German Ethics Council

Climate justice

OPINION

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2) Based on a brief description of the state of affairs (Chapter 2), the German Ethics Council develops a concept of justice in this opinion that aims to shape the distribution of burdens and duties in all three dimensions in such a way that the minimum requirements for a good, successful life are met now and in the future (Chapter 3). Building on this, it deals with key questions on responsibility in climate change (Chapter 4) and formulates recommendations (Chapter 5).

State of affairs

3) The climate is the average of the long-term dynamic processes in the earth's atmosphere determined using meteorological methods and summarizes regional and global weather phenomena. There is no longer any reasonable doubt that global warming has been caused by human influences since the beginning of industrialization, primarily through the combustion of fossil fuels.
4) Unchecked further global warming would have catastrophic consequences. Extreme weather events such as heavy rainfall, floods, heatwaves and droughts are already becoming more frequent. The destruction of human livelihoods can cause indirect damage such as

poverty, famine and displacement. Human health is also endangered by heat, but also by the spread of pathogens and climate change-related psychological stress.

5) Responses to the challenges of climate change include measures to reduce warming (mitigation), measures to adapt (adaptation) and technological approaches to climate change (climate engineering).
6) Examples of mitigation measures include reducing greenhouse gas emissions in electricity generation, food production, building heating, the transport sector, industrial production and private consumption.
7) Adaptation strategies to climate change include changes in agriculture, robust infrastructures such as dams and storm-proof power lines or preparing the healthcare system for the consequences of global warming.
8) Climate engineering includes technical measures for the targeted $_{\text{removal of CO2}}$ from the atmosphere as well as other interventions in the climate system, such as the supply and removal of greenhouse gases.
   reduction in solar radiation by releasing large quantities of sulphur dioxide into the stratosphere.
9) There are different attitudes among the population towards measures to combat climate change, which are also influenced by the media discourse. It is the task of climate ethics to identify possibilities for responsible political and individual action in dealing with climate change, to work out and justify morally justifiable options for action and thus reduce uncertainties.

Climate change and justice

10) Both the causal responsibility for climate change and the dangers and damage caused by it

and losses and the means to overcome them are unequally distributed. Such inequalities raise questions of justice.

11) Justice determines in a justifiable form what is appropriate for individuals and groups. The central ethical problem of climate change concerns the appropriate distribution of the associated burdens and responsibilities.

12) The concept of climate justice advocated in this statement incorporates egalitarian, sufficiency and prioritarian considerations. Egalitarian theories focus on the principle of equal treatment. Sufficiencyarian concepts focus on the minimum conditions for a good, prosperous life. Prioritarian approaches argue in favor of the most disadvantaged.

13) The German Ethics Council combines these three perspectives within the framework of a human rights approach to create a *sufficiency-based threshold concept of climate justice*. According to this, firstly, all people are fundamentally entitled to the same opportunities to lead a good, successful life (egalitarian). Secondly, threshold values for important basic goods or capabilities, such as health, food, water, security or mobility, must be determined as a minimum requirement for such a life and must not be exceeded (sufficiencyarianism). Thirdly, climate protection measures should be aligned in such a way that those who are most affected by climate change can reach the relevant thresholds as a matter of priority (prioritization).

14) Since overcoming climate change, as demanded by the ethics of justice, requires a comprehensive transformation at both individual and societal level, ideas of a good, sustainable life will in many respects not take the form of

of current Western consumption practices. At the same time, such a transformation opens up new opportunities.

15) The concept of justice presented here has ethical consequences in at least three dimensions: with regard to different population groups within a society, to people in different countries and regions of the world, and to current and future generations.

16) Within society, the damage and burdens caused by climate change and its management also vary greatly in Germany. They often hit people with limited financial resources particularly hard. The aim here is to counteract an exacerbation of social upheavals and conflicts and to distribute burdens in such a way that the conditions for a good, successful life are maintained for all. For this reason, the reasonableness of climate protection measures for the less fortunate must be examined in particular and effective equalization and support measures are required to ensure relevant threshold values.

17) Internationally, the long history o f colonialism and industrialization must be taken into account, as must ongoing neo-colonial dependencies. Contributions to global warming as well as climate damage and the opportunities to protect ourselves from it are unevenly distributed geographically. A distinction must therefore be made between catch-up growth in countries of the Global South and further growth in consumption and resource use in industrialized countries, and a transfer of appropriate compensation payments must be negotiated. People in all countries deserve equal opportunities for a good, prosperous life and must be able to reach corresponding threshold values. Here too, preference should initially be given to those who are furthest away from this.

18) Intergenerationally, young people and those not yet born will have to bear the main burden of a changed global climate and the measures required to deal with it. It is therefore important to take all necessary and reasonable measures today to prevent future generations from no longer being able to achieve the minimum requirements for a good, prosperous life. At the same time, all solutions considered must leave future generations sufficient scope for decision-making and action and must not impose disproportionate long-term burdens on them.
19) With regard to all three dimensions, the path to greater climate justice is characterized by considerable conflicts. Procedurally fair communication processes are therefore needed.
20) Within society, the established normative principles and procedures of the liberal-democratic order apply. They require open and equal communication between all those affected and those responsible. Suitable institutions and procedures must be (further) developed. This requires fair access and participation opportunities in the public political discourse on climate justice as well as a transparent comparison of the various arguments and options for action.
21) Internationally, a procedurally fair debate on climate justice issues requires better understanding and cooperation. Sustainable political decisions can only be negotiated in fair multilateral processes and recorded in contractual agreements. In the longer term, the establishment and expansion of international institutions for fair political decision-making on climate issues would appear to be necessary in order to stabilize such communication processes.

22) In the intergenerational dimension, the interests of younger and future generations need to be taken into account in a measured way. A stronger involvement of young people in political processes and ways to advocate for future generations in today's negotiation processes are being discussed here.

Responsibility in climate change

23) Responsibility presupposes freedom and freedom includes responsibility. This principle also applies in the context of climate change, is central to a free and democratic community and is safeguarded by law. Human coexistence requires mutual restrictions on freedom in order to enable equal freedom for all.
24) The inner and reason-based insight into the necessity of action leads to self-commitment as an expression of one's own freedom. This can mean questioning previous lifestyles or changing behavior, for example by voluntarily giving up certain forms of vacation, consumption or mobility.
25) For reasons of justice, participation in measures to tackle climate change may be morally required. If one's own exercise of freedom interferes unjustly with the freedom and well-being of others, including future generations, for example through climate-damaging consumption, the state can intervene by restricting freedom. As long as there is no regulatory obligation, it is up to the individual to assume a moral duty to cooperate.
26) Responsibilities and duties to cooperate at different levels of the organization are intertwined. The fulfillment of individual moral duties of cooperation, such as the conversion of individual

mobility behavior, is facilitated by conducive framework conditions and in some cases made possible in the first place. Their creation is largely the responsibility of state regulation, but also requires private organizations such as companies to assume responsibility. To prevent a diffusion of responsibility, clear attributions of responsibility are needed in a well-founded concept of multi-actor responsibility.

27) Individual responsibility is often at the center of the climate debate. However, it would be unreasonable to expect individuals alone to tackle climate change. If the economic and social order does not provide suitable conditions for this, the state should not demand a lower-emission lifestyle and consumption.

28) Nevertheless, part of the responsibility for climate protection lies with individuals and their consumption decisions, at least within the scope of individual degrees of freedom and the availability of reasonable lower-emission alternatives. Individual contributions may be small, but they remain morally relevant. Insofar as they become habitualized in the behaviour of many individuals and become routine, they promote the emergence and development of a culture of perceived responsibility. Individual responsibility can also be exercised through participation in the democratic formation of will and opinion.

29) At the level of non-governmental or private associations, companies in particular have a moral responsibility to enable individuals to engage in climate-friendly consumer behavior. In accordance with the capability principle, large, globally active companies have a particular duty in this regard. The moral obligation of companies to cooperate must not place an undue burden on them. Competition rules and

Economic framework conditions should be designed, at least within the national framework, in such a way that they support and do not hinder climate justice.

30) At the political level, t h e task is to shape social conditions and legal frameworks in such a way that low-emission behavior is possible without unreasonable personal or corporate burdens and that burdens are distributed fairly. Measures must be effective, necessary and proportionate and must be democratically legitimized. They should also be structured with a view to the future so that individuals and private collectives can adapt to them and companies can plan with certainty, for example.

31) In view of the global dimension of climate change, there is an urgent need for an effective global strategy that goes beyond the existing international agreements. Germany must involve as many countries as possible in climate protection efforts through supranational agreements and also allow itself to be involved. There is a significant state responsibility to drive forward global agreement processes for more climate justice and to achieve binding global agreements with effective reduction targets that are actually implemented.

32) There are currently considerable obstacles at all levels to a fair perception of climate responsibility. In view of the considerable risks posed by climate change, the German Ethics Council believes that state actors have a duty to make special efforts, even if it remains uncertain whether ambitious targets for limiting global warming can actually be achieved. In view of the extraordinarily serious consequences of unchecked global warming, it would be downright irresponsible,

to forego national and European climate protection measures simply because the global implementation of corresponding measures does not yet appear to be assured. Moreover, efforts to achieve more effective international climate protection agreements would be politically implausible without simultaneous national or European efforts.

33) Germany can assume international responsibility, particularly in the field of technology development, both at the national level and at the level of its companies. The mitigation of greenhouse gases and a more precautionary approach to adapting to climate change must remain a key concern of long-term climate-friendly development. At the same time, the development of technologies to achieve "negative emissions" should be promoted, including technologies for $CO2_{capture}$ and storage.
-storage. However, such technologies
should not be misused to reduce emissions, as this would set in motion a spiral of increasing emissions and a simultaneous increase in the need for retrieval.

34) The above considerations give rise t o the responsibility to scrutinize climate-relevant framework conditions for politics, business and technology both nationally and globally in terms of ethical justice and to develop alternatives. In view of the current economic order based on competition and quantitative growth, industrialized countries are faced with far-reaching questions about a fundamental transformation.

35) An open social debate is necessary in order to discuss the necessary trade-offs and to make the sense of corresponding measures clear and transparent. All levels of stakeholders have a shared responsibility to make such a transformation a reality.

sustainable and climate-neutral society and to develop alternatives for a good, successful life without further growth in consumption and resource consumption.

36) Social communication, especially in the media and politics, is of particular importance for understanding political measures. All actors with a communicative reach in society are responsible for objective and transparent reporting and a differentiated presentation of different positions.

37) Demands to suspend democratic freedoms and processes in order to enforce the measures required for lower-emission action in a technocratic or even eco-dictatorial manner must be firmly rejected. However, there is a responsibility at all levels to think about the further development of current institutions and processes of democratic opinion-forming in the face of the challenges of climate change.

Conclusions and recommendations

38) Responses to the challenges associated with climate change must take appropriate account of the interests, impacts and capabilities of all people living today and of future generations. This is why the German Ethics Council has developed a concept of climate justice in this opinion, which aims to shape the distribution of burdens and duties in such a way that as many people as possible can achieve the minimum requirements for a good, successful life now and in the future.

39) Based on the above considerations, the German Ethics Council recommends

1. The challenges and potential of the socio-ecological transformation required to tackle climate change should be discussed more clearly in public, politically and socially in future. The focus should be on climate justice and responsibility. Political parties, civil society, the media and science should consider and develop perspectives for a good, successful life in a sustainable and climate-neutral society without further growth in consumption and resource use.

2. Material and immaterial costs for the implementation of climate protection measures should be determined as precisely as possible, communicated transparently and distributed fairly and responsibly within society as well as internationally and intergenerationally. It is important to be guided by threshold values for important basic goods and capabilities as minimum requirements for a good, successful life. The needs of people whose provision does not reach certain thresholds must be given priority here.

3. Climate protection measures should be interlinked in an overall political concept that includes changes in the energy industry, the promotion of low-emission technology, the reduction of climate-damaging subsidies, emission-reducing regulations and corresponding economic incentives, forward-looking measures to adapt to the unavoidable consequences of climate change, as well as the development and testing of technologies to reduce emissions.

to $_{\text{remove}}$ CO2 from the earth's atmosphere. Every decision on technical measures must take into account possible new path dependencies that may be caused at the expense of future generations, for example if they are burdened with the responsibility of permanently creating a global carbon footprint.
functioning economy for CO2 $_{\text{removal}}$.

4. At national level, care must be taken to ensure that the commitments made by Germany under the Paris Climate Convention are fulfilled quickly and effectively. This can be achieved in particular by expanding and intensifying CO2 $_{\text{pricing}}$ on products and services.
happen within society. Intra-societal
ensure fairness, e.g. through the equalizing effect of a flat-rate per capita reimbursement from CO2 $_{\text{pricing}}$ to all
inhabitants. In addition
Ensure that attractive climate-friendly alternatives are available. In addition, regulatory instruments such as over-proportional pricing of particularly climate-damaging products or services should be considered in order to make them less attractive to financially strong individuals.

5. The fair distribution of responsibility for these and other climate protection measures is primarily a government task. Companies and other private collective actors must also be made much more responsible for fulfilling this responsibility and supported by appropriate framework conditions. The widespread focus to date on individual

The responsibility of individuals does not do justice to the problem. Individual freedom of choice is always determined by the collective action of many and is essentially shaped by the political framework. Clear legal regulations are therefore necessary to make it easier for individuals to act in a climate-friendly way. It is inappropriate for state actors to expect individuals to consume in a lower-emission way if the conditions for this are not fulfilled to a large extent or are even thwarted within the economic and social order desired and supported by the same state, so that lower-emission action still requires "moral heroism" in many areas. Moral criticism of decisions in the area of private lifestyle and consumption is no substitute for necessary political measures.

6. However, the justified expectation of politicians to set more effective framework conditions for climate protection does not release individuals from an individual moral obligation to cooperate. Everyone has a moral responsibility to help ensure that social obligations can be fulfilled. This includes reflecting on personal behavior, one's own lifestyle and one's own civic engagement, even independently of regulatory requirements, with a view to the challenges of climate change and how to overcome them, and changing accordingly within the scope of one's own possibilities and reasonableness.

7. The debate on a fair approach to climate change and its consequences

must take place within the framework of open social discourse. Attention must be paid to fair access and participation opportunities as well as a transparent comparison of the various information, arguments and options for action. Binding decisions must be reserved for the democratically legitimized institutions intended for this purpose, in particular parliaments. Scientific expert committees and extra-parliamentary civil society involvement are components of public discourse in a liberal parliamentary democracy; however, they cannot replace democratic decision-making. A possible destabilization of democracy must be counteracted at all levels. Individual engagement and protests must also adhere to democratic rules.

8. The actors in the media and politics have a particular responsibility to facilitate and lead a constructive, solution-oriented discourse on climate change. A credible discussion about realistic climate solutions requires factual reporting that neither embellishes nor exaggerates and provides an appropriate amount of space for the range of positions represented in society and science. Too much attention should not be paid to doubts, evasive strategies or pseudo-solutions that have little factual basis. Excessive alarmism should be avoided, as should the exclusive emphasis on problems. In view of the major challenge of a socio-ecological transformation, expected positive aspects should also be sufficiently highlighted.

9. In view of the many and varied health consequences of climate change that are already apparent in Germany and are expected to increase, the healthcare sector has a special responsibility to respond to these challenges and implement protective measures. The legislator should change the rules and resource allocation of the healthcare system so that special attention is paid to climate adaptation issues when regulating, controlling and organizing the healthcare system.

10. Climate change and its consequences cannot be tackled at national level alone. More effective action against global warming must also and above all be taken at international level. Decisions on an internationally equitable distribution of the burden of climate change and its management require a strengthening of intergovernmental understanding and cooperation. For this reason, Germany should once again step up its efforts to date with high priority in order to achieve effective global agreements to limit global warming and binding reduction targets, the implementation of which is guaranteed by the nation states. To this end, diplomatic options must be exhausted and agreements must be reached within alliances of states such as the EU and the G20, as well as other multinational agreements as intermediate steps. Particular attention should be paid to mechanisms for the effective implementation of the measures adopted.

11. The wealthy industrialized nations must support the countries of the Global South in this,

finance the necessary investments to reduce emissions and adapt to climate change. The support payments already pledged for this purpose must actually be made, used for efficient measures in the recipient countries, supported by technology transfer and fair trade relations and their climate-protecting effect must be independently verified.

12. It is to be expected that individual countries will try to withhold their own contribution to climate protection for as long as possible and benefit from the advance efforts of others. This free-rider phenomenon must be countered by the broadest possible international cooperation in order to keep the costs and risks manageable for all parties involved, even if not all actors are prepared to make their own contribution from the outset.

13. The necessary steps to mitigate climate change and adapt to its consequences must be taken as quickly as possible for reasons of intergenerational justice. In view of the serious effects on the livelihoods of younger and future generations, there is no ethical justification for waiting, stalling and delaying. The perspectives and interests of young people and future generations should be given greater weight in political decision-making and decision-making on measures to tackle climate change. Appropriate instruments that politically implement and institutionalize the consideration of these perspectives and interests must be developed and further expanded.

1 INTRODUCTION: OBJECTIVES AND DEVELOPMENT OF THE OPINION

Coping with climate change and its consequences is one of the major tasks facing humanity today and in the future. This not only involves immense scientific, technological, social and political challenges, but also difficult ethical problems, especially questions of justice and responsibility. The German Ethics Council would like to contribute to their discussion for several reasons.

According to Article 2 (2) of the 2015 Paris Climate Agreement, the agreements reached on the global response to climate change are "an expression of equity and the principle of common but differentiated responsibilities and respective capabilities in the light of different national circumstances".[1] However, the implementation of this idea of justice is proving difficult and the results achieved so far appear disappointing to many. This is also due to often unspoken differences of opinion on the ethical foundations of climate policy options. They require explicit consideration.

The urgency of climate justice issues became clear to the German Ethics Council in its exchanges with other European ethics councils[2] and at its autumn conference with school students in September 2022, where they made a strong request to address the issue.[3] The resolution of the

1 Official German translation: BGBl. II 2016, p. 1082 (1085).
2 Cf. Austrian Bioethics Commission (2022); Swedish National Council on Medical Ethics (2023); Nuffield Council on Bioethics (2023).
3 Further information can be found at https://www.ethikrat.org/weitere-veranstal- tungen/triff-den-ethikrat-unser-leben-inder-pandemie [16.01.2024].

The Federal Constitutional Court's decision of March 24, 2021 on climate protection[4] underlines the need for an ethical foundation for fair climate policy. According to this decision, climate protection measures must be reasonably distributed with regard to future generations. The Federal Constitutional Court defines minimum requirements for policy design without specifying in detail what the legislator must do - in particular, how it must specifically balance the burdens between current and future generations. This leaves room for ethically reflected political decisions that also take into account the socio-political challenges of climate protection.[5]

In its discussion of the topic of climate justice and the results of two public hearings[6] , the German Ethics Council identifies three central dimensions: firstly, justice between social groups within a society (intra-societal), secondly, justice between states (international) and thirdly, justice between generations (intergenerational). A just approach to the challenges of climate change must strive to distribute burdens and responsibilities as fairly as possible in all three interwoven dimensions. To this end, the German Ethics Council develops proposals in this Opinion that take into account different views of justice and climate ethics arguments as well as existing inequalities, injustices and responsibilities with regard to the most important implementation issues. They are not intended to influence specific climate policy decisions and

4 Decision of the First Senate of March 24, 2021 - 1 BvR 2656/18 (BVerfGE 157, 30).

5 See Bohnenberger (2022); Rixen and Welskop-Deffaa (2023); Rixen (2023).

6 In February and May 2023, the members of the German Ethics Council discussed issues of justice and responsibility in the management of climate change with experts from the normative and social sciences as well as with people representing different perspectives o f those affected. Further information at https://www.ethikrat.org/themen/aktuelle-ethikratthemen/klimaethik [16.01.2024].

measures, but primarily contribute to clarifying their normative foundations.

Chapter 2 summarizes the relevant factual foundations of the debate on climate change, including scientific facts, public attitudes, problems of public discourse, approaches and issues of climate ethics and the relevant legal framework. Chapter 3 looks at central questions of justice in the three dimensions mentioned and develops a concept of justice that aims to shape the distribution of burdens and duties in such a way that the minimum requirements for a good, successful life for all are met now and in the future. Following on from this, Chapter 4 discusses key questions of responsibility in connection with climate change. On this basis, recommendations are formulated in Chapter 5.

The German Ethics Council assumes two basic ethical convictions. Firstly, it assumes an enlightened anthropocentrism that identifies humans as responsible for the prudent use of natural resources and living conditions.[7] This approach is motivated by a well-understood interest in the sustainable development and future of humanity, but recognizes the interdependence of human and planetary well-being. Secondly, the German Ethics Council is convinced that crises must also be dealt with in the forms and by the means of parliamentary democracy. It emphasizes the need to strengthen democratic negotiation processes in the crisis and to find ways to communicate constructively about the challenges of dealing with climate change.

It is widely known and widely explained how the sometimes gloomy scenarios of a climate crisis could be averted. In addition

7 See Grunwald and Kopfmüller (2022).

In general, a socio-ecological transformation is needed that also opens up new opportunities for a good and fulfilling lifestyle.[8] However, it can only succeed if the associated measures meet with social acceptance. This cannot be achieved without a fairer distribution of burdens and responsibilities. To achieve this, issues of intra-societal, international and intergenerational climate justice must be considered more systematically in future.

8 See WBGU (2018); German Advisory Council on the Environment (2021); IPCC (2022b).

2 STATUS

2.1 The causes of climate change

The climate is the average of the long-term dynamic processes in the earth's atmosphere determined using meteorological methods. It includes weather phenomena on a regional and global scale. The resulting temperature is based on the interaction of a large number of different factors: the sun's rays hit the earth's surface and heat the ground, which then emits heat radiation. The earth's atmosphere consists not only of nitrogen and oxygen, but also contains trace gases such as water vapor, carbon dioxide ($_{CO2}$), methane ($_{CH4}$) and nitrous oxide
($_{N2O}$), which, despite its very low thermal radiation
concentrations like a greenhouse film. These so-called greenhouse gases contribute to the global average temperature of approx. +15 °C (degrees Celsius) and thus make life on earth possible in the first place - without the earth's atmosphere, the average temperature would be -19 °C. This is known as the natural greenhouse effect. This is known as the natural greenhouse effect.

The almost constant $_{CO2}$ concentration of 280 ppm[9] in the Earth's atmosphere over the last 10,000 years or so is partly due to the burning of fossil fuels.
and the destruction of forests and peatlands since the beginning of industrialization (around 1750) has risen by 50 percent to 421 ppm in December 2023.[10] The increase in CO_2 concentrations to levels that have not been seen for at least two million years will lead to global warming, which will have an impact over thousands of years and

9 280 ppm (*parts per million*) are 280 CO_2 molecules in one million air molecules, i.e. a molar concentration of 0.028 %.

10 See Siegert et al. (2020); IPCC (2021) 4 (A.1.1). See current values at https://gml.noaa.gov/ccgg/trends/global.html [11.01.2024].

man-made climate change.[11] Warnings of this global warming as a result of burning coal were issued more than 100 years ago.[12] It has been scientifically proven that the increase in $_{CO2}$ $_{concentration}$ in the earth's atmosphere is largely due to the burning of fossil fuels. The observed drastic dilution of the radioactive carbon isotope[14] C in the earth's atmosphere can only be explained by an accumulation of atmospheric carbon from the combustion of coal, oil and gas, whose[14] C isotopes have already largely decayed during their long storage underground (the so-called Suess effect).[13] The concentration of other greenhouse gases in the earth's atmosphere is also increasing. The concentration of methane, for example, has risen 2.6-fold compared to the pre-industrial age and is increasing ever faster. The main drivers here are the natural gas industry and cattle farming.[14]

The Intergovernmental Panel on Climate Change (IPCC, "Intergovernmental Panel on Climate Change") - the scientific reference body - calculates the warming caused by humans since 1850 at +1.07 °C (range: 0.8 °C to 1.3 °C).[15] The change in global surface temperature due to natural factors, on the other hand, is only between -0.1 °C and +0.1 °C.[16] According to the current state of scientific knowledge, there is therefore no longer any reasonable doubt that the

11 Cf. Gammon et al. (1985) 27 f. (Fig. 3.1); IPCC (2021) 8 (A.2.1), 21 (B.5).

12 "The world's furnaces currently burn around two gigatons of coal per year, adding around seven gigatons of CO_2 to the atmosphere each year. This causes the air to form a more effective heat blanket for the earth and its temperature to rise. The impact could be significant in a few centuries." Originally published in *The Rodney & Otamatea Times, Waitemata & Kaipara Gazette*, August 14, 1912, p. 7.

13 See Graven et al. (2020).

14 See NOAA (2022); Scholtz et al. (2020).

15 In addition to the warming caused by the additional greenhouse gases in the earth's atmosphere, cooling effects mainly caused by man-made aerosols and chlorofluorocarbons (CFCs) were also taken into account.

16 Cf. IPCC (2021) 5 (A.1.3).

current global warming is almost exclusively man-made.[17]

Global annual greenhouse gas emissions are still rising and in 2022 were over 37 billion tons of $_{CO2}$ per year. The G20 countries account for 77 percent of this and
8 percent to the EU member states. The current German emissions of 650 million tons of $_{CO2}$ per year correspond to around eight tons of $_{CO2}$ per person. Due to the decline in emissions in Germany and the simultaneous increase in emissions in other parts of the world, Germany's share of global emissions is 1.8 percent (around 1900 it was 17 percent).[18] Since around 1750, however, Germany has emitted around 94 billion tons of $_{CO2}$ as a result of its industrialization. namely approx. 5.3 percent - to the previous total global $_{CO2\ emissions}$. Despite its comparatively small population, Germany has therefore historically been the world's largest emitter of CO2 in terms of absolute emissions since 1750.
emissions, the EU is the fourth largest emitter of $_{CO2}$ after the United States, China and Russia.[19] The EU's share of global $_{CO2}$ emissions amounted to 22 percent by 2020 - almost as much
such as all of Africa, Latin America and East Asia (except China) with a combined 25 percent.[20] Emissions from the production and transportation of imported and exported goods must also be taken into account. The production of many goods that are in demand in industrialized countries in other regions of the world means that emissions are "outsourced".
China accounts for around a third of its $CO2_{\ emissions\ from}$ the production of goods for export.[21]

17 See Rahmstorf and Schellnhuber (2019).
18 See Global Carbon Budget (2023a).
19 See Global Carbon Budget (2023b).
20 See Chancel et al. (2021) 117 (Fig. 6.2).
21 See Weber et al. (2008).

2.2 The consequences of climate change

As predictions about climatic developments are difficult, the IPCC has developed various scenarios based on different assumptions about the future course of global greenhouse gas emissions. All scenarios describe an increase in the average global temperature for the year 2100 compared to the pre-industrial age.

This increase is caused both by the increased greenhouse effect and by other non-linear consequences. The temperature rise predicted for the years 2081-2100 compared to 1850-1900 is between +1.4 °C with net zero emissions from 2050 and +4.4 °C with long-term rising emissions.[22] In the last 10,000 years, there has been no comparably rapid increase.[23]

In addition, risks for possible abrupt climate changes due to non-linear processes (including "tipping points") must be taken into account, the specific probability of occurrence and consequences of which are subject to diverse interactions and feedback loops due to the complexity of the climate system and are therefore difficult to determine precisely.[24] Even at the current level of warming, it is possible that tipping points will be reached in the subpolar circulation of the North Atlantic (Gulf Stream)[25] , in the thawing of permafrost soils with large methane releases and in the shrinking of the Greenland and West Antarctic ice sheets. With increasing warming, further systems could tip over and destabilize each other, making tipping "cascades" possible.[26]

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22 Cf. IPCC (2021) 14 (B.1.1, Table SPM.1). The global surface temperature in the period 2011-2020 was already 1.09 [0.95-1.20] °C higher than in 1850-1900, with the increase over land (1.59 [1.34-1.83] °C) being greater than over the ocean (0.88 [0.68-1.01] °C). Cf. IPCC (2021) 5 (A.1.2).

23 See Federal Environment Agency (2013).

24 Cf. IPCC (2021); Federal Environment Agency (2008).

25 See Piecuch and Beal (2023).

26 See Lenton, Armstrong McKay, et al. (2023).

The concrete consequences for people can vary greatly depending on the region, the social circumstances and the chance of being affected by extreme events. Although it has "only" become about 1.1 °C warmer compared to pre-industrial times, the consequences are already catastrophic in some cases and will increase further by the year 2100, even assuming a fictitious immediate halt to emissions[27] : Extreme weather events such as heavy rainfall, flooding and heatwaves, as well as droughts, dehydration and water shortages and the resulting crop failures and forest fires are occurring more frequently, including in Germany, and are leading to ever greater landscape changes, losses and damage.[28] The extinction of many animal and plant species already caused by changes in land use, environmental pollution, hunting and overfishing is being accelerated by climate change because it is destroying their living conditions and encouraging the colonization and spread of invasive species, among other things.[29] For example, it is feared that the red fire ant could spread rapidly throughout Europe as a result of climate change and cause billions in damage due to crop failures.[30]

The impairment of human livelihoods
climate change can result in further indirect damage. These can range from malnutrition t o the prevention of schooling.[31] Due to the increasing number of natural disasters and crop failures as a result of global warming, many

27 This is due to the rapid decomposition of the reflective and thus cooling effect of the combustion aerosols, which are quickly washed out by rain in the event of a fictitious combustion stop, while the emitted CO_2 remains in the earth's atmosphere for many decades and the sun's heat "captures". See Dvorak et al. (2022).

28 See IPCC (2023) 46 ff.; (2019); Rahmstorf and Schellnhuber (2019); Otto (2019).

29 Cf. IPBES (2023) XVIII (KM-B3).

30 See Menchetti et al. (2023).

31 See Shamsuddoha and Jabed (2022).

Millions of people will be driven into poverty or forced to flee their homes.[32] Even though many factors and risks are important for the long-term well-being of humanity and the total number of people living in poverty could possibly even decrease due to widespread increases in income[33] , the *additional* poverty risks and refugee movements[34] caused by climate change as calculated by the IPCC should not be neglected.

Climate change also has dramatic consequences for human health and increases various vulnerabilities.[35] Risks arise primarily from heat, whereby the thermal regulation of living organisms (e.g. through sweating and breathing) depends not only on temperature, but also on humidity, solar radiation and wind speed. The so-called wet bulb temperature is the lowest temperature that can still be achieved through direct evaporative cooling in a particular environment. If it is above 35 °C for a longer period of time, mammals can no longer regulate their internal body temperature. This can then rise to dangerous levels and lead to heat death. In the long term, unchecked global warming could mean that survival in some regions of the world would only be possible with artificial air conditioning.[36] In addition to heat, climate change also poses other health risks, such as the spread of tropical disease vectors in Europe and Germany.[37]

Climate change also has short and long-term effects on mental health. These can manifest themselves directly as stress disorders following extreme weather events, for example, or indirectly as a result of the impairment of mental health.

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32 See Piguet et al. (2011); Llain Arenilla and Hawkins Rada (2020).
33 Cf. O'Neill (2023).
34 See IPCC (2018) Chapter 3; (2022a).
35 See Bolte et al. (2023).
36 See Sherwood and Huber (2010).
37 See Watts et al. (2019).

of economic and social activities. In addition, the mere awareness of the threat posed by climate change can cause psychological stress. The health of people with existing mental illnesses and members of certain population groups, such as migrants, refugees, children and young people, is particularly affected. The measurable consequences include increased anxiety, sadness or anger and even an increase in depression and suicidal tendencies.[38] As a result, there is also an increased burden on healthcare systems.[39]

In the climate debate, a distinction is made between the irretrievable *loss* of livelihoods, cultural assets or biological species and *damage that is* in principle reversible and can be remedied (e.g. with money). The extent of such losses and damage depends on the extent of future greenhouse gas emissions. The greater the warming, the more intense and frequent heat extremes, heavy rainfall and droughts will occur, and the greater the losses and damage will be as a result.

For example, a temperature extreme that occurred on average once in 50 years in a climate without human influence will occur 8.6 times in 50 years with a 2 °C increase in the intensity of heat extremes with global warming of 1.5 °C, and even 39.2 times in 50 years with global warming of 4 °C and a 5.3 °C increase in intensity.[40] Worldwide, people are already exposed to extreme heat on twice as many days as in the period from 1986 to 2005.[41] In 2022, the number of heat-related deaths of people over the age of 65 was 85 percent higher than in the period from 1991 to 2000.[42] A one-day heavy precipitation event that occurs in a climate without the influence of the

38 See Doherty and Clayton (2011).
39 See Kahlenborn et al. (2021); Adrian et al. (2023).
40 Cf. IPCC (2021) 15 (B.2.2), 18 (Fig. SPM.6).
41 See Romanello et al. (2023) 2358.
42 See Romanello et al. (2023) 2360.

The drought, which statistically only occurred once in ten years for humans, is likely to occur 1.5 times in ten years with global warming of 1.5 °C and with 10.5 percent more precipitation; with global warming of 4 °C, it is likely to occur 2.7 times and with 30.2 percent more precipitation. Droughts are also expected to become more severe.[43] Many changes due to greenhouse gas emissions cannot be reversed for centuries or even millennia. This applies to changes in the oceans, ice sheets and global sea levels.[44] To date, people around the world have settled almost exclusively at average annual temperatures between 0 °C and 29 °C - a temperature range known as the human climate niche. In 1980, only 0.3 percent of the world's population lived in areas with extreme heat, i.e. an average annual temperature of over 29 °C. Global warming and population growth to date have meant that today around 9 percent of the global population already has to live in areas with such extreme heat. For the scenario of a warming of approx. 2.7 °C compared to pre-industrial times, calculations show that in 2100, approx. one in three people will have to live in a place with extreme heat, which will cause migration.
would intensify migration and flight movements.[45]

2.3 Reactions to the challenges of climate change

In 2015, 195 countries and the EU adopted the Paris Agreement. This provides for global emissions to be reduced in such a way that global warming

43 Cf. IPCC (2021) 15 (B.2.2), 18 (Fig. SPM.6).
44 See IPCC (2021) 21 (B.5).
45 Such a scenario is not considered unlikely if the climate protection measures agreed to date are not significantly tightened. See Lenton, Xu, et al. (2023).

to below +2 °C - if possible even to +1.5 °C (Art. 2 para. 1 lit. a).[46] To achieve this target, global CO2 $_{\text{emissions}}$ would have to fall to net zero by 2040.[47]

The following applies to the effect of future emissions: every additional tonne of greenhouse gas emissions causes a small amount of additional warming. Since the expected negative consequences and the associated financial losses and damage caused by climate change also increase with every increase in global warming,[48] the latter can be stated proportionally per additional tonne of $_{CO2}$ emitted the. However, the assessment is subject to a variety of Prerequisites. The German Federal Environment Agency estimated the losses and damage in 2020 at 680 euros per tonne of CO , taking into account the consequences for current and future generations in equal$_2$ measure.[49] More recent studies also take into account feedbacks between the economy and climate extremes and estimate the consequential costs of an additional tonne of $_{CO2}$ at more than 3,000 US dollars. They refer to fear that the gross national product worldwide will fall as a result of the damage caused by climate-related natural disasters could fall by an average of one third by the end of the century.[50] The IPCC concludes from the predicted losses and damage that greenhouse gas emissions need to be limited quickly. The speed of the reduction to net zero emissions depends on which warming scenario will occur with the associated losses and damage.

46 This strategy was already recommended by the German Advisory Council on Global Change in 2003. See WBGU (2003).

47 Only if emissions of other greenhouse gases are roughly halved at the same time will the date for net-zero CO_2 emissions required to meet the 1.5°C target be postponed to 2055. See IPCC (2018) 6 (Fig. SPM.1).

48 Cf. IPCC (2023) 14 (B.2).

49 See Matthey and Bünger (2020).

50 See Kikstra et al. (2021).

When responding to the challenges of climate change, a distinction must be made between measures to reduce warming (mitigation) and measures to adapt to climate change (adaptation). Examples of mitigation measures include, in particular, the reduction of greenhouse gas emissions in electricity generation, food production, building heating, the transport sector and industrial production. People with average German consumer behavior can roughly halve their personal emissions by changing their behavior.[51] There is also great potential for savings in industry and infrastructure, e.g. investments in more climate-friendly processes, products in a more climate-friendly construction industry, transport, etc.). However, these cannot be realized through individual decisions, or only to a limited extent. In addition to voluntary contributions, technical changes (e.g. more renewable energy generation with more efficient facilities for storing and transporting electricity, electromobility, heat pumps, etc.), positive incentives (reduction in VAT for climate-neutral products, cheaper public transport, subsidies), negative incentives (such as taxes, levies and subsidy reductions for climate-damaging processes) and other regulatory measures such as a speed limit are therefore being discussed.

A $_{CO2\ price}$ on products and services, the level of which is determined by inclusion in or linking to emissions trading with $_{CO2}$ certificates (cf.
with lower and upper limits for more planning flexibility.
emissions) can lead to an effective reduction in greenhouse gas emissions.[52] However, pure CO pricing can cause social tensions because wealthy people with

51 See, for example, the seven "Big Points" of the Competence Center for Sustainable Consumption at https://nachhaltigerkonsum.info/service/bigpoints [16.01.2024].
52 See Green (2021).

higher emissions on average pay higher taxes in total, but are less forced to change their lifestyle than worse-off people due to their greater financial leeway.[53] To prevent this, for example, the $_{CO2}$ price per tonne could increase exponentially with personal emissions. Alternatively, $_{CO2\ pricing}$ could be linked to a per capita rebate that is paid out equally to all residents (including children). Such a model would also give people more freedom of choice than subsidizing certain technologies. For example, subsidies for electric cars do not benefit those who do not want to own a car.

As the steering effect of $CO2_{pricing}$ is limited for people who can afford to pay considerable surcharges for very high emissions, additional regulatory instruments are being considered. These include "hard" emission caps or a ban on particularly climate-damaging products or services.
Limiting extreme $_{CO2\ emissions}$ from people with high energy consumption and high household incomes in this way could make it easier to meet the basic needs of the most vulnerable people in society despite strict reduction targets. In addition, such a limit could
This would increase public acceptance of $_{CO2\ pricing}$ overall.[54]

At the same time, adaptation to climate change to increase resilience to climate impacts is becoming increasingly urgent in view of the warming that has already occurred and is expected to continue even in optimistic scenarios. The adaptation strategies for endangered regions, population groups and economic sectors are very different. They include, for example

53 See Tank (2020).
54 See Büchs et al. (2023).

Changes in agricultural practices (choice of crop varieties, irrigation, cultivation systems) to withstand the changed climatic conditions, the expansion of robust infrastructures, e.g. dams, dykes, storm-proof power lines, as well as the implementation of storm early warning systems and the preparation of the healthcare system for the diverse health consequences of climate change. One example is the heavy rain hazard maps recently drawn up by local authorities in order to develop effective urban planning precautionary measures for exceptional rainfall events. In addition to mitigation and adaptation, climate engineering[55] has been attracting increasing attention for around 15 years. This involves technical measures for the targeted removal of CO_2 from the atmosphere and other technical interventions in the climate system. These include for example, the carbonization of biomass[56], ocean-based methods[57] and the technical capture of CO from the $_2$ air with subsequent long-term landfilling (CCS: Carbon Capture and Storage, CDR: Carbon Dioxide Removal). Further geo-engineering or climate engineering is also being discussed, such as the reduction of solar radiation (solar radiation management) by emitting large quantities of sulphur dioxide into the stratosphere using aircraft.[58] This would create artificial stratospheric clouds of sulphate aerosols that reflect the incoming sunlight as if after a volcanic eruption.

55 See Caviezel and Revermann (2014).

56 For example, the carbonization of biomass from water hyacinths in African lakes is one of the most cost-effective methods of reducing greenhouse gas emissions. See https://char2cool.org [11.01.2024] for more information.

57 See Kim et al. (2023).

58 See IPCC (2021) 624 ff.

2.4 Overview of the climate protection legislation

There are currently legal regulations in place at various levels to meet the challenges of climate change. The fulfillment of the commitments from the Paris Agreement is regulated in the EU Climate Protection Regulation of 2018[59] by means of binding annual national targets for the reduction of European greenhouse gas emissions in the period from 2021 to 2030. The Federal Climate Protection Act set corresponding annual national reduction targets in 2019[60] and defines action requirements if these are not met.

In 2021, the Federal Constitutional Court ruled[61] that this law law does not meet the constitutional requirements due to the lack of annual reduction targets for the period from 2031. The court explains that fundamental rights protect against a one-sided shift of the burden of greenhouse gas reduction imposed by Article 20a of the Basic Law into the future in the sense of an "intertemporal safeguarding of freedom" (guiding principle 4, para. 183). Accordingly, freedom under fundamental rights may be restricted by measures taken as early as possible to limit climate change and by adaptation measures that mitigate its consequences (Guiding Principle 4, para. 183). Such restrictions must be proportionate, i.e. suitable, necessary and appropriate (para. 192). This is the case if they have a limiting and

59 Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 setting binding annual national targets for the reduction of greenhouse gas emissions for the period 2021 to 2030 as a contribution to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (OJ L 156, 19.6.2018, p. 26).

60 Federal Climate Protection Act of December 12, 2019 (Federal Law Gazette I, p. 2513), last amended by Article 1 of the Act of August 18, 2021 (Federal Law Gazette I, p. 3905).

61 Decision of the First Senate of March 24, 2021 - 1 BvR 2656/18 (BVerfGE 157, 30).

effectively combine adaptation measures and are neither unilaterally at the expense of future generations (para. 131) nor place an excessive burden on people who are alive now and will probably not live to see the measures required in the future. When implementing Article 20a of the Basic Law, the court leaves the legislator "considerable leeway" (para. 207) and points out that, in the event of a conflict, a balance must be struck with other constitutional rights and principles (para. 198).

In order to meet the requirements of the Federal Constitutional Court, the national climate protection targets in the Federal Climate Protection Act were subsequently amended (reduction of national greenhouse gas emissions by 65% by 2030 compared to 1990, by 88% by 2040 and to net neutrality by 2045) and corresponding annual emission levels were set for the years 2023 to 2040.[62] The German government has also proposed a second amendment to the law in 2023[63] to enable cross-sectoral and forward-looking overall considerations if the reduction targets are not met. There are also a whole series of current EU legislative proposals, some of which have already been completed, to implement the European Green Deal.[64]

2.5 Attitudes towards climate change

The measures discussed in section 2.3 for dealing with climate change have far-reaching effects

62 See First Act to Amend the Federal Climate Protection Act of August 18, 2021 (Federal Law Gazette I, p. 3905).

63 Cf. draft of a second law to amend the Federal Climate Protection Act of September 11, 2023 (BT-Drs. 20/8290).

64 It is beyond the scope of this statement to list these legislative procedures. See https://germany.representa- tion.ec.europa.eu/news/european-green-deal-eu-states-bring-decisive-climate-legislation-on-the-way-2023-04-25_en [16.01.2024].

on the population. The willingness to accept these effects depends, among other things, on personal attitudes towards climate change. Psychological and social science research has identified different attitude patterns, in Germany, for example, alarmed-active, convinced, cautious, uninvolved and rejecting. The groups of people concerned differ in aspects such as beliefs and certainty regarding climate change, commitment to the issue, concerns and risk perception as well as the perception of their own effectiveness.[65] The importance of emotions such as shame or fear is also receiving increasing attention in research.[66]

According to several studies, a majority of respondents in all age groups in Germany consider climate change to be a serious problem for humanity and show a strong awareness of the need for climate protection measures.[67] There are only weak correlations between attitudes and demographic characteristics such as age, gender, education and place of residence.[68] For example, the willingness to take action tends to be slightly higher among people who are older or female, have had a longer school education or live in larger cities.[69] However, when psychological factors such as knowledge about climate change, trust in government institutions and assessments of the effectiveness of measures and one's own self-efficacy are considered at the same time, such demographic differences become less important.[70]

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65 See Klinger et al. (2022). This study and other studies in other countries follow the methodology of the Yale Program on Climate Change Communication; this also enables international comparisons. See https://climatecommunication.yale.edu/about/projects/ global-warmings-six-americas [16.01.2024].
66 See Pihkala (2022).
67 See Stieß et al. (2022).
68 See Wolf (2021).
69 See PACE (2023); Lehrer et al. (2023) 45 f.
70 See PACE (2023).

However, a high level of problem awareness does not necessarily lead to environmentally or climate-friendly behavior. Although people with higher incomes tend to have a greater environmental awareness, they do not generally also contribute significantly more to $_{CO2\ emissions}$ than people with lower incomes because, among other things, they heat more living space, are more mobile and emit more CO2. spend on consumption.[71] There is hardly any difference in awareness of the problem between age groups, although it has risen most sharply in recent years among people under 35. In fact, an increase in worries about the consequences of climate change has been observed for some time, especially among younger people, which can also be reflected in a psychological burden known as climate anxiety.[72] In a study published in 2022, 37% of young people stated that they were "very afraid" of climate change and 27% were "somewhat afraid".[73]

2.6 The discourse on climate change

Attitudes towards climate change and possible solutions are also influenced by the media. However, communication science studies of media offerings show that certain media patterns and mechanisms can tend to stand in the way of constructive public discourse on the topic.

Firstly, climate continues to receive little media attention compared to other topics. Even though the debate has increased in recent years, it only accounts for a small proportion of the media's coverage.

71 Cf. BMUV and Federal Environment Agency (2023) 58.
72 See S. Clayton (2020).
73 Cf. Möller-Slawinski (2022) 80.

reporting.[74] The question of how important climate change should be in public discourse in relation to other topics is itself the subject of controversy.[75]

Secondly, in the context of climate change, the focus is often one-sidedly on problems and conflicts, while there is less coverage of solutions and constructive efforts to find a way out.[76] Depictions of catastrophes or reports on particularly provocative protests serve the usual journalistic news factors such as conflict, damage or controversy, but at the same time can fuel fears and contribute to "cognitive dissonance" - a psychological discomfort caused by confrontation with gloomy scenarios and a lack of solutions. This often leads to repression or polarization, which makes constructive discourse on how to deal with climate change more difficult.[77] However, there are now also signs of a change in reporting, away from purely negative portrayals towards more constructive messages and a stronger focus on proposed solutions.[78]

A third factor is how to deal with doubts about human behavior. climate change or downplaying it. If such statements are given as much space as those that correspond to the overwhelming scientific consensus on the human cause of climate change, this can suggest a "false balance" in which both sides appear to be similarly plausible.[79] However, such representations are now less common

74 Cf. for public television in Germany Tschötschel et al. (2022); for online media Brüggemann and Sadikni (2024); for newspapers Hase et al. (2021).
75 See Lawrence et al. (2024).
76 See Guenther et al. (2023).
77 See Guenther et al. (2023); Guenther and Brüggemann (2023); Hiss (2021).
78 See Guenther et al. (2022).
79 See Boykoff and Boykoff (2004).

has become the norm. Instead, many media are now increasingly focusing on the weighting of scientific evidence and discussing positions that express skepticism about human causation of climate change in a correspondingly critical manner.[80]

A fourth challenge for the discourse concerns the strategic instrumentalization of critical objections to climate protection measures. It goes without saying that such objections must always be examined for their justification. At the same time, they can also be backed up by strategies of relativization and delay, with the help of which doubts about measures can be deliberately dispersed, for example to protect particular economic interests.[81] Such strategies emphasize, for example, the responsibility of third parties, promote technical solutions, some of which have yet to be developed, that do not require major cuts, focus on the negative effects of climate protection measures or call for people to accept climate change and focus primarily on adaptation measures.[82] The challenge is to distinguish between serious and possibly justified arguments and purely strategically motivated ones. The latter should be subjected to critical scrutiny without casting blanket suspicion on concerns about climate protection measures and thus narrowing the public discourse.[83]

2.7 Fundamentals of climate ethics

With this Opinion, the German Ethics Council aims to provide an orienting analysis of the normative basis of positions and arguments on dealing with the

80 See Brüggemann and Engesser (2017).
81 See Painter et al. (2023).
82 See Lamb et al. (2020).
83 See Bojanowski (2019).

climate change. This requires a brief look at the tasks and viewpoints of climate ethics.[84] It deals with the question of which approach to the challenges of climate change is morally correct under which conditions and assumptions. As the climate is a global common good, everyone is involved, contributing to and affected by it, even if the contributions to causing it and the extent to which they are affected are distributed differently. Climate ethics aims to provide normative guidance for individual and collective action[85] to protect this global common good.

In view of the spatial and temporal dimensions of climate change, climate ethics is confronted with special challenges and the need to weigh up the various factors, which are exacerbated by the interwovenness of its topic with many other major fields such as the economy, health, migration and social and political stability. In spatial terms, the entire earth's atmosphere and therefore the entire planet is affected, regardless of which countries or regions of the world or which sectors of the economy or consumption processes generate emissions, for example. In terms of time, a major challenge is that although the damage and losses caused by the emissions of past and present generations are already being felt, they will have a much more serious impact on future generations. From the perspective of many people living today, there is therefore little incentive for immediate countermeasures (present preference).[86] The temporal dimension also involves specific epistemic difficulties, as, for example, estimates of the effectiveness of individual climate protection measures are subject to uncertainties.

84 See Ott (2021).

85 See Kallhoff (2021).

86 Climate ethicist Stephen M. Gardiner sees this as a "tyranny of the present", the adherence to the current lifestyle as an imposition for all future generations. See Gardiner (2021) 203.

which increase with the size of the time periods under consideration.

The collective structure of both causing and coping with climate change becomes particularly challenging as soon as it comes to taking concrete responsibility. When it comes to climate responsibility, people are quick to point to others who could make greater contributions. If others do nothing or only a little, this is often used to relieve people of their own responsibility, so that in the end nobody does anything. It can also be observed that in the so-called free-rider problem, certain actors hold back their own contribution for as long as possible, thereby profiting from the advance efforts of others.

The core of the subject area of climate ethics is therefore the analysis and normative assessment of current and long-term distribution and responsibility problems in relation to climate protection measures, under conditions of epistemic uncertainty and taking into account diverse interdependencies with other social challenges.

Coping with climate change is a social design task. Based on today's data, assessments and normative considerations, guidelines for action must be developed. The temporal dimension of this design means that forward-looking, precautionary and consequence-oriented thinking is involved, as it concerns the consequences of today's actions or omissions for future generations. Such consequentialist approaches must be distinguished from deontological positions. For example, utilitarian contributions are oriented towards the expected maximum benefit of measures to combat the consequences of climate change. Human rights approaches, on the other hand, are based on normative principles that limit benefit-calculating considerations.[87]

87 See Gardiner et al. (2010).

The often necessary trade-offs require the introduction and justification of principles of medium scope, which are based on general normative principles, but which can also do justice to the concrete, often complex practical contexts of the climate problem.[88] These principles include

- the *principle of equality*: every present and future human being has, in principle, the same basic rights, for example to life, free self-development and the resources necessary for this.
- the *polluter pays principle*: those individuals or collectives who contribute more to climate change must make proportionately greater efforts to tackle it and, for example, bear a larger share of the costs.
- the *beneficiary principle*: those who benefit more from past and present damage to the climate caused by emissions have a greater obligation to compensate for the damage caused and to ensure a better future.
- the *performance principle*: those who can contribute more, e.g. because they are economically or technologically better able to do so, should also provide these services.

The ranking of these principles has far-reaching consequences for the assessment of how to deal with climate change, e.g. with regard to mitigation and adaptation strategies and possible climate engineering.[89]

In view of increasingly noticeable consequences and worsening forecasts, climate policy is under pressure to slow down climate change and mitigate its effects.

88 Cf. Birnbacher (2022) ch. 5.

89 For an ethical discussion of these three fields of action, see Baatz and Ott (2015).

cope with it. At many levels, however, it remains unclear what successful political steps could look like. It is the task of climate ethics to identify possibilities for responsible political and individual action in dealing with climate change, to work out and justify morally justifiable options for action and thus reduce uncertainties.[90]

90 See Düwell (2017).

3 CLIMATE CHANGE AND JUSTICE

3.1 Climate change as a problem of justice

Both the causal responsibility for climate change and the dangers, damage and losses caused by it, as well as the means to overcome them, are unequally distributed. Inequalities can be unjust in various respects. An ethical analysis and reflection is needed to identify such injustices and to develop well-founded ways of overcoming them constructively.

The emission of greenhouse gases on a scale that affects the global climate has grown rapidly with the industrialization of the countries of the Global North and the expansion of the resulting level of prosperity. In contrast, the negative consequences of climate change affect three groups in particular: socially disadvantaged people within societies, people in the Global South and members of younger and future generations. What they have in common is that their contribution to past and current emissions is not only comparatively small, but also that they usually have less capacity and resources to deal with climate change than many high-emission actors. A closer look at these three constellations of inequality already points to the associated problems of justice.

One example of the *inequality within society is* the burden of extreme heat that is already becoming apparent in Germany. Elderly people, children, people whose health is particularly susceptible to heat and members of certain occupational groups are disproportionately more severely affected and endangered by extreme heat than others. People who work in construction, agriculture, gastronomy, waste collection and

Figure 1: Inequality within society

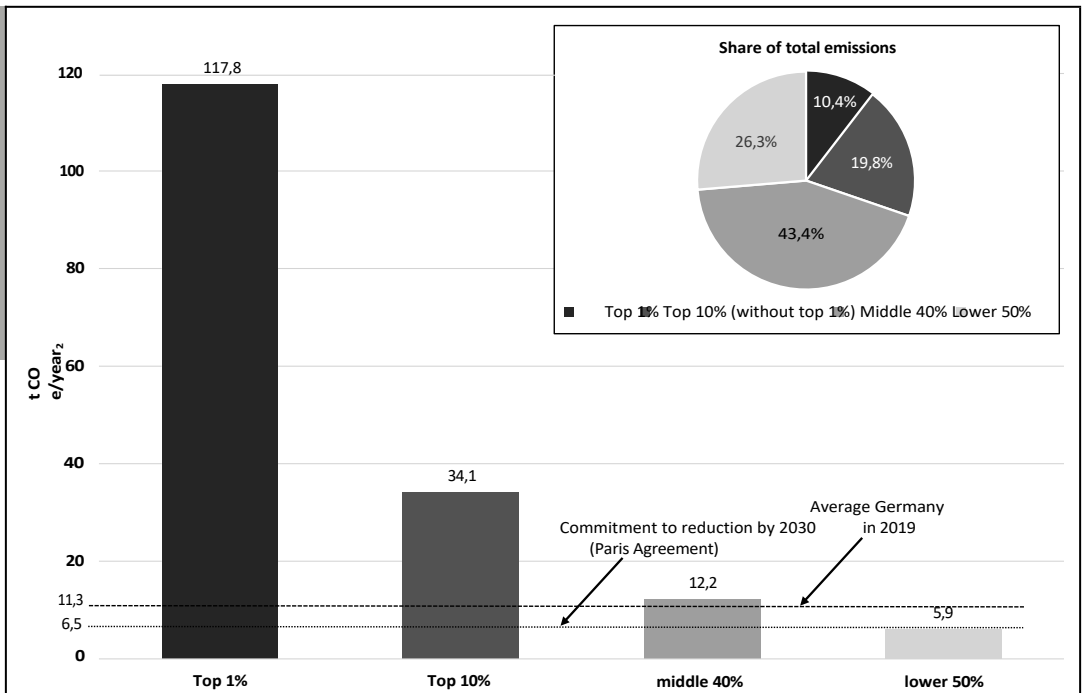
The figure shows the per capita emissions and emission shares of income groups in Germany in 2019. The top 1 % emit 20 times as much per capita as the bottom 50 % and are therefore responsible for more than 10 % of German emissions. As part of the Paris Agreement, Germany has pledged to reduce its per capita emissions by 55% by 2030 compared to 1990, i.e. to 6.5 t CO_2 per person. The lower income groups 50% of the population already comply with this value.

Source: World Inequality Report 2022

people who work outdoors in similar professions cannot escape the heat. People who have no access to air conditioning due to limited finances or who live in cramped or precarious housing conditions suffer particularly from heatwaves and the associated health risks. At the same time, lower-income people in particular contribute comparatively little to $CO2_{emissions}$, as they do not have access to air conditioning.
can afford less consumption than people with more money (Figure 1). Other changes associated with climate change also affect different areas and groups in society to varying degrees. For example, some emission reduction measures may restrict the mobility and leisure behavior of people in rural areas more than people living in cities, as they are more dependent on cars.

Extreme inequality and climate change exacerbate each other when very wealthy people contribute strongly to climate change through more frequent air travel, larger homes and overall higher consumption (especially if they own their own private jets, yachts and villas), but also through climate-damaging investment decisions and political influence. In 2019, for example, the richest one percent of the world's population was responsible for 16 percent of global CO2 emissions - this corresponds to the emissions

Greenhouse gas Footprint depending on from income



Data: World Inequality Report 2022

Figure 2: Inequality between countries

The figure shows countries as dots with their historical CO_2 emissions, i.e. summed up since 1750, divided by the number of people living in the country today on the abscissa and their climate vulnerability or adaptability on the ordinate. The statistics are based on 45 indicators compiled by the US University of Notre Dame to form the ND-GAIN are summarized and published.

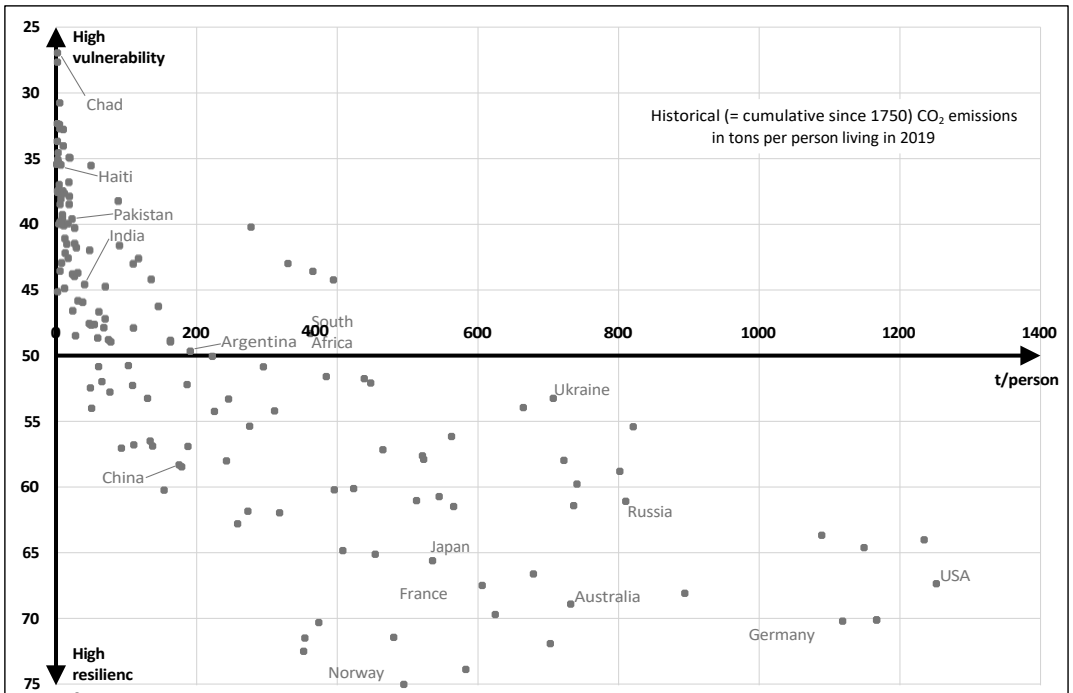
Source: https://gain.nd.edu/our-work/country-index/download-data, the CO_2 emissions and population figures are taken from https://ourworldindata.org/co2-emissions

of the poorer two thirds of the world's population, i.e. around five billion people.[91]

International inequality is reflected, for example, in the fact that Germany, as a country with comparatively high per capita emissions, is less severely affected by climate change than other countries (Figure 2). In Pakistan, for example, over 33 million people were affected by an extreme flood disaster in the summer of 2022, which destroyed 1.5 million homes and more than 2,000 km of road. This was caused by record monsoon rainfall following an extreme heatwave, which resulted in an extraordinary melting of the Himalayan glaciers. Although Pakistan emits less than 1 percent of the world's greenhouse gases, it is one of the ten countries in Asia most affected by climate change.[92] However, the effects of climate change are also becoming increasingly tangible in the Global North, as the flooding of the Ahr Valley in 2021 clearly demonstrated.[93] Worldwide, such changes are also triggering considerable migratory movements, which are associated with destabilization of the countries of origin, considerable

91 See Kowalzig et al. (2023) 4.
92 Cf. Shehzad (2023).
93 See Tradowsky et al. (2023).

Inequality between states: Vulnerability in relation to historical CO_2 emissions



Data: ND-GAIN, Our World in Data

►

Figure 3: Intergenerational inequality

The EU accounts for 22 percent of the 2,450 billion tons of CO_2 that have been released since 1850. The figure compares historical emissions with the CO_2 budgets that will still be available in the future if climate change is to be limited. According to the latest IPCC report, only 300 billion tons of CO_2 may be emitted in order to limit warming to less than 1.5 percent with a probability of 83 percent.
°C, and a maximum of 900 billion tons of CO_2 to limit warming to less than 2 °C with the same probability. At the global emission rates of 2020, the 1.5°C budget will be exhausted within six years and the 2°C budget in 18 years.

Source: World Inequality Report 2022, Fig. 6.2 (budgets according to IPCC report AR6 2021)

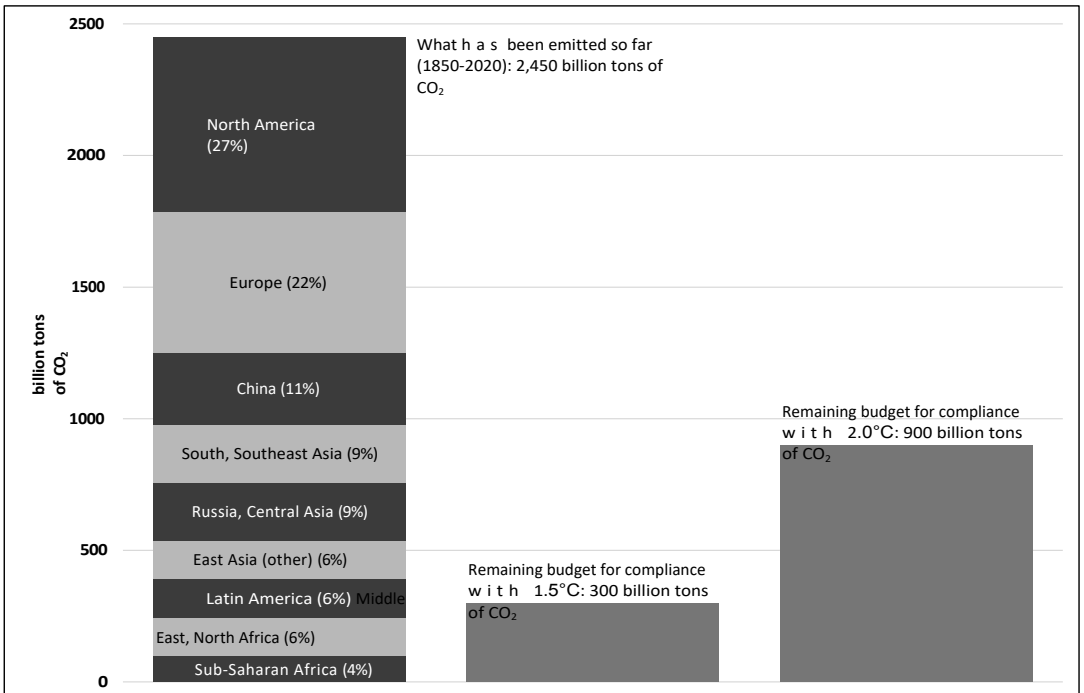
This can be accompanied by risks for the affected "climate refugees" as well as social tensions and political conflicts in the destination countries.[94]

Intergenerational inequality can be illustrated by comparing historical emissions and the "residual budgets" of greenhouse gases that remain today to limit climate change (Figure 3). A theoretical model in which each generation chooses the easiest path for itself - even though future generations are burdened with high costs and damage as a result - leads to unbearable burdens after several generations due to amplification. Today's lack of climate protection will have an even greater negative impact on future generations.

From an ethical perspective, the inequalities outlined above raise questions of justice. Justice should first of all be understood in general terms as a normative principle that determines what is appropriate for individuals and groups in a regionally justifiable and comprehensible form. Accordingly, the central problem of climate change in terms of the ethics of justice concerns the appropriate distribution of

94 Cf. Expert Council for Integration and Migration (2023).

Intergenerational Inequality: historical CO_2 emissions vs. Remaining budget



Data: World Inequality Report 2022

Burdens and responsibilities that result directly or indirectly from climate change itself and from the response to it (mitigation, adaptation, etc.).

3.2 Theoretical foundations of justice

Questions of fair distribution must be considered against the background of fundamental considerations of justice theory.[95] Of fundamental importance here is the distinction between justice as a (personal) act and justice as a structural feature of social orders and relationships.[96] In addition, there are different, sometimes even competing positions that define and emphasize different aspects, dimensions and "currencies" of justice, such as basic goods or empowerments (opportunities to shape one's life).

In this position statement, the German Ethics Council focuses in particular on the structural justice of social orders and conditions. It is true that the aspects of ethics of action, which are concerned with individually just action, are not insignificant for questions of climate justice. Individually just action is oriented towards options that appear ethically justified in the sense of a universalist ethics of responsibility[97] . However, a particular focus on the virtue ethics dimension of justice could lead to the misunderstanding that emission-reducing individual behavior alone is the only way to achieve climate justice.

95 The German Ethics Council has already commented in detail on the various dimensions of the concept of justice in previous opinions. Cf. in particular German Ethics Council (2017) 219-26; (2022) 192-203.

96 Cf. Aristotle (1985) Book V; Rawls (1975) 19.

97 See Jonas (2020).

could overcome the climate-damaging consequences of today's lifestyles. This view falls short. Structural justice, on the other hand, does not ignore personal action; however, it focuses on individuals primarily as members of a politically constituted community.

The central ethical question of a fair distribution of the burdens and responsibilities resulting from climate change can be answered in different ways.[98] The concept of climate justice advocated in this opinion draws on egalitarian, sufficiencyist and prioritizationist considerations. Egalitarian theories focus on the equal status of all persons and the resulting requirement of equal treatment. According to sufficiencyist concepts, justice requires a political practice that guarantees the minimum conditions for a good, successful life. Finally, prioritarian approaches advocate giving preference to the most disadvantaged.[99] Human rights considerations play a role in all three theoretical models, even if their subsequent formulation is very different. Although each model in its pure form has attracted considerable criticism[100] , these three conceptions can be combined to create a more balanced view overall. The key aspect for a fair distribution of the burdens and benefits associated with climate change and its management is the facilitation of a good, prosperous life for all people.

Based on the ideas of human rights, egalitarianism demands respect for every person and equal consideration of the interests of all. With regard to questions of the distribution of goods and burdens, it can be deduced from this that all people have an equal right to an equal distribution of goods and burdens.

98 See Bartmann et al. (2023).
99 See Konrad Adenauer Foundation (2023).
100 See Roser and Seidel (2013).

amount of resources and emissions. However, such a purely synchronous-egalitarian distribution scheme with a view to climate change would be short-sighted, as it would not take into account the relevant historical and geographical inequalities of the initial situation. It could also lead to a general expansion of emissions that is incompatible with the goals of climate protection or to a radical reduction in emission levels with serious social and economic consequences.

In this context, it is therefore also important to consider sufficiency perspectives, which demand that a sufficient level of basic goods or capabilities[101] be ensured and seek to define this level more precisely by formulating corresponding threshold values. This is by no means a matter of setting generally binding upper limits that cannot be exceeded, as is the case with threshold values for $CO2_{\text{emissions.}}$
emissions is the case. Rather, sufficiency-oriented
Conversely, these threshold values are fundamental prerequisites for a good, successful life, the achievement of which must at least be guaranteed for reasons of ethical justice.[102] The exact distinction between objective basic needs and particular desires is not easy and is correspondingly controversial.[103] Nevertheless, it appears

101 Cf. Nussbaum (2011).

102 The supply of drinking water can be used as an example of such a sufficiency-based argument. Climate change h a s serious consequences for water availability due to drought, falling groundwater levels, heavy rainfall and flooding.
However, supplying all people with a daily amount of water above the necessary threshold is a minimum requirement for a good, successful life. To ensure that future generations also achieve this threshold v a l u e for the basic need for water, the necessary conditions for dealing with water must be defined today. The National Water Strategy calls for numerous measures in this regard, such as incentives for rainwater use in gardens, the rewatering of peatlands, increased water abstraction fees and a ban on the privatization of drinking water. See BMUV (2023).

103 Cf. Shue (1996); (2014).

It makes sense to set the goal of guaranteeing the goods and capabilities that are essential for a good, successful life. This requires social agreement on the respective threshold values for individual areas.[104] New forms of civil society participation in the threshold definition process must be examined.[105] Finally, a prioritization perspective must also be a p p l i e d , which asserts the principle of priority treatment of those who are less advantaged.[106] This is based on an ethical argument that classifies an increase in benefits as morally more valuable if it benefits the particularly needy or disadvantaged.[107] Accordingly, the current situation (geographical location, social situation, cultural specifics) and the capacity (economic prosperity, political framework conditions, scientific and technical development) must be taken into account in the concrete assessment of both reasonable burdens and necessary support services. People who have to live a life further below the thresholds for a good, prosperous life should be given priority.
and support them.

These considerations result in a *sufficiency-based threshold concept of climate justice*, which corresponds to an interweaving of all three perspectives within the framework of a human rights approach. According to this, firstly, all people are fundamentally entitled to the same opportunities to lead a good, successful life (egalitarian). Secondly, threshold values for important basic goods or capabilities, such as health, must be defined as a minimum requirement for such a life,

104 See Nussbaum (2000); Kistler (2018).
105 See Oels et al. (2020).
106 Cf. Temkin (2000).
107 Cf. Birnbacher (2022) 63. Historically known variants of this intuition can be found, for example, in the so-called difference principle of Rawls (1975) 104; with r e f e r e n c e to a religious tradition in the so-called "option for the poor" in Franziskus (2015); Bedford-Strohm (2018).

food, water, security or mobility, which must not be undercut (sufficiency-based). Thirdly, climate protection measures should be aligned in such a way that those who are most affected by climate change can achieve the relevant thresholds (prioritization).

From the perspective of justice theory outlined above, it is clear that the debate on climate justice touches on broader questions about a good, successful life. In ethics, the relationship between the just and the good has always been controversial. On the one hand, the question of a good, successful life appears to be fundamental, as it determines what can be understood as basic goods or capabilities relevant to distribution.[108] On the other hand, the general rights and duties derived from ethical considerations of justice set definitive limits to efforts to realize a good life.[109] Since coping with climate change, as demanded by the ethics of justice, requires a comprehensive transformation at both individual and societal level, ideas of a good, successful life will in many respects not be able to be realized within the framework of current Western con- sumption practices (for example in terms of mobility, energy and resource consumption). At the same time, a just and comprehensive socio-ecological transformation will open up new opportunities for a good and fulfilling life, and not only for those who are currently disadvantaged (see Chapter 4).

108 Cf. Nussbaum (2000).
109 Cf. Schockenhoff (2014) 530.

3.3 Dimensions of Climate justice

The sufficiency-based threshold concept of climate justice presented in section 3.2 has important ethical consequences with regard to the inequalities associated with climate change. In line with the types of inequality already mentioned, three dimensions must be taken into account that form a coordinate system of climate justice: intra-societal, international and intergenerational justice. These three dimensions overlap and must therefore always be considered in conjunction with each other. They also touch on other topics such as gender justice and ecological justice, which are not considered in more detail here.

3.3.1 Intra-societal Justice

Germany is already experiencing damage and stress as a result of climate change and its management. However, these vary in severity between different social groups, sub-sectors and regions. This applies, for example, to consequential damage to health[110] , which
z. For example, the elderly are disproportionately affected,[111] for extreme weather events, which have a particularly serious impact on agriculture, as well as for financial burdens due to mitigation and adaptation measures, which can hit people with limited financial resources particularly hard. There is a risk of exacerbating social upheavals and conflicts.

Even from an egalitarian point of view, it is an imperative of climate justice within society that social

110 See Traidl-Hofmann and Orasche (2023).
111 See WBGU (2023); German Advisory Council on the Environment (2023); German Advisory Council on the Assessment of Developments in the Health Care System (2023); Robert Koch Institute (2023).

to counteract divisions due to different stresses. It is not only the direct consequences of climate change that are important here, such as direct damage to life, health and property as a result of heat or more frequent extreme weather events. Rather, indirect and longer-term effects must also be taken into account, for example in the areas of family, professional life, mobility or leisure activities.

From the point of view of sufficiency, the burdens caused by climate change and the necessary measures for adaptation or mitigation must be distributed in such a way that the minimum requirements for a good, successful life are maintained for all people. Both in the case of any residual rifferings and any compensatory allocations, the reasonableness of the burdens for the socio-economically disadvantaged must also be examined from a prioritization point of view.[112]

If necessary, compensation and support payments may be required to secure the relevant thresholds, which could also take the form of per capita reimbursement from $CO2_{pricing}$ to all residents.
and residents (climate money) could be granted (cf.
Section 2.3).[113] As less affluent people typically cause fewer $_{CO2}$ $_{emissions,}$ they would receive more money back than they would have lost as a result of $CO2_{emissions.}$
have paid a high price. High taxation especially
emission-intensive behaviors and, as a last resort, even banning them should also be considered if this is the only way to keep the burden on all people within reasonable limits.

112 See Baatz and Voget-Kleschin (2019).
113 Cf. Kruip (2023).

3.3.2 International Justice

At an international level, unevenly distributed contributions to global warming, profits derived from colonialist exploitation and different geographical impacts of climate damage must be taken into account in terms of the ethics of justice.[114] Industrialization and the associated gains in prosperity in one part of the world cannot be understood in isolation from the associated events in other parts of the world. The history of the Global North is inextricably interwoven with the imperialist colonization, oppression and exploitation of the Global South, some of which continues to this day. These processes gave the colonial powers numerous advantages and - with a time lag - contributed significantly to climate change and the associated damage. This has been and continues to be at the expense of countries that have not benefited to the same extent from this industrialization, whose self-determined development has been massively hindered by exploitation and oppression and which are particularly hard hit by climate change today. At the same time, they are inadequately prepared for climate change and have fewer opportunities to protect themselves from its consequences.[115]

Against this background, a purely egalitarian allocation of equal $_{CO2\ budgets}$ is not acceptable. Even if misdemeanors from the past, some of which occurred a long time ago
Although it is not easy to derive obligations for the present, it is necessary to assume moral responsibility because people living today benefit from the actions of previous generations. Accordingly, a distinction must be made between catch-up growth in countries of the

114 See Caney (2021).
115 See Leichenko and O'Brien (2008).

Global South and further growth in consumption and resource use in industrialized countries.[116]

This is already reflected in the current political discourse: the countries of the Global South, which are often particularly hard hit by the consequences of climate change, are not in a position to finance the necessary investments to reduce emissions and adapt to climate change on their own. Against this backdrop, the high cumulative emissions of wealthy industrialized countries by global standards are also seen as a form of illegitimate appropriation of the atmospheric commons. For this reason, at the UN Climate Summit in 2009 (COP 15), the industrialized countries promised to make support payments to finance mitigation and adaptation amounting to USD 100 billion per year to the countries of the Global South.[117] Even though official reports recently list over 80 billion US dollars in annual support, this figure is actually lower because the donor countries often only grant loans.[118] The fund for loss and damage, which was envisaged and agreed at earlier meetings, was further specified at the 28th World Climate Conference (COP 28) in Dubai at the end of 2023[119] , but payment and disbursement modalities have not been settled to the satisfaction of the countries of the Global South. In addition, they believe that far higher compensation payments from countries with high emissions to countries of the Global South are necessary to achieve international climate justice.[120]

Also for the international dimension of climate justice
The three principles on which the sufficiencyarian threshold concept is based are guiding. Firstly, the people of all countries should be able to live according to the egalitarian

116 Cf. Francis (2015) 53 ff (No. 48-51).
117 Decision 2/CP.15 (UN Doc. FCCC/CP/2009/11/Add.1).
118 See Zagema et al. (2023).
119 Decision 1/CP.28 5/CMA.5 (advance unedited version).
120 See Fanning and Hickel (2023).

The first is to ensure that everyone has the same opportunities for a good, successful life. Secondly, it is important to ensure that everyone can reach the threshold values to be determined according to the suf- ficientarian principle. Thirdly, according to the prioritarian principle, those countries and populations that are furthest away from reaching these thresholds should be given preference first. At the same time, former colonial dependencies must not be allowed to continue unchecked. The issue of climate justice must therefore always be considered in the context of development ethics.[121]

3.3.3 Intergenerational Justice

The historical responsibilities for past greenhouse gas emissions, their negative consequences and the different resources and capacities for mitigating or coping with climate change are also of importance in terms of ethical justice. The ethical debate about a fair distribution of the relevant damage and burdens must therefore not only take into account age groups living today,[122] but also future generations in particular.[123] According to all projects, their members - who have not yet been born - will have to bear the main burden of a changed global climate and the measures required to deal with it (see section 2.1). The fact that their very existence depends on the decisions we make today (*non-identity problem*[124]) does not relieve people living today of their responsibility.

121 See Moellendorf (2018). In this context, see also the "Green House Development Rights Framework". See Baer et al. (2008).
122 Cf. Müller-Salo (2022).
123 Cf. H. Meyer and Roser (2007).
124 Cf. Parfit (1984) ch. 16.

moral and political obligations with regard to their well-being.[125]

In view of the egalitarian principle of not imposing heavier burdens or more far-reaching restrictions on anyone than on everyone else without objective reason, the problem of intergenerational justice is particularly acute.[126] This is all the more true as, depending on the predicted scenario, the burdens in question could assume a scale that would no longer be readily compatible with the guarantee of minimum conditions for a good, prosperous life. Climate change and the problems associated with it, for example for the health of the population, economic prosperity or the ecological balance, threaten to have an existential impact on the living conditions of future generations. From the point of view of the priority principle, future generations therefore deserve special attention. On average, they will probably be worse off than people living now because climatic conditions will deteriorate in most regions of the world.

Against this background, it is not only an expression of high-minded benevolence, but also a strict ethical duty to take all necessary and reasonable measures today to prevent future generations from no longer being able to achieve the minimum requirements for a good, successful life. First and foremost, this concerns the necessary steps to mitigate climate change and adapt to its consequences. Time is a decisive factor here, so waiting, stalling and delaying are morally reprehensible.[127] At the same time, all the technical measures considered in this context must be

125 Cf. H. Meyer and Roser (2009); L. Meyer (2021).
126 See also the decision 1 BvR 2656/18 of the Federal Constitutional Court of March 24, 2021.
127 See WBGU (2023) 251 ff.

Solutions must leave future generations sufficient scope for decision-making and action and must not impose disproportionate permanent burdens on them. With this in mind, the requirements of carbon management that can be maintained for thousands of years by means of $CO2_{capture}$ and storage technologies must be taken into account.
-storage (CCS) should be critically examined (see section 4.3.2). Finally, the same standard of sufficiency that applies to people living today must also be applied to future generations.

In all of this, however, ethical considerations of justice with a view to future generations face particular challenges. In this context, too, the overlapping of the various dimensions of climate justice must first be considered. The members of future generations cannot be combined into a homogeneous group. Depending on their social affiliation and geographical distribution, the extent to which they are affected by the negative consequences of climate change is likely to vary considerably, especially as climate change tends to exacerbate existing inequalities.[128] Climate adaptation measures for the benefit of a good life in the future, such as climate-resilient building technology or urban greening, can be implemented more quickly and comprehensively in economically more efficient countries.

Moreover, in view of the long-term nature of climate change, the question also arises as to the temporal scope and, if necessary, gradation of ethical obligations towards the future.[129] The debate is about how far into the future and for how many generations we are obliged to take precautions and to what extent. In line with welfare economics approaches, a lower moral obligation is sometimes advocated in this context.

128 See Caney (2019).
129 See Roemer (2011); L. Meyer (2021).

The argument is that the well-being of more distant generations should be prioritized over the well-being of those living now or in the near future (future-discounting). However, it seems at least necessary to justify why the contingent circumstance of being born later should diminish the moral value and the inherently justified claims of future persons.[130] The feeling of being morally overburdened in view of the temporal scope of ethical obligations of justice and the epistemic uncertainties regarding the cultural, technological, political and religious situation and priorities of future generations are not sufficient here. In view of the urgency of tackling climate change with regard to generations living today and in the near future, the practical significance of the question of temporal discounting with a view to the more distant future is of course of secondary importance. In the case of fundamental goods or capabilities that are protected by human rights, it is also highly likely that they will also be i m p o r t a n t for future generations. These include, for example, food and health, but also social relationships and humane opportunities for development.[131]

3.4 Just procedures: Fair design of political communication processes

With regard to all three dimensions of climate justice considered, the question arises as to how political decisions on how to deal with climate change should be made in a fair manner. In particular

130 Cf. Caney (2014).
131 See Roser and Seidel (2013) 55 f.; Gosseries and Meyer (2009).

note that the path to greater climate justice is characterized by considerable conflicts in view of the systemic interdependencies of the issue and historical path dependencies. They are rooted, for example, in trade-offs and different weightings between inter- and intragenerational justice and in divergent weightings of historical responsibility. It can therefore not be assumed that, as in an ideal world, all dimensions of justice can be satisfied equally and appropriately. Rather, priorities must be set, conflicts of interest regulated and weightings negotiated. Instead of striving for the fulfillment of ideal solutions that are desirable in terms of justice theory, in the reality of a "non-ideal" world[132] compromises have to be made on the way to ever better solutions.

Without losing sight of the ideals of justice theory, action in favor of greater climate justice requires purposeful, ethically justified and procedurally just steps on this path.[133] It is about the principles and procedures of political decision-making and decision-making with regard to the fair distribution of the burdens of climate change and its management. This aspect of procedural justice[134] is equally at odds with the three dimensions of justice discussed here, but must be applied to all three.

As we have seen, the problem of dealing fairly with climate change touches on essential aspects of a good, successful life. It therefore concerns fundamental questions about how individuals and societies want to live and what they need to do so (see section 3.2). In this context, different areas of social life and

132 See Heyward and Roser (2016).
133 See the discussion in Broome (2016).
134 Cf. Forst (2022) 14.

objectives (individual freedom, economic prosperity, international security) are affected and must be included in the consideration. Approaches that recommend an expertocratic or technocratic crackdown by invoking constraints, self-preservation imperatives or emergency situations fall short here.[135] Rather, the established normative principles and procedures of the liberal-democratic order must form the inescapable basis for the necessary political decisions. They require open and equal communication between all those affected and responsible, particularly with regard to the articulation of their own needs and interests as well as agreement on appropriate perspectives for action.

However, a procedurally fair understanding of climate justice issues poses specific challenges for the principles and procedures of political decision-making and decision-making. Those particularly affected by climate change and its management are often disadvantaged, marginalized or even excluded from existing political communication and decision-making processes. This applies to disadvantaged people within the German population as well as to people in the Global South and members of future generations. Accordingly, suitable political principles and procedures must be (further) developed with regard to all three dimensions - intra-societal, international and intergenerational - in order to enable procedurally fair political consideration of the perspectives and concerns of all those affected. This applies in particular insofar as the understanding of climate change and its management touches on questions of the restriction of individual freedoms and the distribution of burdens. The concept of the

135 Cf. Staab (2022).

Climate justice must therefore be expanded to include the principle of fair democratic participation and involvement.

In terms of the *justice dimension within society,* this *means* strengthening and expanding political participation in a liberal democracy. If a decision is to be made on the appropriate distribution of the burdens of climate change and its management within the framework of liberal democratic principles and procedures, broad and sustainable social majorities must be won for the relevant proposals. Arguments based on the ethics of justice, which are able to convince all those involved and affected of the appropriateness and justification of a certain distribution, can play a decisive role here. In any case, the impression must be avoided that the debate on climate justice is tantamount to a renunciation by a small elite for everyone else. It is therefore necessary to include all those affected in the discussion.

This requires fair access and participation opportunities in the public political discourse on climate justice as well as a transparent comparison of the various arguments and options for action. This must also include comprehensive and reliable information about the respective potential and consequential costs for individuals and society. However, it must be borne in mind that even good participatory processes cannot always dispel all objections and must not result in projects that are in the public interest (e.g. the construction of wind turbines or flood protection dams) being prevented by objections that are irrational or primarily driven by the personal interests of individuals.[136]

With regard to the *international dimension,* a procedurally fair debate on issues requires

136 Cf. Braun (2023).

climate justice requires a strengthening of international understanding and cooperation. In the absence of appropriate international institutions with executive power, sustainable political decisions regarding the global common good of the climate can only be effectively achieved through voluntary self-commitment by sovereign states, negotiated in fair multilateral processes and set out in contractual agreements.[137] However, the problem of historically grown imbalances and asymmetrical power and dependency relationships between states, which are particularly pronounced between the countries of the Global North and the Global South, must be taken into account. Fair inclusion of the countries most affected by climate change in the Global South and the population groups most affected there in the international agreement on climate justice must be ensured. In the longer term, the establishment and expansion of international institutions appears to be necessary in order to stabilize corresponding fair communication processes.

In the *intergenerational dimension,* a procedurally just understanding of climate justice requires appropriate consideration of the interests of younger and future generations. This poses challenges to conventional principles and procedures of liberal-democratic decision-making and decision-making, because according to these, state action is legitimized by the citizens who are currently eligible to vote.[138] It is true that young people who have not yet reached voting age already know how to make their voices heard in the public debate on climate change. However, appropriate changes to existing institutions and procedures would allow them to participate even more in the political process.

137 See United Nations (2021).
138 Cf. Schaible (2023).

decision-making processes.[139] Discussions in this regard include inclusion in relevant decision-making bodies, the formation of youth councils or a general lowering of the voting age.

For the future generations who are likely to be particularly affected, on the other hand, there are fundamental and far-reaching epistemic as well as political and democratic theoretical difficulties. This applies not only to the growing uncertainty of forecasts as time goes on, but also and above all to the appropriate representation of people not yet born today in social and political communication processes of the present that are relevant to their future survival.[140] In principle, the interests of future generations must be taken into account today. This has already found prominent expression in the 2021 ruling of the Federal Constitutional Court. As a result, the court is acting as an advocate for those who are not yet able to speak up for themselves and assert their interests politically or legally. This corresponds to the basic intention of an advocacy ethic that has been discussed for some time.[141] With a view to future generations, it is unavoidable that their interests are asserted in today's negotiation processes.[142]

The instruments established to date provide important approaches, but - as the Federal Constitutional Court has stated - are probably not yet sufficient. In addition to the general promotion of awareness of the long-term challenges posed by climate change, various proposals are being discussed to ensure that the perspectives and interests of future generations are represented in parliamentary democracy.

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139 Cf. Müller-Salo (2022).
140 See Abate (2019).
141 Cf. Apel (1988) 204 ff.; Brumlik (2017).
142 See Gonzalez-Ricoy and Rey (2019).

to be better taken into account.[143] For example, intergenerational justice could be enshrined in the constitution to oblige parliaments to consider the impact of their decisions on future generations, or governments could be encouraged to systematically assess the long-term effects of political measures and include them in their decision-making processes, as well as to develop long-term budget plans that define climate protection investments over longer periods of time, for example.

143 See Tremmel (2014); Stein (1998); Rose and Hoffmann (2020).

4 RESPONSIBILITY IN CLIMATE CHANGE

It is a moral obligation to consider issues of justice in the fight against climate change in all its dimensions. On the one hand, this raises the question of *who is* responsible for such duties - individuals or social, economic and state collectives. On the other hand, it must be clarified how the respective responsibilities should be distributed - e.g. in the relationship between the individual and the collective or between different collectives such as states in the Global South and the Global North.

4.1 Freedom and responsibility

The debate on climate responsibility and its fair distribution has been going on intensively for a long time in many industrialized countries, including Germany (see section 2.3). However, it often seems unclear, polarized and deadlocked. It fluctuates between a focus on the individual responsibility of people who "fuel" climate change through their consumption, one-sided attributions of responsibility to the economy and references to the structural responsibility of national and international politics, which set the essential framework conditions for production and consumption. In the public debate, restrictions on existing freedoms and opportunities and their justification in weighing them up against other individual and social goals play a central, often conflict-generating role. At the same time, the familiarity of the concept of responsibility in everyday life repeatedly leads to premature simplifications and one-sided attributions of responsibility.

Responsibility presupposes freedom and freedom includes responsibility. Human freedom, as it manifests itself, for example, in setting goals, acting intentionally and weighing up different options for action with reasons, is inextricably linked to responsibility. Human coexistence requires reciprocal restrictions on freedom in order to enable equal freedom for all in the first place. In addition, the realization and safeguarding of individual freedom presupposes advance work to be performed collectively. This interplay of enabling and restricting freedoms is central to liberal and democratic communities and is secured by law. This is well established and accepted in practically all fields of activity, right down to daily routine, such as in road traffic through the Highway Code.

New challenges or social change can lead to this interplay having to be rebalanced. Comprehensive transformations such as the development towards greater sustainability and climate justice are associated with conflicts in plural societies, especially when previous freedoms and vested interests are called into question. They result in part from the fact that, for reasons of climate justice, areas that were previously left entirely or largely to private action (e.g. mobility, food or space heating) are also politically regulated. The debate to date on climate change and climate responsibility shows that there are sometimes strong defensive reactions in such situations.[144]

As a moral and legal principle, responsibility is relevant to the normative relationship between actors, their actions and the authorities to whom they are responsible for their behavior. Responsibility presupposes

144 See Stein (2014) 55-57.

This presupposes a subject, an object for which responsibility is to be taken and an authority to which the subjects bear responsibility. Responsibility is always based on norms, with justice norms receiving particular attention in the context of this statement (cf. Chapter 3). Finally, a distinction must be made between retrospective responsibility in the sense of causation or guilt for actions that have already taken place and prospective responsibility in the sense of responsibility for future actions.

Possible subjects of climate responsibility can be identified at different levels, from individuals in different roles, civil society groups and private companies to states and communities of states.[145] Their responsibilities for climate justice are intertwined and must therefore be combined in an overall concept of multi-actor responsibility (see section 4.2).

The objects of responsibility for climate justice are climate and climate impact-relevant actions and decisions. Due to complex chains of causation, it is often difficult to assess and evaluate the consequences of today's actions for the future. In order to measure the burden of responsibility in favor of greater climate justice, unreflected and interest-driven distortions must be avoided. Both the degree of precaution demanded for present and future generations and the emphasis on uncertainties about long-term consequences can be exaggerated and then place a one-sided burden on the decisions to be made.

Responsibility can lead to obligations because actors commit themselves or when obligations or concrete restrictions are imposed on them by others. Inner insight guided by reasons leads to self-commitment as an expression of one's own freedom - and

145 See Braun and Baatz (2017).

not as an external restriction of freedom. At an individual level, this can mean **questioning** previous lifestyles or changing behavior, for example by voluntarily changing vacation, consumer or mobility behavior - completely or at least largely regardless of whether this is expected by society, whether it makes a relevant contribution or whether other people also make a commitment.[146]

A moral obligation to *participate* in measures to tackle climate change exists under certain conditions. The diagnosis of the problem must be robust and moral norms such as those of justice must make a certain action appear morally imperative. In the case of climate change, for example, this means upholding sufficiency-based standards to safeguard freedom and the possibility of a good life for all people (see section 3.2). As long as there is no regulatory obligation, it is up to individual freedom to accept this moral obligation to cooperate. If one's own exercise of freedom interferes unjustly with the freedom and well-being of others, state intervention is appropriate. Not only people living today are relevant here, but also the opportunities for life and freedom of future generations, as the Federal Constitutional Court recently stated (see section 2.6). State intervention can range from appeals and incentives to bans and prohibitions. Restrictions on freedom must be democratically legitimized, be effective, necessary and proportionate and distribute the burdens fairly.

The central criterion for the attribution and effective distribution of individual and collective climate responsibility and obligations to cooperate follows from the concept of climate justice developed in Chapter 3. This is based on

146 See Lob-Hüdepohl (2020).

The concept is based on a close interweaving of the polluter-pays principle and the beneficiary principle (see section 2.7). The concept is based on a close interweaving of the polluter pays principle, the ability to pay principle and the beneficiary principle (see section 2.7). The exercise of individual moral duties of cooperation is facilitated by social and political framework conditions and in some cases made possible in the first place. Their creation is l a r g e l y the responsibility of state regulation, but also requires the assumption of responsibility by private collectives such as companies. The various responsibilities and duties to cooperate are therefore intertwined.

4.2 Multi-stakeholder responsibility in dealing with climate change

In order to structure the field of climate-responsible actors and bundle them in the form of multi-actor responsibility, three actor levels can be distinguished: the individual level, the level of private collectives and the political level of public collectives. The actor levels are characterized by different scopes of action. At the individual level, individuals shape their personal lives according to their preferences, lifestyles, political attitudes and values. At the level of private collectives, supra-individual associations such as clubs, citizens' initiatives, civil society organizations, religious communities or commercial enterprises act according to their respective goals and possibilities. At the political level, public collectives ranging from municipalities and states to communities of states such as the EU bindingly regulate the possibilities and limits of action of actors at the levels of individuals and private collectives.

The responsibility for greater climate justice is specifically distributed across these three levels due to different opportunities to influence, dependencies and responsibilities. For example, production and consumption are influenced and shaped by factors such as lifestyles, behavioral patterns and consumer preferences on the one hand (individual level) and social and political framework conditions on the other (public-collective level). In addition, responsibility at all levels grows with the performance of the players.

However, distributed responsibility is subject to the danger that it is shifted back and forth between actors, that some contributions are seen as marginal and that the finger is pointed at others who should do something first. This creates a diffusion of responsibility. This can increase the temptation to succumb to an interest-driven preference for the opposite, the desire to secure one's own possessions or the inertia of ingrained habits - instead of taking drastic measures (including lifestyle measures) for which there may be abstract approval but no serious willingness to act. This can be countered by clear attributions of responsibility in a well-founded concept of multi-actor responsibility. This concept differentiates role-specific responsibilities and areas of responsibility in order to specify who should take responsibility for what, at what level and in what chronological order, so that the burdens of climate change and its management are distributed fairly. In order to develop this concept, it first makes sense to take a closer look at the three levels of actors.

4.2.1 The individual level

For a long time, the debate on responsibility has focused on climate, especially in the public and mass media.

space, to the level of individual action, particularly with regard to individual consumption.[147] This approach is based solely on the polluter pays principle. There is no doubt that practically every form of personal life and consumption is associated with energy and resource consumption, emissions and waste. As part of humanity, every person contributes to climate change as a polluter. Even if each individual contribution may seem small, the consequences add up when looking at entire societies. This gives rise to a moral obligation for individuals to change their personal behavior, especially if it generates comparatively high emissions. Another widespread assumption is that assuming this responsibility will ultimately solve the problem if everyone not only increasingly reduces their individual emissions, but also motivates the economy to make more climate-friendly offers. Overall, there is a good chance of overcoming the climate problem in this way.

On closer inspection, however, this argument is not tenable. Three counter-arguments in particular can be put forward:

(1) Individuals do not behave in abstract freedom, but are integrated into their social environment. Often, they are entrenched by framework conditions and incentive structures, e.g. through gainful employment with the associated need for mobility. It is inappropriate for the state to expect people to adopt a lower-emission lifestyle and consumption as long as the conditions for this are not met within the economic and social order desired and supported by the same state. In many areas, low-emission action still requires the acceptance of sacrifices, disadvantages and possibly even "moral heroism", especially on the part of

147 See Scherhorn and Weber (2002); Grunwald (2010); Heidbrink et al. (2011); Fragnière (2016).

financially disadvantaged. This is not only unfair, but also not a reliable basis for a comprehensive transformation to climate neutrality.

Individual responsibility in consumption is therefore by no means obsolete or even ineffective. In many areas today, there is considerable freedom in the organization of personal life and consumption. For example, no one is subject to social constraints to take a plane trip or even a long-haul flight for vacation purposes. It should be noted, however, that the possibility of living and consuming with lower emissions is unevenly distributed, for example between social classes, between urban and rural areas and between different areas of life. It depends on the availability of reasonable climate-friendly alternatives, e.g. a good public transport system or low-emission and affordable heating systems. In their role as consumers, individuals are not responsible for the availability of these alternatives.

(2) Climate justice concerns the collective in society and the state, both nationally and globally, and relates to humanity as a whole as well as to nature. The goal of limiting climate change has been legitimized nationally and under international law since 1992 in Article 2 of the United Nations Framework Convention on Climate Change. Expecting private individuals to achieve it would privatize the implementation of a political objective and miss the social division of labour between public tasks and private freedoms. Moral criticism of individual decisions in personal life and private consumption is no substitute for political measures.

In a liberal democracy, however, these require political legitimization by parliament and ultimately by the voters. This refers to a different form of individual responsibility, namely political responsibility. The individual

They are not just passively confronted with the state as people affected by government measures, but also actively shape climate policy as citizens of this state (see section 4.2.3). This participation encompasses a broad spectrum of different activities, ranging from exercising the right to vote and stand for election to participating in public opinion-forming and civil society engagement.[148]

(3) The third argument relates to the lack of success of the approach of achieving greater climate justice through individual lifestyle choices. Despite many efforts over the decades, successes remain modest and are often undone by increased consumption.[149] There is no sign of a global movement towards a more climate-friendly lifestyle. Hopes of a breakthrough towards lower-emission consumption with the help of gentle "nudging"[150] have also faded. The (at least) considerably increased awareness of the problem of climate change continues to be reflected only slightly in changes in consumption. Although there are certainly many reasons for this, the lack of effectiveness of individual measures, which seems plausible to many, represents a considerable barrier.[151]

Against this background, it does not seem realistic,
It is not possible to achieve a comprehensive turnaround by simply intensifying environmental education, climate education or even moral pressure. People are jointly responsible for shaping their personal lives and are subject to a moral obligation to participate in shaping their behavior within the scope of their respective possibilities.

148 Cf. Cripps (2013) 133-43.
149 Cf. Sorrell (2007).
150 See Thaler and Sunstein (2009).
151 See Sinnott-Armstrong (2005). This lack of self-efficacy experience can be responded to in different ways. See Schwenkenbecher (2014); Knights (2019); Sandler (2010).

more climate-friendly. However, the one-sided or even exclusive attribution of climate responsibility to individuals is objectively inappropriate and unacceptable. The responsibility of collectives such as companies and, in particular, states and, in view of limited national scope, international bodies must not be lost sight of. Overall, claiming individual responsibility only seems appropriate as part of a more comprehensive multi-actor responsibility.

4.2.2 The level of private collectives

The argument is analogous for the private-collective level, which includes non-governmental organizations such as companies, churches or associations. In the case of climate change, for example, companies have a moral responsibility to enable climate-friendly consumer behavior with their products and services. In principle, companies are also morally responsible for switching to lower-emission production, logistics and product ranges. In accordance with the capability principle, large, globally active companies have a particular duty. This applies all the more to the handful of companies ("carbon majors") to which alone two thirds of global industrial greenhouse gas emissions can be attributed.[152]

It is within the scope of companies to offer climate-friendly alternative products that are not necessarily more expensive or worse than conventional products. Of course, the moral obligation to cooperate is tied to ensuring that it remains compatible with the rules of competition in the economic system and does not place an undue burden on companies. Beyond what is reasonable would be, for example, a clearly comprehensible (and not in the context of lobbying)

152 See Grasso and Vladimirova (2020).

The only thing that is not allowed is a merely alleged threat to a company's own economic basis or competitiveness due to its commitment to reducing emissions. Under no circumstances should a merely claimed threat to the economic basis be misused for campaigns against an effective climate policy. Competition rules and economic framework conditions, which are decisive for what is economically reasonable, can also be shaped politically - at least within the national and European framework. This in turn points to climate responsibility in the political sphere (see section 4.2.3) and the interconnectedness of the levels in terms of a comprehensive socio-ecological transformation.

4.2.3 The political level of public collectives

State and supranational institutions with a political mandate, such as governments and corresponding supranational bodies, are located at the political level of public collectives. This is where framework conditions are established that strongly influence the opportunities for individuals and private collectives to participate in tackling climate change. The social conditions and legal framework must be redesigned in such a way that low-emission behavior is possible without unreasonable or unjustified personal or corporate burdens. Examples include the reduction of subsidies that hinder climate neutrality, tax legislation that favors climate neutrality, an international kerosene tax, expansion of the public mobility system, promotion of climate-friendly agriculture and food, and targeted continuation of the energy transition.

Political measures in this regard are of course subject to constitutional requirements. The measures must be suitable, necessary and proportionate. Proportionality also requires a fair and

reasonable distribution of burdens. For this reason, it is also constitutionally necessary to avoid unfair burdens due to climate-related measures, for example for socially weaker population groups. It should also be borne in mind that political measures must not merely lead to the emigration of emissions-intensive industries to other countries, as this would ultimately negate the intended climate effects. It is therefore necessary to think on a larger, ultimately global scale.

Political measures for more climate justice have different effects on people's freedom. They can enable, secure or restrict freedom. Legal provisions can collectively bind the members of a society to certain patterns of action by means of commands and prohibitions and thus have a more effective effect than the moral obligation to cooperate based on insight and voluntariness. They can also eliminate the free-rider problem, for example, along with the injustices involved. Of course, this does not provide a free pass for any government measure to implement climate protection goals that have an unreasonable impact on the freedom of individual people.

Ultimately, both individual states and supranational actors at the political level have a responsibility to work towards an effective global strategy for dealing with climate change that goes beyond existing international agreements. This is urgently needed because the free-rider problem also plays a role internationally when countries pursue their own national interests first. Policies that aim to maximize the interests of a single country at the expense of other countries cannot solve the global problem of global warming.[153]

153 See Nordhaus (2019).

Thinking in terms of national borders does not do justice to the climate as a global asset. In this respect, parallels can be drawn with the equitable distribution of water and the protection of international waters.[154] Here, for example, international water protection conventions[155] are based on the idea that internationally important waters are a common good that cannot only be managed nationally. States are not allowed to do as they please in such waters on their respective territories, but have a shared responsibility to maintain the integrity of the waters in the long term. Some states are even considering granting rivers, some of which supply entire regions of the world with water, their own legal status.[156] Just like the protection of water, the protection of the climate is an international task that states must fulfill as a joint responsibility. Addressing climate change can be seen as a cooperative endeavor in which the well-being of nations will be improved if countries move away from nationalistic policies and take cooperative action. There is a significant state responsibility to make a massive international commitment to such a strategy.

4.3 Consequences for climate action for various stakeholders

In order for multi-stakeholder responsibility for fair climate protection to be successfully realized, it is important to

154 See Grunwald (2016).

155 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (in short: UNECE Water Convention) of March 17, 1992; Convention on the Law of the Non-Navigational Uses of International Watercourses (UN Watercourses Convention) of May 21, 1997.

156 See Iorns Magallanes (2019); Page and Pelizzon (2022); Hansche and Meisch (2021).

The role of expected technological developments should be taken into account and the scope for action identified on this basis. The role of expected technological developments should be taken into account and, on this basis, the scope for action should be identified in which specific responsibility should be concretely distributed according to ethical considerations of justice.

4.3.1 Responsibility in interaction of the actor levels

At the *individual level,* responsibility exists in two respects. On the one hand, it extends to *private consumption*. Even after the relativizations explained above, part of the responsibility for climate protection remains with consumers within the scope of their degree of freedom and the availability of reasonable lower-emission alternatives. Even if the climatic consequences usually occur at a distance in time and space from the individual actions and are therefore anonymized, they are morally relevant.[157] Individual contributions to climate justice may remain extremely small, and those involved may feel that they are ineffective, but this does not mean that they are morally irrelevant.[158] The effort to reduce climate damage through personal, family and community climate protection measures is initially an individual decision of conscience tailored to the problem of climate change. Insofar as such decisions become habitual and routine in the behavior of many individuals,[159] they promote the emergence and development of a culture of perceived responsibility.[160] This can significantly help to

157 See Broome (2019); Kagan (2011).
158 See Baatz (2014).
159 See Lawford-Smith (2015).
160 See Hourdequin (2010); Hedberg (2018); Knights (2019).

The aim is to set the necessary transformation processes in motion, even if the *individual* contributions do not have a direct impact in quantitative terms.

On the other hand, individual responsibility extends to *political participation in* the democratic formation of a climate-friendly future.[161] This can take place through direct participation within representative democracy, for example through elections or party political engagement, but also through active participation in democratic opinion-forming in many other places in society, e.g. in political parties or in the (social) media. In addition, committed citizens can and should bundle their interests in more climate justice in local initiatives, supra-regional environmental associations or social movements in order to trigger or strengthen political dynamics for climate protection and socio-ecological transformations in civil society. Procedural justice (see section 3.4) and compliance with the principles of the rule of law and democratic rules are essential for participation in all these forms.

At the *political level* of multi-actor responsibility, state bodies shape the possibilities and conditions for climate protection-promoting action by individuals and private collectives that produce climate-relevant goods and services through regulatory and administrative action. Government action in all its forms (legislative and administrative) must itself be *sustainable*, i.e. permanently resilient, reliable and predictable, especially in view of the upcoming socio-ecological transformations, so that it can fulfill its orientation function for personal lifestyles as well as for the production and trade of goods and services. Burdens must be socially just

161 See Sandberg (2011).

(see section 3.3.1) and those who are worse off are given preference according to the principle of prioritization.

More climate justice must not come at the price of injustice elsewhere. An open social debate is necessary in order to make the necessary trade-offs and to make the sense of corresponding measures clear and transparent. One example of this is the Scottish concept of an independent Just Transition Commission, which examines and evaluates regulatory plans for the transition to a low-carbon economy for aspects of justice.[162]

In view of the global dimension of climate change, a state must use supranational agreements to involve as many other states as possible in climate protection efforts and allow itself to be involved. This applies in a special way to Germany, which contributed only 1.8 percent to global CO_2 emissions in 2022, but is one of the world's largest emitters.
largest economies in the world.[163] This situation
is both an opportunity and an obligation to promote and implement international agreements for greater climate justice today and in the future.

Of course, the problem remains that there are still considerable obstacles at all levels to a fair perception of climate responsibility. In view of the considerable risks posed by climate change, the German Ethics Council believes that state actors have a duty to make special efforts to promote *global* agreement processes for greater climate justice and to achieve binding global agreements with effective reduction targets. In view of the free-rider problem mentioned above, the agreement processes must therefore also include an effective

162 See at https://www.justtransition.scot [18.01.2024].
163 See Global Carbon Budget (2023a).

concept to guarantee the implementation of agreed goals on the part of the states. To this end, diplomatic options must be exhausted and regional alliances used to take meaningful steps towards the goal.

Although the existing international climate protection agreements promote the global implementation of necessary measures to limit global warming to a considerable extent, they are not yet sufficiently effective. For this reason, it is currently uncertain whether the goal of limiting global warming can actually be achieved, even if Germany and Europe do their part. Dealing with this uncertainty is of central importance for the legitimization of national and European climate protection concepts that are fair within society and is the subject of controversial debate in social discourse. Some argue that the burdens associated with national and European climate protection measures should only be imposed on the population once the global implementation of the necessary measures to limit global warming has been fully secured by international climate protection agreements.

However, this view does not do justice to the weight and urgency of the problem. It ignores the fact that in situations in which there is no way of averting a danger with certainty, it may be necessary to resort to defensive measures whose success is uncertain. The required degree of probability of success is determined above all by the extent of the damage threatened if the danger materializes. The more serious these damages are, the more likely it is that measures are required to avert them that at least offer a chance of preventing the danger in question from materializing or reducing its extent. In view of the extraordinarily serious consequences of unchecked global warming, it would therefore be downright irresponsible not to take national and international action.

European climate protection measures only because the global implementation of corresponding measures to limit global warming does not yet appear to be assured.

This is all the more true as efforts to reach more effective international climate protection agreements would be politically unacceptable without simultaneous national or European efforts. By 2020, the EU was responsible for 22 percent of the

The EU is responsible for the $_{CO2\ emissions}$ generated at the beginning of industrialization[164] and, in view of its technical and financial capabilities, has a responsibility to take action if necessary.

necessary socio-ecological transformations and to promote the necessary innovations. It is therefore essential to take national and European climate protection measures now, in parallel with the negotiation of better global agreements, so that the emission reduction targets promised in the Paris Climate Convention are achieved as far as possible and the necessary measures to achieve climate neutrality are sensibly distributed over time in a forward-looking overall concept. It is not simply a question of whether a target such as limiting global warming to 1.5 °C is achieved or missed, but rather of making significant progress towards greater climate justice. If the individual burdens necessary to fulfill this collective obligation are distributed in a socially just manner, they can be expected of people, because without such a parallel approach, there is no longer a realistic chance of limiting global warming to a tolerable level.

Determining the extent of national measures is the responsibility of political opinion-forming and state institutions. It must aim to ensure that justice is maintained or increased in all dimensions. Furthermore, it should be carried out in such a way that restrictions on freedom and

164 See Chancel et al. (2021) 117 (Fig. 6.2).

burdens must be structured with foresight in such a way that individuals and private collectives can adapt to them and that, for example, planning security is created for companies. This is in line with the decision of the German Federal Constitutional Court, which concludes from the principle of proportionality that the measures necessary for the protection of future generations must be taken with due consideration. reductions in $_{CO2\ emissions}$ through to climate neutrality can be spread over time in a forward-looking manner that protects fundamental rights.[165]

According to the polluter pays principle, Germany is in line with other industrialized countries that contribute significantly more than proportionally to climate change. The special ethical responsibility resulting from this is intensified when the historical dimension of the causation of climate change is taken into account (see section 3.3.2). With its industrialization through coal and steel, Germany is one of the pioneers in the use of fossil fuels. Because, like other countries in the Global North, it still benefits from these developments today, it has a special responsibility for reasons of justice. This applies not only to the future mitigation of its own contribution to climate change, for example through the energy transition, but also, in the spirit of international climate justice, to supporting the countries of the Global South that are severely affected by the consequences of climate change. The aim here is to overcome the historical injustices between the causation of climate change and the massive impact of its consequences.

4.3.2 Role of technology development

Technology development is a field in which Germany has a strong position due to its technological capabilities and

165 BVerfGE 157, 30 (para. 243).

The German Ethics Council is of the opinion that the German economy can assume its international responsibility by exploiting possible export opportunities for corresponding technologies and its business models. In the view of the German Ethics Council, the mitigation of greenhouse gases must remain a key concern of long-term climate-friendly development, which requires, for example, further increases in efficiency and a phase-out of fossil fuels as quickly as possible.

At the same time, climate-responsible action also includes a more precautionary approach to adapting to climate change. The state and society, including private collectives such as companies, have a responsibility to identify problems at an early stage and take precautionary measures, if possible before further climate-related catastrophic damage such as severe floods or droughts occurs. The German Ethics Council also considers it necessary to develop technologies that could help to achieve "negative emissions" (negative emissions technologies).
gy, NET), including technologies for $_{CO2\ capture}$ and storage, but also for binding other greenhouse gases such as methane (see section 2.3). Promoting the development
of such technologies should generally be regarded as positive, since, on the one hand, the experience of recent decades shows that emission reduction measures will not lead to sufficient successes quickly enough and, on the other hand, even in the case of far-reaching emission reductions, a $CO2_{base\ level\ will\ not}$ be reached.
that will remain for limiting global warming.
could be reduced to a tolerable level.[166]

However, such technologies must not be misused to reduce emissions. This would set in motion a spiral of increasing emissions and a simultaneous increase in the need to recover them, placing an undue burden on future generations. A global development with only slow progress in

166 See Smith et al. (2023).

emissions reduction, but rapid implementation of NET technologies would impose the burden on future people for an indefinite period of time, but at least for centuries[167] of having to operate the necessary global large-scale technological infrastructure. This would create considerable constraints that involve risks and thus impair freedoms and would be an unfair burden for future generations. In the use of technological progress to mitigate climate change and to deal fairly with the consequences, however, the liberties of those affected in the longer term must also be taken into account in normative terms (see section 3.3.3). This consideration therefore argues in favor of continuing to give higher priority to reducing emissions. Without this, the spiral of technical upgrading to contain the climate problem while emissions increase cannot come to an end in the long term.

Responsibility for more climate justice to ensure minimum conditions for a good life also means realistically assessing the role of technology in overcoming climate change and its consequences. This starts with efficiency-enhancing technologies, for example in energy supply and mobility. Although efficiency is a key to greater climate justice, increases in efficiency are not per se beneficial to the climate, for example if they are offset by other effects such as economic growth and increasing consumption (rebound effects). For example, advancing digitalization and artificial intelligence are always expected to contribute to climate protection and sustainability. In fact, the opposite has mostly happened so far, for example due to the high energy consumption of IT systems worldwide and the demand for rare metals associated with their use. Even considerable progress in efficiency does not release human activity from its responsibility. Technology must always be considered in its social

167 Cf. Kalkuhl et al. (2022).

embeddedness, for example in consumption and regulation. When evaluating new technologies, it is also not enough to be satisfied with their positive *potential* for greater climate justice. Rather, it is necessary to develop strategies to effectively implement this potential both nationally and internationally, including an examination of the effects of these strategies in terms of proportionality and justice.

The German Ethics Council considers it irresponsible to expect that individual future technologies such as nuclear fusion or artificial intelligence could, metaphorically speaking, turn the tide on climate change so that we could manage without additional burdens or changes to current global economic and living conditions. The risks associated with climate change are so serious that waiting for this "opportunity" or relying on a single solution would be irresponsible in our view, especially towards future generations.[168]

4.3.3 Offered Scope for action

The above considerations also give rise to the responsibility to scrutinize climate-relevant framework conditions for politics, business and technology from a national and global justice ethics perspective and to develop alternatives. On the one hand, this concerns questions of international governance and their bundling in the United Nations. The renaissance of geopolitical great power thinking with a corresponding bloc mentality as well as national egoism and nationalism jeopardizes the necessary fair global cooperation in dealing with climate change.

168 See Jonas (2020).

On the other hand, far-reaching questions arise with regard to the current economic order, which is based on competition and quantitative growth. In many cases, growth in consumption and production cancels out the considerable technical progress that has been made in terms of efficiency and greater resource productivity, as well as changes in the behavior of parts of the population. In terms of justice, a distinction must be made here between catch-up growth to achieve the minimum requirements for a good, prosperous life in countries of the Global South and further growth in consumption and resource use in industrialized countries. While catch-up growth in countries of the Global South is about making development particularly low-emission, e.g. through efficient technologies, industrialized countries are faced with more far-reaching questions about a fundamental socio-ecological transformation, i.e. an end to the focus on quantitative growth.

In Germany, political parties, civil society and science have a joint responsibility to make the comprehensive transformation to a sustainable and climate-neutral society a topic of discussion and to develop alternatives for a good, successful life without further quantitative growth in consumption and resource consumption. This will require changes in private lifestyles as well as in society. It is now clear how strongly life as a consumer in a capitalist society in countries of the Global North affects the well-being and freedom rights of future generations as well as those living today in other countries and in our own country. Here, politically set framework conditions have an impact on the individual and private-collective level. Politicians are challenged to reshape the framework conditions for the actions of individuals and organizations, e.g. companies, in such a way that

at least the achievement of threshold values for a good, successful life is promoted for everyone. Individuals should have as much freedom as possible in the practical realization of their responsibility, i.e. the choice between several options for achieving the goals of climate justice.

Societal communication, especially the media and politics, is particularly important for sounding out and defining accepted, solution-oriented political measures (see Chapter 2). Democratic opinion-forming requires informed and reflective communication in order to enable a constructive discourse with comprehensible and transparent considerations and prioritization, which is essential for a sufficiently large social consensus. As a result of this constellation, all actors with a communicative reach in society have a special responsibility for objective and transparent reporting as well as differentiated presentations of normatively divergent positions.

All of this, especially the need for a comprehensive transformation, represents a considerable challenge for democracy. The perception of climate responsibility at the political level has a considerable impact on habits and vested interests at the individual level and leads to a considerable need for explanation and, in some cases, resistance. For this reason, greater consideration of criteria of procedural justice (see section 3.4) is also of great importance here.

The challenges for political and communicative processes described above, but also the short-term nature of democratic decisions due to four- to five-year election periods, have repeatedly led to calls for democratic freedoms and processes to be temporarily suspended by means of a kind of emergency argument in order to take the measures necessary for lower-emission action.

technocratically or even ecodictatorially.[169] There are two reasons why such proposals should be decisively rejected. The first reason is of a normative nature and is linked to the commitment to the democratic principle that all citizens have the right, as those affected, to have a say in shaping the norms of their (collective) lives.[170] The other reason lies in the fact that, unlike technocratic regimes, democracy also offers a wealth of opportunities for deliberation and participation (for example, in the context of many civil society climate protection movements that have been active in democracies for decades), which ultimately enable good decisions to be made based on sound arguments. Of course, this does not mean that the current forms of democracy already offer the best solutions for dealing with climate change. This gives rise to a responsibility at all levels to reflect on the further development of current institutions and processes of democratic opinion-forming in the face of the challenges posed by climate change.[171]

169 Cf. Staab (2022).
170 Cf. Habermas (1992).
171 Cf. Kersten (2022).

5 CONCLUSIONS AND RECOMMENDATIONS

The search for ways to limit climate change and global warming and to cope with their consequences is one of the major tasks facing humanity today and in the future and raises a variety of questions of justice. Approaches to solutions in the interests of health and the life chances of current and future generations concern both emission reduction measures (mitigation) and adaptations to the consequences of climate change that have already occurred and those that will occur in the future (adaptation), such as protection against heat, floods, drought and forest fires. In addition, there is a need to develop technologies for the targeted reduction of greenhouse gas concentrations. However, the fulfillment of these tasks not only involves immense scientific, technological, social and political challenges, but also the solution of difficult ethical problems.

Losses, damage and burdens resulting from climate change and its management often also mean injustices in at least three overlapping dimensions - between different social groups within a society (intra-societal), between states (international) and between people of different generations (intergenerational). Responses to the challenges associated with climate change must take appropriate account of the interests, concerns and abilities of all people living today and of future generations. In this opinion, the German Ethics Council therefore presents a concept of climate justice that aims to shape the distribution of burdens and duties in such a way that minimum conditions for a good, successful life are guaranteed for all. For important basic goods and

Threshold values must be determined for capabilities such as health, nutrition, safety or mobility, which must not be undercut for a good, successful life and which result in different distribution rules. Agreeing on such threshold values and finding ways to take them into account appropriately in political decisions is no easy task. Overcoming them requires efforts at all social and political levels and by all actors, as well as compliance with the principles of procedural justice.

In view of the problem, an effective and efficient approach is a fundamental requirement of justice. Tackling climate change requires a socio-ecological transformation that is associated with high investment, material and immaterial costs. However, unchecked global warming would entail even greater consequential costs and problems of justice than the transformation itself. The necessary efforts require confidence as a basic attitude and determination in political action. This is sometimes countered by the fact that the discussion on climate change is increasingly characterized by hopelessness, fatalism and worries, e.g. regarding undesirable sacrifices, unacceptable bans or even a comprehensive deindustrialization of the country. However, the conclusions derived from the considerations presented here can also be linked to positive life plans and attractive potential for transformation. It is possible to justify climate protection ethically and to design measures that are fair, socially acceptable and democratically legitimized. At the same time, major development opportunities are opening up in many areas - in addition to the positive effects on the quality of life of many people, not least for job-creating innovations in industry, transport and the energy sector.

With this opinion, the German Ethics Council offers ethically sound answers to the fundamental question of how the interest of all people in a good, prosperous life can be taken into account and how responsibilities and burdens in dealing with climate change can be clearly defined and fairly distributed.

The German Ethics Council recommends:

1. The challenges and potential of the socio-ecological transformation required to tackle climate change should be discussed more clearly in the public, political and social spheres in future. The focus should be on climate justice and responsibility. Political parties, civil society, the media and science should consider and develop perspectives for a good, successful life in a sustainable and climate-neutral society without further growth in consumption and resource use.

2. Material and immaterial costs for the implementation of climate protection measures should be determined as precisely as possible, communicated transparently and distributed fairly and responsibly within society as well as internationally and intergenerationally. It is important to be guided by threshold values for important basic goods and capabilities as minimum requirements for a good, successful life. The needs of people whose provision does not reach certain thresholds must be given priority here.

3. Climate protection measures should be interlinked in an overall political concept that includes changes in the energy industry, the promotion of low-emission technology, the reduction of climate-damaging subsidies, emission-reducing regulations and corresponding

economic incentives, forward-looking measures to adapt to the unavoidable consequences of climate change and the development and testing of technologies to $_{\text{remove CO2}}$ from the earth's atmosphere. Every decision on technical measures must take into account possible new path dependencies that may be caused at the expense of future generations, for example if they are forced to wait for the next generation.
maintain a globally functioning economy for $_{CO2}$ removal in the long term.

4. At national level, care must be taken to ensure that the commitments made by Germany under the Paris Climate Convention are fulfilled quickly and effectively. This can be achieved in particular by expanding and intensifying $CO2_{\text{pricing}}$ on products.
and services. Intra-company
economic justice, e.g. through the compensatory effect of a flat-rate per capita reimbursement from $CO2_{\text{pricing}}$ to all residents.
and residents. It must also be ensured that
attractive climate-friendly alternatives are available. In addition, regulatory instruments such as disproportionate pricing of particularly climate-damaging products or services should be considered in order to make them less attractive to financially strong individuals.

5. The fair distribution of responsibility for these and other climate protection measures is primarily a government task. In addition, companies and other private collective actors must be made much more accountable for fulfilling this responsibility and supported by appropriate framework conditions. The widespread focus to date on the individual responsibility of individuals is being replaced by the

problem situation. Individual freedom of choice is always determined by the collective action of many and is essentially shaped by political conditions. Clear legal regulations are therefore necessary to make it easier for individuals to act in a climate-friendly way. It is inappropriate for state actors to expect individuals to consume less emissions as long as the conditions for this are not fulfilled to a large extent or are even thwarted within the economic and social order desired and supported by the same state, so that low-emission action still requires "moral heroism" in many fields. Moral criticism of decisions in the area of private lifestyle and consumption is no substitute for necessary political measures.

6. The justified expectation of politicians to set more effective framework conditions for climate protection does not, however, release individuals from an individual moral obligation to contribute. Everyone has a moral responsibility to help ensure that social obligations can be fulfilled. This includes reflecting on personal behavior, one's own way of life and one's own civic engagement, even independently of regulatory requirements, with a view to the challenges of climate change and how to overcome it, and changing accordingly within the scope of one's own possibilities and reasonableness.

7. The debate on a fair approach to climate change and its consequences must take place within the framework of open social discourse. Attention must be paid to fair access and participation opportunities as well as a transparent confrontation

of the various information, arguments and options for action. Binding decisions must be reserved for the democratically legitimized institutions intended for this purpose, in particular parliaments. Scientific expert committees and extra-parliamentary civil society involvement are components of public discourse in a liberal parliamentary democracy; however, they cannot replace democratic decision-making. A possible destabilization of democracy must be counteracted at all levels. Individual engagement and protests must also adhere to democratic rules.

8. The actors in the media and politics have a special responsibility to facilitate and lead a constructive, solution-oriented discourse on climate change. A credible discussion about realistic climate solutions requires factual reporting that neither embellishes nor exaggerates and provides an appropriate amount of space for the range of positions represented in society and science. Too much attention should not be paid to doubts, evasive strategies or pseudo-solutions that have little factual basis. Excessive alarmism should be avoided, as should the exclusive emphasis on problems. In view of the major challenge of a socio-ecological transformation, expected positive aspects should also be sufficiently highlighted.

9. In view of the diverse health consequences of climate change, which are already apparent in Germany and are expected to increase, the healthcare sector has a special responsibility to respond to these challenges and implement protective measures. Legislators should change the rules and resource allocation of the healthcare system accordingly,

that special attention is paid to climate adaptation issues in the regulation, management and organization of the healthcare system.

10. Climate change and its consequences cannot be tackled at national level alone. More effective action against global warming must also and above all be taken at international level. Decisions on an internationally equitable distribution of the burden of climate change and its management require a strengthening of intergovernmental understanding and cooperation. For this reason, Germany should once again give high priority to strengthening the efforts made to date in order to achieve effective global agreements to limit global warming and binding reduction targets, the implementation of which is guaranteed by the nation states. To this end, diplomatic options must be exhausted and agreements made within alliances of states such as the EU and the G20, as well as other multinational agreements as intermediate steps. Particular attention should be paid to mechanisms for the effective implementation of the measures adopted.

11. The wealthy industrialized countries must support the countries of the Global South in financing the necessary investments to reduce emissions and adapt to climate change. The support payments already promised for this purpose must actually be made, used for efficient measures in the recipient countries, supported by technology transfer and fair trade relations and their climate-protecting effect must be independently verified.

12. It is to be expected that individual countries will try to maximize their own contribution to climate protection.

and to benefit from the advance work of others. This free-rider phenomenon must be countered by the broadest possible international cooperation in order to keep the costs and risks manageable for all parties involved, even if not all players are prepared to make their own contribution from the outset.

13. The necessary steps to mitigate climate change and adapt to its consequences must be taken as quickly as possible for reasons of intergenerational justice. In view of the serious effects on the livelihoods of younger and future generations, there is no ethical justification for waiting, stalling and delaying. The perspectives and interests of young people and future generations should be given greater weight in policy-making and decision-making on measures to tackle climate change. Appropriate instruments that politically implement and institutionalize the consideration of these perspectives and interests must be developed and further expanded.

SPECIAL VOTUM

We share the view of the majority vote that tackling climate change and its consequences is one of the major tasks facing humanity today and in the future and that fundamental questions of justice need to be answered. We also agree that, in view of the German Ethics Council's competencies, its contribution can only lie in providing reliable ethical guidance for the necessary balancing decisions. Regrettably, however, the majority vote falls short of this self-imposed goal in several respects. The approach outlined in the opinion has some serious argumentative problems and normative gaps. Furthermore, it addresses questions of individual and collective responsibility in the context of climate change. However, the answers to these questions are themselves subject to criticism.

I. Dealing with questions of justice

The central theme of climate justice remains surprisingly undefined. Firstly, there is no discussion of how the
"climate justice" related efforts to other
The report does not explain the "great tasks facing humanity" - such as the fight against hunger - or specifically why they are given top priority. Comprehensible criteria for this are not named, let alone explained in more detail. The same applies to the question of risk assessment (e.g. in comparison to the peaceful use of nuclear power), just as innovation aspects only appear in passing. The relationship between mitigation and adaptation, which raise very different equity issues, is also underexposed.

Secondly, the majority vote attempts to combine egalitarian, sufficiencyist and prioritarian considerations to create a "democratic participation model based on the principle of fairness".

and participation" (section 3.4, paragraph 4)
"*sufficiency-based threshold concept of climate justice*" (section 3.2, paragraph 7). However, the statement does not provide a comprehensible explanation that goes beyond academic jargon. In particular, it remains completely unclear how the distribution-relevant threshold values for the individual goods, which are fundamental to the proposed concept of equity, are to be determined in concrete terms. Since the importance and practical (utility) value of individual goods vary greatly due to the extremely different circumstances and living conditions in the individual regions of the world, but also within a national area, the recent debate on justice does not focus on the goods as such, but on their relationship to the development of certain capabilities. However, it is not only a question of the se- mantic currency in which the distribution discourse itself should be conducted, but also of its normative point of reference. Depending on whether the basic concept of 'dignity', the notoriously controversial 'human rights' or even the culturally conditioned notions of a 'good life' are used, very different distribution arrangements arise. In order to be able to appropriately moderate the political conflicts of objectives in the three central areas of intra-societal, international and intergenerational justice, a much more differentiated normative criteriology is required, beyond the always necessary safeguarding of a minimum subsistence level for all those involved, in order to be able to evaluate alternative strategies for action and shape the temporally extended transformation processes accordingly. As the statement itself acknowledges that the theoretical models of egalitarianism, sufficiencyarianism and prioritarianism used here as reference points take "different, occasionally even competing positions" (section 3.2, paragraph 1) with regard to the definition and accentuation of the different

aspects and dimensions of justice, it is not enough to simply mention the various possibilities of weighting the principles of equality, causation, beneficiaries and efficiency (cf. section 2.7) and then, in recommendation no. 12, to point out the general *free* rider *problem* to which all these theoretical models are naturally exposed.

Thirdly, a direct consequence of the lack of a convincing criterion for making well-founded decisions when weighing up competing strategies for action is the purely *appellative* nature of the statements, particularly on international and intergenerational justice. The call to intensify efforts to conclude global agreements to limit global warming is as general as it is cheap, as long as it is not at all foreseeable that the largest

CO_2 emitters into such agreements. The same applies to the suggestion that the wealthy industrialized nations should "support the countries of the Global South",

finance the necessary investments to reduce emissions and adapt to climate change" (recommendation no. 11). Here, too, we would like to see more concrete details on what such support should look like in view of the very different national strategies, for example with regard to the compensation fund for damage and losses set up at the last world climate conference COP 28. The reflections on intergenerational justice also largely consist of a few references to improving the political representation of younger or not-yet-born people, without answering the ethically relevant questions of a fair distribution of various adaptation measures over a longer generation sequence, even for a single area of action. This is made more difficult by the widespread lack of coherent structural considerations on how the different approaches to the theory of justice and the respective legal interests affected can be integrated into one single system.

could be set in a procedurally and materially convincing relationship. Apart from the fact that the epistemic status of climate science forecasts that extend far into the future is not adequately taken into account, there are no further considerations on the relationship between scientific and political rationality. Furthermore, the question of how probability aspects can influence the weight of certain justice considerations remains completely unanswered - although this is obviously of the utmost importance for the deontic qua- lification (permissibility or imperative) of a measure. The same applies to the inadequate differentiation with regard to the various relevant (legal) normative levels, for example the relationship between international and constitutional law. Fourthly, the fact that the advocated climate protection policy has a clearly unequal impact in social terms is neglected. Instead, the statement answers questions of justice within society from a one-sided elitist perspective. The statement cited in section 2.3

For most people in Germany, freedom of choice with regard to more or less $_{CO2\text{-heavy}}$ lifestyles is not an option due to their personal and economic circumstances.

even if they are provided with financial assistance. To give just one example, this cannot compensate for people who are dependent on private cars due to illness, age or housing situation. It is simply inadequate to react to expected lack of freedom and inequality by merely proposing monetary compensation, especially as this will probably neither compensate for all losses nor is its concrete distribution logic more precisely defined. Furthermore

comprehensive $_{CO2\ pricing,\ as}$ set out in Recommendation No. 4, a particularly intervention-intensive instrument for comprehensive control and monitoring

private lifestyle - a danger that the statement does not mention at all.

The complex dimensions of individual and collective responsibility in connection with the challenges induced by climate change are also insufficiently addressed in the statement. Firstly, this concerns the normative containment of the finding that even particularly extensive national efforts to improve
have a very small impact on global $_{CO2\ emissions}$ (and are also very likely to be [over]compensated elsewhere, because
for example, fossil fuels do not simply disappear). Interventions in the individual freedom of citizens can hardly be legitimized on this basis; they are simply not proportionate in the absence of any suitability for achieving the declared goal of climate protection. Contrary to the opinion (section 4.3.1, paragraph 8), the "urgency" of the problem does not change this: time pressure does not turn an ineffective measure into an effective one. The hope that Germany could take on a global pioneering role through its national climate policy, which would motivate those countries in particular to follow suit that are currently contributing massively to global $CO2_{emissions}$, proves to be epistemically highly inappropriate.
certain and therefore cannot be sufficient to justify massive
to justify encroachments on the freedom of its own citizens.

The appellative tone turns into an exaggerated and illiberal moralism when the statement imposes a moral obligation to participate on individual citizens, according to which they "can and should bundle their interests in more climate justice in local initiatives, supra-regional environmental associations or social movements in order to trigger or strengthen political dynamics for climate protection and socio-ecological transformations in civil society" (Section 4.3.1, paragraph 2), which is referred to in Recommendation No. 6. In view of the manifold normative gaps, it is not only the contours of the recommendations qualified as absolutely worthy of support that remain here.

It also questions why it should not be left to the responsible citizens themselves to autonomously determine the goals of their respective political engagement. With this rhetoric, the statement also disavows the concern, which we expressly support, that the issue of climate protection must not lead to an erosion or questioning of democratic institutions.

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LIST OF ABBREVIATIONS

Abl.	Official journal
Para.	Paragraph
Art.	Article
BGBl.	Federal Law Gazette
BMUV	Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
BT-Drs.	Bundestag printed paper
	Decisions of the Federal Constitutional Court
	CCSCarbon Capture and Storage
	CDRCarbon Dioxide Removal
CO_2	Carbon dioxide
$CO e_2$	CO -equivalent$_2$
COP	Conference of the Parties
et al.	and others (lat.: *et alii*)
	EUEuropean Union
f.	following [page]
ff.	following [pages]
	G20Group of Twenty
GG	Basic Law
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
	IPCCIntergovernmental Panel on Climate Change
lit.	letter (lat.: *littera*)
	NETNegative Emissions Technology
	NOAANational Oceanic and Atmospheric Administration
	PACEPlanetary Health Action Survey
ppm	parts per million
margin	margin number
S.	Page
	UNUnited Nations
UN Doc.	UN document
WBGU	Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (German Advisory Council on Global Change)

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