

# The World Today and the Food Security Challenge



Photo Courtesy of The World Bank

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# Defining Food Security

The four pillars of food security are: availability, access, utilization, & stability.



Levels of food security: individual, household, national, regional, and global.

***“A situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets dietary needs and food preferences for an active and healthy life.” (FAO)***

Photo by Burniske

# Definitions of malnutrition indicators

- **Low birth weight**
  - Less than 2,500 grams
- **Underweight:** weight for age
  - Indicates short term malnutrition
- **Wasting:** weight for height
  - Indicates **acute** food shortages
  - Strong indicator of mortality
- **Stunting:** height for age
  - Indicates **chronic** malnutrition
  - Typically before two years old and irreversible
- **Mid-upper arm circumference - MUAC**



# Micro-Nutrient Deficiencies - **Hidden Hunger**

## Major issues

- Vitamin A deficiency (VAD)
- Iron Deficiency (ID/A)
- Iodine Deficiency (IDD)

## Also of concern

- Selenium
- Zinc
- Folic Acid
- B Vitamins
- Vitamin D

# Poverty



- **3.4 billion people** — still struggle to meet basic needs
- **1.9 billion people, or 26.2% of the world's population,** were living on less than \$3.20 per day in 2015
- **73% of global farms** are smaller than 1 ha; 85% are smaller than 2 ha
- **25% of the rural poor** are landless
- **12% of the rural poor** are composed of pastoralists/herders & fisherfolks

# **Impact of COVID-19 on Poverty**

- About a **half a billion people were pushed into poverty** just as the world experiences the worst economic fallout since the Great Depression.
- According to the International Food Policy Research Institute (IFPRI), for every **1% decline in global economic growth, 14 to 22 million people are forced into extreme poverty.**
- David Malpass, President of the World Bank, stated that COVID-19 pushed an additional **100 million people into extreme poverty.**
- World Bank figures show remittances to low- and middle-income countries could **drop at least 14 percent by 2021, resulting in an additional 33 million people at risk of hunger.**

# Impact of COVID-19 on Food Prices

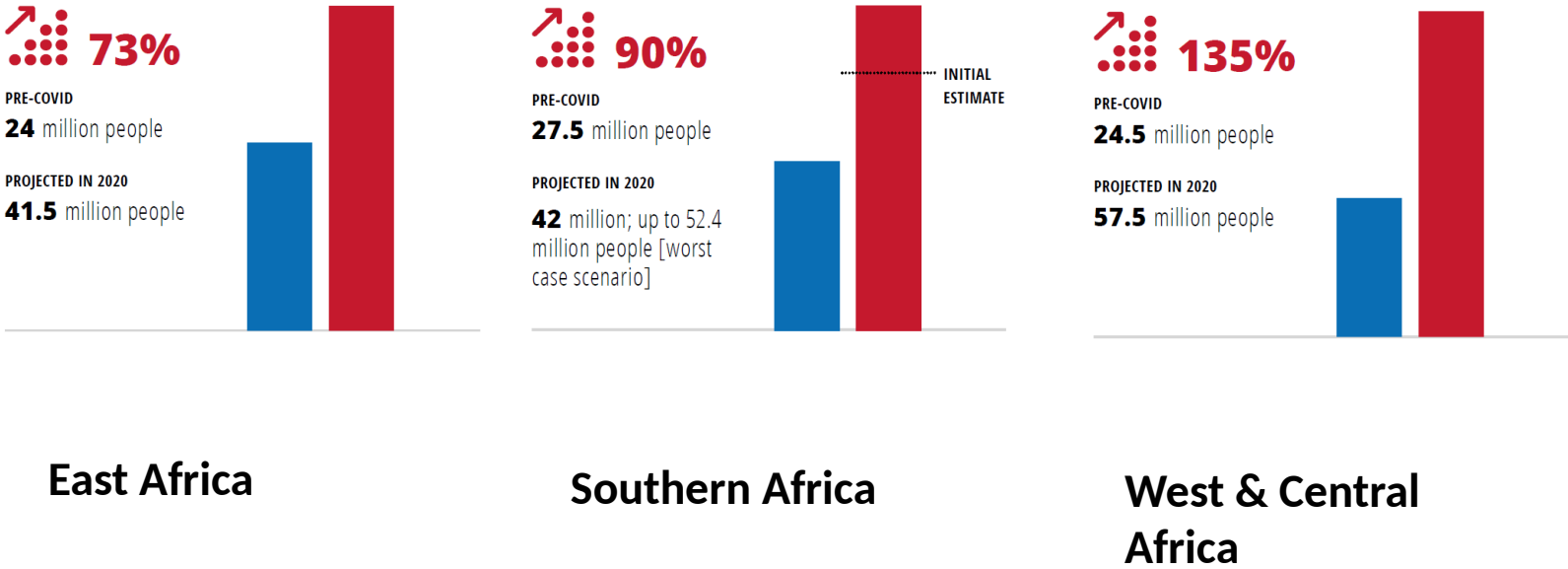
- In 2021, the Agricultural Commodity Price Index climbed **25% higher** than the previous year and wheat prices rose 34%.
- Monthly food costs in Syria increased by **240%** and the number of **food insecure people increased by 1.4 million**.
- In 2021, South Sudan saw prices of **wheat and cassava skyrocket by 62% and 41%** and the price of **maize in Kenya rose by 60%** over prices in 2019.
- In 2021, the price of rice in Nigeria rose by **30%** and **food prices in Sudan tripled**.
- In 2021, Ghana saw the price of basic food products jump by as much as **33%**.
- Nutrient-rich foods like **eggs, fruits, and vegetables were 10 times more expensive** than staple foods like rice or wheat in sub-Saharan Africa

# Impact of COVID-19 on Hunger

- In 2021, the UN determined that four countries – Ethiopia, Madagascar, South Sudan and Yemen – experienced famine-like conditions and nearly three dozen more countries were on the brink of famines, pushing an additional 130 million people to the edge of starvation.
- In 2021, the largest locust outbreak in 70 years in Africa compounded the devastating impact of COVID-19 and threatened to push 25 million East Africans into hunger.
- The World Food Program stated that **a real danger that more people could potentially die from the impact of COVID-19 on hunger than from the virus itself.**
- **85 million children** in Latin America and the Caribbean, who heavily relied on **school feeding programs to combat malnutrition and micronutrient deficiencies**, no longer had access to this crucial social safety net.
- In South Africa, school closures during 2020-2021 stopped a national feeding program that provided nutritious meals to **9 million poor children.**

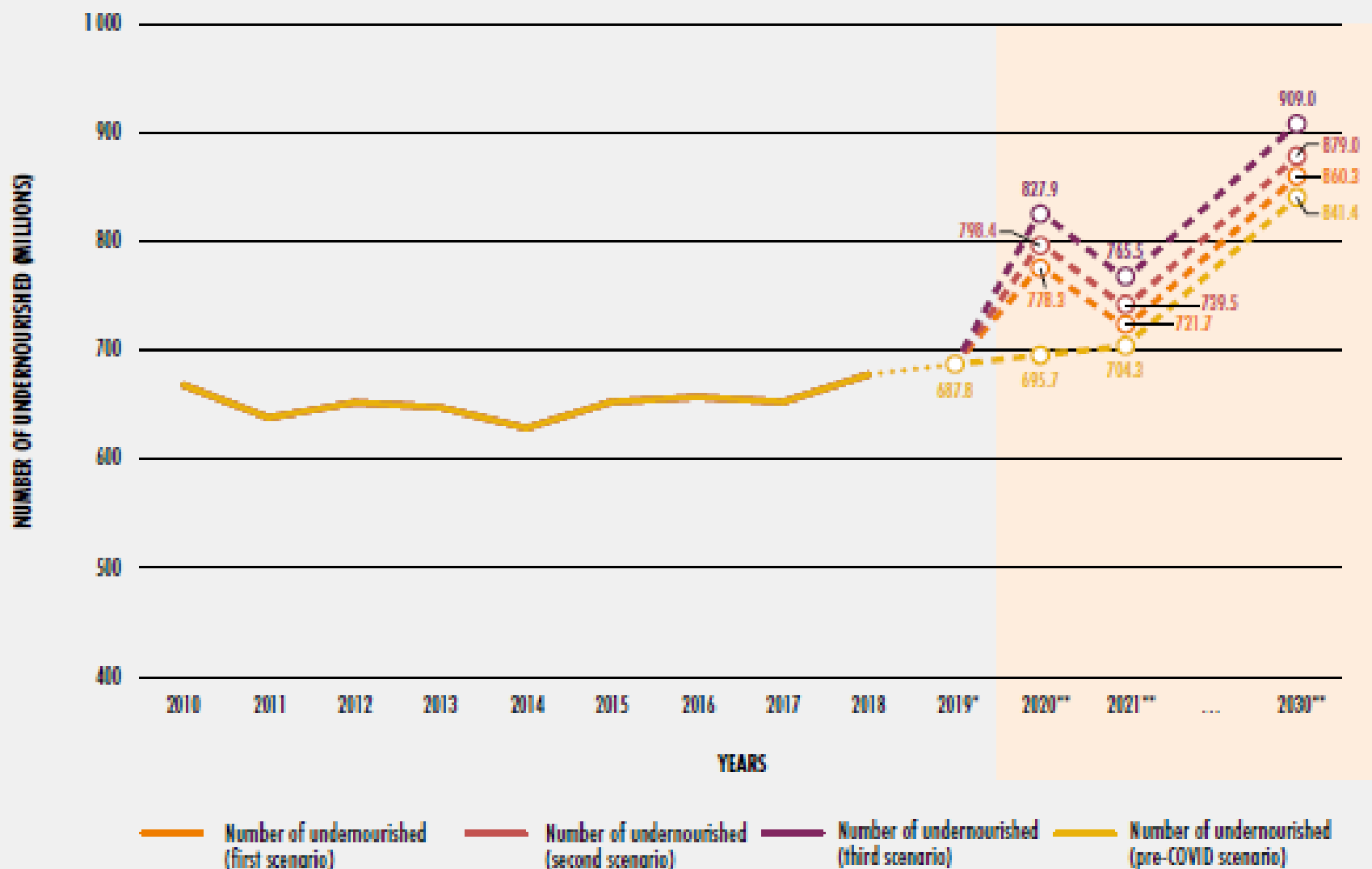


# Food Insecurity Estimates for 2020 in Sub Sahara Africa Due to the COVID-19 Pandemic



Source: WFP

# HOW THE COVID-19 PANDEMIC MAY AFFECT HUNGER IN THE WORLD: THREE SCENARIOS



NOTES: The shaded area represents the projections for the longer period from 2019 to the 2030 target year.

SOURCE: FAO.

# Take Home Points – COVID-19 AND FOOD SECURITY

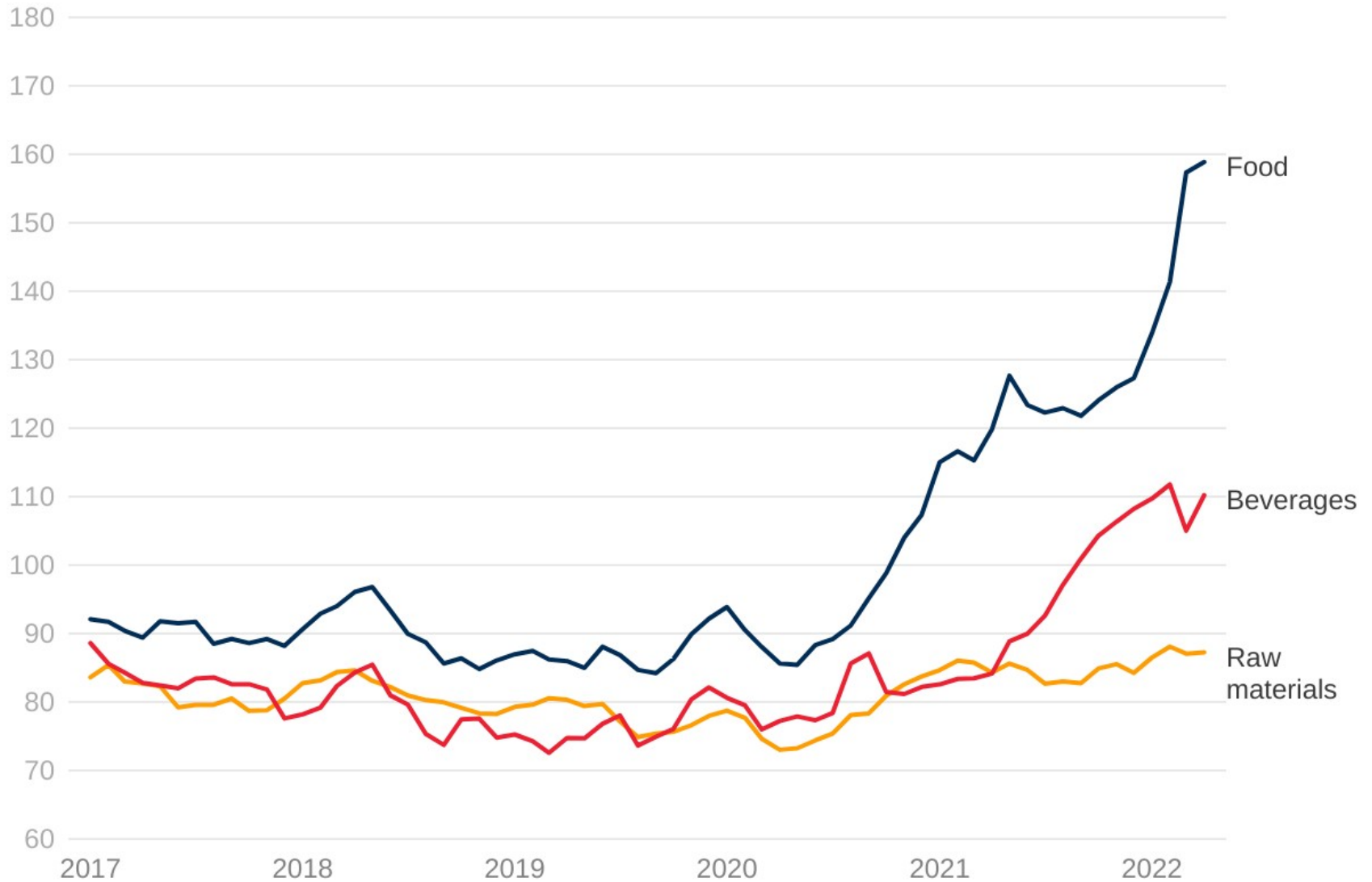
- People who are already hungry and food insecure – an estimated 825 million people are suffering the most and on the brink of famine dimensions.
- People who are dependent upon informal sector have extremely high unemployment rates, and because they live “hand to mouth” are hardest hit by COVID-19, and are entering into a stage of extreme poverty and high food insecurity.
- Climate change, conflict and natural disasters are compounding the problem of food insecurity.
- The global prospects for a quick recovery are dim, and “the worst is yet to come” in terms of food insecurity.
- International assistance is critical to responding to the looming food crisis.

# **Compounding Climate Change, COVID and the Russian-Ukraine Conflict on Food**

- Escalating food prices globally.
- High energy costs along the food supply chain.
- Climate extremities – heat, drought, floods resulting in crop stress exasperated by pest outbreaks.
- Migration and labor shortages.
- Rising prices for agricultural inputs.
- Trade restrictions.

# Agriculture price indexes

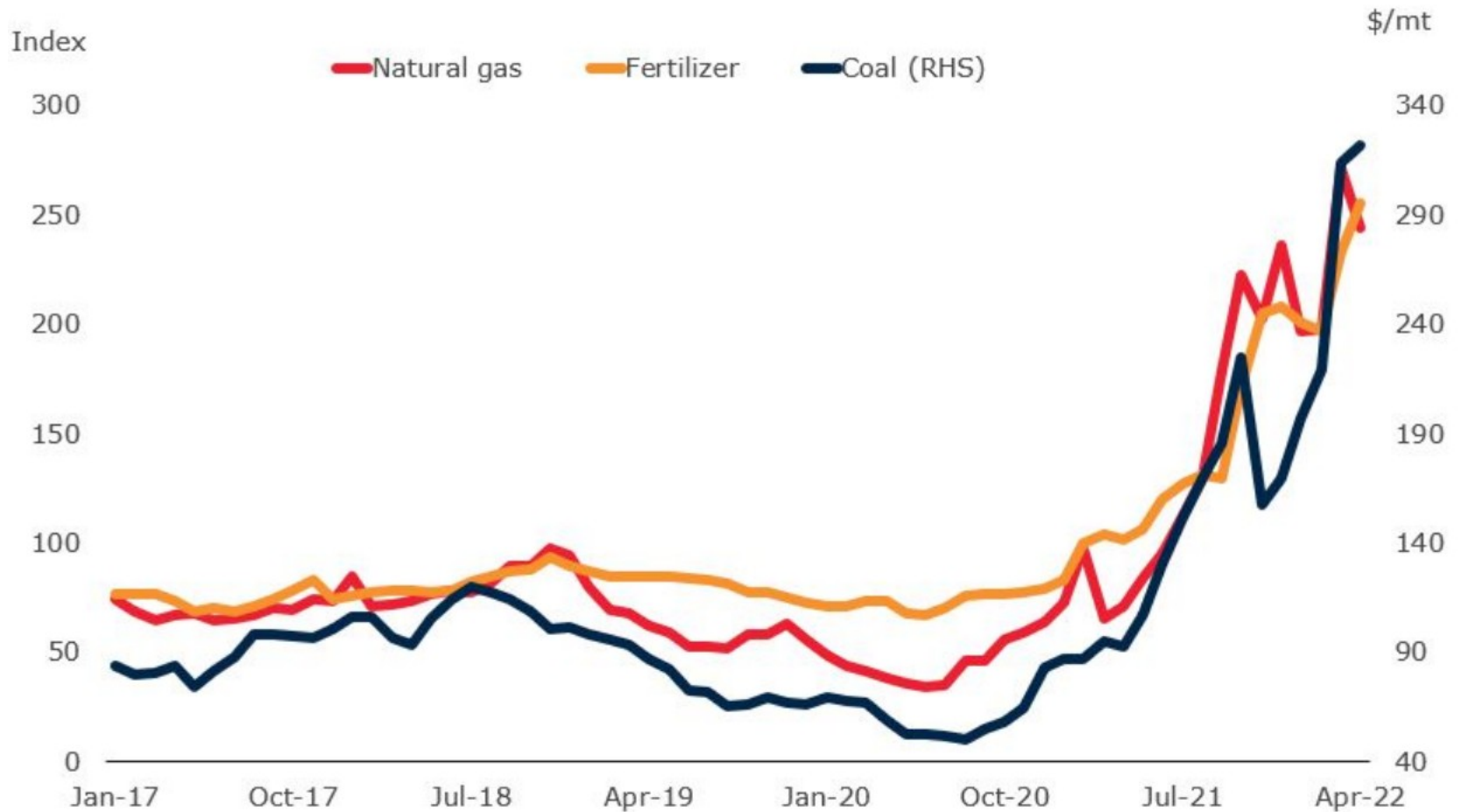
US\$ indexes, 2010 = 100



Note: Last observation is April 2022.

Source: World Bank.

## Agriculture input prices

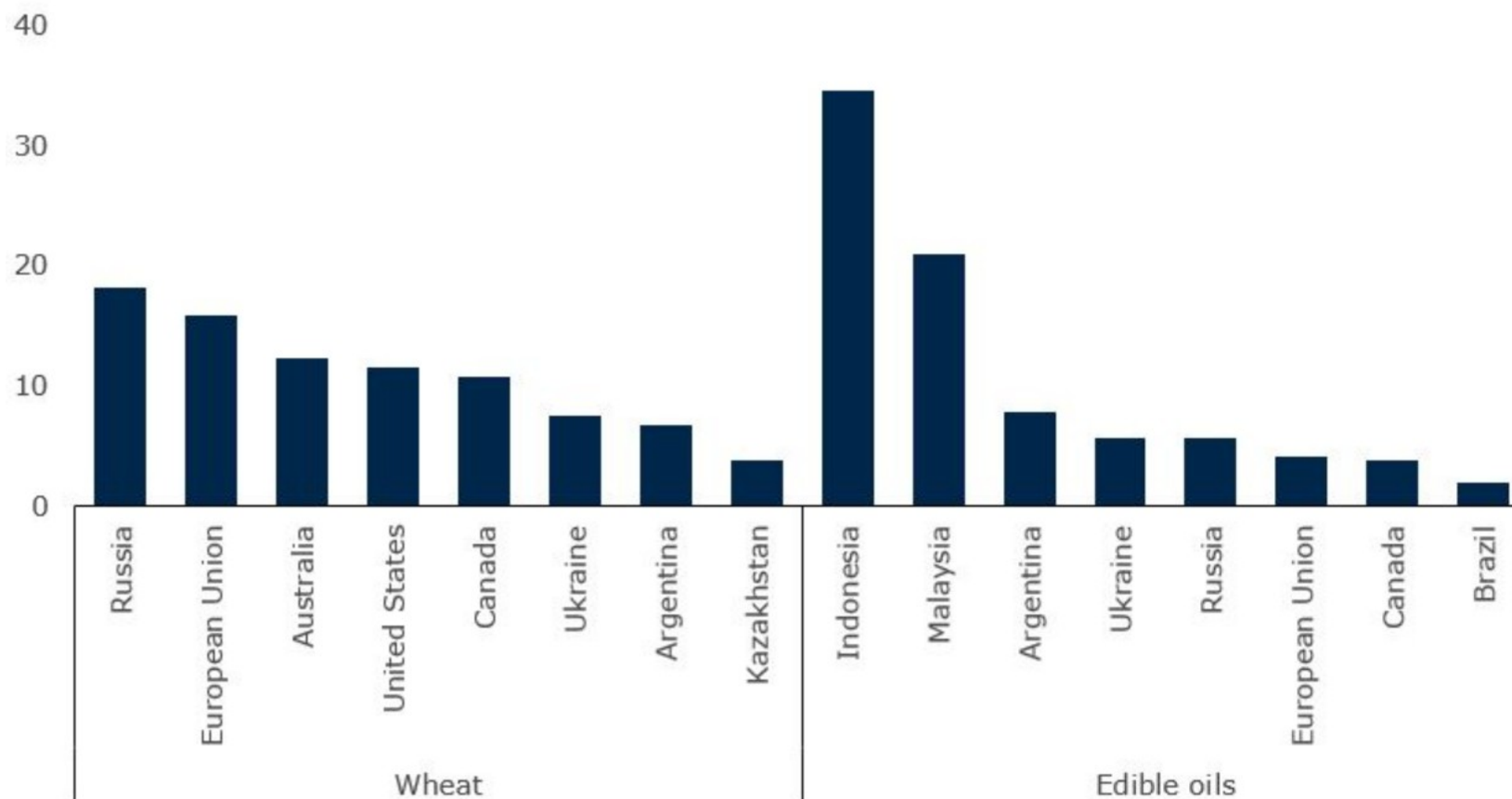


Note: Last observation is April 2022.

Source: World Bank.

## Top exporters of wheat and edible oils

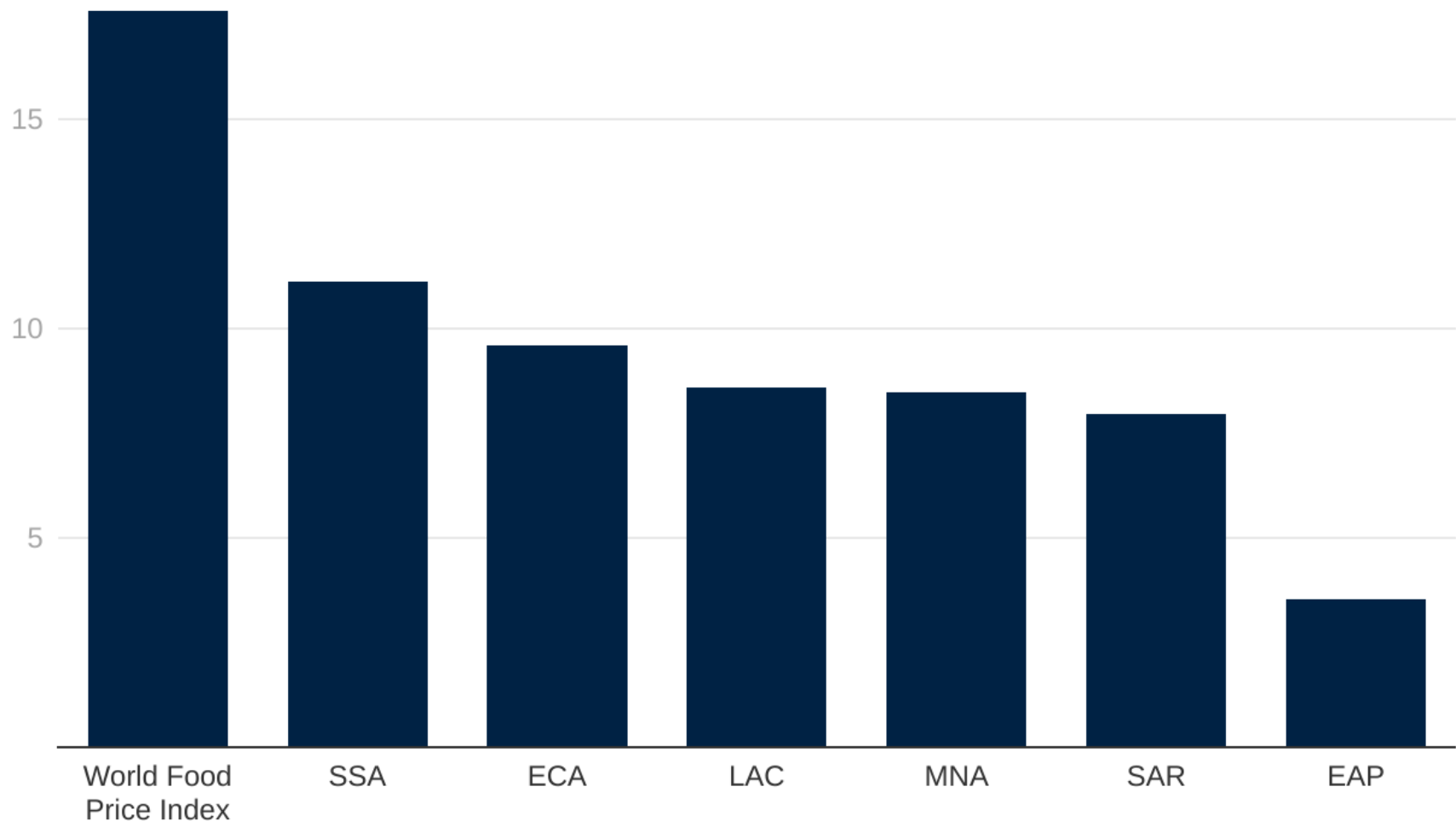
Percent of world exports



*Note: Largest eight exporters of wheat and edible oils, average 2020-2022.*  
**Source: U.S. Department of Agriculture; World Bank.**

# World and regional inflation on Food Prices

Percent, y/y



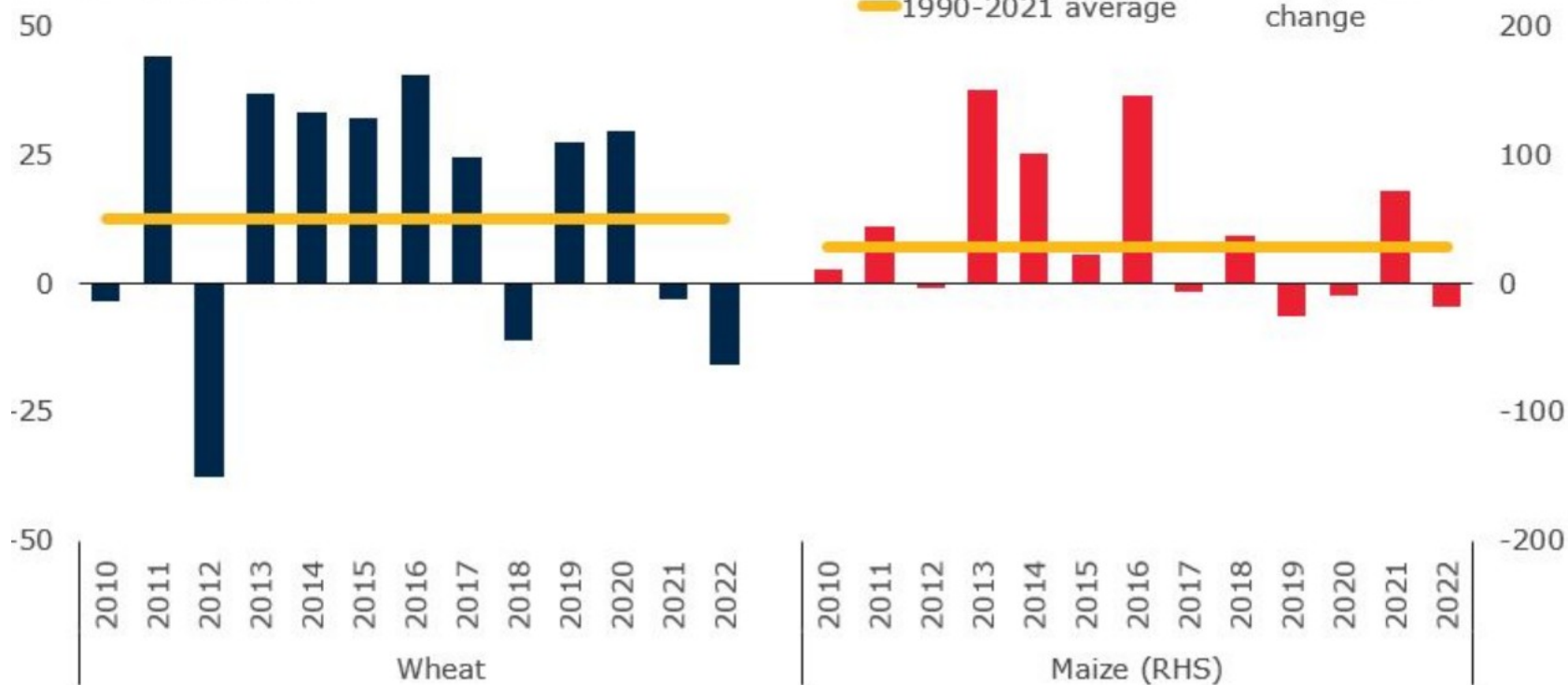
*Note: Bars denote year-on-year food price inflation (average of January-March 2022). EAP = East Asia and Pacific, ECA = Europe and Central Asia, LAC = Latin America and the Caribbean, MNA = Middle East and North Africa, SAR = South Asia, SSA = Sub-Saharan Africa; EMDEs = emerging markets and developing economies.*

Source: World Bank.



# Wheat and maize supply growth

mmt, annual change



Note: Years represent crop seasons (for example, 2019 refers to 2019-20). Supply is the sum of beginning stocks and production.  
 Source: U.S. Department of Agriculture; World Bank.

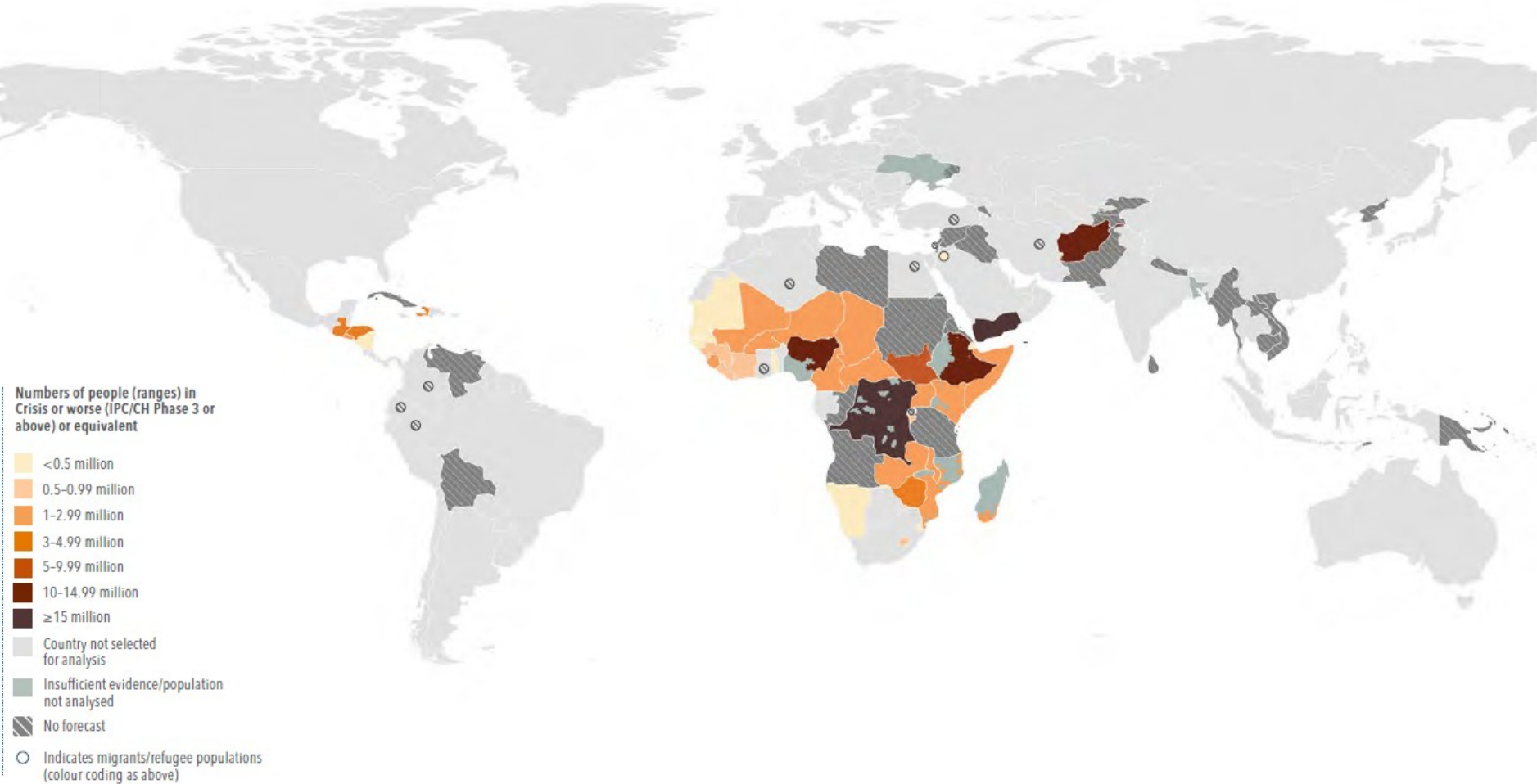
# Global Report on Food Crisis 2021

## IPC/CH acute food insecurity phase description and response objectives

IPC – Integrated Phase Classification system

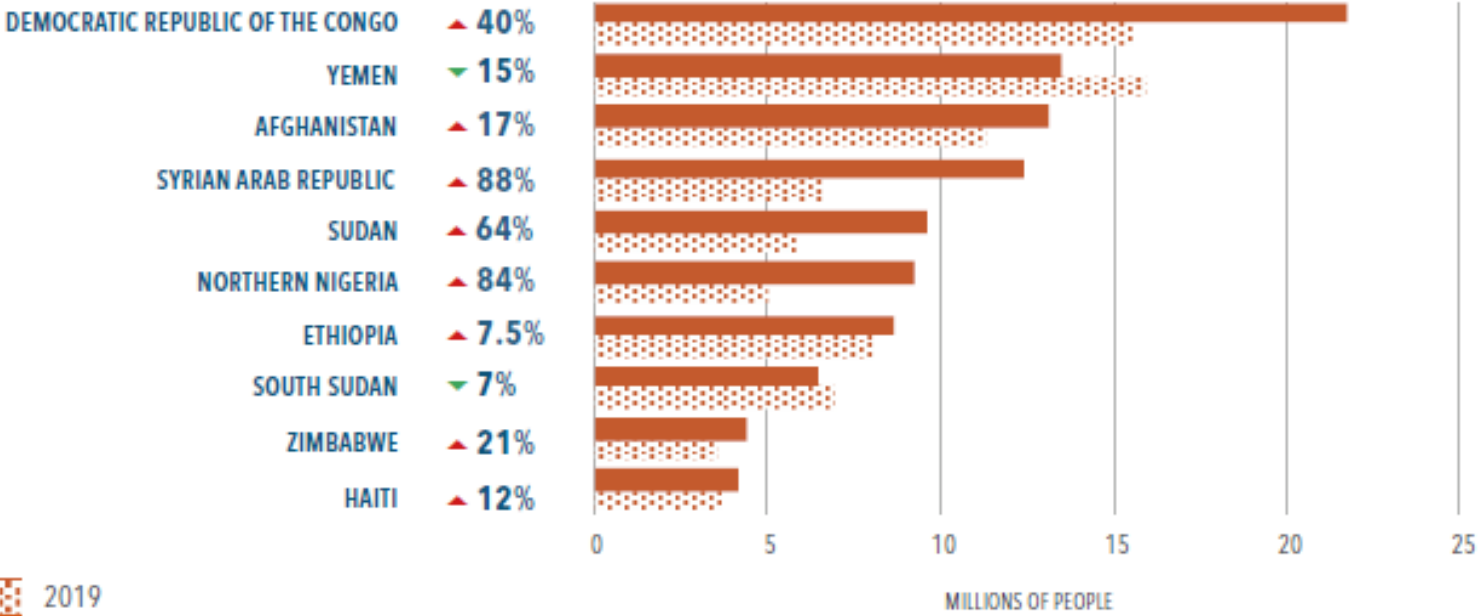
Phase	Phase description and priority response objective
Phase 1 <b>None/Minimal</b>	Households are able to meet essential food and non-food needs without engaging in atypical and unsustainable strategies to access food and income. <b>Action required to build resilience and for disaster risk reduction.</b>
Phase 2 <b>Stressed</b>	Households have minimally adequate food consumption but are unable to afford some essential non-food expenditures without engaging in stress-coping strategies. <b>Action required for disaster risk reduction and to protect livelihoods.</b>
Phase 3 <b>Crisis</b>	Households either: <ul style="list-style-type: none"> <li>• Have food consumption gaps that are reflected by high or above-usual acute malnutrition; <i>or</i></li> <li>• Are marginally able to meet minimum food needs but only by depleting essential livelihood assets or through crisis-coping strategies.</li> </ul> <b>URGENT ACTION required to protect livelihoods and reduce food consumption gaps.</b>
Phase 4 <b>Emergency</b>	Households either: <ul style="list-style-type: none"> <li>• Have large food consumption gaps which are reflected in very high acute malnutrition and excess mortality; <i>or</i></li> <li>• Are able to mitigate large food consumption gaps but only by employing emergency livelihood strategies and asset liquidation.</li> </ul> <b>URGENT ACTION required to save lives and livelihoods.</b>
Phase 5 <b>Catastrophe/Famine</b>	Households have an extreme lack of food and/or other basic needs even after full employment of coping strategies. Starvation, death, destitution and extremely critical acute malnutrition levels are evident. (For Famine classification, area needs to have extreme critical levels of acute malnutrition and mortality.) Famine and Famine Likely classifications are equally severe, the only difference is the amount of reliable evidence available to support the statement. <b>URGENT ACTION required to revert/prevent widespread death and total collapse of livelihoods.</b>

# Around 142 million people in Crisis or worse (IPC/CH Phase 3 or above) or equivalent in 40 countries/territories in 2021



Note: Migrant/refugee populations refers to: Venezuelan migrants in Colombia, Ecuador and Peru; Sahrawi population in Algeria; refugees, mostly Syrian, in Egypt, Jordan, Lebanon and Turkey; mostly Afghan in Iran (Islamic Republic of); mostly Ivorian in Ghana and mostly Congolese and Burundian in Rwanda. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.  
 Source: FSIN GRFC May 2021.

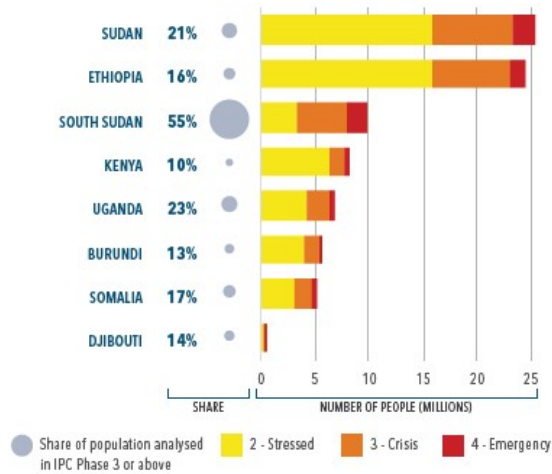
# Change in numbers of people in IPC/CH Phase 3 or above (or equivalent) in the 10 worst food crises, 2019-2020



Note: The 2019 and 2020 analyses are not fully comparable for Democratic Republic of the Congo, Ethiopia, northern Nigeria and Sudan.  
 Source: FSIN. GRFC 2021.

## Numbers of people in Stressed or worse (IPC Phase 2 or above)

and share of population analysed in Crisis or worse (IPC Phase 3 or above)



Source: FSIN, using IPC data.



### 52.8M people

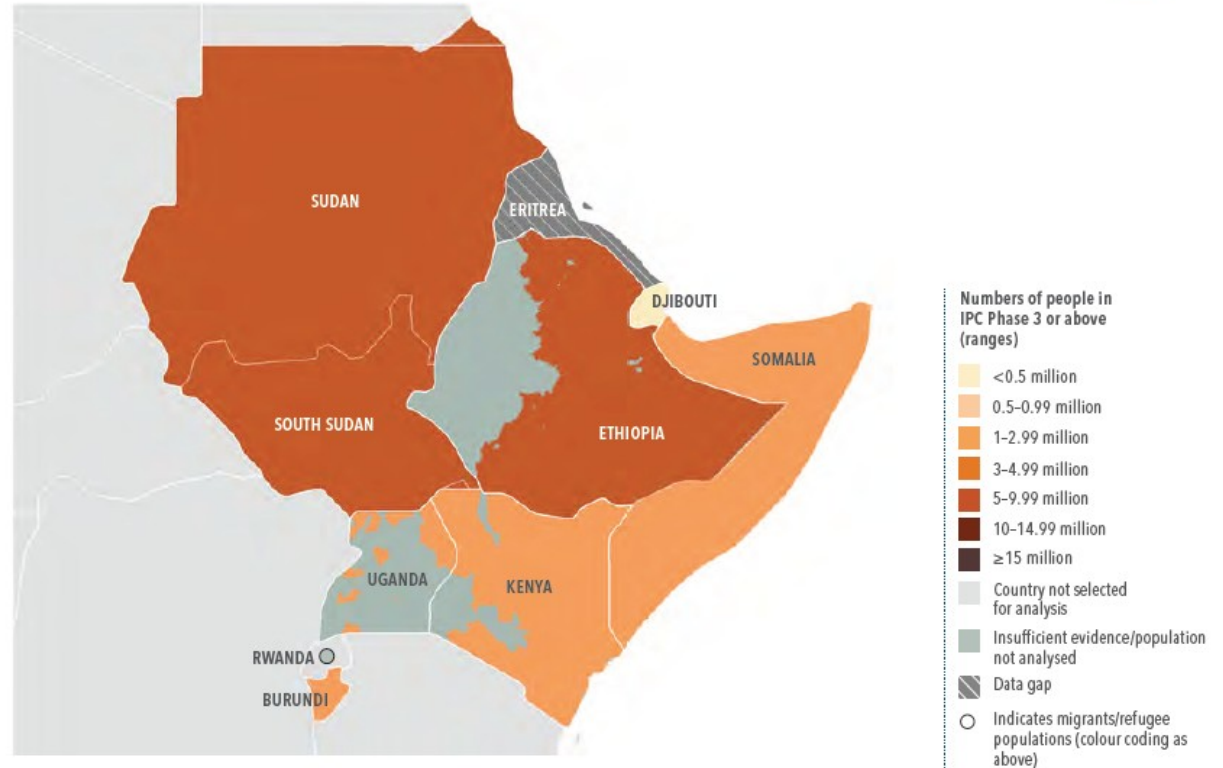
in 8 countries in East Africa were in Stressed (IPC Phase 2).



### 31.4M people

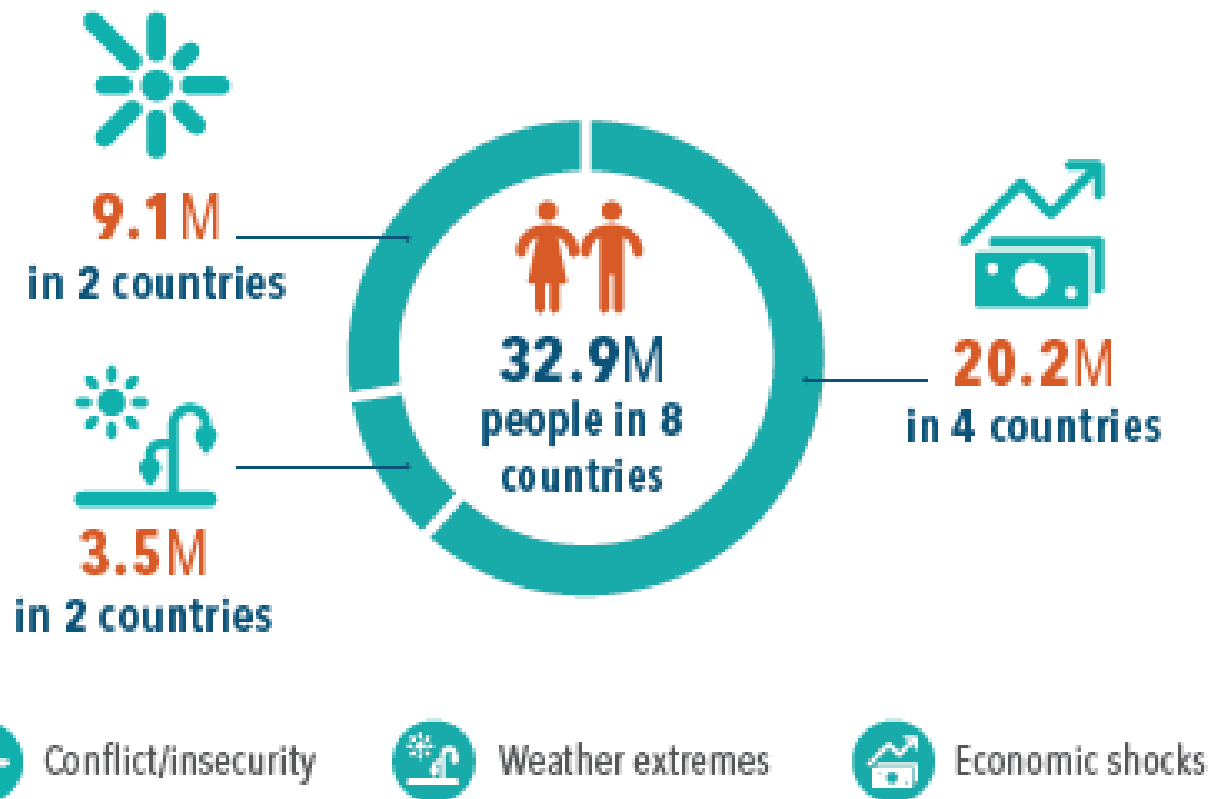
in Crisis or worse (IPC Phase 3 or above) in 7 of the 8 IGAD member states: Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan, Uganda.

## Across the region, 75 percent of people in Crisis or worse (IPC Phase 3 or above) were in three countries, Sudan, Ethiopia and South Sudan



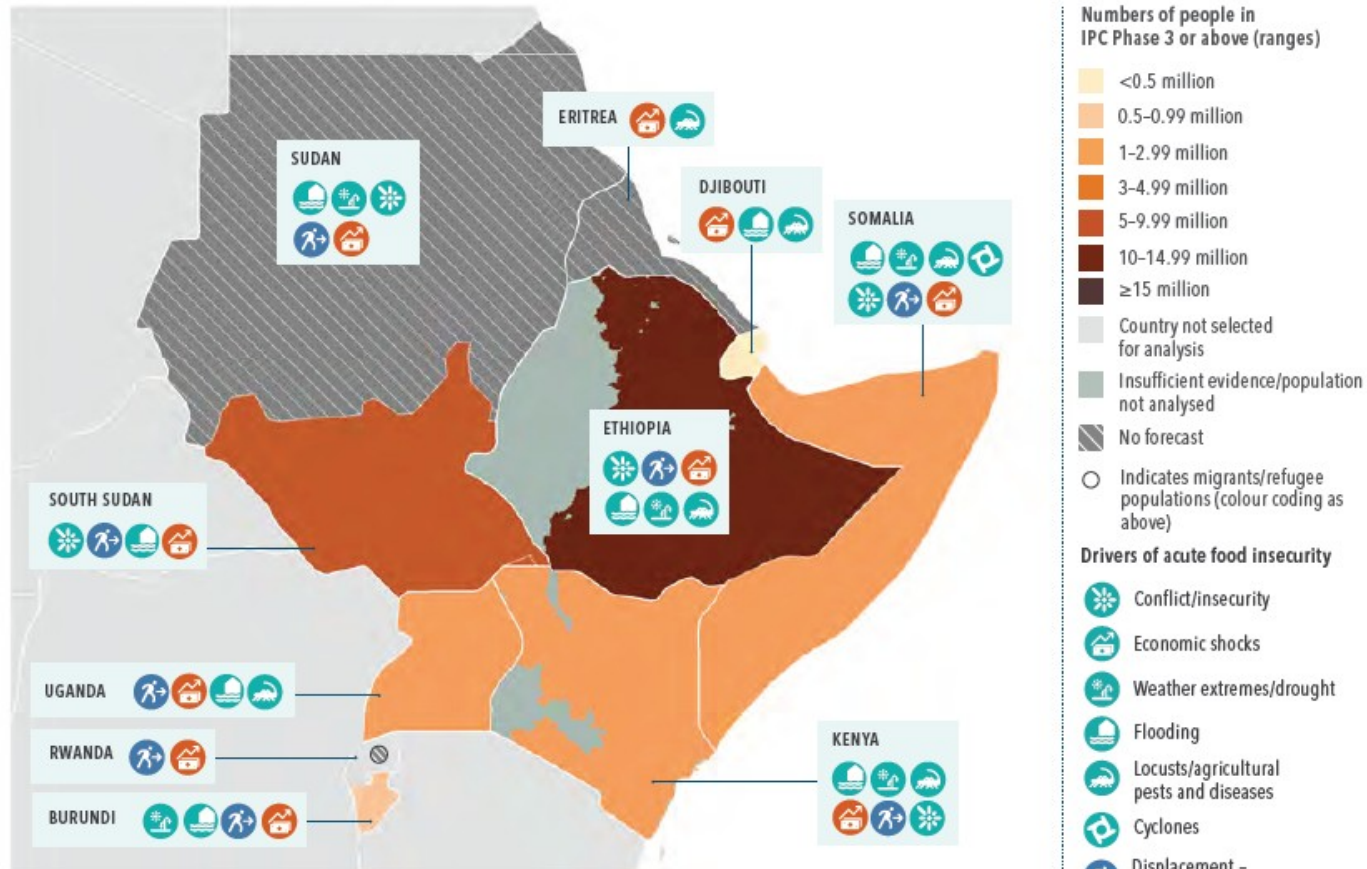
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. Final status of the Abyei area is not yet determined. Source: FSIN, GRFC 2021.

## Numbers of people in Crisis or worse (IPC Phase 3 or above) by key driver in 2020



Note: Many food crises are the result of multiple drivers. The GRFC has based these infographics on the predominant driver in each country/territory.  
Source: FSIN, GRFC 2021.

# East Africa, acute food insecurity estimates and drivers in 2021



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. Final status of the Abyei area is not yet determined. Source: FSIN, GRFC 2021.





# Climate Change and Food Security

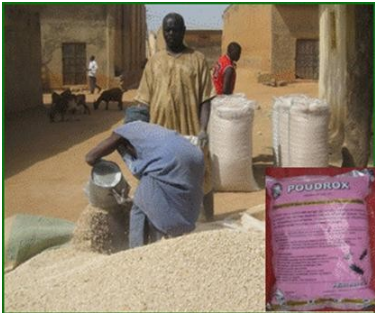
- Poor households are found on the most marginal land and are more vulnerable to the impacts of severe weather caused by climate change.
- Agriculture contributes to climate change: 30% of GHG annual emissions (17.4% forest destruction; 13.5% agriculture production).
- Small Scale Fishing & Aquaculture (SSFA) is impacted by the degradation of water quality in addition to rising sea levels and severe weather events.
- Livestock occupies 70% of the world's agricultural land. Overgrazing deteriorates grassland, cattle contributes methane to the atmosphere.
- Biodiversity and ecosystem services are being greatly diminished.
- Rainfall patterns are becoming more volatile – oscillating between intense rain and prolonged drought.
- Heat and humidity are making agricultural work more unbearable.
- New pests and disease on crops, livestock and humans are emerging.

# Building Resilience

- Reducing food waste
- Climate Smart Agriculture
- Small Scale Fisheries and Aquaculture
- Urban agriculture, including hydroponics
- Virtual platforms connecting farmers to customers
- Crop insurance – index based
- Diversifying small holder production systems – agroecology, agroforestry, silvopastoral systems
- Halt forest degradation and deforestation
- Get youth interested in agriculture

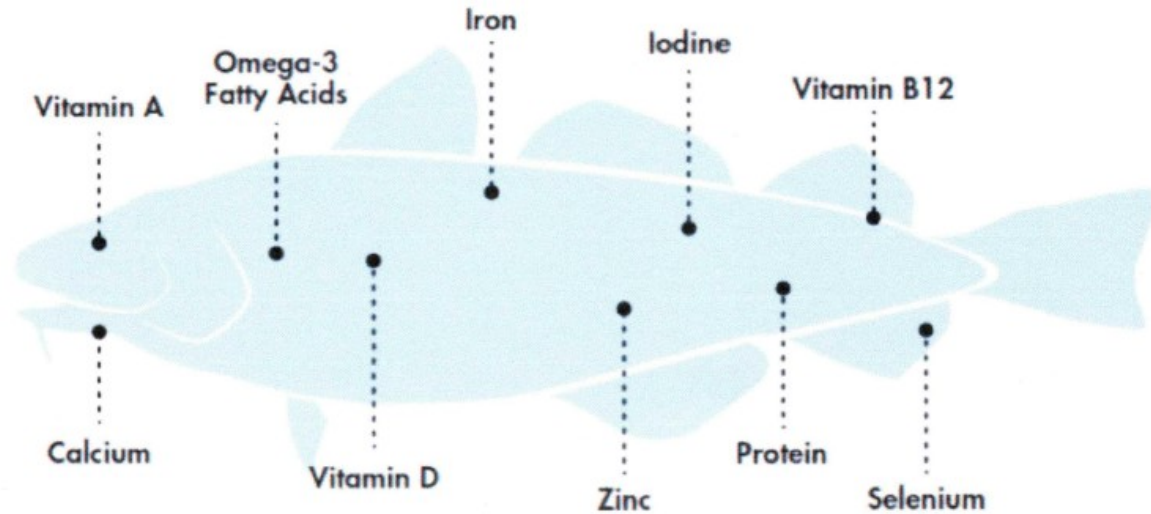
# Reducing food waste

## Solutions to grain storage challenges



**PICS Technology- a solution**

# Nature's superfood



## LONG CHAIN OMEGA-3 FATS

Mainly found in fish and fishery products, these fatty acids are essential for optimal brain development.



## IODINE

Seafood is in practice the only natural source of this crucial nutrient. Iodine serves several purposes like aiding thyroid function. It is also essential for neurodevelopment.



## VITAMIN D

Another nutrient crucial for mental development, this vitamin also regulates the immune system function and is essential for healthy bones.



## IRON

During pregnancy, iron intake is crucial so that the mother can produce additional blood for herself and the baby.



## CALCIUM, ZINC, OTHER MINERALS

Diets without dairy products often lack calcium, and zinc deficiency slows a child's development.

# Hydroponics system in Urban Environments



# Virtual Platforms for Connecting Producers to Market – Twiga Example



## Revolutionizing African Retail

In sub-Saharan Africa, 90% of retail is informal, highly inefficient and characterized by layers of intermediaries.

Twiga simplifies the supply chain between fresh food producers, FMCG manufacturers and retailers through a B2B e-commerce platform. This removes the need for many intermediaries, significantly lowering the cost of food for consumers. Twiga has over 100,000 registered customers and delivering to 10,000 every day.

By creating this closed eco-system in this \$700bn industry in sub-Saharan Africa, Twiga will revolutionize retail.

[Our Story >](#)



# Kenya Livestock Insurance Program (KLIP)



Building the evidence case for scaling up drought risk financing in East Africa

- Index-based livestock insurance model
- Uses satellite data to generate an index for grazing conditions so that payments are triggered early in the drought
- Eliminates the need for insurance agents to be out in the field monitoring forage and animals
- Ensures timely payouts to pastoralists
- As of 3 years ago, 30,000 vulnerable households participated with total premiums of US\$5 million, and insurance companies have paid claims amounting to US\$7.2 million – benefiting about 100,000 people

# SILVOPASTORAL SYSTEMS







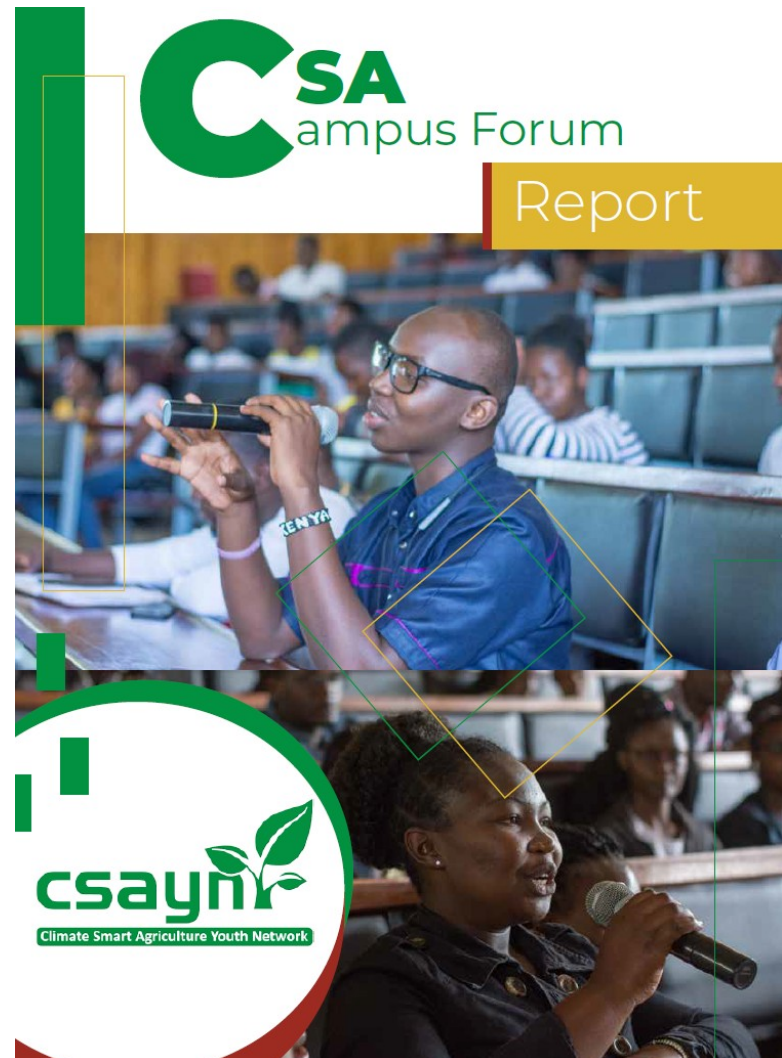
Slash and Burn

# Climate Smart Agriculture Youth Network CSAYN

Kenya National Youth in Agriculture Dialogue  
UN Food Systems Summit (UNFSS)



Proposed Date: **20/05/2021**



# Conclusions

- Challenges that humankind faces is a multitude of inter-related factors:
  - Climate Change
  - COVID-19
  - Conflict
- The poor are the most vulnerable and most heavily impacted
- There are no silver bullets – a multitude of approaches are needed
  - Measures suggested to build resilience
  - Peace and stability are essential
  - With climate change – competition for resources and pandemics will intensify – humankind must pull together to help one another
- Global and national policy frameworks can provide guidance, but it is up to citizens to take action.
- We have an urgent need to get youth involved in agriculture.
  - Global Youth Institute – Borlaug Dialogue
  - Climate Smart Agriculture Youth Network - CSAYN