

FUTURE OF GLOBAL FOOD PRODUCTION

A question of Food (In)Security - William England

Thank you for the invitation, my first visit to Sweden feels like coming home !



AGENDA – Food (In)Security

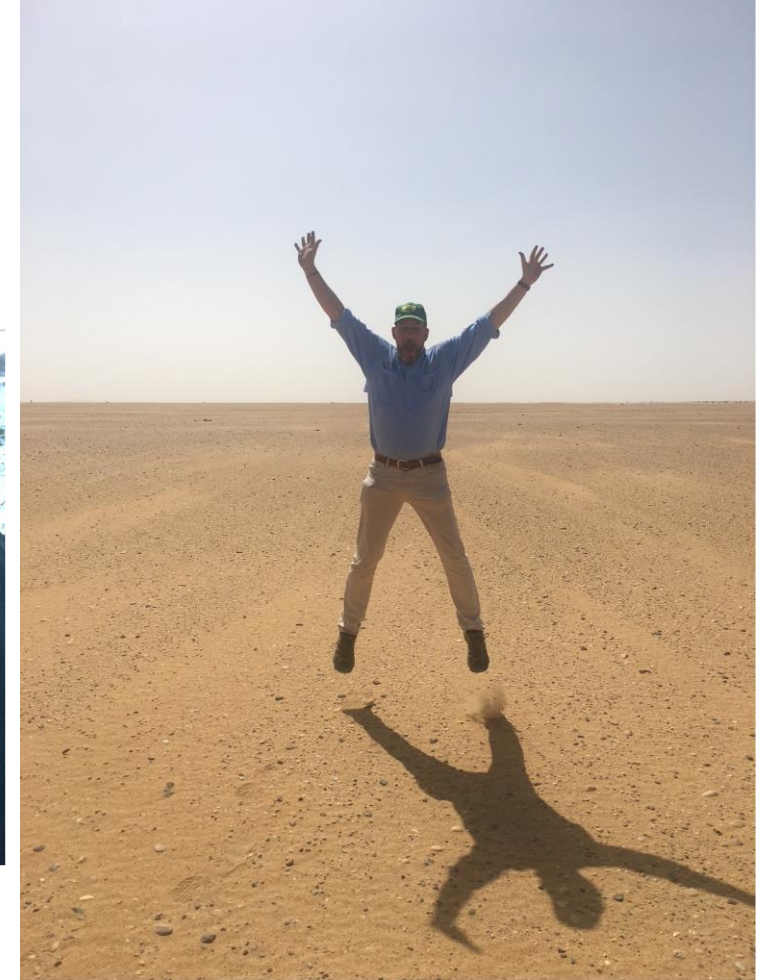
- **15.15–16.45: William England, Internatonell jordbruksinvesterings expert.**

En unik framtidsspaning kring lantbrukssektorn globalt

William är internationell lantbruksföretagare, få har den erfarenhet ifrån världens största lantbruksföretag och investeringsfonder som han har. William har också erfarenhet ifrån ledande positioner i en av världens största slakterikoncerner.

- **William England - International Agricultural Investment Expert (But still “Every day is a School Day”)**
- **A unique look into the future of the global agricultural sector (Simply my personal observations)**
- **William is an International Agricultural Entrepreneur, few have the experience from the world's largest agricultural companies and investment funds that he has. William also has experience from leading positions in one of the world's largest slaughterhouse groups. (True – Which means I have been very lucky and it is a privilege to share some of that luck ...)**

MY STORY



Introduction: Farmers through the generations – My Grandfather, Father, Son and I

- Before we can look forward into the future of the global agricultural sector, we need to look at the past.

Winston Churchill said, “Study history, study history”

- Henry England – Farmer, 1900 – 1991
- Edward Henry England – Farmer, 1937 – 2002
- William Henry England – Farmer , 1965
- Henry George England – Investment Banker, 1999
- Nikolai Henry England – Farmer ?, 2015

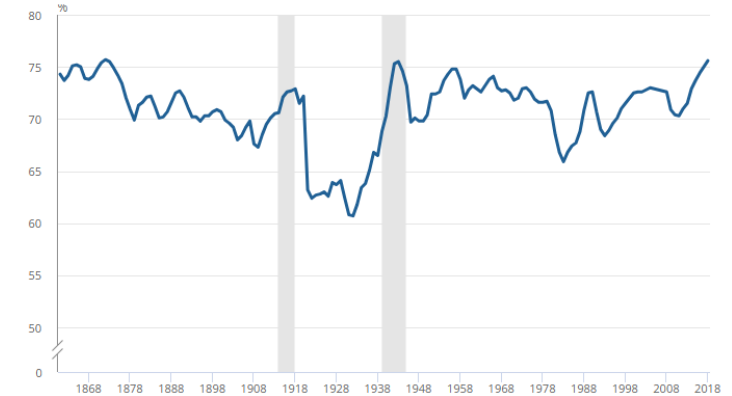
Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons

Henry England



- Born 1900
- Two older brothers killed in WWI
- 1920 – Took over his Father's Crown Tenancy in Yorkshire
- During the Great Depression he paid no rent if he promised to continue to employ all his 40 staff
- He farmed during WWII with the Land Army and PoW
- On 80 Ha he grew grains, oilseeds, fodder, sugar beet and had grassland.
- He had cattle, pigs, sheep and chickens.
- He hunted foxes, shot pheasants, attended all the UK's major sports events, played poker and drank whisky !

Figure 1: Employment rate, UK, 1861 to 2018



At the peak of the inter-war depression 3.5m (22%) of the 16m UK working population were unemployed.

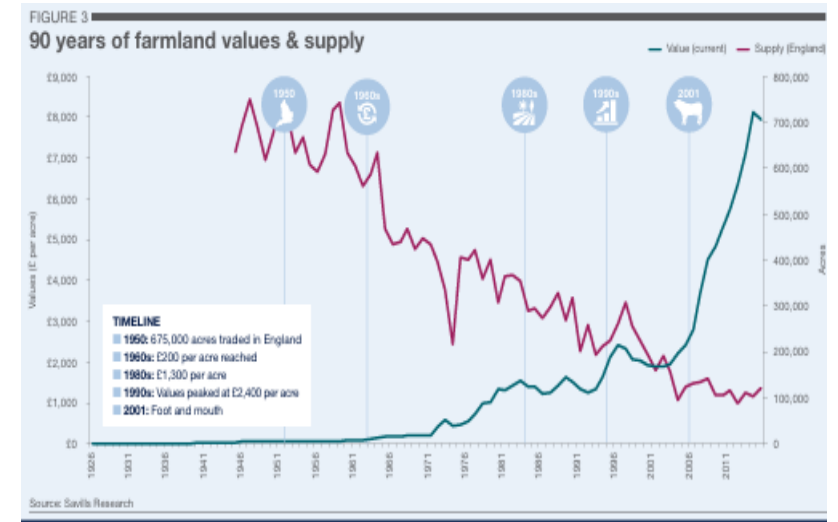
Conservative, risk averse, slow technological development, little government support

Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons

Edward “Ted” England



- Born 1937
- One of two brothers
- Jack went to Rhodesia now Zimbabwe
- Completed National Service
- Father started farming in the UK in 1963
- Response to food security concerns
- Farm and Horticultural Development Scheme
- Marketing Boards
- Introduction of production quotas
- Land and building values
- Cashed in unlike generational farmers



Post-WWII food security boom, major technological development, risk appetite, government support

Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons

William England



- Born 1965
- Studied Agriculture at University
- Corporate Farm Management
- Budgets & Weather – 1992 to 2025
- Collapse of the Soviet Union
- CEE from 1996
- Corporates, UHNWs, Governments
- Saudi Arabia
- Australia
- “Farmer”
- Drives Tractors



Farming entry cost barrier, global opportunities, further technological development, climate awareness, global food insecurity

Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons

UK



CEE



Global



Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons



- Wheat
- Barley
- Corn
- Canola
- Sunflower
- Soybean
- Forage
- Poppy
- Potatoes
- Sugar Beet
- Salads
- Greenhouse
- Vegetables
- Top Fruit
- Pomegranate
- Hazelnuts
- Cotton
- Dairy
- Beef
- Sheep
- Chicken
- Fish

Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons



Lived in:

1. United Kingdom
2. Czech Republic
3. Slovakia
4. Ukraine
5. Russia
6. Azerbaijan
7. Saudi Arabia
8. Australia

Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons



- One chain on one site
- 3.6m processed in 2024
- Exported Globally
- Target 9m

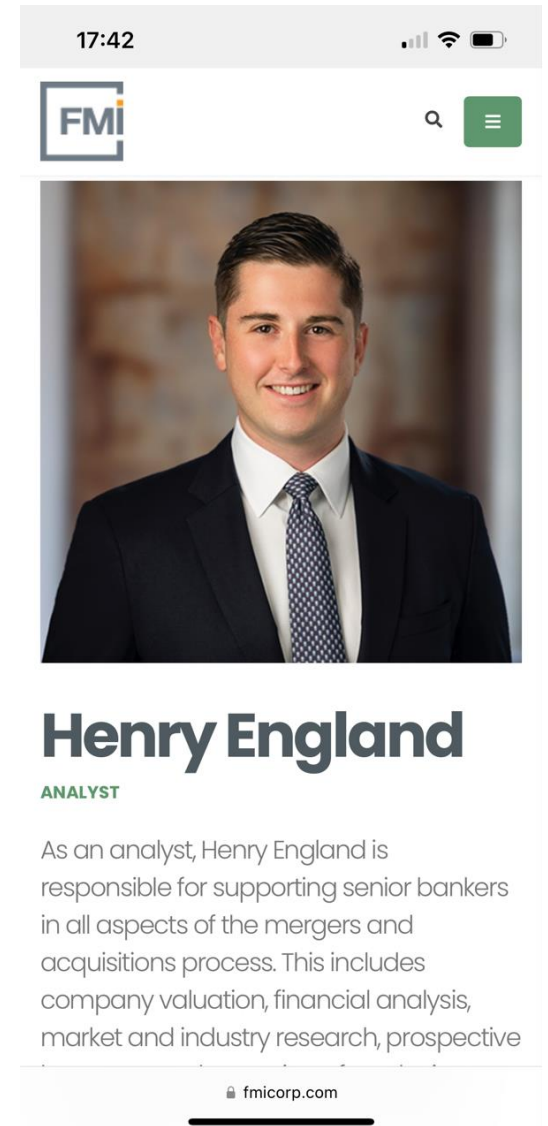
Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons

Henry England



- Born 1999 in the Czech Republic
- Studied Economics & Finance at University
- Lives in Denver, Colorado
- Investment Banker
- Married to an American Lawyer
- Doesn't drive a tractor

“Generation Z” - deeply connected to technology.



Introduction: Farmers through the generations – My Grandfather, Father, Myself and my Sons

Nikolai England



- Born 2015 in Russia
- Studies at South Perth Primary School in Australia.
- Wants to drive a tractor
- My last hope ...



“Generation Alpha” characterized as being a digital native and spending hours and hours in front of screens

And there
is hope:



World Population

Current World Population

8,207,485,141

[view all people on 1 page >](#)

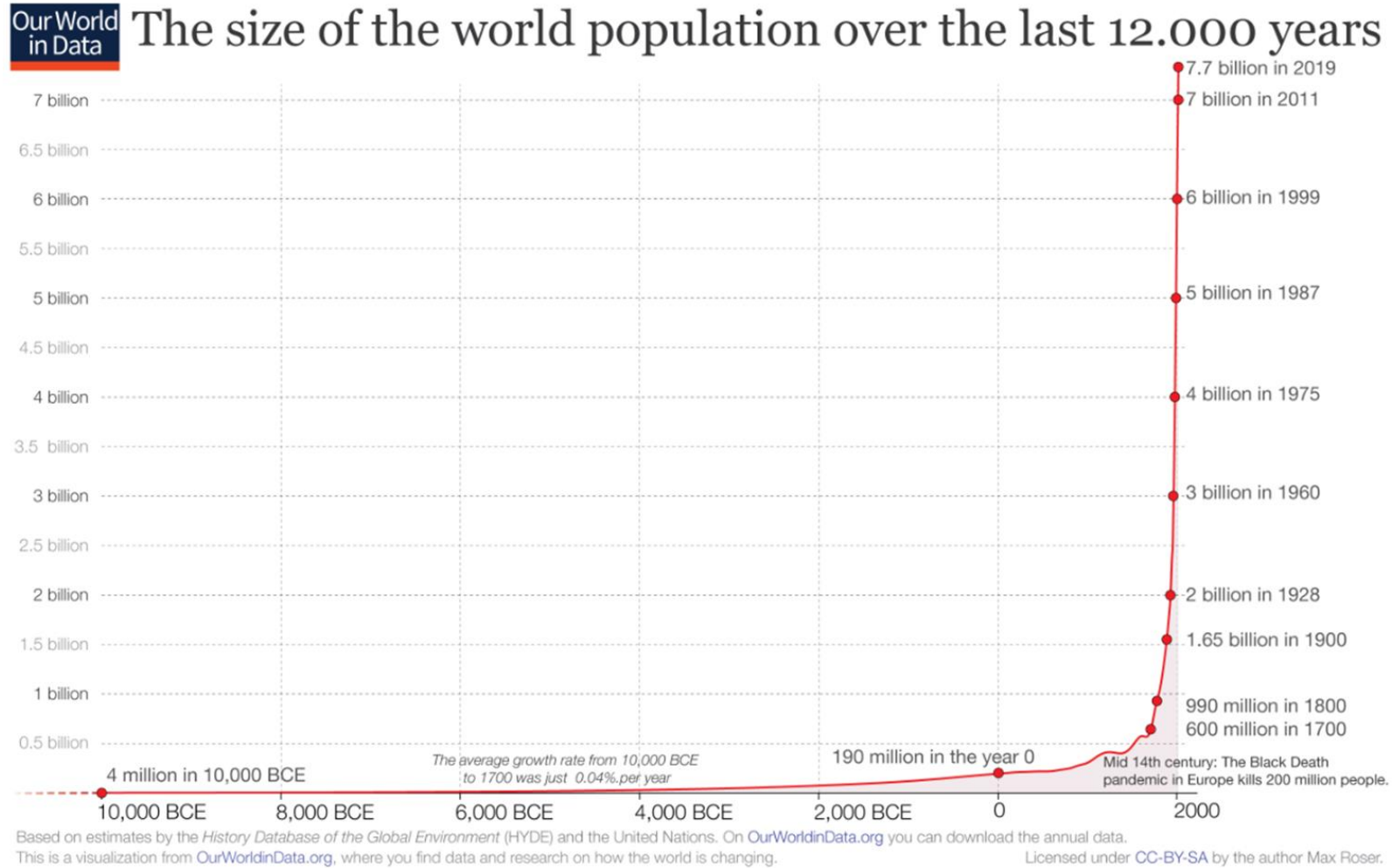
TODAY	THIS YEAR
Births today 215,428	Births this year 19,441,657
Deaths today 101,510	Deaths this year 9,160,999
Population Growth today 113,918	Population Growth this year 10,280,658

Sweden Population (LIVE)

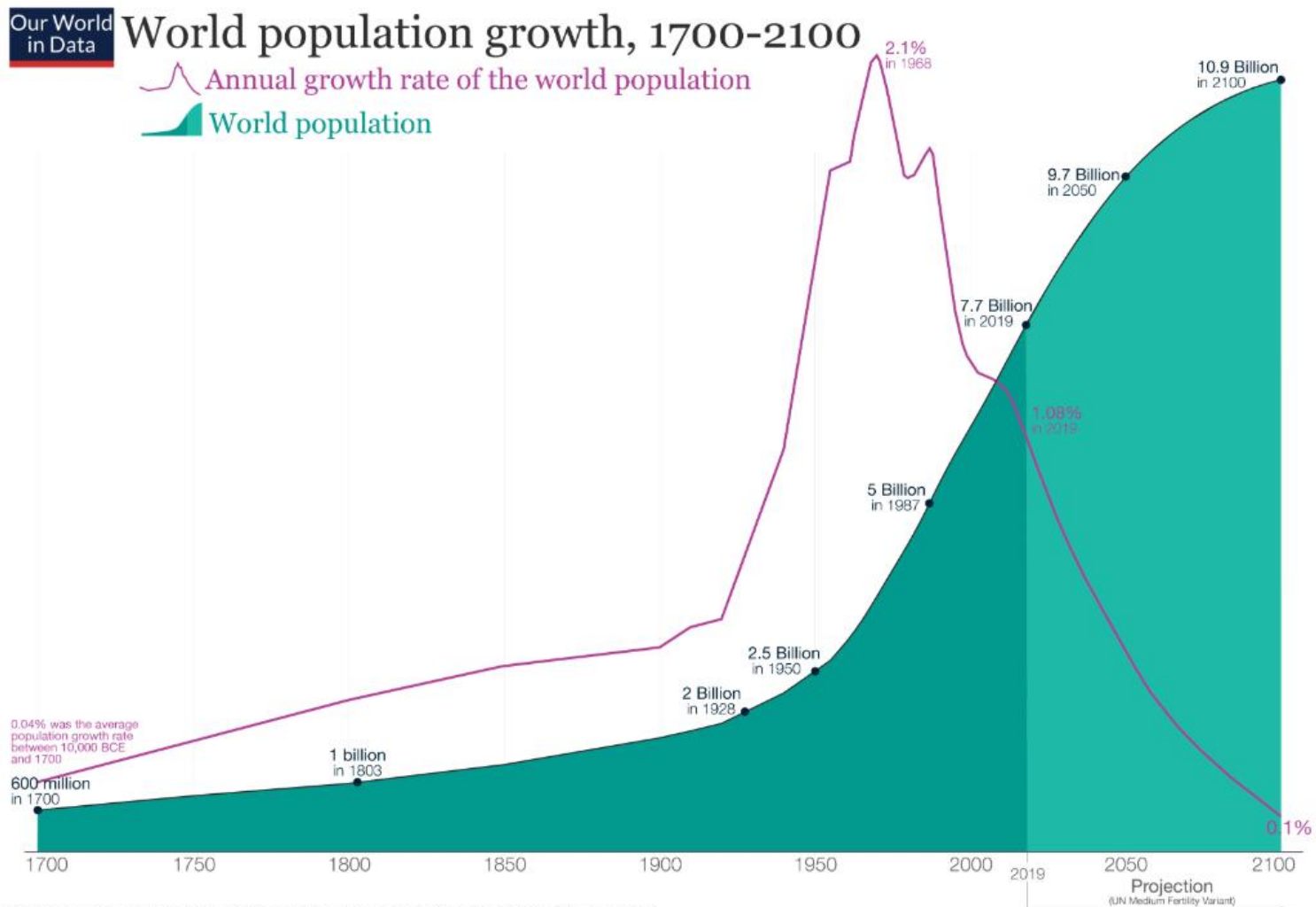
10,639,213

0.13%

World Population



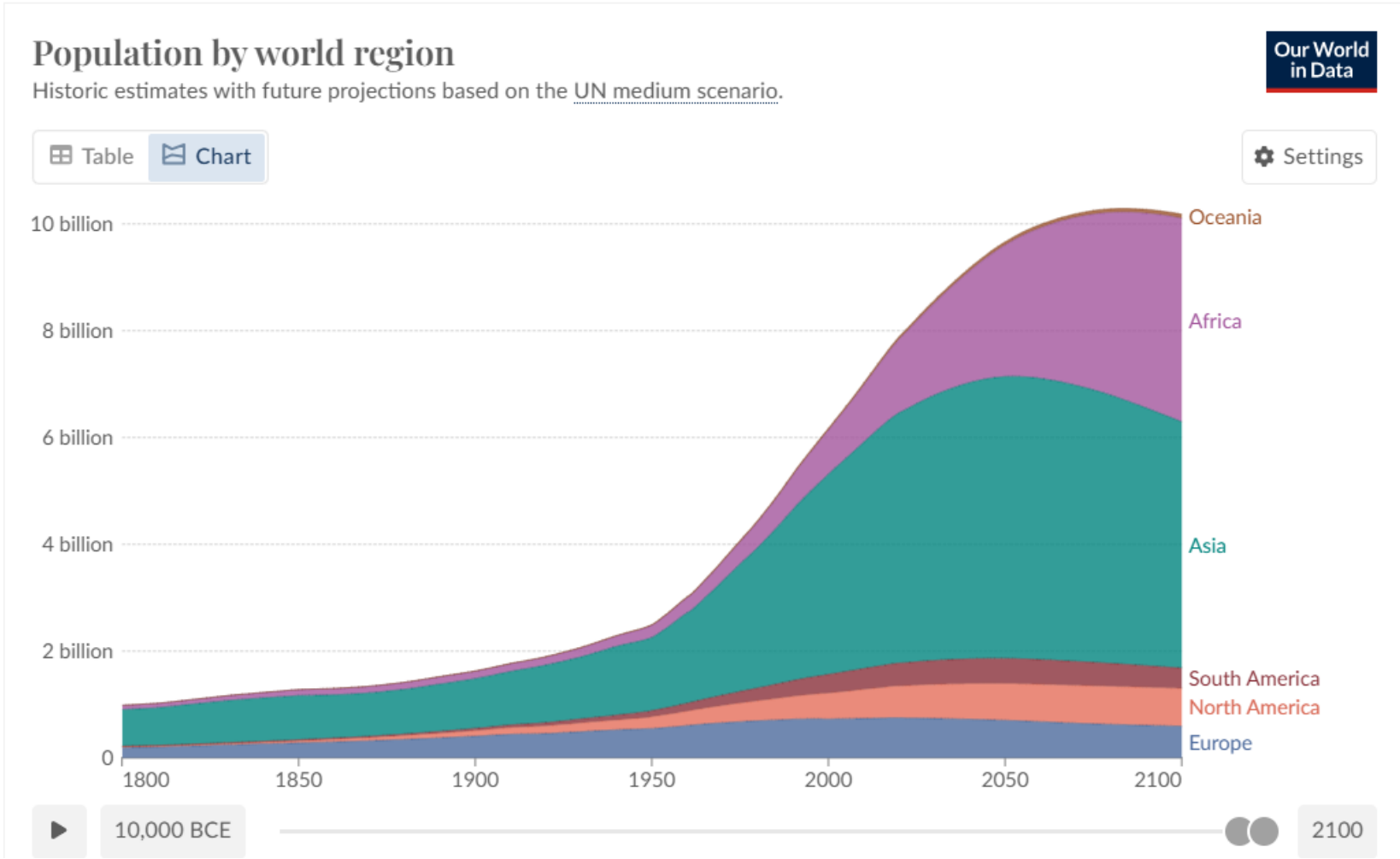
World Population



Data sources: Our World in Data based on HYDE, UN, and UN Population Division [2019 Revision]
This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.

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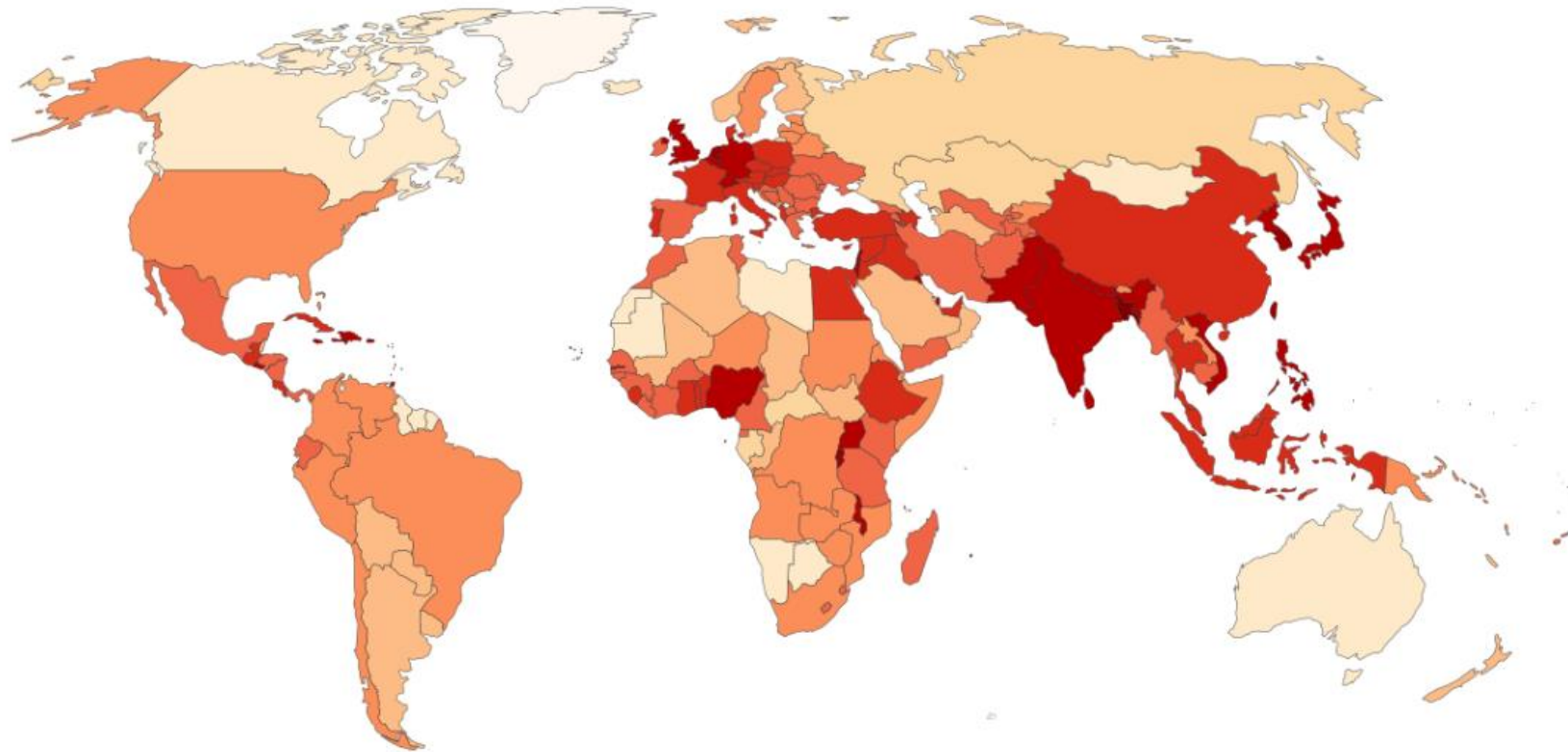
World Population



World Population

Population density, 2022

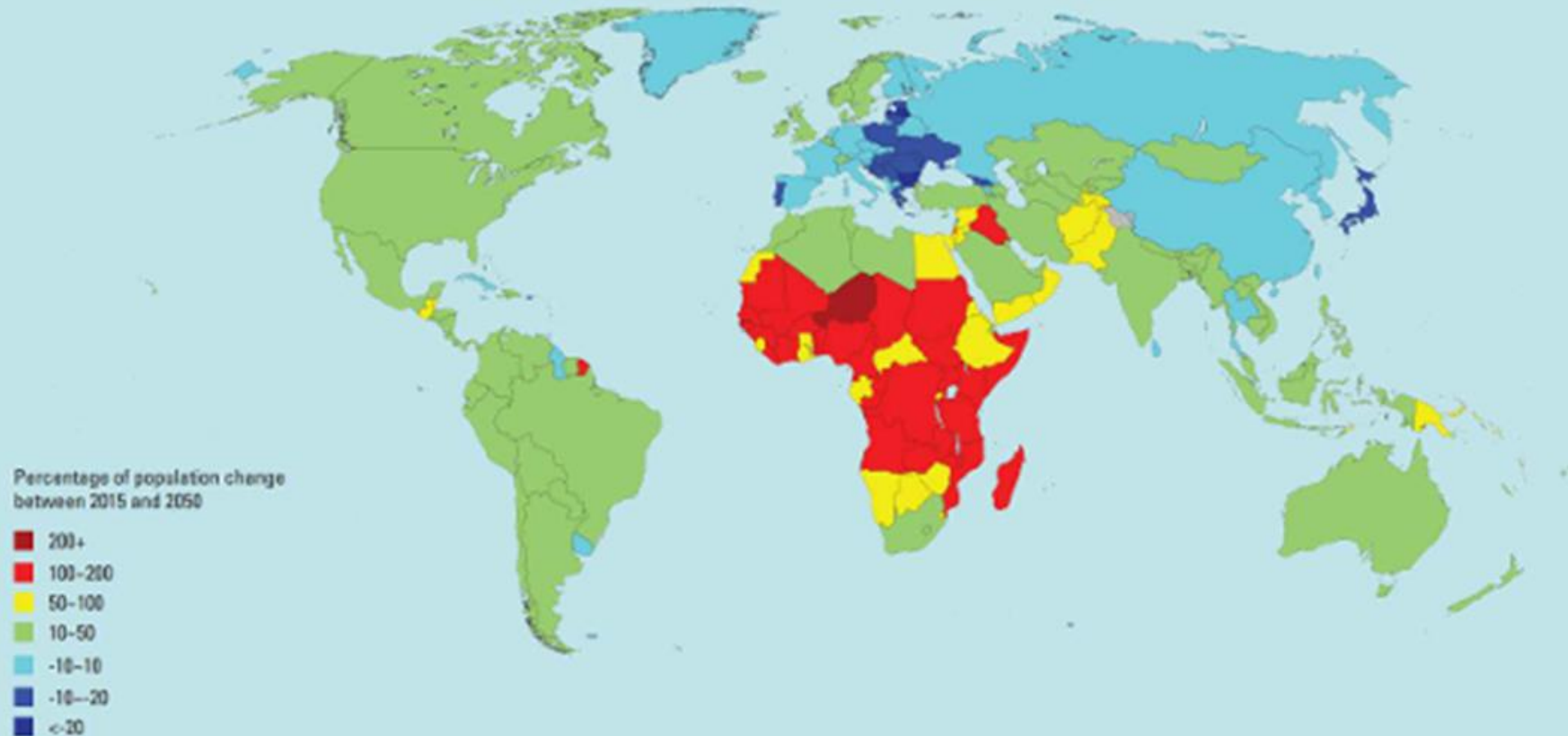
The number of people per km² of land area



Data source: HYDE (2017); Gapminder (2022); UN WPP (2022); UN FAO (2022)

World Population

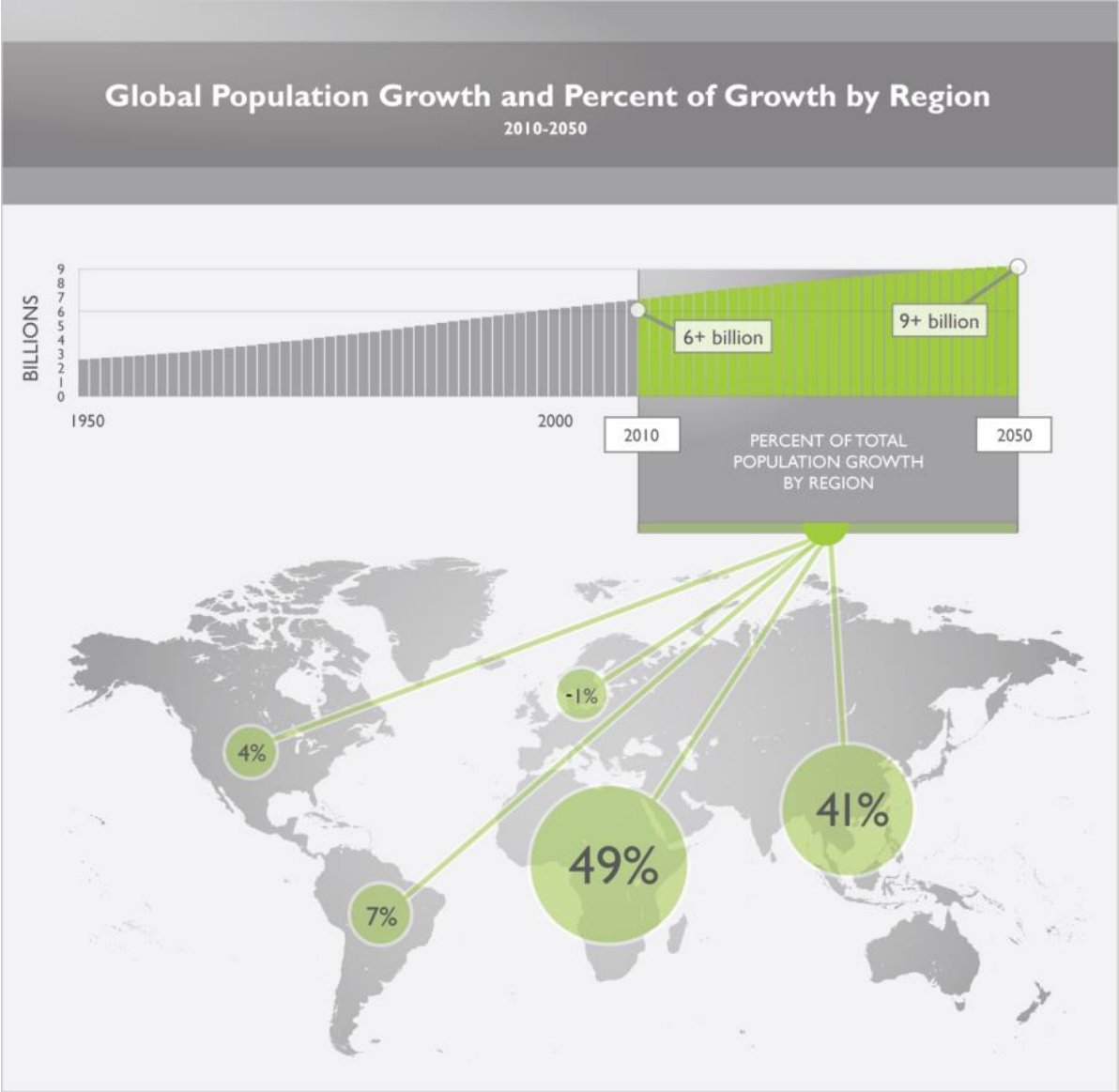
Projected population growth, 2015-2050



Data source: World Population Prospects: The 2017 Revision.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

World Population



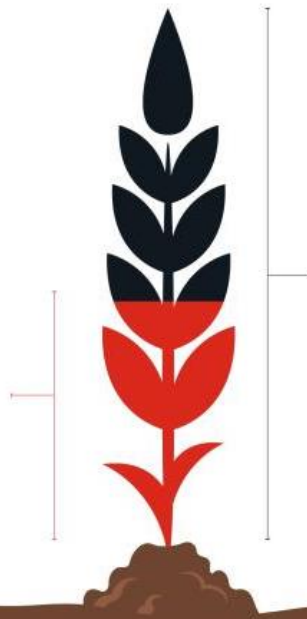
How the Australian's look at the World Map !



Global Food Production

Food needed to
feed everyone

2,250
calories
per person, per day



Food grown
globally

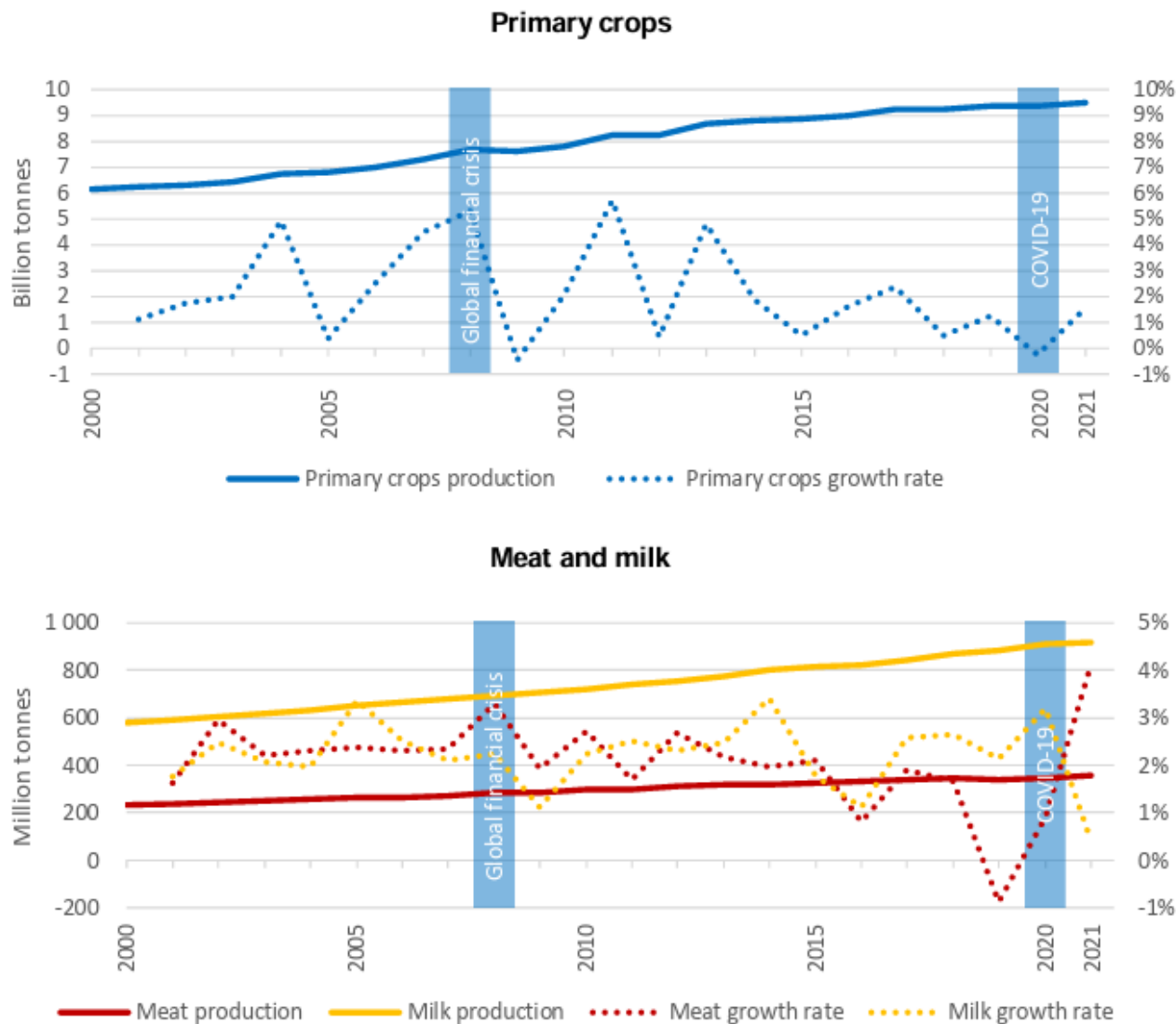
6,000
calories
per person, per day

Source: M. Berners-Lee et al., "Current Global Food Production Is Sufficient to Meet Human Nutritional Needs in 2050 Provided There Is Radical Societal Adaptation," (2018) & FAO, IFAD, UNICEF, WFP and WHO., "The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable," (2022)

Global Food Production

The global agricultural production of primary crops grew by 54 percent between 2000 and 2021 reaching 9.5 billion tonnes in 2021

Figure 1: World agricultural production volumes and growth rates by commodity group



Source: FAO. 2022. FAOSTAT: Production: Crops and livestock products. In: FAO. Rome. Cited December 2022. <https://www.fao.org/faostat/en/#data/QCL>

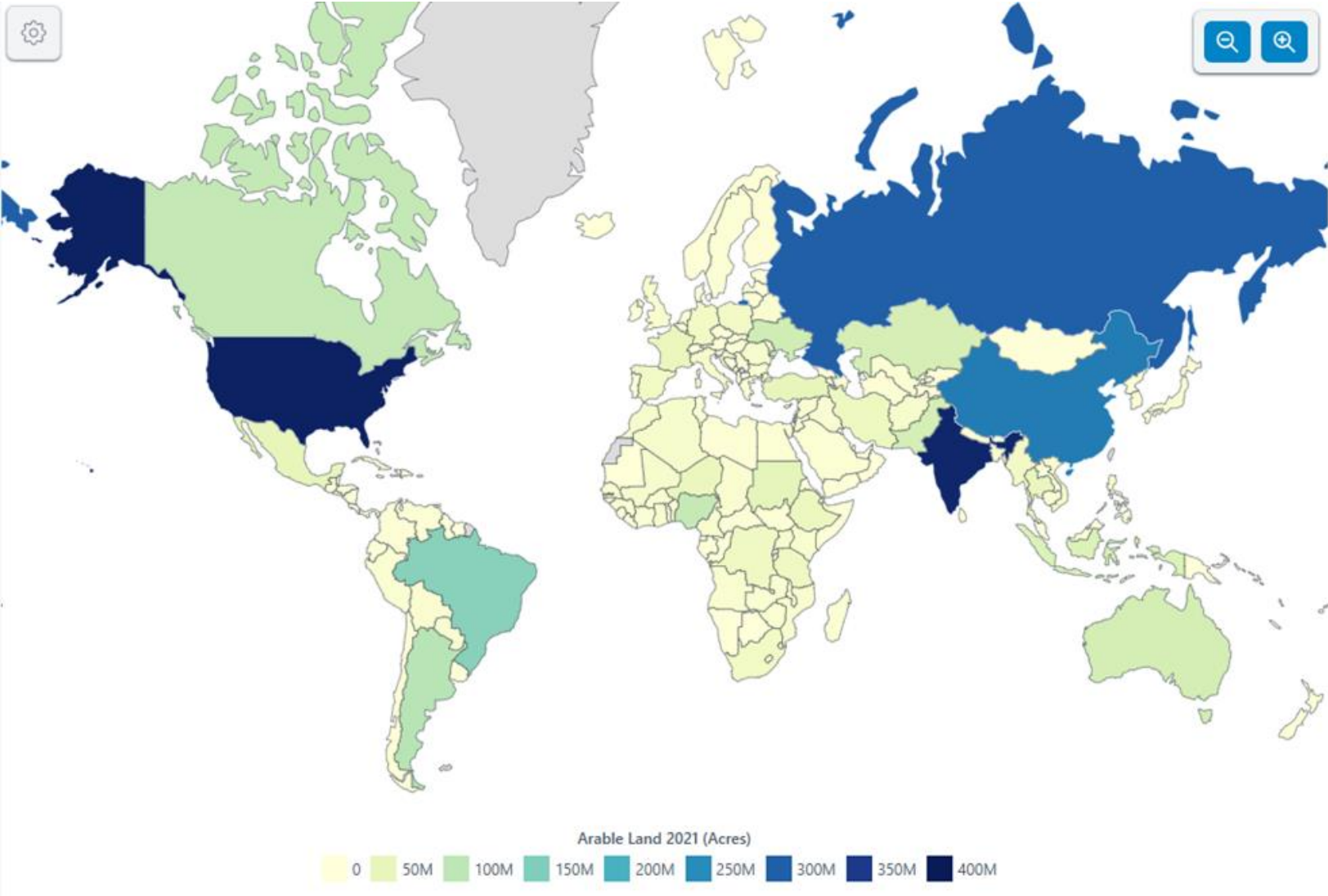
LAND



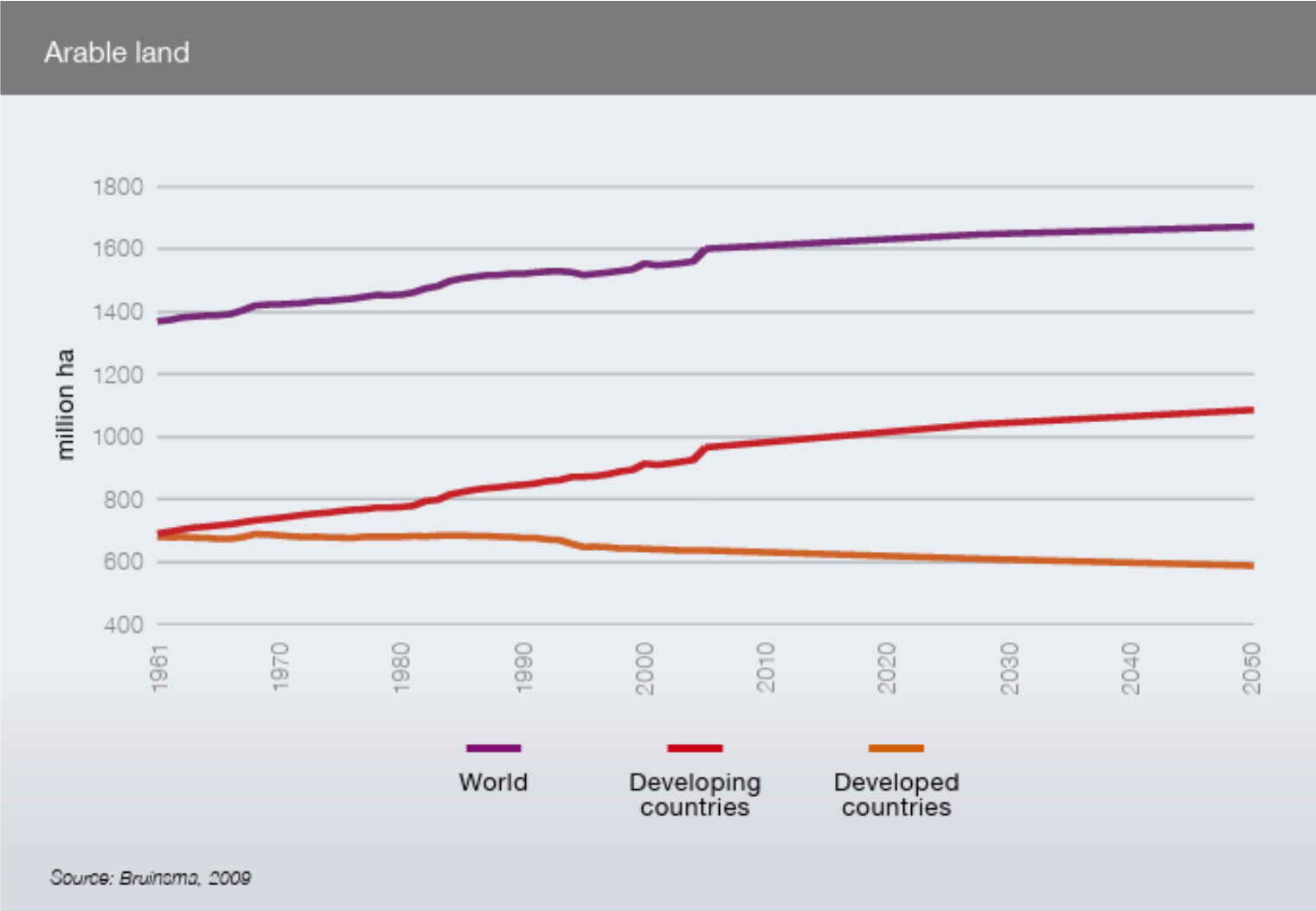
Land



Land



Land



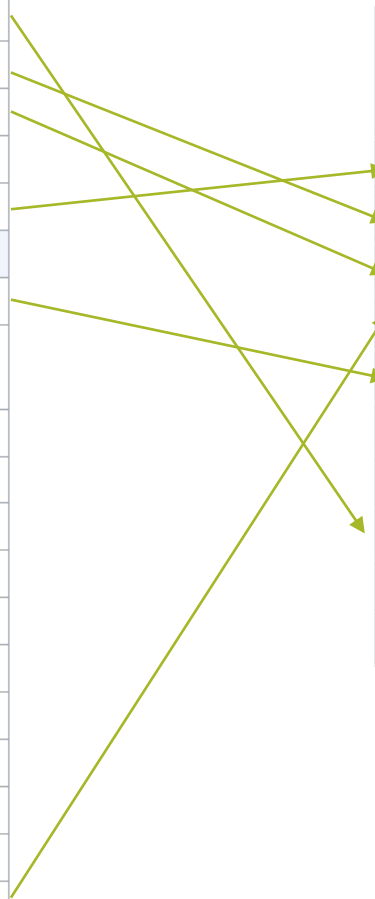
Developed countries efficiency will increase despite less land.

Land

	Location	Arable m ² / person	Persons / arable km ²	% arable	Arable land (km ²)	Population
	World	1,800	570	11%	14,000,000	7,900,000,000
1	 Kazakhstan	15,456	65	11%	296,697	19,196,465
2	 Australia	12,062	83	4%	312,650	25,921,089
3	 Canada	10,027	100	4%	382,590	38,155,012
4	 Argentina	9,322	107	15%	422,088	45,276,780
5	 Russia	8,384	119	7%	1,216,490	145,102,755
6	 Lithuania	8,178	122	36%	22,790	2,786,651
7	 Ukraine	7,563	132	57%	329,240	43,531,422
8	 Saint Helena, Ascension and Tristan da Cunha	7,402	135	10%	40	5,404
9	 Latvia	7,268	138	22%	13,620	1,873,919
10	 Paraguay	7,062	142	12%	47,340	6,703,799
11	 Niger	7,009	143	14%	177,000	25,252,722
12	 Uruguay	5,927	169	12%	20,306	3,426,260
13	 Belarus	5,872	170	28%	56,240	9,578,167
14	 Moldova	5,589	179	52%	17,110	3,061,506
15	 Estonia	5,268	190	16%	7,000	1,328,701
16	 Guyana	5,220	192	2%	4,200	804,567
17	 Niue	5,163	194	4%	10	1,937
18	 Bulgaria	5,084	197	32%	35,005	6,885,868
19	 United States	4,681	214	17%	1,577,368	336,997,624
20	 Sudan	4,598	217	11%	209,948	45,657,202

Wheat Export, 2023

#	Country	Quantity in tonnes	Value in thousands of USD
1	 Russia	31,599,104	9,184,005
2	 Australia	29,292,038	9,276,804
3	 Canada	25,571,109	8,839,931
4	 United States	17,942,310	6,133,204
5	 Ukraine	16,151,705	2,940,949
6	 France	13,476,663	3,962,766
7	 Romania	8,171,216	2,224,351
8	 Kazakhstan	7,202,626	1,852,686
9	 Poland	6,972,401	1,966,392
10	 Germany	6,784,192	1,946,337

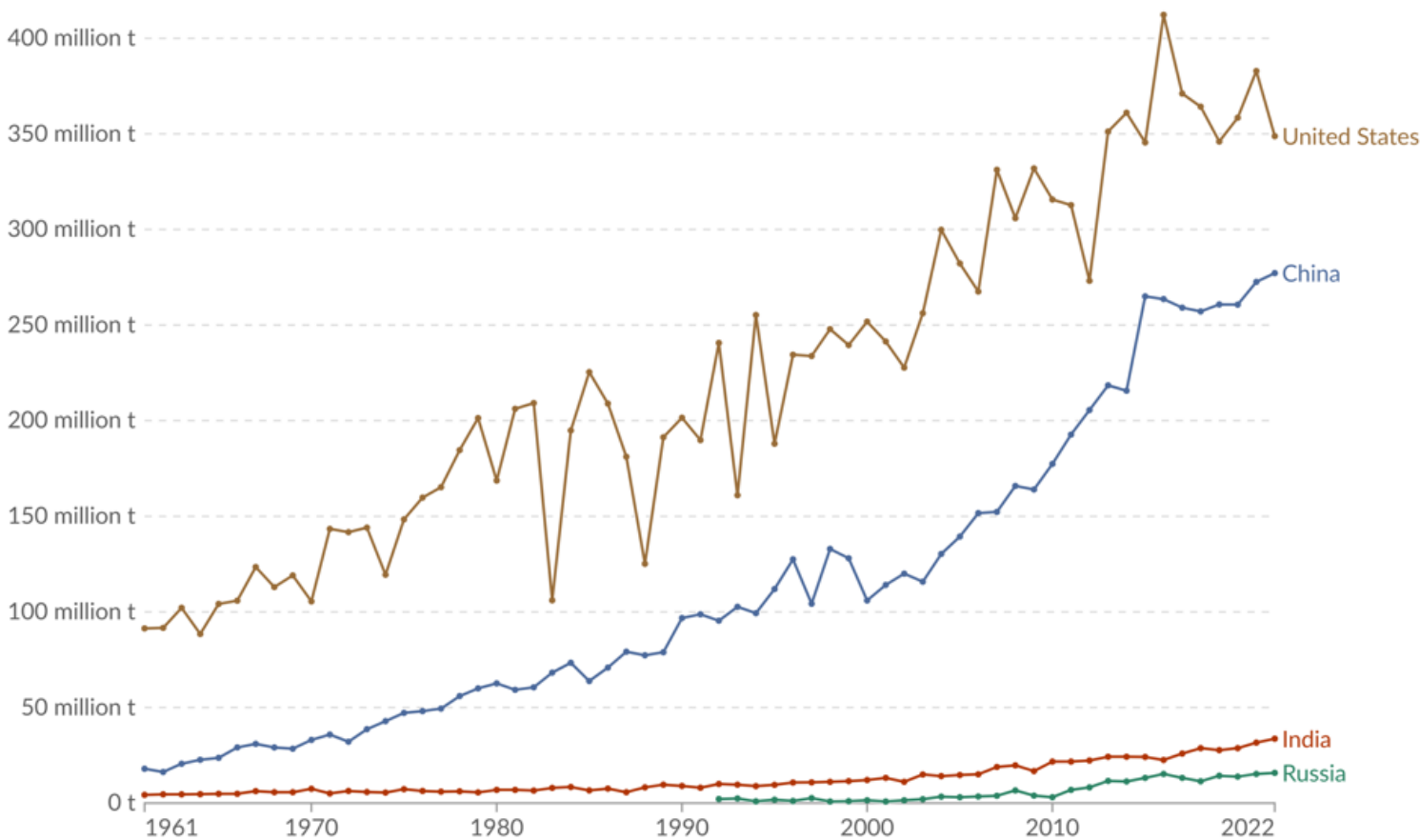


Global Food Production

Corn production, 1961 to 2022

Our World
in Data

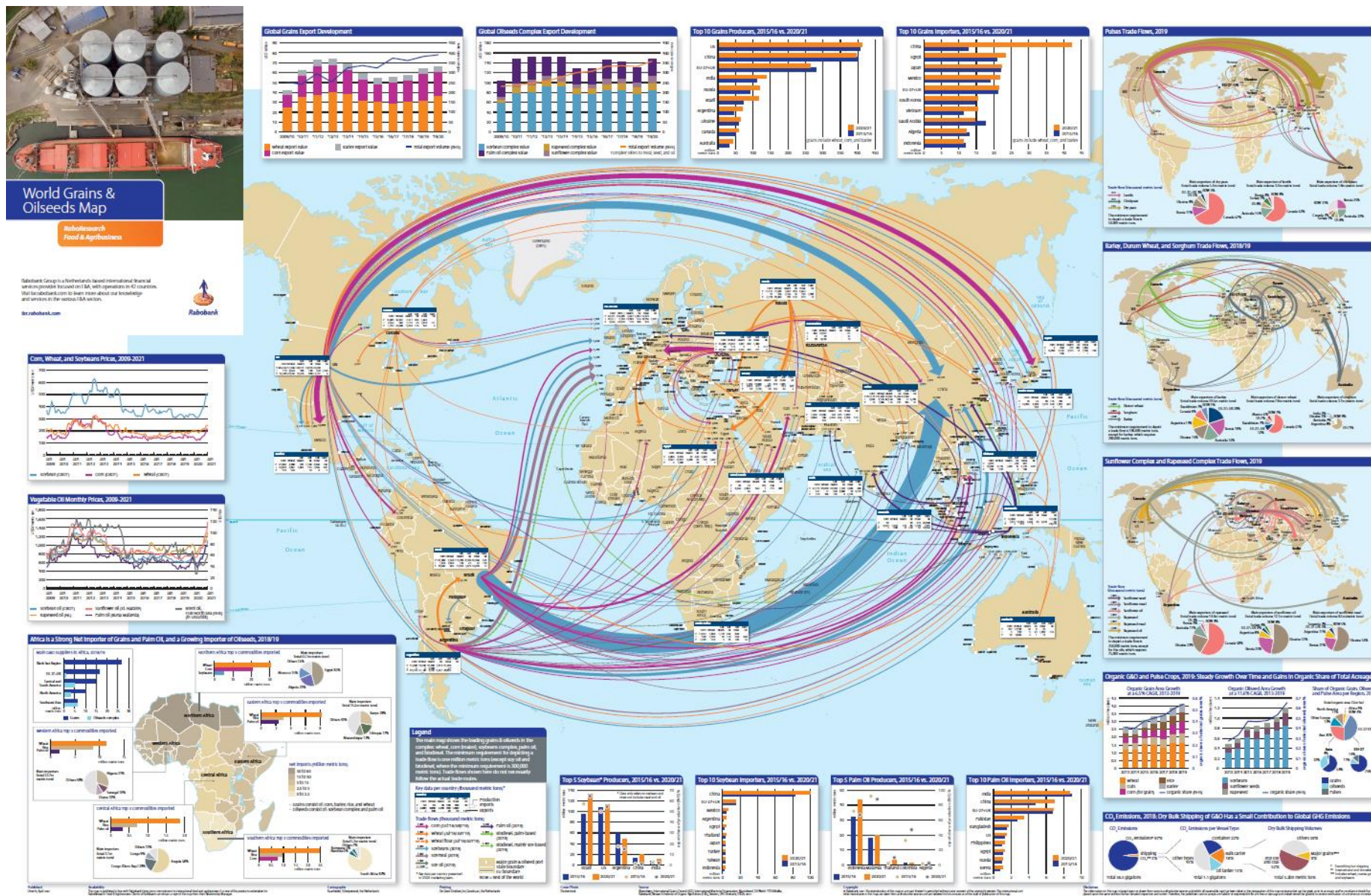
Corn (maize) production is measured in tonnes.



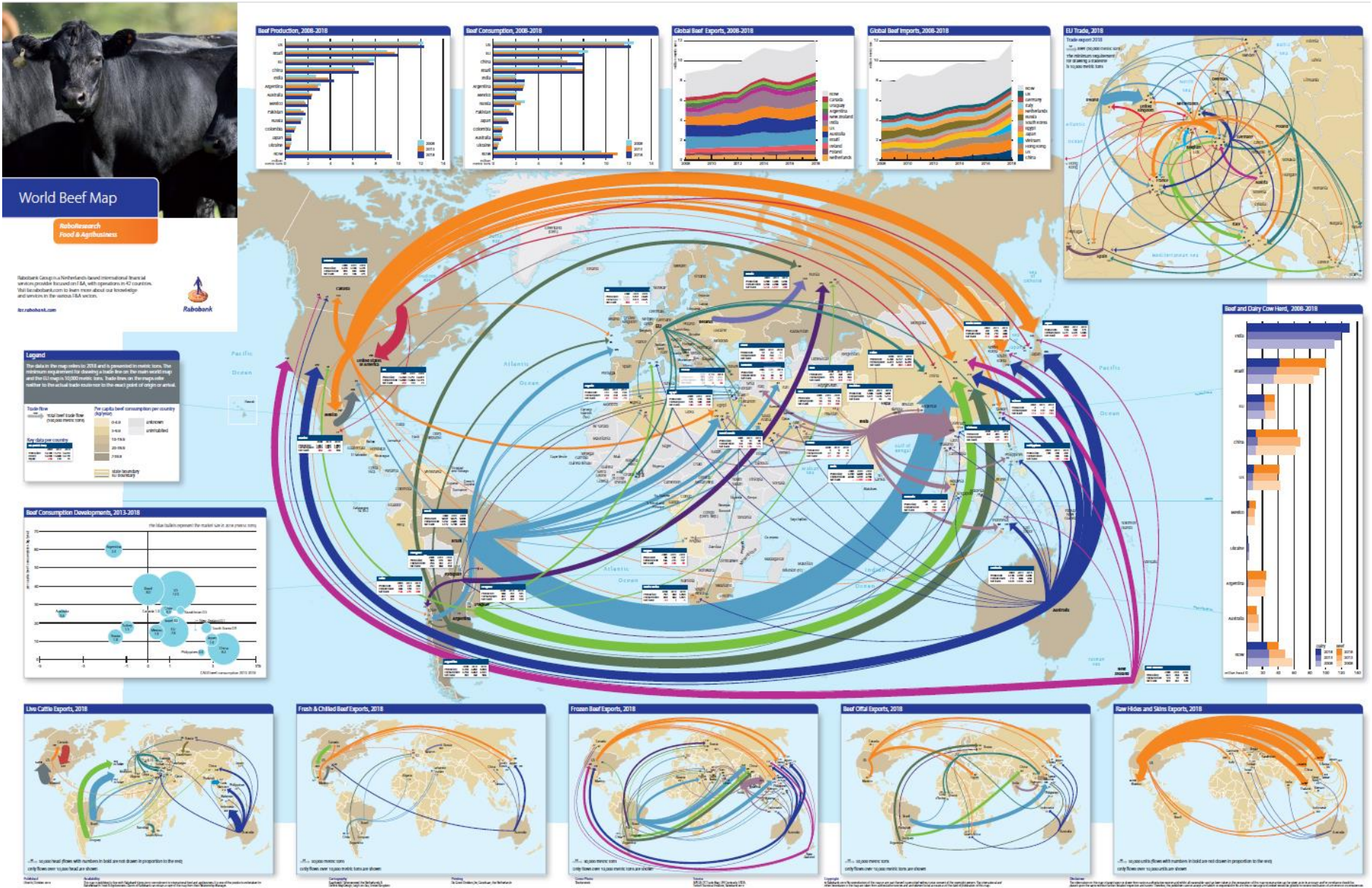
Data source: Food and Agriculture Organization of the United Nations (2023)

OurWorldinData.org/agricultural-production | CC BY

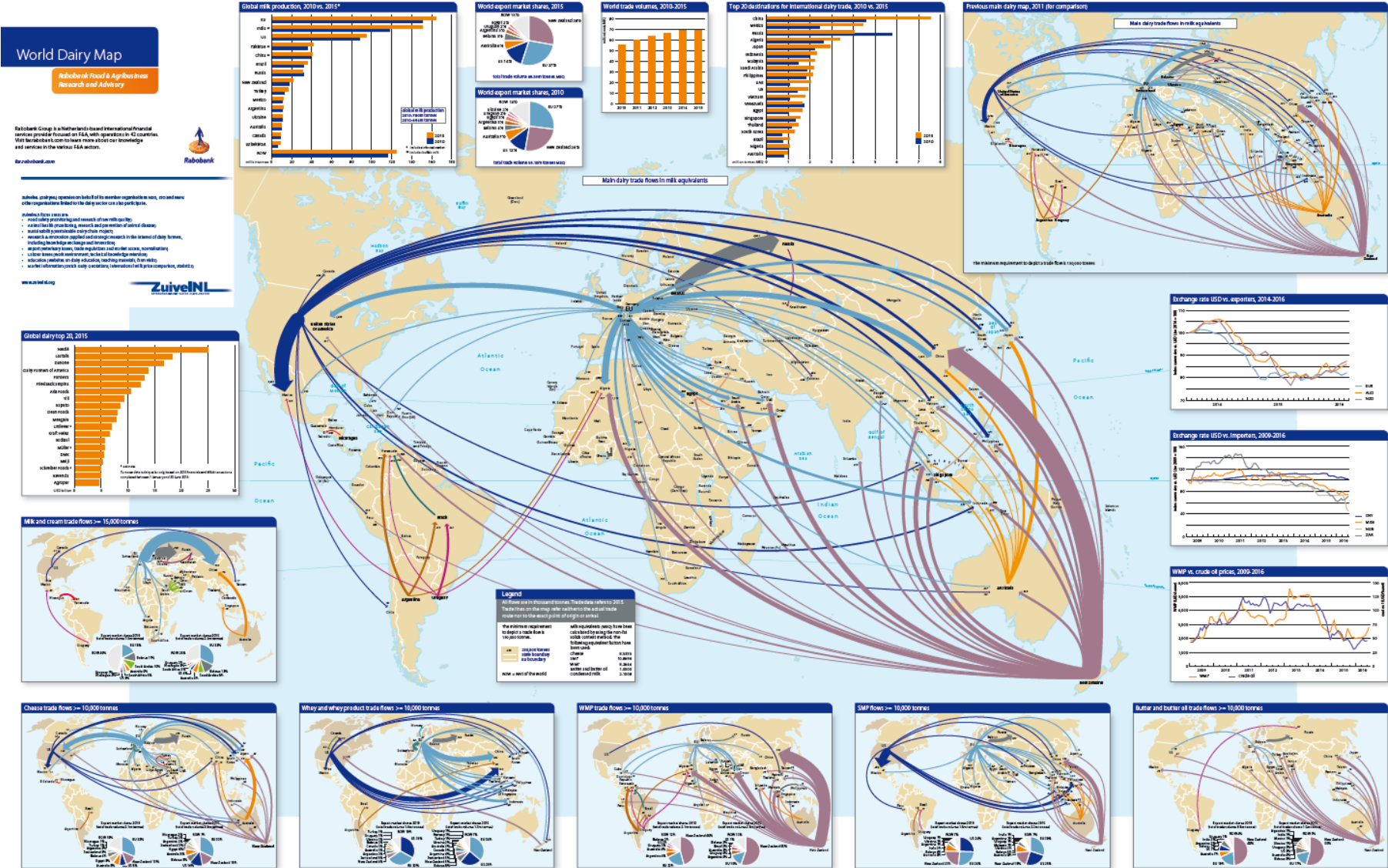
Food Production – World movements of Grain and Oilseeds



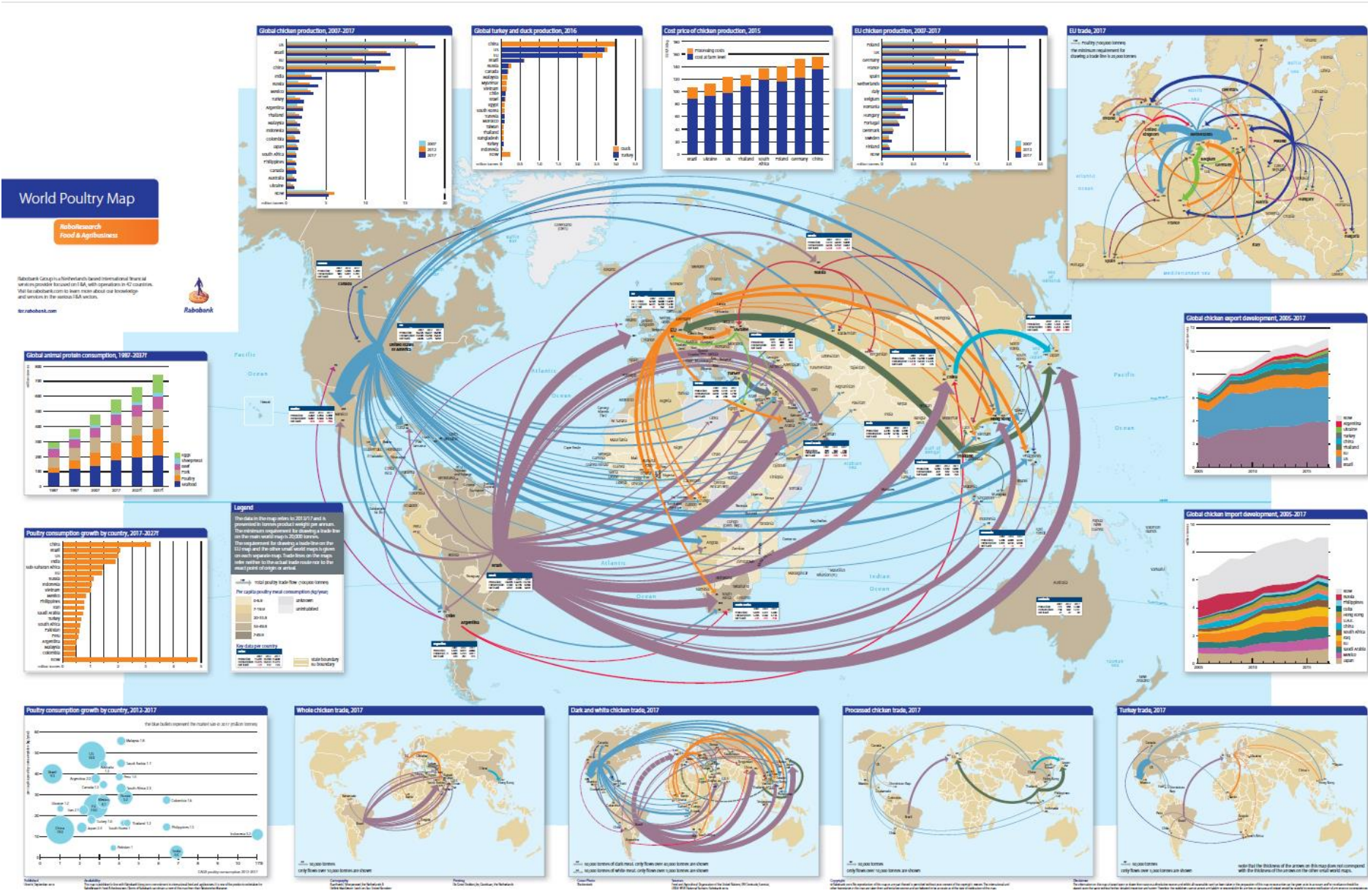
Food Production – World movements of Beef



Food Production – World movements of Milk products



Food Production – World movements of Poultry products



Population and Food Production – Diets

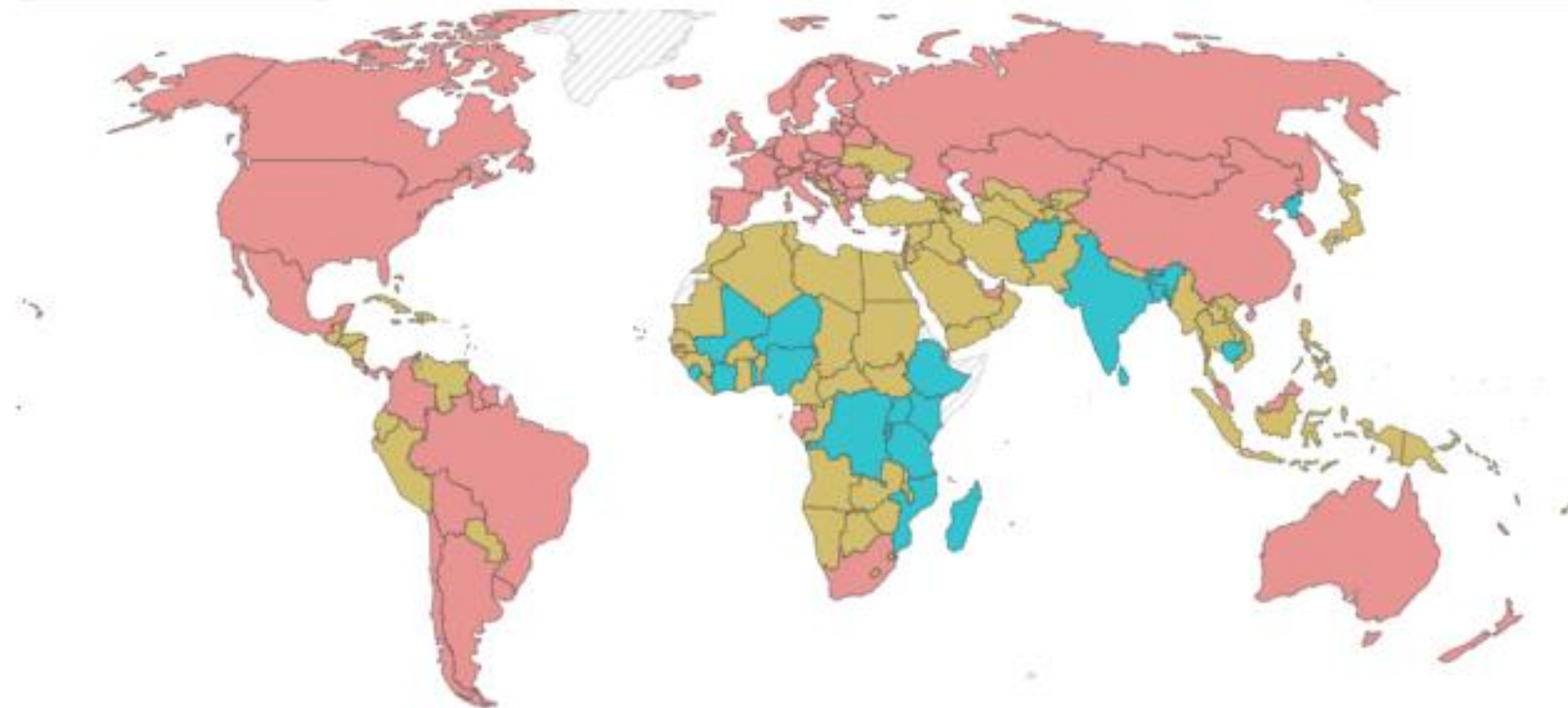
Daily meat consumption per person, 2021

Our World
in Data

Daily meat consumption is shown relative to the expected EU average of 165g per person in 2030. This projection comes from the livestock antibiotic scenarios from Van Boeckel et al. (2017).

Table Map

World



No data Below 40g 40-165g Over 165g

Population and Food Production – Diets

Per capita sources of protein, 2021

Our World
in Data

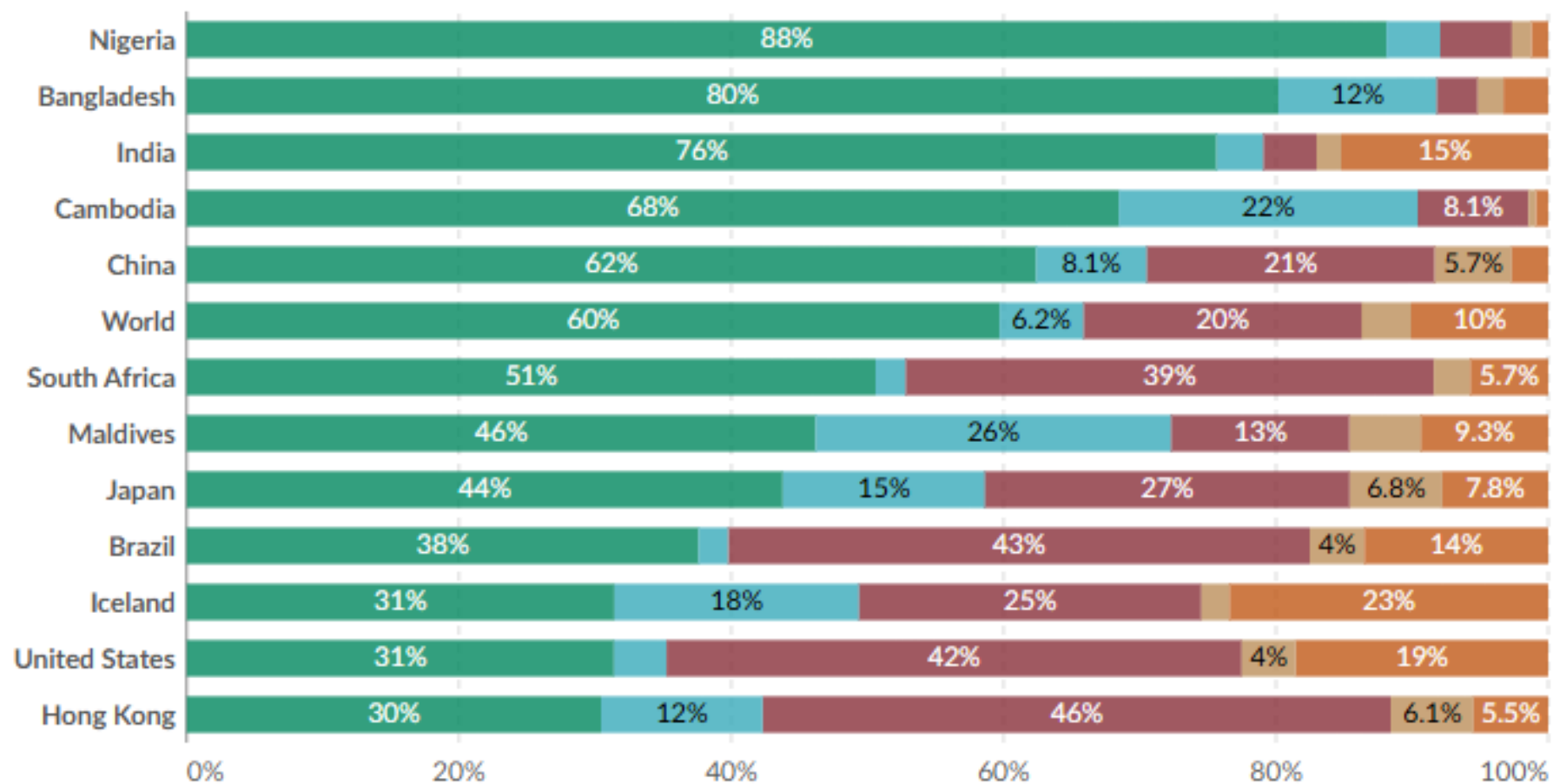
Daily protein sources are measured as the average supply of protein, in grams per capita per day.

Table Chart

Edit countries and regions

Settings

Plant protein Fish and seafood Meat Eggs Dairy

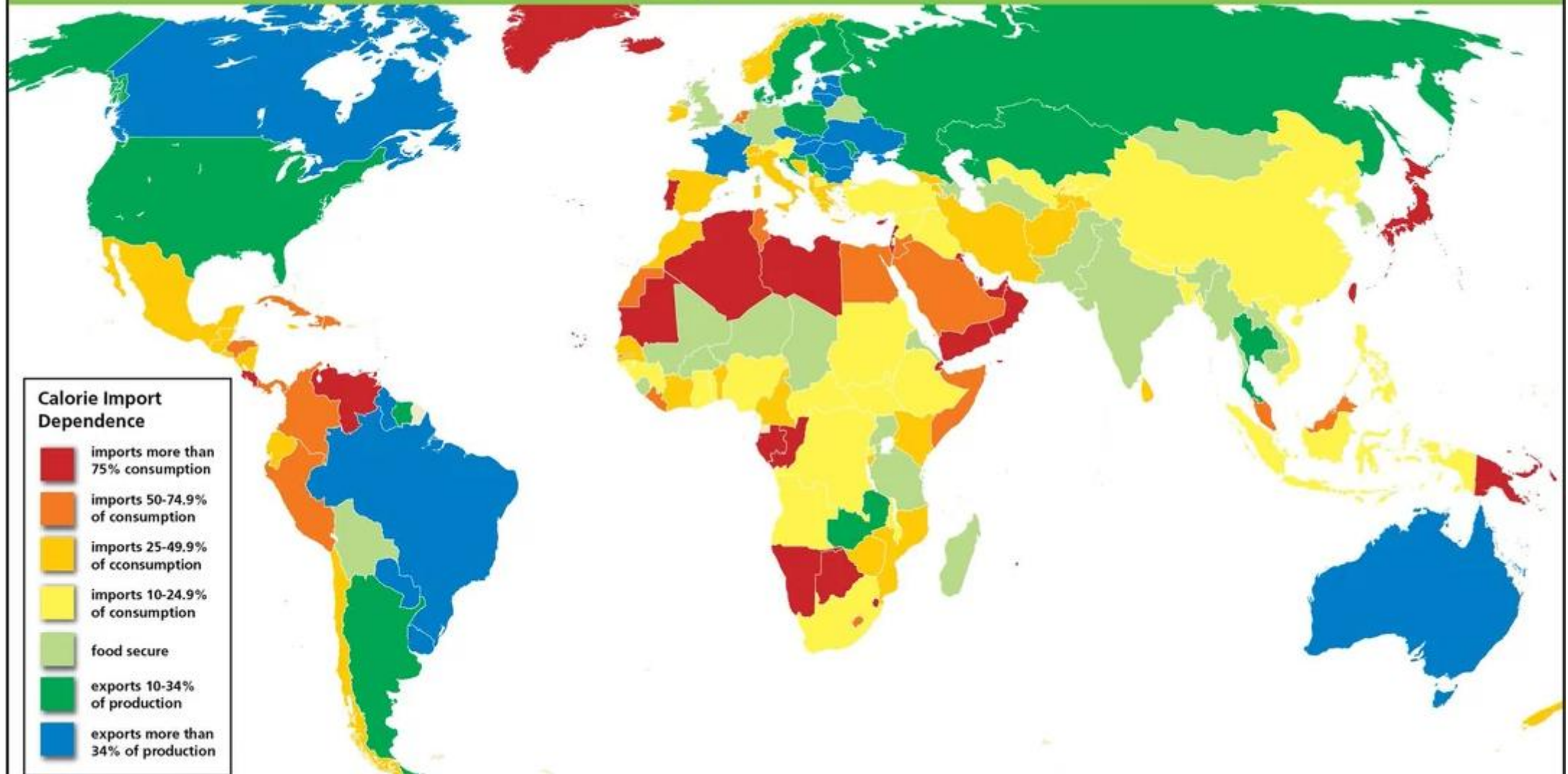


Food Security

Who really cares and why ?

Globally, SWFs hold approximately \$7.5 trillion in financial assets, and since the 2007/2008 global food price crisis, some SWFs have become increasingly involved in agri-food system-related investments, including large scale land acquisitions, to increase the domestic food supplies of their home countries

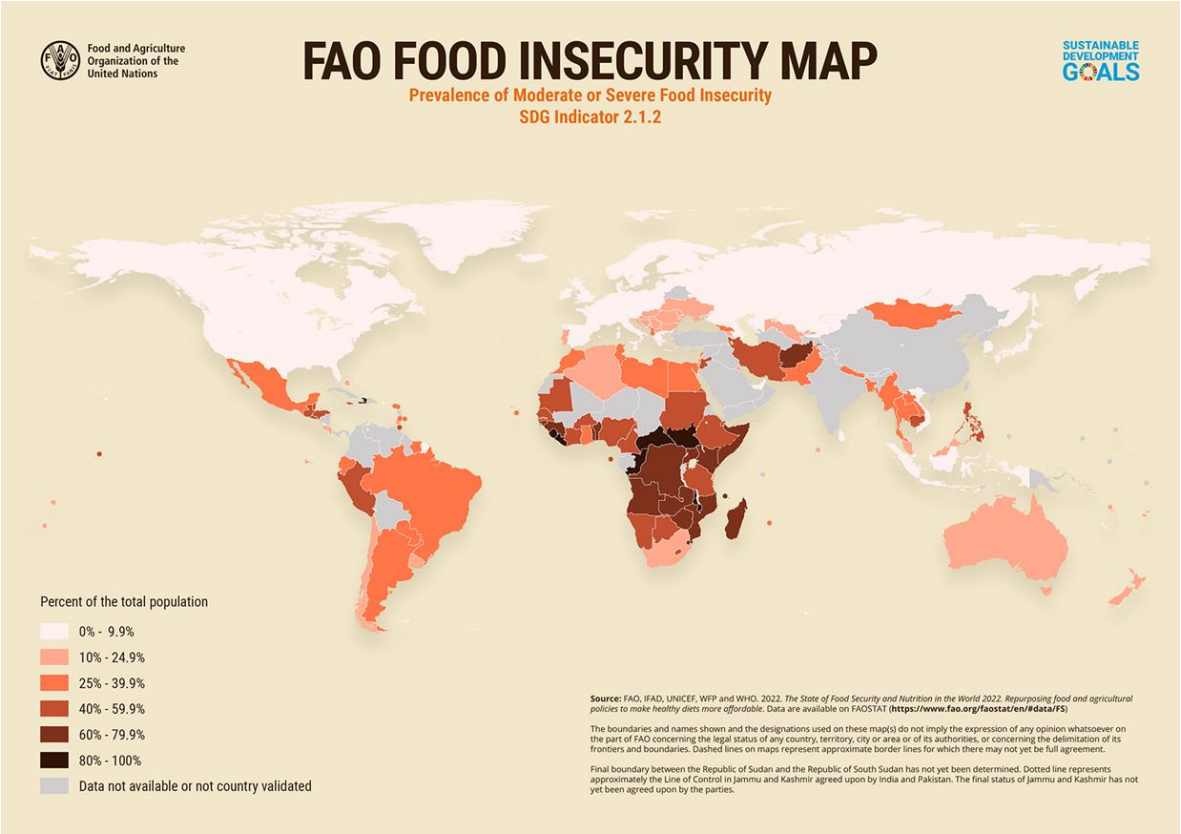
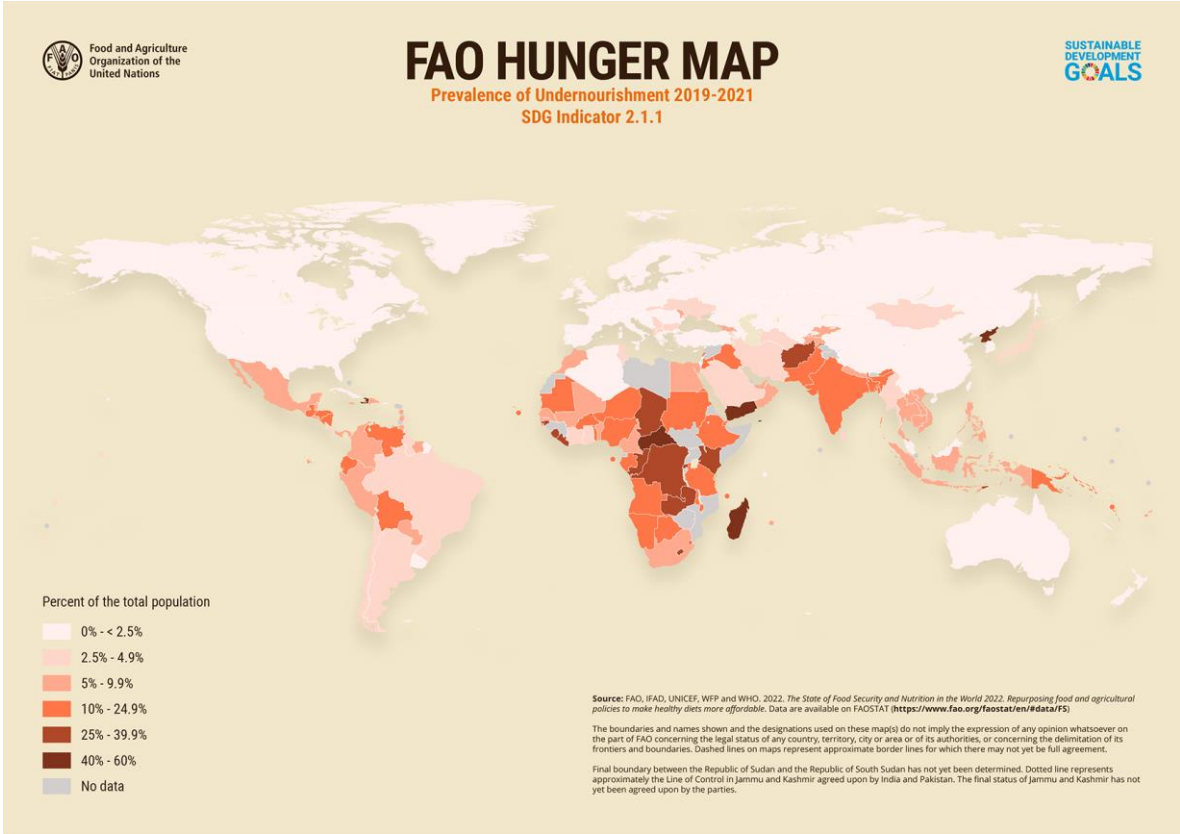
Food (In)Security 2017



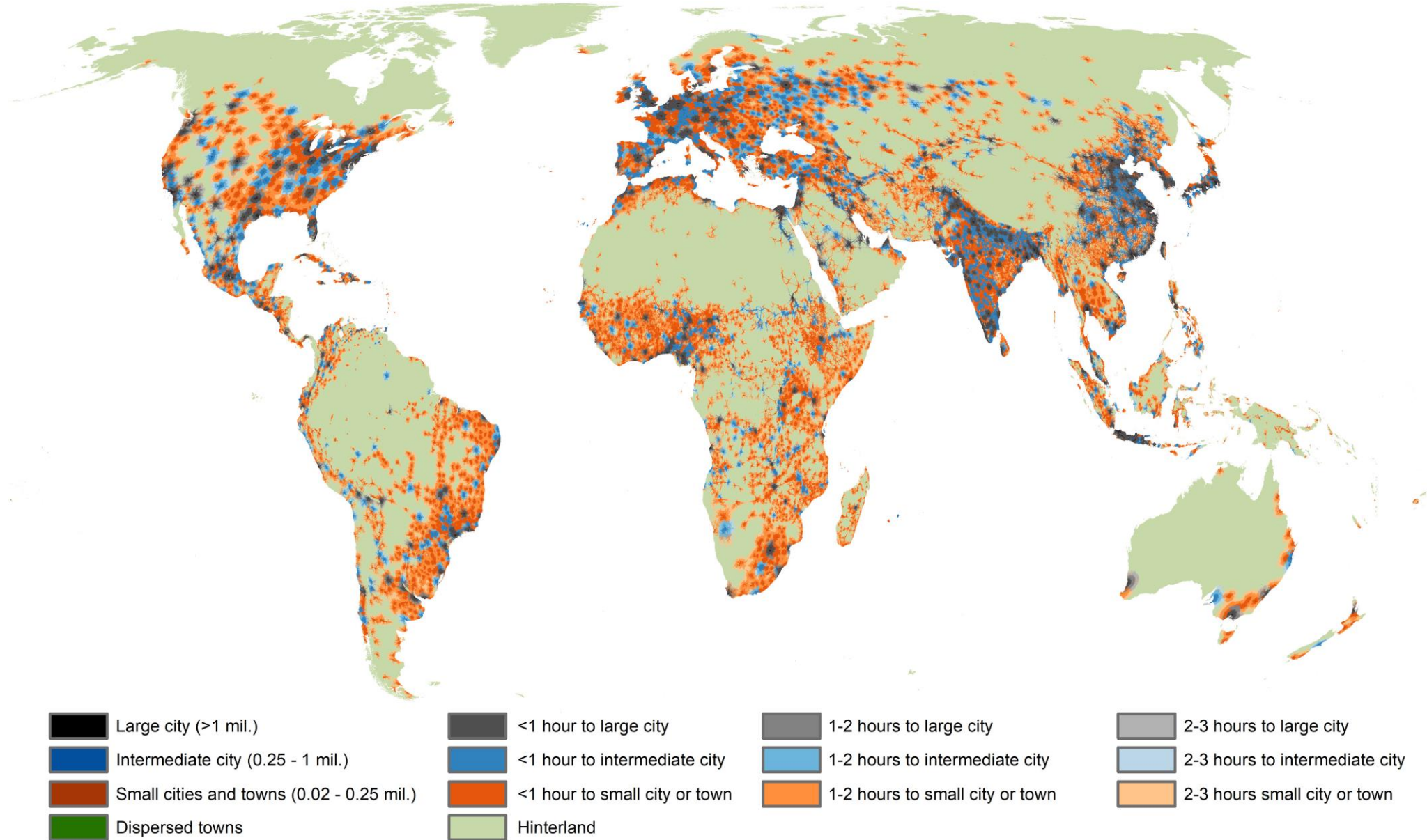
Sources: USDA Foreign Agricultural Service, Trademap, and Eurostat.

© 2017 Zeihan on Geopolitics

Food Security

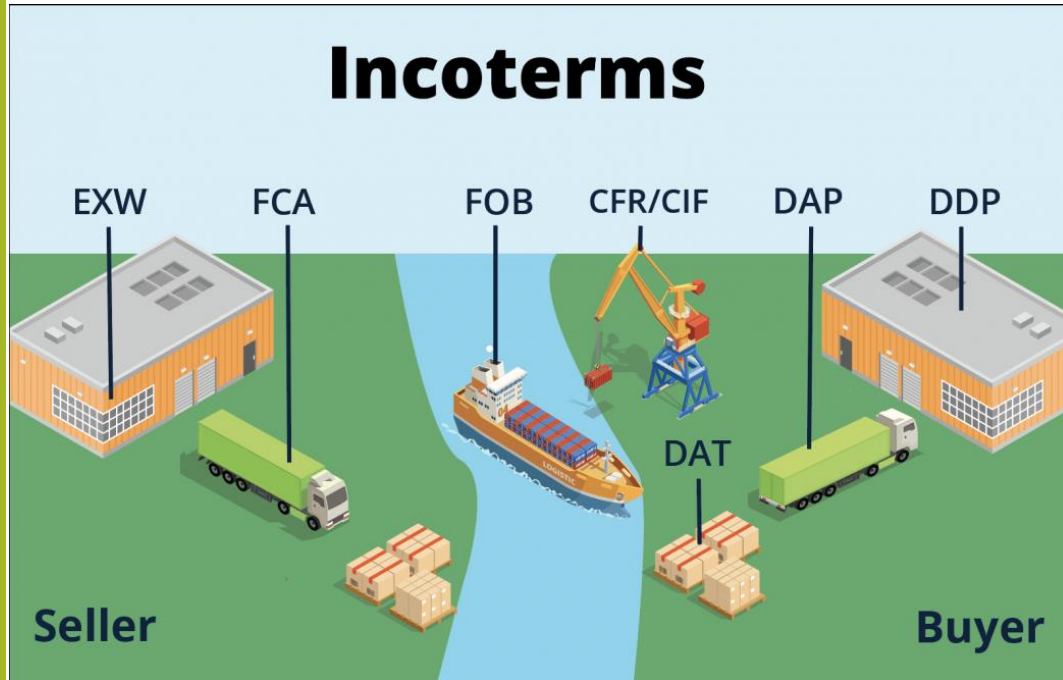


Food Security



Food Security

How do countries actually deliver food security ?



SINGAPORE FOOD STATISTICS



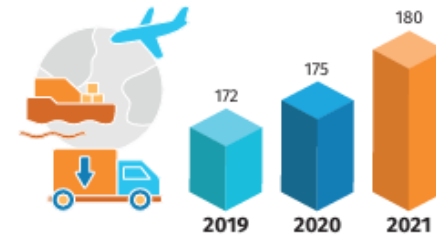
HIGHLIGHTS

Singapore's food supply sources were further diversified between 2019 and 2021.



With more than 90% of food imported, diversification is a key strategy to ensure Singapore's food security. SFA continuously works to diversify Singapore's import sources so that Singaporeans can enjoy a stable supply of safe food.

In 2021, the number of imported food supply sources by countries and regions **increased**.



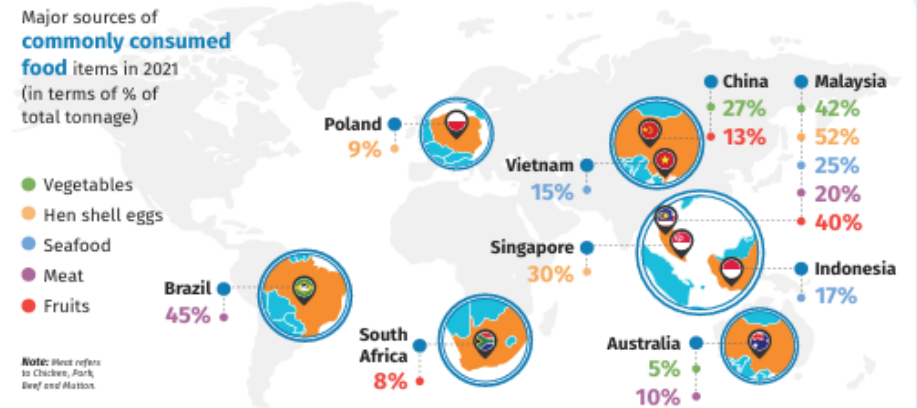
40 countries are allowed to export high-risk food items to Singapore, having met our requirements on food safety and public health.

Note: High-risk food items refer to those which are more susceptible to contamination which can lead to foodborne diseases in consumers and include livestock, meat and egg items.

Major sources of commonly consumed food items in 2021 (in terms of % of total tonnage)

- Vegetables
- Hen shell eggs
- Seafood
- Meat
- Fruits

Note: Meat refers to Chicken, Pork, Beef and Mutton.



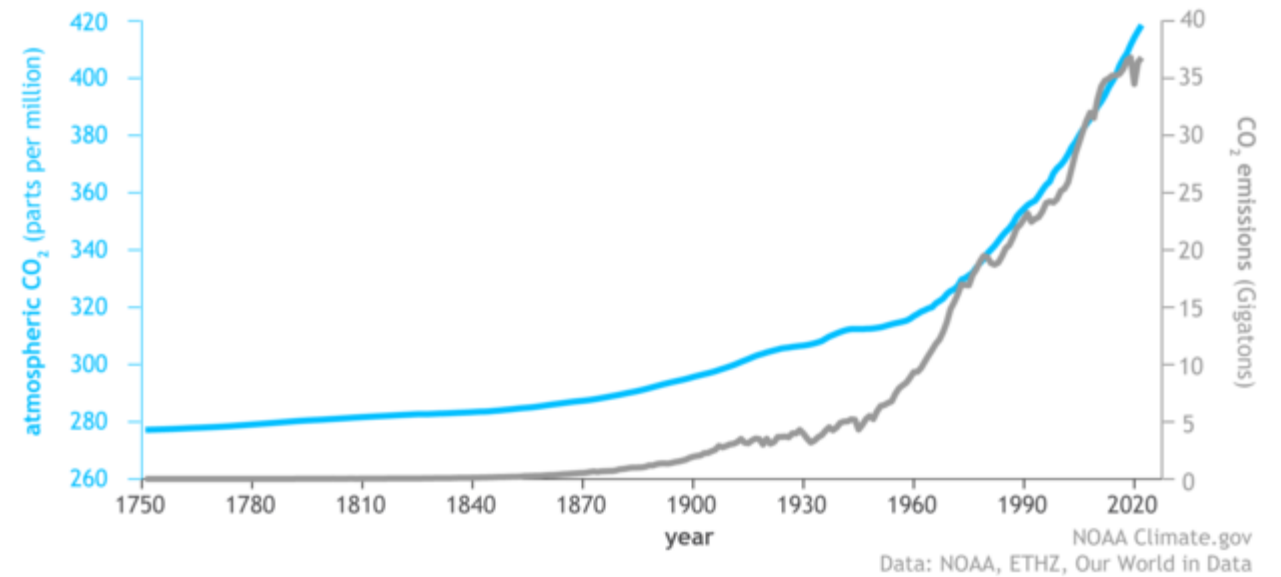
Our commonly consumed food items arrive from different channels.



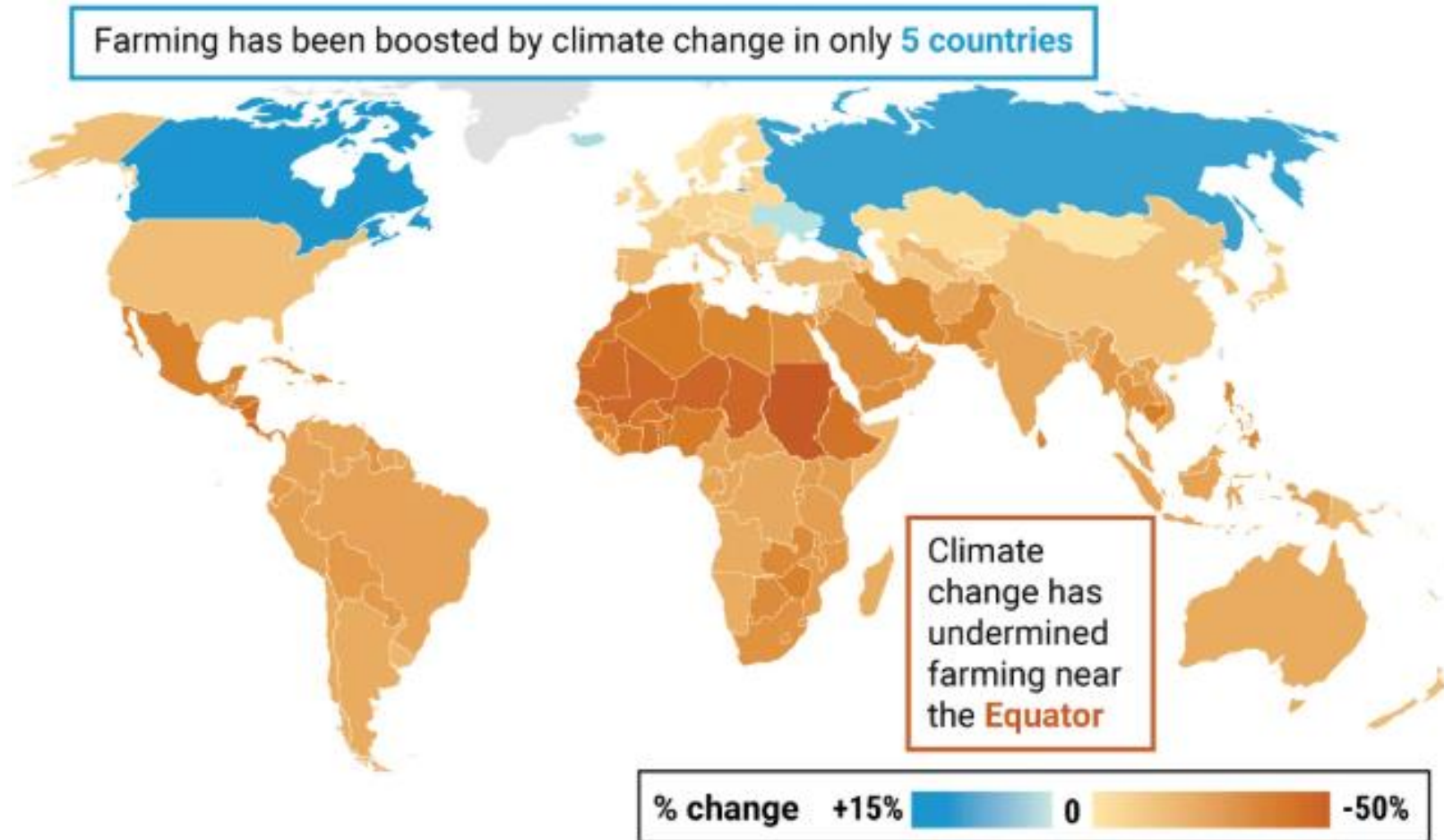
Climate Change



Global atmospheric carbon dioxide compared to annual emissions (1751-2022)

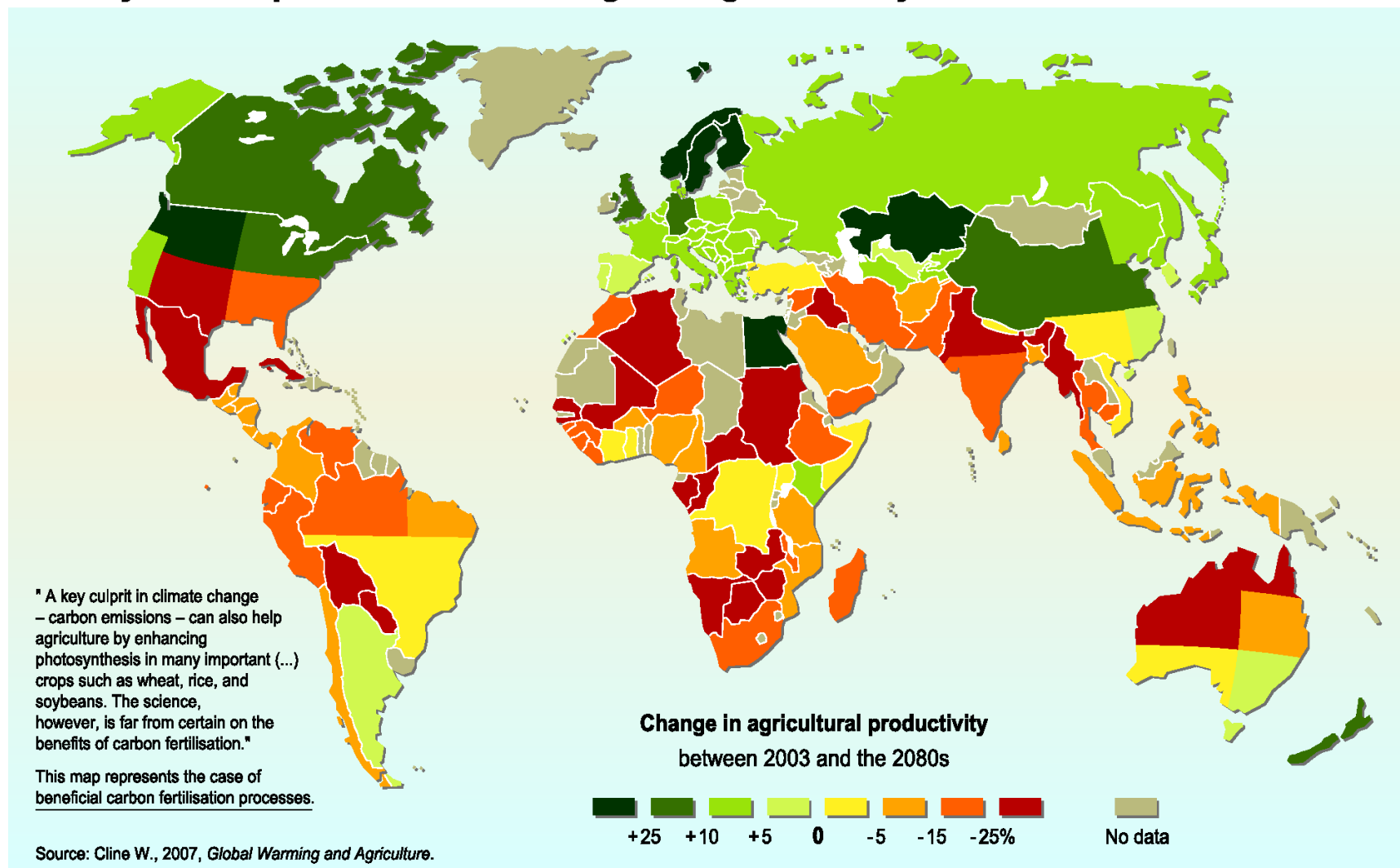


Climate Change



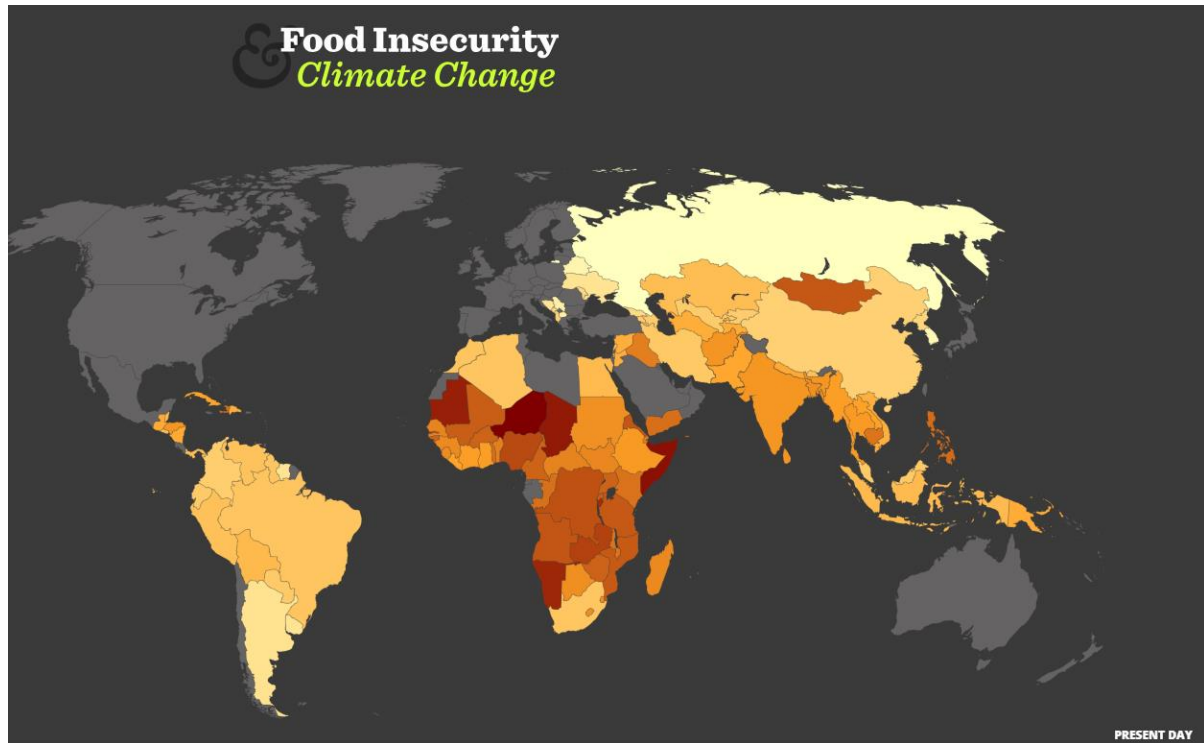
Climate Change

Projected impact of climate change on agricultural yields

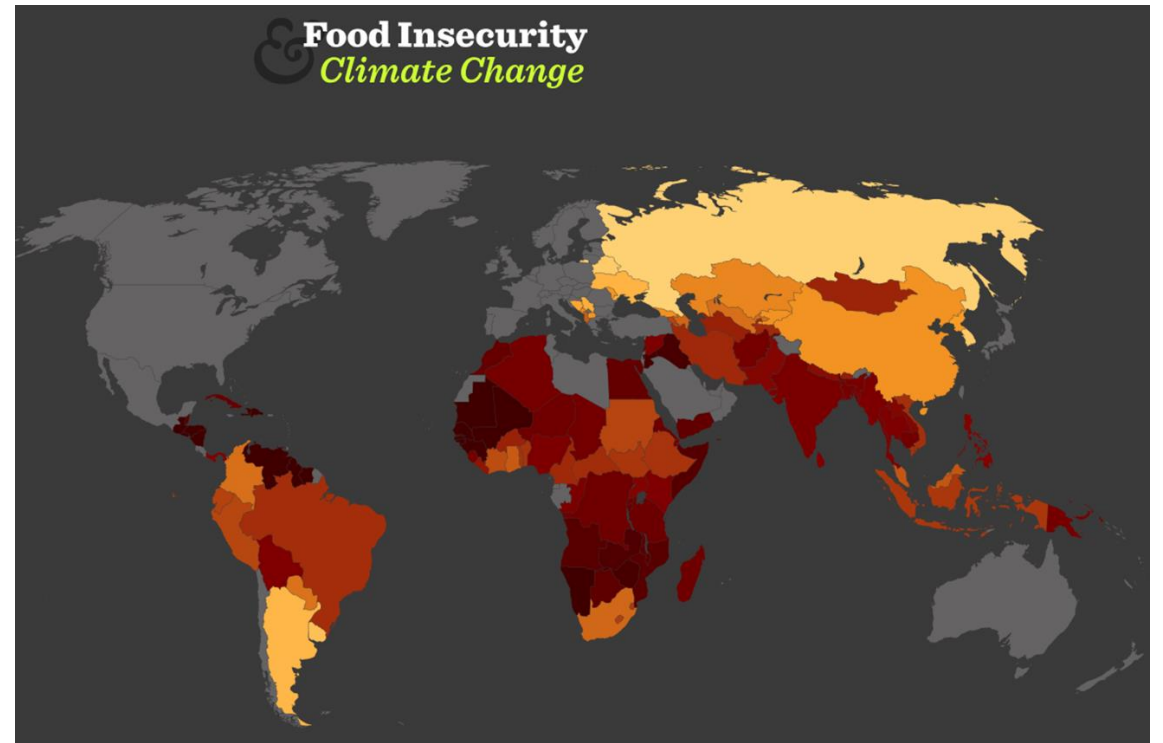


Climate Change

Present Day



2080 – High Emissions – Low Intervention



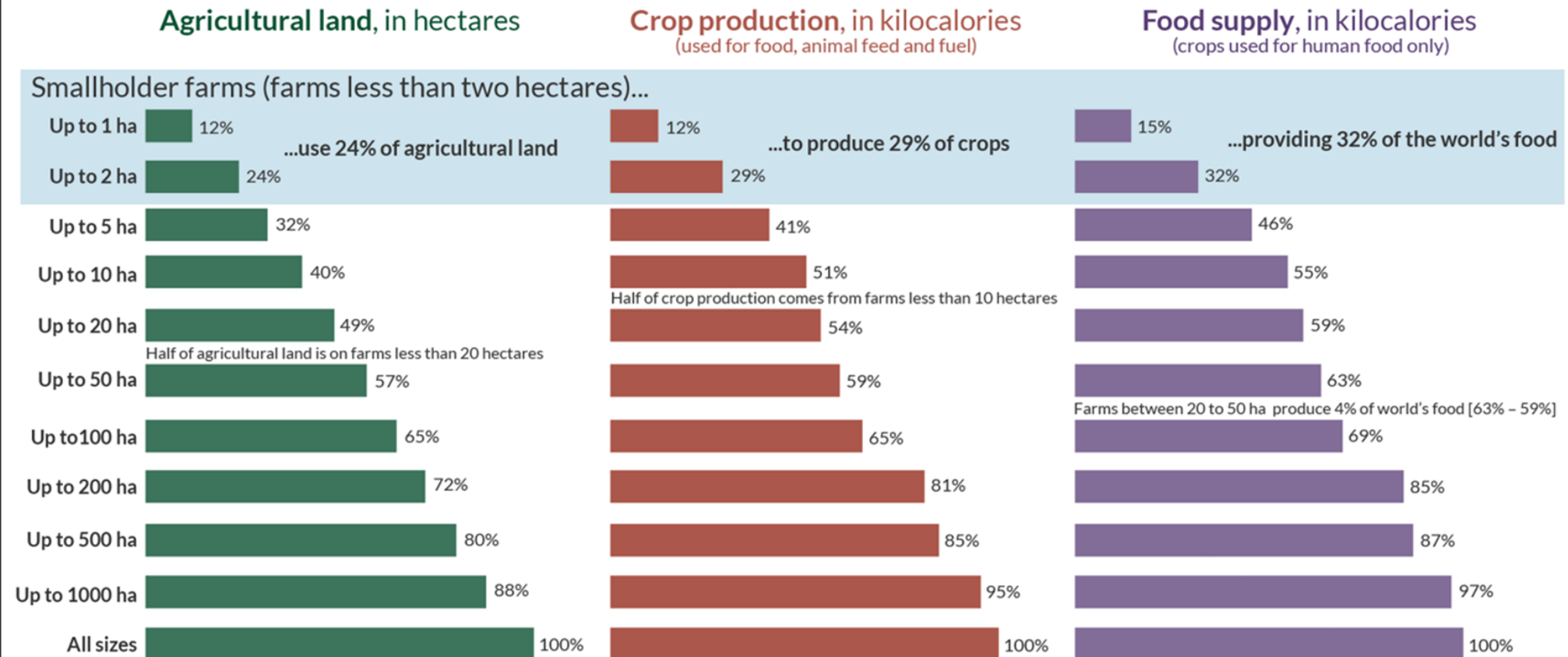
The countries that are most developed, small or have little domestic production have been excluded.

Who is actually producing the World's food ?

Smallholder farms produce one-third of the world's food

Our World
in Data

The cumulative share of the world's agricultural land, crop production and food supply, broken down by farm size.



Source: Vincent Ricciardi et al. (2018). How much of the world's food do smallholders produce? *Global Food Security*.
OurWorldinData.org - Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the author Hannah Ritchie.

Who is actually producing the World's food ?

The roles of:

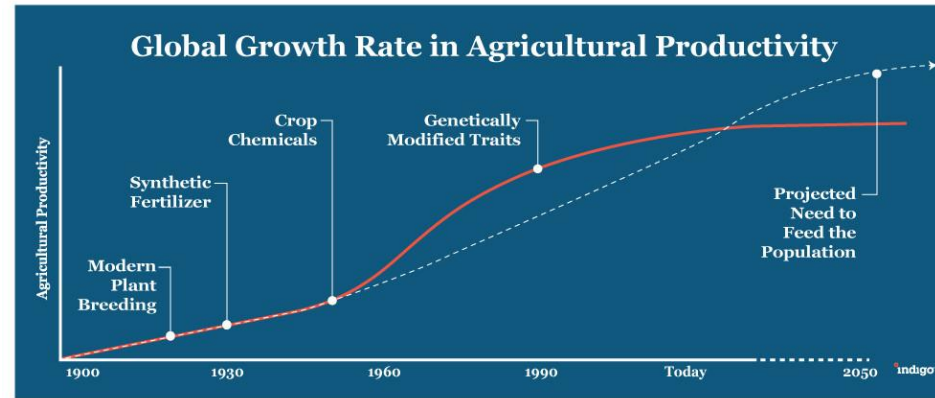
- Generational Farming Families
- Corporate Agribusiness
- Seed, Fertiliser and Chemical Producers
- Machinery Manufacturers
- AgTech
- Cooperatives
- Education
- Government

Catch phrases:

- Precision Farming
- Sustainable Practices
- AI driven crop monitoring
- Automated irrigation systems
- Vertical Farming
- Hydroponics
- Aeroponics
- Smart machinery
- Drone surveillance
- CRISPR
- Bioengineered seeds

All aiming to maximize yield at minimal environmental impact.

The Future



Observations:

- Hunter / Gatherer
- Omnivores
- Hunger
- Disease
- War
- Corruption
- Men
- 5 species dependency

Beliefs:

- Creativity and innovation
- Increase productivity
- Improve Soil & Water
- Reduce Food Waste
- Improved Diets
- Bio-energy production
- Reduced Fertility Rates

Doubts:

- Climate control
- Carbon Credits
- Population control
- AgTech Funds
- Vertical Farming
- Cooperation
- Governments

**NECESSITY IS THE MOTHER OF INVENTION
BUT NATURE WILL BALANCE US**

The only statistics you can trust are
those you falsified yourself.

— *Winston Churchill* —

Tack för att du lyssnade !

