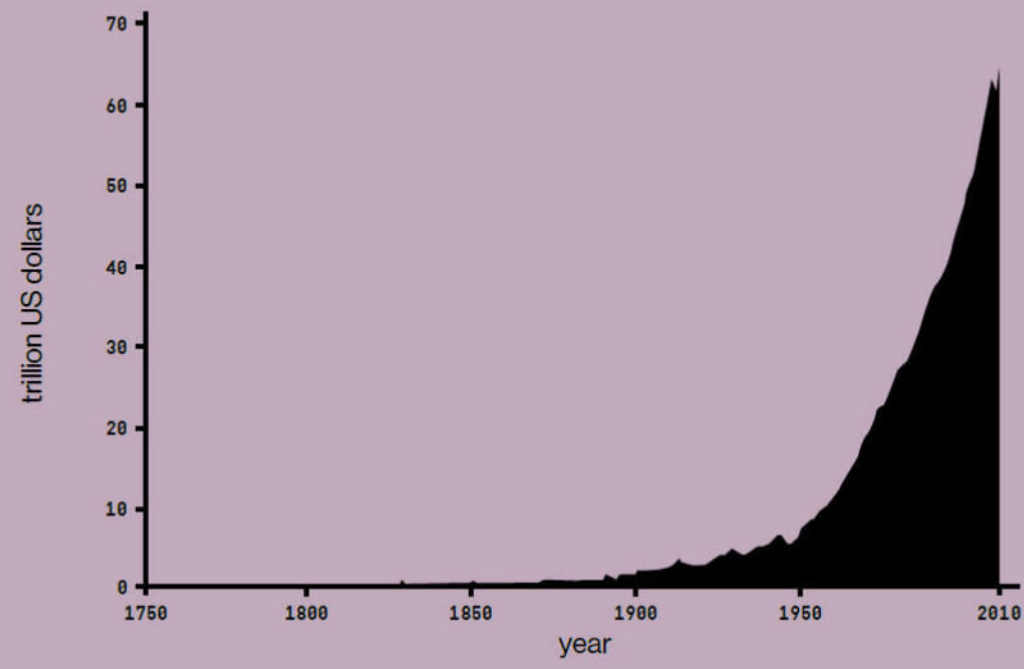
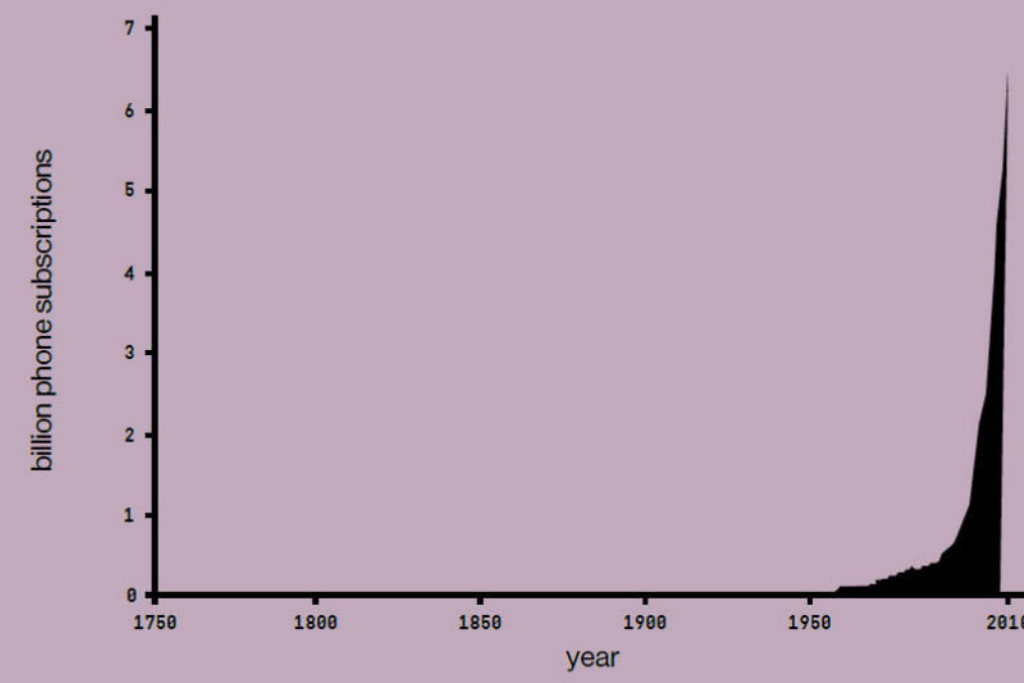


Economische groei Economic Growth (Real GDP)



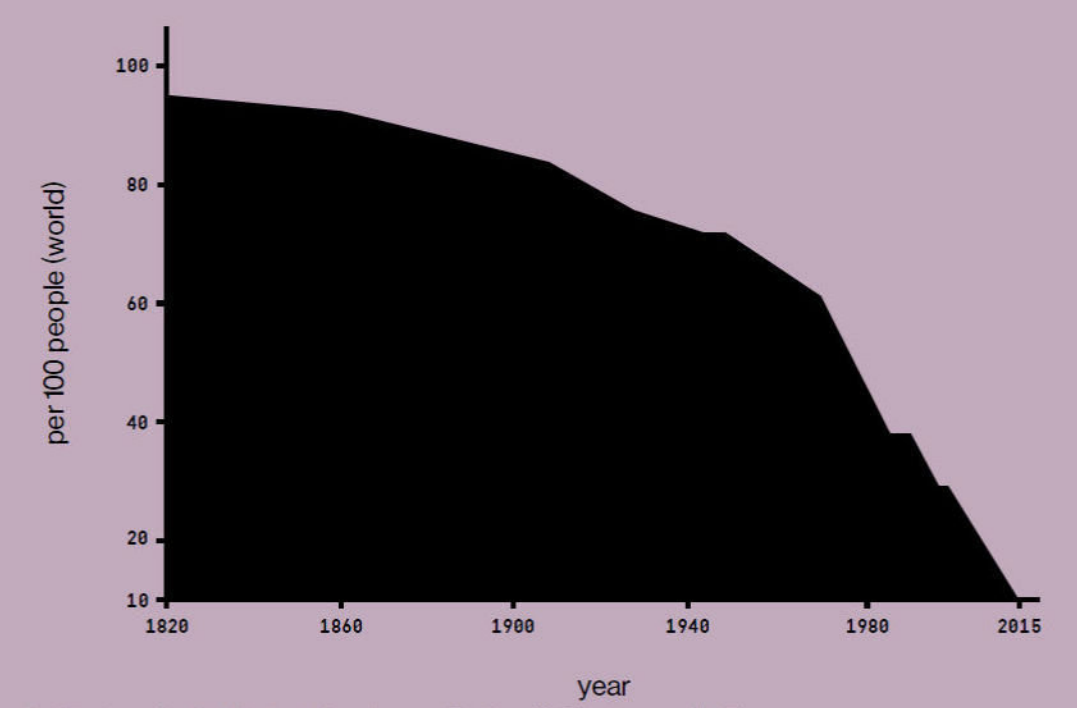
Sources: Maddison 1995, M. Shane, Research Service, United States Department of Agriculture (USDA); Shane 2014; www.anthropocene.info

Telecommunicatie Telecommunication



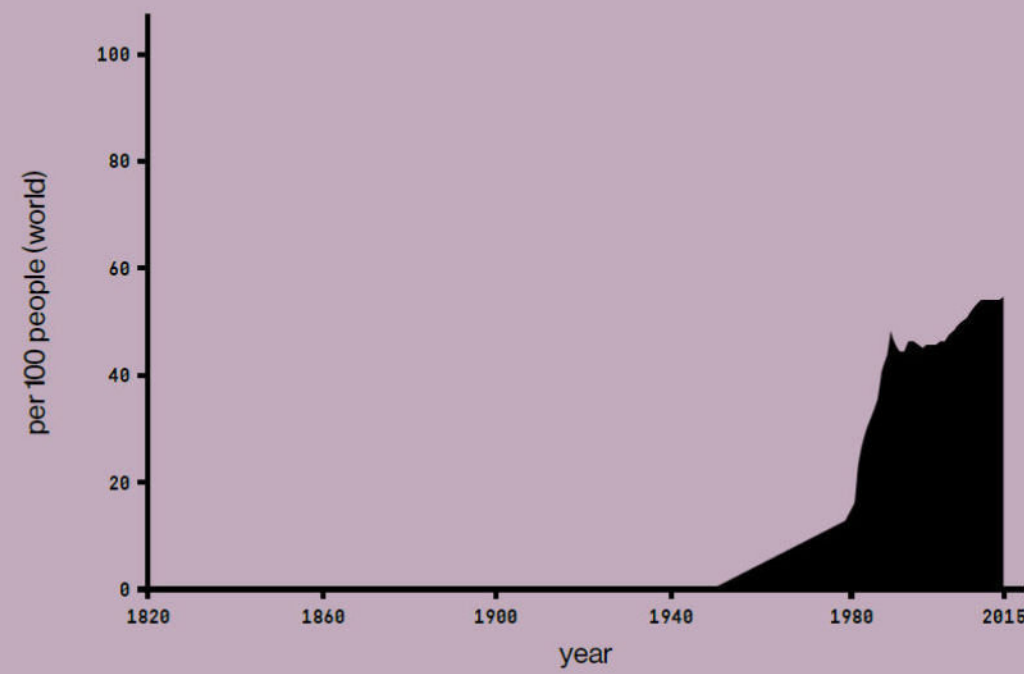
Sources: Canning 1998; United Nations Statistics Division (UNSD) 2014; www.anthropocene.info

Extreme armoede Extreme poverty



Sources: Max Roser based on World Bank and Bourguignon and Morrisson (2002); www.ourworldindata.org

Vaccinatie Vaccination



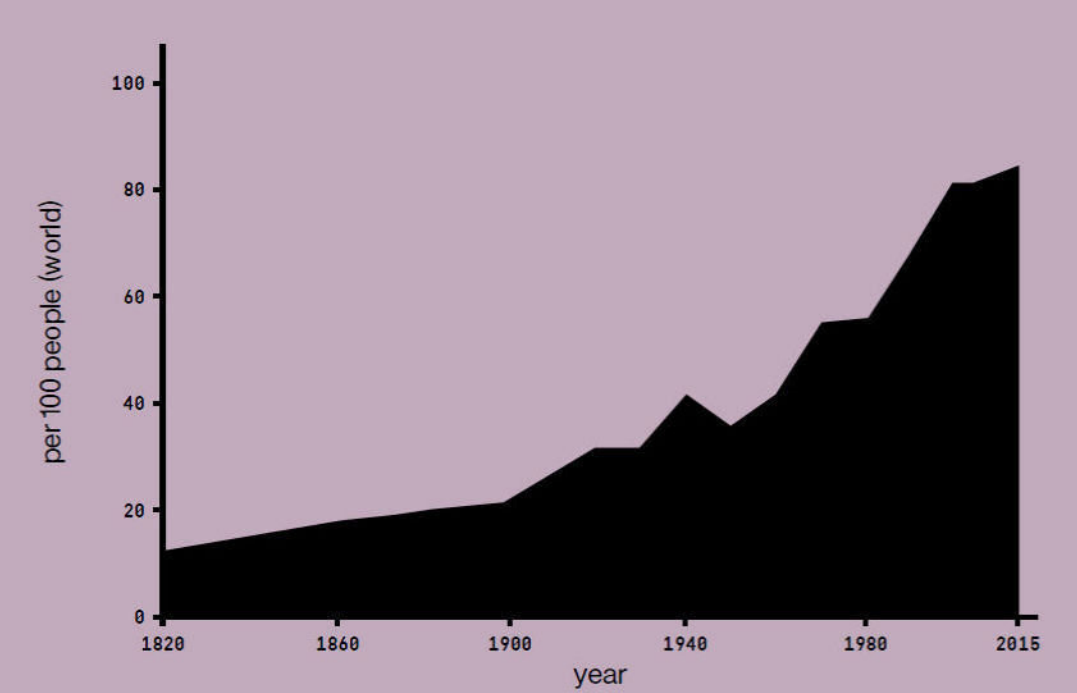
Sources: Max Roser based on WHO; www.ourworldindata.org

Basiseducatie Basic education



Sources: Max Roser based on OECD and IIASA; www.ourworldindata.org

Geletterdheid Literacy



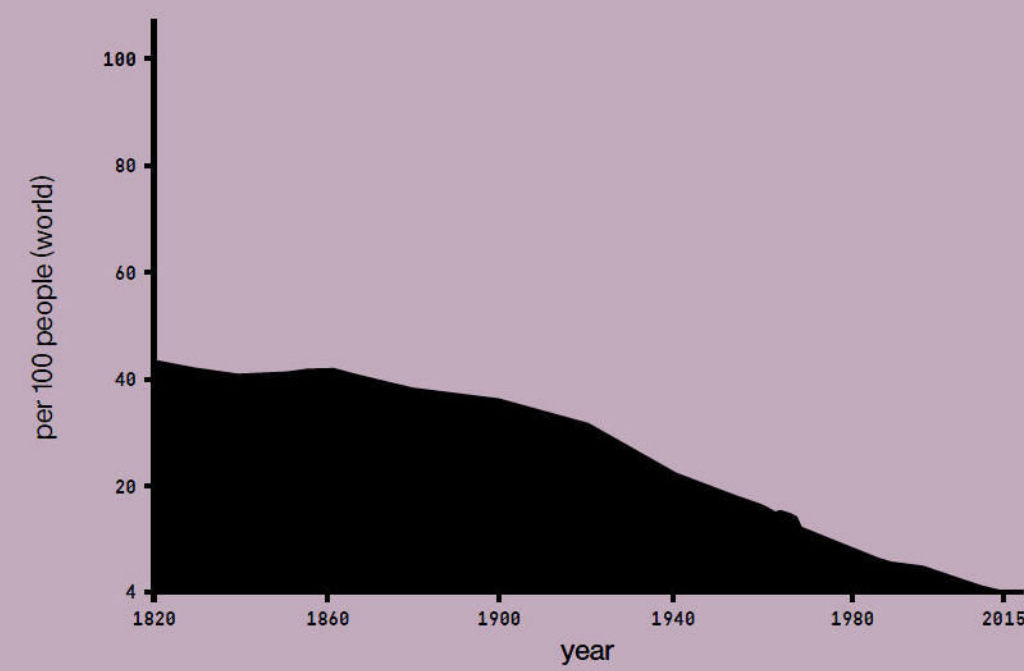
Sources: Max Roser based on OECD and UNESCO; www.ourworldindata.org

Democratie Democracy



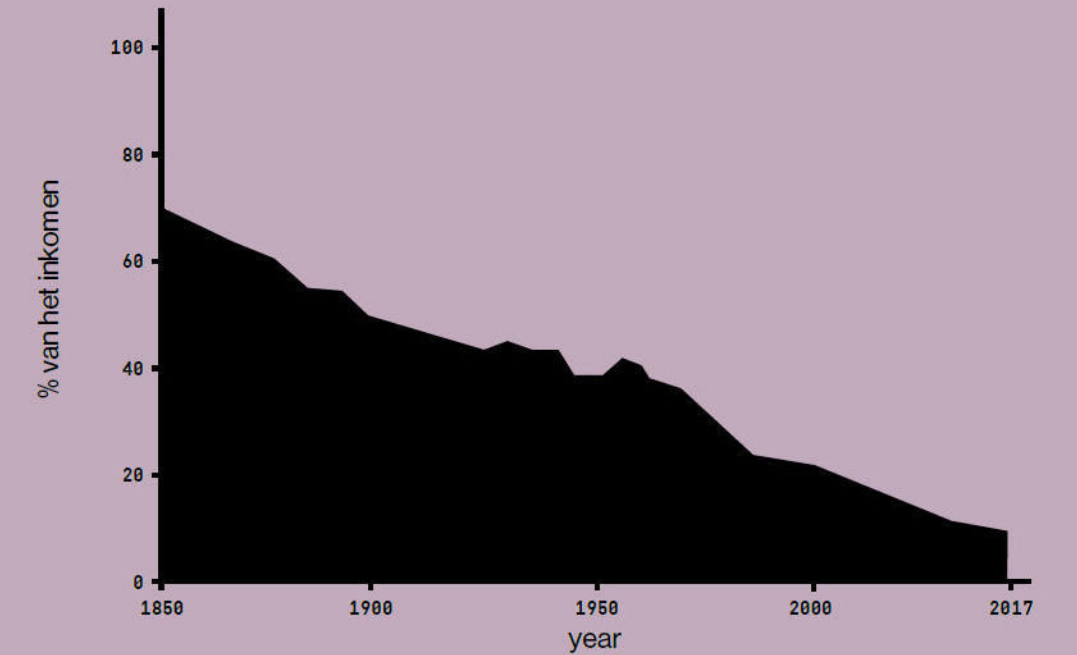
Sources: Max Roser based on OVID, Polity IV index (2016); www.ourworldindata.org

Wereldwijde kindersterfte Global child mortality



Sources: gampinder and worldbank; www.ourworldindata.org

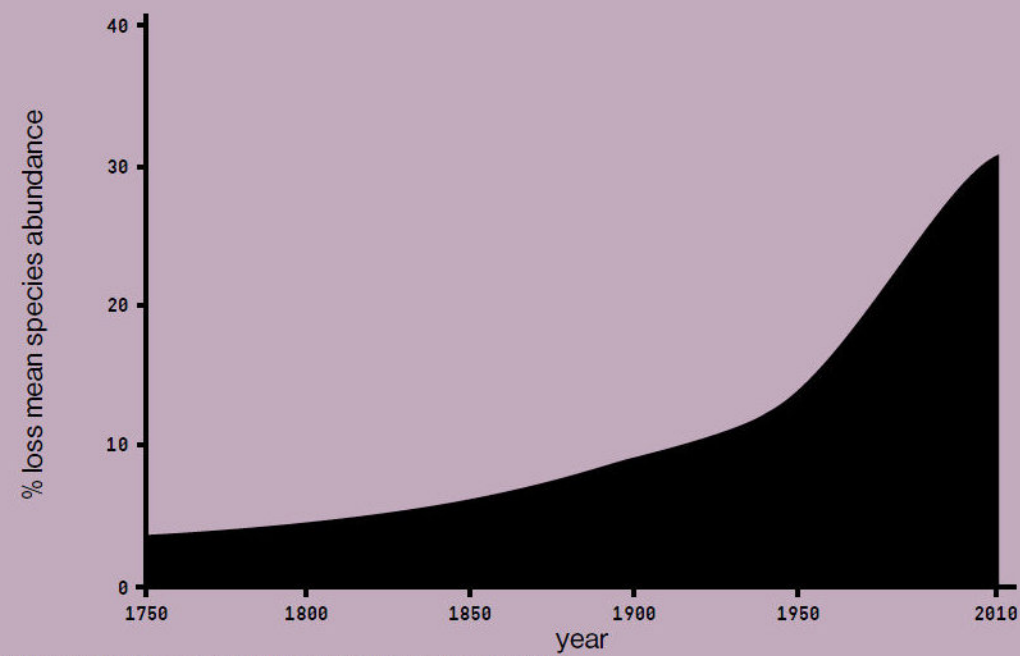
Inkomen besteed aan voedsel (NL) Percentage of income spent on food (NL)



Sources: ARBM, compiled from various sources and assumptions, including Jon Verriet, 'Culturele 'mentaltellen' en de kant-en-klarmaaltijd' (2011); A.H. van Otterloo, en C. Salzman; S. Guyenet 'Why do we overeat?'

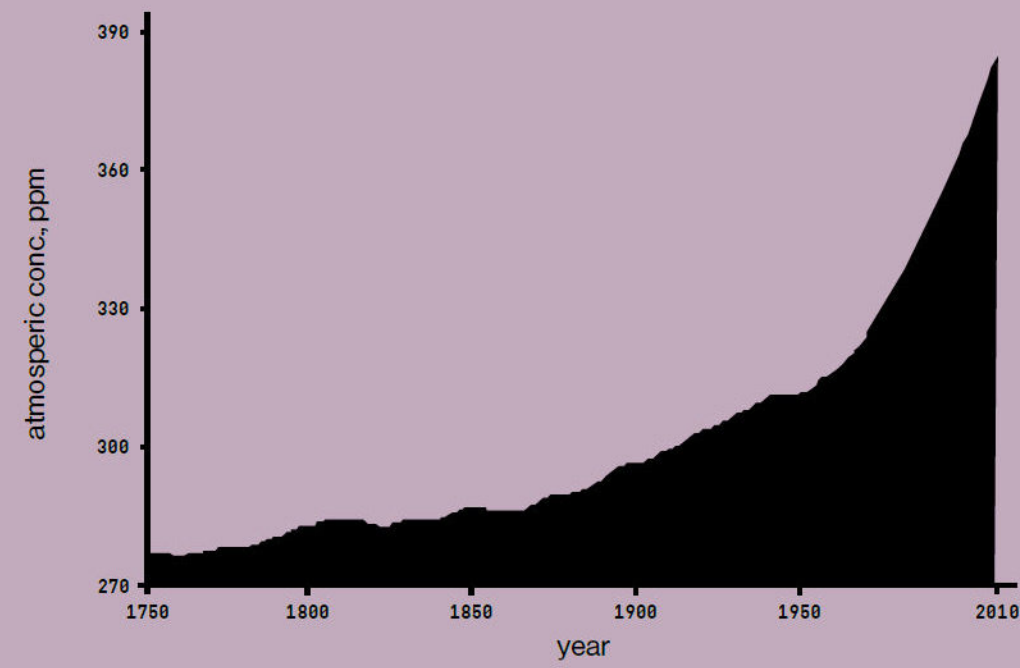
MANKIND HAS NEVER BEEN BETTER OFF THAN TODAY

Afname van biosfeer Terrestrial Biosphere Degradation



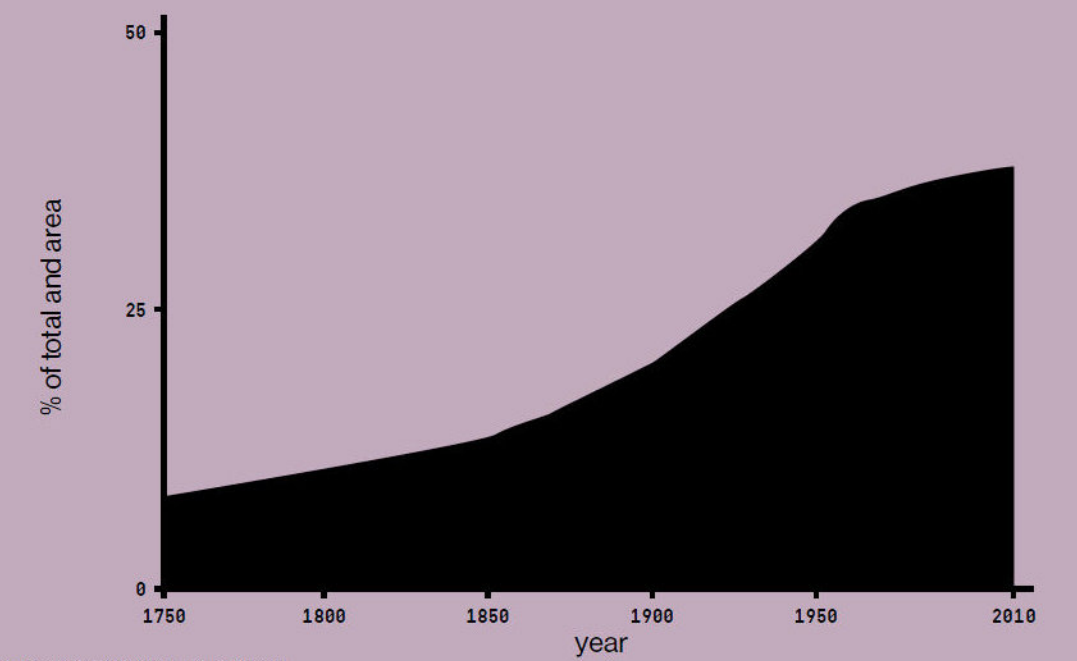
Sources: R. Alkemade, PBL (Alkemade et al. 2009, www.globio.info, ten Brink et al., 2010); www.anthropocene.info

Carbon Dioxide Carbon Dioxide



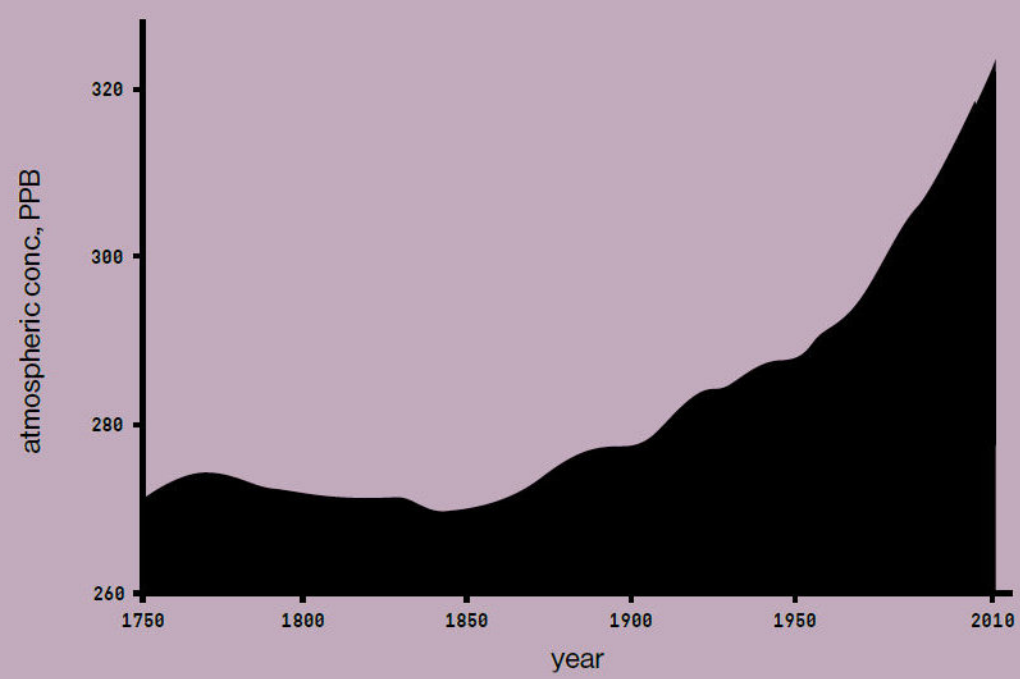
Sources: D. Etheridge CSIRO, Australia; Etheridge et al. 1996; MacFarling Meure et al. 2004 and 2006; Langenfelds et al., 2011; www.anthropocene.info

Gedomesticeerde grond Domesticated Land



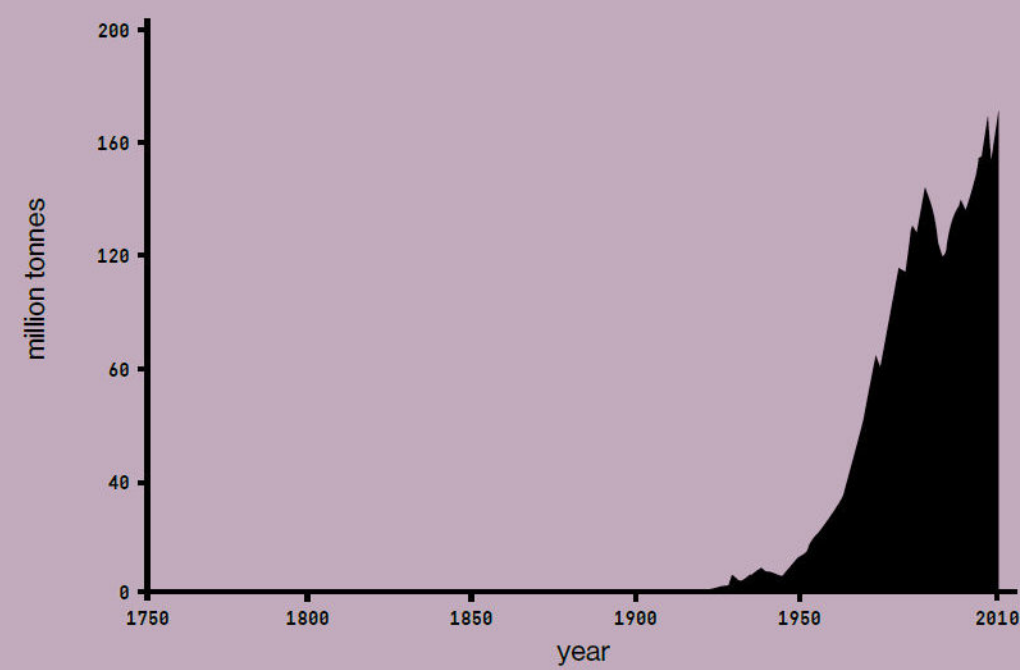
Gedomesticeerde grond / Domesticated Land
Sources: Julia Pongratz, Carnegie Institution of Washington, Stanford, US; Pongratz et al. 2008; www.anthropocene.info

Lachgas Nitrous Oxide



Sources: D. Etheridge CSIRO, Australia; MacFarling Meure et al. 2004 and 2006; Langenfelds et al., 2011; www.anthropocene.info

Consumptie van meststoffen Fertilizer consumption



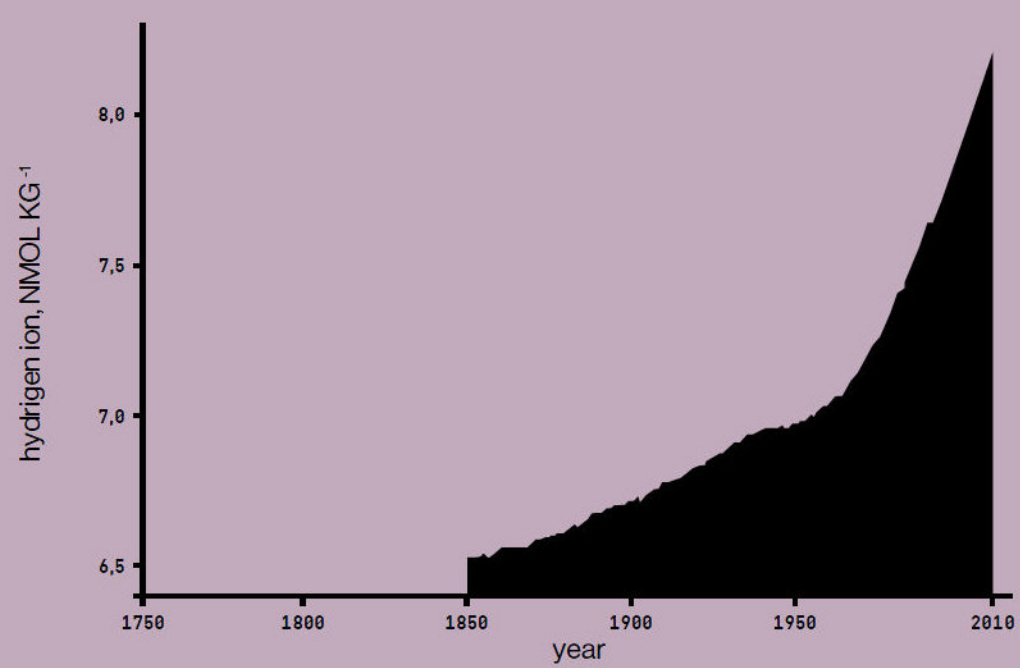
Sources: Olivier Rousseau, IFA; IFA database; www.anthropocene.info

Methaan Methane



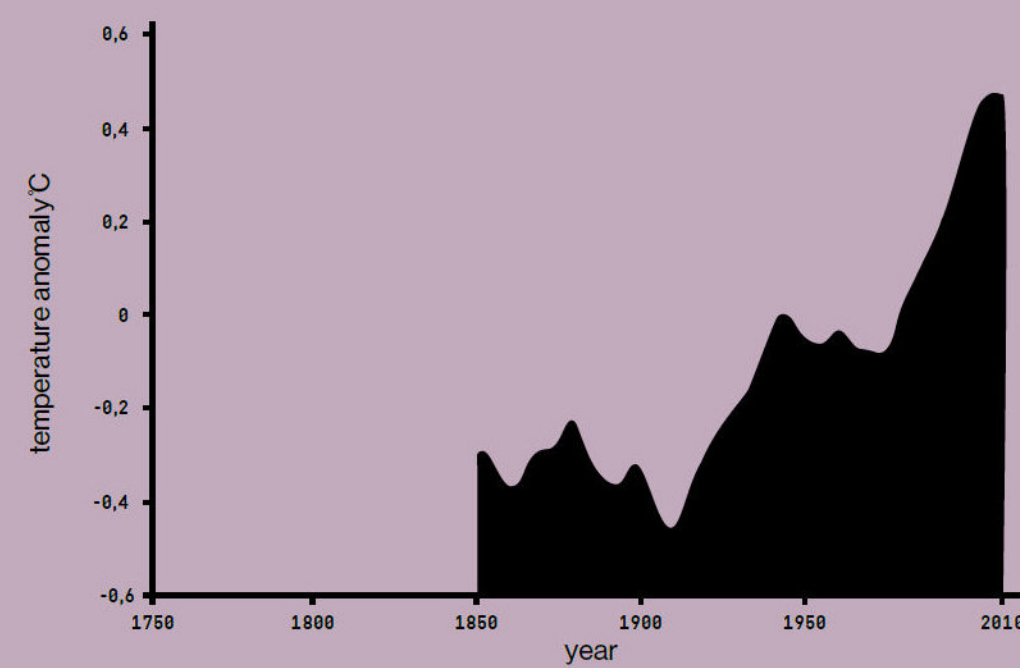
Sources: D. Etheridge CSIRO, Australia; MacFarling Meure et al. 2004 and 2006; Langenfelds et al., 2011; www.anthropocene.info

Oceaanverzuring Ocean Acidification



Sources: James Orr, LSCE/IPSL, France; Bopp et al. 2013 and IPCC Fifth Assessment Report, Working Group I, Chapter 6 (Ciais et al. 2013); www.anthropocene.info

Oppervlaktetemperatuur Surface temperature



Sources: P. Jones, Climatic Research Unit, UK in conjunction with the Hadley Centre (UK); www.anthropocene.info

Verlies tropisch bos Tropical Forest Loss



Sources: Julia Pongratz, Carnegie Institution of Washington, Stanford, US; Pongratz et al. 2008; www.anthropocene.info

THAT IS WHY NATURE HAS NEVER BEEN IN A WORSE CONDITION THAN TODAY

Earth as a System

A SYSTEM WITH 4 PRIMARY PARTS

WATER (hydrosphere)

LAND (geosphere)

AIR (atmosphere)

LIFE (biosphere)



Why Climate Change Isn't Our Biggest Environmental Problem, and Why Technology Won't Save Us

By [Richard Heinberg](#), originally published by [Post
Carbon Institute](#)

© August 17, 2017

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Why climate change is an irrelevance, economic growth is a myth and sustainability is forty years too late

By Kevin Casey Posted in [Commentary](#) [Culture](#) [Current Affairs](#) [Environment](#) [Society](#)

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Featured Writers



E. Young

E. Young is a small town country author of horror and sci-fi works. Strives to cultivate a general sense unease and wholesome pop culture references. Owns a multitude of cats

and probably wants to talk to you about a movie or music from a band you've never heard of. Can also be found at *Bright Nightmares* or on the Twitter machine @xenoxands.

Tesla wins court approval to build Gigafactory by clearing forest in Germany

A high court in Berlin has allowed Tesla to continue clearing a 92 hectare forest for its massive Gigafactory. The court rejected pleas from environment activists and said that its decision was final.



© picture-alliance/dpa/P. Pfau

The higher administrative court of Berlin-Brandenburg on Thursday allowed Tesla Inc, a US electric-car maker, to continue clearing the Grünheide forest near Berlin for its massive Gigafactory project. The court said that its decision was final.

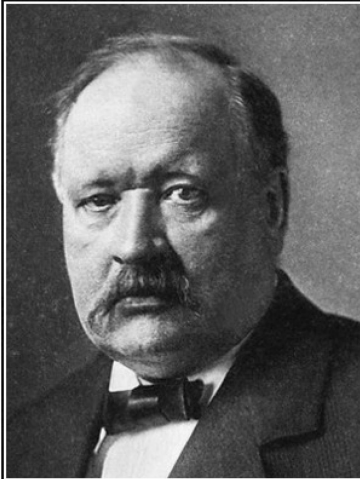


Deforestation in New Caledonia - BIOMASS IS NOT RENEWABLE : NOT IN TIME / NOT IN YIELD / NOT IN SPACE

we knew
we know

“In one or two hundred years, crisscrossed by railways and steamships, covered with factories and workshops, the world will emit billions of cubic meters of carbonic acid and carbon oxide, and, since the forests will have been destroyed, these hundreds of billions of carbonic acid and carbon oxide may indeed disturb the harmony of the world.”

Eugène Huzar
L'arbre de la science
(1857)



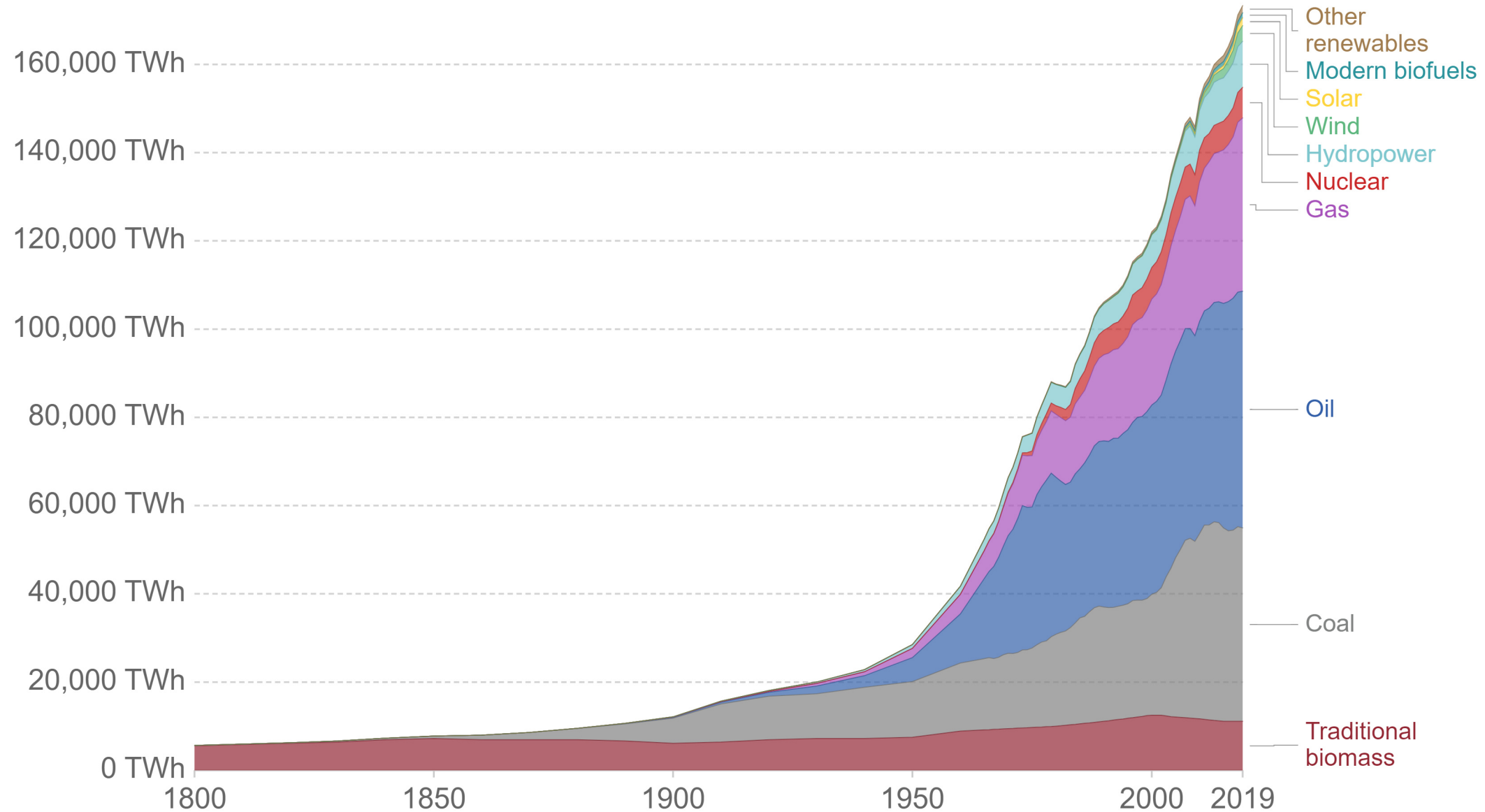
Is the mean temperature of the ground in any way influenced by the presence of heat-absorbing gases in the atmosphere?

— *Svante Arrhenius* —

- 1896 : University of Stockholm
Paper on Carbon Emissions
and Global Warming
- 1903 : Nobel Prize Chemistry

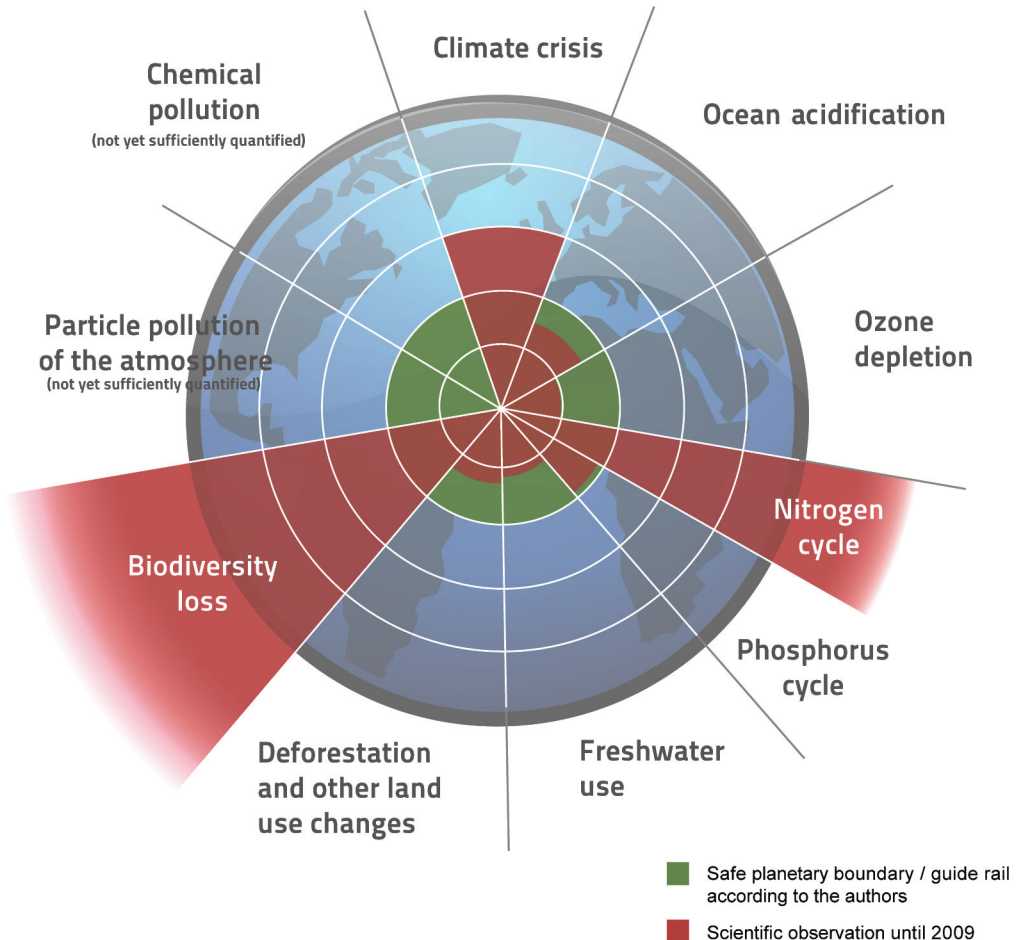
Global primary energy consumption by source

Primary energy is calculated based on the 'substitution method' which takes account of the inefficiencies in fossil fuel production by converting non-fossil energy into the energy inputs required if they had the same conversion losses as fossil fuels.



Planetary Boundaries

after Johan Rockström, Stockholm Resilience Centre et al. 2009





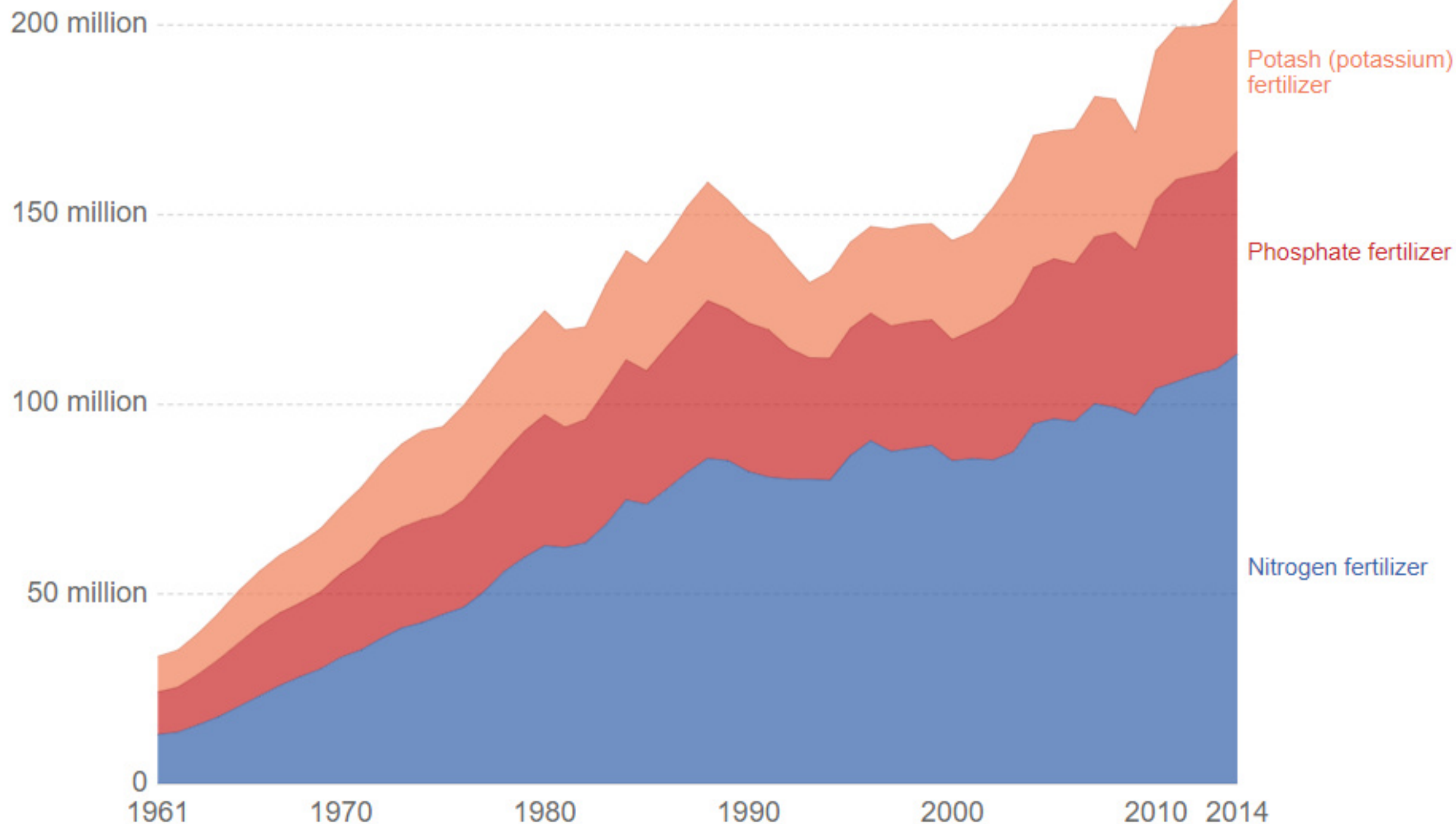
Greenhouses, Almeria

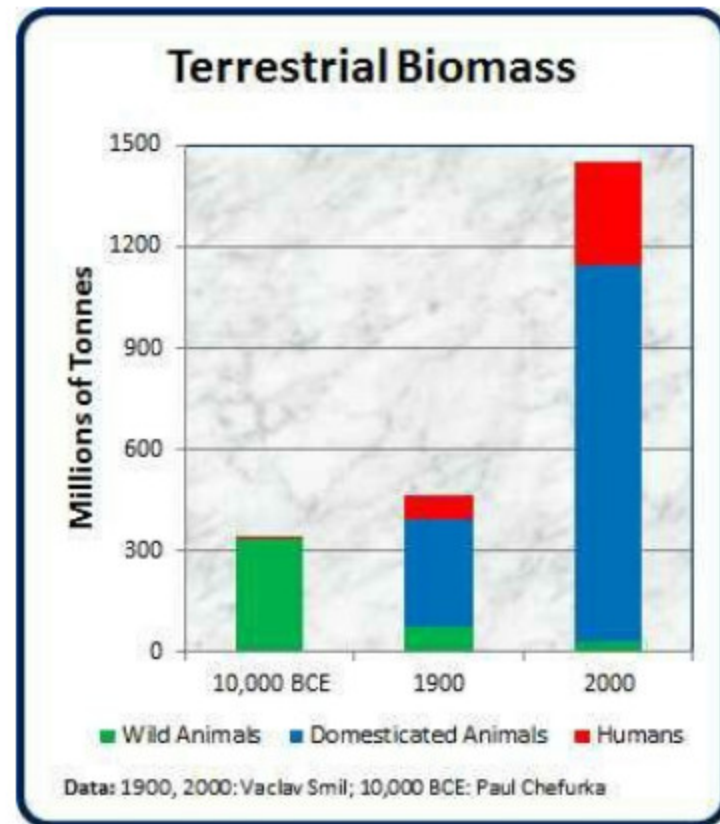
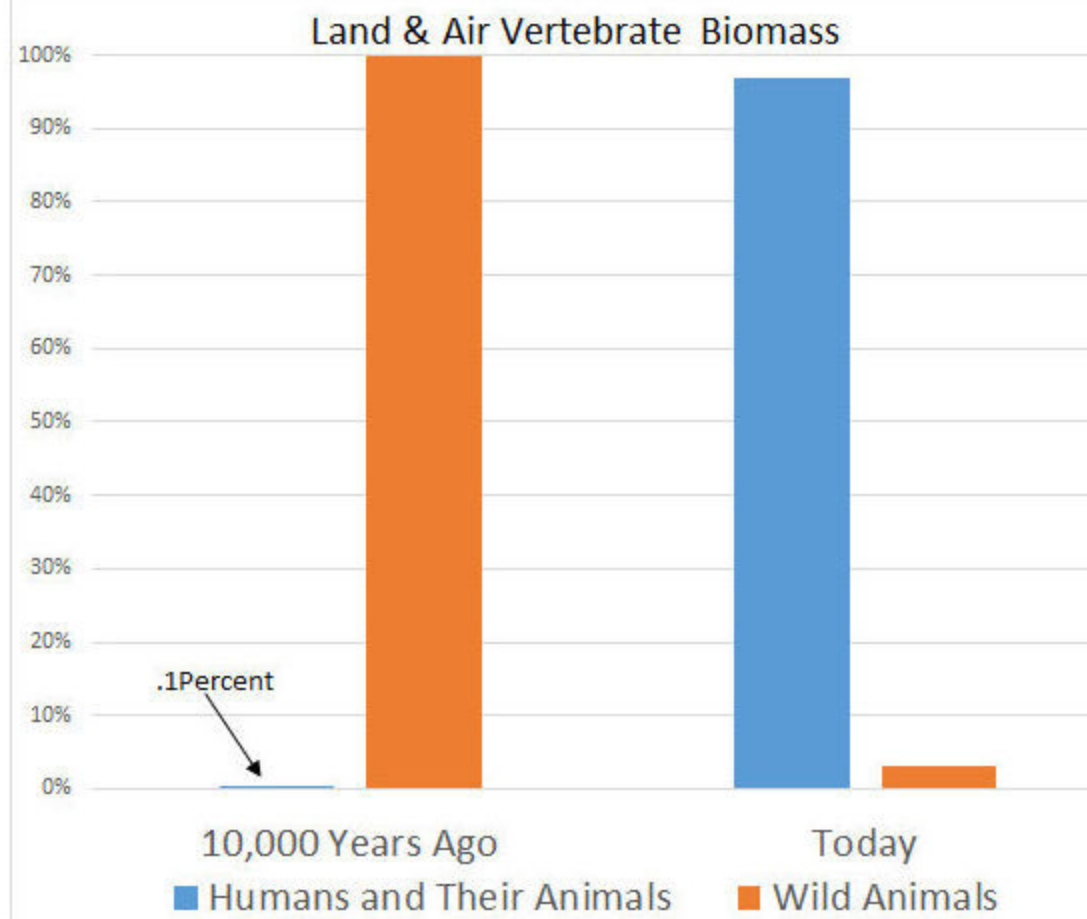
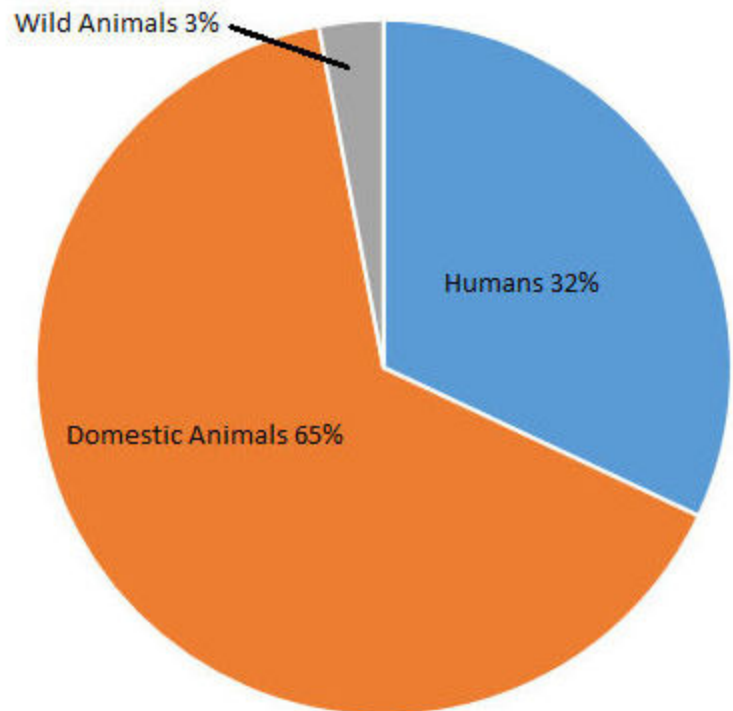


Industrial Livestock, Brasil

Total fertilizer production by nutrient, tonnes, World

Total fertilizer production by nutrient type (nitrogen, phosphate and potash/potassium), measured in tonnes per year.





EUROPE

ASIA

AFRICA

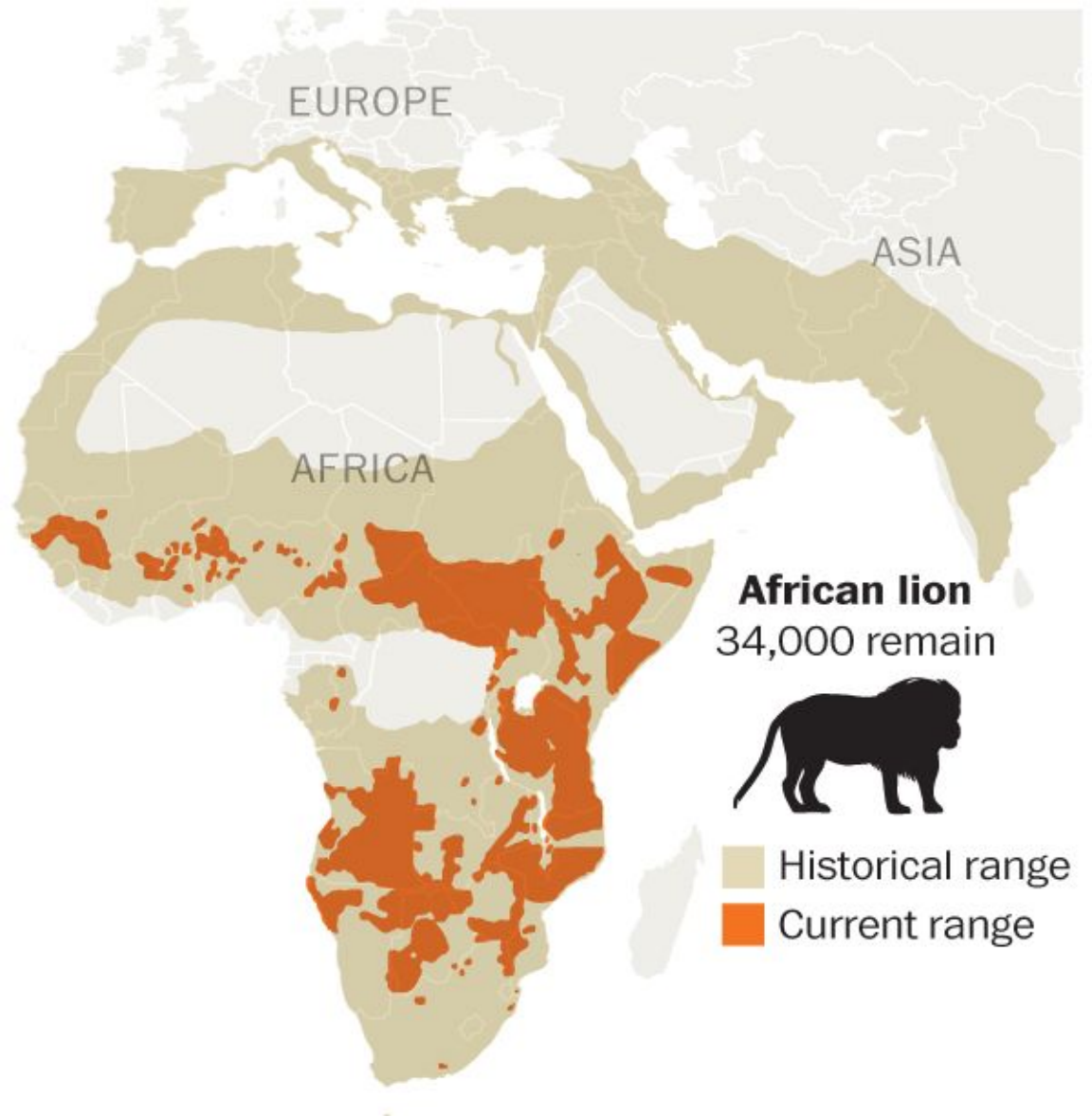
African lion

34,000 remain



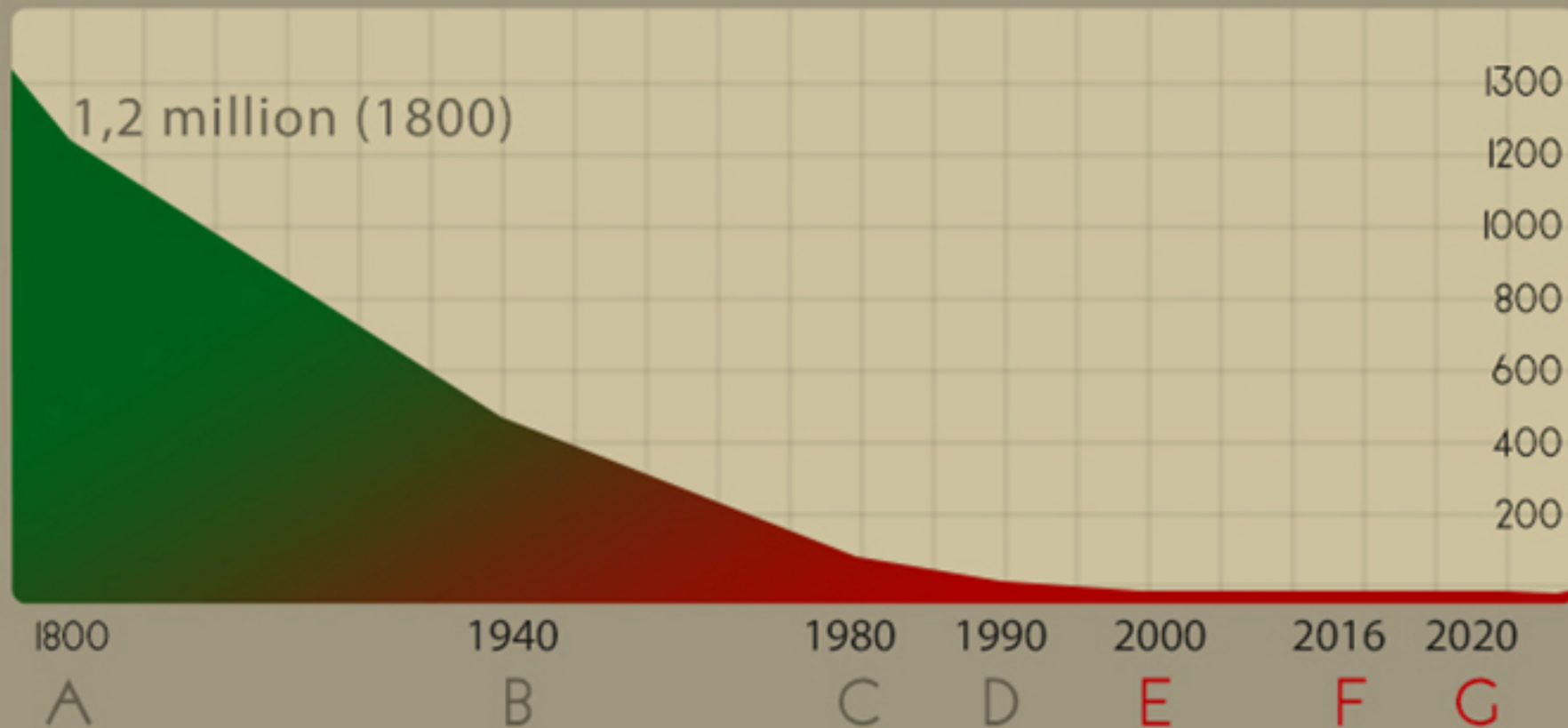
Historical range

Current range





DECLINE in LION numbers over last 216 years



DECLINE

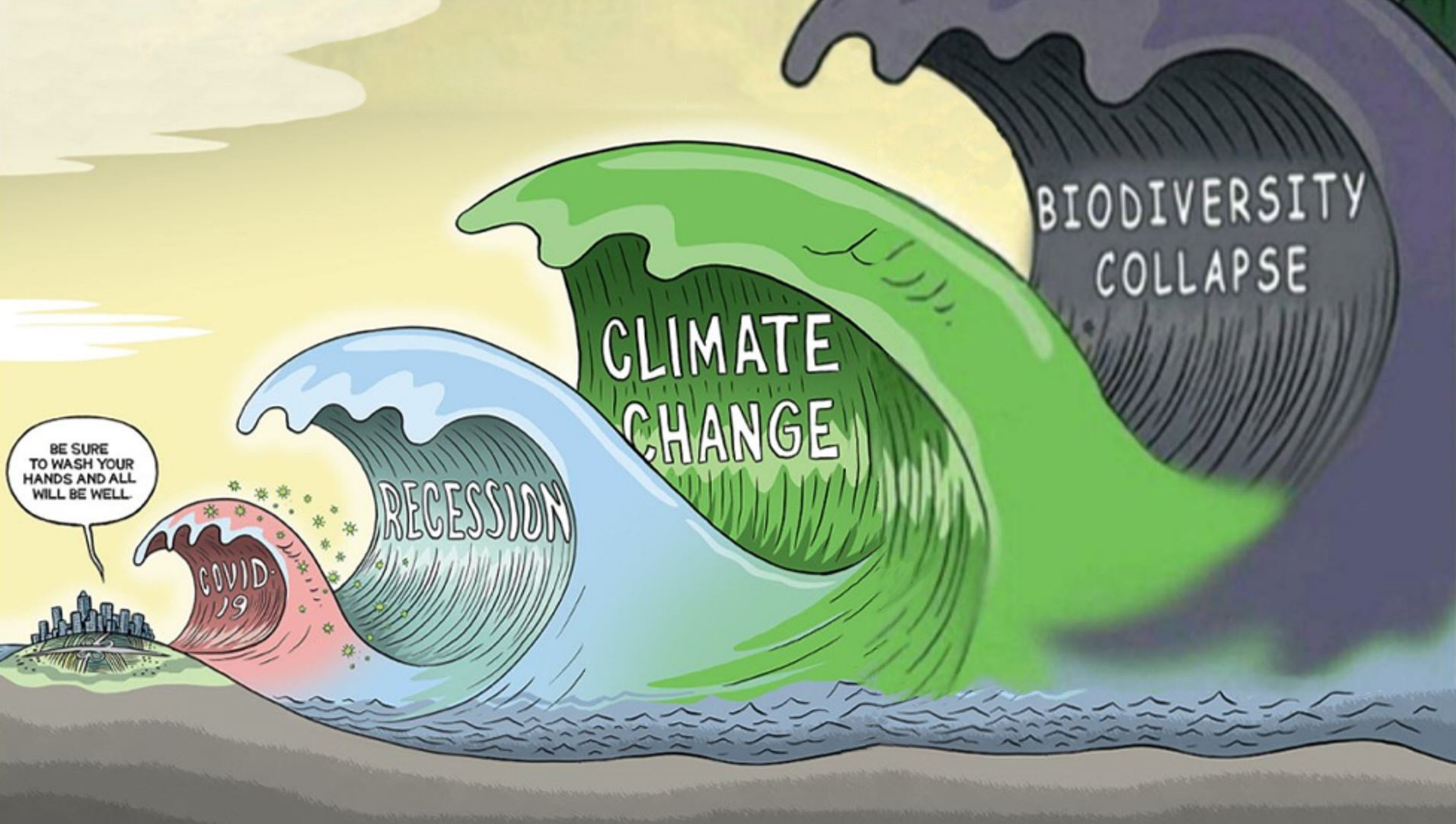
- A | ± 1,2 million
- B | ± 450 000
- C | ± 100 000
- D | ± 50 000
- E | ± 25 000
- F | ± 23 000
- G | ± 20 000 -

UCC

CONSERVATION THROUGH RESEARCH & EDUCATION



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BE SURE
TO WASH YOUR
HANDS AND ALL
WILL BE WELL.

COVID-19

RECESSION

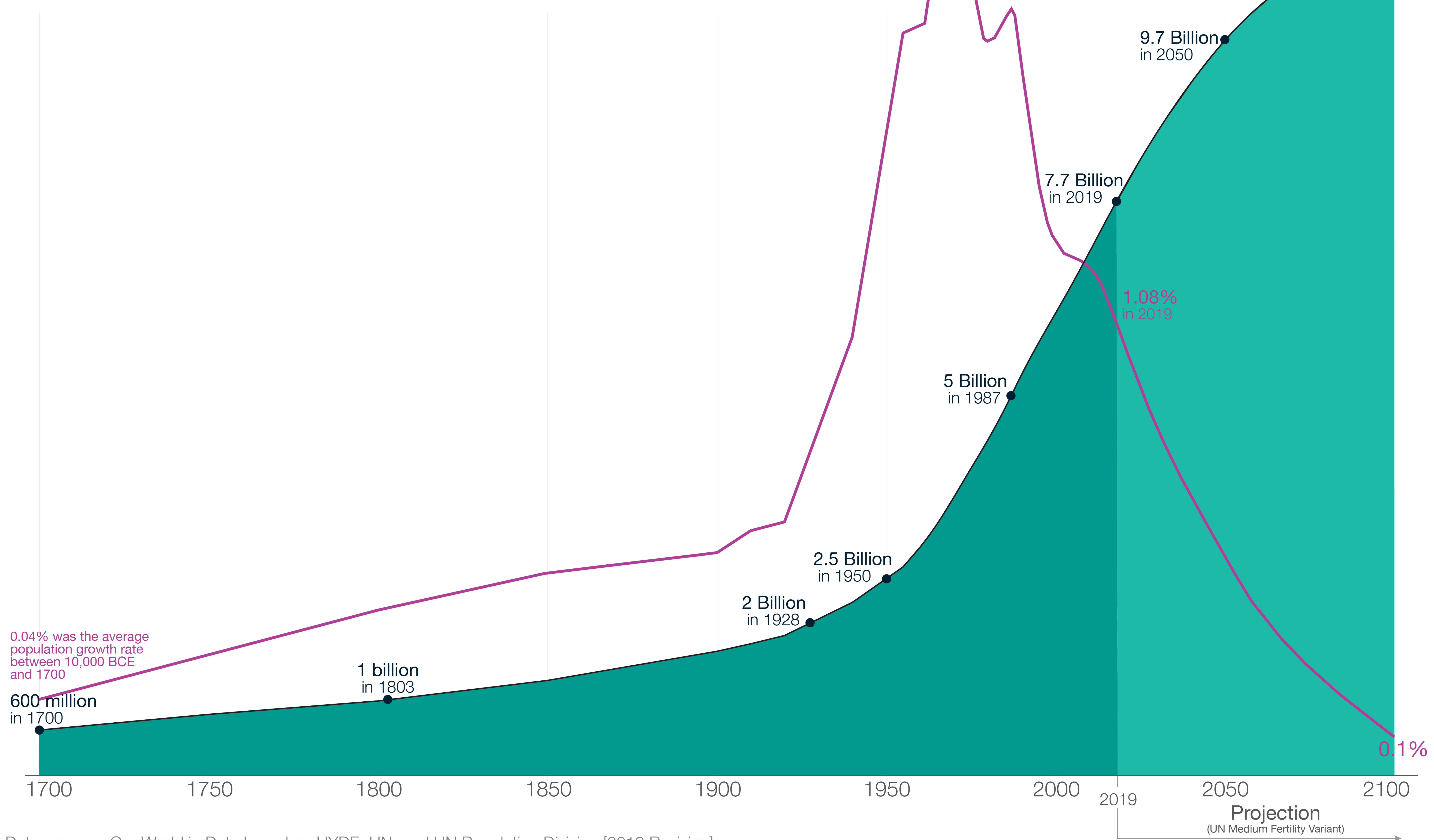
CLIMATE
CHANGE

BIODIVERSITY
COLLAPSE

World population growth, 1700-2100

Annual growth rate of the 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](https://ourworldindata.org), where you find data and research on how the world is changing.

Licensed under [CC-BY](https://creativecommons.org/licenses/by/4.0/) by the author Max Roser.

IETS NA 2100 ZAL DE WERELDBEVOLKING EINDELIJK IN AANTAL BEGINNEN AFNEMEN
ALS WE AAN ELKE SOORT PLANT, MENS EN DIER EEN GEZONDE HOEVEELHEID ECOSYSTEEMRUIMTE WILLEN GEVEN DAN KAN DE AARDE
1 MILJARD MENSEN AAN (footprint USA vandaag), 2 à 3 MILJARD MENSEN (footprint Europa vandaag) en 3 à 4 miljard mensen (zero CO2 uitstoot en weinig vlees eten)

HALF- EARTH



*Our Planet's
Fight for Life*

EDWARD O.
WILSON

WINNER OF THE PULITZER PRIZE

Environment ► Climate change Wildlife Energy Pollution

Environment

Scientists say halting deforestation 'just as urgent' as reducing emissions

Protecting and restoring forests would reduce 18% of emissions by 2030 and help to avoid global temperature rise beyond 1.5C



Oliver Milman

@olliemilman

Thu 4 Oct 2018 14.00 BST



13,267

most viewed



Banksy auction prank leaves art world in shreds



I was an Isis sex slave. I tell my story because it is the best weapon I have

Nadia Murad



Manchester United back José Mourinho and have no plans to remove manager



Melania Trump criticised for wearing colonial-style hat during Kenyan safari



Juncker criticises British media and urges limits to press freedom

EU Biodiversity strategy for 2030

PAGE CONTENTS

Why do we need to protect biodiversity?

Key elements of the biodiversity strategy

The business case for biodiversity

Documents

- Establishing protected areas for at least



30% of land in Europe



30% of sea in Europe



with legally binding nature-restoration targets in 2021 providing stricter protection of EU forests.

- Restoring degraded ecosystems at land and sea across the whole of Europe by



increasing **organic farming and biodiversity-rich landscape features** on agricultural land.



halting and reversing the decline of **pollinators**



reducing the use and harmfulness of pesticides by **50% by 2030**

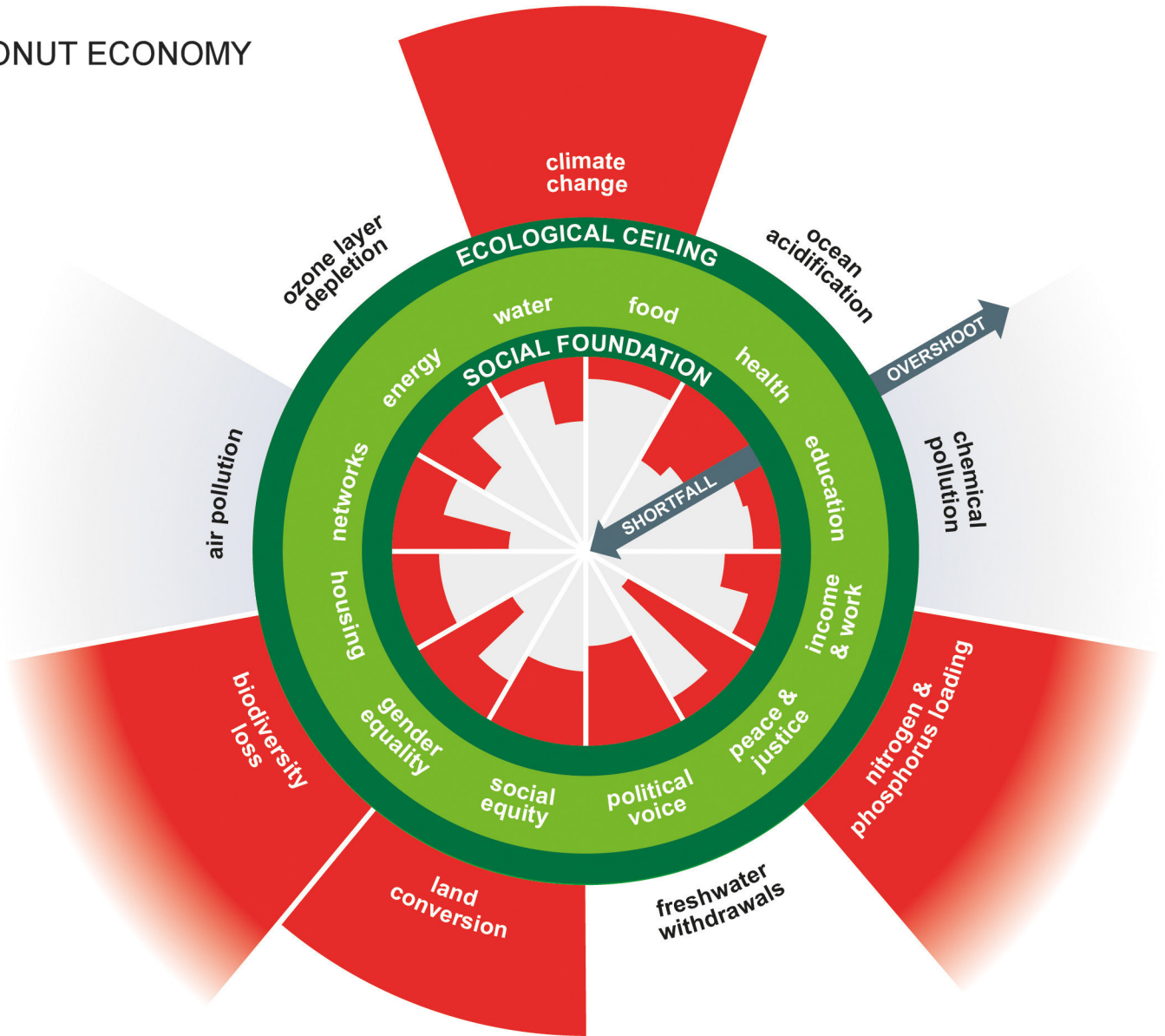


restoring at least **25,000 km** of EU rivers to a free-flowing state



planting **3 billion** trees by 2030

DONUT ECONOMY





WE SHOULD NOT GO BACK TO
NORMAL,

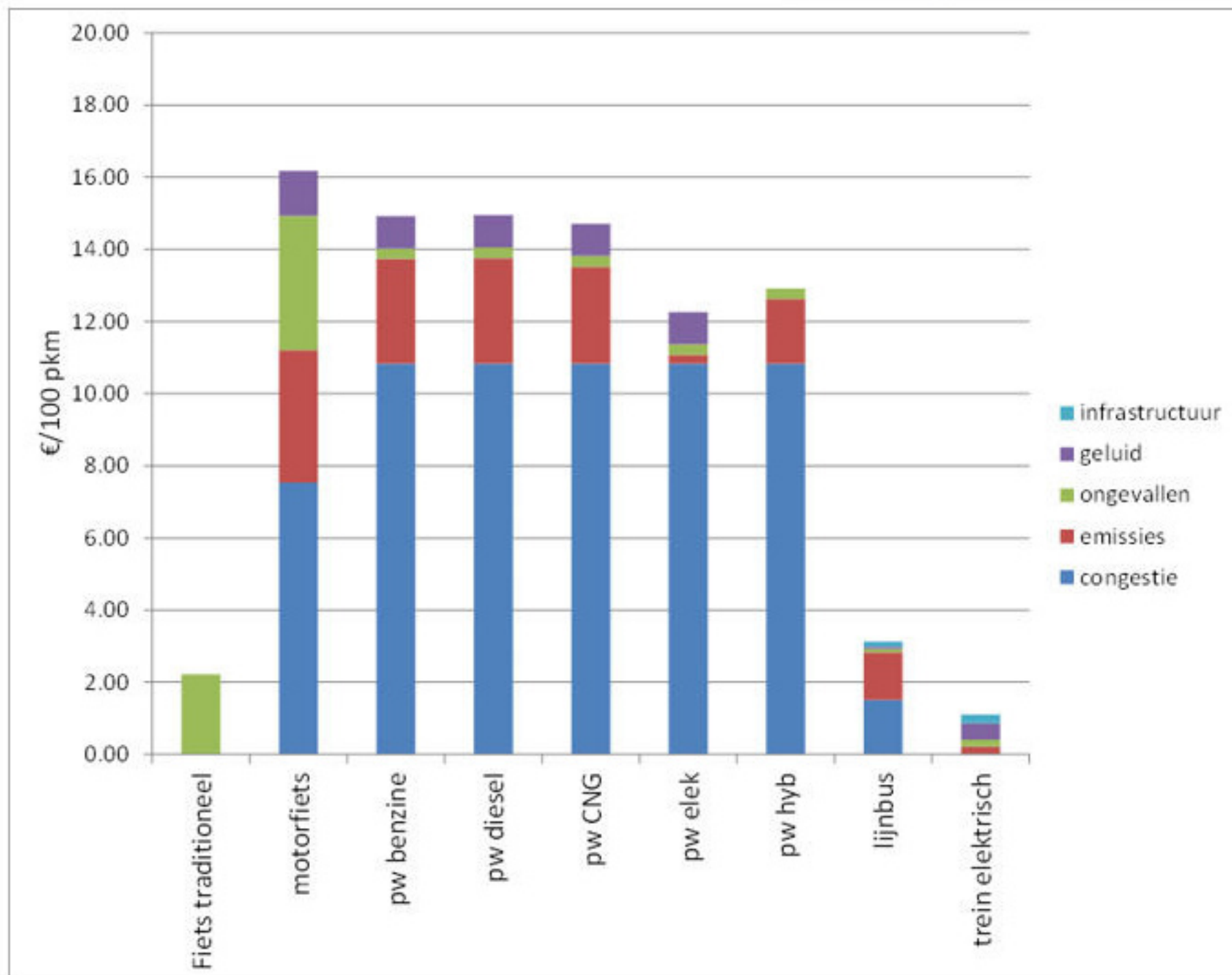


BECAUSE
NORMAL WAS THE PROBLEM.

Milieukost



Vlaanderen
is omgeving



**totale milieukost in euro per 100 personenkilometer
motorfietsen en personenwagens - zelfs elektrische - scoren slecht
fiets, trein en lijnbus scoren het best**





CO2

DB

To





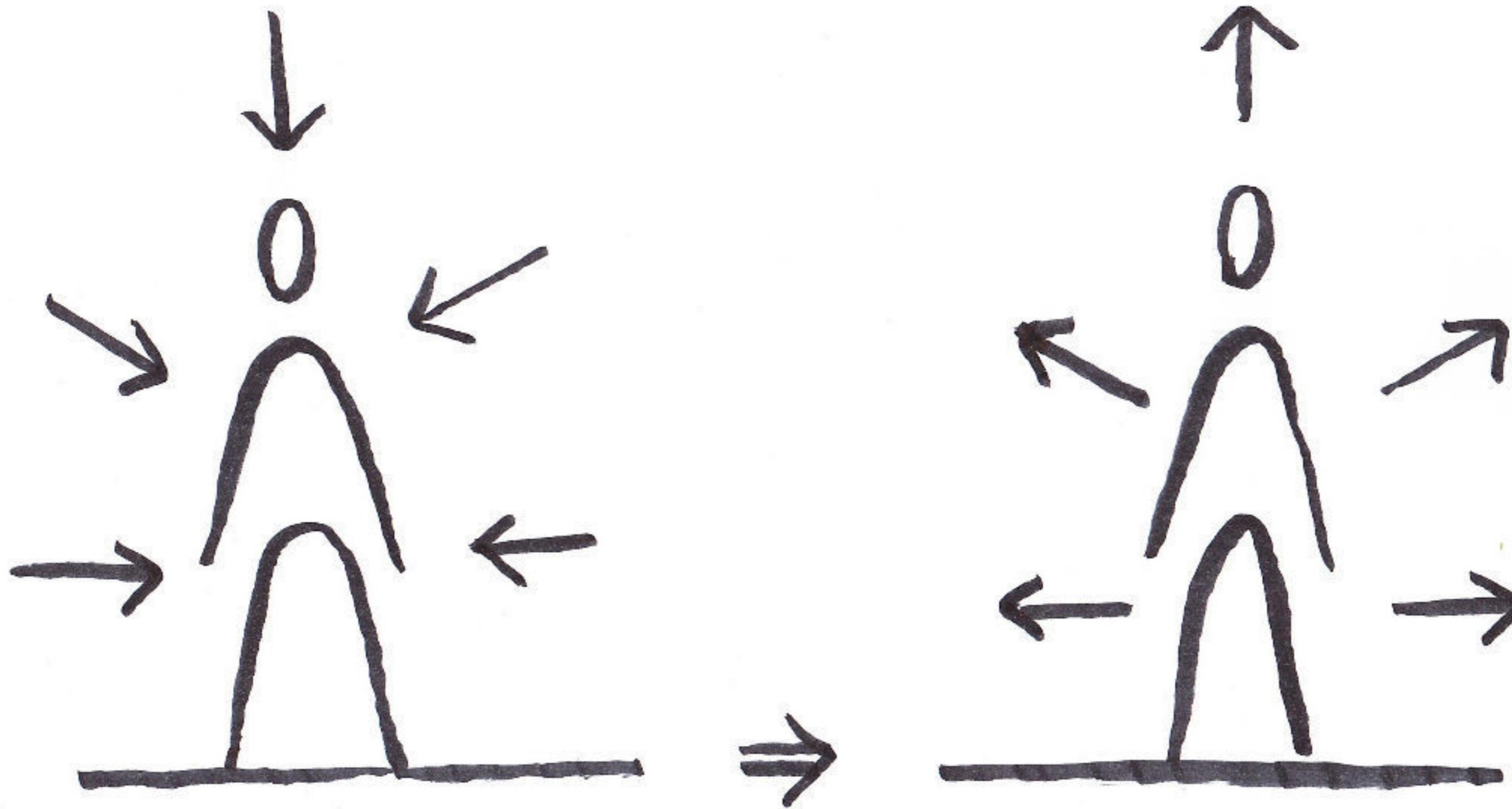
647 ha



Knepp Castle Estate - Sussex



A new sequence of priorities



From the consumption of quality towards the production of quality

OVERSHOOT = TOTAL IMPACT IS BIGGER THAN WHAT EARTH CAN STAND

TOTAL IMPACT = AVERAGE IMPACT PER PERSON x NUMBER OF PEOPLE

AVERAGE IMPACT PER PERSON = AVERAGE (LAND USE + EMISSIONS + WASTE)

NUMBER OF PEOPLE = BIRTH RATE

CAUSES OF IMPACT ARE POTENTIAL VECTORS OF CHANGE

REDUCING OUR LAND USE – GIVE LAND BACK TO NATURE <ul style="list-style-type: none">• Causes of land use: food, housing, raw materials.• Agriculture: smaller surface, less red meat, less land to feed livestock.• Undo urban sprawl: densify all forms of built land use, free standing housing should be forbidden.• All housing above 50 units per hectare (the minimum needed for a feasible heat net).• Maximum rewilding. New nature with restricted respectful accessibility.	ECONOMICAL MODEL <ul style="list-style-type: none">• Stock market driven max. profit economy or economy driven by max. quality of life for all life forms?• Private concentration of shares (hard capitalism) or public concentration of shares (communism) do not work.• Socio-capitalism: a genuine sharing economy with access to shares for all people.• Growth of value creation and turnover of services, reduction of turnover of goods, reduced land use.
BIRTH RATE <ul style="list-style-type: none">• Depends on level of education, equal rights for women, health care system.• Development aid and equal distribution of wealth. No low-income countries.	GOVERNANCE <ul style="list-style-type: none">• Nobody stays behind. A more equal society reduces polarisation and reduces extremist votes.• Sharing economy takes care of redistribution of wealth.

TECHNOLOGY BY ITSELF IS NEVER GOOD NOR BAD

EXAMPLE: WE ALREADY HAVE NEW BIOTECH THAT ALLOWS TO GROW TWICE THE AMOUNT OF FOOD PER HECTARE.

- Will it be patented and used by rich farmers to make twice as much food on the same surface for half the price, to compete and push other farmers out of the market (shareholder driven)?
- Will it be used to give almost half of the agricultural land back to nature (max. quality of life for all life forms)?

TECHNOLOGY IS LIKE A KITCHEN KNIFE.

YOU CAN KILL SOMEONE WITH

YOU CAN PREPARE HEALTHY TASTY FOOD.

THE QUALITY OF TECHNOLOGY DEPENDS ON THE INTENTIONS OF THE ONES WHO USE IT

DO WE GO FOR ANTROPOCENTRIC?

MORE

DO WE GO OR FOR ECOCENTRED?

LESS BUT BETTER