

# POPULATION DYNAMICS AND FOOD SECURITY

After decades of improvements in food security, there has been an increase in the number of people experiencing hunger in recent years.<sup>1</sup> The UN estimates that in 2022 around 735 million people across the globe suffered from hunger – 122 million more than in 2019.<sup>2</sup> Women, children and young people are particularly affected by undernutrition and malnutrition,<sup>3</sup> as are people in sub-Saharan Africa.<sup>4</sup> In 2022, almost one in ten people worldwide was undernourished – and almost one in four in sub-Saharan Africa.<sup>5</sup>

## More Food for More People

The population of sub-Saharan Africa will increase by almost one billion by 2050. While the number of people that need a secure food supply in the region is estimated at over 1.2 billion in 2024, this figure will rise to more than 2.1 billion by 2050.<sup>6</sup> At the global level, by 2050 an estimated 50 to 60 percent more food will need to be produced in order to feed the growing pop-

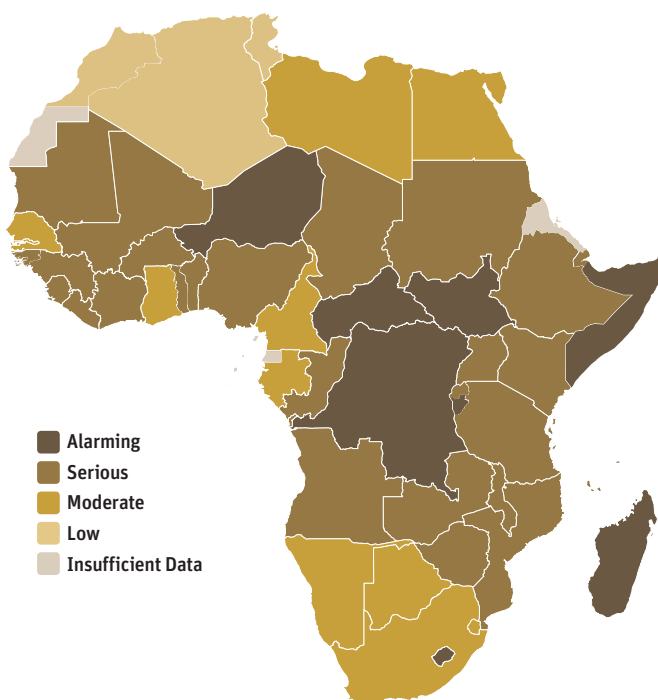
**Food security** exists when all people at all times are able to purchase and afford food in sufficient quantities that is safe and nutritious, allows for a balanced diet, and meets people’s dietary needs and food preferences so they can lead an active and healthy life.<sup>9</sup>

**Food insecurity** includes not only hunger but also all forms of malnutrition, such as an insufficient supply of vitamins and minerals, excess weight, obesity and resulting diet-related illnesses.<sup>10</sup>

ulation.<sup>7</sup> Violent conflict, economic shocks and price increases such as those caused by the war in Ukraine threaten food security. In addition, the consequences of the climate crisis such as droughts, flooding and storms reduce crop yields and place food systems under mounting pressure.<sup>8</sup>

Ending hunger and malnutrition is one of the UN Sustainable Development Goals (SDGs). The availability of and reliable access to adequate food is also a human right. Food security is central to human health and is a precondition for children to be able to learn at school, and for people to work and engage in social activities.

Strategies for better, secure nutrition must factor in population dynamics to ensure adequate food supply for all people. Yet the requirements for food security are determined not only by population growth, but also by changes in the age structure and the geographical distribution of populations between urban and rural areas. For example, increasing urbanisation and migration require appropriate strategies. Conversely, food security also has an impact on population dynamics.



## Where people are going hungry in sub-Saharan Africa

Countries in which hunger is classified as *alarming* by the Global Hunger Index (GHI) are found almost exclusively in sub-Saharan Africa. The GHI score is based on statistics on undernutrition among the population as a whole and on three values for children under the age of five (stunting, wasting and mortality). Poor scores therefore point to the urgent need for action among young children. Undernutrition in childhood is particularly serious and has lifelong effects on health of a person. Food security strategies should consequently focus on children in particular.

Global Hunger Index 2023: Severity of hunger  
(Source of data: Welthungerhilfe<sup>11</sup>)

## How population dynamics and food security are linked

Food security influences population dynamics: It can slow down population growth because a secure food supply reduces child mortality. If, at the same time, socio-economic progress improves living conditions in the form of better health care, education and income opportunities, the birth rate will subsequently decrease, thus advancing the demographic transition\*. Food security can also ensure that people are not forced to leave their homes.

Changes in the size, age structure and geographical distribution of the population create urgent social challenges. In Africa, for example, governments must meet the needs of a growing youth population and respond to urbanisation. Population dynamics thus require that food security strategies are continually adapted and realigned with the changing dynamics.

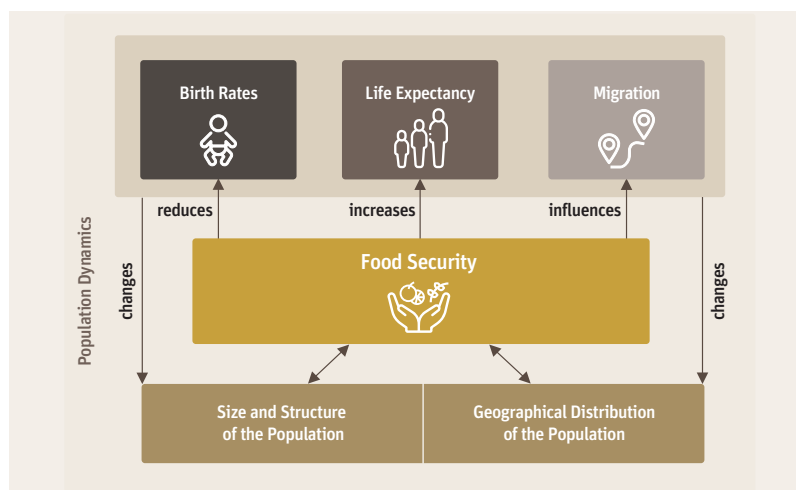


Diagram showing the interactions between food security and population dynamics (own diagram)

## Food Security Reduces Mortality – Particularly Among Children

On average, women in Africa have more children than in other world regions.<sup>12</sup> Food insecurity is particularly harmful for the large number of pregnant women, young mothers and children on the African continent. For example, many pregnant women in sub-Saharan Africa suffer from iron deficiency. Micronutrient deficiencies can lead to serious health complications for mothers and their children. Undernutrition and malnutrition during a woman's pregnancy and the first two years of a child's life (referred to as the *1,000-day window*) can cause irreversible damage to children's health.<sup>13</sup> In 2022, more than a third of children aged under five (around 67 million children) in sub-Saharan Africa were malnourished, which is particularly dangerous at this age and can be life-threatening.<sup>14</sup> Undernourished and malnourished children are more prone to illness and more susceptible to infections. Around the globe, undernutrition is responsible for nearly half of all deaths in children under the age of five.<sup>15</sup> Therefore, **food security for pregnant women, mothers and children should be a top priority.**

## A Healthy Diet Improves Learning Outcomes

Education is the foundation for a self-determined life. Food security improves educational outcomes, because hunger and malnourishment make it more difficult for children to learn. Often, children may also be prevented from attending school because their parents need their help farming so

they can grow enough food for the family. Studies have shown that free school lunch programmes for students improve attendance rates and learning outcomes.<sup>16</sup> For families, free school meals are an additional incentive to send their children to school. This is particularly true for girls, who more often work in the fields or at home while boys go to school. Food insecurity not only increases the likelihood of girls not going to school but can also put them at greater risk of being forced into marriage at an early age. As a result, school-based food programmes contribute to enabling women and girls to have more education and employment opportunities. School meals are thus an important starting point to improve food security for families – and especially women and girls – and to create a brighter future for young people.

## Harnessing the Potential of the Agricultural Sector

Continuing population growth means that the number of people of working age (15 to under 65) in sub-Saharan Africa will double by 2050, reaching up to 1.3 billion.<sup>17</sup> This population will need income opportunities together with social protection measures (see BI fact sheets on 'Population Dynamics and Employment Promotion' and 'Population Dynamics and Social Protection') to secure livelihoods and improve living conditions. Currently – with some variation across countries – just over half of the workforce in sub-Saharan Africa works in the agricultural sector.<sup>18</sup> Despite the challenges created by the climate crisis, the hopes of the African continent rest on the agricultural sector. Not

only could it produce considerably more food than it does at present but it could also generate many more jobs, thus driving an economic transformation.<sup>19</sup> Progress in the agricultural sector reduces poverty to a much greater extent than progress in other areas of the economy.<sup>20</sup> To achieve food security, **training opportunities and jobs must be created throughout the agricultural sector** – from production to marketing and trade.

### GOOD PRACTICE

#### Using School Cafeterias to Bolster Children's Nutrition and Local Markets

The NGO *CICODEV Africa* works with partner organisations to support school cafeterias in several regions of Senegal. The objective is to strengthen food security for 9,000 students, thus allowing them to focus better on learning. The cafeterias favour short supply chains. They mainly source supplies from local producers, such as vegetables and rice from smallholder organisations, and processed foods such as groundnut paste from women's groups. This improves children's diet and health as well as their educational achievements. In addition, the school cafeterias support food producers' access to local markets and in turn their household incomes.<sup>21</sup>

## Sustainable Agriculture as a Key to Food Security

A rapidly growing population **requires not only a more efficient food supply but also a more productive agricultural sector.**

This is necessary primarily because climate change, urbanisation and unsustainable farming are causing the loss of agricultural land.<sup>22</sup> Africa is more affected by land degradation than any other continent.<sup>23</sup> Innovations and new technologies can help the agricultural sector produce higher yields while saving resources and avoiding environmental damage. The use of high-tech solutions and precision farming systems must be combined with organic farming

methods.<sup>24</sup> Development cooperation should work to ensure that **disadvantaged populations, including women, are also able to increase their crop yields using environmentally sustainable methods.**

Ensuring women's participation in a modern agricultural sector increases their autonomy and a country's agricultural production.<sup>25</sup>

Population growth is exacerbating the shortage of available farmland.<sup>26</sup> Agricultural land per capita has been declining in sub-Saharan Africa for decades. In 1990, 0.3 hectares were available per capita, but by 2021 it was only 0.2 hectares.<sup>27</sup> Young people often inherit little or no farmland, preventing them from entering the agri-

cultural sector in their home region, often forcing them to move elsewhere.<sup>28</sup> However, smallholder agriculture is seen as the key to food security, better living conditions and hence socio-economic development in rural areas.<sup>29</sup> The food and agricultural system must therefore be tailored to the needs of smallholder agriculture. Secure land titles and a just distribution of land are decisive factors to secure the livelihoods and food security of vulnerable populations and those affected by poverty. **Solutions that address the shortage of farmland and land rights are therefore urgently required.** This includes supporting cooperative communities in the diverse use of land.

## Promoting Gender Equality to Fight Hunger

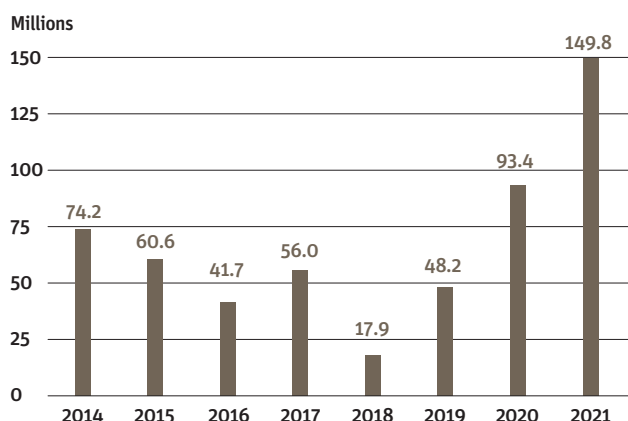
Women are systematically disadvantaged when it comes to accessing food.<sup>30</sup> Although women produce most of the food and are usually responsible for family health and nutrition, women and girls are more likely to experience food insecurity than men and boys.<sup>31</sup> Worldwide, 150 million more women are affected by food insecurity than men.<sup>32</sup> In many households, women and girls eat last during family meals. This has cross-generational impacts,<sup>33</sup>

endangering the health of women and girls as well decreasing their educational opportunities and those of their children. In sub-Saharan Africa, 66 percent of working women are employed in the agricultural sector – yet women have less access to resources such as land titles, credit and technology.<sup>34</sup> This makes it more difficult for women to produce food independently. Agricultural land farmed by women is 24 percent less productive than farms of the same size belonging to men.<sup>35</sup> As a result,

more women migrate to towns and cities, resulting in a societal loss in terms of the tremendous contribution that women could make to food production.<sup>36</sup> Far-reaching measures to dismantle patriarchal structures in all areas of society – ranging from social norms and decision-making structures within families to education and health systems – are necessary to achieve sustainable food security for women and girls.<sup>37</sup>

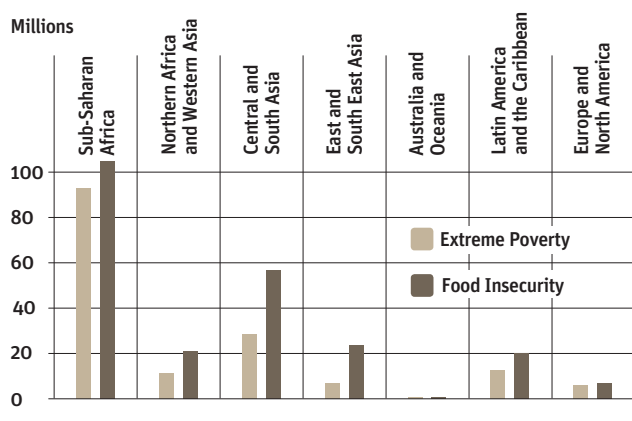
## Women are more likely than men to experience hunger worldwide

Women are more often affected by food insecurity than men. In 2014, 74 million more women than men suffered from hunger or undernutrition; in 2021, this figure doubled to 150 million. The climate crisis will cause crop failures and will further destroy livelihoods, thus exacerbating the risk of hunger and poverty among women and girls. In 2050, as many as 240 million more women and girls will not have enough to eat and 160 million more will be living in extreme poverty. Women in sub-Saharan Africa are particularly affected by this trend.



Additional number of women affected by food insecurity compared with men, in millions

(Source of data: CARE<sup>38</sup>)



Additional number of women and girls pushed into extreme poverty and food insecurity by the climate crisis, by region: forecasts for 2050, worst case scenario

(Source of data: UN Women & UN DESA<sup>39</sup>)

#### GOOD PRACTICE

### Enforcing Land Rights and Strengthening Women's Agricultural Production

Women rarely have secure long-term access to farmland in Africa. Land titles are usually held by men or by communities led by men. As a result, women often lose access to land after divorce or the death of a spouse.<sup>40</sup> The women's organisation *GROOTS Kenya* supports thousands of women-led groups across Kenya. Its aim is to involve women and girls in social development at the local level and to strengthen their decision-making power. GROOTS offers information and training for women so that they can enforce and monitor their land rights. Through this, women have been able to get listed in community registers and become members of committees responsible for communal land.<sup>41</sup>

### Migration as a Challenge and an Opportunity for Food Security

Migration calls for changes in food security strategies. The number of displaced persons is growing across the globe. In 2022 alone, 16.5 million people were forced to flee their homes in sub-Saharan Africa – 9 million as a result of conflict and violence, and 7.4 million due to natural disasters. Within this context, food security is a major reason for internal displacement and international migration.<sup>42</sup> Studies show that especially members of rural households affected by poverty move to cities or to more fertile rural areas in order to reduce the risk of food insecurity.<sup>43</sup> In sub-Saharan Africa in particular, the results of the climate crisis, including crop failures and associated job losses are already forcing large numbers of people to move – impacts that will worsen in the future.<sup>44</sup> Yet not everyone can leave their home. (Internal) migration is often not an option for particularly vulnerable groups, such as people affected by extreme poverty, the elderly, mothers with young children and people with disabilities. **Hunger and displacement are often linked, which is why it is important to recognise migration as a survival strategy.**<sup>45</sup>

Not only does food insecurity lead to an increase in migration, but migrants are also particularly affected by hunger, both during migration and after arriving in their new community.<sup>46</sup> In Cameroon, 87 percent of displaced persons in one survey reported difficulties in obtaining food. Migrants suffer from hunger much more frequently than people who have not been displaced.<sup>47</sup> **Food security strategies must adopt a forward-looking approach that takes migrants and migration movements into account and offers measures tailored to their needs.**

### Urbanisation is Transforming Food Systems

Many people suffer from food insecurity in both rural and urban areas. In Africa, for example, two thirds of the rural population and slightly more than half of the urban population are affected. In towns and cities, certain population groups are at greater risk: women and children, people living in poverty, residents of slums and migrants who have recently arrived.<sup>48</sup>

By the middle of the century, the number of people living in towns and cities in Africa will more than double: from 515 million city dwellers in 2023 to an estimated 1.26 billion in 2050.<sup>49</sup> The climate is expected to exacerbate this trend because (internally) displaced persons primarily move to cities.<sup>50</sup> According to current estimates, in 2050 80 percent of food worldwide will be consumed in cities.<sup>51</sup> Urbanisation is also strengthening rural-urban interconnectedness and interdependence.<sup>52</sup> In Meru, Tanzania, for example, urbanisation has boosted the demand for milk and created a reliable source of income for smallholder dairy farmers in a region where fertile arable land is in short supply.<sup>53</sup> **Food security strategies should therefore factor in the impacts of urbanisation.**

Cities depend on their surrounding areas for their food supply.<sup>54</sup> If rural areas increasingly offer a professionalised, strong agricultural sector with better income opportunities and greater food security, they will become a more attractive place to live. It is even conceivable that more and more city dwellers will return to rural areas

to try their hand at agricultural entrepreneurship (agripreneurs).<sup>55</sup> On the one hand, **rural-urban interconnectedness should be fostered.** On the other hand, **agriculture in the direct vicinity of urban areas should be supported**<sup>56</sup> to shorten transport routes and promote local production, **and the potential of urban agriculture should be considered as part of food systems.**<sup>57</sup>

#### GOOD PRACTICE

### Food Security in Cities via Irrigated Agriculture in Peri-urban Areas

On the outskirts of N'Djamena, the capital of Chad with more than one million residents, France's *Agence Française de Développement* (AFD) is promoting agricultural development in the Bahr Linia river basin. By constructing water infrastructure such as bridges and fish ponds the project aims to restore water to the river basin in a controlled manner so that it can be used for agricultural purposes year-round for and in different manners. It is rehabilitating the natural ecosystem along the river and developing an area for growing fruit and vegetables as well as for livestock and fish farming in order to supply the markets of N'Djamena with a range of fresh products. Peri-urban agriculture supports the creation of sustainable, resilient and regional food systems in the vicinity of growing cities. At the same time, it strengthens agricultural production in areas where water is scarce.<sup>58</sup>

## Recommendations

Development cooperation institutions can promote food security more effectively if they factor in the effects of population dynamics such as population growth and migration. This will improve people's health and living conditions as well as their societal inclusion and participation. Moreover, food security is conducive to socio-economic progress. Harnessing synergies between health, agriculture, education and gender equality more effectively within food systems and making advances in these areas can accelerate the demographic transition. In turn, the associated changes in the age structure of the population can facilitate an economic upturn.

However, focusing on regional population dynamics must not distract from the fact that global developments have a strong impact on food security and socio-economic progress. The German Advisory Council on Global Change (*Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen*; WBGU), among others, points to some of the causes of problems in global food systems.<sup>59</sup> On the production side, these include international agricultural policies in addition to a concentration of power among a few corporations in the agricultural industry and trade sector. Food security can only be achieved if all actors – including decision-makers in Europe – **fundamentally and globally restructure business practices and production systems and transform dietary habits.**

In order to ensure sufficient, healthy food for all people within the planetary boundaries German development cooperation must take action in a number of areas. With a view to population dynamics, development cooperation organisations should...

■ ... **take greater account of each partner country's population development, age structure and geographical distribution** when designing, implementing and evaluating food security measures.

■ ... **draw attention to the advantage of a socially just, sustainable food system for the demographic transition and socio-economic progress** in their work with partner countries

■ ... emphasise **supporting particularly disadvantaged population groups in the food system.** To do so, they must ensure the inclusion of **the perspectives of women, children, young people and other disadvantaged population groups when analysing, planning and evaluating measures.**

■ ... **strengthen the role of women and girls and give top priority to food security for pregnant women, mothers and children** in all areas of society – not only to compensate for the greater risk they face and to improve their prospects, but also to harness the huge potential women offer for the development of society as a whole. Secure, socially just and sustainable food systems can only be built hand-in-hand with gender equality and targeted support for women.

■ ... **link sexual and reproductive health and rights (SRGR) with food and income security.** This is the basis for enabling women and girls to lead self-determined lives.

■ ... **focus more on schools as places for food security measures.**

■ ... **give adequate consideration to migrants, displaced people and refugees and their needs** in food security strategies. A long-term view is necessary to factor in future migration.

■ ... **take account of the challenges and potential of urbanisation** in food security strategies – in urban and rural areas and the places in between.

■ ... **ensure that social protection instruments increase food security in the short and long term,** for example through money and food transfers (see BI fact sheet on 'Population Dynamics and Social Protection'<sup>70</sup>).

■ ... **help to improve data availability, invest in research and develop analytic capacity in partner countries** to gain a better understanding of the interactions between food security and population dynamics. Projections of population development help in designing successful food security measures.



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\* During their socio-economic development, all countries undergo a demographic transition – albeit at different times and at different speeds. For more information, please visit: <https://www.berlin-institut.org/en/focus-areas/demographic-dividend>

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