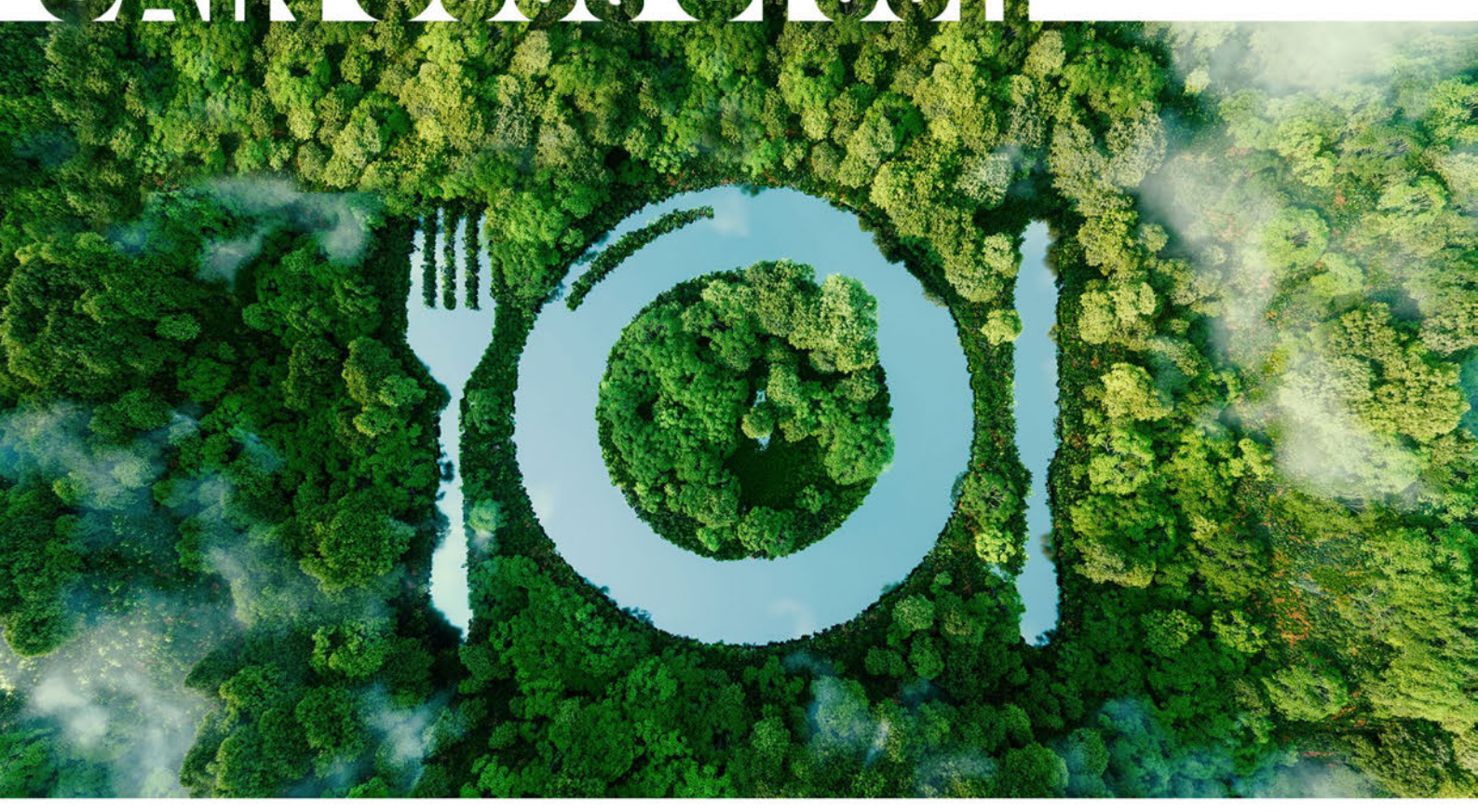
GAIN Goes Green



Climate change: A threat to food and nutrition

DIRECT EFFECTS OF CLIMATE CHANGE

- Higher levels of CO_2
- Higher Temperatures
- Changing Seasons
- Changing Rainfall Patterns
- Extreme Climate Events: Droughts, Floods, Cyclones
- Rising Sea Levels

LEAD TO INDIRECT EFFECTS OF CLIMATE CHANGE

- Reduction in crop yields
- Reduction in agricultural areas
- Reduction in micronutrient content of crops (Fe, Zn, A, E)
- Greater food losses and risks to food safety
- Reduction in labour productivity
- Threats to livestock production

ACCESSING NUTRITIOUS FOODS BECOMES CHALLENGING

- 10% — Up to 10% of current food production areas may become unsuitable by 2050 under the worst-case scenario
- 12-32% — Yields will decrease by up to 12 - 32% by 2100 due to adverse climate events
- Rising levels of CO2 will reduce the concentrations of protein and minerals in most plant species
- Direct effects of climate change will adversely affect the farmer's net income, reducing his/her capacity to purchase nutritious food
- **<<All the above lead to >> A rise in HUNGER, MALNUTRITION, FOOD & NUTRITION INSECURITY**

What the numbers reveal

828 million
The number of people globally affected by hunger went up to 828 million in 2021

150 million
World hunger levels have gone up by 150 million since the outbreak of the COVID-19 pandemic (SOFI 2022)

3+ billion
Over 3 billion people are unable to afford a healthy diet

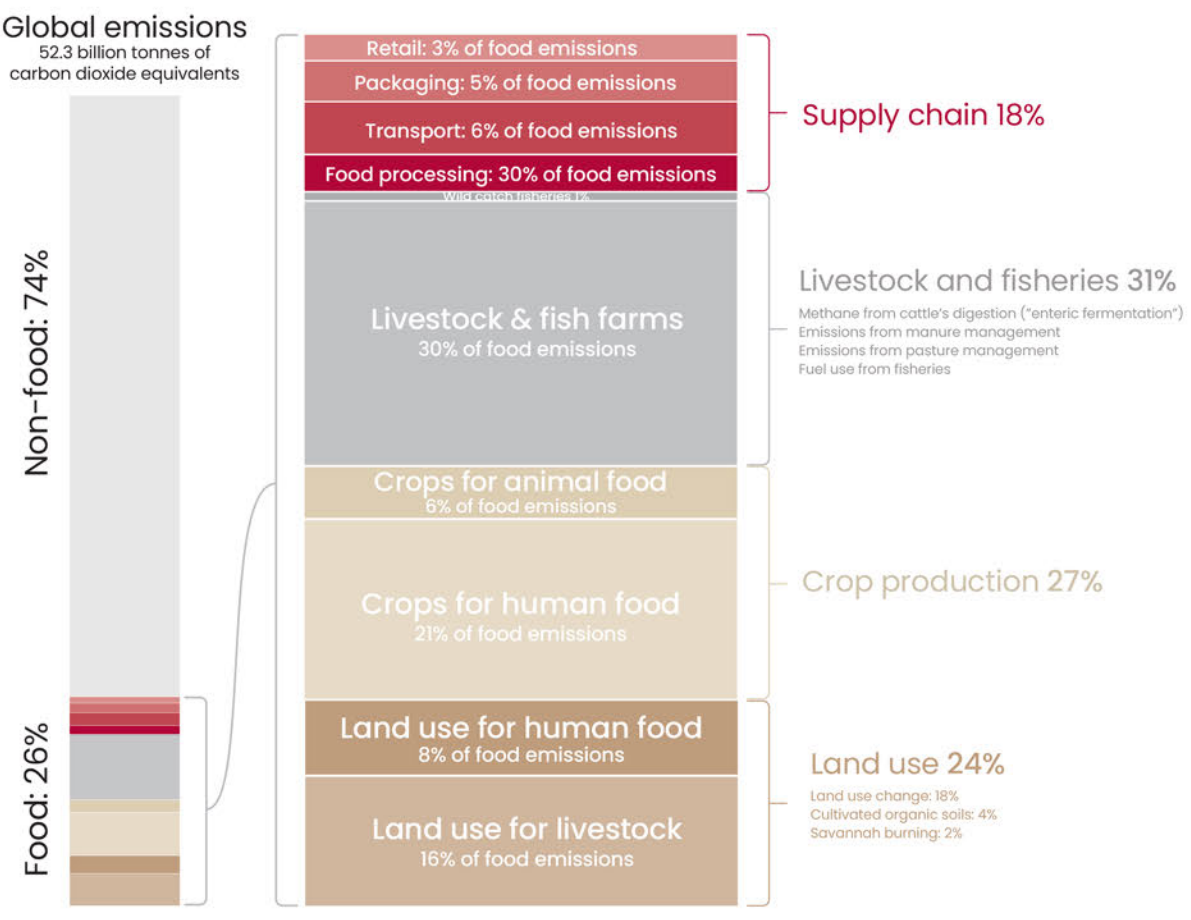
20%
Africa has the heaviest burden of hunger with one in five people (20 percent of the population) facing hunger in 2021 (SOFI 2022)

CO_2 increases
Combined effects of projected atmospheric CO_2 increases will decrease growth in the global availability of nutrients by 19.5% for protein, 13.6% for iron, and 14.6% for zinc

Food systems impact climate change

Did you Know: Food Systems contribute approximately one third (21-37%) of anthropogenic Greenhouse Gas Emissions (GHGs)

Global greenhouse gas emissions from food production



Data source: Joseph Poore & Thomas Nemecek. Reducing food's environmental impacts through producers and consumers. Published in Science.
OurWorldinData.org – Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Hannah Ritchie.

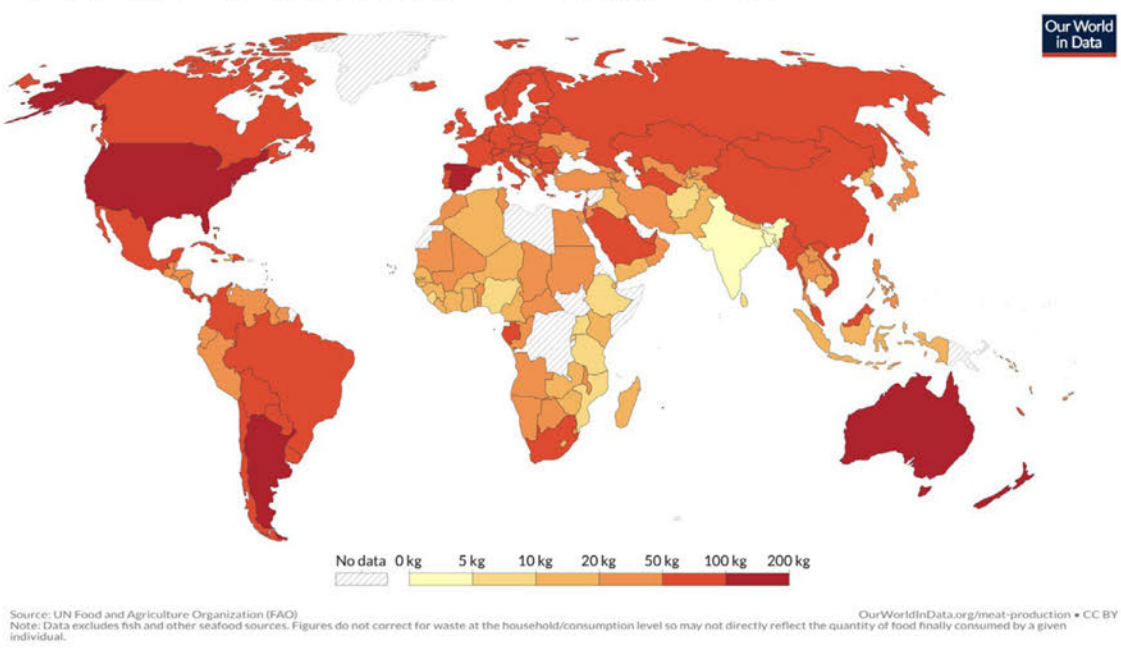
SOURCE : https://ourworldindata.org/environmental-impacts-of-food

Land used for grazing and feed production for livestock accounts for **50%** of the total land used for agriculture

Animal-source foods, have a large environmental impact. Livestock contribute approximately **14-18%** of total greenhouse gas emissions emissions from human activities, but consumption of animal-source foods is unevenly distributed worldwide

Meat supply per person 2017

Average total meat supply per person measured in kilograms per year



Source: UN Food and Agriculture Organization (FAO)
Note: Data excludes fish and other seafood sources. Figures do not correct for waste at the household/consumption level so may not directly reflect the quantity of food finally consumed by a given individual.
OurWorldInData.org/meat-production • CC BY

Agriculture already uses **34%** of all land on the planet and drives an estimated **80%** of new deforestation

Oil and gas used through stages of food production, contribute to greenhouse gas emissions of the food system

1/3 of all food produced globally is either lost or wasted

Mitigation and adaptation in food systems

- Reduce greenhouse gas emissions associated with the production, distribution and consumption of food
- Increase food systems resilience to adapt to the effects of climate change

GAIN x COP27

We must take integrated action for nutrition to adapt to climate change

Call for governments, businesses, NGOs, and consumers to take action to advance both nutrition and climate goals in several key areas including:

1.
Ensure access to healthy and sustainable diets for all

2.
Reduce food loss and waste

3.
Support the diversification of the crops grown and consumed to help adapt to the effects of climate change and provide greater nutrition

4.
Ensure access and affordability of nutritious foods with low climate impacts

5.
Ensure integration of climate and nutrition goals and policymaking, supported by joined-up research and data

6.
Improve data for decision-making through global knowledge leadership and development of tools and resources such as the Food Systems Dashboard