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Social impact of the COVID-19 pandemic in Germany and possible consequences for environmental policy

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1 Introduction

The COVID-19 pandemic has suddenly and fiercely changed social life around the world. Above all, in Germany, as in other countries, it was the drastic restrictions imposed by the government as part of social distancing (up to and including the lockdown) to contain the pandemic that were clearly felt by all. They have in part forced radical upheavals in daily activities for everyone. Although it is not yet possible to foresee by when and in what order the interventions in economic and social life will end completely, it is nevertheless foreseeable that they will end. Other social impacts of the pandemic, such as the loss of jobs in particularly hard-hit sectors, are very likely to continue in the longer term. However, learning experiences, changes in views and values, and newly acquired skills and practices originating from the period of restrictions are also likely to persist in the “aftermath”.

The urgency for political action to avert a further worsening of ecological crises has not been diminished by the societal changes caused or temporarily induced by the pandemic. However, environmental policy should now respond to this, for example by examining the social impact of its actions more systematically and prioritising synergistic measures.

In order to argue the environmental policy consequences of the social impacts of the pandemic, this discussion paper takes an initial stock of the social consequences that we consider significant for environmental policy. External shocks or crises are potential triggers or catalysts of socially desirable transformations, and are also referred to as “bounce forwards”¹. Moreover, the crisis has – in addition to the manifold, sometimes serious negative social consequences such as being affected by the illness itself, job insecurity, loss of income, loneliness, domestic conflicts, excessive demands due to the additional task of caring for one’s own children and teaching the school curriculum, etc. – created images and situations that seem utopian in “normal” times:

uncongested inner cities, wild animals reclaiming old habitats, completely altered awareness of time which are much less shaped by the rhythm of employment and other appointments, a reduction to the basics. We would therefore also like to look at the deviations from the usual social routines generated by the crisis, in order to seek out starting points to the socio-ecological transformation of society that has not lost any of its urgency. This is because such a transformation needs to produce sustainable and globally fair modes of living and economic activity, and thus raises the question of what is important in ensuring a good life for everyone. It is precisely this question that is being intensively discussed in the context of the crisis.

Although the negative social consequences of the COVID-19 pandemic are far more dramatic in many countries and the World Food Programme, for example, warns² of an impending famine in many of the poorer countries, this text only considers the social consequences in Germany. The international environmental dimension of the pandemic is addressed in a separate publication³.

1 Roth, F. (Publisher: Fraunhofer ISI – Fraunhofer Institute for Systems and Innovation Research ISI) (2020): Bouncing forward – How findings from resilience research are of help in the coronavirus crisis. <https://www.isi.fraunhofer.de/de/blog/2020/resilienz-corona-krise.html>, Giovanni, E. et al. (Publisher: Joint Research Center) (2020): Time for transformative resilience: the COVID-19 emergency. Download under https://publications.jrc.ec.europa.eu/repository/bitstream/JRC120489/resilience_coronavirus_final.pdf

2 WFP – World Food Programme (2020): WFP chief warns of hunger pandemic due to Covid-19 (statement to the UN Security Council); <https://de.wfp.org/pressemitteilungen/wfp-chef-warnt-vor-hungerpandemie-wegen-covid-19-vor-un-sicherheitsrat>

3 Ginzky, H., Kosmol, J., Schwirn, K. (2020): Internationale Umwelt- und Nachhaltigkeitspolitik während und nach der Covid-19 Pandemie. <https://www.umweltbundesamt.de/publikationen/internationale-umweltnachhaltigkeitspolitik>

2 Initial stocktaking of the environmental policy-related social impact of the COVID-19 pandemic in Germany

At this stage, it is neither possible to state the immediate nor to state the longer-term effects of the pandemic comprehensively and on a reliable empirical basis⁴. These depend on decisions being taken during the current months and on how the further spread of the disease develops. The present analysis is therefore based on initial survey results, media reports and plausible assumptions regarding the social impact to date, and in many cases it is unclear whether the observations and consequences will persist or dissipate.

This paper is not a complete illustration of all the social effects, but only an excerpt from them, focusing on the effects relevant to environmental policy action. As a result, some aspects such as domestic violence during lockdowns⁵, as well as other key issues⁶, are excluded. Nevertheless, we believe that such social ills should urgently be addressed at the political level.

2.1 Role of the state and social context of environmental policy

The social experience of crisis changes some social conditions for political action, for example by changing discourses, values and expectations towards the state. How persistent these changes will become cannot be answered at present.

The state decided to make deep cuts in personal and corporate freedoms as a precautionary measure to prevent an anticipated crisis, namely the overloading of the health care system. Surveys show that the introduction of the drastic restrictions was not only accepted but also supported by a large majority.⁷ A few weeks after the measures came into force,

the number of lawsuits against the restrictions⁸ and protests increased⁹, yet according to the “ZDF political barometer”, even at that point 81 % of the population still rated the work of the federal government in the coronavirus crisis as good, while only 13 % rated it as bad (as of 8th May).¹⁰ The poll “ARD Deutschlandtrend” also reported that a clear majority of 67 % stated that they were satisfied or very satisfied with the work of the federal government, compared to 32 % who stated they were less satisfied or not satisfied at all (as of 7th May).¹¹

Relevance for environmental policy

The exceptionally strong support for decisive political action shows that, under certain conditions, citizens accept clear, binding rules, even if these entail cuts and changes in routines in various areas of life^{12, 13}. These conditions could include an awareness of the crisis, a clear objective, a simple narrative (“flatten the curve”) and comprehensible measures that are well justified and affect everyone equally (regardless of social status)¹⁴. Local and regional differences in restrictions are also well justified, respectively. In addition, other states also implemented measures and, above all, emotionally moving images from heavily affected states, especially Italy and the USA, clearly demonstrated the seriousness of the crisis.

All of these circumstances can also be mobilised for environmental policy measures. A sticking crux of the limited transferability of this knowledge to

4 The term (COVID-19) pandemic is used here to cover not only the global spread of the virus, but also societal responses to it, such as adjustments in societal behaviour or policy measures contained for instance in the economic recovery package.

5 Steinert, J. and Ebert, C. (2020): First major study on experiences of women and children in Germany – Domestic violence during the coronavirus pandemic. <https://www.tum.de/nc/die-tum/aktuelles/pressemitteilungen/details/36053/>

6 Heisig JP (Publ.: bpb – Federal Agency for Civic Education) (2020): Coronavirus Crisis: What are the social consequences of the pandemic? <https://www.bpb.de/politik/innenpolitik/coronavirus/307702/soziale-folgen>

7 zdfheute – Zweites Deutsches Fernsehen (Publ.) (2020): ZDF-Politbarometer – Shutdown: Majority opposed to rapid loosening. <https://www.zdf.de/nachrichten/politik/politbarometer-coronavirus-shutdown-100-100.html>; YouGov – YouGov Deutschland GmbH (2020): COVID-19 tracker results from the second half of April – satisfaction with federal government remains high <https://yougov.de/news/2020/04/22/covid-19-trackerergebnisse-der-zweiten-april-halft/>

8 zdfheute – Zweites Deutsches Fernsehen (Publ.) (2020): Coronavirus court proceedings – The number of lawsuits is increasing, acceptance is declining. <https://www.zdf.de/nachrichten/panorama/coronavirus-richterbund-klagen-100.html>

9 tagesschau.de – Norddeutscher Rundfunk (Publ.) (2020): Nationwide demonstrations – thousands expected at coronavirus protests. <https://www.tagesschau.de/inland/corona-demos-107.html>

10 zdfheute – Zweites Deutsches Fernsehen (Publ.) (2020): ZDF-Politbarometer Extra – The majority believes current relaxations to be correct. <https://www.zdf.de/nachrichten/politik/politbarometer-extra-coronavirus-lockerungen-gastronomie-bundesliga-100.html?slide=158858016258>

11 tagesschau.de – Norddeutscher Rundfunk (Publ.) (2020): ARD-DeutschlandTrend: Söder is the winner in the crisis. https://www.tagesschau.de/inland/deutschlandtrend-2197~magnifier_pos-7.html

12 Loske R (Publ. agora⁴²) (2020): From the Coronavirus Crisis to Sustainable Economy – What Future-Oriented Politics Must Do Now <https://agora42.de/corona-krise-und-nachhaltigkeit-reinhard-loske/>

13 Some governments, however, also used the crisis to continue dismantling their democratic institutions, cf. article by Julian Nida-Rümelin in: Cicero – Magazine of cultural politics (Publ.) (2020): The virus as the nail in the coffin of democracy; <https://www.cicero.de/innenpolitik/corona-krise-zivilkultur-virus-demokratie-sargnagel-rechtsstaat>

14 The possibilities for dealing with these restrictions may depend on social status. It is easier to work from home while the children play in their own garden or spacious children's room than in a cramped apartment; children with their own laptop are better able to participate in digital lessons, etc. cf. also Sections 2.4 and 2.7.

environmental policy is the time factor: the speed of the crisis and its immediate effects on life and health, which precluded time-consuming deliberative negotiation of appropriate policy measures, as well as the time limit on the cutbacks. The ecological crisis is progressing slowly – at least so far – in comparison with the COVID-19 pandemic. The increasing number and extent of extreme weather events and their consequences could, however, possibly increase the acceptance of a faster societal response (cf. see another paper for a more detailed comparison of the climate crisis and the pandemic).¹⁵

Subsequently, the management of the crisis in Germany could be interpreted in such a way that consistent government action has (at least so far) effectively averted a major health crisis and that this government action, which intervenes deeply in daily routines, is supported by the population. The feeling of political powerlessness might diminish and the political idea of a state that is capable of action and resolute intervention may consequently emerge strengthened from the crisis.¹⁶

2.2 Perception of science in the public discourse and dissemination of conspiracy myths

Science is in the focus of public attention in the COVID-19 pandemic to a much greater extent than usual and the current state of research directly serves as a basis for political decisions. In the first phase of the spread of the virus in Germany, there was a high degree of confidence in the scientific community, which had increased considerably compared to previous surveys: a survey conducted in mid-April showed that 73 % of those surveyed trust science and research, and this figure remained high in May at 66 %. In comparison, only 46 % expressed such confidence in 2019¹⁷. Nevertheless, from May onwards, public discourse, and even the rhetoric

from some politicians, has been increasingly critical of virologists and research results or the selection of disciplines represented by the scientists featured.

This reveals a lack of understanding of the processes of acquiring scientific knowledge outside the scientific community. The generation of research results on COVID-19 is extremely fast compared to the usual scientific timeline. Currently, even preliminary research results are in part subject to intensive public discussion. The gaps in knowledge, doubts, contradictory results and indispensable discussions between scientists are an important element in the process of acquiring knowledge and not a sign of incompetence, as the public debate is sometimes inclined to portray. It should be emphasised that even scientific findings are criticised here; this is even more applicable to the recommendations for societal reactions based on these findings, where scientists arrive at less clear-cut results, which in turn serve as a basis for political measures.

The argument about the “right” way to deal with the various risks posed by the virus itself, as well as the political reactions to contain it, is important and legitimate in democratic societies. Nonetheless, this debate is intermingled with speculation about the influence of powerful clandestine actors in the pandemic (conspiracy myths) and with a rejection of and scepticism towards “politics”, “the media” and now also increasingly “science” that has been increasingly articulated for years in sections of the population. According to surveys, a surprisingly large proportion of the population, around 20–27 % of respondents, believe that politicians and the media are deliberately misleading the public about the dangers of COVID-19 and the counter measures taken (as of mid/late May)¹⁸. Relief organisations providing advice to members of sects and conspiracy believers claim that the number of followers of conspiracy myths, who are also openly declaring their support, has risen sharply following the emergence of the new

15 Ginszky, H.; Löwe, C.; Neßhöver, C. (2020): Lessons from the Corona Crisis: New guiding principles required for environmental and sustainability policy? – a discussion paper <https://www.umweltbundesamt.de/publikationen/lessons-from-the-corona-crisis-new-guiding>

16 Deutschlandfunk (Publ.) (2020): What is really systemically relevant in our society; Rosa H in discussion with Fritz S. https://www.deutschlandfunk.de/folgen-der-coronakrise-was-in-unserer-gesellschaft-wirklich.886.de.html?dram:article_id=477022

17 rb – Robert Bosch Stiftung (Publ.) (2020): High esteem for scientists in times of coronavirus. <https://www.bosch-stiftung.de/de/news/hohe-wertschaetzung-fuer-wissenschaftler-zeiten-von-corona>, science in dialogue – Wissenschaft im Dialog gGmbH (Publ.) (2020): Science Barometer Coronavirus Special Report. <https://www.wissenschaft-im-dialog.de/projekte/wissenschaftsbarometer/wissenschaftsbarometer-corona-spezial/>

18 The results of a survey conducted in the 2nd week of May by the Allensbach Institute show that 27 % of those questioned answered the following question with “Yes”: “You sometimes hear that the measures to combat the coronavirus crisis are about something quite different from what politicians and the media are saying. In your opinion, is there any truth to it, or is it unfounded suspicion?” A survey by Infratest dimap at the end of May found that ca. 20 % believe that the media and politicians are deliberately exaggerating the dangers of the coronavirus in order to deceive the public. Cf. ZEIT ONLINE (2020): Coronavirus crisis clouds the mood of the Germans. <https://www.zeit.de/news/2020-05/26/corona-truebt-die-stimmung-afd-waehler-wittern-verschwoerung>; Tagesschau.de (2020): 20 percent feel deceived. <https://www.tagesschau.de/investigativ/zapp/verschwoerungserzaehlungen-umfrage-101.html>

type of coronavirus¹⁹. As early as the beginning of February, the World Health Organization warned of an “infodemic”²⁰ in light of the spread of a plethora of misleading information about the virus. There are many reasons for this; important aspects are likely to be that the political measures combating the pandemic drastically affect people’s everyday lives while at the same time being successful for society as a whole, thus causing the risks of the pandemic to appear lower (keyword: prevention paradox). Public participation in the search process inherent in scientific work probably also contributes to the uncertainty; however, this should not lead to the conclusion that such participation is to be avoided.

Relevance for environmental policy

Results of environmental research, for example on climate change, are similarly used to advise politicians to take informed decisions for the common good. The state of knowledge has been accumulating here for decades and the recommendations of the scientific community to policy-makers are clear on many issues, yet those are being implemented far too slowly or not at all. The differences between the crisis caused by the COVID-19 pandemic and the climate crisis, which lead to this divergent treatment of scientific results by politicians, are obvious (cf. previous section on this).²¹ The question nevertheless arises as to what is to be learnt from the communication of scientific results in the pandemic and the public reactions to them for environmental science and environmental policy, including the “flip-flop” of the debate from trust in science to criticism, the popularity of conspiracy theories, and how the role of science in social dialogue and scientific policy consultation (together with other “knowledge providers”) needs to evolve. We are not in a position to answer these questions in this paper, but we consider it very important that they will be addressed.

2.3 Experience of crisis, cohesion and orientation towards the common good

One thesis represented in public discourse is that the COVID-19 pandemic could strengthen social cohesion as it makes visible the extent to which one’s own actions are linked to the common good, and that this effect could persist in the longer term.²² Research also considers the common experience of crises such as wars and natural disasters to be conducive to promoting cooperation.²³

Initial empirical surveys do not provide a clear picture of the strengthening of prosocial attitudes as a result of the COVID-19 pandemic. A survey conducted by the market and opinion research institute YouGov on 31.03.2020 showed that 40 % of those questioned believed that the crisis had brought people closer together, while only 22 % stated people had distanced themselves further as a result.²⁴

This contrasts with a recent study by the Akkon University of Human Sciences, which finds that respondents do not have the impression that prosocial behaviour has increased in this crisis. The respondents’ assessments that prosocial and cooperative (47 %) or antisocial and selfish (52 %) behaviour has increased are more or less balanced.²⁵ Previous crisis situations, according to the head of the study, have been characterised by significantly more prosocial experiences.²⁶ One explanation for this is that a common goal, such as local damage management in the case of floods where damage is clearly visible, promotes collaboration, group formation and cooperation. In such cases there are specific actions people undertake as effective coping measures, such as filling sandbags.²⁷ These indications could provide starting points for environmental policy conclusions.

19 Laufer, D. (Publ.: Netzpolitik.org) (2020): When parents suddenly believe in conspiracy theories; <https://netzpolitik.org/2020/wenn-die-eltern-ploetzlich-an-verschwörungstheorien-glauben-corona-pandemie/>

20 SZ – Süddeutsche Zeitung (Ed.) (2020): WHO complains of “massive infodemics”; <https://www.sueddeutsche.de/politik/coronavirus-china-who-01.4782487>

21 Ginszky, H.; Löwe, C.; Neßhöver, C. (2020): Lessons from the Corona Crisis: New guiding principles required for environmental and sustainability policy? – a discussion paper <https://www.umweltbundesamt.de/publikationen/lessons-from-the-corona-crisis-new-guiding>

22 e.g. Heisig JP (Publ. bpb – Federal Agency for Civic Education) (2020): Coronavirus Crisis: What are the social consequences of the pandemic?; <https://www.bpb.de/politik/innenpolitik/coronavirus/307702/soziale-folgen>, ZEIT ONLINE (Publ.) (2020): “As if many have not yet understood what it’s all about”; Bude H with Bangel C. <https://www.zeit.de/gesellschaft/schule/2020-03/corona-krise-folgen-neoliberalismus-gerechtigkeit-solidaritaet-heinz-bude>

23 Grimalda G (Publ. di e – German Institute for Development Policy) (2020): Lessons for Global Cooperation from the COVID-19 Pandemic; <https://blogs.die-gdi.de/2020/04/01/lessons-for-global-cooperation-from-the-covid-19-pandemic/>

24 YouGov – YouGov Deutschland GmbH (2020): Compulsory mask-wearing, society and retirement homes. <https://yougov.de/opi/surveys/results/#/survey/fe2756b8-7320-11ea-8c65-9daa9383f449/question/34be67a5-7321-11ea-900d-d3fb4a0675b5/toplines>

25 Goersch H. G., et al. (2020): Interim report “Akkon population studies on managing, experiencing and coping with the German population in the coronavirus crisis; Publ. akkon – University for Human Sciences https://www.akkon-hochschule.de/files/akkon/downloads/publikationen/2020-04-02-Zwischenbericht_Akkon_Studie.pdf (p. 6)

26 tagesschau.de – Norddeutscher Rundfunk (Publ.) (2020): Study on the coronavirus crisis – What the virus does to us; Rohwedder W. <https://www.tagesschau.de/investigativ/corona-soziale-folgen-101.html>

27 ibid.

Relevance for environmental policy

The pandemic is the most dramatic crisis that many people, especially younger people in Germany, have ever personally experienced. The general presumption of far-reaching stability in everyday life has been lost. We therefore assume that experience of this crisis – despite all the differences between the types of the crisis – is likely to make it easier to imagine the occurrence of other crises affecting society as a whole, such as the climate crisis. Appropriate arguments and narratives need to be used for this purpose.

The expression of values such as orientation towards the common good, solidarity and a sense of responsibility towards people who live far away or in the future are decisive conditions for an effective sustainability policy. After all, the idea at the core of sustainable development is that the well-being of others depends on how carefully we treat the ecological foundations. Individualistic ideas of happiness are potentially at odds with sustainability. Consequently, an increase in the importance of these values could be beneficial for environmental policy. Relevant in this context is the observation that the solidarity discussed in relation to the pandemic is predominantly conceived and practised only within national borders.²⁸ In other words, environmental policy needs to succeed in extending the concept of the common good to future generations and people beyond national borders.²⁹

Should, as mentioned above, prosocial behaviour also depend on whether people are able to contribute to preventing and overcoming damage through specific, collective action, then environmental policy should work more vigorously to facilitate citizens' access to appropriate involvement, such as transition-town initiatives³⁰. The Environmental Awareness Study 2018³¹ shows that the desire to engage in

voluntary work is often not fulfilled at present. An important starting point in this regard is to reduce the time spent on gainful employment (see section 3.2).

2.4 Impact on employment, income and distributive consequences

In the first quarter of 2020, gross domestic product (GDP) had already contracted by 2.2 % compared with the previous quarter, representing the sharpest decline since the financial and economic crisis of 2008/2009, with January and February barely affected by the pandemic.³² German GDP is currently (May 2020) forecast to contract by 6.3 % for the year 2020 as a whole.

The number of unemployed has increased significantly since March 2020 and totalled 2,853,000 people in June. This represents an increase of 637,000 compared to June last year. The unemployment rate has risen by 1.1 percentage points to 6.2 percent since March. Compared with June 2019, this represents a 1.3 percentage increase.³³ The announcements for short-time work received by the Federal Employment Agencies in March and April cover a total of up to 10.1 million people and considerably exceed the announcements received in the entire crisis year of 2009.³⁴

In a survey of persons over 18 years of age conducted at the end of May, a large proportion (30 %) of those surveyed in Germany stated that they would be affected by a loss of income as a consequence of the pandemic³⁵. A considerable number of Germans were worried in May about a deterioration of their own

28 e.g. the sociologist Stephan Lessenich in the WOZ – Die Wochenzeitung (2020): Even solidarity stays at home <https://www.woz.ch/-a7cd>, Deutschlandfunk (Publ.) (2020): Does the coronavirus offer the chance for a better world? Bude H; Rau M; Götzke M. https://www.deutschlandfunk.de/heinz-bude-vs-milo-rau-bietet-corona-die-chance-fuer-eine.2927.de.html?dram:article_id=474486

29 Cf. Pissarskoi et al. (2018): What is sustainability policy able to learn from the good life? (Publ. Federal Environment Agency) Dessau-Roßlau. UBA Texte 18/2018 Download under: <https://www.umweltbundesamt.de/publikationen/was-kann-nachhaltigkeitspolitik-vom-guten-leben>

30 Transition Network.org. <https://transitionnetwork.org/>

31 Rubik, F. et al. (2019): Environmental awareness in Germany 2018 – Results of a representative population survey; (Publ. BMU – Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and UBA – Federal Environment Agency) <https://www.umweltbundesamt.de/publikationen/umweltbewusstsein-in-deutschland-2018>

32 tagesschau.de – Norddeutscher Rundfunk (Publ.) (2020): Economy contracts by 2.2 percent. <https://www.tagesschau.de/wirtschaft/statistisches-bundesamt-bip-101.html>

33 Bundesagentur für Arbeit (Publ.) (2020): The labour market in April 2020 – under severe pressure due to the coronavirus crisis. <https://www.arbeitsagentur.de/presse/2020-27-der-arbeitsmarkt-im-april-2020>, Bundesagentur für Arbeit (Publ.) (2020): The labour market in June 2020 – Massive deployment of short-time work provides stability. <https://www.arbeitsagentur.de/presse/2020-34-der-arbeitsmarkt-im-juni-2020>

34 Ebd. Explanation: "The Federal Employment Agencies recorded advertisements in March and up to 26 April 2020 for a total of up to 10.1 million people. This does not mean, however, that these people will all end up working short time. Nevertheless, this is an unprecedented number compared to the last decades and even exceeds the number of advertisements during the 2008/2009 recession many times over. In the entire "crisis year" of 2009, the Federal Employment Agencies received advertisements for 3.3 million people".

35 Statista reported that 30 % of those surveyed from Germany have suffered a loss of income. 46 % have not been negatively affected by the crisis so far. 2 % answered "I don't know", the rest stated that they did not work. Survey conducted between 25.5–31.05.2020, statista – Statista GmbH (Publ.) (2020): Have you suffered loss of income as a result of the COVID-19/coronavirus pandemic? <https://de.statista.com/statistik/daten/studie/1108203/umfrage/persoene-einkommensverluste-aufgrund-der-covid-19-corona-pandemie/>

economic situation in the wake of the pandemic.³⁶ In macroeconomic terms, consequences also arise for the budgets of social security systems due to reduced contributions and distributional effects of the measures introduced as part of the economic recovery measures, as well as the subsequent reduction of new borrowings.

It is not possible at this stage to assess conclusively how the economic consequences of the COVID-19 pandemic will be reflected in income distribution. According to a recent DIW study³⁷, the financial crisis in 2009 had hardly any lasting negative effects on income levels in Germany and did not widen income disparities, as state support services such as the short-time working allowance mitigated the distributional effects. The DIW states that this could again limit the negative consequences on the distribution of income, provided the current restrictions are not maintained for too long. Initial studies on the current crisis situation indicate that short-time work and unemployment mainly affect people on low incomes, while comparatively many people with a university degree have the opportunity of continuing to work from their home office³⁸. Women are more likely to be affected by unemployment and short-time work, as sectors where many women work, especially the hotel, catering, and cultural sectors, have been more affected by the restrictions³⁹. Migrant workers also appear to be disproportionately affected by job losses⁴⁰.

Relevance for environmental policy

The macroeconomic impact of the pandemic, in particular on the labour market, incomes and social systems, causes some parties to call into question the financing of environmental protection measures as an additional burden for companies and citizens more strongly than formerly⁴¹. In a representative survey conducted at the end of April on behalf of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 22 % of those questioned considered environmental and climate policy to be the policy area that the Federal Government should most urgently address⁴². The protection of the environment and nature has remained equally important to most people during the pandemic, but overall it has become slightly more important⁴³. Accordingly, there are also many voices in the public discourse calling for state measures to mitigate the economic impact of the crisis in an ecologically sound manner. In addition to short-term economic policy measures with the potential of having a pioneering effect, it is crucial for a socio-ecological transformation of society to change the framework conditions accordingly and to design the measures necessary for climate and environmental protection in a socially acceptable manner⁴⁴. In addition, environmental policy measures that potentially impose a financial burden on companies often reduce the overall economic costs that would otherwise be incurred as a result of failing to protect the environment.

The distributive effects of the current crisis should be very closely monitored through environmental policy and, where possible, environmental policy measures should be designed in such a manner that no negative distributive effects are caused and, wherever possible, social justice is promoted (see section 3.1).

Professions that are of high social relevance for health, education and quality of life of the population and that are associated with low resource

- 36 Two surveys from early/mid-May show very different results: according to an Allensbach survey from the 2nd week of May, 46 % of those questioned expect their own economic situation to worsen as a result of the pandemic; according to the ARD-Germany trend of 07.05.2020, only 26 % are very worried or extremely worried. Cf. ZEIT ONLINE (2020): Coronavirus crisis clouds the mood of the Germans. <https://www.zeit.de/news/2020-05/26/corona-truebt-die-stimmung-afd-waehler-wittern-verschwörung>, tagesschau.de – Norddeutscher Rundfunk (2020): ARD-DeutschlandTrend – Söder is the winner in the crisis. WDR (Publ.). <https://www.tagesschau.de/inland/deutschlandtrend-2197.html>
- 37 Press release by DIW Berlin – German Institute for Economic Research dated 29th April 2020: Income inequality had stabilised before coronavirus – further development difficult to predict. https://www.diw.de/de/diw_01.c.785914.de/einkommensungleichheit_hat_sich_vor_corona_stabilisiert____weitere_entwicklung_schwer_abzusehen.html
- 38 University of Mannheim (Publ.) (2020): Mannheim coronavirus study: Significant social inequality with regard to home office and short-time work/93 percent of parents look after their children at home. <https://www.uni-mannheim.de/news-room/presse/pressemitteilungen/2020/april/corona-studiesoziale-ungleichheit/>, DW – Deutsche Welle (2020): Study: Coronavirus pandemic increases social inequality; Soric M. <https://p.dw.com/p/3dXkf>
- 39 Hammerschmid A et al. (2020): Women in coronavirus crisis more severely affected on the labour market than men; Publ.: DIW Berlin – German Institute for Economic Research https://www.diw.de/de/diw_01.c.789751.de/publikationen/diw_aktuell/2020_0042/frauen_in_corona-krise_staerker_am_arbeitsmarkt_betroffen_als_maenner.html
- 40 FOCUS Online (Publ.) (2020): The number of Hartz IV recipients is most likely to increase: Economic crisis renders many migrants unemployed. https://www.focus.de/finanzen/news/hartz-iv-wirtschaftskrise-treibt-migranten-massenhaft-in-arbeitslosigkeit_id_12150125.html

- 41 In April, for example, associations from various sectors demanded from politicians that environmental regulations be suspended on account of the difficult economic situation.
- 42 BMU (2020), unpublished survey. Health policy was named as the most important policy area by 21 %, the labour market and economic policy by 11 % and 13 % respectively.
- 43 Unpublished survey by Civey, an opinion research institute commissioned by the BMU, status 29.04.2020
- 44 cf. Press Release No. 20/2020 of the Federal Environment Agency of 20.05.2020: Sustainable recovery from the coronavirus crisis – UBA presents 15-point plan for economic recovery – focus on energy and mobility. <https://www.umweltbundesamt.de/presse/pressemitteilungen/nachhaltig-aus-der-corona-krise>, https://www.diw.de/documents/publikationen/73/diw_01.c.790248.de/diwkompakt_2020-152.pdf

consumption are needed for the socio-ecological transformation. The relevance of some of them, such as people in elderly, health and childcare, cashiers and harvest workers, has become apparent in the crisis and is being discussed in relation to their correspondingly completely inadequate remuneration. It would therefore be reasonable from an ecological and socio-political point of view that the applause for carers and the broad perception of the difficult situation of schools and childcare facilities during the pandemic be reflected permanently in higher social esteem, remuneration and better working conditions for such “systemically relevant” occupational groups.

Moreover, only about ten years after the financial crisis, the coronavirus crisis shows once again how fragile periods of growth are and that for this reason, among others, precautionary policies should look for ways to make social well-being less dependent on GDP growth (see section 3.2).

2.5 Experiences of a shortage of time and wealth of time

The measures taken to combat the pandemic have temporarily changed the timing of everyday life for almost everyone. Some occupational groups, such as employees in food retailing and some medical staff, were required to work more hours at times and were subject to heavy workloads in their job. Parents of small children (predominantly mothers⁴⁵) have taken over the full care and support of their children’s school education as a result of the absence of childcare and schooling and may have been required to continue their gainful employment “on the side”. Others could or cannot work at all, or only to a limited extent, or earn leisure time by eliminating the need to travel to work and to attend meetings. Employment opportunities in leisure pursuits have been greatly reduced for all due to the loss of events, courses, shopping and appointments.

The perception of time in the face of these changes is subjective, may vary greatly between individuals, and is likely to heavily depend on contextual factors such as worries about losing one’s job, grief over

visiting bans, lack of social interaction, size of home, etc. While some certainly long for the complete lifting of the state of emergency, others, especially when they do not suffer so much from the negative consequences of the pandemic, experience the decreasing pressure of deadlines in their work and leisure time as positive. The media often speak of “getting off the treadmill”. In a YouGov survey, 18 % of respondents stated that slowing down everyday life was a positive aspect of the crisis, making it the second-most frequently mentioned positive side effect of the pandemic behind the positive impact on the climate (28 %) (as of 13th May)⁴⁶. The (forced) deceleration widens the scope for tackling things that have been planned for a long time, for trying out new realms of activities and for more unpaid work on one’s own account, e. g. family work, neighbourhood help, gardening, repairs, further education with the support of many online services etc. Whether or not the available scope is actually used and enjoyed in this way will also vary greatly from one individual to another⁴⁷. There is currently, to our knowledge, no representative empirical information available on how this situation has been experienced so far with regard to the perception of time. Though there are indications, for example, from a survey⁴⁸ in which 963 people in employment in April 2020 were asked the question “Should you have additional free time in connection with the coronavirus pandemic, what do you mainly use it for?”. The question was answered by 77 %, the most frequent responses were reading, gardening and housework. Overall, the list contains mainly positive activities.

Relevance for environmental policy

The issue of time use and perception of time is extremely complex and indicates various direct and indirect links to environmental policy issues⁴⁹. An important aspect is the empirically proven connec-

45 UNI Mannheim (Publ.) (2020): The Mannheim coronavirus study: Focus report on employment and childcare; Möhring K; Naumann E; Reifenscheid M; Blom AG; Wenz A; Rettig T; Lehrer R; Krieger U; Juhl S; Friedel S; Fikel M; Cornesse C; download under: https://www.uni-mannheim.de/media/Einrichtungen/gip/Corona_Studie/2020-04-05_Schwerpunktbericht_Erwerbsstaetigkeit_und_Kinderbetreuung.pdf

46 YouGov – YouGov Deutschland GmbH (2020): One in ten perceives rather positive everyday changes caused by the coronavirus; <https://yougov.de/news/2020/05/20/einer-von-zehn-nimmt-eher-positive-alltagsverander/>

47 Deutschlandfunk Kultur – German Radio Culture (Publ.) (2020): Deceleration through coronavirus – Why the new slowness does not relax; Rosa H in conversation with Kassel D. https://www.deutschlandfunkkultur.de/entschleunigung-durch-corona-warum-die-neue-langsamkeit.1008.de.html?dram:article_id=473780

48 cf. ReZeitKon (2020): Selected results of the follow-up survey during the coronavirus pandemic in April 2020. <http://www.rezeitkon.de/wordpress/de/ergebnisse/>, FR – Frankfurter Rundschau (Publ.) (2020): FR series “The World after the coronavirus” – The coronavirus crisis could change our priorities; King V. with Rosa H. <https://www.fr.de/politik/hartmut-rosa-vera-king-corona-krise-koennte-unsere-prioritaeten-aendern-13685349.html>

49 Reisch und Bietz (2015): Time for sustainability – a time of transformation: Elements of a time policy for social transformation towards more sustainable lifestyles. (Publ. Federal Environment Agency) Dessau-Roßlau. Download at: https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/texte_68_2014_zeit_fuer_nachhaltigkeit_0.pdf

tion between reductions in working time, lower income and environmental relief, whereby the exact effect depends on the circumstances in each individual case where rebound effects are also possible⁵⁰. It is extremely important to take a nuanced view of this issue especially (but not only) in the context of the socio-economic consequences of the pandemic: reducing working time in favour of time for other activities may serve as a powerful and purposeful narrative for higher-income milieus, which also contribute⁵¹ more to environmental pollution through their lifestyles, and the wealth of time experienced in some cases during the lock down may act as a discursive anchor in this respect. However, the narrative is blind to reality for people whose work is poorly paid, and could at most be part of the political challenge to enable these occupational groups to reduce working hours through better remuneration⁵².

An additional, possibly even more significant aspect of the temporal impact of the pandemic with environmental relevance results from the partial deceleration experienced in everyday professional and private life. The negative effects of the otherwise common general compression of time on various elements of satisfaction and quality of life are being intensively researched by some sociologists.⁵³ Many phenomena of this social acceleration, such as the high mobility and short cycles of innovation in consumer goods, also have negative environmental impacts. It is plausible to assume that a permanent and collective reduction in the number of activities (appointments, travel, events, purchases, etc.) in favour of an increased intensity of activities, which has been shown to improve the quality of life, would result⁵⁴ in the conservation of resources.

The interruption of everyday routines and the deceleration could act as a springboard for a new social discussion of the relationship between time for gainful employment and time for family and personal work and leisure, as well as the collateral damage of the consolidation of daily life.

2.6 Impact of the crisis on health-related environmental pollution

The pandemic is revealing various correlations between environmental pollution and human health.

The restrictions in the wake of the coronavirus crisis led to a decrease in individual car traffic in cities, air traffic and cruises⁵⁵ (see section 2.9). Satellite data from March show a significant decrease in NO₂ pollution for some German cities, for example.⁵⁶ The measurement data are subject to large fluctuations, however, and a (presumably weather-related) increase in nitrogen dioxide values have also been measured locally. A meaningful evaluation is only possible over a longer period of time when the meteorological influences on average are offset. In addition, a temporary reduction in CO₂ emissions was also forecast as a result of the decline in road traffic and industrial production caused by the lockdown.⁵⁷ The decrease in air traffic has led to a noticeable reduction in aircraft noise⁵⁸. A decrease in street noise has also been noted

⁵⁰ *ibid.*, p. 19.

⁵¹ UBA-Umweltbundesamt (Publ.) (2020): Representative survey of per capita consumption of natural resources in Germany (by population groups). Dessau-Roßlau. Download at: <https://www.umweltbundesamt.de/publikationen/repraesentative-erhebung-von-pro-kopf-verbraeuchen>

⁵² Destatis data published at the beginning of 2020 show that more people would like to work more than people who would like to reduce their working hours, cf. Press Notice Nr. 020 of the Federal Statistical Office dated 16.01.2020: Working time preferences 2018: 2.2 million employed people want to work more, 1.4 million less. https://www.destatis.de/DE/Presse/Pressemitteilungen/2020/01/PD20_020_133.html.

The interpretation of these data, however, would require a close look at the respective reasons and income levels. In addition, different surveys on the subject produce very different results due to different methodologies, see DESTATIS – Federal Statistical Office (eds.) (2017): Working hours and working time preferences: differences between the microcensus and SOEP; Rengers M; Bringmann J; Holst E. <https://www.destatis.de/DE/Methoden/WISTA-Wirtschaft-und-Statistik/2017/04/arbeitszeiten-arbeitszeitwuensche-042017.html>

⁵³ In particular the works of Hartmut Rosa, e.g. Rosa, H. (2014): Acceleration and Alienation, Suhrkamp, 2nd Issue, p. 17.

⁵⁴ Reisch, L. and Bietz (Publ. Federal Environment Agency) (2015): Time for sustainability – a time of transformation: Elements of a time policy for social transformation towards more sustainable lifestyles. Dessau-Roßlau. Download at: https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/texte_68_2014_zeit_fuer_nachhaltigkeit_0.pdf, S. 26f.

⁵⁵ DER SPIEGEL (Publ.) (2020): Germany's inner cities are so empty. <https://www.spiegel.de/panorama/coronavirus-wirken-die-ausgangsbeschraenkungen-daten-analyse-zum-oeffentlichen-leben-a-3002d1f9-8199-4973-ac04-87722694c2e7> tagesschau.de – Norddeutscher Rundfunk (Publ.) (2020): Travel in the coronavirus crisis – 85 percent less air traffic. <https://www.tagesschau.de/wirtschaft/ruetckgang-flugverkehr-101.html>

⁵⁶ ESA – THE EUROPEAN SPACE AGENCY (Publ.) (2020): Air pollution remains low as Europeans stay at home. http://www.esa.int/Applications/Observing_the_Earth/Copernicus/Sentinel-5P/Air_pollution_remains_low_as_Europeans_stay_at_home

SZ – Süddeutsche Zeitung (Publ.) (2020): Does the coronavirus pandemic make our air cleaner? <https://www.sueddeutsche.de/wirtschaft/verkehr-macht-die-corona-pandemie-unsere-luft-sauberer-dpa.urn-newsml-dpa-com-20090101-200416-99-721660>

UBA – Federal Environment Agency (2020): FAQ: Impact of the coronavirus crisis on air quality. <https://www.umweltbundesamt.de/faq-auswirkungen-der-corona-krise-auf-die-welche-auswirkungen-hat-die-corona-krise-auf-die-luftqualitaet>, UBA – Federal Environment Agency (2020): The impact of the coronavirus crisis on the environment. <https://www.umweltbundesamt.de/themen/der-einfluss-der-corona-krise-auf-die-umwelt>

⁵⁷ IEA – International Energy Agency (2020): Global Energy Review 2020. <https://www.iea.org/reports/global-energy-review-2020> LeQuere et al. (2020): Temporary reduction in daily global CO₂ emissions during the COVID-19 forced confinement – Nature Climate Change. Download at: https://www.mcc-berlin.net/fileadmin/data/B2.3_Publications/Other/200518_Schnellsch%C3%A4tzung_CO2-Emissionen_Deutschland.png, SPIEGEL (Publ.) (2020): Less energy consumption due to coronavirus. <https://www.spiegel.de/wirtschaft/unternehmen/coronavirus-weniger-stromverbrauch-im-ersten-quartal-a-4e0b0146-59cf-4cb7-bd68-52b45a4aa4ee>, BASt – Federal Highway Research Institute (Publ.) (2020): Statistics – Traffic barometer: road traffic on German motorways (BAB) during the coronavirus pandemic. https://www.bast.de/BASt_2017/DE/Statistik/Verkehrsdaten/Verkehrsbarometer.html?nn=1820340

⁵⁸ FVW (Publ.) (2020): Noise levels decrease only slightly as a result of less air traffic. <https://www.fvw.de/mobilitaet/news/umweltbundesamt-laermpegel-sinkt-nur-leicht-durch-weniger-luftverkehr-208292>

in several cities.⁵⁹ In return, the importance of urban green spaces, parks and allotment gardens has risen according to forsa surveys commissioned by “Green in the City” and the DBU.⁶⁰

Initial observations regarding the health effects of Covid-19 infections indicate a higher risk for people with limited financial resources. This is due to the fact that socially disadvantaged population groups are more likely to have pre-existing conditions that are associated with a higher risk of severe disease progression, together with fewer opportunities for social distancing⁶¹. Secondly, observations suggest that exposure to air pollutants makes the body more susceptible to disease⁶². It has been known for some time that air pollutants facilitate the lung infections⁶³. In the debate on environmental justice, there is also empirical evidence that people with few financial resources are more often exposed to higher environmental pollution than wealthy people, for example as they tend to live near busy roads on account of lower rents. In addition, socially disadvantaged urban neighbourhoods often have worse access to green spaces, which in turn are likely to have a positive impact on people’s health and well-being.⁶⁴

Relevance for environmental policy

Human health and well-being depend to a considerable extent on the quality of the environment⁶⁵. Current data on the crisis-related decrease in nitrogen dioxide levels and noise are snapshots. The effect of the coronavirus crisis will probably only be short-lived here. The same is expected for the reduction of greenhouse gas emissions. After all, a lasting improvement is only achievable with targeted climate and environmental policy measures that permanently change production and infrastructure as well as consumption and mobility patterns. As traffic increases again, emissions and noise will increase in turn. The pandemic will not have led to temporary relief for other pollutants already present in the environment or in products. No noticeable positive effect on health is therefore expected. The situation does offer the opportunity to experience less noise and cleaner air in everyday life, though, even if the increase in quality of some environmental factors is only short-term. This helps making people aware of the environmental and health consequences of their actions.

The same applies to the pandemic itself, as it illustrates the global impacts of human activity. Human intervention in nature (e. g. through habitat destruction, wildlife trade, climate change), but also international transport and travel routes and insufficient attention to animal welfare and health, means that disease-transmitting organisms (e. g. mosquitoes, ticks) are able to spread more widely or that animal pathogens have a greater chance of being transmitted from wild animals to humans⁶⁶. A symptom of this is the onset of the COVID-19 pandemic.

Should climate and environmental protection measures not be advanced further, eased or even suspended due to the coronavirus crisis, there would be far-reaching consequences. Firstly, it would increase social inequalities related to environmental

59 Stuttgarter Zeitung (Publ.) (2020): The birds are singing in Stuttgart. <https://www.stuttgarter-zeitung.de/inhalt.weniger-laerm-wegen-corona-diese-voegel-singen-in-stuttgart.311a5ba9-c246-475a-b8e6-58aa99a2ea1a.html>, ZEIT ONLINE (Publ.) (2020): Distancing is everything. <https://www.zeit.de/gesellschaft/2020-04/boxen-coronavirus-boxtrainer-alltag-pandemie/seite-2>, TAZ (Publ.) (2020): Who’s having a crisis? <https://taz.de/Trotz-Corona-die-Nerven-behalten/!5673123/>, BR (Publ.) (2020): Metropolis in sleep mode: Photographs of Munich during the lockdown. <https://www.br.de/nachrichten/kultur/metropole-im-ruhemodus-muenchen-fotos-waehrend-des-lockdowns,RyxZaE4>

60 GREENERY IN THE CITY (Publ.) (2020): The coronavirus crisis reveals the high value of urban greenery. <https://www.gruen-in-die-stadt.de/informieren/vorteile-von-stadtgruen/stadtgruen-ist-wichtiger-denn-je>, DBU – German Federal Foundation for the Environment (Publ.) (2020): Representative survey: DBU Environmental Monitor “Coronavirus Consequences”. https://www.dbu.de/2985ibook82907_38647_.html

61 ZEIT ONLINE (Publ.) (2020): Health is a profoundly unequally distributed resource; Pausch R with Richter M. <https://www.zeit.de/gesellschaft/2020-04/risikogruppen-coronavirus-einkommen-gesundheit-vorerkrankungen-gesellschaft>, tagesschau.de – Norddeutscher Rundfunk (2020): Coronavirus strikes the socially disadvantaged harder; Delfs S; Kooroshy K. <https://www.tagesschau.de/inland/corona-sozial-schwache-101.html>

62 Conticini, E. et al. (2020): Can atmospheric pollution be considered a co-factor in extremely high levels of SARS-CoV-2 mortalities in Northern Italy? *Environmental Pollution*. Vol. 261 114465 medRxiv – THE PREPRINT SERVER FOR HEALTH SCIENCES (2020): Exposure to air pollution and COVID-19 mortality in the United States: A nationwide cross-sectional study. <https://doi.org/10.1101/2020.04.05.20054502>

63 UBA – Federal Environment Agency (2020): Coronavirus: the significance of air pollution. <https://www.umweltbundesamt.de/themen/gesundheit/umwelteinflusse-auf-den-menschen/besondere-belastungssituationen/coronavirus-bedeutung-der-luftverschmutzung>

64 e. g. Science Direct (2007): Air pollution particles diminish bacterial clearance in the primed lungs of mice. <https://www.sciencedirect.com/science/article/pii/S0041008X07002098>

65 C. Bunge & J. Rehling (2020): Environmental justice in cities – Empirical findings and strategies for more equal health opportunities. *Information on spatial development* (1), 70–83, G. Bolte et al. (2018): Environmental justice as an approach to reducing social inequality in environment and health. *Federal Health Gazette* 61 (6): 674–683.

65 WHO – World Health Organization (2015): Connecting Global Priorities: Biodiversity and Human Health – A State of the Knowledge Review. Download at: <https://www.who.int/globalchange/publications/biodiversity-human-health/en/>

66 UBA – Federal Environment Agency (2019): Asiatic tiger mosquito. <https://www.umweltbundesamt.de/asiatische-tigermücke#alternative-bekämpfungsmassnahmen>, RKI – Robert Koch Institute (Publ.) (2019): West Nile Fever overview. https://www.rki.de/DE/Content/InfAZ/W/WestNilFieber/WestNilFieber_Ueberblick.html, UBA – Federal Environment Agency (Publ.) (2015): Effects of climate change on the distribution of disease-spreading animals: Import routes and establishment of invasive mosquitoes in Germany. <https://www.umweltbundesamt.de/publikationen/auswirkungen-des-klimawandels-auf-die-verbreitung>, Ipbes – German Coordination Office (2019) (Publ.): Global IPBES assessment on biodiversity and ecosystem services. <https://www.de-ipbes.de/de/Globales-IPBES-Assessment-zu-Biodiversitat-und-Okosystemleistungen-1934.html>

pollution and the associated consequences on health. Secondly, the young and subsequent generations would be particularly severely affected.

2.7 Impacts on the food system

There were no major supply disruptions on the German food and feed markets, according to the Federal Ministry of Food and Agriculture (BMEL). Delays in the delivery of goods within Europe only occurred in a few instances, for example as a result of border controls.⁶⁷ There have, however, been price increases, particularly for fruits, vegetables and dairy products, mainly due to increased demand and bottlenecks in transport and distribution.⁶⁸

Some media and social associations⁶⁹ reported that vulnerable groups within Germany have suffered financially from the omission of free lunches in day-care centres and schools for families at risk of poverty and from the restriction of the service offered⁷⁰ by many food banks.⁷¹ In marked contrast to the relatively small overall impact of the pandemic on the food supply in Germany are the forecasts for the supply of food to people in countries with low average income and weak social systems, especially people in crisis areas, migrants, displaced persons, people working in informal sectors, etc. The responsible

organisations warn of a significant expansion of the global hunger crisis, especially as a result of the socio-economic distortions of the pandemic.⁷²

The COVID-19 pandemic has had a particularly severe impact on slaughterhouses and harvesting work in German agricultural production. Many seasonal workers from Eastern Europe are employed there. Residence and entry regulations have been relaxed owing to the initial lack of seasonal harvest workers following travel restrictions. COVID-19 infections have spread in several slaughterhouses since people often live in cramped collective accommodation.⁷³ Slaughterhouses have been under criticism for years on account of the poor working conditions and accommodation.⁷⁴

The extent to which increasing antibiotic resistance could affect the mortality of SARS-CoV-2 patients is being discussed, particularly in international media⁷⁵. A scientific study showed that secondary bacterial infections were responsible for the majority of deaths during the so-called “Spanish flu”.⁷⁶ The extent to which those are treatable also depends on whether the pathogens developed resistance to

67 BMEL – Federal Ministry of Food and Agriculture (Publ.) (2020): Coronavirus – Questions and Answers. https://www.bmel.de/SharedDocs/FAQs/DE/faq-coronavirus/FAQ-coronavirus_List.html

68 BMEL – Federal Ministry of Food and Agriculture (Publ.) (2020): Coronavirus – Questions and Answers. https://www.bmel.de/SharedDocs/FAQs/DE/faq-coronavirus/FAQ-coronavirus_List.html, Welt(Hrsg) (2020): Food becomes more expensive in the crisis; Kaiser T; Interview with EU Agriculture Commissioner Wojciechowski J. <https://www.welt.de/wirtschaft/article207141659/EU-Bauern-koennen-nichts-fuer-steigende-Lebens-mittelpreise.html>

69 DW – Deutsche Welle (2020): Poverty and coronavirus – the hardship becomes even greater; Walther TC. <https://www.dw.com/de/armut-und-corona-die-not-wird-noch-gr%C3%B6%C3%9Fer/a-53035404>, zdfheute – Zweites Deutsches Fernsehen (Publ.) (2020): Concern about growing child poverty – When there is not enough money for food; Houben L (Publ.). <https://www.zdf.de/nachrichten/panorama/corona-krise-kinder-armut-hartz-4-100.html>

70 TAFEL Deutschland (Publ.) (2020): Management report dated 02.04.2020 of the Tafel registered food charity in Germany. http://www.tafel.de/fileadmin/media/Themen/Coronavirus/2020-04-02_Lagebericht_Tafel_Deutschland_2._Auflage.pdf

71 This is one of the reasons why social organisations are pressing for a temporary surcharge on the German Social Security Code II standard rates, Press release of the PARITETIC ASSOCIATION dated 20.03.2020: Coronavirus: Paritetic Association demands surcharge on standard rates in basic welfare support; Stilling G. <https://www.der-paritaetische.de/service-navigation/suche/suchergebnis/corona-paritaetischer-fordert-zuschlag-auf-regelsaetze-in-der-grundsicherung/>, Diakonie (Publ.) (2020): End of coronavirus pandemic not yet in sight: Provide material security for poor children and their families with emergency aid in the crisis! https://www.diakonie.de/fileadmin/user_upload/Diakonie/PDFs/Pressemitteilung_PDF/Erklaerung_Arme_Kinder_und_ihre_Familien_in_der_Corona-Krise.pdf

72 WFP – World Food Programme (ed.) (2020): WFP chief warns of a famine pandemic as a result of COVID-19 (statement to the UN Security Council). <https://de.wfp.org/pressemitteilungen/wfp-chef-warnt-vor-hungerpandemie-wegen-covid-19-vor-un-sicherheitsrat>, FAO – Food and Agriculture Organization of the United Nations (Publ.) (2020): Novel coronavirus (COVID-19). <http://www.fao.org/2019-ncov/q-and-a/impact-on-food-and-agriculture/en/>

WFP – World Food Programme (Publ.) (2020): COVID-19 L3 Emergency External Situation Report #06. Download at: https://docs.wfp.org/api/documents/cc9c32f64353429fb2f6b2b0d36a00ef/download/?_ga=02.240182081.37216817.1589284250-1874631449.1589284250, IFPRI – International Food Policy Research Institute (2020): Poverty and food insecurity could grow dramatically as COVID-19 spreads; Laborde D; Martin W; Vos R (Publ.). <https://www.ifpri.org/blog/poverty-and-food-insecurity-could-grow-dramatically-covid-19-spreads>

73 DW – Deutsche Welle (2020): Meat industry becomes the coronavirus focal point in Germany. <https://www.dw.com/de/fleischindustrie-wird-zum-corona-brennpunkt-in-deutschland/a-53372663>, tagesschau.de – Norddeutscher Rundfunk (2020): “Unacceptable conditions”; Bognanni M (WDR), Lambrecht O (NDR) (2020). <https://www.tagesschau.de/investigativ/ndr-wdr/fleisch-mitarbeiter-infiziert-101.html>

NDR – Norddeutscher Rundfunk (Publ.) (2020): Weil announces coronavirus tests in the meat industry. <https://www.ndr.de/nachrichten/niedersachsen/Weil-kuen-digt-Corona-Tests-in-Fleischindustrie-an,schlachthof516.html>, SZ – Süddeutsche Zeitung (Publ.) (2020): Slaughterhouses are becoming coronavirus hotspots. <https://www.sueddeutsche.de/politik/schlachthofe-coronavirus-fleischindustrie-01.4902646>, ZEIT ONLINE (Publ.) (2020): Die Schlächter <https://www.zeit.de/2012/09/Fleisch-Schlachten/seite-2>

74 Antibiotic Research UK (Publ.) (2020) Antibiotic Research UK, coronavirus (COVID-19), bacterial infection and antibiotic resistance. <https://www.antibioticresearch.org.uk/our-charity-coronavirus-covid-19-bacterial-infection-and-antibiotic-resistance/>

NPR (Publ.) (2020): Why Antibiotic Resistance Is More Worrisome Than Ever. Interview with M. Zaman <https://www.npr.org/sections/goatsandsoda/2020/05/14/853984869/antibiotic-resistance-is-still-a-top-health-worry-its-a-pandemic-worry-too>

Jpiamr – Joint Programming Initiative on Antimicrobial Resistance (Publ.) (2020): Considerations for AMR in the COVID-19 pandemic; <https://www.jpiamr.eu/considerations-for-antibiotic-resistance-in-the-covid-19-pandemic/>

76 NCBI – US National Library of Medicine National Institutes of Health (Publ.) (2020): Predominant Role of Bacterial Pneumonia as a Cause of Death in Pandemic Influenza: Implications for Pandemic Influenza Preparedness. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2599911/>, THE LANCET (Publ.) (2020): Co-infections: potentially lethal and unexplored in COVID-19. [https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247\(20\)30009-4/fulltext](https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30009-4/fulltext)

antibiotics. The use of antibiotics in human and veterinary medicine beyond what is medically necessary and the handling of manure and fertilisers may contribute⁷⁷ to the emergence and spread of antibiotic resistance and resistance may spread rapidly between animals, humans and the environment.⁷⁸ No reliable information is currently available on the role of antibiotic resistance in the course of severe SARS-CoV-2 infection. Nevertheless, it seems plausible that treatment conditions improve when the risk of antibiotic resistance is low.

SARS-CoV-2, though, was not spread by livestock farming like other zoonotic diseases. Nevertheless, it is assumed that the risk of zoonoses is generally increased by the intensity of livestock farming⁷⁹ and the degradation of natural habitats⁸⁰ where the production of animal food with its comparatively high land requirements has been one of the main drivers in recent decades.⁸¹

Relevance for environmental policy

As the analysis shows, the context of the pandemic suggests that the issue of farm animal husbandry should be addressed, as it is highly relevant to environmental policy, as well as giving new discursive weight to environmental policy demands, particularly for improvements in the use of antibiotics, the intensity of husbandry and the extent of consumption and production of animal food.

The current intense debate concerning the poor working and accommodation conditions in slaughterhouses in the view of COVID-19 infections within those offers the opportunity to forge an environmental, health and social policy alliance: the low prices of meat and sausage products are only possible through the externalisation of social and ecological costs. Should they be internalised by improving production standards, resulting in a higher pricing level, especially in the low-cost segment, consumption is expected to decline. This would be an important achievement in terms of public health in Germany and compliance with regional and global ecological tolerance limits.

The crisis has also led to increased reflection on the resilience of key supply systems, including food. Synergies with environmental policy objectives could be achieved by⁸² diversifying or reducing specialisation. Environmental policy should above all use the discourse on resilience to advance precautionary measures against the consequences of climate change for agriculture. The fact that currently a drought situation is again measurable in Germany after 2018 and 2019,⁸³ reflected in concerns about the harvest in the agricultural policy discourse⁸⁴, further widens the window of opportunity for political measures for such improvements in land use.

2.8 Social distancing as a catalyst for digitalisation

The social distancing measures implemented in the wake of the COVID-19 outbreak made restrictions on social life a reality not experienced in this drastic form in most democratic states since World War II. Personal social contact was restricted for weeks to the family or household for large parts of the population, apart from essential journeys and tasks.

77 UBA – Federal Environment Agency (Publ.) (2018): Antibiotics and antibiotic resistance in the environment. Dessau-Roßlau. Download at: <https://www.umweltbundesamt.de/publikationen/antibiotika-antibiotikaresistenzen-in-der-umwelt>, FAO – Food and Agriculture Organization of the United Nations (Publ.) (2018): Transforming the livestock sector through the Sustainable Development Goals. <http://www.fao.org/3/CA1201EN/ca1201en.pdf>

78 RKI – Robert Koch Institute (Publ.) (2019): The One Health Concept. <https://www.rki.de/DE/Content/Infekt/Antibiotikaresistenz/One-Health/One-Health-Konzept.html>

79 IPES FOOD – International Panel of Experts on Sustainable Food Systems (Publ.) (2020): COVID-19 and the crisis in food systems: Symptoms, causes, and potential solutions. http://www.ipes-food.org/_img/upload/files/COVID-19_Communique_EN.pdf, FAO – Food and Agriculture Organisation of the United Nations (Publ.) (2018): Transforming the livestock sector through the Sustainable Development Goals. <http://www.fao.org/3/CA1201EN/ca1201en.pdf>

80 UNEP – UN Environment Programme (Hrsg): Zoonoses: Blurred Lines of Emergent Disease and Ecosystem Health. <https://wedocs.unep.org/bitstream/handle/20.500.11822/32060/zoonoses.pdf?sequence=1&isAllowed=y>, IPBES – Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (Publ.) (2020): IPBES Guest Article: COVID-19 Stimulus Measures Must Save Lives, Protect Livelihoods, and Safeguard Nature to Reduce the Risk of Future Pandemics <https://ipbes.net/covid19stimulus>, WHO – World Health Organization (Publ.) (2015): Connecting Global Priorities: Biodiversity and Human Health. <https://www.who.int/globalchange/publications/biodiversity-human-health/en/>

81 FAO – Food and Agriculture Organisation of the United Nations (Publ.) (2018): Transforming the livestock sector through the Sustainable Development Goals. <http://www.fao.org/3/CA1201EN/ca1201en.pdf> P.122

82 EU Agriculture Minister Wojciechowski: “Coronavirus is a wake-up call for the farmers. The high degree of specialisation of many companies becomes a problem in the coronavirus crisis. Our lesson for the future is that policy needs to encourage farmers to reduce the level of specialisation”. WELT (2020): “Food products will become more expensive in the crisis”; Kaiser T (Ed.). <https://www.welt.de/wirtschaft/article207141659/EU-Bauern-koennen-nichts-fuer-steigende-Lebensmittelpreise.html>

83 UFZ – Helmholtz Centre for Environmental Research (2020): Drought Monitor Germany; Marx M (Publ.). <https://www.ufz.de/index.php?de=37937> (downloaded 23.05.20)

84 Agrarheute (2020): Drought: what the current drought chart for 2020 depicts; Deutsch D (Publ.). <https://www.agrarheute.com/land-leben/trockenheit-zeigt-aktuelle-duerre-karte-2020-567886>, Federal Institute for Agriculture and Food (2020): Is the next drought imminent in 2020? <https://www.praxis-agrar.de/umwelt/klimawandel-und-klimaschutz/droht-2020-die-naechste-duerre/>, tagesschau.de – Norddeutscher Rundfunk (Publ.) (2020): “Danger of a new drought grows”. <https://www.tagesschau.de/inland/duerre-landwirtschaft-105.html>

Personal contact in the private sphere, at work, in education, etc. is partially replaced by other means of communication using the telephone and internet-based tools. The estimated proportion of employees working from home between late March and mid-April 2020 ranges from 15 % to 49 %, with differences in the figures depending, among other things, on whether those affected work exclusively or increasingly from home.⁸⁵ In both the professional and private spheres, previously practised behaviour is being intensified or tested by other groups of people, including the acquisition of additional technology, or in some cases completely new methods are being adopted.

Relevance for environmental policy

The restrictions caused by social distancing are temporary, but it is reasonable to assume that the newly tested communication methods are likely to be maintained beyond the crisis as a result of newly acquired technical equipment and changed habits, possibly in addition to the resumption of personal contact.

The result in terms of environmental pollution is, in the context of the work environment, firstly, the prospect of a permanent reduction in commuter traffic and business trips through the establishment of a permanent occasional home office and more routine video/telephone conferences. The experience acquired during the crisis could also lead to a certain appreciation of the reduction of time and travel commitments. It is rather unlikely that personal visits in the private sphere will be permanently replaced by virtual communication channels.

Conversely, there is a risk that new routines lead to the introduction of video conferences where previously only telephone calls sufficed, and the additional use of streaming services becomes permanently established, resulting in increased energy consumption. Working from home may also lead to greater

environmental pollution overall, in which case the general conditions are the determining factors: such factors include equipment with additional technology, distance from the workplace, other means of transport used, additional space in apartments for workplaces (and possibly reduced office space in contrast⁸⁶), data transmission and possible rebound effects should people increasingly live further away from their place of work due to the possibility of working from home and very long-distances travel to get there.

There are, however, some important opportunities for social interaction that principally defy digitalisation, such as childcare and nursing, team sports, visiting restaurants or participating in local cultural events. The death of important institutions of social life (e. g. clubs, restaurants, cultural institutions) would not only be a great loss to society, but would also tend to be harmful to the environment should this “social consumption” shift in favour of a higher consumption of material goods⁸⁷.

2.9 Consequences for the mobility system

Social distancing has also led to a temporary significant decline in the mobility of the population from mid-March onwards, both in everyday life and during travel. The burden of car traffic in large cities has temporarily decreased, especially during the otherwise normal rush hours⁸⁸. A dramatic slump in public transport was recorded in mid-April, with a drop of more than 75 % in the number of kilometres travelled compared with normal times⁸⁹, which is attributable not only to the overall reduction in mobility but also to concerns of infection by the virus in public transport itself. Air traffic has decreased the most by over 90 %⁹⁰ (number of flights; as of April 2020). Pro rata, however, car traffic has increased due to the decline in the use of public transport. A German

85 bitkom (Publ.) (2020): Home office in times of the coronavirus pandemic. <https://www.bitkom.org/Themen/Corona/Homeoffice-in-Zeiten-der-Corona-Pandemie>, ZEIT ONLINE (Publ.) (2020): Right to a home office also after the coronavirus. <https://www.zeit.de/arbeit/2020-04/hubertus-heil-homeoffice-gesetz-corona-wahlmoeglichkeit>, DLR – Institute for Transport Research of the German Aerospace Center (Publ.) (2020): DLR survey: How is the coronavirus affecting our mobility? Usage of transportation, shopping, work and travel behaviour. <https://verkehrsforschung.dlr.de/de/news/dlr-befragung-wie-veraendert-corona-unsere-mobilitaet>, BMU – Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Publ.) (2020): Interim balance COVID-19: Environmental policy and digitalisation. https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Digitalisierung/zwischenbilanz_covid19_bf.pdf

86 Allianz, for example, intends to considerably reduce its office space based on the experience gained during the pandemic, cf. *Versicherungsbote* – insurance industry publisher for brokers (Publ.) (2020): Allianz will mehr Homeoffice und weniger Reisen. <https://www.versicherungsbote.de/id/4895070/Allianz-Home-office-und-weniger-Reisen/>

87 Tukker A. et al. (2006): Environmental Impact of Products (EIPRO): Analysis of the life cycle environmental impacts related to the final consumption of the EU-25s. Report for the European Commission.

88 Infas & Motiontag, results from observations using mobility tracking until mid-April SZ – Süddeutsche Zeitung (Publ.) (2020): Freedom of the Open Road; Kunkel C; Witzemberger B. <https://www.sueddeutsche.de/auto/verkehr-stau-corona-01.4857721>

89 Infas (Publ.) (2020): Mobility and Coronavirus: Back to normality faster than expected? <https://www.infas.de/neuigkeit/die-mobilitaet-und-corona-kaum-oepnv-viel-fahrrad-und-immer-noch-auto/>

90 zdfheute – Zweites Deutsches Fernsehen (2020): The pandemic is hitting air traffic hard; Waldow M (Publ.). <https://www.zdf.de/nachrichten/wirtschaft/coronakrise-luftfahrt-zahlen-fakten-100.html>

Aerospace Center survey conducted at the beginning of April showed that 32 % of people without a car in their households regretted not having a car at that time, and 6 % of this group were even thinking about buying a car due to the pandemic⁹¹. Walking and cycling traffic has also increased somewhat, although it should be noted that the beginning of the restrictions coincided with a nationwide fair-weather period, favouring walking and cycling traffic.

The COVID-19 pandemic is affecting transport services for shared use in different ways. Initially, demand in this area mostly collapsed due to fears of becoming infected during use. In the meantime, however, services such as e-scooters and rental bicycles also seem to have profited from the reduced use of public transport, and car-sharing services are slowly recovering, but showing significant revenue losses⁹².

Some cities around the world have taken advantage of the decline in motorised traffic spontaneously to rededicate road space to walking and cycling in order to ensure sufficient distance is maintained and to relieve the pressure on public transport⁹³. In Berlin, at least 15 km, and in Bogotá even 100 km, of temporary cycle paths along major roads have been created by closing off vehicle lanes. In Berlin, up to 18 streets were also closed on Sundays in order to create temporary play streets to relieve the pressure on playgrounds⁹⁴. Brussels and Vienna prioritised walking and cycling in narrow inner city streets or entire neighbourhoods and obliged cars to reduce their speed. Dublin temporarily abolished parking bays in order to increase safety and space on bicycle routes. Other cities followed these examples. These

temporary experiments could leave lasting traces. Berlin is planning to gradually convert the provisional routes into safe cycle paths, partly because this means bringing forward already scheduled infrastructure changes.

Relevance for environmental policy

An overall reduction in CO₂ emissions from the transport sector (excluding aviation) of around 50 % compared with 2019 was recorded worldwide during the period of the most severe restrictions⁹⁵. The peace and quiet, the improvements in air quality and also the space temporarily created in cities were considered positive by many (see also section 2.6).

It remains to be seen what lasting consequences the pandemic will have for mobility and what additional consequences a possible second wave of the pandemic would have for this sector. An ecologically-oriented transport policy has the potential to decisively influence the development of various means of transport. Which means of transport will benefit in the long term or be used less is not the only relevant question – it is also pertinent to ask whether the experience of staying at home causes more people to reconsider the necessity of mobility in everyday life, for business trips and holidays. What type of mobility is desirable and which is more burdensome and dispensable? (see also section 2.8). The macro-economic impact of the crisis could also lead to a situation where costly mobility, such as long-distance and business travel, is used less than before over an extended period of time.

2.10 Supply of goods, purchasing behaviour and online commerce

Access to shopping facilities, apart from food and everyday necessities, was also temporarily severely affected by the pandemic-related restrictions. Real shortages in the supply of essential goods – apart from those caused by the short-term phenomenon of “hoarding” – have, however, not been evident in industrialised countries. Long-term effects on goods dependent on international supply chains, such as pharmaceuticals, are currently not yet quantifiable.

91 GAC – Institute for Transport Research of the German Aerospace Center (Publ.) (2020): GAC survey: How is the coronavirus affecting our mobility? Usage of transportation, shopping, work and travel behaviour. <https://verkehrsforschung.dlr.de/de/news/dlr-befragung-wie-veraendert-corona-unsere-mobilitaet>

92 WN – Westfälische Nachrichten (Publ.) (2020): More of a chance than a handicap? Sharing in the coronavirus crisis. <https://www.wn.de/Specials/Coronavirus/4204792-Raeder-Roller-Autos-Mehr-Chance-als-Schaden-Sharing-in-der-Corona-Krise>

Bitkom (Publ.) (2020): German Car-Sharing providers are responding to the coronavirus crisis. The focus here is on health protection for customers and employees. <https://www.carsharing.de/carsharing-waehrend-corona-krise>

93 NDR – Norddeutscher Rundfunk (Publ.) (2020): Coronavirus: Traffic re-think as a result of the crisis; Corall A; Welzel S. <https://www.ndr.de/nachrichten/info/Corona-Verkehr-neu-denken-durch-die-Krise,verkehrswende104.html>, ZEIT ONLINE (Publ.) (2020): Is the pandemic-related traffic U-turn coming now? Reidl A (Publ.). <https://www.zeit.de/mobilitaet/2020-04/radwege-berlin-popup-bikelane-coronavirus-verkehrswende-radfahrer>, SPIEGEL (Publ.) (2020): Vier Strategien gegen eine Rückkehr der Luftverschmutzung; Müller J (Publ.). <https://www.spiegel.de/auto/corona-lockdown-vier-strategien-gegen-eine-rueckkehr-der-luftverschmutzung-a-892b5e22-e597-4092-9595-308978f0b424>

94 DER TAGESSPIEGEL (Publ.) (2020): Friedrichshain-Kreuzberg opens streets as temporary play areas. <https://www.tagesspiegel.de/berlin/strasse-frei-fuer-kind-er-friedrichshain-kreuzberg-eroeffnet-temporaere-spielstrassen/25797340.html>

95 nature research (2020): Temporary reduction in daily global CO₂ emissions during the COVID-19 forced confinement; Le Quéré C; Jackson RB; Jones MW (Publ.). <https://doi.org/10.1038/s41558-020-0797-x>

The willingness to make major purchases has fallen to an all-time low, regardless of the easing in the retail sector, either as a result of the loss of income or the fear of it⁹⁶. This is likely to remain so for longer due to the expected recession and purchases will be avoided or postponed for longer.

Many consumers made greater use of online shopping as regular shops were closed. 22 % of respondents in a mid-April survey stated that they had made purchases online in the past week, which they would normally do in retail outlets, and the majority could also imagine continuing to do so in the future⁹⁷. Simultaneously, at around the same time, 67 % of those surveyed were worried that many local businesses would not survive the crisis⁹⁸. Amazon is considered a big profiteer from the crisis⁹⁹. Although sales in online retailing also fell by almost 20 % in March compared with the same period of the previous year¹⁰⁰, in relative terms the declines in many product areas are much smaller than in retailing. A study conducted in early April found that a quarter of respondents made more online purchases than usual¹⁰¹.

Relevance for environmental policy

Even when shopping, the necessity of social distancing results in an excursion into the possibilities of the internet. The expectation is that the volume of products traded online will remain at a permanently higher level than before the crisis. Online retailing has certain ecological advantages over in-store retailing (elimination of heated shops and individual car journeys), but also disadvantages (more delivery traffic, increased packaging volume). The bottom line seems to be that it usually performs better in terms of the carbon footprint, but this is highly dependent on the general conditions in the individual case (e. g. means of transport, frequency of returns and

handling of returned goods at the retailer)¹⁰². Looking at the environmental impacts alone, however, would narrow the scope too much. City centres are important social meeting places and should be preserved as such.

It is also a possibility that the enforced disruption of consumption, especially in connection with the renunciation of social contacts, which is probably more painful for most people, encourages people to reflect on the necessity and extent of new purchases.

96 tagesschau.de – Norddeutscher Rundfunk (ed.) (2020): consumer sentiment “in free fall”. <https://www.tagesschau.de/wirtschaft/boerse/gfk-index-109.html>

97 IFH Cologne (Publ.) (2020): Coronavirus Consumer Check: Online purchases are becoming more popular. <https://www.ifhkoeln.de/pressemitteilungen/details/corona-consumer-check-onlinekaeufe-werden-beliebter/>

98 IFH Cologne (Publ.) (2020): Coronavirus Consumer Check: Local retail trade in focus. <https://www.ifhkoeln.de/pressemitteilungen/details/corona-consumer-check-lokaler-einzelhandel-im-fokus/>

99 tagesschau.de – Norddeutscher Rundfunk (Hrsg.) (2020): \$ 23.6 billion richer since New Year's Eve; Göpfert A. <https://www.tagesschau.de/wirtschaft/boerse/amazon-bezos-101.html>

100 Bevh – Deutscher E-Commerce Association (Publ.) (2020): Coronavirus pandemic leads to significant loss of sales in online commerce. <https://www.bevh.org/presse/pressemitteilungen/details/corona-pandemie-fuehrt-zu-deutlichem-umsatzverlust-im-onlinehandel.html>

101 DLR – Institute for Transport Research of the German Aerospace Center (Publ.) (2020): GAC survey: How is the coronavirus affecting our mobility? Usage of transportation, shopping, work and travel behaviour. <https://verkehrsfoerderung.dlr.de/de/news/dlr-befragung-wie-veraendert-corona-unsere-mobilitaet>

102 Ongoing project on “Greening Online Commerce” on behalf of the UBA – Federal Environment Agency

3 Possible strategic approaches to environmental policy as a consequence of the social changes brought about by COVID-19

3.1 Orient environmental policy in such a way to promote social justice to a greater extent

The debate on the monetary distributional effects of environmental policy could take on new relevance against the backdrop of the socio-economic inequalities that are in all probability exacerbated by the pandemic. Environmental policy should respond to this by making greater use of instruments that counteract major discrepancies in income and wealth. It is nonetheless important not to reduce the discourse on the distributional effects or social compatibility of environmental policy to this one aspect. The debate on the distribution of environmental damage (air pollution) also attracted increased public attention when connected with the spread of the COVID-19 disease.

Broad understanding of the social impacts of environmental policy

What requirements exactly environmental policy needs to satisfy in order to be considered socially just is a complex question. The answer to this question may vary, notably when determining which aspects need to be included. In general, relevance relates in particular to the distribution of environmental burdens (who suffers?), the benefits of good environmental quality (who profits?) and the costs, if any, of achieving good environmental quality (who bears the costs?), and in particular the reasonableness of the costs for certain groups.

The Federal Environment Agency attaches importance to a comprehensive and nuanced consideration of the effects of environmental policy measures based on the following categories: income effects, wealth effects (e.g. loss of wealth due to extreme weather events), employment effects, effects on the quality of jobs and qualification requirements, effects on health and quality of life (e.g. exposure to pollutants or noise), access to public goods (e.g. to green spaces in the city), provision of environmentally friendly infrastructure (e.g. for mobility, nutrition and housing), social participation, empowerment and

social cohesion. Supplementary analyses that make group-specific distributional impacts transparent and focus on vulnerable population groups are often required to obtain a comprehensive picture of the social and societal impacts. In particular, the following criteria may be relevant: income classes, household types (single persons, families, single parents, etc.), gender, age, education, migration background, socio-cultural milieus, burden on businesses versus burden on private households, groups particularly affected by sector-specific policies (e.g. commuters), spatial effects (local, urban/rural, regional). Where appropriate, international and intergenerational distributional impacts also need to be taken into account.

Environmental protection generally benefits everyone. Poorer people benefit disproportionately high from improved air quality and noise protection in particularly polluted areas, since they are more likely to live in such areas (cf. section 2.6).¹⁰³ Environmental policy may serve to counteract existing socially unjust distribution to this extent.

Political discourse often narrows environmental protection down to the question of the monetary costs of achieving environmental policy goals. Environmental policy measures and instruments can, under certain circumstances, have a greater impact on financially poorer households, for example in the case of price mark-ups as a control mechanism without any accompanying measures. Any discussion of the monetary distributional effects of environmental policy measures requires an individual and comprehensive assessment and discussion of each measure in terms of its financial costs and benefits.

¹⁰³ This social discrepancy of environmental pollution is thematised, researched and addressed under the term environmental justice
UBA – Federal Environment Agency (2020): Environmental justice – environment, health and social situation. <https://www.umweltbundesamt.de/themen/gesundheits/umwelteinfluesse-auf-den-menschen/umweltgerechtigkeit-umwelt-gesundheit-soziale-lage>

Generalising that environmental policy measures are always a financial burden for poorer people is factually incorrect.

As mentioned at the outset, the likelihood is that the (narrowed) debate on the monetary distribution effects of environmental policy will intensify as a result of the negative socio-economic consequences of the pandemic. As a result, acceptance of environmental policy action could diminish while measures that actually have negative distributional effects could create a conflict with social policy objectives unless compensated by accompanying measures.

Moreover, such measures would also be contrary to a broader understanding of environmental policy that is more strongly based on the concept of sustainability: the goal of sustainable development is – beyond the undisputed priority of satisfying the basic needs of all people – an intra- and intergenerational fair distribution of opportunities for the satisfaction of needs. The extent to which needs are satisfied depends on various conditions, including the natural resources available to do so.¹⁰⁴ Access to resources is predominantly regulated through the markets and they rely mainly on purchasing power. Where environmental policy measures place a financial burden on poorer people, their access to resources deteriorates accordingly. The discrepancy in the use of resources is particularly significant when viewed in its global dimension. Even within Germany, however, people with high incomes consume more energy and resources on average than poorer households.¹⁰⁵ Environmental policy should therefore contribute as far as possible to closing this gap by bringing resource use into alignment at an environmentally sustainable level.

Design environmental policy instruments in a socially responsible manner and create synergies with social policy objectives

There are several approaches and possibilities for the pursuit of environmental policy objectives in favour of (or at least not at the expense of) social policy objectives. For example, when levying environment-related taxes and charges, the use of the funds is a core element of socially responsible design. One option would be to finance the reduction of the EEG (Renewable Energies Act in Germany) reallocation charge through revenues from CO₂ pricing.¹⁰⁶ Another form is so-called “eco-bonus” or premium concepts. Such schemes provide revenue from environmental taxes reimbursed in the form of flat-rate amounts per capita (either to all or only to low-income households). Scientific studies show that it is even possible to provide relief to low-income households at the end of the day.¹⁰⁷

These examples are only a small selection from a multitude of options for action to reconcile environmental and social policy objectives.

The share of environment-related taxes initially increased in the years following the introduction of the ecological tax reform. In recent years, however, the share of environment-related taxes in total tax revenue has fallen to its lowest level since 1995.¹⁰⁸ The proposal is therefore to strengthen the environmental steering effect of existing environmental taxes, increase their share of total tax revenue, reduce exemptions and tax or levy charges or fees in other areas. In addition to the taxes on energy and greenhouse gas emissions currently levied and already adopted and the environment-related passenger car taxes, other environmentally harmful or resource-consuming activities should be considered for taxation or for the introduction of levies. Some examples are a levy specifically imposed on plant protection products, which in turn would be used to finance measures for the reduction in the use of

104 Some sustainability theorists accordingly stress that the guiding principle of sustainable development implies the equitable distribution of natural resources, among other factors (Ott, K. & Döring, R. (2014): P.46; Grunwald, A. and Kopfmüller, J. (2012): Sustainability, 2nd updated edition. Campus. P.35; Grunwald, A. (2016): Understanding sustainability – working on the importance of sustainable development. Oekom Verlag. (Publ.) P.96 The criteria for determining whether a distribution is fair (both in its outcome and in the process of achieving it) have not yet been answered, and the debate on this issue is not appropriate in this context. We nevertheless share the widely held view that such large discrepancies in resource use is unjustifiable.

105 Kleinhückelkotten, S. et al. (2016): Representative survey of per capita consumption of natural resources in Germany (by population groups). (Hsrg.) Federal Environment Agency. UBA Texts 39/2016: <https://www.umweltbundesamt.de/publikationen/repraesentative-erhebung-von-pro-kopf-verbraeuchen>

106 Burger, A. et al. (2019): CO₂ pricing in Germany – An overview of the options for action and their advantages and disadvantages. Publ. Federal Environment Agency https://www.umweltbundesamt.de/sites/default/files/medien/376/publikationen/factsheet_co2-bepreisung_in_deutschland_2019_08_29.pdf S. 7

107 Press Notice No. 117/19 of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety dated 05.07.2019: Schulze: It is possible to structure the CO₂ price in a socially fair manner. <https://www.bmu.de/pressemitteilung/schulze-co2-preis-kann-sozial-gerecht-gestaltet-werden/>

108 UBA – Federal Environment Agency (2019): Environmental taxes and charges. <https://www.umweltbundesamt.de/daten/umwelt-wirtschaft/umweltbezogene-steuern-gebuehren#wirkung-umweltbezogener-steuern>

pesticides and – embedded in an overall concept for the reduction of nitrogen surpluses in agriculture – a levy on nitrogen surpluses.

Establishing new alliances with social policy stakeholders

Social policy stakeholders such as trade unions and welfare and social associations play an important role in crisis management and are in a position to play a key role in shaping social change. Stakeholders concerned with environmental and social policy have converged in a number of areas in recent years and have begun to act collectively and with integrated objectives. They have also to some extent made their voices heard in the discourse on the structuring of the coronavirus economic stimulus packages.¹⁰⁹

However, social and environmental policy interests are occasionally used as opposing arguments within the discourse¹¹⁰. At times, though, they can actually opposing each other in political processes, for example in the exnovation¹¹¹ of environmentally harmful industries, in the pursuit of environmental policy objectives through price premiums such as taxes, levies, etc., or in the costs imposed on tenants.

Alliances of environmental and social stakeholders are an effective means of preventing interests being played off against each other by third parties as well as helping to increase the power of discourse. In addition, the expertise of social and welfare associations, trade unions etc. regarding social hardship, sensible starting points as well as on the effectiveness and acceptance of measures is valuable for a socially

responsible design of environmental policy. Finally, alliance partnerships help to dismantle measures and incentives that are motivated by social policy but have the opposite effect on the environment and instead replace them with socio-ecological solutions.

A research project commissioned by UBA (“New Alliances for Sustainability Policy”) shows that this kind of cooperation is particularly promising in the policy areas of “housing”, “mobility” and “sustainable consumption”¹¹². One of the project’s recommendations to environmental policy stakeholders is to encourage collaboration by establishing dialogue platforms at national and regional levels. Important elements of cooperation are a common understanding of the problem, knowledge of existing synergies and conflicting goals and finding common solutions.

Cooperation on meat consumption and production in the context of the pandemic seems promising in several aspects. Firstly, in the communication of knowledge on the role of intensive livestock farming in the development of zoonotic diseases. Secondly, in the improvement of conditions in meat production facilities (see 2.7). Thirdly, in the consumption of meat, which is higher per capita among socially disadvantaged people¹¹³. An important coalition of discourse and action could be formed with trade unions and social associations. Finally, social organisations themselves manage many facilities with food catering and could contribute to ecological relief and the health of their clients by increasing the proportion of healthy plant-based foods.

3.2 Make social welfare resilient

Resilience to fluctuations in economic growth

The COVID-19 pandemic is showing once again how fragile economic growth is, and the drastic socio-economic consequences that economic contraction entails. Financing deficits in the health and pension systems could arise depending on how long-term economic activities are restricted by the pandemic.

109 Cf. The National Paritetic Association (2020): Economic recovery measures need to be ecological, social and fair: Fridays For Future, Paritetic Welfare Association and trade union ver.de exert pressure on the Federal Government; Stilling G (Publ.) <https://www.der-paritaetische.de/presse/konjunkturmassnahmen-muessen-oekologisch-sozial-und-gerecht-sein-fridays-for-future-paritaetischer-wo/>, The National Paritetic Association (2020): no wasted investment! The BUND (German environment and nature conservation assoc.) and Paritetic Association are demanding an economic stimulus package to effect a socio-ecological turnaround; Pieper J (Publ.). <http://www.der-paritaetische.de/fachinfo/keine-fehlinvestitionen-bund-und-paritaetischer-fordern-ein-konjunkturpaket-fuer-eine-sozial-oekologis/>, Dies gilt allerdings nicht für die Förderung von Autos mit Verbrennungsmotor, wo mehrheitlich Gewerkschaftsinteressen den umweltpolitischen Forderungen entgegenstehen, cf. IG Metall (2020): IG Metall submits proposals for an economic recovery package. <https://www.igmetall.de/presse/pressemitteilungen/ig-metall-legt-vorschlaege-fuer-ein-konjunkturpaket-vor>

110 “It is not uncommon to try to play off climate policy against social policy, the climate movement against the social movement,” says Ulrich Schneider, Chief Executive of the National Paritetic Association. The National Paritetic Association (2020): Economic stimulus measures in the coronavirus crisis: ecological, social, fair! Schneider U. <https://www.der-paritaetische.de/blog/article/2020/06/02/konjunkturmassnahmen-in-der-coronakrise-oekologisch-sozial-gerecht/>

111 Exnovation refers to the intended termination, cessation and phasing out of practices, technologies, industries, etc. In transformation processes, exnovation is necessary when innovation is unable to fundamentally change the existing system. This may be the case when they either contribute rather marginal improvements (system stabilizing innovations) or when they are radical but merely add to the status quo.

112 IÖW (2020): New alliances for sustainability policy. Project website: https://www.ioew.de/projekt/neue_allianzen_fuer_nachhaltigkeitspolitik/

113 MRI – Max-Rubner-Institut (2008): National Nutrition Survey II Interim Report 2, S. 60 https://www.mri.bund.de/fileadmin/MRI/Institute/EV/NVSII_Abschlussbericht_Teil_2.pdf

A decline in GDP growth may have other causes beyond acute crises, such as the ageing of society, consumption saturation effects and above all the consequences of inadequate environmental and climate policy¹¹⁴. The extent to which further continuous economic growth in wealthy countries is possible under the conditions of compliance with planetary and local ecological limits and rising living standards worldwide is a controversial question and one that has no clear answer at the present time. It therefore seems reasonable to us to assume, as a precautionary measure, that GDP may decline in the future or at least not grow, or hardly grow at all. Given the current conditions, this could lead to a worsening of distribution conflicts and affect the functioning of social institutions such as social security and employment. There is in other words an (indirect) connection to people's quality of life and safeguarding their livelihoods. As a precautionary measure, these social institutions should be reorganised so that they are able to fulfil their purpose less dependent on the development of GDP. This conclusion was reached after intensive debate in the research project "Approaches to Resource Conservation in the Context of Post-Growth Concepts" conducted on behalf of the UBA¹¹⁵.

The publication discusses various strategies and instruments through which this stronger "growth independence" or "resilience" is achievable:

- ▶ Promotion of sectoral transition towards a service society, enabling a shift of jobs to sectors with low environmental consumption and high labour intensity.
- ▶ Stress on the environment, relief for labour (see 3.1), enabling technological transition to have an effect in the direction of increasing resource productivity. In contrast, labour productivity would grow less strongly in the future, resulting in fewer new jobs needed to compensate for the loss of jobs.

- ▶ The attractiveness of the professions needed for structural change could also be enhanced by better working conditions and higher remuneration. Professions in the sustainable economy could be promoted through an accompanying campaign.
- ▶ Reduction of regular working hours in order to keep the number of jobs constant while (nevertheless) increasing labour productivity, simultaneously providing citizens with more time for meaningful activities that replace commercial consumption.
- ▶ Strengthening public services of general interest (e.g. in the area of housing and mobility) enables prosperity at the individual level to be rendered less dependent on income from wage labour.
- ▶ In pension and long-term care insurance: recognition of non-market mediated activities, e.g. via time credit systems, providing monetary relief for these social insurance schemes (observance of a gender-appropriate and socially-equal distribution of care work is essential)
- ▶ In the healthcare system: reduction of cost pressure, among other things, through a stronger focus on disease prevention and promotion of health practices

The impact of the approaches outlined has not yet been sufficiently researched and they should be tested and further refined in a broad social and interdepartmental discussion. Environmental policy should become a key driver in determining the best way to achieve growth independence. Once sufficient resilience of societal institutions to growth fluctuations has been achieved, the necessary political decisions to restrict economic activities, such as air traffic, lignite-based electricity generation, etc., will probably be easier for society to take in view of the transgression of planetary boundaries.

The importance of intact ecosystems for the resilience of human well-being

The recognition that the integrity of ecosystems and a high level of biodiversity are an important basis for the resilience of human well-being is then considered *common sense* in society, at least with regard to the climate system. For example, periods of drought pose a recognisable threat to the food supply. The global

¹¹⁴ This was determined by the Stern Review on the Economics of Climate Change in 2006.

¹¹⁵ Petschow, U. et al. (2018): Social well-being within planetary boundaries – the approach of a welfare-oriented post-growth scenario. (Publ. Federal Environment Agency) (<https://www.umweltbundesamt.de/publikationen/vorsorgeorientierte-postwachstumsposition>)

spread of zoonotic diseases also poses new serious health risks, such as SARS-CoV-2 encouraged by ecological degradation, and the spread of pathogens such as West Nile virus, made possible by climate change.

We have nevertheless observed in some recent contributions to the debate that resilience is being reduced to the question of stable supply chains. It is self-evident that the role of environmental policy here is to point out the relevance of resilient ecosystems. Up-to-date publications in the press could, for example – as was previously done by the BMU (Federal Environment Ministry)¹¹⁶ at the beginning of the pandemic – establish a connection between the current discussion on resilience in the course of the pandemic and relevant studies¹¹⁷ join the importance of intact ecosystems for human well-being.

3.3 The One Health Approach

Today's economy and lifestyle are characterised by the overuse of natural resources, causing man-made climate change and the loss of valuable habitats and biodiversity, and the associated consequences. In addition, there are demographic, economic and technological changes involved. This transition profoundly affects the interaction between humans, animals and the environment and poses a serious threat to global sustainability and well-being. As a result, also human health is confronted with new and complex risks.

The zoonotic infectious diseases of recent years (e. g. MERS, SARS, Ebola, Covid-19) are a direct consequence of human activities, as is the climate and biodiversity crisis. The United Nations Environment Programme states that 75 % of all newly emerging infectious diseases are zoonotic diseases, with an average of three new infectious diseases emerging worldwide each year.¹¹⁸ The estimate is that there are still 1.7 million unknown viruses in mammals and

waterfowl that could potentially infect humans and thus trigger the next wave of disease¹¹⁹. The transfer of pathogens from animals to humans and their rapid spread is attributed in particular to unchecked deforestation, intensive land use (e. g. for agricultural purposes or settlement and transport areas), mining, exploitation, unregulated trade in wild species, the explosive growth of long-distance air traffic and climate change. These developments are closely linked to inadequate environmental and climate protection.

The “One Health” approach is an integrated approach which acknowledges that human health is closely linked to animal health, a healthy environment, food safety and food security, and agricultural practices¹²⁰. Interdisciplinary cooperation is essential to ensure the success of the One Health approach. It is admittedly true that the One Health approach recognises the importance of the environment and climate and the need for institutional cooperation. It is, however, notable that One Health has been discussed and researched primarily in the field of (veterinary) medicine and food¹²¹. It has so far received little attention in areas of environmental and climate protection, although environmental and climate protection measures contribute or are capable of contributing significantly to the early prevention of zoonotic diseases and the spread of disease-transmitting or antibiotic-resistant organisms.

Environmental and climate policy should therefore, firstly, take a closer look at the one-health approach in order to identify points of contact and strengthen thematic links in the field of environment and health (for example, health and climate change, chemical risks in connection with health, biodiversity and ecosystem services). This also includes questions of gender justice in the One Health approach¹²² and questions of environmental justice. At the same time, cooperation between the various competent areas of responsibility (authorities, ministries) should be

¹¹⁶ Press Notice Nr. 053/20 of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of 02.04.2020: Global nature conservation is able to reduce the risk of future epidemics. <https://www.bmu.de/pressemitteilung/schulze-weltweiter-naturschutz-kann-risiko-kuentfiter-seuchen-verringern/>

¹¹⁷ e. g. IPBES (2019): The global assessment report on Biodiversity and Ecosystem Services - Summary for policy makers. https://ipbes.net/sites/default/files/202002/ipbes_global_assessment_report_summary_for_policymakers_en.pdf, Manca, A. R. et al. (2018) Building a Scientific Narrative Towards a More Resilient EU Society – Part 1: a conceptual framework. JRC Report 2017, JRC 106265; Diaz, S. et al. (2018): Assessing nature's contributions to people Science Vol. 359, Issue 637, pp. 270–272

¹¹⁸ UNEP – United Nations Environmental Programme (Hrsg) (2020): Preventing the next pandemic – Zoonotic diseases and how to break the chain of transmission. <https://www.unenvironment.org/resources/report/preventing-future-zoonotic-disease-outbreaks-protecting-environment-animals-and>

¹¹⁹ UNEP- United Nations Environmental Programme (Hrsg) (2020): Science points to causes of COVID-19. <https://www.unenvironment.org/news-and-stories/story/science-points-causes-covid-19>

¹²⁰ Lebov et al. (2017): A framework for One Health research. One Health Vol. 3, pp 44–50; Queenan et al. (2017): Roadmap to a One Health Agenda 2030. CAB Reviews 12, Nr. 014

¹²¹ Zoonotic diseases – National Research Platform on Zoonotic Diseases (2020): <https://www.zoonosen.net>, ELSEVIER (2020): One Health. <https://www.journals.elsevier.com/one-health>

¹²² Friedson-Ridenour et al. (2019): Gender Analysis for One Health: Theoretical Perspectives and Recommendations for Practice. EcoHealth 16, 306–316

developed to improve governance in this context. At the level of public agencies, for example, the Robert Koch Institute, the Friedrich Loeffler Institute, the Federal Institute for Risk Assessment, and the UBA could work in closer cooperation with each other to strengthen the One Health approach nationally and internationally beyond the German Antibiotic Resistance Strategy¹²³. Interdepartmental cooperation is crucial for the development of inclusive, targeted and coherent policies and their efficient implementation. Cooperation within the framework of One Health also can help to raise the acceptance of environmental and climate protection measures in interdepartmental decision-making.

3.4 Exploiting new dynamics and awareness in individual fields of treatment

The crisis has brought about a variety of short-term changes in the parameters of environmental policy. Such situational treatment circumstances result from changing political, economic and informational situations and events and contain both opportunities and obstacles for environmental policy concerns¹²⁴.

Environmental policy should build directly and rapidly on the changes and experiences that have arisen as a result of the pandemic and which could form the basis for a socio-ecological transformation. In our opinion, the following issues and fields of action in particular are now the subject of a new dynamic process in terms of environmental policy:

Food supply system

In our estimation, a special opportunity for environmental policy, so far largely unexploited, lies in using the pandemic discourse to highlight the links to livestock farming. As it is plausible that antibiotic resistance will worsen the conditions for the treatment of secondary infections of virus epidemics and pandemics (see 2.7), an important discursive momentum is created for the demand by

environmental policy to reduce the use of antibiotics to medical necessity and to take precautions against the development of resistance¹²⁵.

The same applies to the increased awareness of the role of habitat destruction as a risk factor for the development of zoonotic diseases. Environmental policy stakeholders should point out the crucial role of livestock farming with its high land requirements, and name this as another relevant reason for the need to more vigorously replace animal foods with plant-based alternatives.

The current heightened concern about the resilience of food supplies should be used above all to increase the resilience of agricultural systems to the consequences of climate change. This should be achieved by testing and extending ecological upgrading measures and approaches such as underseeding, agro-ecological concepts, agroforestry systems, humus-building practices, etc. It is also possible to increase resilience by closing nutrient cycles to a more pronounced degree, as dependence on external inputs is reduced.¹²⁶

The drive to regionalise supply, a matter of current debate in public discourse, might under certain conditions, such as a more plant-based and seasonal diet, be connected with ecological advantages in the region, for example when the diversity of cultivated crops in agricultural landscapes, made monotonous as a result of differentiation, is thereby increased.^{127, 128} Regionalisation is, however, often overestimated as a strategy for reducing the environmental impacts of the food supply system – in the end, it is the what and how of production that is decisive and less the where.¹²⁹ Moreover, with regard

123 DART – German Antibiotic Resistance Strategy (2020): Prevent resistance to antibiotics. https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Praevention/Broschueren/DART2020_4-Zwischenbericht_2019_DE.pdf

124 M. Jänicke, Umweltpolitik, 2003

125 RKI – Robert Koch Institute (Publ.) (2019): The One Health Concept. <https://www.rki.de/DE/Content/Infekt/Antibiotikaresistenz/One-Health/One-Health-Konzept.html>; UBA – Umweltbundesamt (Publ.) (2016): Concepts to reduce the introduction of pharmaceuticals from agricultural animal husbandry into the environment. (https://www.umweltbundesamt.de/sites/default/files/medien/2546/publikationen/fachbrochure_tam_final.pdf)

126 Iied – International Institute for Environment and Development: Building resilient food systems. <https://www.iied.org/building-resilient-food-systems>

127 This conclusion was implemented by a farmer in the USA in an exemplary manner. In response to the pandemic, various types of vegetables were grown instead of a catch crop for self-harvest. Civileats: Most farmers in the great plains don't grow fruits and vegetables. The pandemic is changing that. <https://civileats.com/2020/05/12/most-farmers-in-the-great-plains-dont-grow-fruits-and-vegetables-the-pandemic-is-changing-that/>

128 Wunder, S. et al. SPIEGEL (Hrsg) (2019): Rural Urban Nexus – Global land use and urbanization: Integrated approaches for sustainable urban-rural development. <https://www.umweltbundesamt.de/publikationen/rural-urban-nexus-globale-landnutzung-urbanisierung>, resp. Rural-Urban-Nexus: (Project website). <https://rural-urban-nexus.org/>

129 Our World in Data (2020): You want to reduce the carbon footprint of your food? Focus on what you eat, not whether your food is local; Ritchie H (Publ.). <https://ourworldindata.org/food-choice-vs-eating-local>

to resilience to regional crop failures in the context of climate change, trade is an important means of increasing resilience.

Mobility and traffic-related air pollution/noise

Changes required to heavily congested traffic routes should be addressed (if necessary brought forward) while the positive recollections of the low traffic volumes are still present. Health improvements for the population should occupy a central position in the argument. The opportunity presented by the experiments in the areas of cycling and walking should be utilised to expand the range of services offered and intensify the discussion on the allocation of road space.

It is particularly important that damage to the image of public transport resulting from the risk of infection is not lasting and that more people do not switch to using their own cars permanently after the crisis. This necessitates the promotion of public transport and car-sharing services, as well as possibly conducting an image campaign. There is also the argument that public transport needs to be expanded to avoid overcrowding in commuter trains, in view of the potential risks of infection (including other infectious diseases) in public transport.

The slump in air traffic should be used to reduce flights permanently¹³⁰, especially shorter flights of less than 1000 km, which need to be curbed anyway to cope with the climate crisis. Individuals and occupational groups affected by job losses should be supported in the development and creation of alternative income opportunities.

Home office and green digitalisation

It is highly likely that the current crisis experience will lead to a surge in digitalisation. Working from home could make an important contribution to avoiding traffic during rush hours. It is estimated that about a quarter of all employees are able to work partly in their home office on a permanent basis¹³¹. Employers should avoid duplication of computer

equipment where possible (e. g. using a private PC with VPN access or using only a notebook or mini PC for home and office) and should also consider the efficient use of workspace (e. g. shared use of office space in the case of frequent home office use). Employees should be informed about the possibilities of how to create an environmentally friendly home office.

Replacing business trips with telephone or even video conferencing is in most cases ecologically very beneficial¹³² and helps families to optimise the combination of work and childcare. The degree of acceptance could now be much greater than before the outbreak of the COVID-19 pandemic. Further improvement in the infrastructure and equipment of public authorities and businesses is necessary to achieve this goal.

The potential to make online commerce more environmentally friendly should be exploited to the full on account of the heightened importance of this area brought about by the crisis¹³³.

In the course of further digitalisation, other green IT topics are also gaining relevance: the energy and resource efficiency of data centres and the network infrastructure should be significantly increased, the energy efficiency of the software used should be taken into account, the longevity and useful life of terminal equipment should be increased, and software should allow for the long-term use of equipment. The expansion in the use of certain resources associated with further digitalisation also needs to be monitored and questioned, and the recycling of critical raw materials from electronic products significantly improved.

130 France, for example, has already done so for Air France domestic flights, cf. ZEIT ONLINE (Hrsg) (2020): Climate-friendly exit from the crisis <https://www.zeit.de/mobilitaet/2020-06/fluggesellschaften-klimaschutz-corona-krise-politische-vorgaben-kurzstreckenfluege-ideen#2-verbot-von-kurzstreckenfluegen>.

131 SPIEGEL (Hrsg) (2020): "20 to 40 percent of the commute to and from work is eliminated". <https://www.spiegel.de/auto/verkehrswende-in-corona-zeiten-fuer-pendler-fallen-20-bis-40-prozent-der-arbeitswege-weg-a-0cb69df1-f095-46e3-9fcc-126e273e6407>

132 There are also borderline cases, for example a relatively short train journey compared to a longer video conference using a tool with high energy consumption. Precise data for energy consumption through video conferencing is not yet available, however, and the data centres and software of video conferencing providers probably varies considerably in this respect.

133 Cf. Ongoing project on "Greening Online Commerce" on behalf of the UBA – Federal Environment Agency (2019–2021)

4 Further development of society's environmental understanding and environmental communication

As the analysis has shown, the pandemic and the strategies for coping with it reveal extensive insights into the social constitution of our contemporary society. In particular, it became clear that the COVID-19 pandemic is first and foremost a major challenge for the management of public communication. This challenge refers not only to a narrower understanding of risk communication in the context of political crisis management to avert the concrete threat and cushion the economic and social consequences, but also, in a broader understanding, to a far-reaching discourse of political and social modernisation.

The background to the analysis provides initial indications for the further development of strategic environmental communication and environmental policy:

Focus: distributive justice and equality of opportunity

The COVID-19 pandemic has made the manifold social tensions within society apparent and has placed existing and new questions of justice prominently at the centre of public debate. Even if in the current phase it is still more a question of cushioning the economic and social costs of overcoming the crisis, at the same time more and more questions about the consideration of aspects of equal opportunity are emerging. This is not so much a question of a classic burden-sharing based on distributional effects, but rather a question of real conditions for realising future life opportunities, i. e. the active political shaping of access and possibilities. In recent years, the increasing commodification of social welfare has intensified the reduction of access and development opportunities within society (described as the “paternoster effect”¹³⁴) through an increased erosion of social advancement opportunities and a simultaneous expansion of the proportion of precarious living conditions. COVID-19 and the containment measures could further encourage this form of “precariousness” and exacerbate discrimination against women. The challenge for environmental

policy as a whole, but also with a look at the further development of strategic environmental communication, is thus that environmental policy must take on an even stronger social and socio-political orientation in order to find forward-looking answers to questions of distributive, opportunity and gender justice more than ever before (cf. 3.1).

Focus: democratisation and political participation

The coronavirus crisis has impressively demonstrated how important the question of a further democratisation of living conditions has become in Germany, Europe and across the world. This means that further scope for political participation and the reconciliation of social interests is essential, especially in view of the restrictions and far-reaching interventions caused by the acute “state of emergency”. In particular, should the realisation of environmental policy objectives lead to possible future disputes about restrictions of civil liberties or ethical-moral fundamental decisions, this would require expanded options for political participation and new forms of social consensus-building. In response to increasing social conflict, environmental policy needs to find a more constructive approach to further “democratisation of democracy”¹³⁵ so as to decisively counteract the regressive tendencies of “de-democratisation” that have been observed. In this respect, environmental policy requires an intensified (and above all renewed) ethical discourse on socio-political models in the face of global crises and new challenges to civilization, which go hand in hand with the establishment and realization of a culture of sustainability in the meaning of the 2030 Agenda. The coronavirus crisis has already clearly shown that there is still a long road to travel under possibly more stringent conditions.

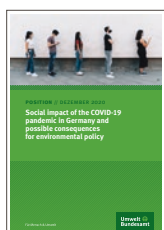
134 Cf.: Andreas Reckwitz: The end of illusions. Politics, economy and culture in late modern times. Edition Suhrkamp 2019 (4. Issue 2020)

135 Philip Manow: (De) democratization of Democracy. An Essay. Suhrkamp Edition 2020

Focus: communication of policy-related scientific findings

Crisis communication and societal responses to it provide an interesting lesson for environmental policy. For example, the communication of the cutbacks in business and private life has always been accompanied by appearances of virologists who once again summarize the scientific basis for the population. Similar appearances by climate researchers and environmental economists, for example, would also be conceivable for accompanying broadly effective

environmental policy measures in order to achieve greater acceptance among the population. It would be useful to analyse in detail the crisis communication of politics, the development of public perception of science during the crisis and the increasing spread of conspiracy theories to derive further practical advice also for the communication of environmental policy. Similarly, it is important for environmental policy not to lose the population to conspiracy theories and to develop a way of dealing with such tendencies to prevent their further spread.



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