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On the Edge of the Sixth Mass Extinction: How Can We Prevent It?

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Climate change is currently regarded as the most serious existential threat. Many experts believe that global extinction is equally dangerous. Should we leave half of our planet to the wilderness?

The climate crisis is often considered to be the main existential threat humankind is facing in the 21st century. Recently, it has become a more visible topic – not only due to mass media but also because of its direct impact on people's lives, even in Central Europe. Nowadays, not seeing the climate crisis is only possible for those who intentionally ignore it – especially for ideological reasons. Nevertheless, the term "climate crisis" does not fully capture the pathological and self-destructive relationship that modern industrial civilisation has to other life on our planet.

Global heating of the planet is the most visible outcome of a relationship with nature that sees it as merely a resource for industrialisation. What is less visible globally is what scientists call the "sixth mass extinction", or the "biodiversity crisis". In fact, many species die out without ever being noticed by humans. Biodiversity means the rich diversity of biological species, and it is vital for the stability of ecosystems and therefore the entire life.

Mass extinction is currently defined as the loss of at least three-quarters of all biological species within less than three million years (a short geological time). While the past five mass extinctions were due to natural causes, the one occurring now has been caused by unsustainable human activity. For this reason, some prefer to talk about the "mass extermination" of species by humanity.

The population of biological life is falling dramatically. More than 500 terrestrial vertebrate species are almost extinct and we will probably lose them within the next 10 years. Moreover, one in five reptile species and one in eight bird species are in danger of extinction as well as 40 per cent of plant species. In the last 50 years, the world's wildlife population decreased by 69 per cent.

We could all go extinct

Concern for biodiversity should not be a matter relegated to ecologists and nature protection activists alone. Mass extinction may have dramatic impacts on all of us.

According to the Swiss Re organisation's estimates, more than half of the global GDP is dependent on high-functioning biodiversity and ecosystem services. At the same time, many world regions rely on ecosystems that filter water – these are mainly wetlands and forests that are very vulnerable to

biodiversity loss. Another threat related to mass extinction is an increased frequency of pandemics.

Food systems also heavily depend on biodiversity which means food security hangs in the balance as ecosystems disappear. For example, the collapse of insect populations (especially pollinators) and ecosystems dependent on them could trigger a food crisis. The Food and Agriculture Organization of the United Nations (FAO) published a warning that the decline in bees poses a serious threat to global food security. Insects pollinate more than three-quarters of crops in our agriculture and more than 80 per cent of wild plants. Up to 95 per cent of our food comes from the land, but approximately 40 per cent of the global soil is heavily degraded by unsustainable farming practices, according to UN findings. The food crisis could deepen as significant micro-organisms in the soil go extinct and affect agricultural yields. Despite depending on biodiversity, agriculture is accelerating this decline.

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Besides agriculture, human activities that endanger biodiversity include overexploitation of marine environments, unsustainable use of natural resources, climate crisis, pollution, traffic, light pollution, and invasive alien species that enter local ecosystems directly due to human activity or indirectly, because of human-induced climate change. Altogether, these issues pose threats to more than one million wildlife species that are nearing extinction.

Even if we managed to put an end to mass extinction overnight, it would take five to seven million years for nature to recover and reach its previous level of biodiversity. Unlike climate which can be, at least in theory, returned to the original state, the loss of biodiversity tends to be permanent and irreversible; once a certain species is lost, it cannot be brought back. The statement that the sixth mass extinction is a real tragedy happening right before our eyes is only partially true because we don't even have a chance to see the actual extent of the losses.

Insect apocalypse

There is an aspect of the current mass extinction that requires special attention. It is the "insect apocalypse", a rapid decline of insect species and also insect populations. The insect is the most diverse group of organisms on the planet, constituting two-thirds of zoological species. This group is facing the most serious risk of extinction; insect populations are undergoing an unprecedented decline with a drop of two per cent every year, on average.

The main causes of this drastic decrease are deforestation, pesticides, excessive use of nitrogen fertilisers, light pollution, and climate change. The impacts of a warming climate on insect populations have been dramatic recently. Some areas that were typically wet have been getting dry, and so their ecosystems which used to be ideal for many insect species have been becoming uninhabitable. Such development is disastrous for insects.

Due to climate change, there can also be outbreaks of some insect species to the detriment of other species and even whole ecosystems, as we witnessed in the case of bark beetle outbreaks in Czechia. As many local forests consist of spruce monocultures that lost their resistance to insect pests, their existence proves to be unsustainable. Long-term extreme temperatures accelerate the development of

common bark beetle species enabling higher numbers of generations or spreading as well as the spreading of those species that used to be less frequent, for example, the northern bark beetle. Historically, the European spruce was the main commercial species, but the situation seems unsustainable and untenable nowadays.

One species that has felt the “insect apocalypse” acutely is the bee. A decline in bees in the last decade has been caused by a combination of factors including the loss of genetic diversity and the occurrence of certain viruses. A quarter of bee species are endangered, and the number of bee colonies in North America decreased from 6 million in 1947 to 2.7 million. The experience of bees confirms a trend among biological species; not only are they facing extinction, but shrinking diversity is also making them less resistant and adaptable to ecological and anthropogenic stressors.

Paris Agreement for biodiversity

What can be done about this? There are – at least formally – efforts to solve this situation. One of the most important ones is the UN Biodiversity Conference, a counterpart of the UN conferences on climate. COP15, the fifteenth international conference of this type, took place in Montreal at end of last year after China’s zero covid policy caused it to postpone hosting the conference.

Kunming, China, which was originally supposed to host the conference, was replaced with Montreal where representatives of national governments met from 7 to 19 December 2022 to discuss stemming mass extinction and biodiversity loss. So far, most negotiations have been conspicuously similar to those of climate conferences; there are complicated discussions leading to agreements that are promoted as breakthroughs, although they are not ambitious enough and are rarely implemented.

In each decade, however, national governments agree on new objectives for the preservation of biodiversity. This previously happened in 2010 in Nagoya, Japan, where the parties set their commitments to halve the loss of natural habitats and expand protected areas by 17 per cent. Although rather modest, these objectives were unfulfilled. Moreover, none of the declared measurable objectives was met in the last decade. The achievements of environmental diplomacy and shared commitments have thus been mostly theoretical.

Nevertheless, the hopes were quite high for the COP15 as some expected it to be a ground-breaking event that would result in the “Paris agreement for biodiversity”, i.e. a paradigmatic document confirming that governments are fully aware of risks related to biodiversity loss. However, the resulting document titled Convention on Biological Diversity (CBD) is a compromise and somewhat vague. Its calls for urgent action to halt and reverse biodiversity loss. The rate and risk of extinction for all species are set to be reduced by 20 per cent by 2030, and eventually tenfold by 2050 compared to the current situation, but there is no clear commitment that might lead to increases in populations of endangered species by 2030. Furthermore, the document lacks specific, measurable criteria that could turn general goals into concrete plans.

Many participants and observers saw the main priority in the 30 by 30 target which stands for the effort to make 30 per cent of the Earth’s land and waters protected areas, especially in regions vital for global biodiversity such as Amazonia, the Congo basin, and Indonesia. This shows that some countries bear more responsibility for biodiversity protection than others, and what is more, this often concerns developing countries whose GDP has largely depended on expanding agricultural production. If they are expected to redefine their position in the global economy, they can hardly do it on their own – and this is where the question of the Global North’s financial support becomes relevant.

At the practical level, the reform of the subsidy system is a necessary condition for any solution to the biodiversity crisis. Research shows that more than 1.8 trillion dollars is spent globally every year to subsidise environmentally destructive activities. This mostly applies to funding for high-emission agriculture, industrialised cattle breeding, massive cutting of forests, and polluting industrial fertilisers. Henceforth, a large part of this funding should be used for nature protection instead (ideally 200 billion dollars a year), improving soil sequestration potential, production of healthy food, and massive tree planting. Harmful subsidies should be reduced by at least 500 billion dollars by 2030. There is also an important part of the agreement related to the restoration of at least 30 per cent of areas degraded by intensive industrialised farming. None of this can happen without significant funding from the developed countries which often take advantage of importing cheap food, but they are often reluctant to financially support the transformation of unsustainable agricultural production.

The document also aims at strengthening the rights of indigenous peoples. In the context of nature protection, they often face an absurd situation: according to some interpretations, wilderness preservation might exclude the presence of humans in the given ecosystems which may result in the repression of indigenous peoples living in such natural areas. The new agreement thus respects their rights as well as their legitimate position in such areas because their presence in these ecosystems may be beneficial in many regards. They can also play the part of “guardians” alerting to violation of rules for ecosystem protection, typically by the mining or agricultural lobby.

Another important point of the agreement applies to pesticides: the overall risk posed by their use should be reduced by half by 2030. On the other hand, there is no mention of the necessity to change dietary habits – even though noticeable progress in biodiversity protection is hardly possible without a considerable reduction of the meat industry and thus meat consumption. According to some studies, we should reduce global meat consumption by approximately 90 per cent, but at this point, such policies do not seem feasible anytime shortly. At the best, we can hope that at least partial reductions in the meat industry will succeed and the direction towards a change in dietary habits may be approved at the COP16 which will take place in Turkey at the end of 2024.

Half of the planet to wilderness…

So far, environmental diplomacy has seen a lack of success or partial achievements only, but it cannot be said the efforts have borne no fruit, quite the contrary. Our current experience proves that biodiversity protection works. Recent studies show that without the implemented measures for biodiversity protection, the advancement of mass extinction would be three to four times worse. The measures can thus be efficient; the problem is there are few, and their implementation is slow.

Nowadays, some form of protection applies to 17 per cent of terrestrial and 10 per cent of marine areas, which is not enough. We should follow sociobiologist E. O. Wilson’s proposal to leave half of the planet to the protected wilderness. It is not that radical or extreme if we realise that formerly there was nothing but wild nature on the Earth. The fact that we only have a few per cent of protected wilderness left is evidence of how much we have transformed the biosphere in the past centuries. What truly is extreme is the way we have treated the planet so far and considered it “normal”, not the proposals to determine sustainable limits to human activity.

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for ourselves, nature will eventually set them for us.

If we fail to, willingly and consensually, set such limits for ourselves, nature will eventually set them for us, and perhaps in a rather cruel way. It might as well happen that we leave the whole Earth to the wilderness if humankind were to die out. Half of the planet for wilderness is not a mere moral appeal of those who protect and love nature, but simply a self-preservation measure for our own good. Such measures would be beneficial not only to halt mass extinction but also to deal with carbon emissions, which will be an essential part of the efforts to stabilise climate and keep the planet inhabitable. Becoming aware of the climate and environmental reality is like waking up from a dream or hypnosis induced by the consumerist society which gives us a convenient but completely false sense that everything is all right. No, it is far from all right.

As if the climate crisis is not alarming enough, the biodiversity crisis is sounding a louder alarm. Even if we managed to get the climate under control, that would not be sufficient. It is vital to see current existential threats in their complexity: there is a risk of environmental, climate, and social collapse because of our unsustainable civilisation model.

…and the other half to green socialism

We should thus take the suggestion to leave half of our planet to wilderness seriously. That is what the authors of *Half-Earth Socialism* also do; they develop E. O. Wilson's idea through the lens of socialist theory. Their vision is straightforward: half of the planet for wilderness, the other half for socialism. What they understand as developing a "scientific utopia" may sound like a promise of a great future to some, while others may see it as a dystopian nightmare. Let's have a look at their conclusions for the sustainable world vision: first, widespread veganism and thus reduction of land used for farming (as a condition for re-wilding a half of the Earth), second, energy quotas, third, non-market planning as a green transformation strategy, and fourth, socialist democracy as the foundation for the political life.

Such attempts can be considered "speculative socialism": in a classic debate between utopian and scientific socialism, the authors have tried to take a third road and make a thought experiment within the limits of the material reality. Above all, in the era of fragmentary and insufficient solutions, they try to be in touch with the reality of the climate and environmental crisis instead of obeying the capitalist "realism" that leads us down the paths of the free market, competition, and unlimited growth presented as the ultimate form of the economic life.

The ongoing devastation of life on our planet is a strong indictment against capitalism that has led the biosphere to near collapse and extinction for centuries. Being in this situation makes a realistic claim to demand the "impossible". It is the idea that we can keep following the same direction without interruptions that seems dangerously utopian and unsustainable. The Half-Earth Socialism proposal is immensely rational in terms of the continuation of our life on the planet. If it proves impossible to reach a sustainable society and inhabitable planet via a market economy, we cannot insist on keeping this economic model. Leaving half of the planet to wilderness and the other to socialist vegans is not as crazy as it might seem.

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