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Re-embedding the economy in nature and society

Seven theses on the socio-ecological reorientation of the economy in times of Covid-19 and the climate crisis*

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Abstract

This paper reflects on the links between the current COVID-19-crisis and the climate and biodiversity crises. It argues that the present pandemic and non-sustainable development on a global scale have similar roots: from ignoring natural boundaries to denying scientific facts, from over-globalisation to a one-sided economic understanding of public services, from a systematic undervaluation of caring activities to consumerism and growth-fetishism. As result our societies became less resilient and more vulnerable over the last decades. Various policy proposals to overcome these undesirable developments are presented in the paper, including selective de-globalisation, regionalization, circular economy, global fairness, the strengthening of public goods and a strategy of democracy-driven "glocalisation".

Keywords: COVID-19-crisis, climate and biodiversity crises, common roots, re-embedding the economy in nature and society, global fairness, "glocalisation"

JEL categories: B52, B59, D62, F02, F41, F55, F60, G38, Q01, Q57, Q58

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1 Principles

In addition to the direct human suffering it causes, the current COVID-19 pandemic has been a painful revelation of unsustainable and unresilient structures and has exposed the global vulnerability of human societies.

There are seven principal hidden truths that have become or are becoming manifest as a result of the pandemic and its consequences:

Revelation I: Ignoring natural boundaries comes at a high price

The crisis has revealed that the systematic violation of natural boundaries by humankind entails considerable self-endangerment and risks. Whether it is the fact that, driven by the push for commercial exploitation and development, we have penetrated into the most remote natural areas previously largely untouched by humans, bringing us into contact with dangerous virus strains, or profit-driven factory farming, which not only promotes the rapid transmission of viruses, but also results in nitrate-contaminated groundwater, massive inputs of nitrogen into ecosystems and multi-resistant germs from the reckless use of antibiotics; we are always dealing with the overvaluation of economic benefits and the undestimation of health hazards and environmental risks (Worster 2020). The lack of respect for nature and its boundaries comes at a high price, not only in terms of the spread of dangerous viruses, but in terms of our fundamental capacity to thrive or even to survive. Human health and the health of the planet are inextricably intertwined.

Revelation II: A politics of deliberative precaution is more successful than one of populism and denialism

The crisis has revealed the depth of the irresponsibility of populist or opportunist denial of threats which robust science has identified as "dangerous" and "requiring urgent corrective action". This is a well-known phenomenon in relation to the results of climate research. Those states that have succeeded in slowing down the spread of the virus through science-based and well thought-out precautionary measures ("Flatten the curve!") have mostly managed to maintain medical services (in terms of hospitals, personnel, equipment and testing capacity) at a level above that required by actually or potentially infected individuals and to limit the number of deaths. In contrast, those countries whose political leaders initially played down the problem and did not take the scientific recommendations seriously have suffered huge numbers of deaths.

A focus on carefully thought-through precautionary measures, based on scientific knowledge and a realistic assessment of one's own capacities and limits, is politically more successful than wishful thinking in denial of the facts. According to opinion polls, political courage and decisiveness in the fight against COVID-19 are

more likely to be rewarded by the voters than political manoeuvring and an unwillingness to take action.

Revelation III: Taken to the extreme, the global division of labour and transport dependency both render us vulnerable

The crisis has revealed that the acceleration (hardly any stock being held, everything "just in time") and deepening of the global economic division of labour in the pursuit of cost savings (an exclusive focus on cost efficiency, total flexibility with regard to production locations and suppliers) has not enhanced the robustness of our economies, but rather diminished it. It has become apparent how dependent the long and elaborately interwoven global supply chains are on each and every link functioning quickly, smoothly and without disruption. When this is not the case - as in the COVID-19 crisis - then even the simplest products can be subject to actual or perceived bottlenecks that create massive problems (e.g. a shortage of respiratory masks or medicines) or trigger irrational consumer behaviour (hoarding).

If essential goods have to be brought in from far away via lengthy transport chains, or if their production locally has been discontinued for cost reasons, then their scarcity during a crisis is the price that is paid for economic globalisation. A high susceptibility to disruption, a lack of resilience and the externalisation of costs (e.g. passing the costs of environmental impacts such as noise and air pollution on to society at large) are core characteristics of hyper-globalised economies. In short: resilience and efficiency (understood purely in an abstract-economic way) are nowadays in conflict (Meadows 2020).

Revelation IV: Essential public services are more than economic efficiency

The crisis has revealed how important good public services are for the functioning of any community. Those who work to provide us with the basic essentials, such as drinking water, food, health, support and care, energy, transport, recycling, waste disposal and communications, are particularly important for the system as a whole. To subject these vital sectors of society to a narrow business management calculus and to put them under permanent pressure to rationalise and to compete is now seen by many citizens as a serious mistake - and rightly so.

Where infrastructures have been systematically denationalised, privatised and deregulated, their capacity to serve society as a whole is diminished, especially for low-income groups dependent on access to public services. This weakening makes itself especially felt in crises such as the current one.

Revelation V: Care work and empathy are fundamental elements of society

The crisis has revealed how essential the small social circles are - families, couples, friendship circles, neighbourhoods and community groups - for what is commonly known as care work: from childcare and education to care for the elderly, from shopping to preparing food, from the maintenance and repair of useful appliances to gardening. The importance of these predominantly non-market activities has become particularly apparent in the crisis, not least because monetary transactions and consumption opportunities in general were for a long time severely restricted by precautionary measures to contain the virus.

At the same time, however, it became apparent during the crisis that the lion's share of unpaid or poorly paid care work still rests on female shoulders, while regular gainful employment is still a male domain, especially when it is well paid. Worse still, the genderised definition of women's roles, which was thought to have been overcome, is experiencing a rapid and worrying renaissance. There are good indications that this experience will lead to intensive debates on issues of gender justice, the distribution and rebalancing of gainful employment and care work, fulfilment through work (satisfying work instead of "alienated work"), the reduction of working hours and an unconditional basic income. It is now time to take stock of and reorganise our many different worlds of work. Digitalisation will play an important role in this process, from home offices to video conferencing. But it also raises new questions itself which require political regulation and direction, from the enormous energy and resource consumption of the Internet to the "24/7 availability" that some employers now expect of their employees, from data protection violations to the vast power of the digital monopolies.

Revelation VI: The experience of “sufficiency” as a possible resource for social change

The crisis has revealed that restrictions can be accepted by many people provided they are justified, well communicated and applied fairly, with no privileges for individual interest groups. Of course, nobody was happy about the restrictions brought in by the COVID-19 crisis, but the shared experience of deceleration and decommercialisation has raised the question among considerable numbers of people whether there really is no alternative to the hamster wheel of consumer society. For many, the fact that for the first time it was possible to breathe fully and deeply on the streets, or that the sky was calm, was a surprising and pleasant experience.

It is not clear whether the enforced experience of sufficiency - a reduction in formal paid work, less shopping, less mobility, fewer holiday trips - will lead the majority of the population to a recognition of the benefits of moderation and the pleasures that are near to hand, or whether it will instead reinforce consumerism and

hypermobility as a counter-reaction. However, there are certainly signs that people's experience during the crisis of concentrating on the essentials, of self-care, empathy, neighbourliness, appreciation of nature, and "resonance" with one's environment, or "syntony", will continue to bear fruit in the future if the political parameters are set correctly and there is no return to an all-enveloping marketisation of social life.

Revelation VII: We live in one world, but we act as if we didn't know it

The crisis has revealed that, at least with regard to major global risks, the human race has long been living in the "One World" that the international solidarity movement speaks of as a guiding principle. Anyone can potentially be infected by a virus, whether in China or the United States, in Brazil or Europe. At the same time, however, it has become clear that not only does the actual impact of the virus vary greatly between countries, for example according to social structure, age profile or population density, but also the political response to it.

It is striking that it was not global or supranational institutions such as the World Health Organization or the *European Union* which took the lead on virus containment, but nation states and subnational entities with their existing and historically developed institutional capabilities. This was both understandable and effective in the light of the need for the rapid implementation of the necessary measures, but it also had knock-on effects that may occupy us for some time to come. These include, above all, border closures, the pursuit of national self-interest in procuring necessary medical supplies, and a refusal to show solidarity with states that are severely affected and have limited capacity. In any event, it is clear that the global nature of the problem has done little to further a deliberative and internationalist approach in the behaviour of states.

Certainly, the idea of "global governance" has not been strengthened by the COVID-19 crisis - quite the contrary. But what should follow from this, given that it has at the same time become abundantly clear that pandemics - just like climate change and biodiversity loss - are global problems that require global responses?

2 COVID-19 and the ecological crisis: do they have roots in common?

The trends described above have been particularly exposed by the COVID-19 crisis, and are now visible as if under a magnifying glass. But they are anything but new; in fact, they have already been described and intensely debated many times. Most of these trends have been familiar for fifty years, and especially in the context of the ecological debate.

In 1972, the report to the *Club of Rome* on the "Limits to Growth" showed with ruthless clarity that the destruction of nature, environmental pollution, overexploitation of resources and population growth could lead to a comprehensive collapse of global society if no countermeasures were taken. The report had a dual character: it was both a doomsday scenario and an exhortation to action, in that it presented the devastating consequences of "business as usual" in a scientifically based and meticulously detailed way and at the same time described ways out of the danger: from alternative policies on energy, raw materials, environmental and nature conservation to appropriately adapted forms of land use and the stabilisation of the world population.

However, almost all the political leaders, in the western industrialised countries, in the "Eastern bloc" still in existence at the time, and in the so-called emerging and developing countries of the southern hemisphere, rejected the science-based scenarios for the consequences of unlimited growth as pessimistic and anti-progress, and ultimately simply ignored the scientific recommendations.

In 1992, at the *Conference on Environment and Development* in Rio de Janeiro, it was agreed that biodiversity conservation, protection of the atmosphere and sustainable development in both the northern and southern hemispheres should be pursued, on a basis of global equity, because humanity would otherwise face a bleak future. Although the "spirit of Rio" was not without internal contradictions, above all in its continued and unquestioned advocacy of economic growth as a universal solution to the problems, the trend was nevertheless clear: a profound structural change was needed in order to significantly reduce human pressures on natural resources and to enable us to leave to coming generations a planet worth living on. The general message was that the industrialised world had to take the lead in this process, as it bore most of the responsibility for the ecological crisis on account of its high consumption of resources.

However, because the early 1990s, after the end of the systemic competition of the Cold War, also saw the final breakthrough of neoliberal thinking and policies, the Rio agenda was soon marginalised, despite continuing rhetoric around sustainability. Trade liberalisation, deregulation, the promotion of competition and

the "lean state" were henceforth the topics that dominated the agenda in many countries.

In 2015, the international community adopted two documents that were supposed to finally make climate protection and sustainability a matter of course: the United Nations' Sustainable Development Goals (SDG) and the Paris Climate Agreement. Here, too, ambiguities can be found, and questioning permanent economic growth once again remained the great taboo. Nevertheless, both agreements offer a good basis in principle for tackling the essential socio-ecological challenges: fundamental changes in society, politics and the economy, in social practice and individual lifestyles, in production and consumption, technologies and infrastructures, laws and institutions.

However, all these studies, conferences, declarations and conventions have not led so far to a trend reversal in the dysfunctional relationship between man and nature. Leaving aside a few partial successes, for example the protection of the atmospheric ozone layer, the opposite is unfortunately the case: the emission of man-made greenhouse gases has increased continuously, as have the destruction of natural habitats and biological diversity, the consumption of non-renewable resources, desertification and the degradation of soils, the pollution of the oceans and the accumulating mountains of waste.

3 Responsibility and failure: human shortcomings and systemic flaws

There are many different explanations offered as to why so many declarations of intent to create a sustainable and better world have so far yielded so little.

One example is the grand theory of the "Anthropocene", which sees humanity as the central driving force behind geological, atmospheric and biological processes since the beginning of the industrial era some two centuries ago. These formative processes have had predominantly destructive consequences for natural systems up until now, because human beings have not yet learned to organise their metabolic interactions with nature in a rational way such that something enduringly sustainable results. In the future, it will be a matter of overcoming this deficit in consciousness and of actively using the power we have acqured to shape the world in the interests of sustainability Steffen et. al 2007).

Others do not believe that the "Anthropocene" concept is wrong in itself, but rather that it has insufficient explanatory power. They prefer to speak of the "Capitalocene", or the geological era of money. It is not man "per se" who is responsible for the exploitation and destruction of nature, but a particular form of society, namely capitalism and its essential features - the accumulation and growth imperatives, the fetishisation of private property, the appropriation of added value, the exploitation of humans and nature, and the alienation of humans from

themselves, from society, the production process and nature. Only when capitalism has been transcended, or at least contained, can an appropriate way of dealing with the metabolic processes between society and nature begin, including sustainable development (Altvater 2018).

Ecologically minded supporters of market economy systems, on the other hand, see continuing environmental damage primarily as the result of a price system that does not tell the "ecological truth" and does not properly reflect scarcities. They prioritise the internalisation of externalities, such as damage done to the climate, the environment or health, in market pricing. Such advocates of a "green market economy" are not opposed to economic efficiency, growth and competition, but believe that the innovative dynamism of the market system can be harnessed and channelled towards a sustainable (e.g. carbon-neutral) future through either price-based (e.g. CO_2 taxes) or quantitative instruments (e.g. tradable emission rights for CO_2). For this school of thought, the primary political task is the creation of a market economy framework that provides incentives for ecological production and consumption (Edenhofer/Schmidt 2018).

4 The end of economism

In pluralistic societies such as ours, there will be arguments about whether it is "the people" and their lack of awareness which are to blame for the ecological-social crisis, or whether the fault lies rather with "capitalism" and its systemic features, or with faulty incentive structures in the market economy. All the more so because other interpretive models are also discussed, such as unfair global economic relations, the delayed or long-term consequences of colonialism, geopolitical power struggles or the ongoing arms build-up, which is preventing a "peace dividend" that could be used to finance sustainable development worldwide.

But one thing is already apparent: in many countries, the fundamental political perception will not be the same as before, given the experience of both the COVID-19 crisis and the worsening climate crisis. It is safe to assume that the marketisation of more and more spheres of society, from health care and education to the infrastructures for water supply, energy, transport, waste management and recycling and communication, will meet with greater resistance in future.

The view that unbridled competition, a ubiquitous focus on cost (reduction), the acceleration and deepening of the global division of labour, systematic denationalisation and maximum deregulation are the economic policy keys to increasing prosperity will come under increasing pressure, much more so than was the case after the financial crisis.

It may be premature to speak of the "Corona twilight of neoliberalism", or to describe the COVID-19 crisis as the "last nail in the coffin" of financial market-driven capitalism. But capitalism as we know it will be replaced by something new,

the shape of which we cannot as yet quite imagine. But that is precisely what defines the new.…

All those who campaign for sustainability and ecology, global justice and a stable international peace must now engage in the public debate with robust arguments, robust societal blueprints and robust implementation strategies. In this, they should be guided by the following insights:

- although the COVID-19 crisis on the one hand and the climate, biodiversity and sustainability crises on the other exhibit differences, e.g. with regard to their time frames and the vehemence of their direct consequences, the roots of the two crises are firmly interwoven and range from a disregard for nature, via denialism, to overweening economism;
- crises always also offer opportunities to abandon well-trodden paths, which for politics and all of us now means above all not falling into an attitude that will only accept a quick "back to the old normality" and that fails to take advantage of the potential for reorientation;
- in the process of socio-ecological transformation, all of these will be needed: robust and decisive policies, a capable and effective state, a pluralistic economy that is ready to transition, and above all a vibrant civil society;
- the process of reorienting our economy involves not only technical efficiency strategies, but also lifestyles based on the principle of sufficiency, not only de-carbonisation and de-materialisation, but also and especially re-naturalisation and re-cultivation (Loske 2020).

5 Recommendations

In what follows, seven recommendations will be presented, in the form of theses, each accompanied by concrete proposals for a politics of sustainability. The theses relate chiefly to the economic dimension of the transition process, not because of any assumption of a "primacy of the economy", but because the need for transformation is greatest in this area of society.

Most of the proposals can be implemented immediately, though in some cases only in incremental steps which must be evaluated in an accompanying public process and modified if necessary. Above all, targeted, swift and consistent action is needed now, in order to exploit the current window of opportunity for a successful socio-ecological transition. The "kairos" is here - the opportune moment to make the right decisions. To fail to seize it now would be unforgivable.

Thesis I: The economy must be re-embedded in nature and society. Just as people are more than just a human resource, nature is more than just a natural resource!

The way we talk about the economy and about pluralist economic systems has to change in future. Reducing people and nature to human and natural capital, as predominates in the neoliberal world view, will have to be fundamentally questioned. The same applies to the dogmatic idealisation of self-interest, efficiency and competition as the supposedly highest forms of individual and social rationality (Ötsch 2019). Equally out of date is the assumption cultivated in mainstream economics that a continuous deepening and acceleration of the global division of labour, with ever longer and more complex supply chains, is good for everyone.

Sustainability and public spiritedness will be at the heart of the new economy. It will respect natural boundaries and embed production and consumption processes as far as possible in natural cycles. And in it, an ongoing democratic process of social reform will constantly seek to strike a balance between self-interest and the common good, competition and cooperation, freedom and shared responsibility, innovation and stability.

The objection will of course be raised that such a world is mere wishful thinking and would shatter on contact with reality. After all, Real Socialism had already shown that there were in reality no alternatives to the prevailing market economy model. And who would dispute that a socio-ecological transition will be difficult and will involve conflict? But the true illusion is the belief that continuing ecological overexploitation and increasing social inequality would have no consequences for our economic and social model. Being realistic today means being prepared to embark on fundamental change. The ideology of "business as usual" betrays not just a lack of imagination. It is in fact a dangerous denial of reality and would ultimately end not only in serfdom but also in the successive destruction of the national economies.

If politics is oriented towards the goal of re-embedding the economy in nature and society, this will translate into a great variety of concrete measures. They include a re-orientation of economic education in schools, universities, businesses and adult education institutions, new priorities in basic and applied research, climate-friendly transition strategies for energy supply, industry, transport and buildings as well as nature-conserving forms of agriculture and forestry, the pursuit of resource-conserving digitalisation paths and sustainability-oriented regulation of the financial sector.

All policy fields need a sustainability check. Any activity that has no sustainable future should not take place anymore, or at least should not receive political support or public funding. Two specific measures in particular would underline the credibility of the fundamental socio-ecological orientation of economic activity in

Germany, namely: enshrining sustainability in the constitution as a fundamental right; and revising and updating the 1967 "Stability and Growth Act", which is often referred to as the Basic Law of Economic Policy, into a "Stability and Sustainability Act", with the explicit objectives of resilience, compatibility with nature, a fair distribution of work for all while maximising distributive justice, a system of co-determination geared towards shared responsibility, price stability and an appropriate balance between imports and exports. This would constitute an appropriate hexagonal target for contemporary economic policy.

Thesis II: The economy must be de-globalised, re-regionalised and “decelerated”. The international division of labour must be brought back down to a reasonable level and the regional solar and circular economy must be promoted!

The reduction and deceleration of efficiency-driven, cost-oriented and extremely transport-intensive globalisation is a political task of the first order. Three areas in particular need to be addressed: transport and traffic policy, energy policy, and agricultural and food policy. Rapid decisions are now both necessary and possible in all three areas:

- Global air and shipping traffic must bear their external costs in full through CO_2 taxes, because unrealistically low transport prices today effectively act like subsidies for excessive globalisation and hypertourism. At the same time, expansionary infrastructure policy, based on the continuous extension and development of ports and airports, motorways and waterways, must be ended. These two measures - realistic transport prices and a sustainable infrastructure policy - are at the same time strong incentives for regionalising production processes, and for a gradual repatriation of outsourced value-adding activities (“reshoring”).

- Despite the gradual growth of renewable energies, a country like Germany today still meets around 70 percent of its total energy requirements through imports of oil, natural gas and coal. These fossil fuels are not only especially harmful to the climate but are also largely imported from unstable regions of the world. Such dependence creates vulnerability. This vulnerability can be reduced above all by saving energy and further expanding renewable energy sources. This is not only imperative for climate policy reasons and technically feasible, but also makes sense from an economic point of view. In fact, the dual strategy of energy conservation plus renewables equates to the substitution of imports by domestic value-creating activities in industry, trade and agriculture. Where energy imports may still be necessary in the future, for example in the case of synthetic gases and fuels, "clean" supply chains must be ensured by appropriate legislation. The goal of climate-friendly energy policy must play a key role in all the economic stimulus packages that are now being considered.

- The global agricultural system is increasingly a perverse system. Germany, for example, is contributing to the destruction of rainforests, soil degradation and violent conflicts between large agricultural producers and local populations in tropical regions of South America through large imports of animal feed. At the same time, intensive domestic livestock farming leads to groundwater pollution, nitrogen overload, biotope destruction and species loss as well as the risk of spreading viruses. The fact that a densely populated and comparatively small country like Germany is today among the world's leading exporters of products such as pork and cheese can be regarded as a success only from a narrowly economic perspective. Systematic and consistent political measures must now be taken quickly in order to transform today's "externalisation agriculture" into an agriculture which is ecologically and socially embedded, with regional value creation and a focus on animal welfare. This includes a fundamental reorientation of the European Common Agricultural Policy towards socio-ecological objectives before the end of this year, more stringent nature conservation and animal welfare requirements on agriculture, the introduction of taxes on agricultural inputs such as mineral nitrogen fertilisers and pesticides, import restrictions on non-sustainably cultivated animal feed and, above all, a targeted support strategy for regional agriculture and regional marketing. An agricultural system on this model, one that produces healthy food and serves the common good, has a justified claim to social and political support.

Thesis III: The alternative to economic globalisation is not re-nationalisation, but a cosmopolitan “glocalisation”. The new models are based on the strengthening of local government, cooperation between local communities, and economies linked together in cellular networks!

Proponents of de-globalisation and re-regionalisation are sometimes accused of wanting to climb back into the familiar bed of nation-state sovereignty, and ultimately of capitulating in the face of the complexity of modern economies and societies. This is nonsense. The alternative to economically driven globalisation is certainly not a policy of national isolation, but rather an open-minded “glocalisation”. This term, a made-up word combining (political-cultural) globalisation and (economic-technical) localisation, is intended to express the idea that although increased international cooperation is undoubtedly needed to make the world a better place, the localisation (or better, decentralisation) of many economic processes also constitutes part of the answer to the challenges of sustainable development. The old slogan of the ecology movement, "think globally, act locally", has lost none of its relevance.

Strengthening the powers of cities and regions and improving intermunicipal and interregional cooperation are important political imperatives of the day. In the economic stimulus and recovery programmes now being launched, a large

proportion of the funds should quickly be channelled into the development of sustainable local infrastructure, into urban parks and the greening of buildings, urban gardens, water conservation technologies, solar energy supply, the energy-efficient retrofitting of buildings and neighbourhoods, the expansion of cycle paths, local public transport, intelligent city logistics, electromobility and car sharing, and digital access for all. Mutual learning between the cities and regions of the world can improve this process and at the same time promote intercultural understanding.

The concept of glocalisation can also be spelled out precisely in terms of economic policy. While today's globalised economy is characterised not only by efficiency gains and the diversity of traded goods but also by a high degree of vulnerability and transport intensity and by the enormous power of large companies and a few states, a glocalised economy is characterised by structures which are cellular but networked via nodes. Just as cells are independent, self-sustaining and semi-permeable systems which are part of a larger organism, in the same way strong regional economies composed mainly of small and medium-sized enterprises can successfully participate in global trade, albeit a global trade that is significantly smaller in terms of the volume of goods physically transported. A global economic system is all the more stable and resilient the more local economies are involved. The aim is not self-sufficiency and isolation, but greater autonomy and a sensible balance between external and domestic supply.

Economic policy can make important contributions to the development of a glocalised economy, from the regulatory policy framework to foreign trade, from fiscal policy to regional economic development. This starts with simple things like a complete ban on the trade in wild animals and time limits on the transportation of farm animals, continues via orienting financial support towards the goal of increasing intra-regional production networks and a complete end to environmentally harmful energy and transport subsidies, and extends to fair and sustainable trade agreements and laws governing supply chains that guarantee compliance with human rights and labour standards.

Thesis IV: Public infrastructures belong under public control. Public goods should be managed collectively!

Public infrastructures for health, education, water, energy, transport, sewage and waste management and communications are so essential to society that they must be treated differently from the production of motor vehicles or the operation of department stores. This has not always been the case in the past. Instead, many infrastructures were subject to a narrow understanding of business efficiency and to increasing rationalisation and competitive pressure. This has led in many areas to the neglect of the wider interests of society, not least ecological interests (Loske/Schaeffer 2005).

Of course, the provision of public goods by public infrastructure operators must also be efficiently managed and costs must be kept under control, but this must not be reduced to the aspect of the returns that can be made by individual operators. When assessing the performance of infrastructure provision, the focus must be on its "social returns", the benefits to the population at large, including and especially to those who depend on access to public goods.

As a rule, public infrastructures should be in the public sector, and mainly in the hands of local authorities. Infrastructure provision by third parties, whether these are under cooperative ownership or private companies under public supervision, can complement this structure. If policy is guided by these basic tenets, the steps now needed for the socio-ecological transition are almost self-evident.

- Transport policy in the cities and regions is now primarily concerned with rapidly expanding the available public space for active forms of mobility (walking and cycling), making local public transport sufficiently attractive that more people switch over to it while at the same time complying with distancing requirements, creating the public infrastructure for electromobility (charging stations) and car sharing, and reducing the space available to motorised private transport on roads and for parking. Heavy SUVs, for as long as such dinosaurs still exist, should as far as possible be banished from public parking spaces, by means of measures such as parking bans or very high parking fees.

- In public housing policy, the cities and regions can now quickly incorporate socio-ecological priorities by encouraging their housing associations to make greater use of energy-efficient retrofitting of buildings and renewable energies, and by promoting socially inclusive neighbourhood development to enhance public spaces. Cooperative housing models should also become an important element of public housing support programmes.

- Digital policy can improve public services, especially for rural areas, by ensuring effective access to the Internet. This will also benefit rural areas in terms of their relative economic power within the region, their attractiveness as places to live and work (home office) and their networking potential in the glocalised economy.

It should be obvious that transport, housing, energy and digitalisation at the local level should be given high priority in the distribution of public funds under the forthcoming economic stimulus and restructuring programmes.

Thesis V: Regular gainful employment and care work must be rebalanced and fairly distributed. Sufficiency, reduced working hours and elements of a basic income are important building blocks of the new economy!

The direct experience of crisis that people around the world have had or are still having in the COVID-19 pandemic may prove to be an important resource for a sustainable future and a new economy, in both negative and positive ways. This certainly includes the experience of fear for one's loved ones and for one's own life, for one' s job or business, because fear is of course a very powerful stimulus. However, it also - and perhaps above all - includes the experience of togetherness, a sense of community and closeness, as well as the involuntary experience of suddenly finding oneself with much more time and fewer constraints on that time from work, consumption or travel. Whether and how this experience of enforced sufficiency can contribute to more sustainable lifestyles in the future, to a sufficiency that to some extent at least is consciously chosen, is not only a question of personal taste, but also an eminently socio-political challenge.

One of the positive aspects of the last weeks and months is how our appreciation of those who keep society going through their work, whether in hospitals, care homes or supermarkets, in public transport, in the water supply or waste disposal systems, has grown. Whereas until recently their work was hardly noticed, now everyone is talking about the "everyday heroes". Above all, the central role of care work, which is predominantly carried out by women, is now becoming clear. But it is important that the warm words are now quickly translated into better salaries and working conditions for the "heroines", and conversely that salaries in the management positions shrink to a healthier level.

All in all, it can be stated with a high degree of confidence that both forms of care work, paid and (financially) unpaid or only partially paid, are also of great importance for sustainability strategies. Above all, they remove commercial growth pressure from the economic system. Shorter working hours and elements of a basic income can help to increase people's time sovereignty and thus create the conditions for a healthy balance between working time and personal time (Freiser et al. 2020) The crisis has also enabled us to see that meaningful and satisfying work can unleash powerful forces when it matters. And we also recognise that meaningless "bullshit jobs" make people ill.

Questions of working hours, remuneration, working conditions and gender equality in the workplace are social issues that are largely regulated in this country by the social partners, and only partly by the state. But politics can set the regulatory framework and thus create the preconditions that would enable the way we work to contribute to sustainable development. Re-designing the world of work must therefore be an integral part of any future sustainability strategy.

An unconditional basic income, or at least elements leading in that direction, must therefore now be put on the political agenda. When people's fear of social decline is taken away or reduced, the freedom of society as a whole increases, and the compulsion to work decreases along with the pressure for economic growth.

Thesis VI: Re-thinking the economy from its ultimate purposes. Sustainability and the common good must be the lodestars for an economy fit for the future!

Among many members of the social movements focused on social ecology, fair globalisation, critiquing economic growth and regulating the financial markets, "the economy" is often seen as the "other", even as hostile to society. Such an attitude is understandable given their empirical experience of many industrial corporations and trade associations. It is equally understandable that they do not take at face value their invocations of green growth and green capitalism and view them with great suspicion.

But undifferentiated business-bashing is itself too simplistic. As a society we cannot afford it. Successful economic activity is too central to the supply of the vital necessities and the functioning of the community. But it is also clear that the economy will and must change, it must become more ecological and social - and it must take responsibility for the consequences of the activities it involves. The more people see it as part of a task that can be described as participatory social design, a task that calls for public spiritedness, the better it is for everyone, including for most businesses themselves.

- In the short term, it is now very important that the funding for economic stimulus and recovery programmes is tied to clear socio-ecological criteria, and that no public money is channelled into unsustainable economic activities or into the longer-term preservation of fundamentally unsustainable structures. Tying public funding to socio-ecological conditions is not illegitimate interference by the state into the world of business but imperative for sustainable and democratically legitimised structural change. Public expenditure for such environmentally dubious purposes as purchase premiums for cars, or new motorways as economic stimulus packages for the construction industry, must be avoided.

- Once the current crisis is over, a realistic way of measuring prosperity must be found as soon as possible. Gross domestic product (GDP) is not capable of realistically measuring social prosperity because it only covers the economic dimension (and even that not realistically) while leaving out aspects like the quality of the environment, the quality of education, distributive justice or participation and inclusion. Alternative indicators such as the National Welfare Index should be used instead of GDP as a guide for economic policy.

- Another requirement is an extension to the corporate accounting system. In addition to the classic company balance sheet and profit and loss account, a public interest balance sheet should be drawn up which provides information on the company's success or failure with regard to ecological sustainability, social fairness towards third parties and internal co-determination. The worse a company's public interest balance sheet is, the greater should be the fiscal penalties it has to accept.

- Economic policy in general must no longer be focused one-sidedly on the needs of large corporations, but must increasingly put the needs of small and medium-sized partnerships and corporations, companies owned by foundations, social enterprises, cooperatives and public enterprises at its core. Property must be re-conceived and redeveloped as responsible ownership, for which the political world must create a new and reliable legal framework. Proposals for this are already on the table.[1]

- Wherever possible, economic policy must also promote socio-ecological innovation and pluralistic economic models, such as the economy of the common good, post-growth economics, the commons and the cooperative movement. These are treasures that can develop into germ cells for a resilient and sustainable economy.[2]

- A contemporary economics curriculum will understand economics as a social science and will see its task above all as promoting an orientation towards the common good, creating spaces for experience, and developing, together with the students, inviting narratives of sustainable economic activity. (Graupe 2020)

- The regulation of financial markets and their enlistment for the goal of economic and social resilience is crucial for the success of sustainable and public welfare-oriented economic activity. This cannot be limited to turning the financial markets into alarm systems to warn against environmentally risky assets and investments. The extreme short-term orientation and global search for returns in the financial markets themselves is a problem that has to be tackled. To this end, instruments to curb highly speculative financial transactions, such as a financial transactions tax, must be introduced quickly.

1 https://www.stiftung-verantwortungseigentum.de/
2 https://www.netzwerk-oekonomischer-wandel.org/ueber-now/

Thesis VII: Change requires forethought, fairness and participation. The relationship between state, civil society and markets has to be readjusted!

The success of the socio-ecological transition depends not only on a readiness for action in the political sphere and a readiness for transformation in the economic sphere, but also and especially on vigilance on the part of civil society.

The political system must ensure that the process of change towards a sustainable society can take place in a precautionary and fair way, and that this principle applies domestically, internationally and intergenerationally. They must justify, communicate and enforce the goals of the state, even in the face of resistance. They are responsible for setting clear rules for the economy which will prevent the concentration of power and the emergence of overmighty companies, tax evasion and the externalisation of costs onto society. Without a fundamental primacy of politics over particular interests, and a new intergenerational contract, this will not be possible.

At the same time, however, civil liberties, including economic liberties, are a precious asset that should only be politically curtailed if there are good reasons for doing so. It is therefore not a question of denying companies their specific purpose and character and seeing them only as the passive targets of policy. They are also actors in the socio-ecological transition, subjects and social systems in equal measure. At the same time, companies themselves need a considered public purpose, one in which not only their own industry interests have a place, but also the goal of the greater public good.

In future, it will also be necessary to look again more closely for other possible pathways besides those of the state and the market. Because, important as it is to push back against the neo-liberal Zeitgeist of an all-encompassing marketisation, it would be entirely wrong to gamble everything on the "strong state" and to put ourselves in its supposedly benevolent paternal hands. As history teaches us, the state, too, has a strong tendency to abuse its powers, as exemplified by the current dismantling of the data protection safeguards or by recent initiatives to introduce immunity certificates.

Neither blind faith in the market nor an excessively optimistic assessment of the powers of government should become the hallmark of the socio-ecological transition, but rather a capacity to shape society through a deliberative, accountable and collective process. The role of civil society, and its evolution into a pro-active, participatory civil society based on shared responsibility, cannot be overstated. We are facing a test of our maturity as a society, and we should do everything we can to ensure that we pass it.

6 Summary

The ongoing COVID-19 crisis has exposed problematic developments in the economy and society that were already becoming visible as a result of the climate and nature crisis. The following are some of the most important insights that can be drawn:

The systematic violation of natural boundaries is not without consequences for humanity. The idea that nature, for us, is first and foremost a source of raw materials and a dumping ground is a tragic misconception with destructive consequences.

The systematic disregard of well-documented scientific facts and recommendations is a major contributory factor in intensifying global risks such as climate change, biodiversity loss and the spread of pandemics. The denial of reality as practised by many protagonists of the status quo and by populists also has destructive consequences.

The systematic deepening and acceleration of the global economic division of labour, with its high transport intensity and high consumption of energy and resources, has not only destroyed regional economic flows, but has also made societies more vulnerable and dependent. Resilience, i.e. a society's capacity to deal with serious crises using its own resources and competences, has declined significantly.

The systematic organisation of essential public services and infrastructure provision according to primarily economic criteria such as cost efficiency and competitiveness means that the delivery of social benefits is compromised in such important areas as health, energy, transport, water supply, recycling and waste management, education and digitalisation. The consequences are especially apparent in times of crisis.

The systematic organisation of society around gainful employment, consumption and growth has contributed to the fact that care work, which is usually not paid at all or poorly paid, has largely disappeared from the political agenda. This underlying orientation consumes not only "natural capital", but also "social capital", i.e. social cohesion. The COVID-19 crisis has made it clear how important care work is for the functioning of the community, and that it must be valued more highly.

The systematic orientation of business and politics towards technical *efficiency* solutions to major societal challenges such as climate change has almost made us forget the great potential of "*sufficiency*", i.e. of lifestyles based on moderation, non-consumption and non-growth. The crisis has shown that sufficiency is possible - at least temporarily - and that many social practices such as do-it-yourself, sharing, repairing, neighbourhood support and subsistence are still alive and well. Whether this experience can be translated into long-term behavioural change depends not least on the political framework.

Although the systematic globalisation of the economy has led to global challenges such as global warming, the widening of income disparities and increased migration, it has not yet led to the creation of political structures capable of action at the global level. In the COVID-19 crisis, there has hardly been any "global governance" so far, but there has been a renaissance in action at the national and subnational levels.

On the basis of this initial analysis, the paper presented here first of all shows that many of the problematic developments which have now become evident have been under intensive discussion for half a century already in the ecology and sustainability debate. A wide range of policy concepts and strategies for overcoming the manifest problems have also been put forward there. The discussions on the "limits to growth" in the 1970s, the linking of environmental and development goals in the 1990s, the Paris Agreement on Climate Change and the Sustainable Development Goals of 2015 are all briefly reviewed here and placed in the broader context of the "Anthropocene".

Based on the analysis of the current COVID-19 crisis, its links to the climate and biodiversity crisis and its historical significance, a series of seven proposals or bundles of proposals is then put forward showing what needs to be done now. Specifically, these are:

Sustainability must take the place of economism. Sustainability is not a sectoral field of policy, but a cross-cutting task relevant not only to energy, transport and agricultural policy but also to economic, financial and foreign policy. The economy must be more strongly re-embedded in social relations and natural cycles. Sustainability must be given constitutional status as a fundamental right and obligation!

The economy must be de-globalised, re-regionalised and “decelerated”, i.e. slowed down and simplified. The international division of labour must be brought back down to a sensible level and the solar recycling economy in the regions must be strengthened. Global air and container traffic must be made to bear their real ecological costs by means of suitable instruments. Our continuing high dependence on fossil energy imports must be reduced by expanding renewable energies and, above all, by intelligent energy conservation. The ecologically devastating agricultural system must be restructured to favour small-scale farming through reduced animal feed imports, site-appropriate land use, species-appropriate animal husbandry and radical reform of European agricultural policy.

The alternative to economic globalisation is certainly not re-nationalisation, but cosmopolitan “glocalisation”. Decentralised and localised economic structures are an important part of the answer to global challenges such as climate and biodiversity protection. Strengthening local government, co-operation between local authorities and cellular networked economies are the new models. Wherever the international exchange of goods and services will continue to take place in

future, legislation governing supply chains and fair trade agreements must ensure that sustainability requirements are met.

Public infrastructures for health, education, water, energy, transport, sewage and waste management and communications are so essential to society that they must be treated differently from the production of motor vehicles or the operation of department stores. It is the responsibility of policymakers to create a regulatory framework which ensures that infrastructures (especially at the local level) will in future help to promote and support sustainability and the common good. The pressure to privatise local infrastructures must be reduced by means of appropriate legislation and funding for local authorities.

Regular gainful employment and care work must be rebalanced and fairly distributed. Sufficiency, reduced working hours and elements of a basic income are important building blocks of the new economy. Although questions of working hours, remuneration, working conditions and gender equality in the workplace are social issues which are largely regulated in this country by the social partners, and only partly by the state, politics can set the regulatory framework and thus create the preconditions that would enable the way we work to contribute to sustainable development.

In future, the economy must be re-conceived much more strongly from its ultimate purposes, and measured against sustainability and public welfare goals. Policymakers must promote and support this process through new forms of accountable ownership, new ways of measuring social welfare, new forms of corporate accounting, and new paradigms for the teaching of economics.

Over the past three decades, neoliberal thinking and neoliberal policies have led to the absolute primacy of competition, economic efficiency, de-regulation and de-nationalisation. The outcome of this policy orientation has been many winners, but also very many losers. In any event, the consequences for the global environment and global justice have been negative on many fronts. That is why market fundamentalism belongs on the rubbish heap of history. It should not, of course, be replaced by a naive optimism regarding the possibilities of politics and a new or rekindled faith in the state. What is needed now are courageous policies, a state with the capacity for decisive action, companies that are willing and able to embark on the transition, and above all a vigilant civil society. What is needed now is the evolution of our civil society into a society of pro-active participation and responsibility.

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