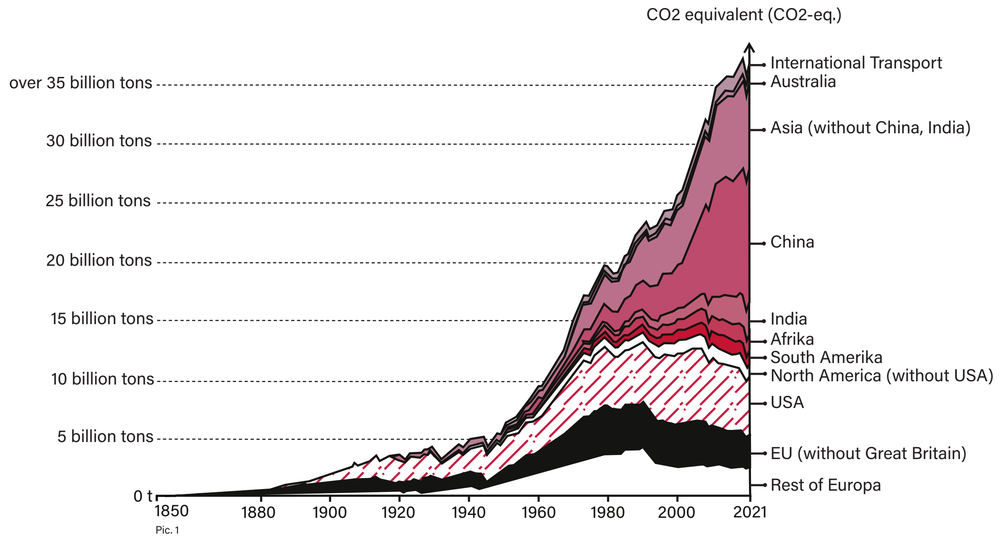
Cause/ contributer

A historical and global perspective

The climate crisis cannot be solved by individuals alone. Various actors and the frameworks they have created are responsible for causing it, but not everyone has contributed equally. These inequalities stem from the past and continue to exist today. To achieve a fair distribution of responsibility for solving the climate crisis, it is essential to understand who has caused how much greenhouse gas emissions.

Looking at the historical distribution of emissions since 1850, it becomes evident that European countries and the USA have been responsible for the majority of greenhouse gas emissions to date. Although China is now the largest emitter of greenhouse gases, its emissions have only risen drastically in the past two decades.[1] We must also remember that China was, until recently, the most populous country in the world.

In addition to historical emissions, per capita emissions are therefore relevant.[2] Furthermore, China produces many products not for its own use but for the global market. In this context, a consumption-based view of greenhouse gas emissions provides valuable insights. From the perspective of climate justice, industrialized countries bear the primary responsibility to reduce their emissions as quickly as possible.



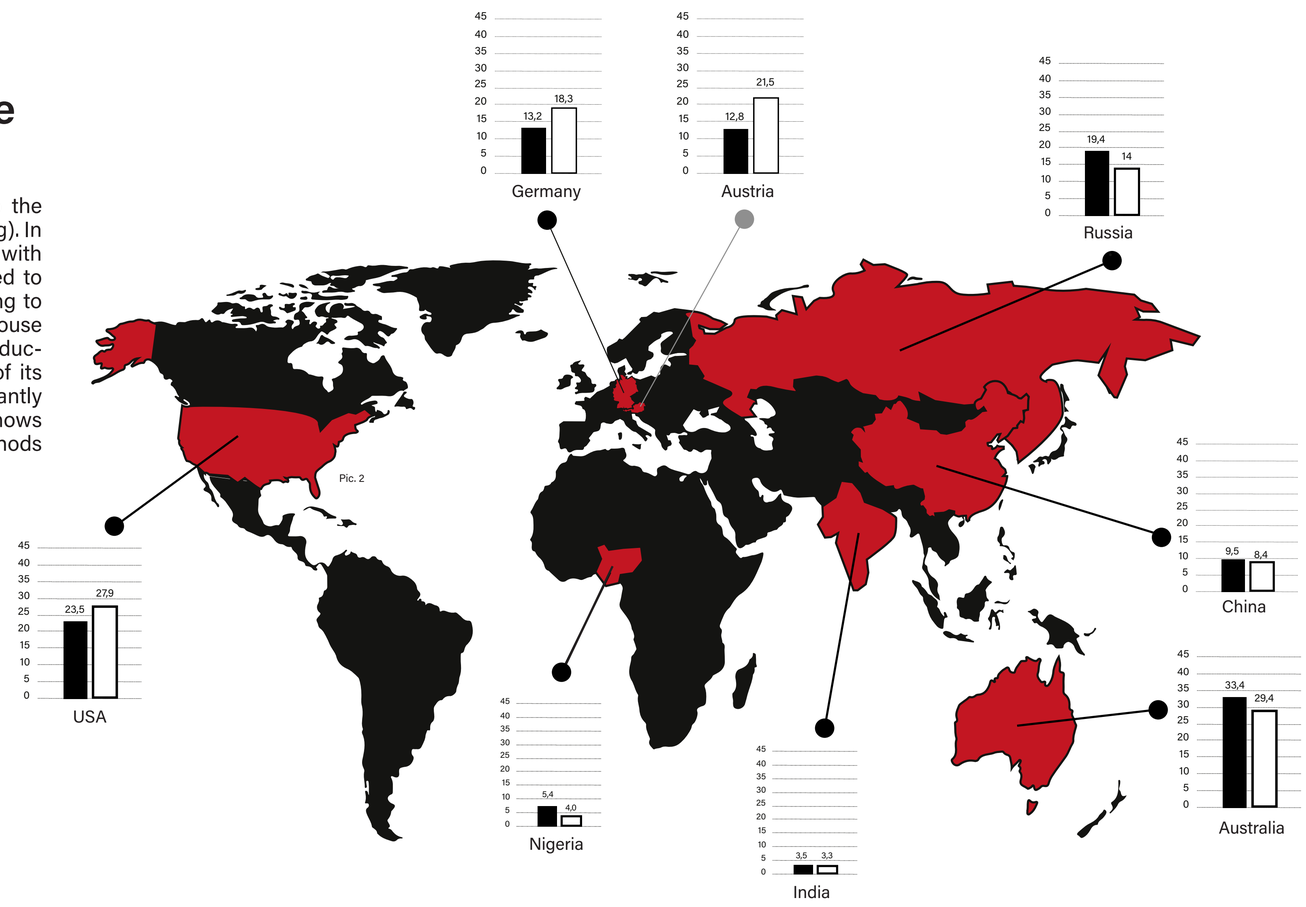
Pic. 1

The diagram on the left shows the total fossil greenhouse gas emissions worldwide since 1850 (in CO_2 equivalents), grouped by world regions in a production-based balance – meaning assigned to the country where they were emitted.[3]

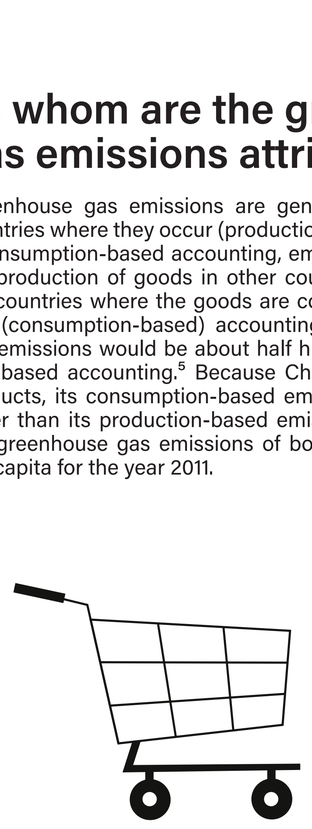
Fossil greenhouse gas emissions include emissions from coal, oil, natural gas, as well as from the production of cement, steel, and other products that involve fossil process emissions.

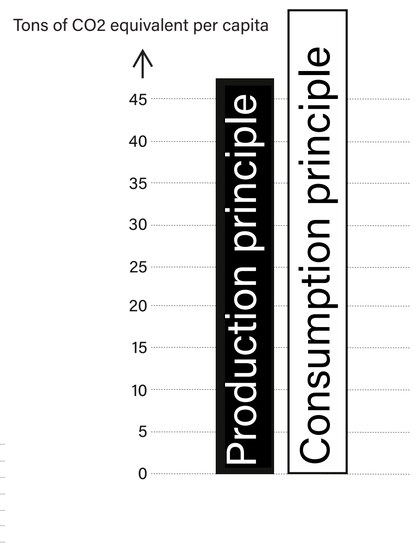
To whom are the greenhouse gas emissions attributed?

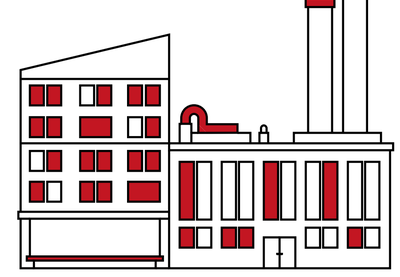
Greenhouse gas emissions are generally attributed to the countries where they occur (production-based accounting). In a consumption-based accounting, emissions associated with the production of goods in other countries are attributed to the countries where the goods are consumed.[4] According to this (consumption-based) accounting, Austria's greenhouse gas emissions would be about half higher than with production-based accounting.[5] Because China exports many of its products, its consumption-based emissions are significantly lower than its production-based emissions. The map shows the greenhouse gas emissions of both accounting methods per capita for the year 2011.



Pic. 2

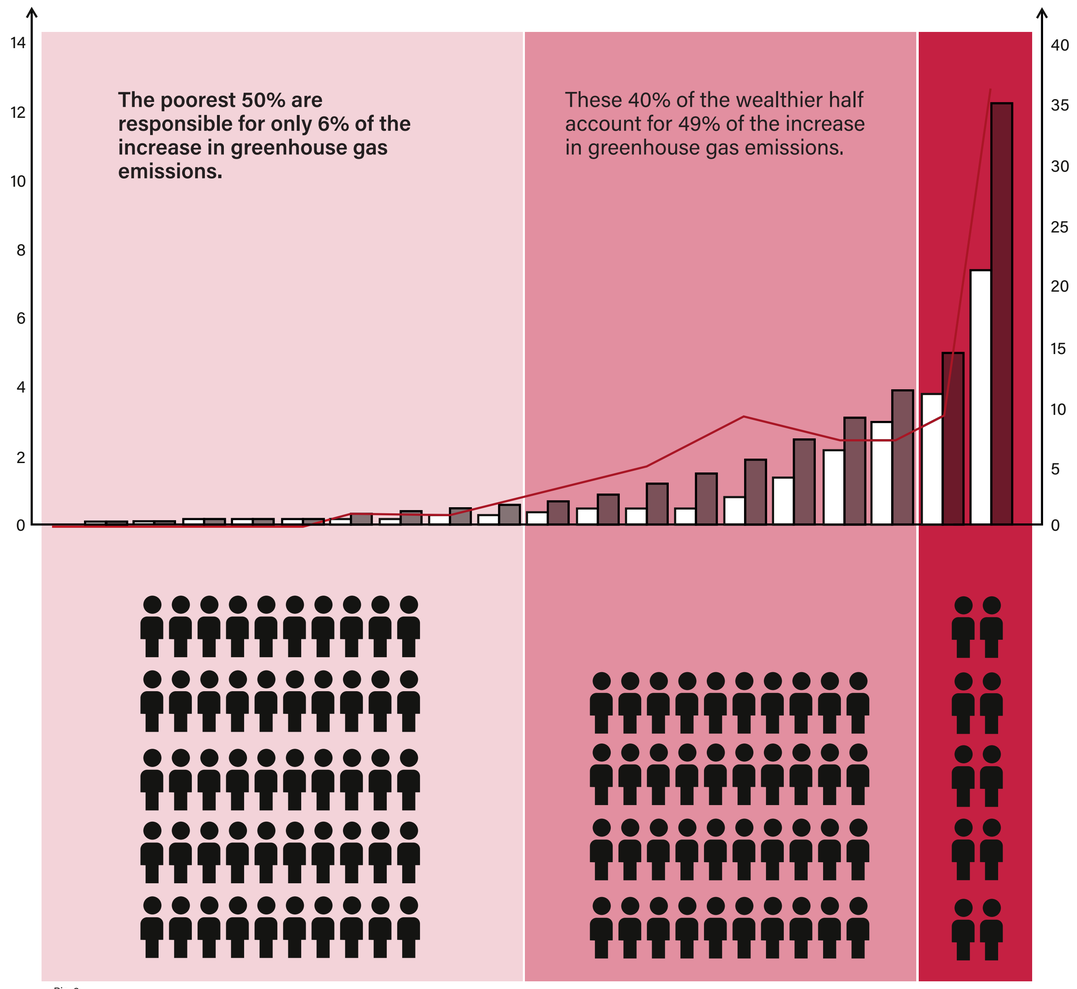






Greenhouse gas emissions in gigatons (Gt) CO_2 equivalent.

Share of the increase in greenhouse gas emissions in percentage



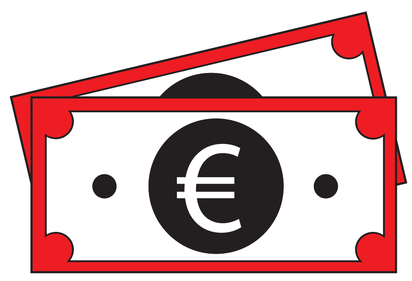
Pic. 3

What role does income play?

Both historical greenhouse gas emissions and consumption-based emissions clearly show that the industrialized countries of the global North must be held accountable when it comes to climate protection, especially if a fair solution is sought: fair, measured by the share of greenhouse gas emissions caused and the resulting damages.

The link between wealth and emissions is evident both globally and within individual countries. Worldwide, the top 10% of earners were responsible for more than half of all greenhouse gas emissions between 1990 and 2015. Their per capita emissions are over 34 times higher than those of the poorer half of the global population.[6] A carbon-intensive lifestyle is thus affordable for only a relatively small number of people on Earth. The chart on the left compares the global, income-based distribution of greenhouse gas emissions between 1990 and 2015.

Many countries in the global South can barely afford climate protection and, especially, climate adaptation measures – such as protection against rising sea levels. They are advocating for a global fund to enable necessary investments.[7]



[1] vgl. Ritchie et al., 2022
[2] vgl. Steininger et al., 2015, S. 5ff. (in: Supplementary Information)
[3] vgl. Ritchie et al., 2022
[4] vgl. Steininger et al., 2015, S. 2f.
[5] vgl. Steininger et al., 2018, S. 230
[6] vgl. Kartha et al., 2020, S. 9
[7] vgl. IPCC, 2022b, S. 1559ff.

Pic. 1: Eigene Darstellung basierend auf Ritchie et al., 2022
Pic. 2: Eigene Darstellung basierend auf Steininger et al., 2015, S. 5ff. (in: Supplementary Information)
Pic. 3: Eigene Darstellung basierend auf Gore et al., 2020, S. 4

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