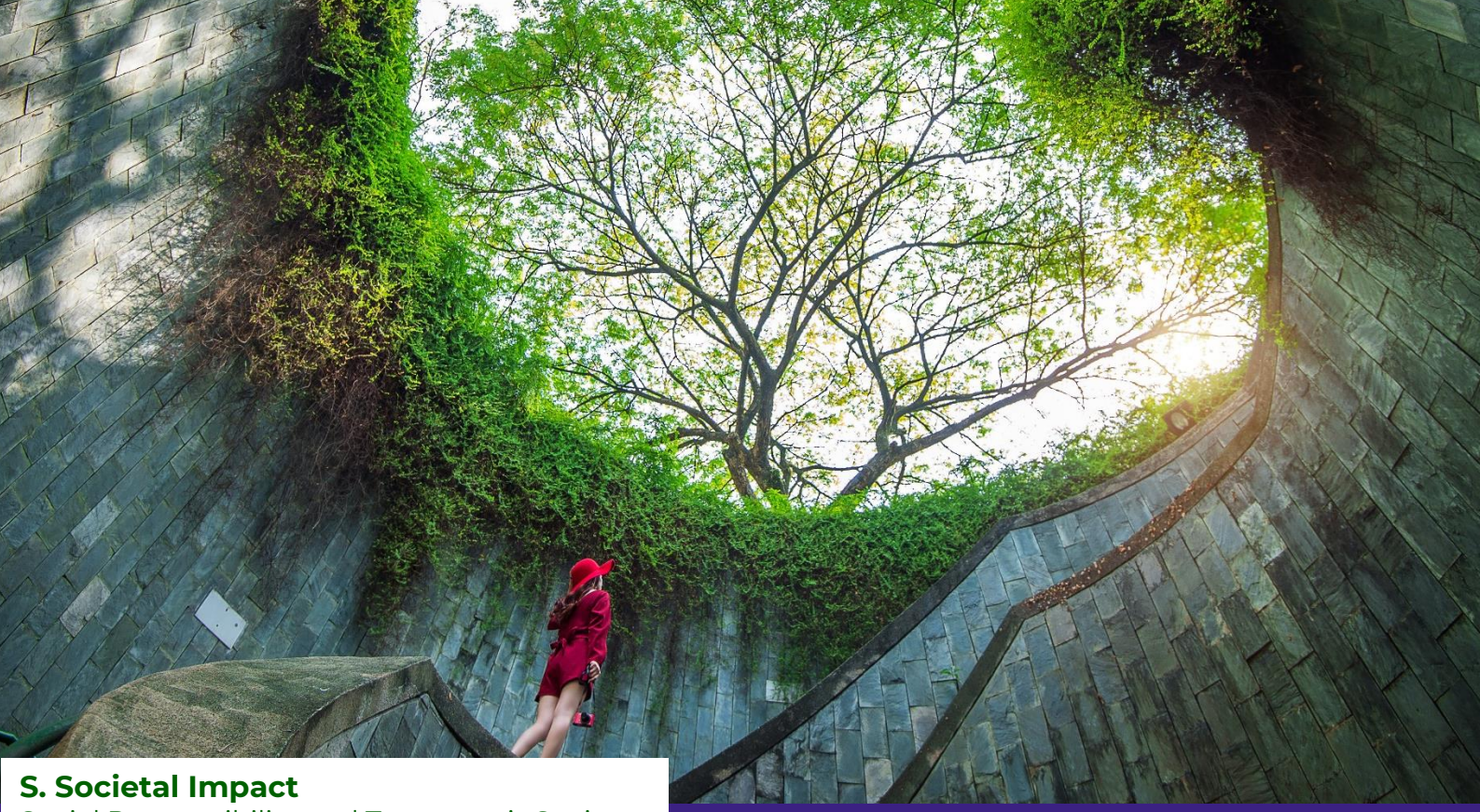

S. Societal Impact
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Rush for resources or preservation of common goods? Two scenarios for managing resources in the Anthropocene era

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Abstract

The Covid-19 pandemic is being apprehended by many experts as one of the symptoms of the Anthropocene, the new geological era characterised by the structural impact of human activities on the dynamic of our ecosystems. While the Anthropocene era will accelerate crises and pressures on the natural heritage, what approach will our economic and managerial systems take to natural resources? Two scenarios are possible: an acceleration of predatory dynamics, a grab for natural resources, leading to an acceleration of the ecological crisis and a radical increase in inequalities, or a reasoned political choice to adopt a model of moderate energy and resource consumption, preserving our habitat and thinking about the commons.

Keywords: Anthropocene, Covid-19, Ecosystem, Circular economy, Resources

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Covid-19: a disease of the Anthropocene era

While the Covid-19 epidemic is generating inordinate impacts and is severely affecting every country in the world, recent history has been marked by other illnesses – HIV, Ebola, avian flu, and SARS – that have the same origin: cross-species transmission from animals to humans. These are thus all 'zoonoses' or zoonotic diseases. For many experts, the multiplication of zoonotic diseases can only be explained by the growing footprint of human activities on natural ecosystems: deforestation, extraction of fossil fuels, overexploitation of land, etc. The IPCC (2019) special report on climate change and land use points to the fact that the destruction of ecosystems brought on by the extraction of natural resources (minerals, fossils, agrarian, animals, forests, etc.) is the origin of increasingly frequent cases of zoonotic diseases being transmitted to humans. The 2019 IPBES report, the equivalent of IPCC for biodiversity, has exactly the same thrust. These scientific observations call into question the assumption that the current pandemic is a 'microbial invasion' and suggest instead that it is one of the consequences of the 'human invasion' of natural ecosystems (Shah, 2016). In other words, Covid-19 is a disease of the Anthropocene age. First theorised by Paul Josef Crutzen, winner of the Nobel prize in chemistry in 1995, the Anthropocene era, whose etymological meaning is 'the Age of Humans', is a controversial but powerful concept. It refers to a new geological epoch that would have begun around 1750 (Industrial Revolution), following the Holocene – the interglacial geological era marked by stable average temperatures around 15°C over the past 12000 years. Since the Industrial Revolution, the human footprint on ecosystems has become so large that it is producing a veritable geological impact on the biosphere and the terrestrial system. Some scholars use the term 'Capitalocene' to point to the capitalist and extractivist mode of development based on the exploitation of resources by large corporations, deemed to be the source of observed dysfunctions in ecosystems (Bonneuil, 2017). Zoonoses are appearing as one of the multiple consequences on natural ecosystems of the unbridled extraction and exploitation of natural resources that characterise the current dominant economic models (Bednik, 2019). The Anthropocene era is also marked by the interconnectedness and internationalisation of economic systems, embodied in global value chains that are structured by reserves of natural resources, competencies and the availability of low-cost labour. This international connectedness has obviously contributed to the rapid propagation of the virus around the world.

As the Anthropocene era accelerates crises and pressure on the natural heritage, but also the spread of these crises throughout human societies, how will the Covid-19 crisis transform our relationship with natural resources?

Two trends are already discernible

Certain long-term trends already appear to be taking shape concerning the post-Covid world capitalism dynamic. First of all, large companies and countries have become aware that organising global value chains on just-in-time principles has consequences other than economic optimisation; such chains are also a source of fragility and create new

dependencies between countries and companies. We can therefore expect that countries and companies will take a lesson from the crisis and will try to reduce their exposure to such supply chain risks and will seek to increase their control over resources, such as energy resources, and their food sovereignty.

Second, it seems that we are entering a new era in international relations. Although combatting the Covid-19 crisis calls for stronger international cooperation, as well as international aid to help the weakest countries, we are witnessing, on the contrary, the legitimacy and financing of the WHO being called into question by the United States and other countries. Against a backdrop of rising nationalism over the past several years, we can expect to see increasingly interventionist government actions becoming generalised in an international context that is less predictable, less coordinated and less 'free market', with a rise in regional, bilateral and national logics.

Third trend: resources that are currently abundant and therefore inexpensive, though obviously threatened, such as wood, water, energy or sand, will become scarce in the coming decades. Is this future so far away ? It is hard to say exactly, but the tensions on numerous resources are already visible. The example of rare earth elements, vital for the electronics industry and green energies is already well documented. Sand, which is omnipresent in our daily lives (essential for many industries such as construction and glassmaking), is the second most exploited resource after water, but one whose availability is increasingly threatened by the growing demand. Desert sand, which is available is large quantities, is unusable as it is too fine. Various sources have warned of a shortage, as maritime extraction threatens coasts and ecosystems, and sand 'mafias' are taking root in different countries (Hackney et al., 2019).

If constraints linked to natural resources are destined to exacerbate in the coming years, how are we going to manage scarcity and rethink our relationship with resources? To continue Bruno Latour's (2017) line of questioning, the question we are facing in the Anthropocene era is 'Where to land?' and above all 'How to land?'. Let's imagine two fictional scenarios, from the future vantage point of 2035, of how natural resources may be managed in a post-Covid world.

Scenario 1: Like before, but worse... Tensions and a rush for resources

To combat the economic and social crisis caused by Covid-19, the vast majority of countries have sought to jump-start national consumption and get their economy moving again using tried-and-tested growth models. Coming to the rescue of the industries most severely affected by the crisis, whose economic weight was considerable, companies and governments have more or less consciously sought to revive former growth models, characterised by high energy consumption and ever more rapid product turnover in a logic of intensive innovation. While these efforts have not managed to restore growth and consumption in a lasting way, they have spurred a sharp rise in global energy consumption and pressure on resources, exacerbated by continued demographic growth at the global level.

In colliding ever more forcefully with planetary boundaries, these growth modes have only intensified anthropogenic pressures on ecosystems. This accelerated erosion of nature and the multiplication of climate crises has taken on such proportions that the habitability of the planet is called into question in several parts of the world. From an economic

perspective, the period has been marked by massive natural resource appropriation. Indeed, whenever there was no substitute for a resource that is indispensable for basic needs (water, wood, sand, agrarian resources, rare earth elements), the growing scarcity of resources made them ever more strategic, generating competition between companies and also between countries to safeguard their supplies and/or benefit from an economic rent. Diplomatic warfare and economic warfare have gradually merged, with a return to stronger forms of state interventionism, resulting in the nationalisation of companies and more robust use of influence than in the past.

We have also witnessed an upstream shift in the locus of potential sources of value in production chains — the exact opposite of the process observed in the previous two or three decades in the West, which had seen most companies selling off their productive assets to lighten their balance sheet and focus instead on immaterial activities (brand management, marketing, distribution network).

The economy has thus gradually become rationed by increasingly limited resources, monopolised by a small number of firms and countries. In this economy in which supply is rationed by the decreasing availability of natural resources, successful companies are now those that control natural resources. Owing to the astronomical rise in prices for indispensable natural resources, the situation has obviously become increasingly unequal and conflictive, between individuals, social groups and countries. In 2035, the vast majority are subjected to moderation, while the remaining powerful enjoy an increasingly costly final feast.

Scenario 2: Landing in the Anthropocene – resilience, moderation in resource use and preservation of the natural commons

The Covid-19 crisis triggered an awareness of the extreme vulnerability of our economic, social and natural systems. Many countries around the world quickly set in motion an ambitious plan to reduce exposure to these new risks. Launching an ambitious industrial strategy, they pursued two clear objectives: regaining sovereignty over all vital aspects of their economic systems (entailing business relocation) and also switching to low or non-carbon-based energy sources and coming up with models based on a much more moderate use of resources. Economic activities were relocated, especially in the area of agriculture and raw materials, but not as before. Alongside the sacred cow of GDP, public decision makers quickly integrated a new indicator to guide policy while taking risks into account: the 'resilience indicator'. Developed by an interdisciplinary panel of biologists, climatologists, ecologists, sociologists, managers and experts in geopolitics, this resilience indicator measures the exposure of economies and societies to the risks of the Anthropocene era.

More sustainable models, hitherto embryonic, became the norm. Anticipating natural resource crises, businesses and government reorganised the economy on the basis of circular principles, aimed at moderation in resource use. The implementation of these models – conceived in opposition to linear, extractivist, energy-consuming capitalism – allowed countries to gain time and to contain resource crises and their environmental and social impacts. Naturally this did not occur without friction and it was necessary to take determined action, to establish a hierarchy of priorities, and to make difficult trade-offs in order to achieve this goal of moderation. The introduction of a new system of taxation for

individuals and businesses was a decisive undertaking to tax the use of certain resources, to finance necessary investments and to make the transition socially acceptable. An ecological transition revenue was introduced to rethink social justice in a context of increasingly scarce resources and rising energy and transportation prices – a potentially explosive situation from a social point of view.

By the end of this painful yet necessary transition, entire sectors had been transformed. For example, owning a private car became too expensive for most households. The norm now is renting or car sharing. The construction sector has massively shifted towards the thermal renovation of housing. Entire sectors such as digital technology and transportation have been reoriented to pursue moderation. Agriculture has been reorganised around the principles of agro-ecology, permaculture, and other approaches that are less resource intensive. The creation of local 'technological loops' has also made it possible to rethink the economy for a post-global value chain world and to restructure key sectors at the local territorial level (healthcare, electronics, clothing, furniture). This new territorial industrialisation, which must further reduce its energy consumption, is characterised by new employment opportunities in the areas of maintenance, product service and repair, and the reconditioning and recycling of raw materials and products.

These transformations did not occur in a uniform way. At the international level, the pressures on resources and ecosystems have not disappeared, but they have diminished and that is already quite significant because it preserves the habitability of the planet and limits geopolitical conflicts. Not every country and business has adopted these models at the same pace, but those that have done so soon found themselves less exposed to social and environmental crises than their neighbours who remained in the old paradigm. Countries and businesses have gradually followed suit in adopting the new models. At the international level, the 'Alliance for the Anthropocene' was formed to revive international cooperation and provide it with a common framework. After having formalised a set of rules, laws and market regulations aimed at a more reasoned use of resources, member countries established a framework to jointly manage 'common bads' (pandemics, ocean plastics, global warming, etc.) in solidarity with each other. Furthermore, they launched an initiative to rewrite the law on global common goods in order to preserve ecosystems and biodiversity and take them out of the commercial sphere. Finally, a new vision of resources is taking shape: not only perceived and managed as an appropriable good, but as an inalienable common good to be preserved.

To make a landing... rebuild economic institutions, law and the concept of resources

These scenarios are fictional. As such, rather than adopting a truly predictive logic, their aim is to help us envisage possible futures.

Scenario 1, which takes the form of a dystopia, appears unfortunately to be the most likely given the current mechanisms for restarting the economy to cope with the post-Covid economic and social crisis. Scenario 2 describes a more desirable though admittedly utopian path. How might a utopia be made possible and where should we begin?

The conditions are multiple, but we can identify several priorities. The first urgent matter is to reform our economic institutions, and in particular our vision and our tools for measuring

progress. Our political, financial, and social institutions are all structured around the dogma of GDP growth, an indicator whose numerous limitations were pointed out by Kuznets (its creator). GDP absolutely does not take into account negative impacts on our natural heritage, because the depletion of natural resources and their waste are treated in accounting terms as value creation. Similarly, it is completely blind to exposure to the risks of the Anthropocene era (Raworth, 2017). To 'rediscover the meaning of limits' (Papaux & Bourg, 2010), it is necessary to switch lenses and to enrich our vision with other indicators (O'Neill et al., 2018). A composite indicator of resilience to the risks of the Anthropocene era remains to be invented, but it should be a priority in reshaping our relationship with resources in a post-Covid world. Such indicators should not be the preserve of governments, but should also be diffused and adapted at the company level, at the heart of strategic thinking and organisational management.

The second challenge is to reorient the market, rejecting the idea that the 'free market' can respond to issues of resource depletion. Indeed, the market only values the scarcity of resources, not their preservation – even less so their restoration. This difference is fundamental: when a massively exploited resource becomes rare, it means that its depletion is already very far advanced. It is useless then to think that market mechanisms alone will be able to restore supplies of that resource, which are governed by biological and geological timeframes that quite distinct from the market's time horizons (just think that it takes several hundred years to form a grain of sand through erosion). At most, the market may prompt the emergence of substitutes, if they exist or may be developed.

Finally, a third challenge is to rethink the mechanisms of international governance and to transform the institutional legal framework relating to the environment. Achieving such a process, which is undeniably complex and ambitious, would entail a veritable transformation in our understanding of what constitutes a resource, as a common good, and abandoning the anthropocentric bias in our relationship with nature (Descola, 2015).

In addition to measures implemented through a strengthening of the role of government and regulations on different geographic scales, the governance of business also needs to be rethought to move beyond the dominant model of shareholder governance. This model operates through the appropriation of value by shareholders to the detriment of other stakeholders – more local and rooted in their territory – who have an interest in the preservation of local resources. The role of hybrid governance forms, cooperatives, associations, and family businesses with a commitment to the long term and in search of resolutely multi-dimensional and multi-stakeholder performance will be more and more decisive.

Conclusion

With its promise to identify more resource-efficient, profitable business models, the circular economy has enjoyed great popularity in recent years in economic and political circles. Innovative and promising models have been identified thanks to the circular economy. However, these models remain embryonic and operate on a scale that is insufficient to face current challenges.

The future scenarios exercise initiated in this article through the use of fiction allows us to put forward two messages. First, the goal of generalising the circular economy and moderation in resource use is currently hindered by the circular economy's lack of a real

institutional structure, a backbone made up of laws and indicators integrated in the management of companies and economic systems.

Second, the circular economy is often defined as an economy of resources. We must nevertheless raise questions about the future of the circular economy in a post-Covid world in which the issues of resource access will become ever more acute. Will the circular economy become an economy of *resource scarcity*, at the risk of intensifying predatory behaviour and the race to grab resources, or an economy of *resource preservation*, which promotes common goods at the global and local levels?

These different elements converge on the idea that in a post-Covid world the horizon of the circular economy will shift: not only the identification of business models, but a profound transformation of our economic, managerial and social institutions. This is what it would take for the circular economy to help us avoid an emergency landing or a crash into the Anthropocene era and allow us to shape the conditions for a negotiated landing.

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