access to adequate food may lead to some people migrating,

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<sup>1</sup> This is how wheat shortages are creating a food security risk, 12<sup>th</sup> April 2022. World Economic Forum. <https://www.weforum.org/agenda/2022/04/most-vulnerable-countries-wheat-shortages/>

<sup>2</sup> More than half of wheat in Togo, Kenya, Mauritania, Namibia, Burundi, Uganda, Tunisia, Libya, Gambia, Burkina Faso, Congo, Madagascar, Rwanda, United Republic of Tanzania, Senegal, Democratic Republic of the Congo, Sudan comes either from Russia and Ukraine (UNCTAD 2022).

<sup>3</sup> Ukraine war could lead to food shortages in Africa, migration problems, says Polish president, 24<sup>th</sup> May 2022 <https://www.swissinfo.ch/eng/ukraine-war-could-lead-to-food-shortages-in-africa--migration-problems--says-polish-president/47618994>

<sup>4</sup>Forty Percent of the World Food Program's Wheat Supplies Come from Ukraine, 2<sup>nd</sup> June 2022. Wilson Center. <https://www.wilsoncenter.org/blog-post/forty-percent-world-food-programs-wheat-supplies-come-ukraine#:~:text=Forty%20percent%20of%20the%20World%20Food%20Program's%20wheat%20supplies%20come%20from%20Ukraine>

<sup>5</sup> Get ready for 'hell,' UN food chief warns amid Ukraine shockwaves, 22<sup>nd</sup> March 2022 <https://www.politico.eu/article/world-food-programme-eu-fund-us-food-aid-ukraine-russia/>

<sup>6</sup> Food security: EU allocates funds to the most vulnerable African, Caribbean and Pacific countries hit by food crisis, 24<sup>th</sup> September 2022. Directorate-General for International Partnerships. [https://international-partnerships.ec.europa.eu/news-and-events/news/food-security-eu-allocates-funds-most-vulnerable-african-caribbean-and-pacific-countries-hit-food-2022-09-24\\_en](https://international-partnerships.ec.europa.eu/news-and-events/news/food-security-eu-allocates-funds-most-vulnerable-african-caribbean-and-pacific-countries-hit-food-2022-09-24_en)

who moves and where depends on a range of other factors as well. The findings call for caution and nuance when referring to migration as a result of food insecurity.

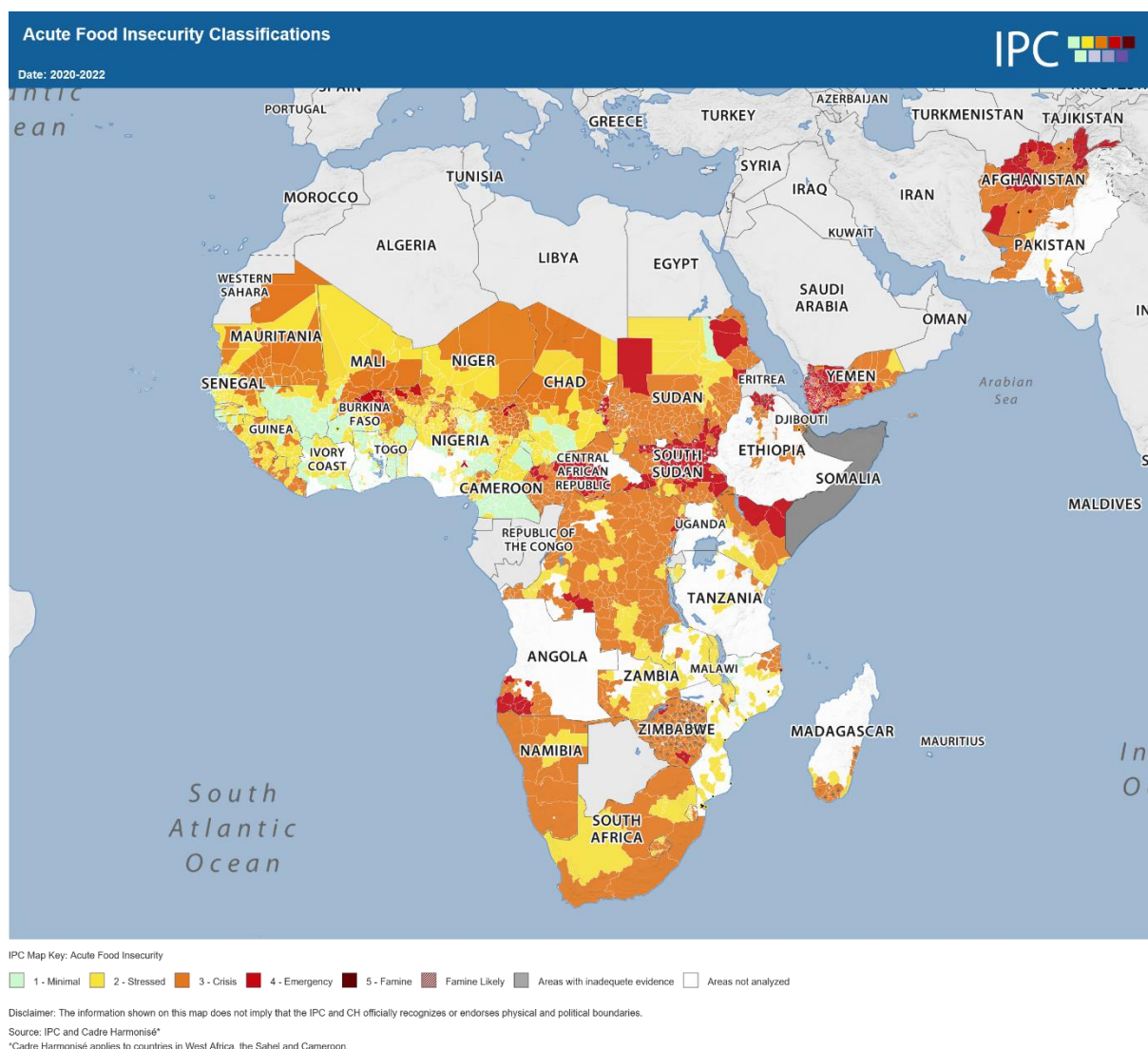
However, it should also be remembered that migration is just one part of the severe situation related to global food security today. According to The State of Food Security and Nutrition in the World report, ‘the world is moving backwards in its efforts to end hunger, food insecurity and malnutrition in all its forms’ due to ‘intensification of the major drivers behind recent food insecurity and malnutrition trends (i.e. conflict, climate extremes and economic shocks) combined with the high cost of nutritious foods and growing inequalities’.<sup>7</sup> Global food prices have already been rising due to a multitude of factors, including the Covid-19 pandemic. The World Food Programme (WFP) estimates that the number of people facing acute food insecurity globally has doubled in just two years, to 276 million,<sup>8</sup> and that this will increase further due to the war (WFP 2022). The Integrated Food Security Phase Classification (IPC) has also highlighted extensive cases of increasing acute food insecurity, defined as a ‘crisis’ or an ‘emergency’ in many African countries (see Figure 1). Against this backdrop, Human Rights Watch has called for Governments to protect the right to affordable, adequate food for everyone (HRW 2022).

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<sup>7</sup> For more information, see: FAO, IFAD, UNICEF, WFP and WHO (2022)

<sup>8</sup> World Food Programme: Conflict, COVID, the climate crisis and rising costs have combined in 2022 to create jeopardy for the world’s 811 million hungry people, <https://www.wfp.org/hunger-catastrophe>

Figure 1. Acute food insecurity in African countries, according to severity



Source: IPC

## 1.1 What we know so far

Food security was defined during the World Food Summit of 1996 as existing ‘when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences or an active and healthy life’ (UNCSO 2011). In contrast, food insecurity can be defined as ‘when people do not have adequate physical, social or economic access to food’ (FAO 2003). These definitions refer not only to food supply and availability, but also to its quality and to the capacity of individuals to access it. Food security has been widely studied in terms of its scale and form, yet it is still difficult to measure in terms of quantitative indicators only and the assessment of the situation requires the involvement of experts from various domains. In Europe, the Joint Research Centre’s Knowledge Centre on Food and Nutrition Security provides scientific support to the EU’s contribution to ending hunger, achieving food security and improving nutrition.<sup>9</sup> At an international level, since 2004, The Integrated Food Security Phase Classification (IPC) has informed food security and nutrition analysis and decision-making by defining the severity and magnitude of acute and chronic food insecurity and acute malnutrition situations in countries around the world.<sup>10</sup> Alongside

<sup>9</sup> For more information, see: <https://visitors-centre.jrc.ec.europa.eu/en/media/animations/knowledge-centre-food-and-nutrition-security>

<sup>10</sup> For more information, see: <https://www.ipcinfo.org/ipcinfo-website/ipc-overview-and-classification-system/en/>



this, international organisations such as the Food and Agriculture Organization of the United Nations, the International Fund for Agricultural Development and the World Food Programme, as well as research centres around the world, regularly produce information and analysis.

In this study we do not examine the reasons for individuals being unable to access food, but rather reflect on the extent to which a change in access to food could lead people to migrate. The available research on the relationship between food and migration reaches varying conclusions. Some researchers argue that food insecurity does not drive migration, or that food insecurity increases how many people wish to emigrate but does not result in more people actually making a journey (Laborde et al., 2017; Sadiddin et al., 2019). For example, Smith and Floro (2020) argue that while food insecurity is an important determinant of people intending to migrate, it does not result in more people actually preparing to move. This is based on an analysis of survey data from the Gallup World Poll. They find that people are more likely to intend to migrate when they face increasingly severe food insecurity. However, they also find that for those who intend to migrate, the likelihood of actually preparing to move decreases with the severity of food insecurity. Sadiddin et al. (2019) using the same data also find that 'food insecurity raises the probability of desiring to migrate internationally, with the probability of the desire increasing along with the severity of food insecurity'. But they also show that this does not necessarily result in higher rates of migration. They conclude that 'the probability of actually deciding to migrate internationally decreased as food insecurity worsened.' This may be because food insecurity is likely to remove some of the resources which would enable people to move away (e.g. if households have to spend more money on food).

However, others also conclude that food insecurity can be a driver of migration, but the extent to which it varies according to context and for different socio-economic groups (Smith and Wesselbaum, 2022; FAO IFAD IOM WFP, 2018). This depends on the way that food insecurity interacts with other factors which also shape migration. For example, one report by the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development, the International Organization for Migration (IOM) and the World Food Programme (WFP) finds that migration can be an adaptation strategy in contexts of food insecurity. It notes: 'especially for poor rural households, sending one or more family members into cities to work in sectors other than agriculture is important in order to reduce the risks of hunger and extreme poverty, and to cope with the possible adverse shocks the household might face' (FAO IFAD IOM WFP, 2018) Smith and Wesselbaum (2022) analyse global data on the measure of individual-level food insecurity and data on migration flows from 198 origin countries to 16 OECD destination countries for 2014 and 2015. The authors find that higher food insecurity in the country of origin is associated with higher rates of emigration, but they also underline that the impact of food insecurity on the likelihood of migrating varies for different social groups. People who have less food than the average for their country are more likely to migrate if their access to food worsens. People who have better access to food than the average for their country are less likely to emigrate if their situation worsens. The authors describe this as 'food insecurity inequality' and conclude that 'people's relative position in the distribution of food insecurity within their origin country influences international migration flows.

It is important to note that multiple, interrelated factors shape international migration. As a result, in many cases it is difficult, if not impossible, to identify a single variable that drives migration. Whether food insecurity specifically makes people look for better conditions abroad depends on the severity of the particular crisis they face, their ability to adapt, and on the intentions, resources and capabilities available to them. A report by Migali et al. (2018), for example, argues that exposure to adverse climatic events can result in migration, but the extent to which it does depends on people's adaptability to new conditions, the quality of institutions and the implementation of strategies aimed at pursuing sustainable development. Structural factors, such as broad political, economic, social and environmental conditions and institutions at national, regional or international levels (IOM. n.d.), and individual-level factors determining whether people decide to migrate (both intentions to move and access to resources to make a move) play a role (Carling 2020; Carling and Schewel, 2018). Migration is also shaped by history and context. For example, in prolonged periods of drought in the Sahel region, family members would be more likely to move away, following established migratory routes and migration networks with selected destination regions (McMahon et al., 2021). A long history of migration from a given country may be associated with a culture of migration, creating an expectation that young people should migrate as a rite of passage to enter adulthood, for example (Belmonte et al., 2020). A trajectory of increasing human development in low and middle-income countries tends to increase emigration as more people gain access to resources enabling them to move, whereas worsening living conditions in a high-income country may be more likely to drive people to move away (Clemens 2014).

## **1.2 Report structure**

The report is structured into two further chapters which build on the findings from the available literature with a particular focus on migration in Africa. The following chapter draws on data from the Afrobarometer survey of 34 countries to explore the relationship between people saying that they go without food and considering, planning or preparing to migrate (summarised as 'migration intentions'). This includes a statistical analysis of the relationship between going without food and migration intentions, a comparison of this relationship across African countries through the use of composite indicators. The chapter closes with an examination of migration patterns in the context of famines and food insecurity, based on studies from three research papers. The final chapter presents the conclusions.

## 2 Food insecurity and migration in Africa

This chapter looks at patterns of self-reported food insecurity and migration in African countries to explore the extent to which food insecurity is (or could be) associated with decisions to migrate. Specifically, we analyse the relationship between food insecurity and intentions to migrate in 34 African countries by using data from the Afrobarometer survey.<sup>11</sup> This analysis builds on previous global studies (as mentioned in the previous chapter), but with a more focused examination of recent data from Africa. We then follow this with an examination of case studies from Nigeria, Somalia and Ethiopia, identified from a review of research literature, to better understand who migrates, where and how in cases of food insecurity and famine.

### 2.1 A varied context across countries

In the Afrobarometer survey, respondents are asked about the frequency of ‘going without enough food to eat over the past year’.<sup>12</sup> Although this question does not explain why they go without food, whether it is a long or short term situation or what quality of food they are able to access, it does capture a certain degree of food insecurity. The survey records how respondents perceive and understand their lived experience, and the sample is representative of the whole population in each country. This means the survey gives a broad view of who does and who does not have access to sufficient food. However, this approach is different from a country-level examination of food insecurity through other indicators, such as the Food Consumption Score (FCS), the Food Insecurity Experience Scale (FIES), Household Hunger Scale (HHS) and Integrated Food Security Phase Classification (IPC). For instance, the IPC is an innovative multi-partner initiative for improving food security and nutrition analysis and decision-making, it distinguishes different phases of acute and chronic food insecurity, as well as acute malnutrition.<sup>13</sup> Afrobarometer survey does not distinguish among food categories hence, does not provide an indication about energy or nutrient deficiency and given the self-reported nature of information should be considered a measure of perception of food insecurity and not a conventional comprehensive food insecurity measurement.

The survey data shows that an increasingly large proportion of the population in African countries reports having gone without enough food to eat at least once or twice already before Russia’s invasion of Ukraine (Table 1). In 2019–2021, this figure was 7 percentage points higher than in 2014–2015. It shows that in 2019–2021 the share of individuals who report experiencing food shortages was 7 percentage points higher compared to 2014–2015. Much of this increase (5.5 percentage points) took place since the previous round (2016–2018). The increase was more significant for those who declared experiencing food shortages ‘Always’ (by 31%) and ‘Many times’ (by 15 %). These observations are in line with findings of the State of Food Security and Nutrition in the World reports which in 2018 documented a rise in world hunger: ‘the number of people who suffer from hunger has been growing over the past three years, returning to levels from almost a decade ago’ (FAO IFAD UNICEF WFP and WHO 2018).

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<sup>11</sup> The survey collects nationally-representative samples of 1200 observations per country, undertaken in face-to-face interviews in the language of the respondent’s choice. This ensures comparability between countries and over time. The survey uses national probability samples designed to generate a sample that is a representative cross-section of all citizens of voting age in a given country. The goal is to give every adult citizen an equal and known chance of being selected for an interview. This is achieved by (i) using random selection methods at every stage of sampling and (ii) sampling at all stages with probability proportionate to population size wherever possible to ensure that larger geographic units have a proportionally greater probability of being chosen into the sample. The datasets used in this study are from the 2016–2018 and 2019–2021 waves of the Afrobarometer survey which were published in 2019 and 2022 respectively and cover 34 countries. Our analysis included 34 countries covered in the most recent waves of Afrobarometer survey for which the microdata is available. Both Round 7 and 8 include 34 countries each, but the sets of countries are slightly different. For more information, see the dedicated website here: <http://afrobarometer.org/about>

<sup>12</sup> Respondents were asked: ‘Over the past year, how often, if ever, have you or anyone in your family: Gone without enough food to eat?’ The set of possible answers is ‘Never’, ‘Just once or twice’, ‘Several times’, ‘Many times’, ‘Always’, ‘Don’t know’ and ‘Refused to answer’.

<sup>13</sup> The IPC distinguishes between three aspects of food insecurity, specifically; (1) Acute food insecurity at a given point in time; (2) Chronic food insecurity which is persistent or seasonal and (3) Acute malnutrition. The IPC gathers evidence to classify regions according to the severity of food-related crises there, with regions being placed in one of five severity levels according to whether at least 20 per cent of the population there face that level of food insecurity. This is an important resource for policy responses, but by focusing on ‘acute’ levels of food insecurity it is distinct to the broad and representative sample coming from a dedicated survey of individuals. For more information, see the dedicated website here: <https://www.ipcinfo.org/>

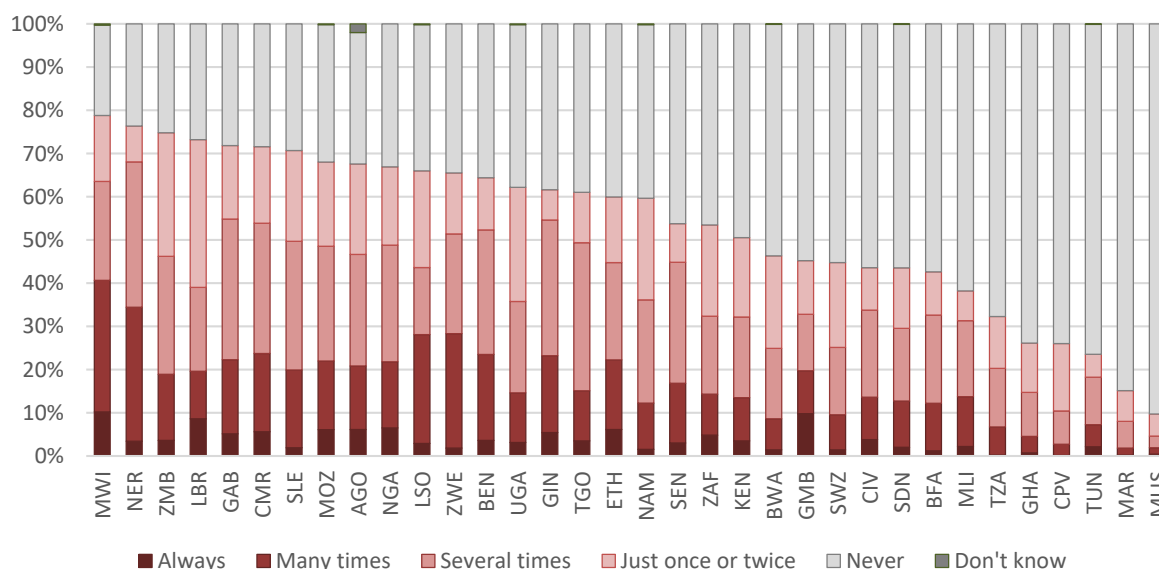
Table 1. Going without enough food to eat over time

Frequency of going without food (over the past year)	Survey round		
	2014/2015	2016/2018	2019/2021
Never	54.8%	53.2%	47.7%
Just once or twice	14.3%	14.7%	15.8%
Several times	17.8%	18.4%	20.4%
Many times	10.5%	11.0%	12.6%
Always	2.4%	2.6%	3.4%
Don't know	0.2%	0.1%	0.1%
(N)	0.0%	0.0%	0.0%

Source: own elaboration of Afrobarometer 2014-2021

However, there are significant variations between countries (Figure 2). Over the period from 2019 to 2021, more than half of respondents in 21 countries (out of 34) reported going without food. The countries with the lowest share of population reporting ever having gone without food are Mauritius (10%), Morocco (15%), Tunisia (23%), Cabo Verde (26%) and Ghana (26%). In contrast, in Malawi (79%), Niger (76%) and Zambia (75%) more than three-quarters of the population state that they have.

Figure 2. People going without food (2019-2021)



Source: own elaboration of Afrobarometer R8 2019/2021

The Afrobarometer survey also asks questions related to people's intentions to migrate, specifically whether they are considering,<sup>14</sup> planning<sup>15</sup> and preparing to migrate.<sup>16</sup> We recognise that a wish to migrate is not a precise indicator about future migration (Migali et al., 2018). There is a consistent gap between those wishing to move abroad and those actually preparing to make an international journey. At the global level, more than 20 per cent of the population expresses a desire for international migration, but less than 1 per cent actually prepares to migrate. However, these survey questions are still useful (Grubanov-Boskovic et al., 2022; Belmonte et al., 2020). They can provide information on the scale and composition of potential future migration flows by showing who is interested in moving, and at what stage they are in making plans and preparations to do so.

<sup>14</sup> Respondents were asked: 'How much, if at all, have you considered to moving to another country to live?' with the following set of possible answers: 'Not at all', 'A little bit', 'Somewhat' and 'A lot'.

<sup>15</sup> Respondents could answer either 'You are planning to move in the next year or two but not yet making preparations' or 'You are currently making preparations to move, like getting a visa'.

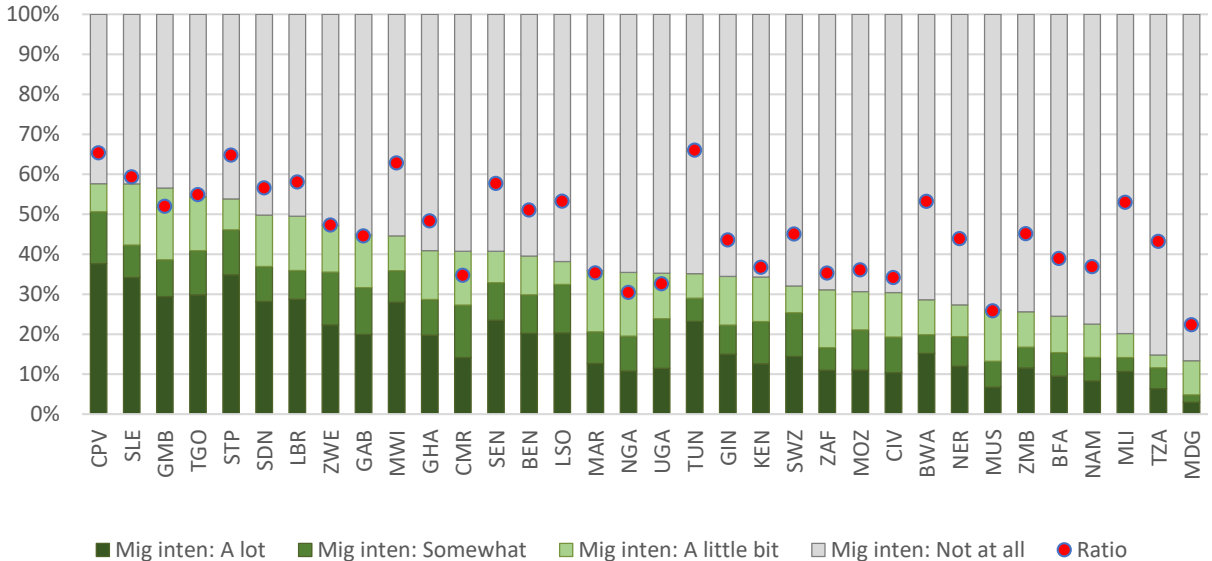
<sup>16</sup> Table 3.1 in Annex 3 list Afrobarometer survey questions on food insecurity and migration intentions (considering, planning and preparing).

They can also provide insights when other data sources such as official statistics are unavailable.<sup>17</sup> In the case of this particular study, they offer a novel opportunity to cross-reference intentions and plans to migrate with experiences of going without food.

Afrobarometer data from 2018 shows that while 37 per cent of the respondents were considering moving to another country, more than half (60%) of those who wanted to emigrate were not actually making any specific plans or preparations. Only 9 per cent of those who wanted to emigrate were actually preparing to do so (e.g. applying for a visa). Nevertheless, there are large variations across African countries (Figure 3). The population considering migrating ranges from 57 per cent of respondents in Cabo Verde and Sierra Leone to only 15 per cent in Madagascar and 13 per cent in Tanzania. The share of respondents who are actually planning or preparing to move is much lower. The highest figures of those preparing to migrate are observed for Zimbabwe and Lesotho (7%) and the lowest in Tanzania and Madagascar (below 1%).

There is significant variation in the intensity of this desire. The red dots in Figure 3 indicate the percentage of those who want to migrate ‘A lot’ among all who want to migrate. It is possible to say that the higher share of those who want to migrate is positively associated with the intensity of these intentions. In Cabo Verde and Sierra Leone more than 60 per cent of those who want to migrate belong to the group who want to migrate ‘A lot’. Instead, In Madagascar – the country with the lowest share of respondents willing to migrate - the share of those willing to migrate ‘A lot’ is only 22 per cent. However, there are also many exceptions to this general trend. For instance, Tunisia with only 35 per cent of respondents willing to migrate has the highest share of those who is willing to migrate ‘A lot’. Similarly, in Mali only 20 per cent is willing to migrate, however, more than half of them belong to the group who wants to migrate ‘A lot’.

Figure 3. Considering migrating (2016-2018)



Source: own elaboration of Afrobarometer R7 2016/2018

Note: Ratio is calculated as the share of those who consider migrating ‘A lot’ to the share of those who consider migrating (all three categories together). It shows, among those who consider migrating, how many do so with the greatest intensity (‘A lot’)

Table 2 also reports the distribution of the most likely destination continent for those who consider emigrating<sup>18</sup>. It reveals that another country in Africa is the most likely destination accounting for 32 per cent of those who

<sup>17</sup> Nevertheless, it should be remembered that intending to migrate does not equate to actually moving. Only a small proportion of the people who say that they would like to migrate sometime in the future actually plans and then prepares to make a move

<sup>18</sup> The calculation is based on the question ‘Most likely country for emigration’ with the following set of answers: ‘Most prominent destination country in region’, ‘Another country in the region’, ‘Elsewhere in Africa’, ‘Europe’, ‘North America’, ‘Central/South America’, ‘Middle East’, ‘Asia’, ‘Australia’, ‘Outside of Africa (place not specified)’, ‘Don’t know/Haven’t heard enough’, ‘Refused to answer’. We replaced the ‘Most prominent destination country in region’ by the country where most of flows from a particular country directed during the preceding decade. Then we aggregated the results into four groups: three continents (Africa, Europe and North America) and ‘Other’ that includes the rest.

consider and plan to migrate. It reaches 35 per cent among those planning to migrate. The share of those who consider Europe as the most likely destination is stable across the three groups – just above 30 percent of those who consider, plan or prepare to migrate.

Table 2. Most likely continent for emigration (%) (2016-2018)

Destination (Continent)	Migration intentions phase		
	Considering	Planning	Preparation
Africa	31.7	31.5	35.1
Europe	30.3	32.0	30.7
North America	22.3	21.7	21.6
Other	13.1	13.0	11.6
Don't know / Refused to answer	2.6	1.7	1.0

Source: own elaboration of Afrobarometer R7 2016/2018

## 2.2 Connecting food insecurity and migration intentions

To describe the relationship between food insecurity and migration intentions we use multivariate regression analysis. It enables estimating the association between food insecurity (having gone without food) and migration intentions (considerations, plans and preparations) while controlling for variations in individual characteristics of the respondents. We control for individual demographic characteristics of the survey respondents, (i.e., age and gender) and for a wide set of individual socio-economic conditions, such as place of residence (rural, urban), human capital (level of education), labour market status (employed, unemployed, inactive), the employment sector (agriculture versus other), economic condition (cash problems at least twice over last year).<sup>19</sup>

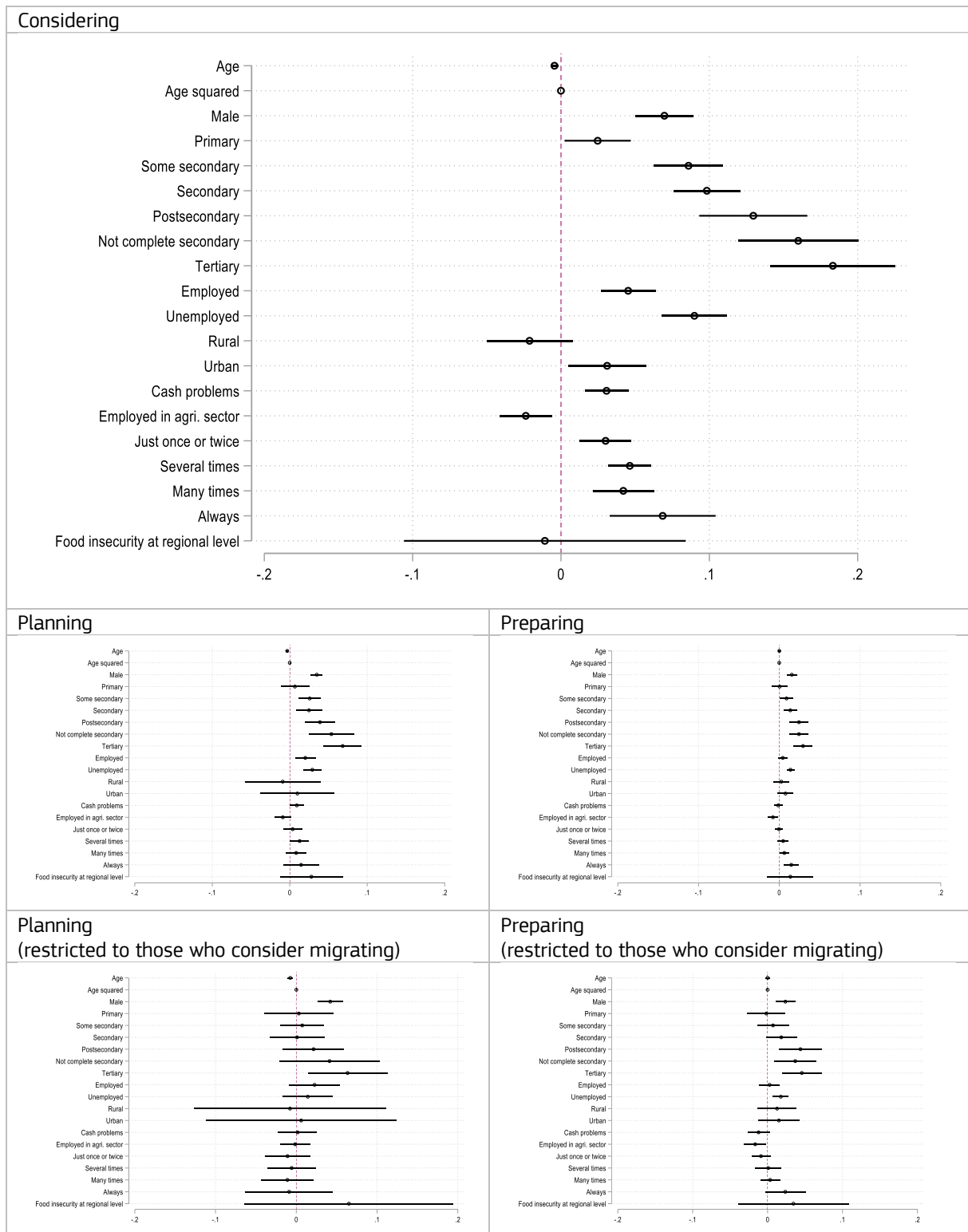
Our findings suggest that experiencing food insecurity may make some people want to move but is less likely to result in sudden large-scale mass migration. We find a positive and statistically significant relationship between people reporting going without food and considering to migrate. In sum, the more often an individual goes without food, and the more frequently that this occurs, then the more likely it is that they say they would consider moving. However, wanting to migrate does not necessarily result in people moving. Indeed, we find no statistically significant relationship between going without food and planning or preparing to migrate. Food insecurity does not make it more likely that people plan or prepare to make a move. Rather, it is likely that people would have to use the resources available to them for other adaptation strategies (such as purchasing or producing food), rather than funding a journey. Further research would be required to understand how people select the adaptation strategies to use and when, and how food shortages interact with other drivers of migration over time.

Figure 4 visualises the regression results by reporting the point estimates (marginal effects) and the corresponding confidence intervals for the models on the considering (whole sample), planning and preparing to migrate (for the whole sample and the subsample restricted to those who consider emigrating). The results suggest that individuals considering migration are more likely to be young, men, reside in urban areas, be active in the labour market (either employed or unemployed), be employed outside the agricultural sector, and have at least a primary-level education<sup>20</sup>. Also higher level of education is associated with a higher likelihood to consider migrating. Having gone without food is positively associated with considering migrating. Moreover, a higher frequency of going without food is associated with a higher propensity to consider migration. The magnitude of the coefficient at the dummy variable indicating an individual has gone without food 'Always' is more than twice higher (0.030) compared with those who reported 'Just once or twice' (0.069). Instead, when we look at the impact of going without food on planning and preparing to migrate we see that the coefficients of interest turn insignificant. The only exceptions are the coefficients at 'Several times' for plan and 'Always' for preparation. However, these two lose their significance once the sample is restricted to only those who consider migrating.

<sup>19</sup> For more information on the methodology, see Annex 1.

<sup>20</sup> The corresponding regression results are reported in Table A1.1 in the Annex 1.

Figure 4. The relationship between food insecurity and migration intentions (considering, planning and preparing)



Source: JRC

Note: Refer to Table A1.1 in Annex 1 for the regression results

### 2.3 Categorising countries with composite indicators

In this section, we look beyond the general view and consider the particular situation of individual countries. Food insecurity and its intensity, as well as migration trends, vary widely from place to place across Africa. As

a result, we should expect the implications of a reduction in food imports to be different from place to place. The discussion above reveals the existing heterogeneity across African countries both in food insecurity and intentions to migrate. Overall, it paints a complex picture with variations that are difficult to summarise. Composite indicators provide a path through this complexity. A composite indicator can be defined as ‘a numerical measure made up by many components meant to be integrated into a single comprehensive value’ (Arechavala and Trapero, 2014). The advantage of using composite indicators is that by summarising complex realities as a single number they can be interpreted more easily than a battery of several indicators and allow for ranking countries across a range of values. The obtained ranking is a function of the set of underlying indicators and necessarily changes if the latter ones are modified.

With the Afrobarometer data we build three composite indicators, specifically:

- (1) **Food insecurity:** ranks the countries based on how often people report going without enough food<sup>21</sup>
- (2) **Considering migration:** ranks the countries based on the extent to which people consider migrating in the future, and the intensity of that consideration<sup>22</sup>
- (3) **Planning or preparing migration:** ranks the countries based on the extent to which people are planning or preparing to migrate<sup>23</sup>

The scatter plots below map these composite indicators for each country (Figures 5 and 6). The vertical axis shows country scores for ‘Considering migration’ or ‘Planning or preparing migration’ composite indicators, with higher scores towards the top and lower scores at the bottom. The horizontal axis plots ‘Food insecurity’ composite indicator scores, with higher scores to the right and lower scores to the left. The dashed lines dividing the plot represent the median scores: points to the right of the vertical or above the horizontal line have a greater value than the median. The position on the plot reflects the configuration of food insecurity and intentions or plans to migrate in each country. Having a higher than the median score on the food insecurity indicator is not always associated with a higher than the median level of migration intentions or planning, because the extent to which people report food shortages and intentions to migrate varies from place to place. In countries where people face a high level of food insecurity, but do not or cannot migrate, then this points to a potentially ‘trapped population.’

However, the plots show that there is no clear pattern relating food insecurity and migration intentions at the country level. If there was a consistent relationship between food insecurity and migration intentions, plans and preparations then we would expect to see a pattern or trend in the way that countries are positioned. If food insecurity was a clear driver of preparations to migrate then countries with higher food insecurity would also have higher scores for preparing to migrate. These countries would be plotted in the top right hand corner. This is not the case because countries are in fact scattered across the board. There are countries like Mauritius, Mali and Tanzania where both food shortages and the aspirations to migrate are relatively modest. Niger instead has a level of migration aspirations similar to Mauritius but ranks quite high in food shortages. In Togo, both are high. Cabo Verde despite having a low ranking in food shortages ranks first when it comes to migration desire. Madagascar is experiencing a major drought for 4 years. The UN declared Madagascar as the first climate change-induced famine<sup>24</sup>. The country ranks high in food insecurity, but it has the lowest ranking when it comes

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<sup>21</sup> To build the **Food insecurity composite indicator**, we rely on the above-discussed question from the Afrobarometer survey on the frequency with which an individual (or anyone in their family) has gone without food over the past year. To this, the respondent could choose from the following set of positive answers: ‘Just once or twice’; ‘Several times’; ‘Many times’ and ‘Always’. The preliminary checks of statistical properties of the set of candidate indicators reveal that the share of individuals who answered ‘Just once or twice’ does not point in the same direction as the other answers. As a result, we excluded this basic component from the composite indicator. The remaining set of indicators satisfies the statistical requirements for building a composite indicator.

<sup>22</sup> To build the **Considering migration** composite indicator we rely on the question from the Afrobarometer survey on whether an individual ‘Considered emigration to other country’ with its three positive answers: ‘A little bit’, ‘Somewhat’ and ‘A lot’. This indicator captures the extent to which people are willing to migrate across selected African countries by bringing multiple answers from the survey into one synthetic measure. Rather than describing the shares of the population which reported considering emigrating the composite indicator ranks the countries from least to most prone to migrate according to both the share of the population which reports having considered migrating and also the intensity of this desire.

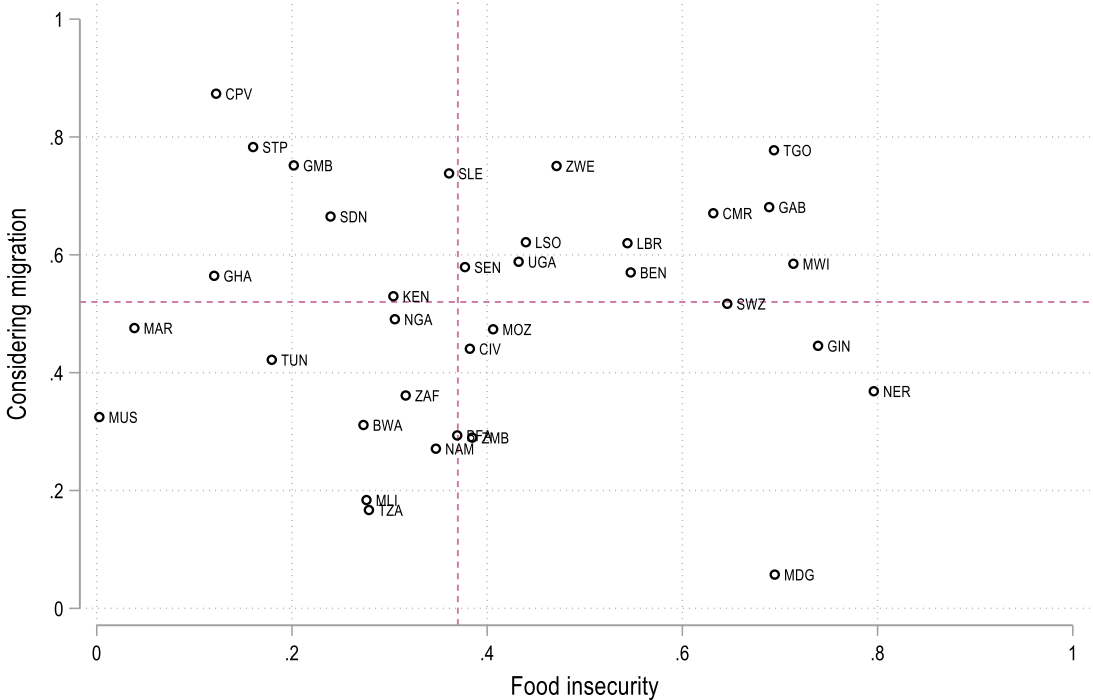
<sup>23</sup> To build the **Migration plan and preparation** composite indicator we take the question from the Afrobarometer survey on ‘How much planning or preparation have you done in order to move to another country to live?’ with its positive answers: ‘You are planning to move in the next year or two but not yet making preparations’ and ‘You are currently making preparations to move, like getting a visa’.

<sup>24</sup> Madagascar: Severe drought could spur world’s first climate change famine. 21<sup>st</sup> October 2021. United Nations. Available online at <https://news.un.org/en/story/2021/10/1103712>



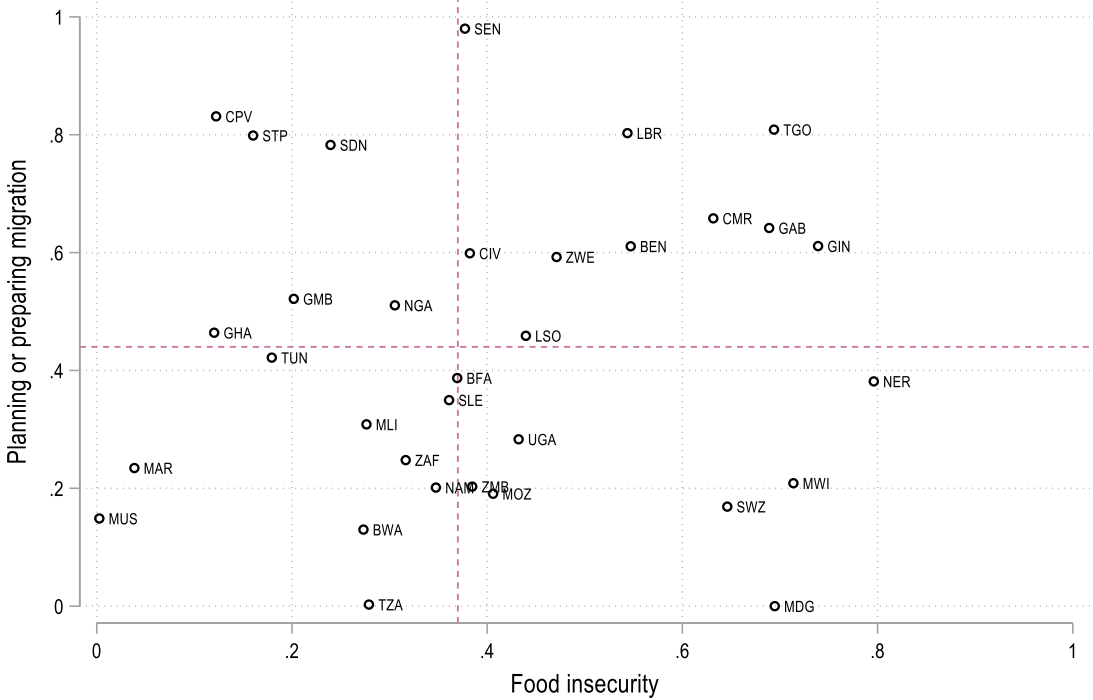
to migration intentions. These results underline the importance of focusing on individual case studies and the specific context in each locality.

Figure 5. Relationship between Food insecurity and Considering migration (composite indicators)



Source: JRC elaboration of Afrobarometer R7 2016/2018

Figure 6. Relationship between Food insecurity and Planning or preparing migration (composite indicators)



Source: own elaboration of Afrobarometer R7 2016/2018

## 2.4 A closer look at case studies

Historical case studies can shine light on how food shortages have impacted on who migrates and under what conditions in African countries in the past. In this respect, the following three research papers present useful case studies on migration during famines in Nigeria, Somalia and Ethiopia.

### Case study 1: Nigeria

In the article 'Historical case studies of famines and migrations in the West African Sahel and their possible relevance now and in the future', John Grolle examines migration during three distinct famines in northern Nigeria in the second half of the Twentieth Century (Grolle, 2015). These famines took place in 1953 and 1954 as a result of heavy rainfall, in 1972 and 1973 as a result of drought, and from 1983 to 1985 as part of broader famines stretching across much of sub-Saharan Africa. The study reports that:

- The causes of crop failure leading to famine in 1953 and 1954 are obscure as the 1950s were characterised by above-average rainfall and abundant harvests, yet famine was documented in southwest and south-central Niger, north-central and northeast Nigeria, and northern Cameroon (Boureima 1993; Fuglestad 1983; Hill 1972; Oguntoyinbo 1981; Campbell 1981). During this period it was more common for people to migrate, and for this to involve families rather than individuals, when compared to 'normal' migration trends. Examples of migrations included family heads setting out with donkeys to attempt to procure and bring back supplies, as well as whole families undertaking longer distance journeys to settle on previously uncultivated land elsewhere in the country (for instance, in Southern Sokoto region), forming new settlements as they did so.
- During 1972, crop yields for the northern Nigeria region were only recorded at 30 to 60 per cent of the previous year and some farmers suffered significant losses of livestock. But despite this, there was no significant difference in long-term migrations to and from the principal settlements compared to during non-famine periods. For the same period Faulkingham and Thorbahn (1975) report that on some settlements around Madaoua (a town located in the Tahoua Region of Niger) earnings from temporary labour migrations helped to minimise the family migration, while in others between 55 and 80 percent of inhabitants left permanently.
- During the famine from 1983 to 1985, harvests were extremely deficient and even failed completely for some farmers. The cost of grain in villages more than doubled whilst prices for livestock fell progressively during the 1984 post-harvest period and collapsed by the beginning of 1985. During this period, the study finds that approximately 40 per cent of the heads of lower-income families emigrated temporarily to find employment elsewhere, and a further 30 per cent had sons or younger brothers who did so as well. Almost all of those classified as the poorest migrated for temporary work. These were the people who had fewer resources to enable them to stay and adapt. When they moved, they went to relatively close settlements where they could continue with their rural livelihoods. Wealthier people, in contrast, had a broader range of ways of adapting. They could spend savings, receive help from family members, diversify their crops and their food intake, or sell their livestock and land.

Overall, the study shows that migration in a context of food insecurity can be both a way of adapting when there are no other choices, such as in the emigration of families during 1952 and 1953, as well as a strategic withdrawal to secure new income or assets elsewhere, such as in the case of temporary labour migration during the 1983 to 1985 famine. For all three episodes, the documented population movements were within the country.

### Case study 2: Somalia

In the article 'Facing famine: Somali experiences in the famine of 2011', Maxwell et al (2016) ask how Somali communities and households coped with the famine of 2011, widely recognised as the worst famine so far in the Twenty-First Century (Maxwell 2016). They describe how individuals and households responded to the famine, which was triggered by drought and crop failures, in a context of a global spike in food prices and on-going conflict in the country. The article finds:

- During the famine, many households were badly affected but some were better placed to cope. This was due not only to their resources or wealth but also to the strength and breadth of their social connections (i.e. the ability to call upon extended family and clan members located in and outside of the country).
- Migration, whether to urban areas in Somalia or to neighbouring countries, was just one of the coping and adaptation strategies adopted, and usually after others had been exhausted. It could involve physical mobility with livestock to ensure their survival (although some also suffered large losses as a

result of moving), temporary labour migration of one or more family members elsewhere, or out-migration of a family as a last resort.

- The families and clans with greater networks of connections outside of the rural economy, and therefore with more opportunities to adapt, tended to be those with a longer history of migration, education, urbanization and emigration. Connections with people in cities near or far, as well as in other countries could be called upon to send remittances or to facilitate out-migration.

In sum, the study highlights how individuals and households have a range of ways of coping and adapting to a crisis, and migration of an individual or a whole family is often not the first choice. Migration is not inevitable during a famine. However, migration does provide resources to those who stay as well as those who move, with extended networks being a potential source of remittances.

### **Case Study 3: Ethiopia**

In the article 'Bespoke Adaptation in Rural Africa? An Asset-Based Approach from Southern Ethiopia', Kidane et al. (2018), examine how adaptation choices and constraints vary among smallholder farmers with different socio-economic conditions. This is important for Ethiopia, where climate change poses a threat to water security and agricultural production, and where agriculture contributes 40 per cent of GDP, 90 per cent of exports, and employs 90 per cent of the poor. Regarding migration, the study finds:

- Richer and poorer households adopt different responses to adapt to uncertainties in agricultural productivity and food security. It is mainly poor households, followed by middle-class households, which undertake temporary migration to neighbouring districts and urban areas as a coping mechanism. Richer households, in contrast, have sufficient assets to adapt to climatic variability such as through diversification of crops and access to newer seeds and tools.
- Poorer households tend to have fewer assets than richer ones to invest in adapting in situ. But they also have limited resources for investing in long-distance and long-term migration projects. As a result, they are more likely to undertake temporary migration to neighbouring districts and urban areas when work conditions are unfavourable or crop yields are low.
- However, migration can also have a downside. Farmers indicated that migration is the least desirable adaptation strategy, due to its association with unstable earnings and weakening social bonds among villagers. Migration also withdraws labour and expertise from farms, which can reinforce maladaptation and increased food insecurity among those household members who do not migrate or receive remittances.<sup>25</sup>

To conclude, the case study of Southern Ethiopia draws attention to the different ways that richer or poorer households respond to climate change and potential food insecurity. The poor most frequently turn to migration, and they tend to move temporarily to local destinations. The rich least frequently turn to migration as they adapt in other ways.

### **Summary**

In sum, the case studies highlight how migration is just one of many potential adaptation or coping strategies in response to food insecurity. It can take various forms, such as temporary migration of a household member to find employment elsewhere or long-term migration and resettlement of a family in a new location.

The choice of whether to migrate or adopt other strategies tends to be influenced by resources, assets and social networks available to individuals and households. In all of the case studies referenced above, richer households are less likely to migrate and tend to invest in other adaptation strategies. These households can be expected to migrate as a last resort. Poorer households, in contrast, are more likely to migrate rather than adapting in other ways. But their migration tends to be temporary and to relatively nearby destinations. Overall the documented migration responses to food insecurity in all three countries were mainly internal – either towards rural areas with more favourable conditions for agriculture or towards urban areas. None of the studies indicate that food insecurity in these countries led to migration towards European countries.

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<sup>25</sup> Similar has also been noted in a case study of Malawi. See, for instance, Suckall et al (2016).

### **3 Conclusions**

This report has sought to unpack and better understand the relationship between food insecurity and migration, with a particular focus on Africa. It provides a rapid assessment to respond to policymakers' concerns regarding some of the potential implications of the Russian invasion of Ukraine through an exploration of the relationship between food insecurity and international migration in Africa. Doing so highlights the need for caution and nuance when considering migration in response to food insecurity. This has implications for responses to the potential disruption caused by the Russian invasion of Ukraine.

The analysis challenges suggestions that declining food security will necessarily lead to mass migration in Africa. The empirical examination based on Afrobarometer survey covering 34 African countries suggests that self-reported food insecurity (having gone without food over last year) is positively associated with considering migrating. Moreover, a higher frequency of going without food is associated with a higher propensity to consider migration. Going without food makes it less likely that people plan or prepare to emigrate. This may be because they use more resources to access food, rather than to pay to migrate.

It also indicates changes in food availability will have varied impacts in different African countries. Composite indicators show that there is no clear pattern relating food insecurity to migration intentions, although Guinea, Gabon, Togo and Cameroon rank highest in terms of people going without food and planning or preparing to migrate.

Case studies from three African countries also highlight how migration is just one of many potential adaptation or coping strategies in response to food insecurity. It can take various forms, such as temporary migration of a household member to find employment elsewhere or long-term migration and resettlement of a family in a new location. Overall the documented migration responses to food insecurity in all three countries were mainly internal – either towards rural areas with more favourable conditions for agriculture or towards urban areas.

Migration is just one way that some people may decide to respond to food insecurity. But many people will not be able to migrate. They will need other ways to adapt to short-term pressures related to the war, in addition to ongoing long-term challenges of rising food prices, climate change and the Covid-19 pandemic.

While this study provides the policy makers concerned with the consequences of possible food insecurity in African countries with insights on how to better tailor the humanitarian responses, the full understanding of the relationship between food shortages and migration would require looking at more comprehensive indicators of food insecurity capturing the duration, severity and prevalence as well as at its drivers (i.e. climatic events, protracted conflicts, increasing food prices, etc.).

## References

- Arechavala, Noelia Somarriba and Trapero, Bernardo Pena (2014) Synthetic Indicators of the Quality of Life in Europe, in Michalos, Alex C (ed). Encyclopedia of Quality of Life and Well-Being Research Dordrecht: Springer, available online at [https://link.springer.com/referenceworkentry/10.1007%2F978-94-007-0753-5\\_3729](https://link.springer.com/referenceworkentry/10.1007%2F978-94-007-0753-5_3729)
- Belmonte, M., Conte, A., Ghio, D., Kalantaryan, S. and McMahon, S. (2020). Youth and migration: an overview, Luxembourg: Publications Office of the European Union, Available online at <https://publications.jrc.ec.europa.eu/repository/handle/JRC122402>
- Boureima, A. (1993). Ecologie et histoire: Concepts et conceptions traditionnels sur les sécheresses, famines, et épidémies du Sahel. *Canadian Journal of African Studies*, 27(2), 260–270.
- Campbell, D. (1981). Soils, water resources, and land use in the Mandara Mountains of Northern Cameroon .Michigan State University/USAID Mandara Mountains Research Report #14.
- Carling, Jørgen (2020). Two-step approaches and the concept of aspirations in migration theory, in Vezzoli, Simona; and Hein de Haas, eds, *Renewing the migration debate. Building disciplinary and geographical bridges to explain global migration* (KNAW Academy Colloquium). Amsterdam: The Royal Netherlands Academy of Arts and Sciences (KNAW) and the International Migration Institute (IMI), 37–45.
- Carling, Jørgen and Kerilyn Schewel (2018). Revisiting aspiration and ability in international migration, *Journal of Ethnic and Migration Studies*, 44:6, 945–963. Available online at <https://doi.org/10.1080/1369183X.2017.1384146>
- Clemens, Michael (2014). Does Development Reduce Migration (Washington DC: Center for Global Development. Available online at <https://www.cgdev.org/publication/does-development-reduce-migration-working-paper-359>
- FAO (2003). Chapter 2. Food security: concepts and measurement in Trade reforms and food security: Conceptualizing the Linkages. FAO: Rome. Available online at <https://www.fao.org/3/y4671e/y4671e06.htm>
- FAO (2022). Food Price Monitoring and Analysis Bulletin, 11 May 2022. Available online at <https://www.fao.org/3/cc0069en/cc0069en.pdf>
- FAO IFAD IOM and WFP (2018). The linkages between migration, agriculture, food security and rural development. Rome: FAO. Available online at <http://www.fao.org/3/CA0922EN/CA0922EN.pdf>
- FAO IFAD UNICEF WFP and WHO (2018). The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition. Rome, FAO. Available online at [https://docs.wfp.org/api/documents/WFP-0000074343/download/?\\_ga=2.81051871.930517552.1665251964-1738102099.1645690208](https://docs.wfp.org/api/documents/WFP-0000074343/download/?_ga=2.81051871.930517552.1665251964-1738102099.1645690208)
- FAO IFAD UNICEF WFP and WHO (2022). The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable. Rome, FAO. Available online at <https://www.fao.org/documents/card/en/c/cc0639en>
- Faulkingham, R., and Thorbahn, P. (1975). Population dynamics and drought: A village in Niger. *Population Studies*, 29, 463–477. Available online at <https://www.tandfonline.com/doi/abs/10.1080/00324728.1975.10412711>
- Fuglestad, F. (1983). A history of Niger 1850–1960. Cambridge: Cambridge University Press.
- Grolle, John (2015). Historical case studies of famines and migrations in the West African Sahel and their possible relevance now and in the future, *Population and Environment*, 37, 181-206. Available online at <https://link.springer.com/article/10.1007/s11111-015-0237-4>
- Grubanov-Boskovic, S., Kalantaryan, S., Migali, S., and Scipioni, M. (2022). The impact of the Internet on migration aspirations and intentions. *Migration Studies*, 9(4), 1807-1822. Available online at <https://doi.org/10.1093/migration/mnab049>
- Hill, P. (1972). Rural Hausa: A village and a setting. Cambridge: Cambridge University Press.
- HRW (2022). Human Rights Watch: Russia's Invasion of Ukraine Exacerbates Hunger in Middle East, North Africa, 21 March 2022. Available online at <https://www.hrw.org/news/2022/03/21/russias-invasion-ukraine-exacerbates-hunger-middle-east-north-africa>

- IFAD (2022). Impacts of Ukraine conflict on food security already being felt in the Near East North Africa region and will quickly spread, warns IFAD, 17 March 2022. Available online at <https://www.ifad.org/en/web/latest/-/impacts-of-ukraine-conflict-on-food-security-already-being-felt-in-the-near-east-north-africa-region-and-will-quickly-spread-warns-ifad>
- IMF (2022). IMF Blog: Africa Faces New Shock as War Raises Food and Fuel Costs, 28 April 2022. Available online at <https://blogs.imf.org/2022/04/28/africa-faces-new-shock-as-war-raises-food-and-fuel-costs/>
- IOM (n.d.). Structural Factors Assessment Toolkit. Geneva: IOM. Available online at <https://www.iom.int/structural-factors-assessment-toolkit>
- Kidane, Rahwa; Prowse, Martin and de Neergaard, Andreas (2018). Bespoke Adaptation in Rural Africa? An Asset-Based Approach from Southern Ethiopia, *The European Journal of Development Research*, 31, 413-432. Available online at <https://link.springer.com/content/pdf/10.1057/s41287-018-0161-4.pdf>
- Laborde, David, Bizikova, Livia, Lallemand Tess and Smaller, Carin (2017). What is the Link Between Hunger and Migration? The International Institute for Sustainable Development. Available online at <https://www.iisd.org/system/files/publications/link-between-hunger-migration.pdf>
- Maxwell, Danie, Majid, Nisar; Adan Khalif, Guhad; Jeeyon, Abdurahman; Kim, Janet (2016). Facing famine: Somali experiences in the famine of 2011, *Food Policy*, 65, 63-73. Available online at <https://www.sciencedirect.com/science/article/pii/S0306919216304900>
- McMahon, S., Tintori, G., Perez Fernandez, M., Alessandrini, A., Goujon, A., Ghio, D., Petroligkis, T., Conte, A., Minora, U. and Kalantaryan, S. (2021). Population exposure and migrations linked to climate change in Africa, Luxembourg: Publications Office of the European Union. Available online at <https://publications.jrc.ec.europa.eu/repository/handle/JRC126594>
- Migali, S., Natale, F., Tintori, G., Kalantaryan, S., Grubanov-Boskovic, S., Scipioni, M., Farinosi, F., Cattaneo, C., Benandi, B., Follador, M., Bidoglio, G., Barbas, T. and McMahon, S., (2018) International Migration Drivers, EUR 29333 EN, Publications Office of the European Union, Luxembourg, Available online at <https://publications.jrc.ec.europa.eu/repository/handle/JRC112622>
- OECD (2008). Handbook on constructing composite indicators: methodology and user guide. OECD Publishing. Available online at <https://www.oecd.org/sdd/42495745.pdf>
- Oguntoyinbo, J. (1981). Climatic variability and food crop production in West Africa. *GeoJournal*, 5, 139-150.
- Sadiddin, A., Cattaneo, A., Cirillo, M., and Miller, M. (2019). Food insecurity as a determinant of international migration: evidence from Sub-Saharan Africa. *Food Security*, 11(3), 515-530. Available online at <https://link.springer.com/article/10.1007/s12571-019-00927-w>
- Smith, M. D., and Floro, M. S. (2020). Food insecurity, gender, and international migration in low-and middle-income countries. *Food Policy*, 91, 101837. Available online at <https://www.sciencedirect.com/science/article/pii/S030691922030021X>
- Smith, Michael and Wesselbaum, Dennis (2022). Food Insecurity and International Migration Flows, in *International Migration Review*, 56:2. Available online at <https://doi.org/10.1177/01979183211042820>
- Suckall, Natalie; Fraser, Evan and Forster, Piers (2016). Reduced migration under climate change: evidence from Malawi using an aspirations and capabilities framework, *Climate and Development*, 9, 298-312. Available online at <https://doi.org/10.1080/17565529.2016.1149441>
- UNCSD (2011). Food Security and Sustainable Agriculture. Available online at <https://sustainabledevelopment.un.org/content/documents/316brief9.pdf>
- UNCTAD (2022). The impact on trade and development of the war in Ukraine. United Nations Conference on Trade and Development. Available online at [https://unctad.org/system/files/official-document/osqinf2022d1\\_en.pdf](https://unctad.org/system/files/official-document/osqinf2022d1_en.pdf)
- WFP (2017). At the root of exodus: Food security, conflict and international migration, available online at <https://www.wfp.org/publications/2017-root-exodus-food-security-conflict-and-international-migration>
- WFP (2022). World Food Programme: Projected increase in acute food insecurity due to war in Ukraine, 6 April 2022. Available online at <https://www.wfp.org/publications/projected-increase-acute-food-insecurity-due-war-ukraine>

World Bank (2022). World Bank Blogs: Fertilizer prices expected to remain higher for longer, 11 May 2022.  
Available online at <https://blogs.worldbank.org/opendata/fertilizer-prices-expected-remain-higher-longer>

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## Annexes

### Methodological Annex 1: Multivariate regression analysis

The results of the regression analysis presented in this study are based on the following model specification:

$$\mathbf{Migration\ Intention}_{ic} = \beta_0 + \beta_1 \mathbf{Food\ insecurity}_{ic} + \beta_2 \mathbf{SD\ Characteristics}_{ic} + \gamma_c + \varepsilon_{ic}$$

$\mathbf{Migration\ Intention}_{ic}$  is the dependent variable for all three models: considering, planning and preparing. For the model on 'Considering migration' it takes a value equal to 1 if an individual considers emigrating ('a little bit', 'somewhat' and 'a lot') and 0 otherwise. For the model on 'Plan to migrate', it takes a value equal to 1 if an individual is planning on emigrating ('You are planning to move in the next year or two but not yet making preparations') and 0 otherwise. For the model on 'Preparation to migrate', it takes a value equal to 1 if an individual is making preparations to emigrate ('You are currently making preparations to move, like getting a visa') and 0 otherwise.

The main explanatory variables of interest are:

- $\mathbf{Food\ insecurity}_{ic}$  is a set of dummy variable reflecting how often people have gone without food over the past year ('Just once or twice', 'Several times', 'Many times' and 'Always'). It takes a value equal to 1 if an individual reports going without food and 0 otherwise. We also control for the food insecurity at the regional level by including the share of individuals reporting going without food at least several times (more than twice) over the past year.
- $\mathbf{SD\ Characteristics}_{ic}$  stands for the set of variables capturing individual demographic and socio-economic characteristics of the respondents.
- $\gamma_c$  -captures country specific fixed effects
- $\varepsilon_{ic}$  stands for unobserved individual characteristics

The empirical models described in the equation is estimated using logit model (consider, plan or prepare migration 1/0) for the whole sample and subsample of those considering migration (for plan and preparation).

The sample included in the analysis is gender-balanced with average age equal to 37 (the descriptive statistics are reported in Table A1.1). Slightly more than half (55%) of respondents reside in rural areas. Half have education level below secondary. When looking at the labour market characteristics, 36 per cent of surveyed individuals are employed, 27 per cent are unemployed, and the rest are inactive. One-third of respondents (or the head of their households) either are employed in the agricultural sector or were employed before becoming unemployed, retired, or disabled. Two-third (65%) of individuals have gone without a cash income and one-third (32%) without food at least several times (more than twice) over the past year.

Table A1.1 Descriptive statistics

<b>Variables</b>	<b>Observations</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Desire	45,367	0.362	0.480	0	1
Plan	45,823	0.102	0.303	0	1
Preparation	45,823	0.032	0.175	0	1
Age	45,777	37.144	14.936	18	106
Age squared	45,777	1602.714	1333.836	324	11236
Male	45,816	0.499	0.500	0	1
Education					
Primary	45,544	0.130	0.336	0	1
Some secondary	45,544	0.207	0.405	0	1
Secondary	45,544	0.164	0.370	0	1
Postsecondary	45,544	0.052	0.223	0	1
Not complete secondary	45,544	0.039	0.192	0	1
Tertiary	45,544	0.059	0.235	0	1
Labour market					
Employed	45,616	0.356	0.479	0	1
Unemployed	45,616	0.272	0.445	0	1
Employed in agri. sector	45,823	0.333	0.471	0	1
Rural	45,823	0.552	0.497	0	1
Urban	45,823	0.433	0.495	0	1
Cash problems	45,823	0.649	0.477	0	1
Food insecurity (frequency of going without enough food to eat)					
Just once or twice	45,753	0.147	0.354	0	1
Several times	45,753	0.185	0.389	0	1
Many times	45,753	0.110	0.313	0	1
Always	45,753	0.026	0.160	0	1
Food insecurity at regional level	45,823	0.322	0.184	0	1

Source: own elaboration of Afrobarometer data (2016-2018 wave)

Table A1.2 The impact of going without good on migration intentions

Variables	(1) Consider	(4) Plan	(5) Prep.	(6) Plan	(7) Prep.
<i>Age</i>	-0.004*** (0.001)	-0.003*** (0.001)	0.000 (0.001)	-0.007*** (0.002)	0.000 (0.001)
<i>Age squared</i>	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000*** (0.000)	-0.000 (0.000)
<i>Male</i>	0.070*** (0.010)	0.035*** (0.004)	0.016*** (0.003)	0.042*** (0.008)	0.024*** (0.007)
<i>Primary</i>	0.025** (0.011)	0.007 (0.009)	0.000 (0.005)	0.003 (0.022)	-0.002 (0.013)
<i>Some secondary</i>	0.086*** (0.012)	0.026*** (0.007)	0.009** (0.004)	0.007 (0.014)	0.007 (0.011)
<i>Secondary</i>	0.098*** (0.012)	0.025*** (0.008)	0.014*** (0.004)	0.001 (0.017)	0.018* (0.010)
<i>Postsecondary</i>	0.130*** (0.019)	0.039*** (0.010)	0.024*** (0.006)	0.021 (0.019)	0.044*** (0.015)
<i>Not complete secondary</i>	0.160*** (0.021)	0.054*** (0.015)	0.024*** (0.006)	0.041 (0.032)	0.037** (0.014)
<i>Tertiary</i>	0.183*** (0.021)	0.068*** (0.012)	0.029*** (0.006)	0.064** (0.025)	0.046*** (0.014)
<i>Employed</i>	0.045*** (0.009)	0.020*** (0.007)	0.004 (0.003)	0.023 (0.016)	0.003 (0.007)
<i>Unemployed</i>	0.090*** (0.011)	0.029*** (0.006)	0.014*** (0.002)	0.014 (0.016)	0.018*** (0.005)
<i>Rural</i>	-0.021 (0.015)	-0.009 (0.025)	0.003 (0.005)	-0.008 (0.061)	0.013 (0.013)
<i>Urban</i>	0.031** (0.013)	0.010 (0.024)	0.008 (0.005)	0.006 (0.060)	0.015 (0.014)
<i>Cash problems</i>	0.031*** (0.007)	0.009** (0.004)	-0.001 (0.003)	0.002 (0.012)	-0.012 (0.007)
<i>Employed in agri. sector</i>	-0.024*** (0.009)	-0.009* (0.005)	-0.008** (0.003)	-0.001 (0.009)	-0.017** (0.008)
<b>Food insecurity</b>					
<i>Just once or twice</i>	0.030*** (0.009)	0.004 (0.006)	-0.000 (0.003)	-0.011 (0.014)	-0.009 (0.007)
<i>Several times</i>	0.046*** (0.007)	0.013** (0.006)	0.005 (0.003)	-0.006 (0.015)	0.001 (0.009)
<i>Many times</i>	0.042*** (0.011)	0.008 (0.007)	0.006** (0.003)	-0.011 (0.016)	0.003 (0.007)
<i>Always</i>	0.069*** (0.018)	0.015 (0.012)	0.015*** (0.005)	-0.009 (0.028)	0.024* (0.014)
<b>Food insecurity at regional level</b>	-0.011 (0.048)	0.028 (0.021)	0.014 (0.015)	0.065 (0.066)	0.034 (0.038)
Country FE	Yes	Yes	Yes	Yes	Yes
Observations	44,969	43,751	43,751	15,729	15,729

Note: Standard errors are clustered at country level and reported in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 Marginal effects are reported.

## Methodological Annex 2: Composite indicators

For this study, we build three composite indicators. Specifically, they are:

1. Food insecurity
2. Considering migration
3. Planning or preparing migration

Table A2.1 presents the set of components (basic indicators) included in each composite indicator.

Table A2.1. Components of composite indicators

Composite indicator	Components
Food insecurity	Share of population gone without enough food to eat 'Several times' a year
	Share of population gone without enough food to eat 'Many times' a year
	Share of population gone without enough food to eat 'Always' a year
Considering migration	Share of population considered emigration to other country 'A little bit'
	Share of population considered emigration to other country 'Somewhat'
	Share of population considered emigration to other country 'A lot'
Planning or preparing migration	Share of population 'Planning to move in the next year or two but not yet making preparations'
	Share of population 'Currently making preparations to move'

To ensure that the composite indicator correctly measures the phenomenon it refers to, the set of basic indicators should form a statistical coherent framework for which it is necessary to verify whether all indicators point in the same direction. For this purpose, our basic indicators were normalised<sup>26</sup> after which the statistical coherence of basic indicators was tested through correlation analysis.<sup>27</sup> Various approaches can be used to build a composite indicator. In this study, we rely on Principal Component Analysis (PCA) - a multivariate statistical technique allowing for a reduction in the number of observed variables (for instance the three basic indicators describing the dependence from receiving remittances) to a smaller number of new variable(s) with the minimum loss of information. After performing the necessary statistical checks, each composite indicator was built through the sum of basic indicators each multiplied by corresponding squared coefficients (weights) drawn from the PCA analysis.<sup>28</sup>

### 1. Food insecurity composite indicator

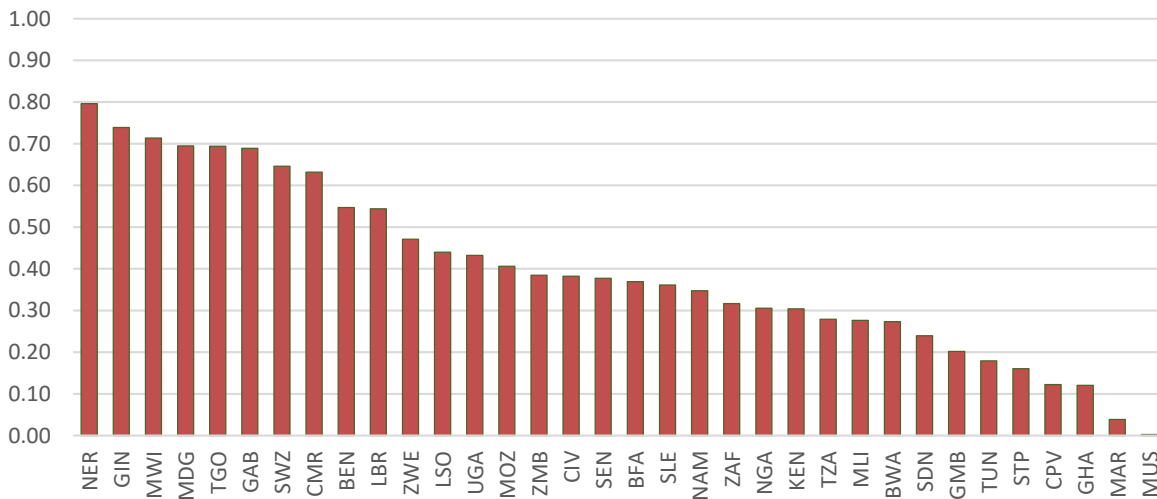
To build the **Food insecurity composite indicator**, we rely on the above-discussed question from the Afrobarometer survey on the frequency with which an individual (or anyone in their family) has gone without food over the past year. To this, the respondent could choose from the following set of positive answers: 'Just once or twice'; 'Several times'; 'Many times' and 'Always'. The preliminary checks of statistical properties of the set of candidate indicators reveal that the share of individuals who answered 'Just once or twice' does not point in the same direction as the other answers. As a result, we excluded this basic component from the composite indicator. The remaining set of indicators satisfies the statistical requirements for building a composite indicator.

<sup>26</sup> Each indicator  $X_{ci}$  for a generic country  $c$  was transformed in  $N_{ci} = \frac{X_{ci} - \text{Min}_c(X_i)}{\text{Max}_c(X_i) - \text{Min}_c(X_i)}$ , where  $\text{Min}_c(X_i)$  and  $\text{Max}_c(X_i)$  are the minimum value of  $X_{ci}$  across all countries  $c$ . In so doing, normalised indicators range between 0 (corresponding lowest level of dependence on remittances) to 1 (corresponding lowest level of dependence on remittances).

<sup>27</sup> For instance, Table X in the annex demonstrates that all pairs of indicators are positively correlated within the set of indicators describing the 'Food scarcity' and hence, they correctly measure the dependence on remittances. The same is valid for the two sets selected for the other two composite indicators: 'Migration desire' as well 'Migration plan and preparation'. The Bartlett's test of sphericity was used to test the correlation of basic indicators. The higher is the correlation, the higher is the probability the basic indicators share common factors. The null hypothesis (the correlation matrix is an identity matrix) is rejected at the 1 percent level suggesting that the basic indicators are correlated. For more information on composite indicators, see OECD (2008).

<sup>28</sup> Only scoring coefficients of factors with eigenvalues higher than one are considered (in our case there only one). The sum of squares scoring coefficients is equal to one.

Figure A2.1. Composite indicator – Food insecurity



Source: own elaboration of Afrobarometer R7 2016/2018

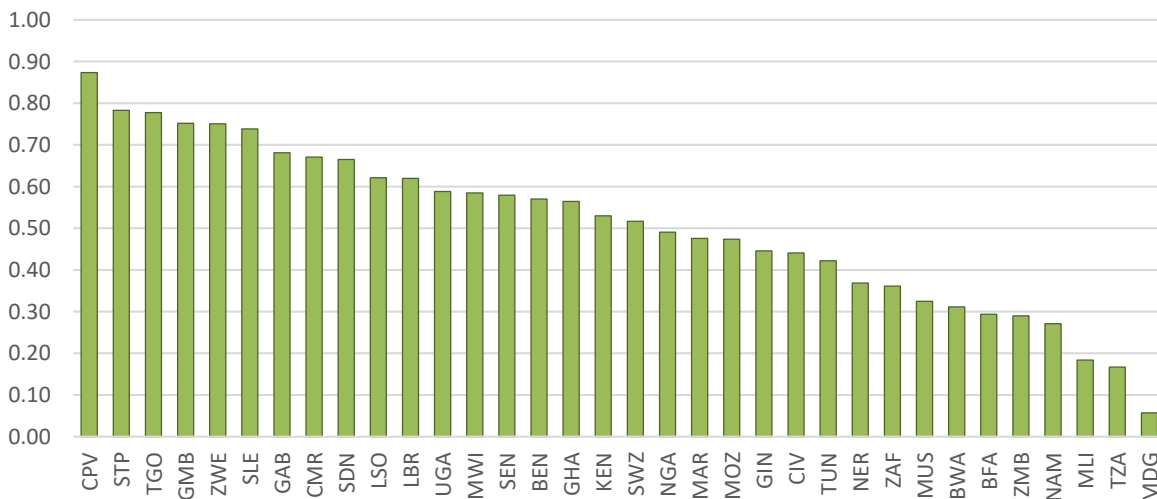
Note: Countries are ranked from least (0) to most (1) food insecure.

Comparing Figure A2.1 and Figure 2 (in Section 2) reveals that the composite indicator reshuffles slightly the ranking of countries pointing to the importance of taking the variation in the intensity of food scarcity across countries.

## 2. Migration intention composite indicators

To build the **Considering migration** composite indicator we rely on the question from the Afrobarometer survey on whether an individual 'Considered emigration to other country' with its three positive answers: 'A little bit', 'Somewhat' and 'A lot'. This indicator captures the extent to which people are willing to migrate across selected African countries by bringing multiple answers from the survey into one synthetic measure. Rather than describing the shares of the population which reported considering emigrating the composite indicator ranks the countries from least to most prone to migrate according to both the share of the population which reports having considered migrating and also the intensity of this desire.

Figure A2.2. Composite indicator – Considering migration



Source: own elaboration of Afrobarometer R7 2016/2018

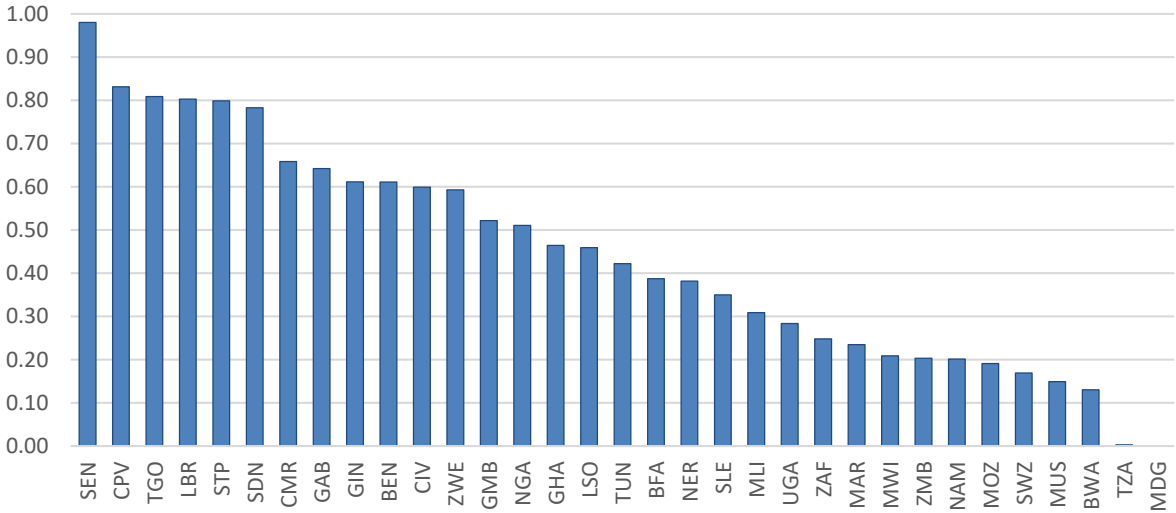
Note: Countries are ranked from greatest (0) to least (1) in terms of people considering migration.

Figure X presents the findings for the African countries for which data are available. Scores nearer to 1.0 show a more widespread (stronger) desire (considering) to migrate among the population, whereas scores closer to 0.0 show less.

Comparing Figure A2.2 and Figure 3 (in Section 2) reveals that the composite indicator reshuffles the ranking of countries, especially among countries characterised by a larger share of those who would like to migrate pointing to the importance of taking the variation in the intensity of migration desire across countries.

To build the migration **Planning or preparing** composite indicator we take the question from the Afrobarometer survey on ‘How much planning or preparation have you done in order to move to another country to live?’ with its positive answers: ‘You are planning to move in the next year or two but not yet making preparations’ and ‘You are currently making preparations to move, like getting a visa’<sup>29</sup>.

Figure A2.3. Composite indicator – Planning or preparing migration



Source: own elaboration of Afrobarometer R7 2016/2018

Note: Countries are ranked from most (0) to least (1) in terms of planning or preparing to migrate.

<sup>29</sup> For this dimension, the composite indicator is equivalent to the average observed for the share of plan and preparation as the PCA analysis reveals that the squared terms of the scoring coefficients is equal to 0.50.

Table A2.2. Socio demographic profiles of respondents by frequency of experiencing food shortages

Variables	Frequency of going without enough food to eat					Total
	Never	Just once or twice	Several times	Many times	Always	
Consider	0.36	0.39	0.38	0.35	0.38	0.37
Plan	0.11	0.11	0.11	0.10	0.11	0.11
Preparation	0.03	0.03	0.03	0.03	0.04	0.03
Age	36.98	35.88	37.27	39.24	40.17	37.22
Male	0.51	0.51	0.49	0.48	0.48	0.50
Education						
Primary	0.12	0.14	0.13	0.11	0.10	0.12
Some secondary	0.21	0.22	0.21	0.18	0.18	0.21
Secondary	0.18	0.18	0.13	0.10	0.10	0.16
Postsecondary	0.07	0.05	0.03	0.02	0.02	0.05
Not complete secondary	0.05	0.04	0.04	0.03	0.01	0.04
Tertiary	0.09	0.04	0.03	0.02	0.03	0.06
Labour market						
Employed	0.39	0.33	0.28	0.23	0.19	0.34
Unemployed	0.23	0.32	0.32	0.30	0.33	0.27
Employed in agri. sector	0.27	0.32	0.39	0.44	0.42	0.33
Rural	0.50	0.56	0.62	0.68	0.70	0.56
Urban	0.48	0.42	0.37	0.30	0.29	0.43
Cash problems	0.48	0.70	0.91	0.95	0.91	0.66
Food insecurity(regional level)	0.26	0.33	0.41	0.48	0.45	0.33

Source: own elaboration of Afrobarometer data (2016-2018 wave)



### Methodological Annex 3: Supplementary tables

Table A3.1 Afrobarometer survey questions on food insecurity and migration intentions (considering, planning and preparing to migrate)

Question	Set of answers
Q8A: Over the past year, how often, if ever, have you or anyone in your family: Gone without enough food to eat?	<b>0. Never</b> <b>1. Just once or twice</b> <b>2. Several times</b> <b>3. Many times</b> <b>4. Always</b> 9. Don't know 8. Refused to answer
Q68A: How much, if at all, have you considered to moving to another country to live?	<b>0. Not at all</b> <b>1. A little bit</b> <b>2. Somewhat</b> <b>3. A lot</b> 8. Refused to answer 9. Don't know/Haven't heard enough
Q68B: How much planning or preparation have you done in order to move to another country to live?	<b>0. You are not currently making any specific plans or preparations</b> <b>1. You are planning to move in the next year or two but not yet making preparations</b> <b>2. You are currently making preparations to move, like getting a visa</b> 7. Not applicable 8. Refused to answer 9. Don't know/Haven't heard enough 99. Not asked in the country This question was asked only to those who gave a positive response to Q68a. For the rest 'Not applicable' was assigned.

Source: own elaboration of Afrobarometer R8 2016/2018

Table A3.2 Set of indicators used to develop the Food insecurity composite indicator

Country	ISO code	Share of population declaring having experienced food shortages over last year (by frequency)		
		Several times	Many times	Always
1. Benin	BEN	0.26	0.15	0.04
2. Botswana	BWA	0.15	0.07	0.02
3. Burkina Faso	BFA	0.18	0.11	0.02
4. Cabo Verde	CPV	0.07	0.04	0.01
5. Cameroon	CMR	0.27	0.18	0.05
6. Côte d'Ivoire	CIV	0.21	0.08	0.03
7. eSwatini	SWZ	0.22	0.12	0.09
8. Gabon	GAB	0.30	0.19	0.05
9. Gambia	GMB	0.10	0.04	0.02
10. Ghana	GHA	0.09	0.03	0.00
11. Guinea	GIN	0.29	0.25	0.05
12. Kenya	KEN	0.19	0.07	0.01
13. Lesotho	LSO	0.12	0.25	0.02
14. Liberia	LBR	0.20	0.09	0.07
15. Madagascar	MDG	0.29	0.28	0.03
16. Malawi	MWI	0.27	0.29	0.04
17. Mali	MLI	0.13	0.11	0.01
18. Mauritius	MUS	0.02	0.00	0.00
19. Morocco	MAR	0.05	0.01	0.00
20. Mozambique	MOZ	0.24	0.09	0.02
21. Namibia	NAM	0.18	0.07	0.03
22. Niger	NER	0.26	0.34	0.05
23. Nigeria	NGA	0.18	0.07	0.02
24. São Tomé and Príncipe	STP	0.12	0.03	0.01
25. Senegal	SEN	0.20	0.09	0.02
26. Sierra Leone	SLE	0.20	0.11	0.01
27. South Africa	ZAF	0.14	0.08	0.03
28. Sudan	SDN	0.13	0.07	0.01
29. Tanzania	TZA	0.18	0.09	0.00
30. Togo	TGO	0.33	0.15	0.05
31. Tunisia	TUN	0.09	0.03	0.02
32. Uganda	UGA	0.24	0.10	0.02
33. Zambia	ZMB	0.24	0.10	0.01
34. Zimbabwe	ZWE	0.20	0.12	0.04

Source: own elaboration of Afrobarometer R8 2016/2018

Table A3.3. Set of indicators used to develop the Considering migration composite indicator

Country	ISO code	Share of population declaring considering migration (by degree/intensity)		
		A little bit	Somewhat	A lot
1. Benin	BEN	0.10	0.10	0.20
2. Botswana	BWA	0.09	0.05	0.15
3. Burkina Faso	BFA	0.09	0.06	0.10
4. Cabo Verde	CPV	0.07	0.13	0.38
5. Cameroon	CMR	0.13	0.13	0.14
6. Côte d'Ivoire	CIV	0.11	0.09	0.10
7. eSwatini	SWZ	0.07	0.11	0.14
8. Gabon	GAB	0.13	0.12	0.20
9. Gambia	GMB	0.18	0.09	0.29
10. Ghana	GHA	0.12	0.09	0.20
11. Guinea	GIN	0.12	0.07	0.15
12. Kenya	KEN	0.11	0.11	0.13
13. Lesotho	LSO	0.06	0.12	0.20
14. Liberia	LBR	0.14	0.07	0.29
15. Madagascar	MDG	0.09	0.02	0.03
16. Malawi	MWI	0.09	0.08	0.28
17. Mali	MLI	0.06	0.03	0.11
18. Mauritius	MUS	0.13	0.06	0.07
19. Morocco	MAR	0.15	0.08	0.13
20. Mozambique	MOZ	0.10	0.10	0.11
21. Namibia	NAM	0.08	0.06	0.08
22. Niger	NER	0.08	0.07	0.12
23. Nigeria	NGA	0.16	0.09	0.11
24. São Tomé and Príncipe	STP	0.08	0.11	0.35
25. Senegal	SEN	0.08	0.09	0.24
26. Sierra Leone	SLE	0.15	0.08	0.34
27. South Africa	ZAF	0.14	0.06	0.11
28. Sudan	SDN	0.13	0.09	0.28
29. Tanzania	TZA	0.03	0.05	0.06
30. Togo	TGO	0.13	0.11	0.30
31. Tunisia	TUN	0.06	0.06	0.23
32. Uganda	UGA	0.11	0.12	0.11
33. Zambia	ZMB	0.09	0.05	0.12
34. Zimbabwe	ZWE	0.12	0.13	0.22

Source: own elaboration of Afrobarometer R8 2016/2018

Table A3.4 Set of indicators used to develop the Planning and preparing migration composite indicator

Country	ISO code	Share of population declaring planning and preparing to migrate	
		Planning	Preparing
1. Benin	BEN	0.15	0.04
2. Botswana	BWA	0.05	0.02
3. Burkina Faso	BFA	0.10	0.02
4. Cabo Verde	CPV	0.19	0.06
5. Cameroon	CMR	0.16	0.04
6. Côte d'Ivoire	CIV	0.14	0.02
7. eSwatini	SWZ	0.05	0.03
8. Gabon	GAB	0.15	0.04
9. Gambia	GMB	0.13	0.06
10. Ghana	GHA	0.12	0.03
11. Guinea	GIN	0.15	0.04
12. Kenya	KEN	X	X
13. Lesotho	LSO	0.11	0.07
14. Liberia	LBR	0.19	0.03
15. Madagascar	MDG	0.02	0.00
16. Malawi	MWI	0.06	0.04
17. Mali	MLI	0.08	0.04
18. Mauritius	MUS	0.05	0.01
19. Morocco	MAR	0.07	0.03
20. Mozambique	MOZ	0.06	0.02
21. Namibia	NAM	0.06	0.01
22. Niger	NER	0.10	0.06
23. Nigeria	NGA	0.13	0.04
24. São Tomé and Príncipe	STP	0.19	0.05
25. Senegal	SEN	0.22	0.04
26. Sierra Leone	SLE	0.09	0.03
27. South Africa	ZAF	0.07	0.03
28. Sudan	SDN	0.18	0.02
29. Tanzania	TZA	0.02	0.01
30. Togo	TGO	0.19	0.04
31. Tunisia	TUN	0.11	0.03
32. Uganda	UGA	0.08	0.03
33. Zambia	ZMB	0.06	0.01
34. Zimbabwe	ZWE	0.14	0.07

Source: own elaboration of Afrobarometer R8 2016/2018

Table A3.4 Correlation matrix of basic indicators

		Food insecurity			Considering migration			Planning & preparing migration	
Composite indicators	Basic indicators	FI.1	FI.2	FI.3	CM.1	CM.2	CM3	PM.1	PM.2
Food insecurity	FI.1	1.000							
	FI.2	0.709	1.000						
	FI.3	0.623	0.516	1.000					
Considering migration	CM.1	-0.015	-0.192	0.053	1.000				
	CM.2	0.095	-0.015	0.245	0.194	1.000			
	CM.3	-0.118	-0.128	0.075	0.165	0.491	1.000		
Planning & preparing migration	PM.1	0.066	-0.074	0.190	0.235	0.578	0.671	1.000	
	PM.2	-0.035	0.202	0.250	0.104	0.641	0.570	0.572	1.000

Note: The reported variables are normalised from zero to one.

Source: own elaboration of Afrobarometer R8 2016/2018

Table A3.4 PCA composite indicators

Country	ISO	Composite indicators		
		Food insecurity	Considering migration	Planning and preparing migration
1. Benin	BEN	0.55	0.57	0.61
2. Botswana	BWA	0.27	0.31	0.13
3. Burkina Faso	BFA	0.37	0.29	0.39
4. Cabo Verde	CPV	0.12	0.87	0.83
5. Cameroon	CMR	0.63	0.67	0.66
6. Côte d'Ivoire	CIV	0.38	0.44	0.60
7. eSwatini	SWZ	0.65	0.52	0.17
8. Gabon	GAB	0.69	0.68	0.64
9. Gambia	GMB	0.20	0.75	0.52
10. Ghana	GHA	0.12	0.56	0.46
11. Guinea	GIN	0.74	0.45	0.61
12. Kenya	KEN	0.30	0.53	
13. Lesotho	LSO	0.44	0.62	0.46
14. Liberia	LBR	0.54	0.62	0.80
15. Madagascar	MDG	0.69	0.06	0.00
16. Malawi	MWI	0.71	0.58	0.21
17. Mali	MLI	0.28	0.18	0.31
18. Mauritius	MUS	0.00	0.32	0.15
19. Morocco	MAR	0.04	0.48	0.23
20. Mozambique	MOZ	0.41	0.47	0.19
21. Namibia	NAM	0.35	0.27	0.20
22. Niger	NER	0.80	0.37	0.38
23. Nigeria	NGA	0.31	0.49	0.51
24. São Tomé and Príncipe	STP	0.16	0.78	0.80
25. Senegal	SEN	0.38	0.58	0.98
26. Sierra Leone	SLE	0.36	0.74	0.35
27. South Africa	ZAF	0.32	0.36	0.25
28. Sudan	SDN	0.24	0.66	0.78
29. Tanzania	TZA	0.28	0.17	0.00
30. Togo	TGO	0.69	0.78	0.81
31. Tunisia	TUN	0.18	0.42	0.42
32. Uganda	UGA	0.43	0.59	0.28
33. Zambia	ZMB	0.38	0.29	0.20
34. Zimbabwe	ZWE	0.47	0.75	0.59

Source: own elaboration of Afrobarometer R8 2016/2018

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