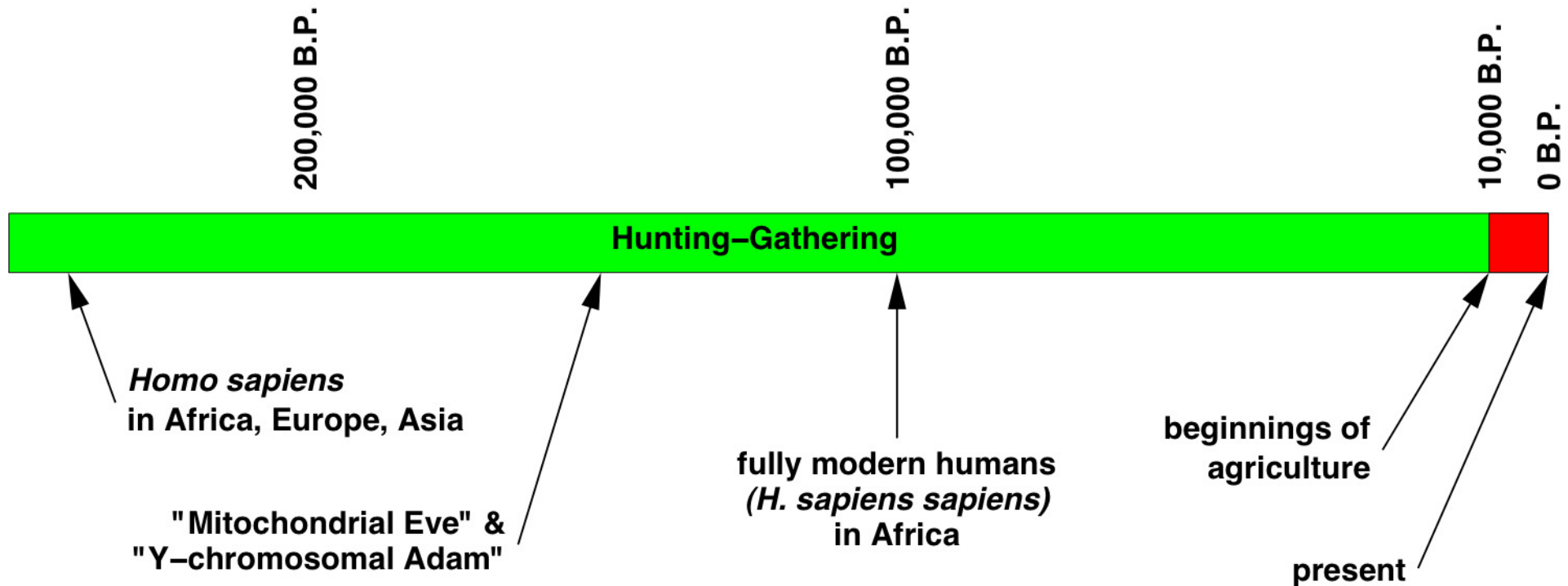
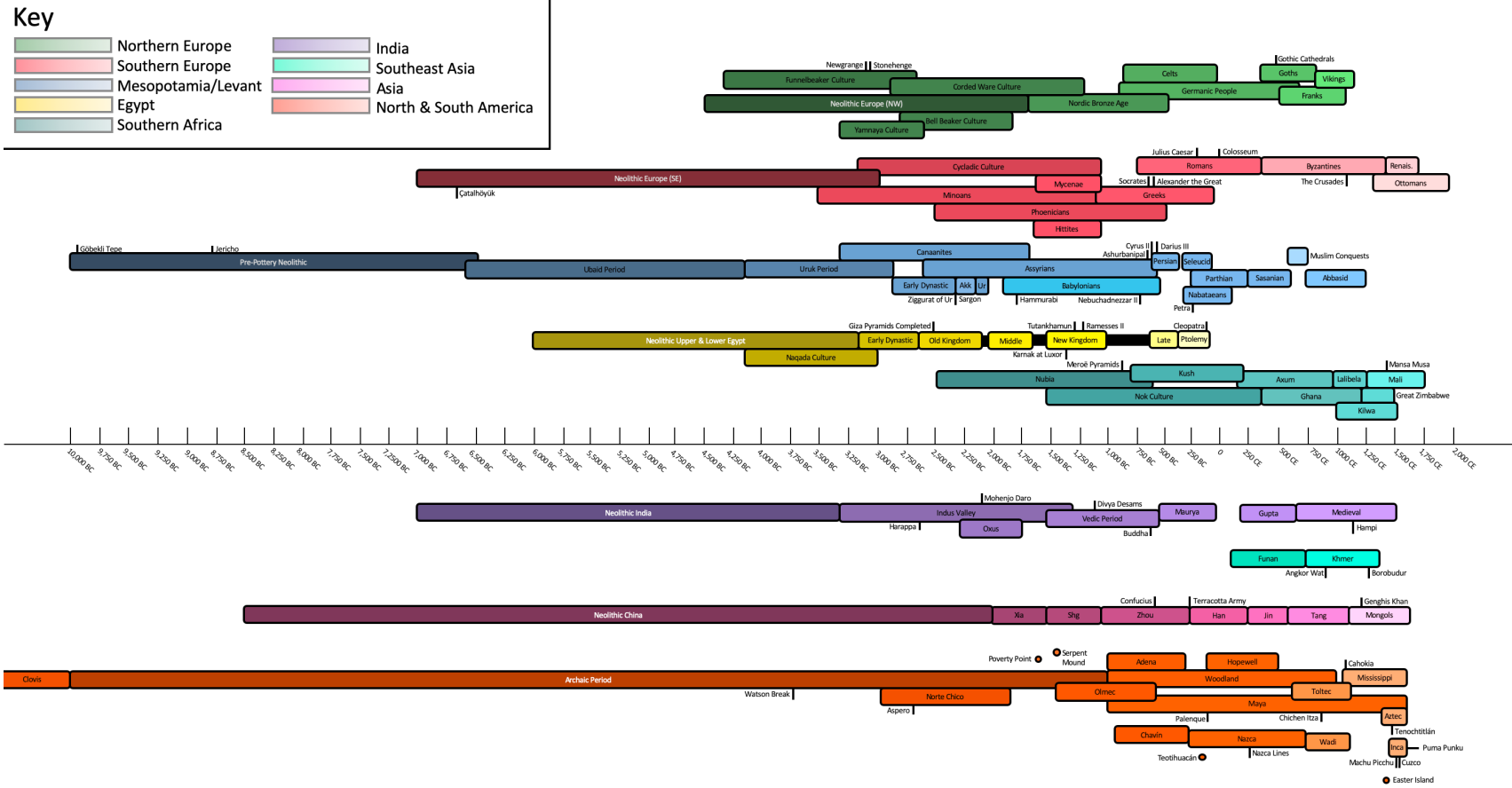


# Expansion of Human Ecological Impacts

# Global Ecological Transformation Begins with Agriculture



# Agriculture Facilitates Civilizations

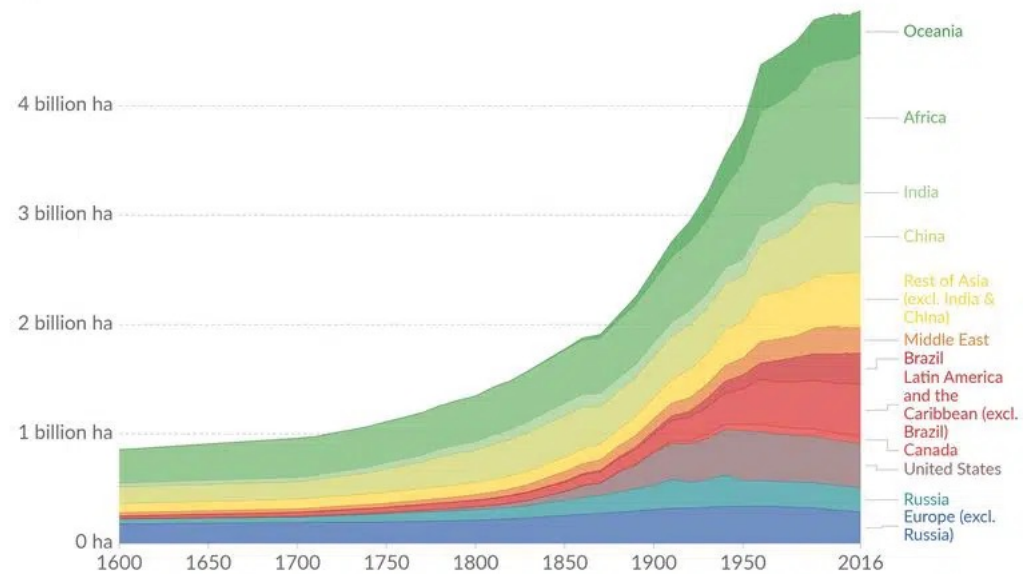


# Agriculture Replaces Ecosystems

## Agricultural area over the long-term, 1600 to 2016

Total areal land use for agriculture, measured as the combination of land for arable farming (cropland) and grazing in hectares.

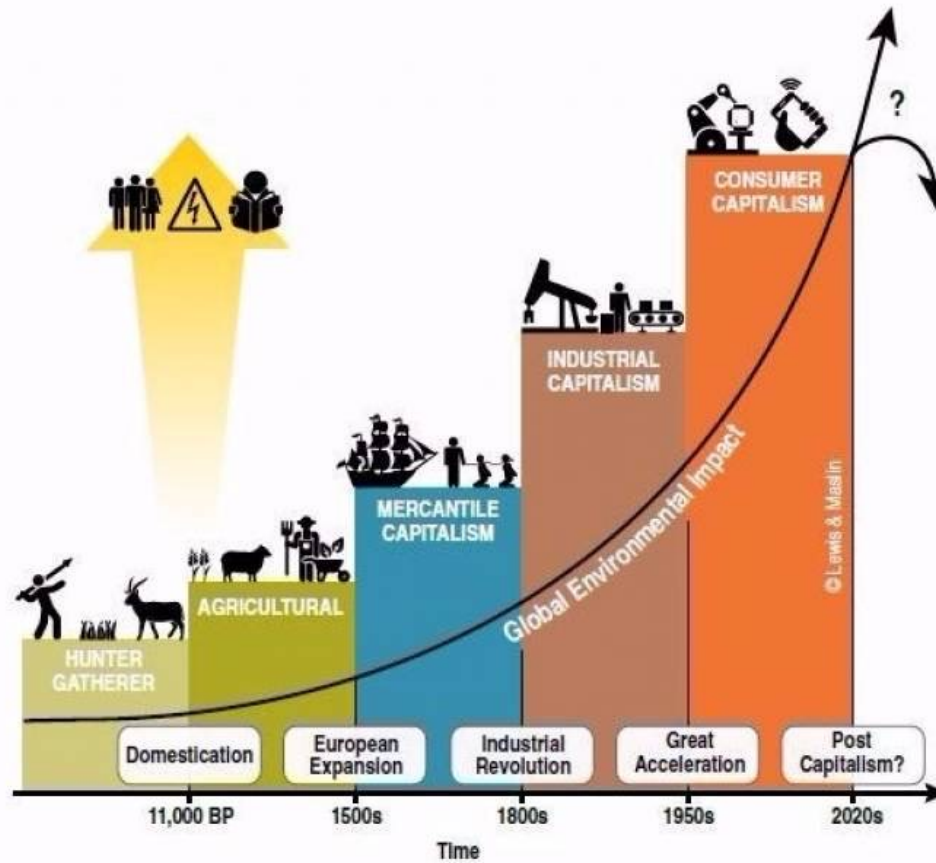
Our World  
in Data



Source: History Database of the Global Environment (2017)

OurWorldInData.org/yields-and-land-use-in-agriculture/ • CC BY

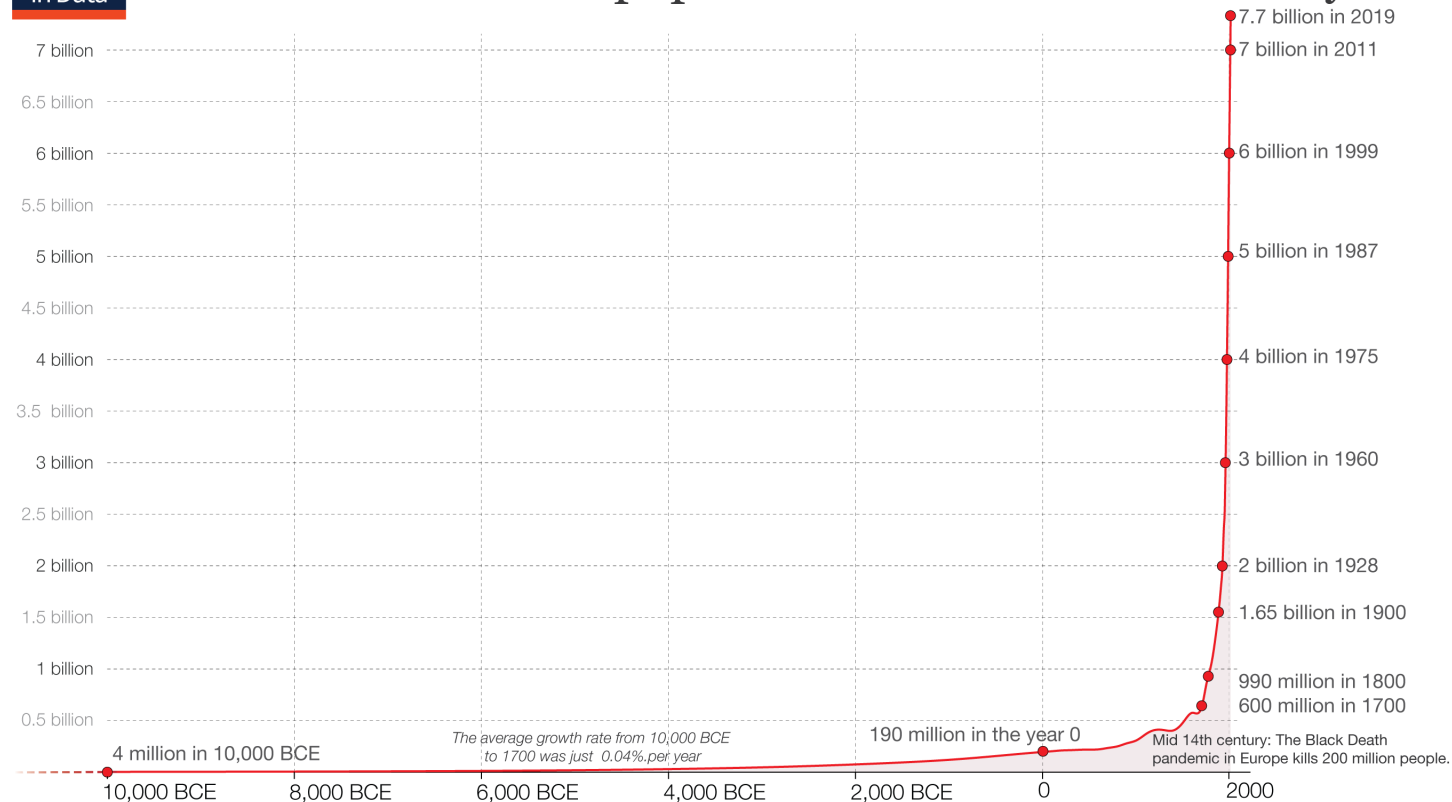
# 10,000 Years of Agriculture 250 Years of Industrialization



# Human Population Expansion



## The size of the world population over the last 12,000 years



Based on estimates by the *History Database of the Global Environment (HYDE)* and the United Nations. On [OurWorldinData.org](https://OurWorldinData.org) you can download the annual data.

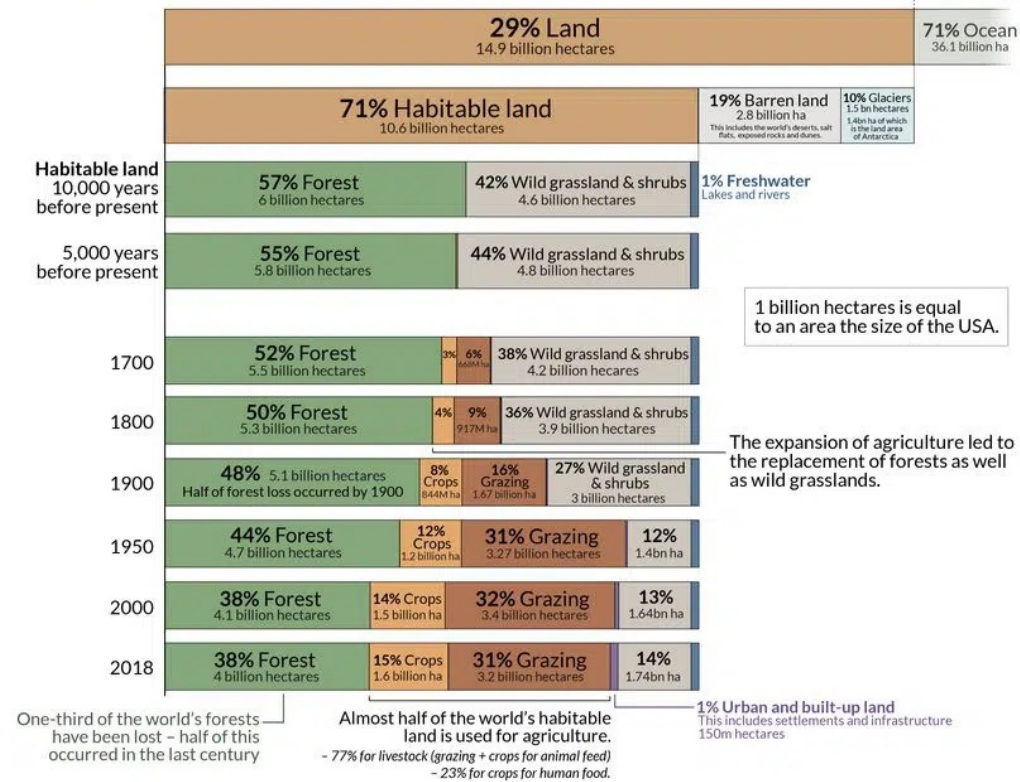
This is a visualization from [OurWorldinData.org](https://OurWorldinData.org), where you find data and research on how the world is changing.

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# Agriculture and Industry Reduce Forests

The world has lost one-third of its forest since the last ice age

Our World in Data

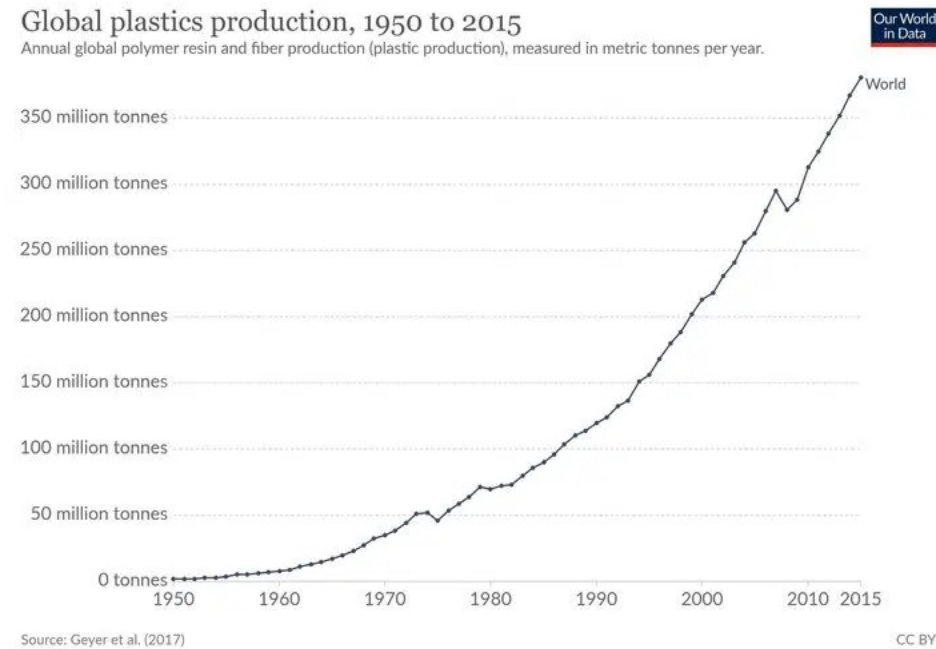


Data sources: Forests data from UN Food and Agriculture Organization (FAO); and Williams, M. (2003). Deforesting the earth: from prehistory to global crisis. Agriculture data post-1950 from UN FAO; pre-1950 data from The History Database of the Global Environment (HYDE)

OurWorldinData.org – Research and data to make progress against the world's largest problems.

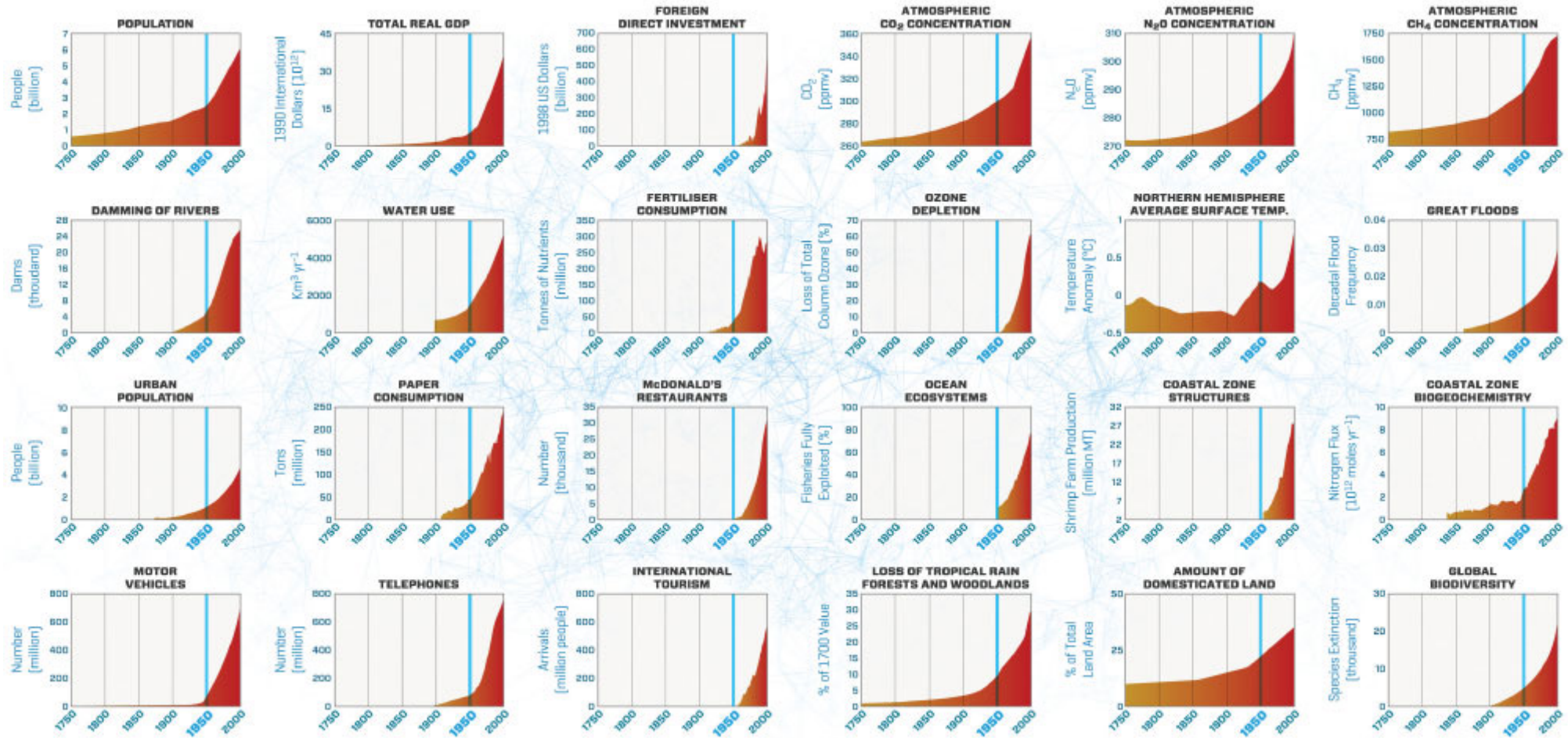
Licensed under CC-BY by the author Hannah Ritchie.

# Post-WWII Expansion of Production

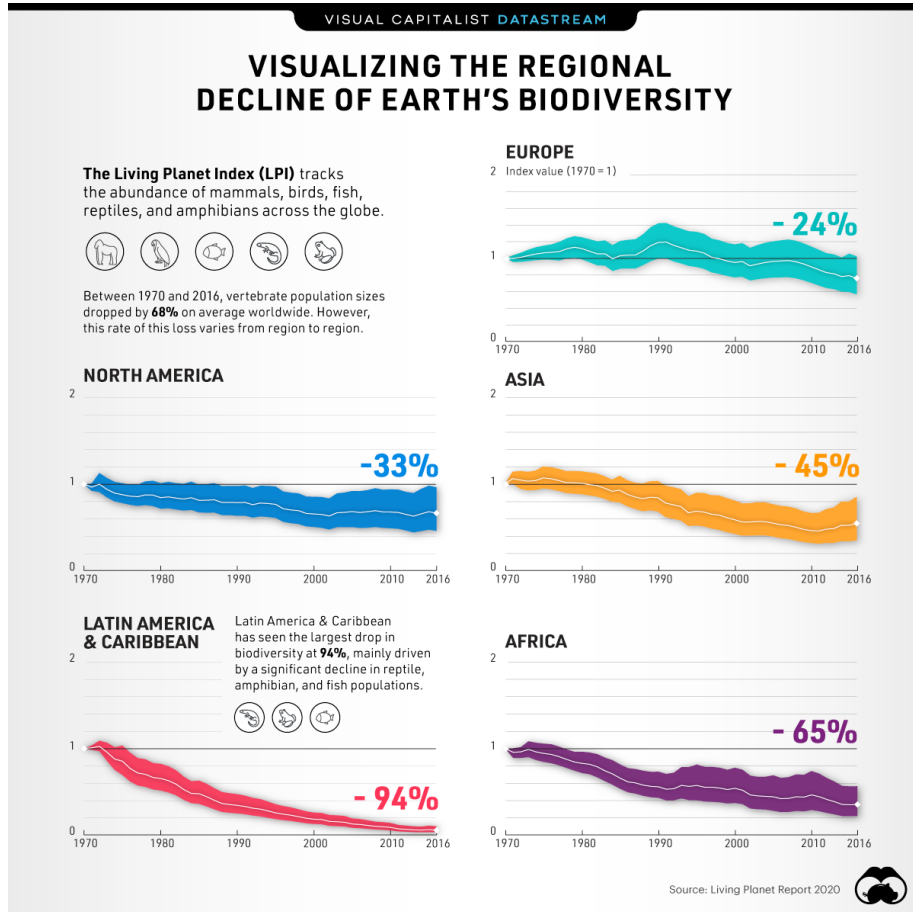




# 1950-Present: The Great Acceleration



# Biodiversity Loss



**Figure 3: The global Living Planet Index (1970 to 2018)**  
The average change in relative abundance of 31,821 populations, representing 5,230 species monitored across the globe, was a decline of 69%. The white line shows the index values and the shaded areas represent the statistical certainty surrounding the trend (95% statistical certainty, range 63% to 75%).  
Source: WWF/ZSL (2022)<sup>184</sup>.

**Key**

- Global Living Planet Index
- Confidence limits

