Tonight's **Sydney Ideas** event

Can we make food security failsafe in the age of climate change?

*Opening the **2019 Food Governance Conference**, 3 – 5 July*

Human rights based approach to food security in the age of climate change

Hilal Elver

3 July 2019

2019 Food Governance Conference

Major points

I. State of food insecurity and malnutrition
II. Overview of Human Rights to adequate food
III. Thinking critically about today's food system governance
IV. Challenges arising from climate change
V. Taking global action for future

I. State of food insecurity

In 2015, 777m. In 2017 815mil. In 2018, 821 m

11% increase of hunger

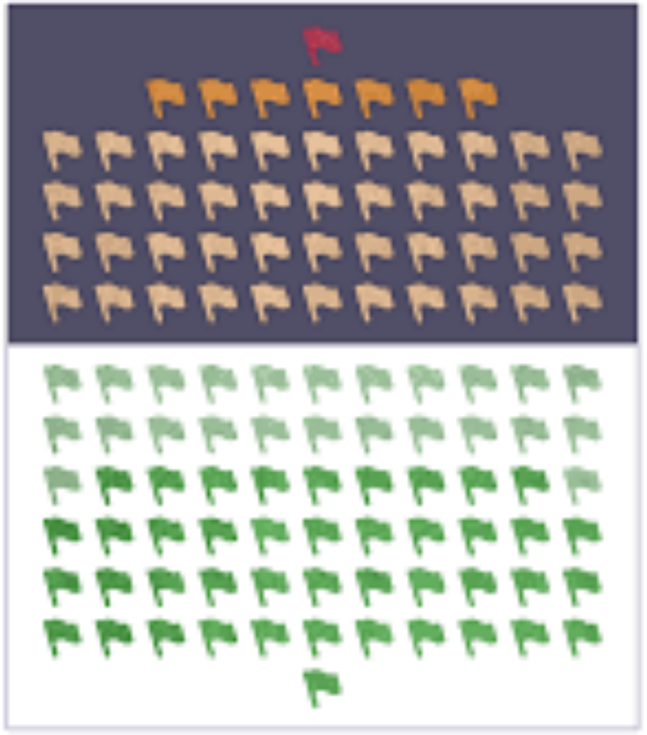
1,5 m. children risk of death

Global Malnutrition

- 5 to 6 million children die every year from malnutrition and related diseases
- **151 million** under 5 stunted & wasted (50 mil);
- 38 mil. overweight
- **2 billion** suffer from undernutrition, and micronutrient deficiency
- **1.2 billion** adult are overweight and 700,000 obese

113 m. alarmingly food insecure

2018 Global Hunger Index



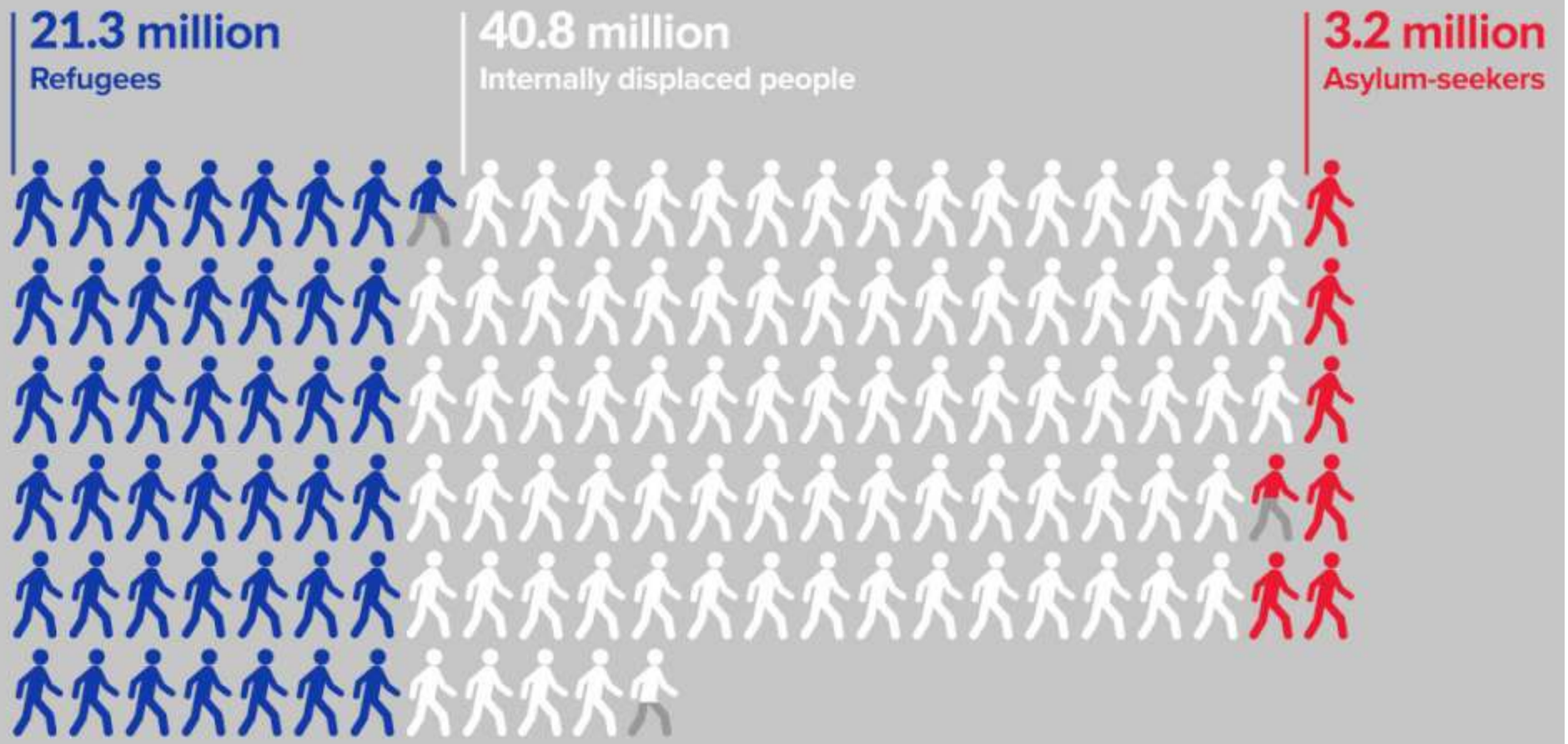
35 m. in North East Nigeria, South Sudan, Somalia, Yemen, plus Myanmar, DRC in imminent danger of famine

Why hunger increasing?

- 95 % of them live sub-tropic regions, climate insecure places in Sub-Saharan Africa, South Asia and Small Island States;
- Most of them small holder or landless farmers in remote villages, and indigenous people;(500 million)
- They produce %70 of the local food with % 30 of the land.

As a result of climate + War: Migration is the highest

65.3 million people worldwide are forcibly displaced — roughly the population of France



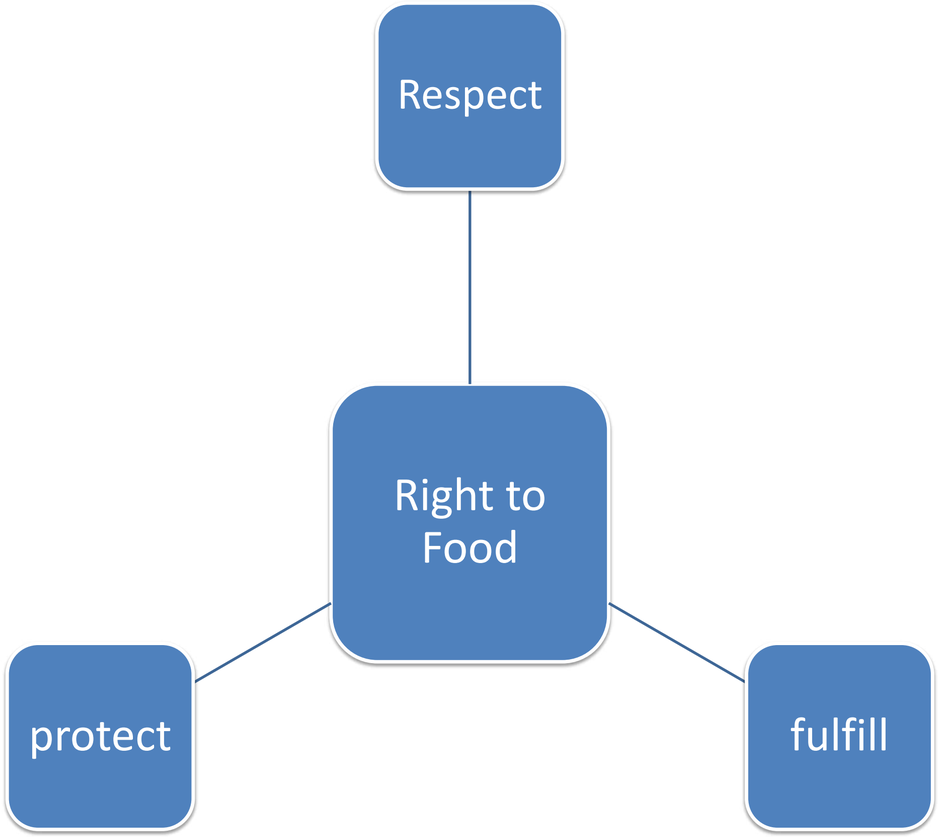
II. What is right to Food?

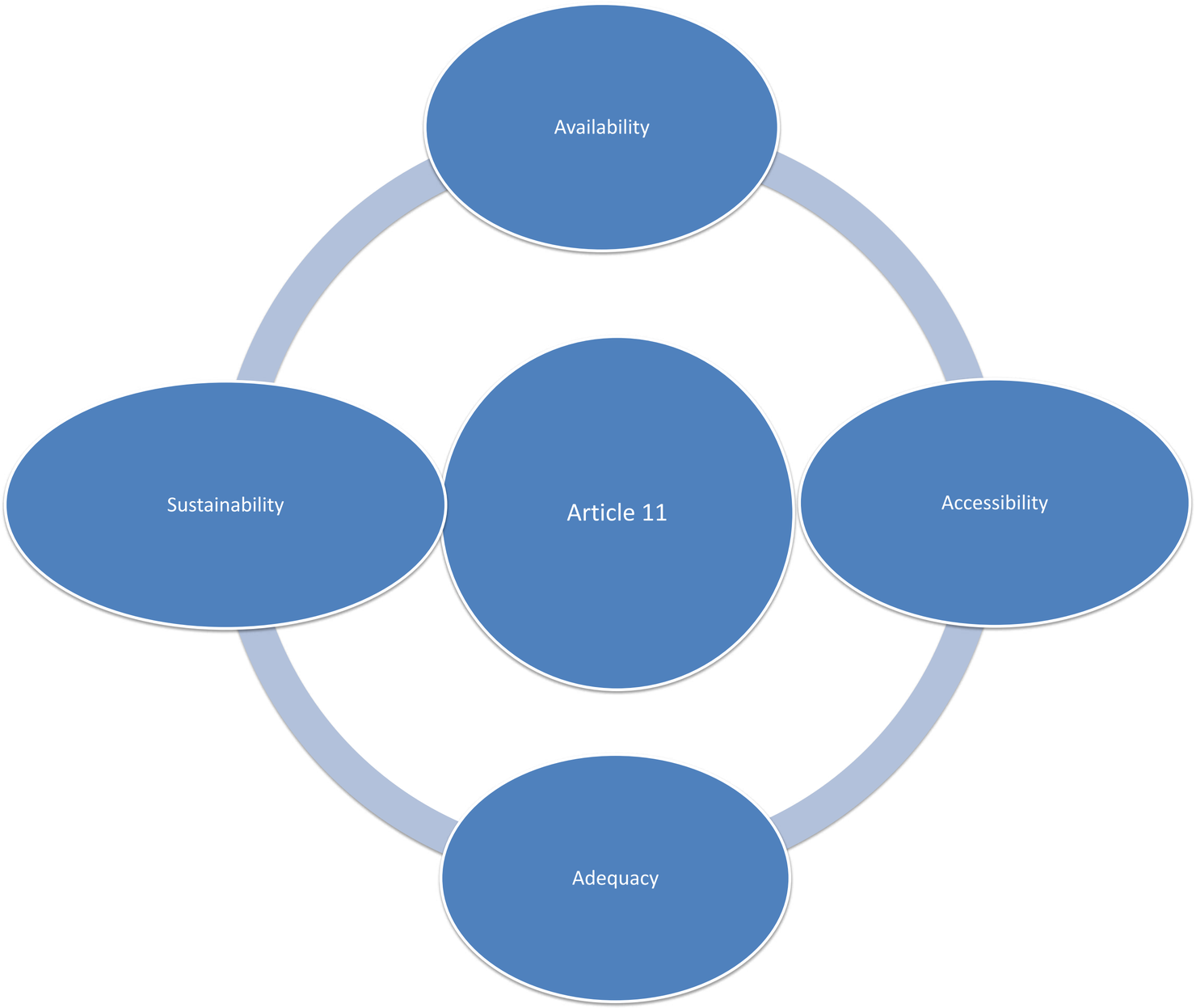
It is not a right to be fed, it is not charity…

HISTORY: From 1948 UDHR, Art.25 To 1966 ICESCR Art.11

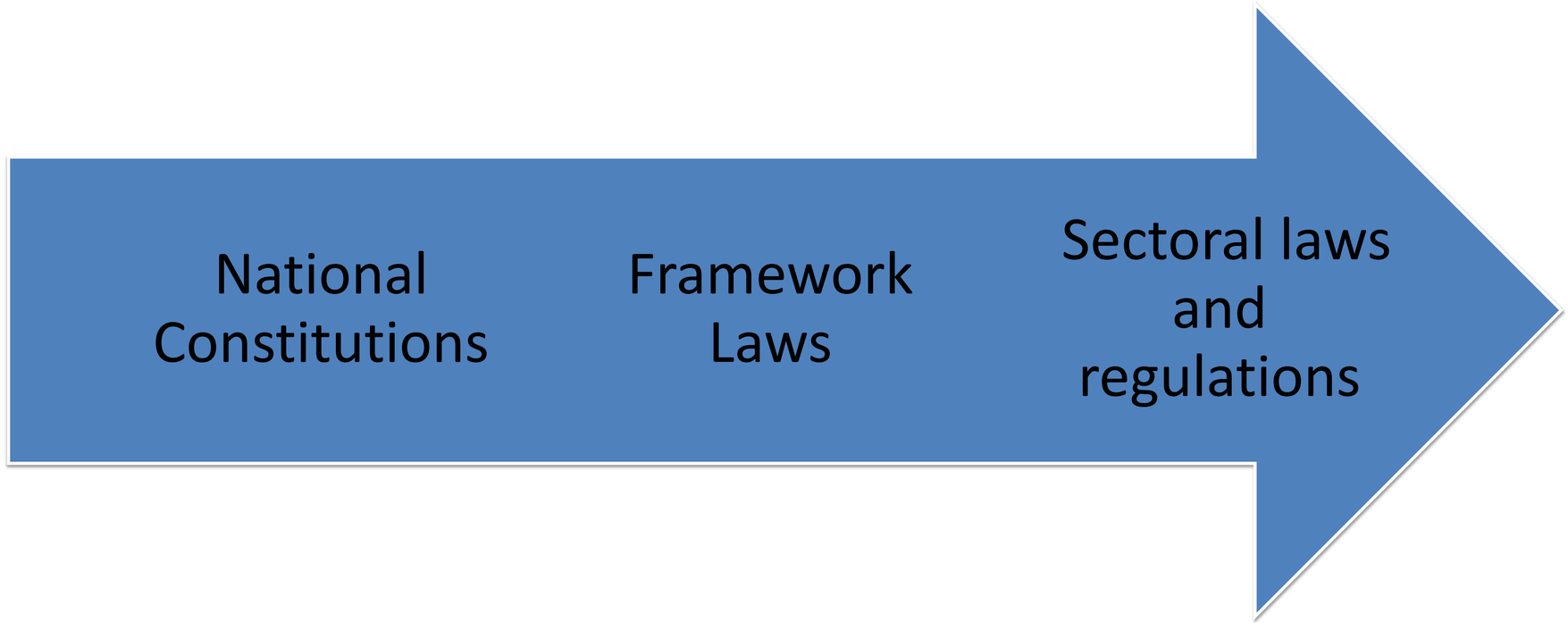
Legal Structure of the Right to Food

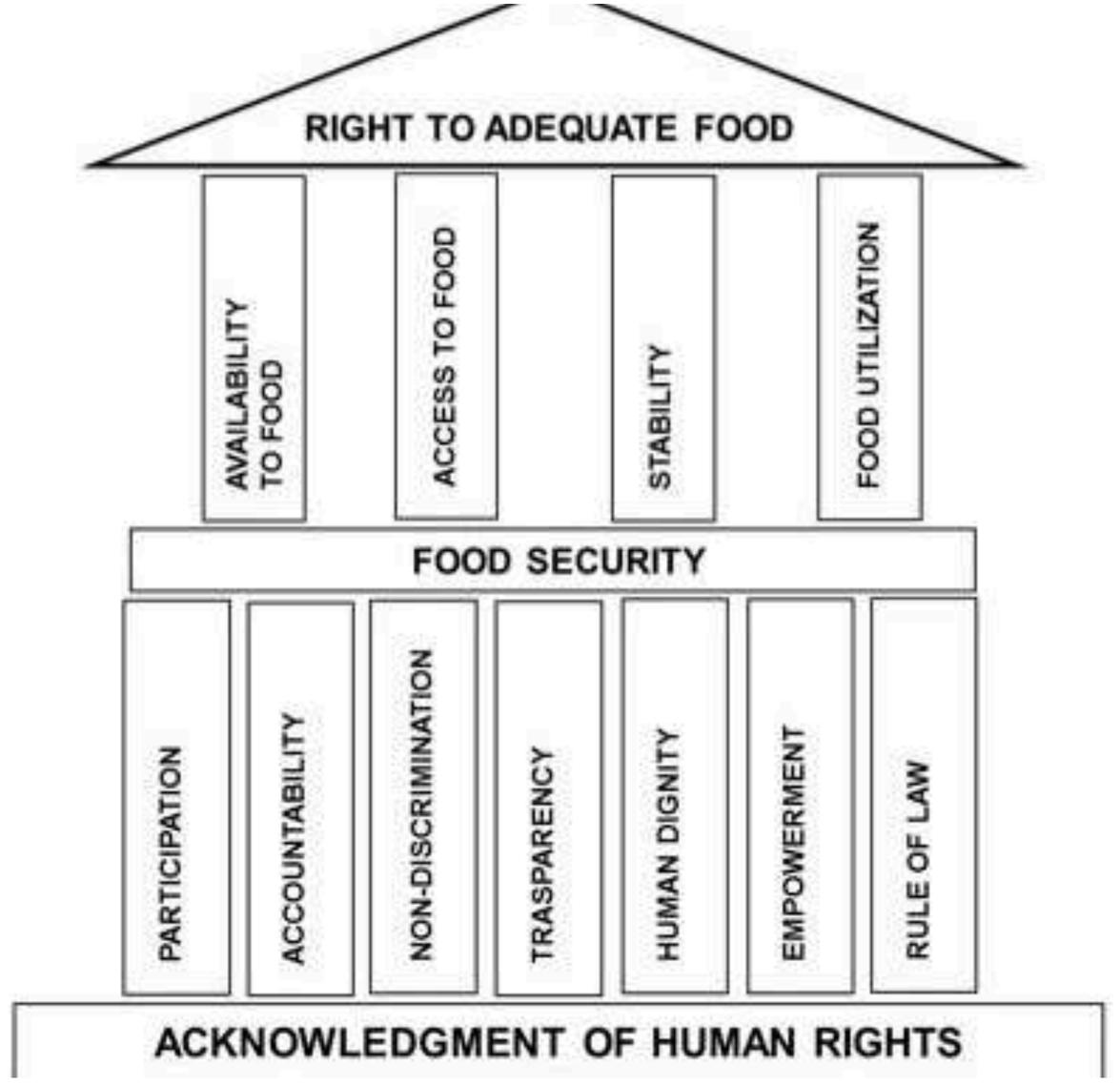
Covenant of the ESCR Art. 11
States: Duty Bearer
Citizens: Right holder




Availability
Sustainability
Article 11
Accessibility
Adequacy

Domestic Legal Structure



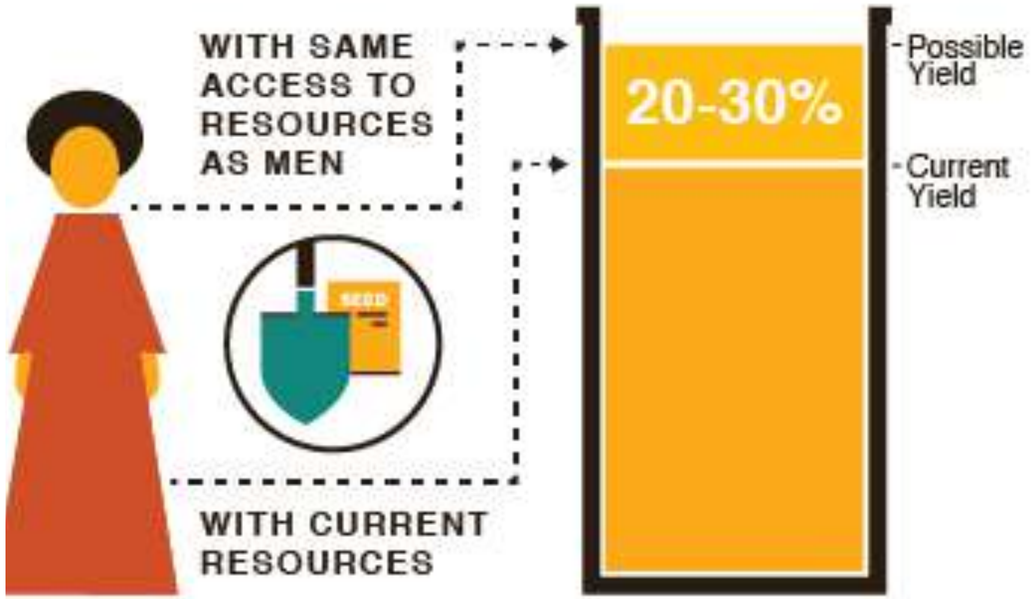

RIGHT TO ADEQUATE FOOD
AVAILABILITY TO FOOD
ACCESS TO FOOD
STABILITY
FOOD UTILIZATION
FOOD SECURITY
PARTICIPATION
ACCOUNTABILITY
NON-DISCRIMINATION
TRASPARENCY
HUMAN DIGNITY
EMPOWERMENT
RULE OF LAW
ACKNOWLEDGMENT OF HUMAN RIGHTS

HUMAN RIGHTS BASED APPROACH TO FOOD SECURITY: Feed the world fairly and equitably

- People centered, measurable policies
- Participation into decision making
- Transparency
- Monitoring and Accountability: Access to justice
- Non-discrimination: Gender equality
- Policy coherency: Sustainable development, poverty reduction, climate change response, trade and economy

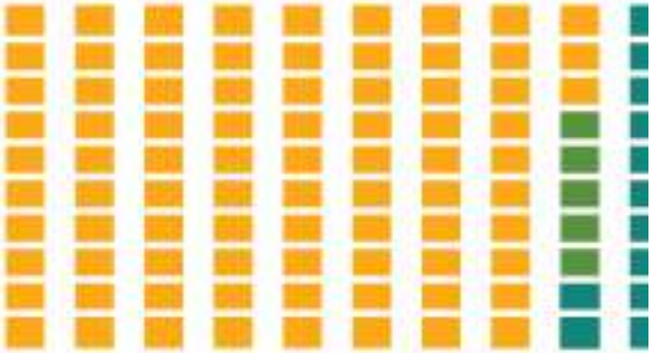
GENDER EQUALITY & WOMEN EMPOWERMENT

f women had access to resources, on-farm yields could **INCREASE BY 20-30%.**



This extra output could reduce the number of hungry people in the world by

12-17%



III. Critical thinking about today's food systems challenges

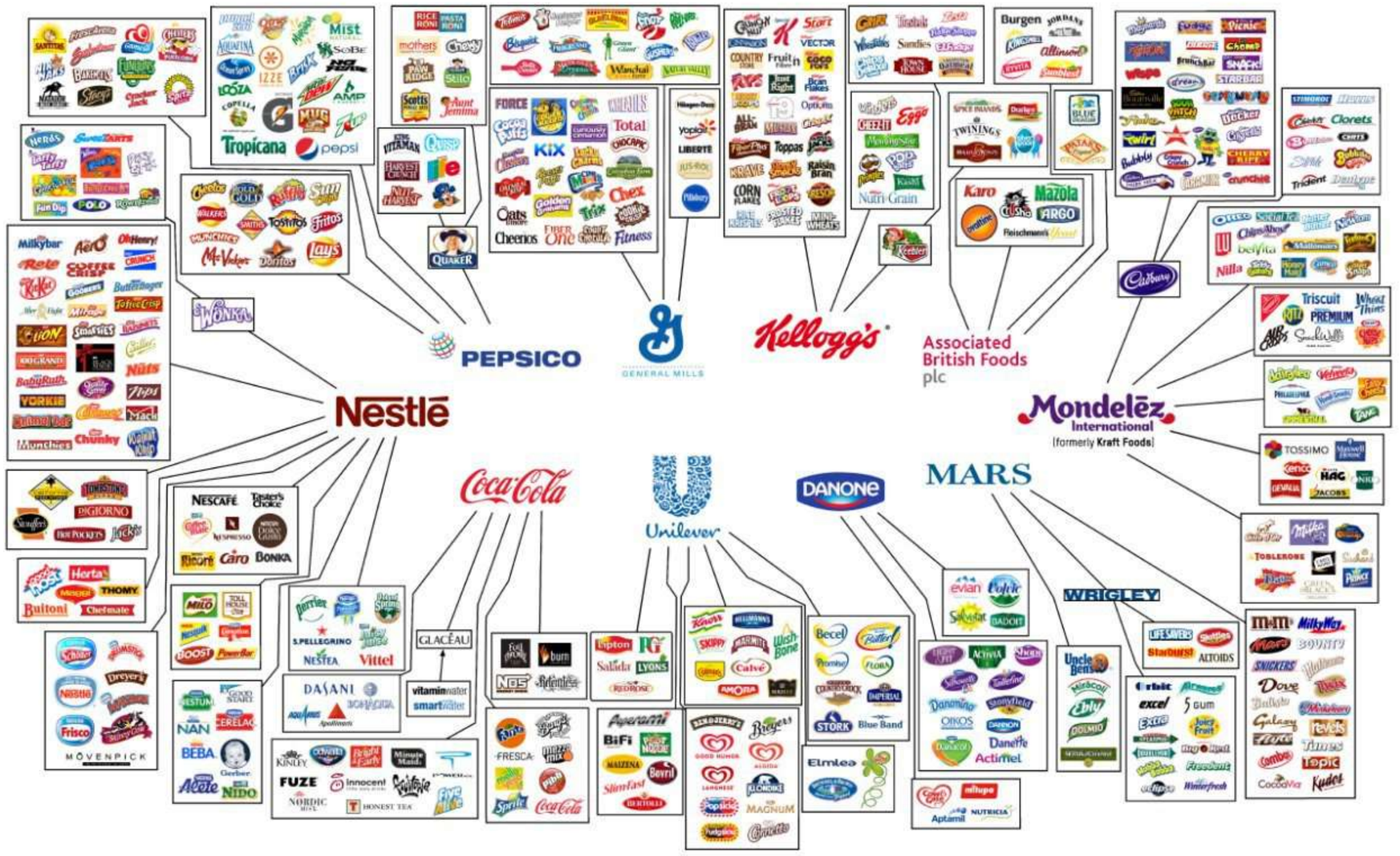
- 1. Growing inequality and poverty in rural areas and peripheries of cities
- 2. Increased migration and IDPs
- 3. Hunger and malnutrition are increasing even affluent societies as by product of neo-liberal global capitalism
- 4. Climate change
- 5. Commodification of agriculture

5. Commodification of agriculture: Trade agreements, neoliberal economic policies

- Rise in cheap monoculture, export oriented agriculture
- Loss of biodiversity, unhealthy earth
- Highly processed, low nutrients food that causes Non communicable diseases
- Use of excessive pesticides, agro chemicals
- Productive resources are under threat
- Consolidation of land
- Farmers are losing seeds to big companies

Who controls the food system?

- <u>The 10 controls the whole system</u>: Oligopoly
  - 4 companies produce 60 % of the world seeds
  - 4 firms account 97% of poultry genetics R & D
  - 4 produce more than 60 % of the agrochemical that farmers use
-

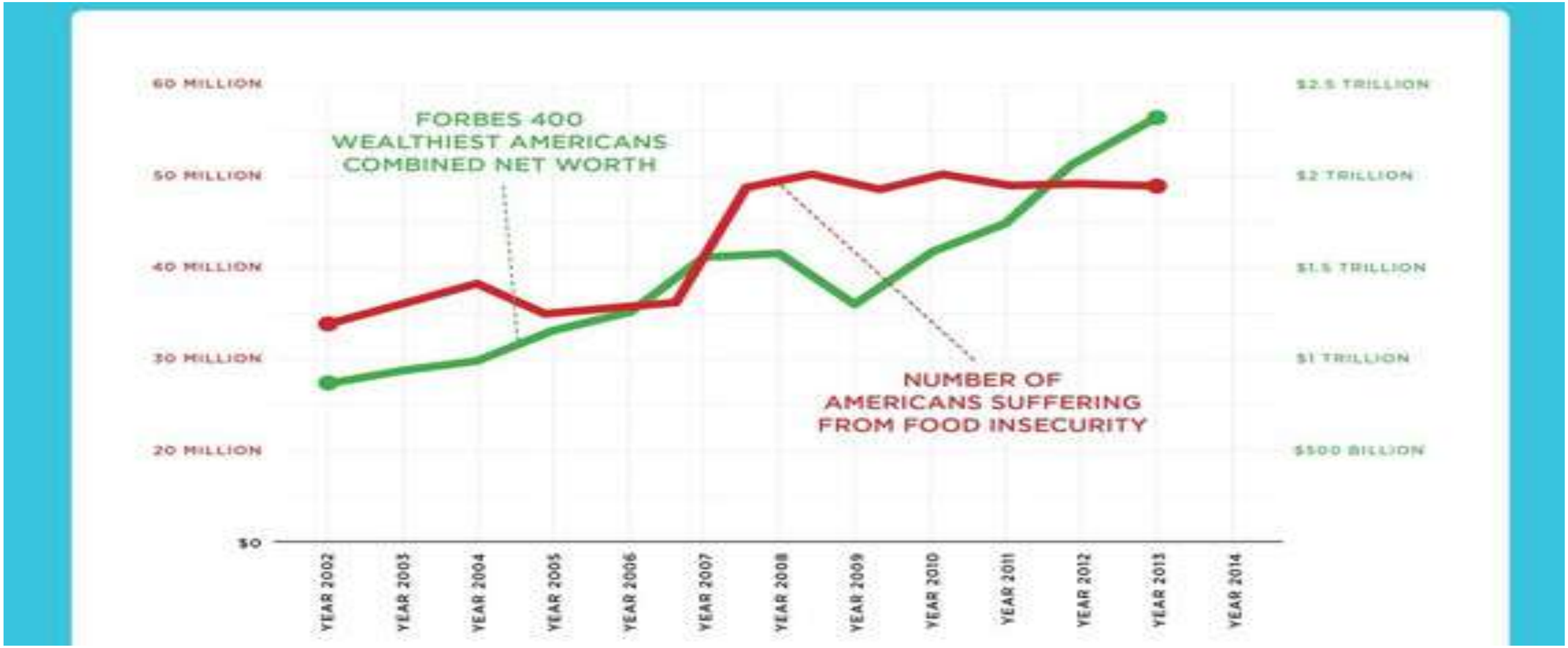

PEPSICO
GENERAL MILLS
Kellogg's
Associated British Foods plc
Mondelēz International (formerly Kraft Foods)
Nestlé
Coca-Cola
Unilever
DANONE
MARS
WRIGLEY

Abusing agriculture & food chain workers for cheap food

Technological innovations?

- Biotechnology
- Robots

Wealth & Hunger increasing



1. Top 1% is benefitting from unsustainable practices, while more suffering, experiencing poverty and hunger
2. Inequality among countries 25% greater because of climate change

Transformation of food systems Supermarket adventure:

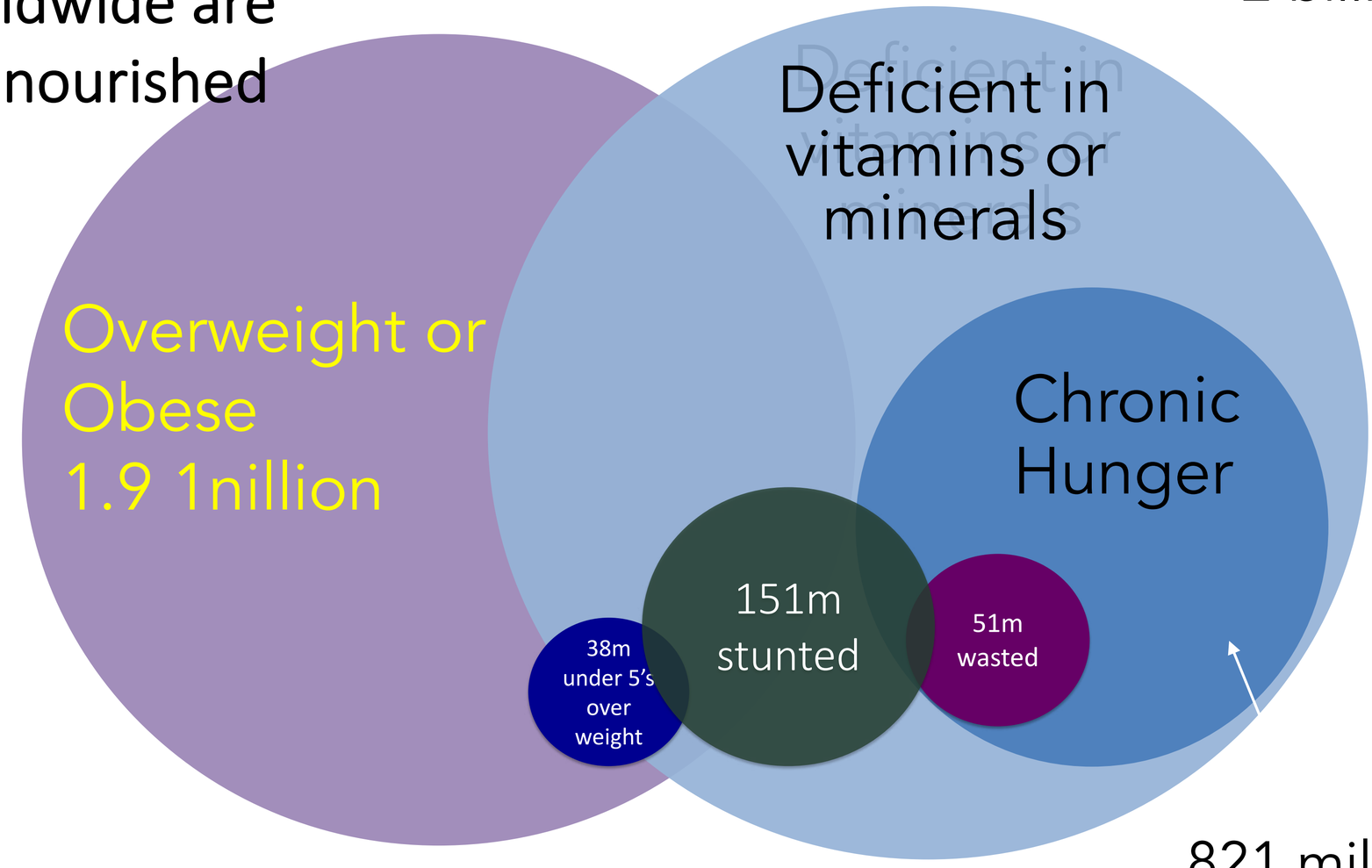
- Problem of Excess and supermarketization of our food system

More people suffers from eating too much food than too little

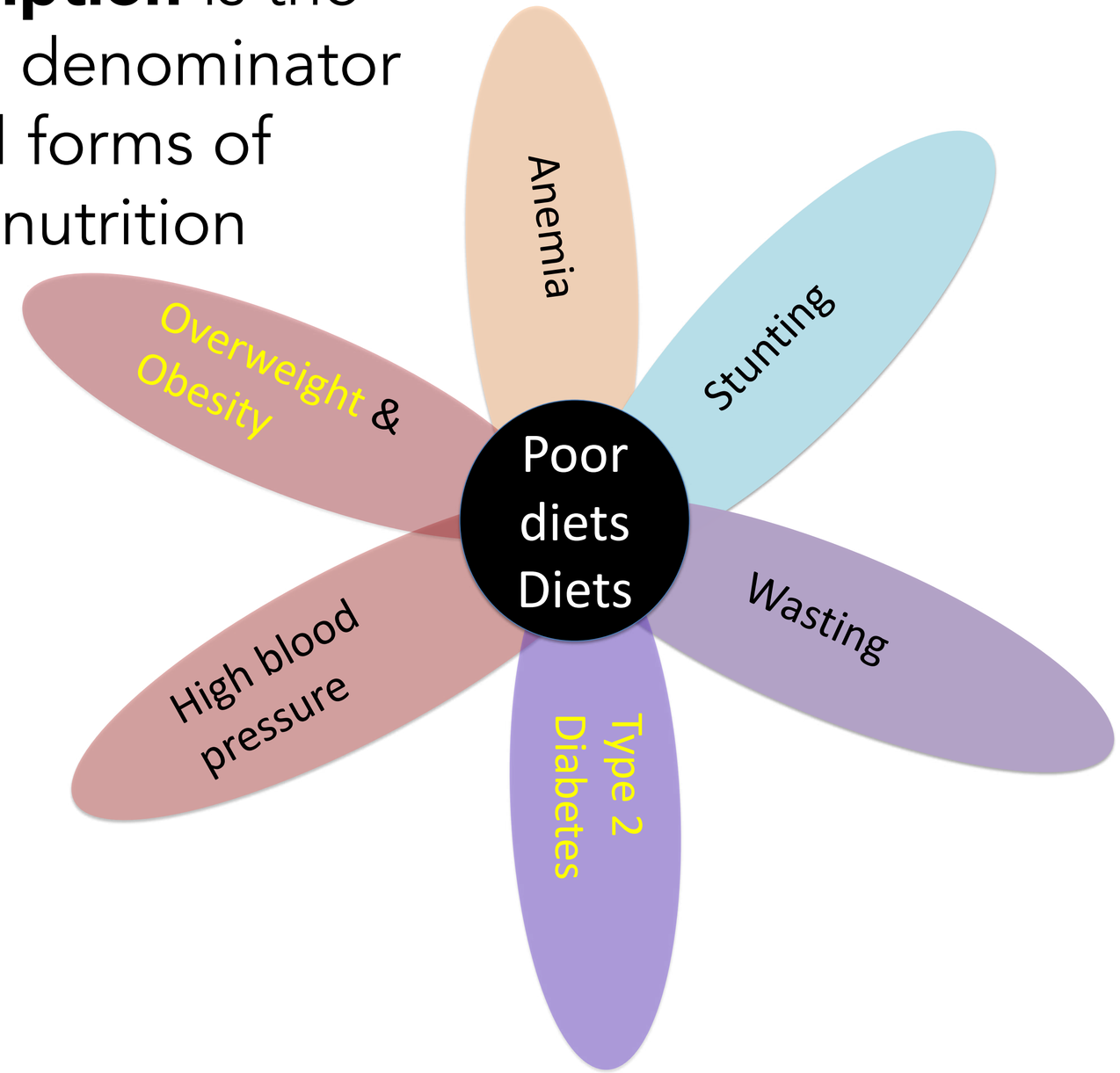
- 1.5bn are overweight, 700 m. obese;
- 300m suffer from Diabetes Type 2
- Obesity: 30% the US
- Poor pays more, eat unhealthy food.

The Nutrition Problem

1 in 3 people worldwide are malnourished

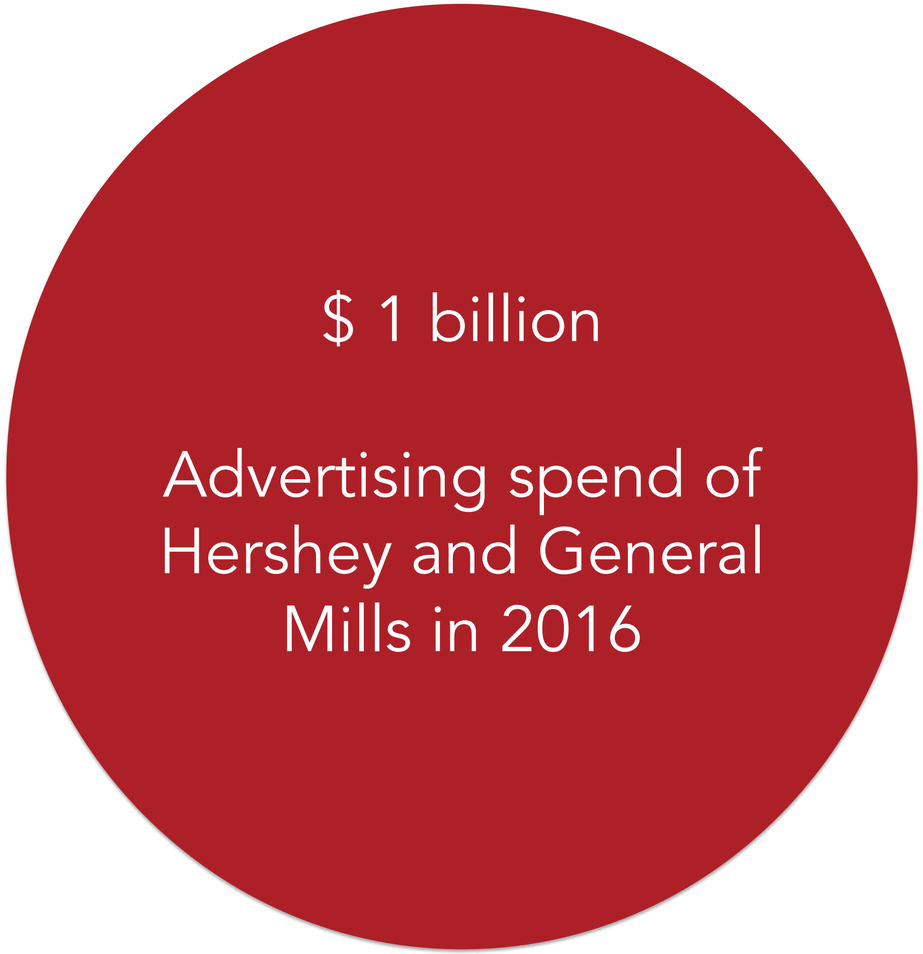


Inadequate food consumption is the common denominator in all forms of malnutrition




Healthy foods like fresh fruits & vegetables are **unaffordable** for large parts of the world
Share of per capita household income to buy 5 fruits and vegetables /day/person
52%
Bangladesh
India
Pakistan
Zimbabwe
Zambia
Paraguay
Argentina
Availability, affordability, and consumption of fruits and vegetables in 18 countries across income levels: findings from the Prospective Urban Rural Epidemiology (PURE) study. Miller, Victoria et al. The Lancet Global Health , Volume 4 , Issue 10 , e695 - e703

Advertisement versus public spending for food



Aid spendingNCDRelated NCDs in 2014 (2016 GNR)

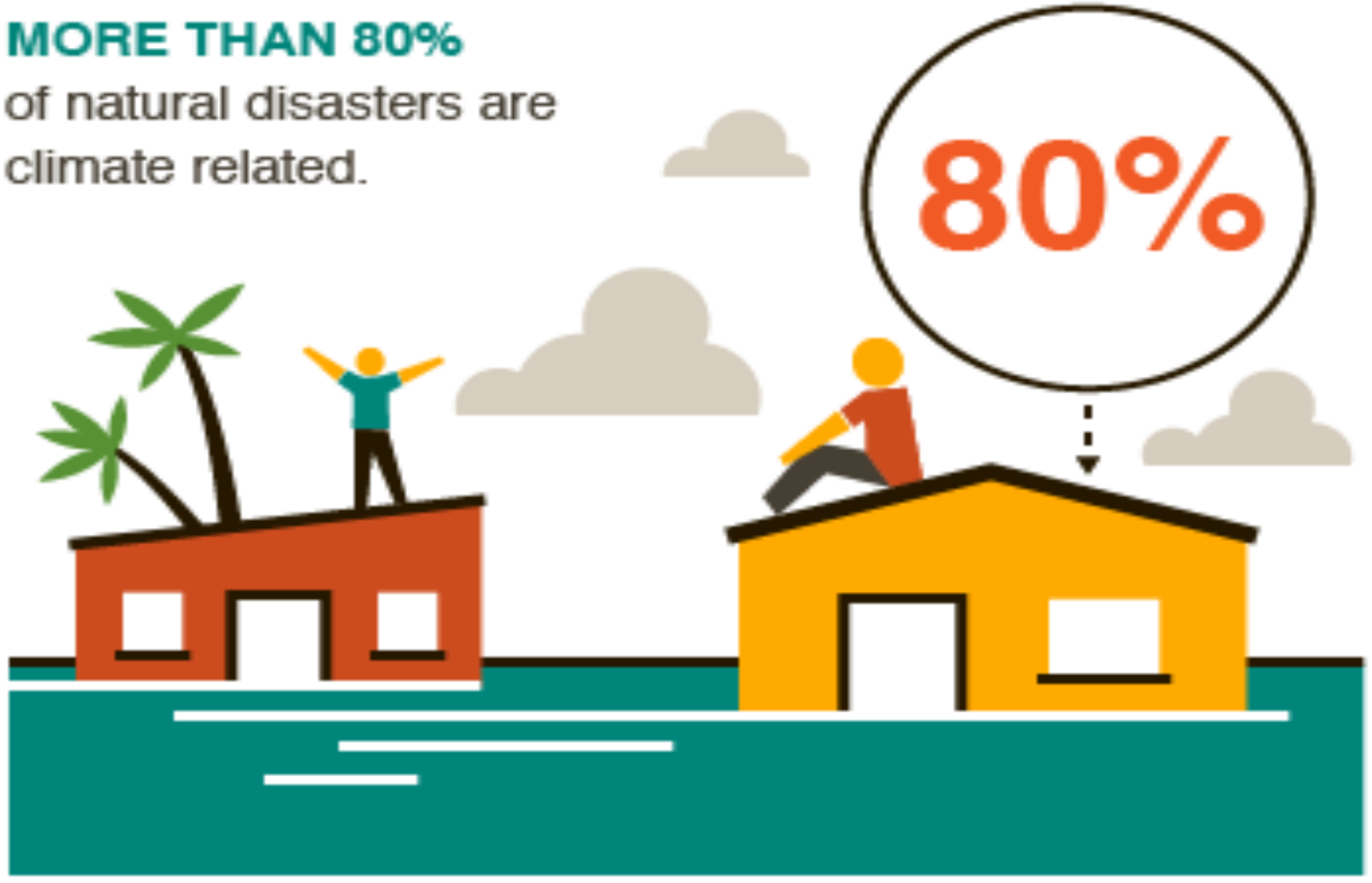
https://www.nature.com/articles/d41586-018-03918-7

Universal existential threat: Climate Change

80% of all disasters, pushed 26 million to acute food insecurity in 2018, mostly in Africa, nearly 23 million people in 20 countries are acutely food insecure.

Extreme weather events:
Drought, flood & mudslide

MORE THAN 80%
of natural disasters are climate related.



Source: GAR 2013

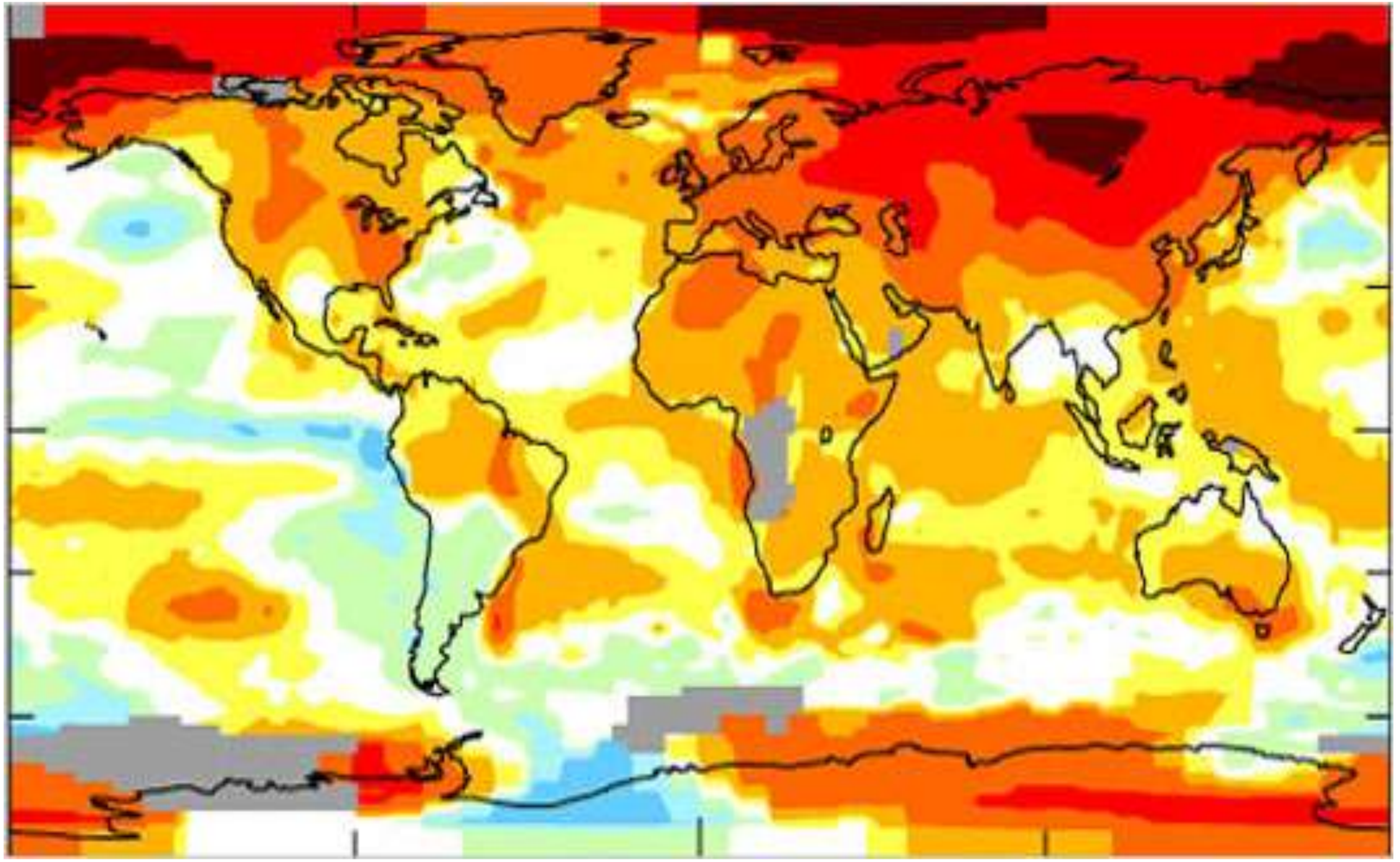
Big Facts

ccafs.cgiar.org/bigfacts

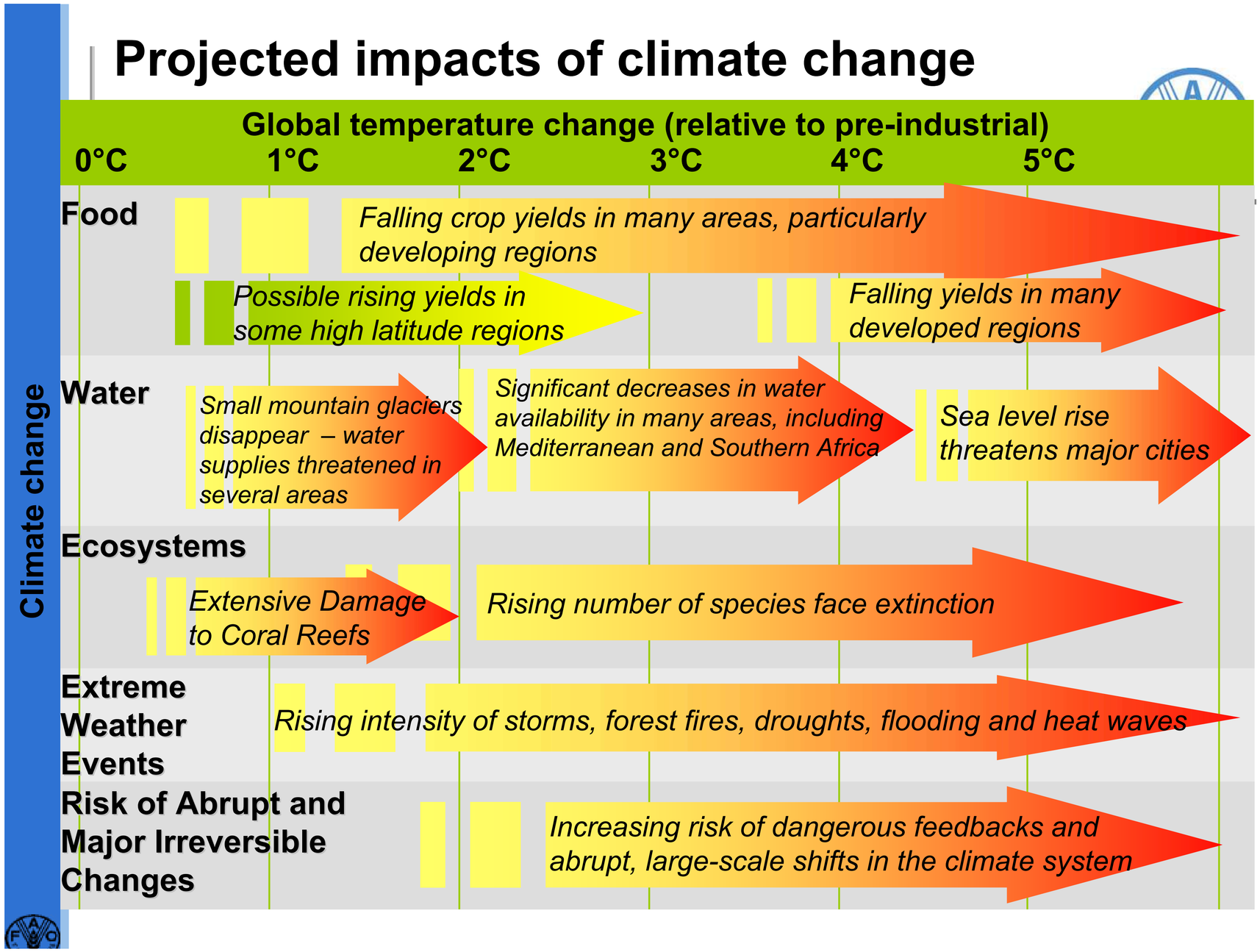
CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CCAFS

Rising Temperature 1960-2020



Projected impacts of climate change



Impact on Crop Yields

- By 2050, the average yield of maize, sorghum, millet, groundnut and cassava will decline by 22%, 17%, 17%, 18% and 8% respectively.
- Several countries could see overall crop yields fall by 50%.
- Expansion of pests, crop diseases, stressing livestock
- Lower productivity higher price: Maize by 4%, rice 7%, wheat 15%

Impact on Hunger & Malnutrition

- 10 to 20% hunger increase by 2050
- 65% of them in Sub Saharan Africa
- Not only quantity but quality: malnutrition
  - Zinc deficiency (CO2 impact)
  - Decline of pollinators
  - Unknown impacts due to biological and chemical interaction

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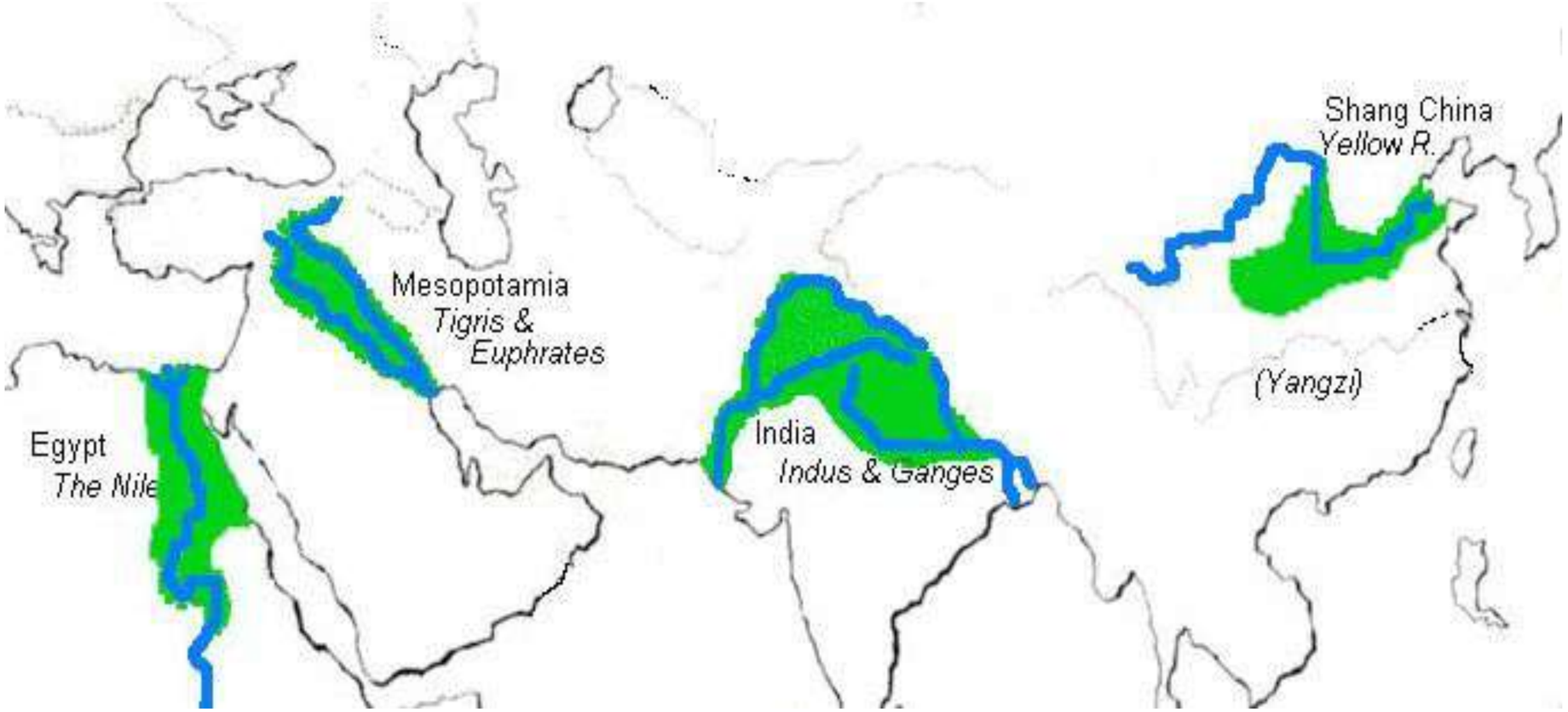
Impact on water: Indus, Ganges, Yangtze



Falling water tables, slowing irrigation

Greatest driver of climate change:

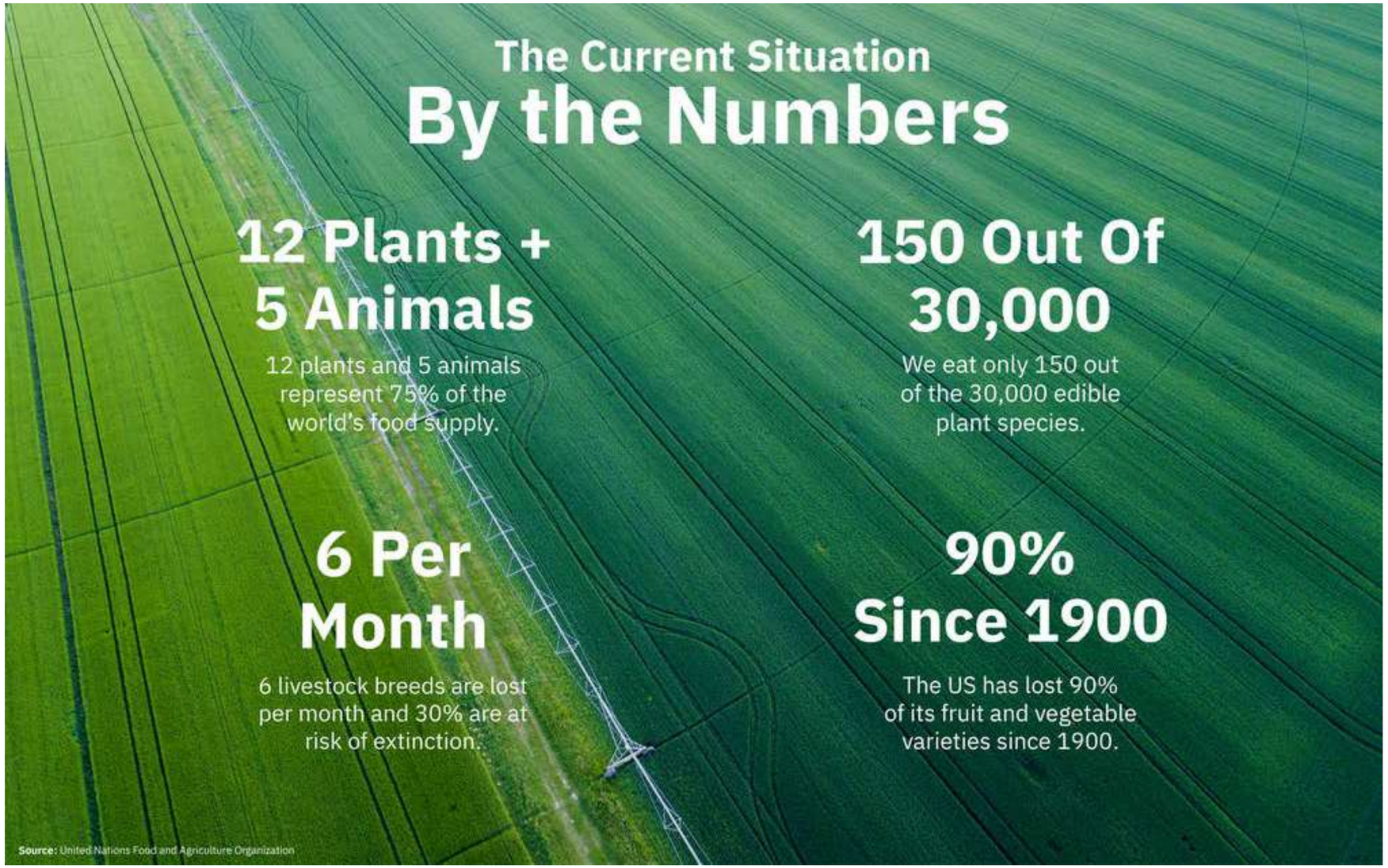
Industrial agriculture

50% more food in 2050?

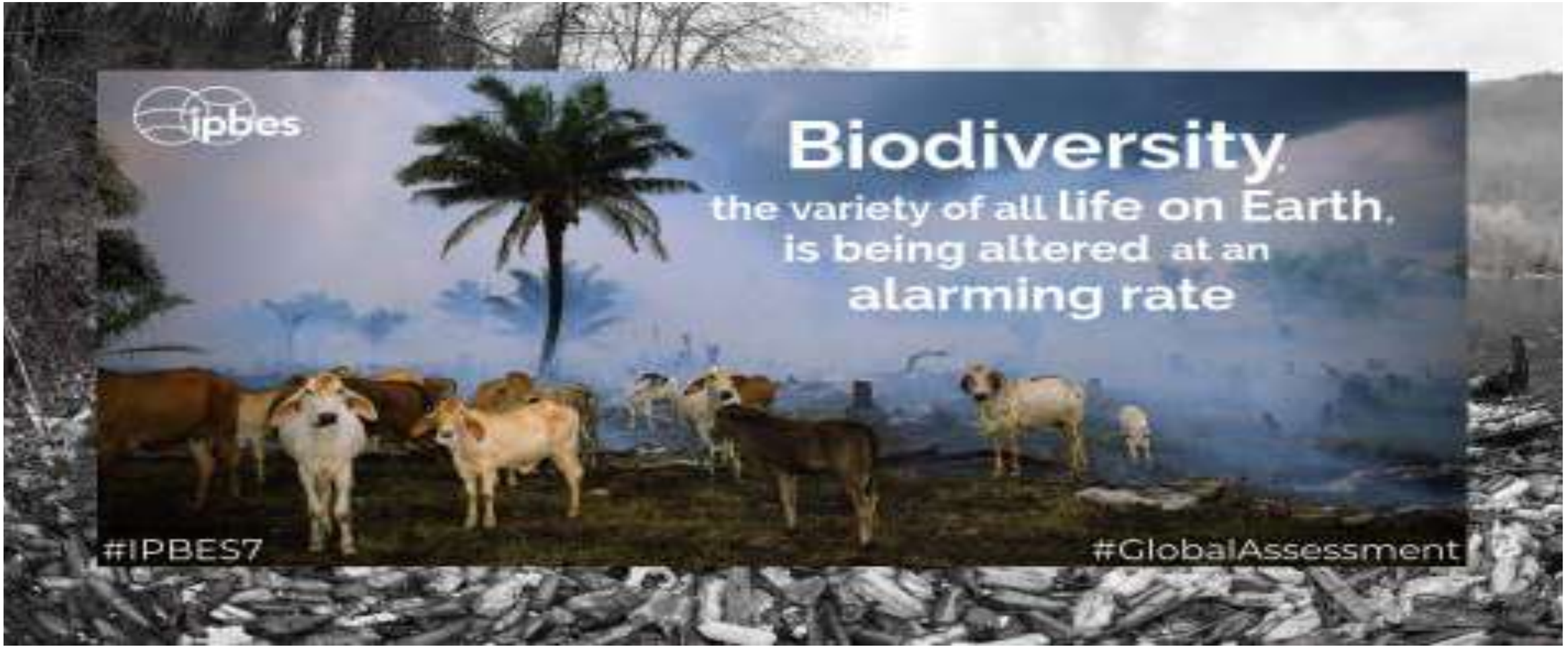
Land Degradation

- 29% of global land, where 3.2 billion people reside
- 33 % of the oceans fish stock are overfished

Loss of biodiversity



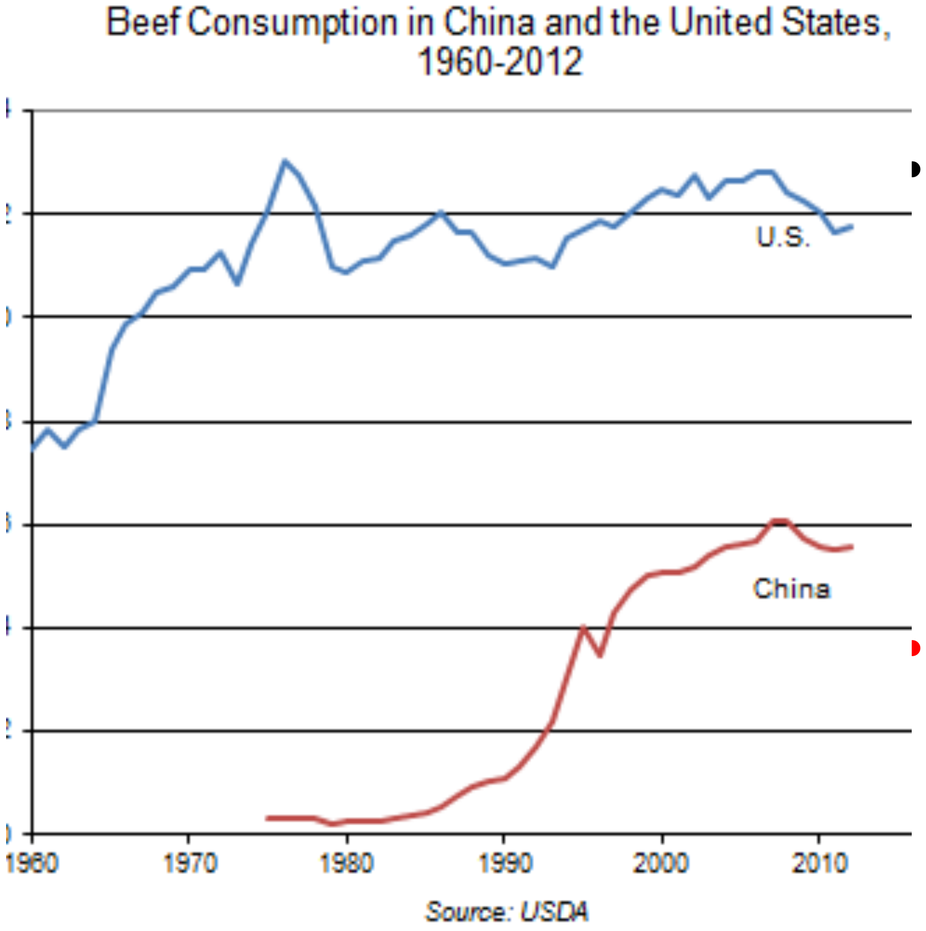
IPBES Report May 2019
Declining of Earth's natural life support



Livestock

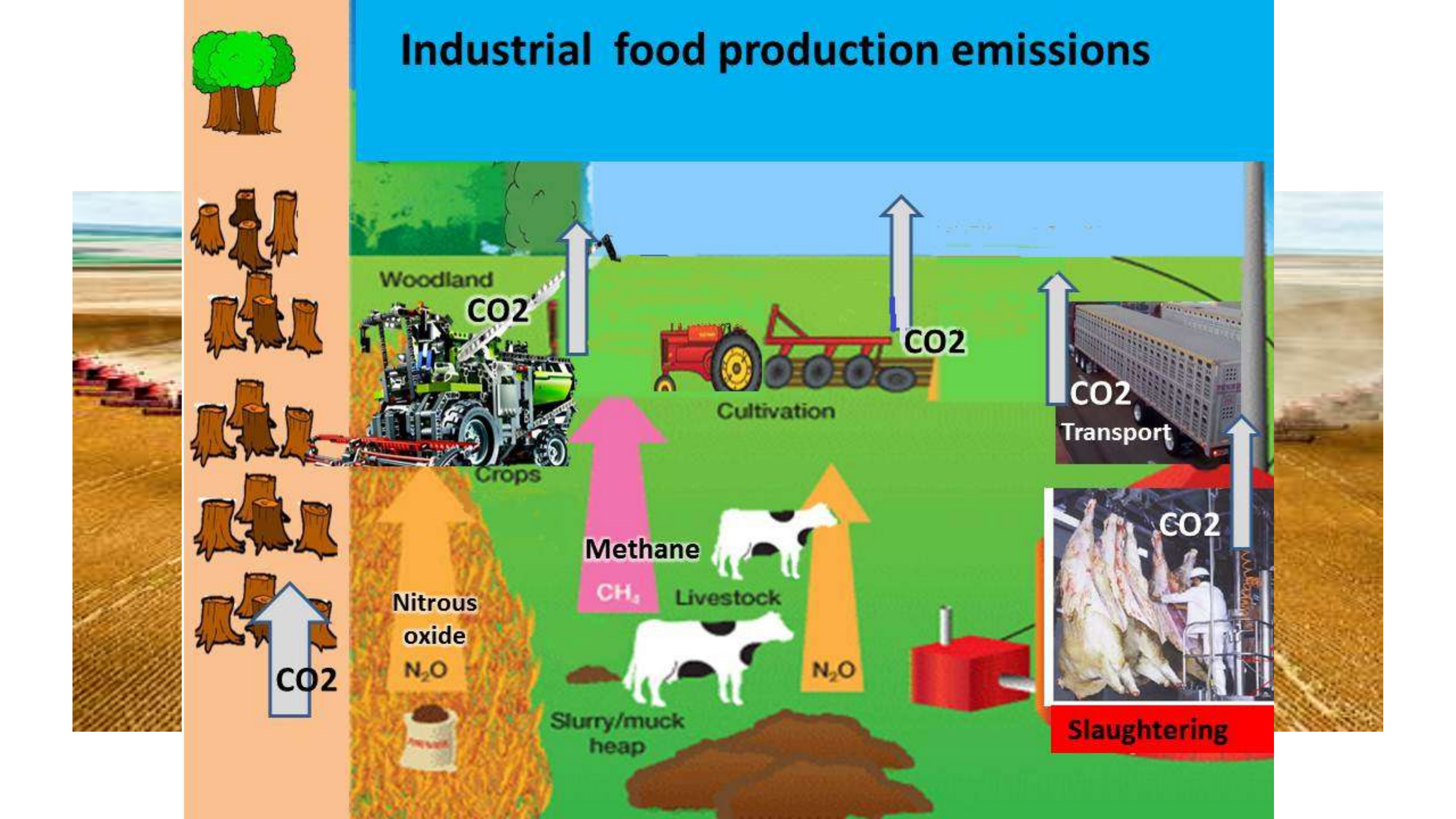

1/3 of global agricultural GDP;
Largest user of land resources: 26% of global land and feed crops; 1/3 of arable land;
It has profound effects on the environment: indirect land-use changes and feed crop production.

Rising populations & Changing eating habits



9 Billion in 2050 with rising income

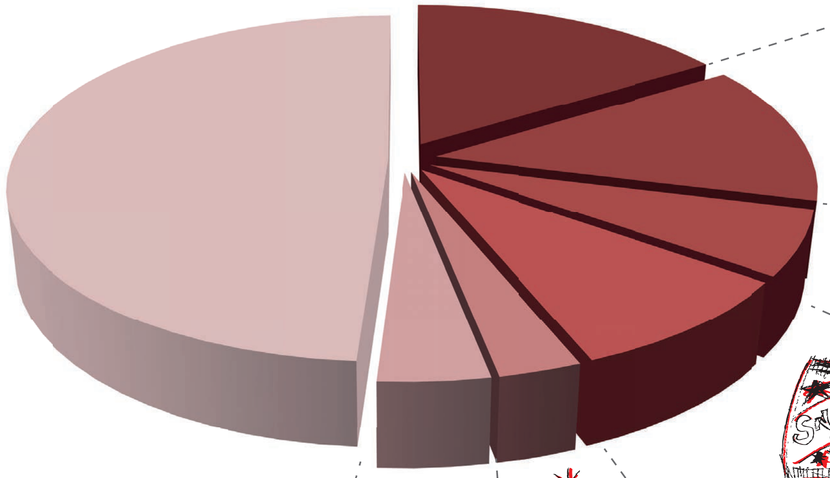
- 50% more food by 2050 in order to meet global population growth. This will have to be done against a backdrop of rising energy prices and climate change.
- It will be harder and more expensive to produce.


Industrial food production emissions
Woodland
CO2
Crops
Cultivation
CO2
CO2
Transport
CO2
Methane
CH4
Livestock
Nitrous oxide
N2O
N2O
Slurry/muck heap
CO2
Slaughtering

How the industrial food system contributes to the climate crisis

Between 44% and 57% of all GHG emissions come from the global food system

Other-non food
related emissions: 43-56%



Deforestation: 15-18%

Before the planting starts, the bulldozers do their job. Worldwide, industrial agriculture is pushing into savannas, wetlands and forests, ploughing under huge amounts of land. The FAO says the expansion of the agricultural frontier accounts for 70-90% of global deforestation, at least half of that for the production of a few agricultural commodities for export. Agriculture's contribution to deforestation thus accounts for 15-18% of global GHG emissions.

Farming: 11-15%

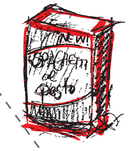
It is generally acknowledged that farming itself contributes 11-15% of all greenhouse gasses produced globally. Most of these emissions result from the use of industrial inputs, such as chemical fertilisers and petrol to run tractors and irrigation machinery, as well as the excess manure generated by intensive livestock keeping.

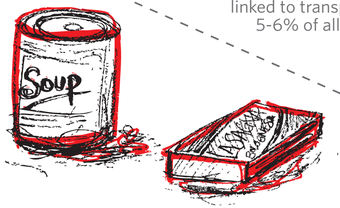
Transport: 5-6%

The industrial food system acts like a global travel agency. Crops for animal feed may be grown in Argentina and fed to chickens in Chile that are exported to China for processing and eventually eaten in a McDonald's in the US. Much of our food, grown under industrial conditions in faraway places, travels thousands of kilometres before it reaches our plates. We can conservatively estimate that the transportation of food accounts for a quarter of global GHG emissions linked to transportation, or 5-6% of all global GHG emissions.

Processing & Packing: 8-10%

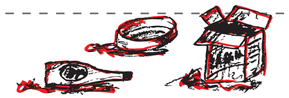
Processing is the next, highly profitable, step in the industrial food chain. The transformation of foods into ready-made meals, snacks and beverages requires an enormous amount of energy, mostly in the form of carbon. So does the packaging and canning of these foods. Processing and packaging enables the food industry to stack the shelves of supermarkets and convenience stores with hundreds of different formats and brands, but it also generates a huge amount of greenhouse gas emissions – some 8 to 10% of the global total.





Waste: 3-4%

The industrial food system discards up to half of all the food that it produces, thrown out on the long journey from farms to traders, to food processors, and eventually to retailers and restaurants. A lot of this waste rots on garbage heaps and landfills, producing substantial amounts of GHGs. Between 3.5-4.5% of global GHG emissions come from waste, and over 90% of these are produced by materials originating within the food system.



Freezing & Retail: 2-4%

Refrigeration is the lynchpin of the modern supermarket and fast food chains' vast global procurement systems. Wherever the industrial food system goes, so do cold chains. Considering that cooling is responsible for 15 percent of all electricity consumption worldwide, and that leaks of chemical refrigerants are a major source of GHGs, we can safely say that the refrigeration of foods accounts for some 1-2% of all global greenhouse gas emissions. The retailing of foods accounts for another 1-2%.

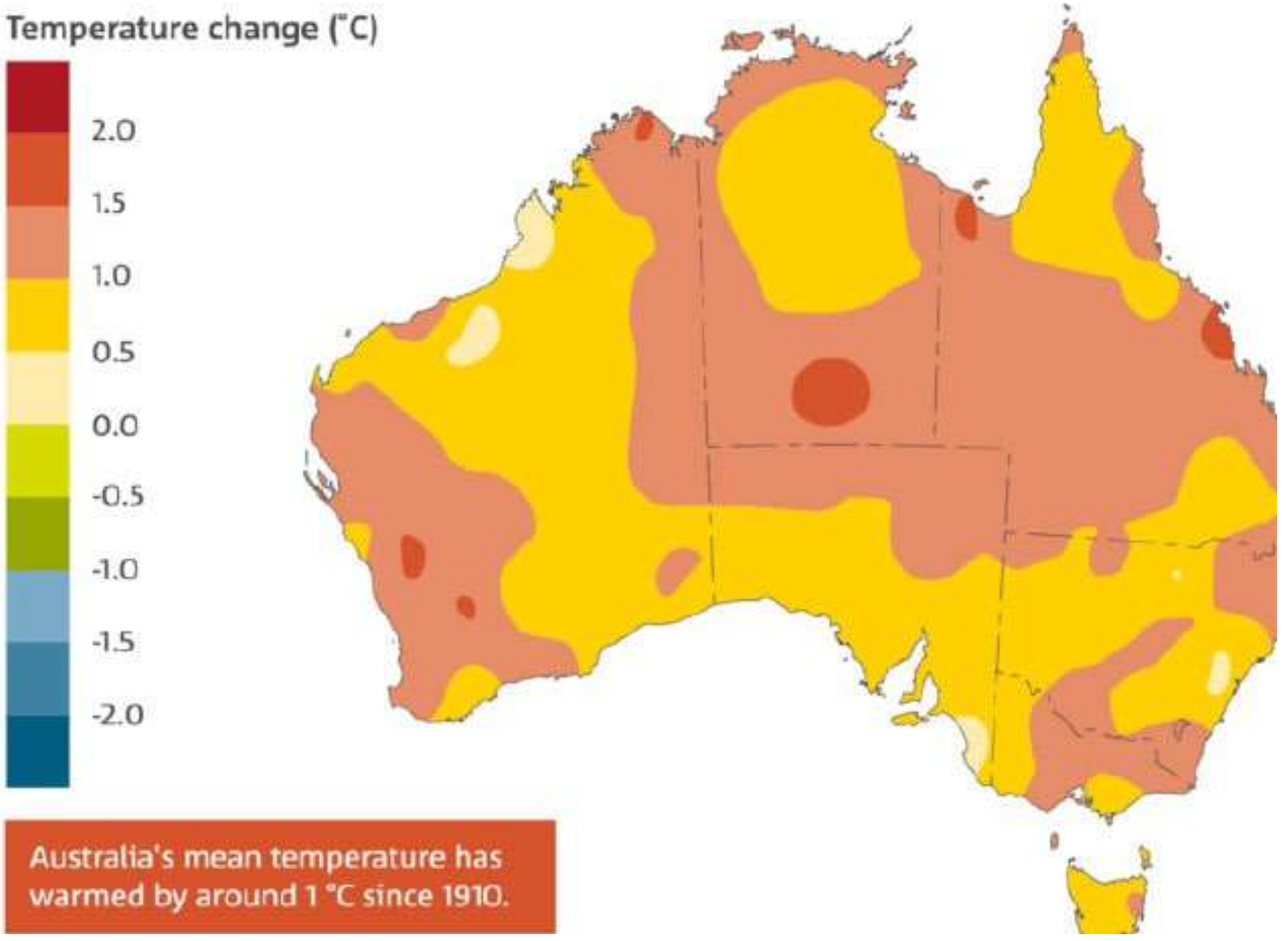
La Via Campesina

GRAIN

Food sovereignty: 5 steps to cool the planet and feed its people: http://grain.org/e/5102

Global Food Waste:30%

Australia’s climate change


Temperature change (°C)
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
Australia's mean temperature has warmed by around 1 °C since 1910.

HOW WILL CLIMATE CHANGE AFFECT AUSTRALIA?

Cyclones are likely to become **more intense,** but less frequent.

Extreme rainfall events are expected to become **more intense.**

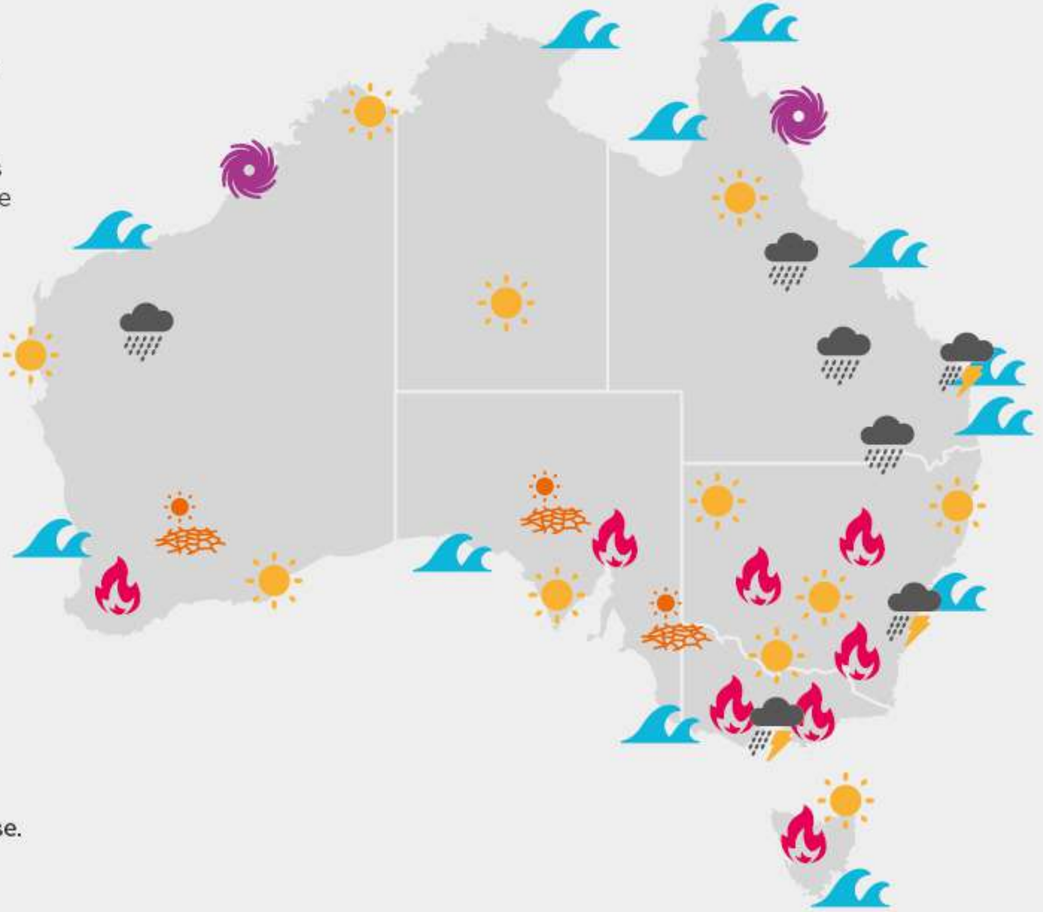
Hotter and drier conditions will lead to harsher bushfire weather.

Heatwaves will become even **longer and hotter.**

Higher sea levels will **increase flooding** in coastal cities and towns.

Potential severe thunderstorm days are **expected to increase.**

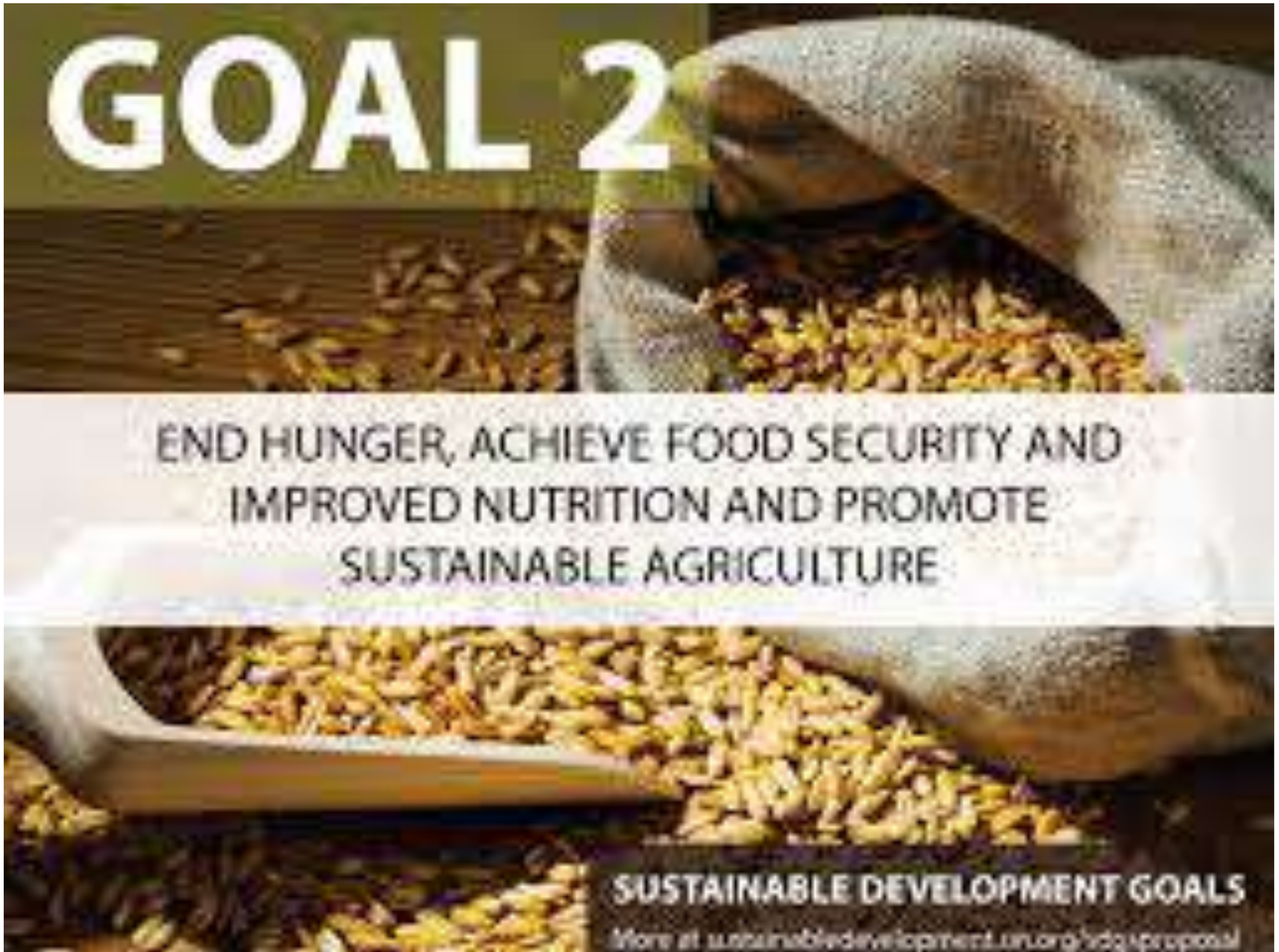
Droughts are likely to happen **even more often.**



Australia
one of the most vulnerable in developed world

- 5 degree Celsius rise by 2090
- IPCC (Oct. 2018): 2 degree of the Paris Agreements is insufficient. 1,5 would be better
- **2018 historic drought**, 3rd warmest, annual rainfall below 11%, lowest recorded in 2005 during the Millennium Drought
- 2 regions; **Murray Darling basin and South west**
- **Very bad for the Agri**: 70% of winegrowing will be less suitable by 2050
- Carrots, most valu. vegetable export will be less
- Heat stress on dairy cows will reduce milk yield by 10-25 %.
- **Ocean warming and acidification** from GHG impacted **Great Barrier Reef.** Valued over 40 billion has degradation, including |mass bleaching event| in 2016., which was made 175 times more likely by cc.

V. Taking Global Action for Future 2030 Agenda for Sustainable


GOAL 2
END HUNGER, ACHIEVE FOOD SECURITY AND
IMPROVED NUTRITION AND PROMOTE
SUSTAINABLE AGRICULTURE
SUSTAINABLE DEVELOPMENT GOALS