Earth Capital

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Introduction

During the 1960s, I was a child in Naples, living in the working class suburb of Bagnoli. My parents, like most of those who had lived through the war as children or teenagers, often reproached my brothers and me for our inability to grasp the immense privileges that had been given to us: "We had nothing to eat and we were happy. You, on the other hand, you complain all the time even though you have everything." This is a refrain that I heard again and again during my stays in Russia, India, southern Africa and Senegal – following the fall of communism in the first case and the end of colonization for the others – when my friends and colleagues made the same reproach to their children.

Yet to me and my brothers or the children of my friends in India and Russia, these criticisms made no sense. Most of our friends had much more than us. Apart from its dubious pedagogical value, this type of reproach rests on a peculiar conflation: going hungry in the past on one hand and present inequalities on the other. It's as if today's poor and humanity in the past belonged to a single category: that of poverty without reprieve.
This confusion has actually got worse as we have become aware of a close link between social inequalities and concern for the environment. Two or three years ago, my teenage daughter – obviously spoilt in my view – reproached the children of my Indian and Russian friends for not being concerned about the future of the planet. Their annoyed responses took her by surprise: how is it that people like you from wealthy countries were allowed to consume and pollute and now that we have the means to do so we have to restrain ourselves?

Finally, with the Covid-19 pandemic, the tensions between generations and between rich and poor have evolved into tensions between the errors of the past, the fear of the present and the uncertainties of the future. The distress of my daughter and my students hits me like a slap in the face every day.

In response to this distressful state of affairs, *The Long History of the World After* is not a chiasmus, but an epistemological and political stance, an attempt to suggest possible avenues in the face of this distress. A *longue durée* perspective is needed in order to envisage "the world after" – not as a rupture with no link to the past, but rather as a response to centuries of capitalist growth built on inequalities and the depletion of resources.

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Earth capital

Between 2004 and 2011, the prices of food crops and staples skyrocketed, basically doubling. Famines and riots occurred in southeast Asia, numerous regions of Africa, Latin America and the near East. In a single year (2007–8), the price of a kilo of rice doubled in southeast Asia (Bangladesh, Thailand, Cambodia), exceeding the average daily wage in Cambodia. In Central America, the price of tortilla (the staple food of poor populations) increased by up to 70% (they called it the "tortilla crisis"). In some African countries, the price of wheat, corn, sorghum and millet increased by 50% or even 100% or more in a few months. These price hikes threatened the food supply of 100 million people around the world. Despite increases in production, hundreds of millions of people do not have access to the minimum needed for subsistence.

Ministers of agriculture in Europe and in the US were quick to blame a surge in demand and unfavorable climate conditions. They were lying and they know it. International speculation on food staples has multiplied in recent years; staples are bought and sold even before they
are grown. The deregulation of financial markets and commodities markets is behind these tensions. But that is not the only factor; new forms of speculation on farmland (land grabbing) have reached the entire planet. In 2016, an NGO called GRAIN catalogued 300 transactions involving 30 million hectares across 70 countries, half of them in Africa.¹ Multinationals based in London acquired land in Madagascar and Argentina. Another based in Malaysia bought land in Liberia. In just a few years, the Indian company Siva accumulated a portfolio of nearly a million hectares of agricultural land for oil palm plantations in Africa and southeast Asia.²

Most often, these lands are left uncultivated, waiting for the most opportune time for production or resale. Alternatively, they are cultivated using seeds produced in a few laboratories belonging to multinationals in Europe and the United States. Hybrid seeds or GMOs with a lifespan limited to one or two years – and which therefore must be constantly resupplied – promise enormous yields, which quickly collapse however without the massive use of chemicals, also sold by Northern multinationals. Speculation on hunger, inequalities, and the destruction of the planet are closely linked.

In this book, I use the term "Earth" to refer to both the planet as a whole and to its land as a factor of production. Access to farmland, water, seeds and agricultural products will be fundamental in the construction of the world after, just as it was during the dysfunctions of the world of before. However, these elements must now be considered at the planetary level. With this twin meaning of planet and resource, the Earth constitutes a kind of "capital" – a notion that has been associated with private property for too many centuries. It is time to consider the planet, its land and its oceans as a common good. It is not just a matter of preserving it (notion of heritage), but reconstituting and interacting with it so that all of humanity can benefit from it. But how?

Among their numerous discoveries, economists seem to appreciate one in particular: "path dependence". According to this theory, we are bound by our previous choices and this


straightjacket becomes so heavy and restrictive over time that it is practically impossible to escape. In this schema, preservation and resignation are the cornerstones of societies and historical dynamics. The goal of this book is completely different: not to idealize the past, but to understand it. If we limit ourselves to making the observation that we are prisoners of our prior choices, what do we have to offer our children?

Nothing is written in stone. Choices were made in the past that got us where we are today, with a planet in agony and where a handful of rich people control the destiny of billions. And yet, just like the past, our future is not predetermined. We are not destined to perish in the flames of collapse, but we don't have ten thousand opportunities either. The way of thinking about the future in relation to the past requires a reflection on our ability to express our experiences and ambitions, our regrets and hopes.

More than ever, we need to close the gap between utopia and realism. Too often, the proponents of utopia have been reproached for their lack of realism and the "realists" for their lack of political courage. In the pragmatism of the following proposals we do not ignore historical trajectories or abandoned projects. We question both, not accepting anything straight off. This book is guided by a central postulate: fighting against inequalities and preserving the planet are inseparable. Progress cannot be made on one front without the other. Instead of dreaming about an authentic world of old or condemning the industrial revolution, instead of criticizing the West or China, we should eradicate the elements that have contributed the most to depleting our Earth capital and caused the rise in inequalities: speculation on staples and markets for virtual products; patents, particularly on seeds; and land grabbing. These behaviors (and the underlying institutions that make them possible) should not just be reformed, but prohibited. They are linked to others: an overhaul of the taxation system and public finances in a truly egalitarian direction; environmental policies that go beyond the energy transition and green taxation.

However, and this is one of the challenges of this book, environmental issues are tightly interwoven with those involving inequalities. It is impossible to resolve some questions without the others. Yet conventional political programs and ideologies on the left – and even more so those on the right – are unable to reconcile these elements. Defending labor, fighting against inequalities, with a smattering of ecology on one hand; extreme attention paid to the environment and the difficulty of proposing coherent public policy in the area of inequalities on the other. Fiscal policies, such as recommended by Piketty, and more broadly the defense
of labor deserve to be brought back to the center of public policy. This defense requires the broadening of labor rights and their convergence with political and social rights more generally. All too often in Western thinking, democracy and political rights are set in opposition to social and economic equality, as if one could function without the other (liberal argument) or the reverse (socialist and communist argument). The Long History of the World After not only shows that these elements can and must be brought together, but that nature can no longer be envisaged simply as an object to exploit. Democracy, social equality and the environment are the three pillars of the “world after”.

When does the world after begin?

The history of the world after is an invitation to take possession of time in two senses: to move beyond conventional interpretations of the past and to gain visibility into the future. Might the history of the world after offer a way out of presentism?3

Since at least the time of the political and economic revolutions of the 18th century, our interpretations of the past and our outlook on the future have drawn on the issues and concerns of the present time.4 The focus is no longer placed, as it was before the modern period, on cyclical movements of time and stars, but on the various continuities and ruptures of our societies. Some people imagined unbounded progress, others a systemic crisis of the modern world (from Marx to the current proponents of collapse).

The coronavirus has modified this relation to time: the present is empty, gloomy, to be left behind as quickly as possible, and all of our attention is directed to the tension between past and future, between the world after and our past responsibilities. Some people miss the peaceful world of before; others blame the arrival of "barbarians", especially the Chinese and their viruses; while still others point to the responsibility of Western capitalists, distortions observed in the world of before, and possibly an agro-ecological utopia. The first approach is widespread – with many variants – among those who long for a return to the world of before the crisis with its mass consumption, its leisure activities, its stock market and its

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globalization. Others dream of a different world of before: the relationism and Keynesian economics of the post-war boom, which they contrast to neoliberalism. The third case are those who point to an inevitable collapse – a just punishment after centuries of consumerism and productivism. And finally, those who think of seizing this opportunity to found a new world, though they would still have to agree on its boundaries. An agro-ecological world for some, one where science would have solved every problem for others, or a new form of socialism for others still.

These are the fundamental questions of our time, which could be reformulated in a simple way:

1) What was "the world of before" and when was it put in place?

2) Can capitalism reconcile social justice and sustainability?

Thinking about time, appropriating the future. A global perspective

All too often, the answers to these questions are based on what I would call "the paradigm of modernization". Since the 18th century, this paradigm associates modernity with science and knowledge, with urbanization and then industrialization, with the market, bourgeois society and the end of famines. The modernizing paradigm in its liberal variants offers clear answers: yes, capitalism and economic liberalism have made it possible to overcome the famines of preceding eras and societies; yes, globalization makes it possible to improve the well-being of humanity and reconcile social justice with economic growth; no, egalitarianism is not compatible with growth; yes, science and the competitive economy will find a solution to environmental problems and inequalities.

Of course, numerous currents have criticized this faith in growth and progress: anti-machine and anti-privatization movements, nature conservationists, the fight against inequalities, and critics of consumerism who over the centuries have spurred the opposition to industrialism and capitalism. The anti-globalization movement and collapse theorists are the most recent incarnations of these attitudes.
Yet these criticisms are based on the same categories and épistémè as their opponents: the tension between science and technology, on one hand, the depletion of resources on the other; the excessive attention accorded to progress, modernization and Western capitalism. The difference is that while some idealize these elements, others reject them. How can we conceive of a different world if we keep these paradigms unchanged?

Moreover, these arguments are Eurocentric. They see other worlds either as passive actors, or victims, or imitators of the West. How can we find a common solution – now imperative – for all of humanity if we ignore the ways that modernization and globalization are perceived and experienced in Africa, India or China?

This book seeks to move beyond conventional notions of modernization and globalization, and then, from there, to propose a global perspective. I will not confine myselfs to studying Europe or the West and evaluating the impact on the rest of the planet; on the contrary, I will highlight the interactions and changing hierarchies across different parts of the world. For centuries Asia dominated, then Europe and the West came to the fore, and finally, in the present day, their domination is being challenged by Asia and, in part, by Africa.

These changing hierarchies are part of what Braudel called the "common waves" of capitalism and the market, which lift but also bring down multiple parts of the world. Waves are not just the result of markets, states and societies. Environmental transformations – the impact of El Niño and La Niña in particular – have played and continue to play a decisive role. It is the interaction between the environment, economies and societies that set the tempo of the world of before and will, most likely, set that of the world after.

The fact that we are asking ourselves "how much time do we have left?" implies that we first need to determine when all of this began. When did "modernization" begin? Or "globalization"? What about "collapse" and more generally the Anthropocene?

The answer depends on the lens that we choose: geological time, biological time or social time. If we look at biological time, then the history of humanity belongs to the Paleolithic (three million years), not to the Neolithic (twelve thousand years), and certainly not to the past two or three centuries. However, if we look at the weight of numbers and society, of the 80 billion humans who have lived on the planet in the past three million years, only 12% lived

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prior to the past 12000 years, 68% between 12000 and 250 years ago, and 20% in the past 250 years.

Those who opt for the very long term, from the Paleolithic to the present, have the advantage of thinking beyond the past 20 to 30 years. It is possible for them to understand the long historical roots of our problems and to avoid thinking of them as something completely new. However, when using such a long time frame, one ends up lumping together agriculture, sedentary civilization, humanity and the end of the planet. Everything is predetermined since the Pleistocene (one hundred thousand years). The result is *The Evolution Man*, an extraordinary novel by Roy Lewis, which reveals the tensions between inventions and preservation, but also the problem of anachronism that stalks historical analyses of the very long term. In this book, Ernest, the young prehistoric man of the Pleistocene, is torn between his father's enthusiasm for any sort of invention – fire, weapons, exogamy – and his uncle Vanya who disapproves, all while benefiting from them. The irony and the humor of the book stem from anachronism: the characters live in the Pleistocene, but their comments on the effects of inventions are straight out of the contemporary period.

But of course that is a work of fiction. Researchers who unintentionally adopt a similar stance have much less of an excuse. For example, Jared Diamond, one of the founding fathers of collapse theory, claims that the die was cast as early as the Neolithic owing to the planetary distribution of easily domesticated species, both animal and vegetable. Progress and modernity originated in the Near East, he would say, because the main domesticated plants and animals happened to be found there.\(^6\) The biological and environmental constraint was there from the start – no point in denying it. The anachronism is obvious: Neolithic people reasoning as if they were New Yorkers at the stock exchange. The general public and specialists from numerous disciplines loved this type of narrative, while biologists criticized it. The latter advance their conclusions based mainly on laboratory experiments that are reproducible and verifiable. In contrast, evolutionary biologists similar to Diamond borrow knowledge from science that they then treat in an anthropocentric fashion: ants and bees cooperate and succeed, as do certain qualities of rice and wheat. Regret, hope, jealousy and other categories taken from social psychology are generalized to interpret the behavior of other species. The problem is not so much about erasing the human-animal barrier, but that

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the points they share constitute an extension of certain human characteristics, rather than the reverse. The main criticism that empirical biologists levelled against their evolutionary colleagues is that their conclusions are not based on laboratory observations, but on scattered information, on questionable data which they later link through equally dubious statistical correlations. In statistics, of course, correlation is not causation; the fact that two series are linked does not mean that one is the cause of the other. The fact that numerous species were present in the Near East at a given moment does not give us any information about the origin of this diffusion. More importantly, it can hardly be transposed through a causal chain that stretches up to the massacres perpetrated by the Spanish in the Americas.

At the other end of the spectrum, "presentists" focus on new phenomena that have occurred in recent decades. To their credit, they do point out the urgency of taking radical measures. The most striking case is that of Pablo Servigne and Raphaël Stevens, two authors who are likeable, brilliant and above all successful. Their argument, though repetitive at times, is clear. Nevertheless, numerous researchers and academics have criticized them in specialized journals, on the radio, and in the press with rather shallow arguments: contradictory data (I challenge anyone to find objective data that are accepted by everyone!), doom mongering and, consequently, suggesting we simply give up. False accusations, especially coming from experts in economics and management, who for their part have only offered rather conventional solutions, like a bit of green taxation to save the planet, and of course business. The main problem with Servigne and Stevens's work is that they make no use of history. Focusing their attention on just the past few decades prevents them from identifying the link between collapse and the historical dynamics of capitalism. There is a risk of idealizing the decades and centuries "of before" and exaggerating the new phenomena of recent years. The *World We Have Lost* is a famous book by the anthropologist Peter Laslett, who advanced this type of argument during the 1960s and attracted the same sort of criticism.

Among biologists and presentists, those who employ the notion of the Anthropocene advance arguments situated at the crossroads of geology (and its eras) and the social sciences, particularly history. This approach has come to the fore in the past two decades and publications using the notion of Anthropocene are multiplying every day. The strength of this

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approach lies in extracting the environmental analysis from both presentism and historical determinism. Not everything was predetermined from the Paleolithic, choices were made, paths toward environmental protection were rejected for centuries even though they were socially and economically viable. At the same time, this stance also has its limitations. First, like other categories (globalization, modernization), the Anthropocene is associated with different periods depending on the author. For some, it begins with the industrial revolution in the 18th century; for others, at the beginning of the 20th century; and for still others with globalization and the consumption of fossil fuels starting in the 1950s. These interpretations are all legitimate and are based on different data. At the same time, they reveal the self-confirming nature of the notion of Anthropocene: we look for data that confirm our initial hypothesis. With this attitude, some writers even look for environmentalist "precursors" in previous centuries. But the notion of precursor is biased. Orientations are attributed to certain authors in the past that are similar to those of others living a few centuries later. But it is an asymmetrical relationship: the precursor in question was not aware of being a precursor. Often, they advanced their ideas with a completely different aim than that suggested by the current authors who pick up on them centuries later. Granted, some scholars of the 18th century were already warning about the dangers of deforestation and productivism; some peasants in France and England were fighting against deforestation and the privatization of the commons; and some lobbies worked to conceal these abuses and alternative solutions. At the same time, while peasant opposition to the privatization of common land may have had environmental aims, in reality, as shown by E.P. Thompson, the peasants were mostly concerned about their social position, which would be severely compromised without common lands. Should we just erase the class struggle completely and reinterpret events from an environmental perspective that was unknown or at least less of a priority for the actors of the time?

While is true that scholars and elites have at various times warned about ecological disasters, it is hard to deny the massive phenomenon that environmental issues have become in the past few decades. Denying it would be to de-historicize the notion of the public sphere, implying that there is no difference between a society where only 10% of the population knew how to

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read and write, the press was almost non-existent or censured, and a society where mass education has been achieved and political parties are accepted. In the latter, lobbying has become essential whereas in the 18th century and part of the 19th, the "productivists" had no need for it as societal and political opposition on these questions was so weak.

Thus, the Anthropocene is a strictly Eurocentric category: the extravagances and misfortunes of the planet are linked to the West, to its industrial revolution and its dominance. These are the same problems that affect broad categories like modernization or globalization. They all point to the West either to praise or criticize, implying that the rest of the planet is simply passive. Consequently, can the solution to our current troubles only come from the West?

In contrast to these approaches, the search for non-Western value systems has been advanced as a serious option in recent decades. The propositions made by Chakrabarty and subaltern studies have greatly contributed to diffusing this approach.\(^\text{11}\) It has been found recently in what is called "decolonial ecology" studies.\(^\text{12}\) Two propositions are extremely important: first, the importance of thinking about ecology in terms that transcend Western patterns and categories. The human vs. nature relationship found in Western thinking is one of them\(^\text{13}\) and it is not possible to generalize it, especially in seeking to develop solutions in the face of current globalization. Second, the environmental question cannot be dealt with separately from the social one, which is indeed heavily influenced by colonialism. This book is largely informed by these two propositions: I will not confine ourselves to Eurocentric conceptions of the economy, society and the environment, nor will I ignore the links between labor and environment, capitalism and colonial worlds. On the other hand, this book differs from others regarding the relations between worlds. A Caribbean perspective will not be set against a French one, nor Indian values to European principles. The history of slavery evolved in close relation to that of wage labor,\(^\text{14}\) and so-called Western values were formed in close interaction


with those of other parts of the world – they did not exist in isolation either. Rather than setting values in opposition to each other and thinking in terms of a clash of civilizations, it is important to highlight the interactions. These interactions have been very intense since Antiquity; what has changed are the hierarchies between them, with very unequal cultural, economic and political exchanges.

More recently, numerous authors have preferred to talk about a "Capitalocene" age rather than the Anthropocene to better highlight the link between capitalism and environmental changes. The validity of this approach depends of course on one's definition of capitalism. Most often, the proponents of the Capitalocene associate capitalism with the industrial revolution. In the wake of my previous writings, I would lean towards the definitions of Braudel and Sombart: capitalism is essentially monopoly and finance. From this point of view, capitalism needs neither private property (as we know it nowadays) nor wage labor; it can manage quite well with coerced labor and with multiple forms of property. I would not be hostile to the notion of Capitalocene as long as it takes into account the long term and the transformations of capitalism.

I distinguish three capitalist regimes, the first stretching from the 12th to the middle of the 19th century. The accumulation and value of this regime can be apprehended by what I would call the anthropology of coercion. At that time, growth based on labor – often coerced – was shared by Africa, Asia, the Americas and Europe. This regime was built on extreme constraint, slavery and serfdom, as well as rather blatant inequalities. Capital, both monetary and physical (tools, machines, livestock) was rare. There was relatively little pollution overall (but a lot per capita!). Markets, which were firmly embedded in societies, operated at the local, regional and international levels.

The second capitalist regime, running roughly from 1870 to 1970, could be called a productivist era. It is distinguished by the supremacy of the West over the rest of the planet. Productivism, the rise of capital and mass consumption in the Global North contrasted with the persistence of labor-intensive regimes in colonies and in countries of the Global South.


The planet's resources were exploited like never before. Accumulation was linked to mechanization, to colonial inequalities, but also more and more to hybrid seeds and the idea of "meat for all". Hyperconsumerism was supported by all currents of thought, from liberals to Keynesians, even though famines persisted in the South.

The third period started in the late 1970s. Productivism gained ground in the countries of the South. Inequalities between North and South have diminished globally, while those between rich and poor have increased in every country and at the global level. The depletion of resources and the negative side effects of ecosystem destruction have accelerated: global warming, reduced yields, droughts, floods, and new viruses. Accumulation no longer occurs just through capital and the standardization of products, but through trade in virtual goods and a new paradigm of appropriation, which more than ever concerns seeds, produce and land itself. The virtualization of agricultural produce has become globalized and reached the countries of the South, as have genetically modified seeds. Added to this is the large-scale acquisition of farmland (land grabbing) around the world and the return of epizootics (animal epidemics), which were thought to have been stamped out with science. What's new is that these recent scourges not only affect the poor and the South, but also decimate the richer populations of the North.

With the periodization described above, I avoid focusing world transformations on the West, as do most economic theories and the Anthropocene approach, as well as approaches inspired by Wallerstein and world-systems. I agree with the latter in terms of the importance accorded to North-South structural inequalities. However, I differ from them, not only in the above-mentioned importance of coerced labor within capitalism, but also the non-passive role that I accord to the South. First of all, in terms of chronology, the West (or the North as it has been defined more recently) did not really begin to dominate until the 19th century, not in the 16th century. Until that time, large state and imperial structures supported economic growth in Asia and somewhat in Africa. Even after the European expansion, the countries of the "South" were anything but passive recipients of the "North". On the contrary, in the areas of ecology, economics and politics, we see that through their attitudes and resistance they contributed to modifying certain attitudes and perceptions in the countries of the North.

Of course, these periods are not to be thought of like those we are used to seeing in history class: ancient, medieval, modern and contemporary. Slicing history into blocks only make sense in the context of textbooks and to assign university posts. They do not exist on their
own, and for decades it has been proven in every field that historical dynamics transcend
these conventional periods that only history professors continue to believe in. Moreover, these
periods do not make any sense outside of Europe. China has a millenary history, often split
into dynasties, following a Sino-centric approach, while historians of India and Africa do not
agree at all on the search for some sort of Middle Ages or modernity that would match those
of Europe, as if those regions needed the arrival of Europeans to exist.

The historical periodization advanced here is malleable and does not always depend on
European dynamics. Such dependence is true for more advanced periods – in the 20th
century, but not in the 12th or the 15th. Obviously, the Asante empire of Ghana or the
kingdom of Naples were not on the same time as London in the 17th century. Nevertheless,
there were links and differences and it would be erroneous to think that entities existed in
isolation until the advent of globalization. There were interconnections during all the centuries
studied here, only their strength and hierarchies change. There is no single capitalism but
capitalisms plural, not one globalization but globalizations and internationalizations.

Finally, any division of time and space does not exist in and of itself, but depends on the
questions asked and the perspectives adopted. The periodization advanced here is justified by
the priority accorded to labor and inequalities, to food on one hand and to agriculture on the
other. These labor and food regimes are found in numerous other studies, including mine on
capitalism and labor. If instead we had taken finance as our starting point, we probably
would have arrived at a different periodization. The task of the historian is not to set historical
periods in stone, but to problematize them.

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17 On capitalism, see Alessandro Stanziani, *Rules of exchange. French Capitalism in
Comparative Perspective, 18th-20th centuries*, Cambridge, Cambridge University Press, 2012;
on labor: Alessandro Stanziani, *Bondage, Labor and Rights in Eurasia*, New York and
Regimes and Their Trade Links: a Socio-ecological Perspective”, *Ecological Economics*, 160
(2019), p. 87-95; Harriet Friedmann, “International regimes of food and agriculture since 1870”, In
Seattle, 7 October 2001. Heavy rain had fallen on the city during the entire summer and the start of autumn. On a tennis court, two billionaires, Jeff Bezos and Bill Gates were dueling it out. It was a charity event to raise money to fight poverty in the world. Soon afterward, the very same day, Bill Gates gave a founding speech on the toilet revolution that he was helping to fund to reduce the risk of infection in poor countries. These initiatives recall those of similar institutions, like the Rockefeller foundation, which during the second half of the 20th century contributed to the diffusion of hybrid seeds produced in the US and accompanying products (fertilizers, etc.). Likewise, Bill Gates is proud of the green revolution and the contribution of his foundation. He also suggested, in the middle of the coronavirus crisis, to gather resources through his foundation and others in order to better protect African countries from the pandemic. The argument is promising as the North mustn't forget about the South. This stance perfectly expresses the state of affairs at the beginning of our millennium: just as the welfare state is being dismantled in countries of the North, enriching companies like that of Gates, and development aid has been cut back and is only provided on the condition of adopting economic plans set by bankers from the North, philanthropy is being proffered as a lifesaver. In large part, the gifts and resources of foundations come from corporations that have contributed to increasing inequalities and to destroying the environment. Gates is not alone; other billionaires like Warren Buffet and Michael Bloomberg have also gone down this path and, like Gates, were shaped during the Reagan years, then affirmed by Clinton, Bush and Obama. The fact that these billionaires are using some of their profits to redeem their souls – all while investing in oil companies or similar and getting tax deductions for charitable donations – does not constitute an effective response to inequalities and the destruction of the planet.

Indeed, the idea of a sort of moral capitalism has come back into fashion with the end of the Cold War and the fall of the Berlin Wall. Single-minded capitalist thinking is seeking to gain
new strength by showing that capitalism is not only efficient (the most efficient system ever developed and implemented in the history of humanity), but also moral and therefore just. In business schools and economics faculties, hundreds of researchers spend their time demonstrating that capitalism is a moral force, that waste, environmental destruction and wealth can be limited through policies that leverage this naturally moral side of capitalism. However, morality has nothing to do with capitalism. While capitalism is not always immoral (though it often is), it is certainly amoral.18

Since capitalist morality is no more successful than the free market at reducing inequalities and protecting the environment, it is important to find political and institutional mechanisms to set things right. But which mechanisms?

Let's begin with demographic policies. All too often we hear the question of how to reconcile population growth with proper nutrition and environmental protection. Every time there is a lack of resources, an environmental calamity, a health crisis or if war breaks out, we hear the same refrain: there are too many of us on the planet. This argument was widespread in the 19th century, right up to the eve of the First World War and then afterward among Nazis, Soviets, Fascists and even among some leftists. The same refrain has accompanied certain development policies to the present day. If there are famines in Asia and India, as well as malnutrition and widespread disease, it is because they have too many children in those countries.

This observation is largely erroneous (graphs 1 and 2). The birth rate is now decreasing worldwide, including in certain regions of Africa. The global peak in population growth was reached at the end of the 1960s (2% annually). Since then, the fertility rate has dropped from 4.5 to 2.5, and consequently by 2015 population growth had fallen to 1.2%. In the coming decades a decrease is expected globally, with eastern Asia seeing a reduction in its population from 2040 onward. Southern Asia should reach its peak around 2060-70, while sub-Saharan Africa will continue to have positive population growth until the end of the 21st century, but with a deceleration starting around 2050.

Demographic policies adopted in certain countries, particularly in China, have been accompanied by authoritarian measures and, in the long run, will have a boomerang effect

with population aging. China will soon be faced with the problem of financing the pensions and healthcare of an aging population, while young people will be less numerous.\textsuperscript{19}

The fact is, if the planet is dying, if inequalities are increasing and hunger persists, it is not because Indians and Africans have too many children, but for many other reasons. In past centuries, colonialism, forms of decolonization, then globalization, not to mention global speculation on food staples and land, caused famines and destroyed ecosystems.\textsuperscript{20} So let's stop talking about demography when it has little to do with the issues of global warming, hunger and epidemics. There could be just as many people on the planet without millions dying of hunger and without ecosystems being destroyed. The problem is the distribution of resources and the use of technology.

An argument similar to the previous one is to point the finger at consumption in developing countries. Yet energy consumption per capita (chapter 9) is lower in China (and even lower in India and Russia) than in Europe and especially in the United States.\textsuperscript{21} European countries and the United States are still the biggest polluters.\textsuperscript{22} Next, it is true that a large share of polluting activities that destroy biodiversity – and indeed behind recent pandemics – have taken place in Africa, Asia (mainly China and southeast Asia), and of course Brazil. However, these activities respond in large part to demand from countries in the North (chapter 10) and they are directly related to the relocation of activities and companies from those very countries – outsourcing whose aim is to generate profits without paying the high salaries demanded by workers in the North. The hypocrisy of this argument targeting developing countries is taken to an extreme by its proponents when they condemn the rise in consumption of Asian and African populations, as if they were meant to be impoverished, to work for the North at low wages, while consuming very little and having few children.

Another objective that should be put into perspective: the fight against waste. At home, we often argue about this question: my daughter and wife mock my penchant for headphones and

\textsuperscript{19} Isabelle Attané, \textit{Au pays des enfants rares. La Chine vers une catastrophe démographique}, Paris, Fayard, 2011.


\textsuperscript{22} Chancel, \textit{Insoutenables inégalités}. 
other musical gadgets, while I always complain that the fridge is too full for my liking. We all want to help reduce waste – especially if others take the first step. The past and present system leads to the waste of such large quantities of resources, energy, raw materials, and food staples (chapters 9 and 10) that a tenth of it would be sufficient to end hunger and malnutrition in the world. Many ideas have been put forward in this regard: the FAO has suggested numerous measures for developing countries, ranging from the construction of infrastructure for the conservation and transportation of goods to the evolution of seeds and produce in order to reduce their perishability. Concerning advanced economies, for many years now associations and institutions have been suggesting ways to reduce the food waste of households. These measures are all welcome and should be encouraged. At the same time, we must not confuse the causes with the symptoms: food waste is a sign of something deeper, more fundamental than the inefficiency of developing countries and the overconsumption of advanced countries. Waste is a manifestation of inequalities (chapters 5 and 8), but also of the power of big supermarket chains which operate on just-in-time supply chain principles, imposing their schedules and prices on suppliers and shifting the risk of unsold inventory onto them. These same multinationals push producers in developing countries to produce large quantities and quickly (chapter 9). Waste is linked to the introduction of Northern techniques in contexts where infrastructure is lacking, such as silos or rail transport. The sale of seeds and fertilizers produced in advanced countries is a way of subordinating the South and boasting high yields without worrying about the journey from harvest to market, which remains a problem and a risk for the South. The North, which is behind these dysfunctions, just exhorts countries of the South to improve their organization (as does the FAO), even though the real problem is the productivism that is imposed on them.

In this context, energy policies take on special importance. It has often been affirmed that the main rupture would take place between fossil fuels and electricity. However, as we have seen over the centuries, the coexistence of several energy sources is more likely than an energy transition. The theory of path dependence (i.e. hard to break out of the established) has been used more in relation to energy than anything else. Hundreds of studies have pointed out the difficulties of changing the energy regime, owing to countless technical and economic

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23 Brown, *Full Planet.*

constraints. However, this theory fails to mention the power of lobbies to impose a certain choice and then perpetuate it. Even so-called alternative energies have been quickly taken over and promoted by giants of the oil and gas industry. Total, Exxon, and Shell got into the production of shale gas and biofuels. Even countries that boast about being environmentally friendly like Canada and Germany consume more coal, petrol, and shale gas than ever and continue to support their automotive industry – especially Germany – with fleets essentially made up of SUVs. It is quite clear that it is less a matter of limited reserves than one of control over energy sources. From the point of view of Trump, Putin or indeed the Canadian government, it is not a problem to drill deeper and deeper and in regions that have so far been spared destruction, like Alaska.

This is not to say that energy availability is not a problem, just that it is less a matter of quantities (the oil supply being artificially limited) than the way these markets work and their impact on inequalities and on the environment. This study shows that, unlike what is found in conventional histories of energy sources, a single true energy transition has taken place: that from human and animal labor to other sources. This process occurred extremely late: during the 20th century in the West and towards the end of it in other regions of the world, which is why the environmental impact of human activities only really exploded in the 20th century. If this is the case, then fiscal policies to fight against inequalities and for the environment are both crucial and inseparable.

**Green taxation vs inequalities**

The state of Paraná in Brazil was one of Lévi-Strauss's favorite places to do research. However, the region is no longer a place to study kinship, the "savage mind", or to become an anthropologist. Instead, it manifests the history of exploitation of land and the expulsion of autochthonous populations in the name of the environment and carbon credits. In 1999, a project was launched by a rather odd consortium: a Brazilian NGO called SPVS (*Sociedade de Pesquisa em Vida Selvagem e Educação Ambiental*), a North American NGO called The Nature Conservancy, and three large American corporations (General Motors, American Electric Power and Chevron). The project was to protect the Brazilian coastline, in particular

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the municipalities of Antonina and Guaraqueçaba. The two NGOs and three corporations acquired a total land area of 18,600 hectares. Through preservation and the restoration of damaged areas, this cluster boasted the removal of 860,000 tonnes of carbon from the atmosphere. The credits derived from saving so much carbon went to the three big corporations who could then continue to produce and emit greenhouse gases. Of course, neither the website of the NGOs nor those of the corporations involved provide any information on the amounts transferred. Nor do the communities concerned have any information on this subject.

The coastal region of Paraná is inhabited by Caiçaras, by indigenous peoples and by quilombo communities. These populations are dedicated to agriculture and cohabit with the forest where they produce their subsistence foods, mainly cassava flour, using a fallow land system. From the Mata Atlântica (Atlantic forest), they obtain heart of palm for food, vines to make handicrafts, and lumber to build houses, fences and canoes. They are hunting and fishing communities who never registered or enclosed the lands where they live and which they consider to be common land (terras devolutas), in principle belonging to the state. In the 1960s, logging firms and large landowners began to arrive and registered the lands in their name. Numerous families were threatened by hired thugs and were eventually expelled.

In the late 1990s, SPVS arrived in the region and began to purchase large tracts of land from owners. It also managed to get hold of some land belonging to posseiros (farmers with no deed of property). At this time, the communities of the region began to lose access to the forest and waterways. In the name of environmental protection, they were prohibited from cutting down trees on their lands. In order to intimidate local communities, the SPVS began to harass them with the help of the environmental police of the State of Paraná known as "Fuerza Verde" (Green Force).

These injustices were the result of the convergence between capitalist dynamics and so-called "green taxation". The main obstacle to reconfiguring agricultural production, distribution and

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the use of resources is low and unequally distributed taxation. Green taxation often has two shortcomings: its unproven effectiveness for the environment and its regressive fiscal nature (which hits the less fortunate harder).\textsuperscript{28} In particular, this is the case of the carbon tax that sparked the \textit{gilets jaunes} (yellow vest) movement in France. The idea behind this tax is that the polluter is the one who pays.\textsuperscript{29} It is no accident that this principle received the most support from large corporations and governments in developed countries. The carbon tax is based on conventional economics and the notion of externalities: imperfections in the market which require price corrections to reach an optimal balance. What this means is that certain types of consumption are taxed regardless of the revenue of the person or company concerned. An increase of 15 cents on the price of gas will be more of a burden for low-income households and even more so for those who live in rural areas and need to use their car for every trip. This is a very uncertain way of protecting the environment and affects the most vulnerable. Adopted by the OECD in 1972, then by the European Union in 1987, this policy was confirmed in France with the Barnier law in 1995.

These policies are combined with tax exemptions, which also have the support of companies less interested in protecting the environment than increasing their profits. The worst abuses and appropriation of public money have been committed in full legality on the back of these policies. Some of the top billionaires in the United States have launched into these green investments offering tax exemptions, from Bill Gates to Michael Bloomberg to Warren Buffet. Likewise in France, the wealthiest people – from Bernard Arnault to François Pinault and others – swear by the environment.

These activities fall under the broader framework of the carbon credits market – one of the most shameless discoveries of large international corporations and their political supporters, devised with the help of the mainstream economy. This mechanism, a perfect complement to the polluter-pays principle and inspired by the same orientation, was validated in Kyoto in 1997. Any company can trade carbon credits, buying or selling them on the market.\textsuperscript{30} Large corporations in the oil, coal, natural gas, and electricity sectors, as well as big automakers and


manufacturers of refrigerators and air-conditioners have greatly benefited from these credits. These companies purchase the right to continue manufacturing their cars or drilling oil wells and, in exchange, they finance measures to protect the environment on the other side of the planet\textsuperscript{31}: in New Guinea, the Amazon, Madagascar, Canada, the Congo or Brazil. Among the various goals of ENI we find "net zero emissions", which means balancing its oil and gas exploration on the ocean floor with the financing of "immense forests".\textsuperscript{32} The mammoths of hydrocarbons are now competing with each other for reforestation projects. Shell invested 300 million dollars in plantations with the aim of reducing its carbon footprint by 2 to 3%. As for Total, it now has a "business unit" created in 2020 and endowed with a 100 million dollar budget to "invest in, develop and manage activities to convert degraded natural environments into sustainable and regenerating carbon sinks, farms and forest operations, as well as conservation activities."

With the help of local government employees, these companies obtained the right to relocate autochthonous populations accused of insufficiently preserving ecosystems through their hunting and other activities. Since the mid-1990s, the Dutch foundation Face the Future has been promoting the reforestation and protection of Kibale National Park in Uganda, which even today is one of the foremost destinations for international safaris. While Face the Future obtained carbon credits for Dutch multinationals, which could then continue to produce petrol and other "ecological" goods, forest rangers and authorities in Uganda expelled thousands of villagers accused of degrading the environment. There were confrontations, shots fired by soldiers, the destruction of local cultures and the imprisonment of many inhabitants.

Many similar examples could be offered. The simple fact is that thanks to the carbon market a virgin forest or a coastline becomes an extension of an oil giant operating at the other end of the planet. It is not just about the plundering of underdeveloped countries' goods and labor by developed ones, but the opportunity for the latter to pollute while hiding behind the preservation of a strip of forest and, on top of that, relocating inhabitants by force.\textsuperscript{33} In a few rare cases, these autochthonous peoples are left in place, for example in New Guinea, in several regions of Africa or on the native reservations of Canada and Amazonia. These

\textsuperscript{31} Mitchell, \textit{Carbon Democracy}.


\textsuperscript{33} Tordjman, \textit{La croissance verte contre la nature}.
populations are no longer allowed to work the forests, and to survive they end up participating in displays of their ancestral traditions for the enjoyment of tourists.

Nevertheless, these schemes do spark tensions. Once it has been agreed that environmental policies must be part of a transnational and global framework, the question arises of how to encourage countries to contribute to a common fund or, if need be, to pay for the damage caused to the environment. Many countries in the North consider China and India to be the biggest producers of CO₂ and other greenhouse gases and that their goods should be taxed accordingly. This is how the otherwise sacrosanct principle of free trade is called into question in the name of the environment. The goods of Southern countries are blocked and taxed in the name of the fight against global warming.

These tensions mounted when several countries in the South decided to make the same argument concerning the environment that had previously been made about slavery: since Northern countries have been polluting for centuries, they should compensate Southern countries for the damage caused. This idea of an ecological debt was launched in the 1990s by a Chilean NGO (Instituto de Ecologia Politica) and was taken up again by numerous NGOs and governments of Southern countries. The 1992 Rio Declaration on Environment and Development recognized this notion and proposed to offset the financial debt of Southern countries against the ecological debt of the North. Subsequently, in a 2009 study published in Climate Policy, German and British researchers assessed this historical responsibility. The largest share was attributed to the United States, considered responsible for 25.6% of the climate disruption. The European Union accounted for 20%, while Brazil (5.2 %), China (6.4 %), Russia (7.3 %), all the OPEC countries (7.4 %), Japan (2.8 %) and India (0.3 %) had a lesser responsibility. Negotiations have been pursued on this question, but have failed systematically.

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34 Olivier Godard, "Une dette climatique ?" Les débats, 189, 2016, p.23-38.


36 Benito Müller, Niklas Höhne, Christian Ellermann, "Differentiating (Historic) Responsibilities for Climate Change", Climate Policy, 9, 6 (2009), p. 593-611.

On the other hand, since the end of the 1990s, "green" or "sustainable" stock market indexes have flourished. Not only do polluting companies display such labels, but now the entire stock market has gone green and has assigned labels and "green" points to Nestlé, Coca-Cola, Exxon Mobil, and BASF. In other words, so-called "green" policies make very little sense when they are conceived and practiced within the capitalist framework. As we have seen, these policies have very little impact on the environment and, conversely, contribute to exacerbating inequalities – to the point where one may wonder if their true objective is to protect the environment or to redistribute riches (yet again) to the wealthiest people. We need to radically rethink these measures by integrating them into fiscal policies designed to reduce rather than increase inequalities, as is currently the case. If the most advanced countries taxed high incomes, there would be more than enough to cover national social expenses and also to help developing countries. Yet, in recent decades, inequalities have accompanied growth in developing countries. In 2018, inequalities between the top 1% and the bottom 50% reached their highest levels in South Africa, Qatar and the Middle East, followed by Brazil and India, and then the United States, which is much more unequal than Europe. A vicious circle is forming between inequalities and destruction of the environment. On one hand, inequalities harm the environment, they encourage overconsumption, waste, and the use of fossil fuels, while environmental disasters afflict the most vulnerable, both in advanced countries and developing ones. Inequalities and environmental damage go hand in hand and it is impossible to solve one without affecting the other, though most political and economic plans seek to do so. The problem is that if equality and protecting the planet seem incompatible, it is because the system we live in has structured it that way. Equality, social justice and environmental protection are compatible under two conditions: that we change our way of reasoning (we need a new economic policy) and that we get out of capitalism.

Should we get out of capitalism?

"A specter is haunting Europe" wrote Marx and Engels after the revolution of 1848, and it is communism. They were wrong because communism never took hold in advanced capitalist countries. Neither labor, nor capital played the role that Marx and Engels had predicted. Labor

38 Tordjman, *La croissance verte*; Chancel, *Insoutenables inégalités*.

in general – not just wage labor but also and above all coerced labor and slavery – have been central to the long history of capitalism. These forms were not confined to pre-capitalist worlds as Marx thought; on the contrary, they have accompanied capitalism right up to the present day. Physical capital, on the other hand, played a lesser role for centuries and only became dominant quite late, starting at the end of the 19th century. This means that it is less physical capital per se that distinguishes capitalism from other economic regimes than its financialization against a backdrop of non-competing markets.

A later blind spot distinguishes our approach from that of Marx or economic liberals: both of them adopt the same productivist-extractivist approach whereby resources and the environment are there to be exploited. In this conceptual framework, there is no room for environmental policies, nor for that matter for non-European realities, which are supposed to follow the same pattern as the most advanced countries.40

Of course, one may always affirm that there is capitalism and capitalism, and that it is possible to adopt a reforming approach. This is where the economic and temporal regimes identified here become so important. Clearly, the capitalism of the 12th century is different from that of the 20th century, which in turn is different from that of today. However, these regimes also have aspects in common: severe inequalities within each country and between regions; a lack of concern for resources and for the planet, viewed simply as assets to be exploited; the formation of oligopolies while preaching about competition; the exploitation of labor in various forms (serfdom, slavery and post-slavery, wage labor); the central role of finance and speculation; and the privatization of the commons. These elements persist over time and are interrelated: oligopolies and speculation lead to the exploitation of resources and labor, while prioritizing speculative profits. The latter also create inequalities, encourage the destruction of resources and spur further speculation. The shift from a labor-intensive economy based on slavery and extreme inequalities to an international capital-intensive economy occurred precisely because the cost of labor rose in the West. The 20th century's democracy and capital intensification accompanied neo-colonialism and the plundering of the planet's resources. Finally, beginning in the 1970s, the end of decolonization, followed by the fall of communist regimes, the collapse of the Bretton Woods system and the shift to China accompanied the return of economic liberalism. These measures encouraged the subsequent

40 Stanziani, Les entrelacements du monde.
rise of speculation, destruction of resources and the globalization of inequalities. In the current state of affairs, it is simply impossible to make marginal changes to any of these elements without also touching the others. Therefore, it is necessary to get out of capitalism. What does that mean concretely?

Several specters have haunted capitalism along its history: the global emancipation of labor, not only that of European wage earners, but also of slaves, serfs, and immigrants subjected to extreme coercion; a massive reduction in inequalities through the real taxation of capital; the prohibition of financial speculation on land and staples; the effective and generalized protection of the commons, not only land but also seeds (prohibition of patents and intellectual property); and truly representative institutions. In the following pages, I will detail these propositions and suggest avenues for these specters to become reality.

○ Put an end to speculation

What is the "value" of our times?

With a few exceptions, \(^{41}\) economists abandoned this question several decades ago, concentrating instead on studying prices, game theory and strategies. Yet it is a central question that links economic theory to political philosophy, to history and to the social sciences. We simply cannot consider the place of the economy in the city without thinking about the value of things, services and labor. Yet despite Georg Simmel’s novel and still relevant observations, \(^{42}\) in the long history of capitalism, finance has done the most to break these links. In 2015, based on annual revenue, the global top 100 include 60 corporations and 40 countries. The cumulative revenue of the ten biggest corporations was greater than that of the 180 poorest countries. \(^{43}\) The value added of American multinational companies and their affiliates increased threefold between 1989 and 2011. \(^{44}\) Rising profits were accompanied by

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\(^{41}\) Mazzucato is one of the most significant: Mariana Mazzucato, *The Value of Everything*, London, Penguin, 2018.

\(^{42}\) Georg Simmel, *The Philosophy of Money*, Routledge Classics, 2011 (German original 1900).

\(^{43}\) Fleurbaey, *A Manifesto*.

decreasing taxes. Nevertheless, value does have meaning in companies' financial statements and also in national accounting systems (having finally reluctantly agreed to include these figures in their GDP calculations). But what is the meaning of these "signs", detached from any real economy, for workers and for society as a whole? More than ever, capitalism has become a "casino" economy, as Mazzucato defined it. Except that large corporations are the house and players at the same time and they always win.

These corporations constitute a threat to democracy; their clout in political life has increased over time. We have shown their role in the diffusion of hybrid seeds, pesticides and chemical fertilizers thanks to powerful lobbying. These same corporations have been brazen enough to finance scientific studies to refute research that showed the destructive impact of their products on the environment and on health. Even today, Montsanto and similar companies intervene in the production of information for the public and in scientific research.46 Therefore, if the first step is to apply a real and progressive tax, not only on income but also on business capital, then financial regulation is just as fundamental. I have shown that finance constitutes one of the constants of capitalist regimes since the 12th century (chapter 4), though under different forms: the financing of monopolies linking long-distance trade to slavery, then starting in the 1870s (chapters 5 and 6), companies creating value with speculative activities on the side, and finally in recent decades, a global surge of purely speculative activities (chapter 9). The solution is not just to regulate the stock market – it only concerns a relatively limited share of business capital; banks contribute much more. In the aftermath of the economic crisis of 2008, numerous mainstream economists and politicians, including Obama, called for more transparency. Banks and their activities were too opaque and thus abused the trust of the markets. This is the conventional argument whereby, for the market and the best of worlds to prevail, we simply need better circulation of information. The crisis of 2008 is thus reduced to a problem of poor information circulation. The real problem lies elsewhere: banks had gradually entered numerous areas of finance without any real control on the part of the authorities, thanks to the neo-liberal credo and blind faith in the markets. As André Orléan


has suggested, the regulation of banking and the separation of lending from financial operations constitutes a prerequisite for any control of financial markets.\textsuperscript{47} But is that enough?

We have shown the importance of commodity markets. Indeed, it is in this area that the biggest speculative profits have been made in recent years and most likely will continue to be made. Virtual trade in food staples is more likely to cause scarcity that encourage production. This sort of trade does not reduce inequalities; on the contrary, it leverages inequalities to make profits. There is no way to escape from productivism and the standardization of seeds and staples as long as global speculators control production and its prospects through futures.\textsuperscript{48} We need much more than piecemeal reforms to these speculative transactions. Rather than attempting to regulate this trade in virtual goods, which afflicts millions of small farmers and consumers on every continent, it should be prohibited outright.

Of course, these measures would only be effective if they were accompanied by profound changes in regimes of land ownership and intellectual property. Land grabbing has been occurring on a global scale (chapter 9), not with the aim of producing and extracting the value of labor, but on the contrary to trade options on goods that often will never see the light of day. In the past few decades, global speculation on farmland has skyrocketed. We have already described these transactions, which now concern the entire planet. In 2012, a UN report suggested linking access to land with human rights, an avenue that has largely been followed nowadays, whereby land is considered a fundamental right, especially in the rural regions of less developed countries.

A second avenue is to distinguish the customary rights of local populations from abstract notions about private property imported from the West – notions that are used to justify the dispossession of rural communities accused, for example, of never having properly registered their land. It is also possible to imagine international directives and national standards whose aim would be to limit or prohibit the acquisition of vast tracts of land and to give priority to local projects on a limited scale while protecting biodiversity.

In this area, cooperatives could play a major role. In many advanced countries, cooperatives were a key actor throughout the 20th century. Nevertheless, standard economic theory


considers these organizations to be legitimate only in the presence of "imperfect markets" and on the condition that they reduce transaction costs. Fortunately, in the past few years they have made a comeback in certain forms of peasant resistance. The FAO also seems to have rallied behind this movement, pointing out its importance in terms of biodiversity, environmental protection, social justice and food supply.\textsuperscript{49} In 2012, which the UN declared "international year of cooperatives", the world's 300 largest cooperatives – in every area, including agriculture, retail, insurance and health – reported revenues equal to the world's seventh biggest economic power.\textsuperscript{50} In total, roughly thirty thousand cooperatives around the world have 252,000 producer members, 11,000 salaried members and three million employees. It is estimated that a billion people – members, customers, or consumers – deal with cooperatives.\textsuperscript{51} Agricultural cooperatives account for 50\% of the world's agricultural output. In France, 75\% of farmers belong to at least one cooperative. In 2005, they encompassed 37\% of employees, 33\% of sales turnover and 21\% of agri-food processing turnover. In France, cooperatives now represent 14\% of businesses and jobs in the social-solidarity sector, alongside associations, mutual companies and foundations. They are particularly present in credit unions (the Crédit Agricole, Caisse d’Épargne and Crédit Mutuel networks) and retailing (Association des Centres de Distributions Édouard Leclerc and Système U).

Rather than pursuing vertical integration and capital intensification, as is the case in capitalist corporations and farms, cooperatives reconcile economies of scale with the operation of small production units. Although the biggest agricultural cooperatives pursue multiple activities, three main groupings emerge: cooperatives that provide services (credit, insurance, storage, transport), those specialized in production inputs (seeds, machines, tools), and those that handle sales and distribution. In particular, credit cooperatives are enjoying global success. In China, these cooperatives have supported rural transformations.\textsuperscript{52} Recent studies show similar

\textsuperscript{49} FAO, \textit{The Future}.

\textsuperscript{50} International Cooperative Alliance, World Cooperative Monitor, Geneva, ICA 2014 \texttt{http://www.euricse.eu/publications/world-cooperative-monitor-report-2014}


outcomes in Asia, Africa, and Latin America.\textsuperscript{53} The phenomenon of microcredits has sparked great enthusiasm in the media; this attention reflects the real success of these initiatives in India, the Near East and Africa. Despite its limitations – at times quite significant, like corruption – microfinance can play an effective role as long as institutional rules limit access to farmers and prohibit expropriation by financial intermediaries.\textsuperscript{54} This link between cooperatives, credit and forms of ownership is particularly striking in the case of seeds.

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\textit{Seeds and intellectual property: breaking the link}

In November 2019, a West African peasant seed fair was held in Burkina Faso, organized by the West African Committee for Peasant Seeds (COASP), a member of the West African Convergence of Land and Water Struggles. This event sought to promote local seeds against national policies, which are encouraged by countries of the North aiming to spread GMO seeds in those regions. As the participants pointed out, contrary to official arguments, peasant seed systems are able to ensure the food security of the entire West African population. Based on this, more and more peasant organizations and NGOs are exerting pressure on national and international institutions to recognize peasant seed systems as part of human rights. The argument made is that these systems prevent famines caused by industrial seeds, while also protecting biodiversity.\textsuperscript{55}

We know that since the start of the 20th century (chapter 6), and even more so since mid-century (chapter 10), the production of hybrid seeds and then GMOs has radically upset the economic, social and environmental balance. Seeds have been patented that only last one or two years and cannot be replanted because they are perishable. Seeds that require the massive use of chemicals, destroy ecosystems and aggravate the dependence of small farmers and peasants on large food retailers and producers of commercial seeds and fertilizers. This model


\textsuperscript{54} On these dangers and limitations see Isabelle Guérin, \textit{La microfinance et ses dérives}, Paris, Demopolis, 2015.

rests on perverse institutional rules: the WTO and the World Bank, with help from the IMF, support the diffusion of hybrid seeds and sanction those who do not comply. The International Union for the Protection of New Varieties of Plants (UPOV) makes sure that multinationals' legal rights over seeds are protected. Currently, 60% of the global seed market is controlled by three multinationals: Monsanto-Bayer, Syngenta-ChemChina and Dupont-Dow. The most recent biotechnologies make it possible to create new seed varieties simply by using seeds' digital sequence information (DSI).  

The consequences in terms of patentability are significant: we know that the American system prioritizes the filing of patents, while the European system prioritizes usage. Regarding seeds, this difference is called into question however when UPOV confers rights on anyone who develops a variety, even if the common strain goes back several thousand years. This is where large companies and seed producers seek to shut out small producers and peasant communities by patenting a slightly modified variety of the seed in question. Then these companies and their lawyers demand that local communities be prevented from using similar varieties. Conflicts obviously arise over the degree of innovation and the scope of the prohibition. Rules established in the new millennium say that seed producers have rights not only over the variety but even over their genetic sequence. When filing their patents, companies obviously emphasize their novelty, however infinitesimal. A single patent, on a "simple cross" tomato plant for example, may cover hundreds of varieties of tomato plant derived from this first strain. At present, 90 to 95% of all the genetic resources used by the plant breeding industry are modern varieties, while the remaining 5 to 10% are either from primitive species or similar to wild species. Around 94% of the global seed market is proprietary (i.e. trademarked varieties that are protected by intellectual property rights), and 35% are genetically modified seeds.

A protocol signed in Nagoya in 2010 and ratified in France in 2014 aims at the equitable sharing of benefits from plant genetic resources between seed manufacturers and the local communities that use the same variety. For example, if a multinational uses wild strawberries from Chile to develop new varieties, it will have a monopoly over the new strains but will pay a share of its profits to Chile and the communities concerned. Ostensibly a comprise, in reality this solution favors the production of new varieties and the monopoly granted to

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56 Tordjman, *La croissance verte.*
multinationals, who are just supposed to share some of their profits – on the basis of their own tax declarations – with the communities they stole the variety from. Another equally worrisome development has followed this one: the European Union, which hitherto had been opposed to GMOs and stood against prioritizing patent filing over usage, created a precedent in 2015 when the European Patent Office (EPO) approved two patents: one on a variety of tomato and another on a variety of broccoli, which had not been created through any modification to the genome, but simply identified, appropriated and patented. Following protests from rural communities, European authorities decreed in June 2017 that any patent application concerning a "conventional" variety of plant or animal, i.e. without genetic manipulation, would be rejected. Unfortunately, in December 2018, the technical bureau of the EPO overturned this decision following an appeal by seed producers. Henceforth it is possible in Europe for multinationals to lay claim to the patentability of living things, notably plants. This is a major about-turn after years of opposition to the American system and the reason is quite simple: scientists, most political authorities and European lobbies were worried about the advantage gained by the US in biotechnology due to the European prohibition on GMOs and patentability rules. Moreover, this argument gained strength when Bayer acquired Monsanto and then BASF took over the seed division of Bayer. There is no longer a trade war in this area between Europe (mostly Germany) and the United States, as their shared companies allow for a convergence of interests. This process also concerns the multinational Syngenta, which has also acquired several companies across the Atlantic, not to mention the merger between Dow Agro-Science and Dupont. Henceforth, these three giants control 60% of the global seed market.

Following these changes, the number of patent filings has skyrocketed. In Europe, 3600 agricultural patent applications were submitted in 2019. As was to be expected, these patents no longer only concern seeds, but also plants and harvests. The reason for this is that acquirers do not have the right to reuse the seeds without paying royalties. Moreover, certain varieties allow for specific uses and these are also listed in the patents. This is the case, for example, of patents on modified barley filed by Carlsberg and Heineken, who also discipline the use of the variety in brewing beer.

What solutions can be found to remedy these adverse trends?

57 https://www.ieepi.org/paroles-dexperts-brevetabilite-plantes/
Certain efforts at reform aim to modify the scope of these laws and judicial interpretations of them. For example, NGOs have sought to have plants included in "essential biological processes", like those concerning the human genome or the creation of new varieties of animal species. Others have attacked the idea of expanding a patent to include other varieties similar to the same plant. Some NGOs are calling for EPO meetings where patent approvals are decided to be opened up to civil society and NGOs.

Several NGOs have also taken legal action and have brought suit against numerous patents granted, arguing that no real innovation had occurred and that the company in question had simply patented a "traditional" variety. These court cases have multiplied, with NGOs winning a few rare cases, against Monsanto in particular.

Others are working to change national laws about seeds. In recent years the standards adopted in different countries strongly resemble each other and have allowed the diffusion of hybrids, then Monsanto seeds, without local communities being able to intervene. This is the case in most countries of Central and Latin America (Mexico, Honduras, Costa Rica, El Salvador, Colombia, Ecuador, Chile, Argentina, Peru, Brazil, Paraguay and Venezuela).

Of course, the stakes are such that these harmful trends could only be stopped through international cooperation. Some observers, like Joseph Stiglitz, winner of the Nobel prize in economics, advocate the generalization of free access to innovations, similar to what happens with generic drugs and free software. Most NGOs (e.g. No Patents on Seeds\(^58\)) and peasant communities are calling for an even more radical solution: for seeds to be considered as "common heritage of humanity" and to prohibit any patents in this area.\(^59\) In addition, Via Campesina proposes that priority be given to small-scale projects run by local communities where local know-how would be used to develop varieties of seeds suited to local ecosystems. In the past few years, peasants in Brazil, Palestine, Paraguay, India, Thailand, Zimbabwe, South Korea, Indonesia and other countries have launched processes for the conservation and preservation of local varieties, accompanied by agronomy training for young people.

This movement is nevertheless faced with several roadblocks. The international treaty on plant genetic resources for food and agriculture was signed in 2001 and came into force in

\(^{58}\) [https://www.no-patents-on-seeds.org/](https://www.no-patents-on-seeds.org/)

2004 under the auspices of the UN and its agency for agriculture, the FAO. This treaty gives priority to multilateral agreements between countries concerning the management of seeds. Faced with protests from several countries and their peasant communities over the years, this treaty evolved until the UN eventually recognized seeds as heritage of humanity in 2012. Unfortunately, once again, the proposal of Via Campesina and other NGOs was hijacked: recognizing seeds as heritage of humanity has primarily resulted in the creation of seed banks, following a model that emerged at the beginning of the 20th century. This solution mainly benefited multinational seed producers who use these banks to develop their own varieties, whereas since the early 2000s NGOs had been demanding that seeds be considered as heritage of humanity precisely to prevent their patentability. The advent of digital sequence information and genome sequences appears to confirm the fears of NGOs and the fact that the notion of "heritage of humanity" has been appropriated by a few multinationals.

Some NGOs, especially Via Campesina, are fighting to restore the original meaning of "seeds as heritage of humanity" – a common good available to all – and to prohibit all patents in this area. At the time of writing, the main countries, particularly the United States but also the EU, are dragging out the discussions and refuse to take into consideration this solution. LVC is now trying to strengthen the link between preservation of local seeds and the food sovereignty of the poorest countries. Starting in 2018, an international movement launched a campaign called "Adopt a Seed". Peasants and their families in different countries exchange seeds and disseminate the most important information about them. One such exchange took place from 29 August to 4 September 2018 in Brazil, attended by delegates from Palestine, the Near East, Africa, Asia, Europe, and North America. In 2019, the same event took place in Palestine where conflicts about seeds and occupation of territory (Israeli settlements) were particularly virulent. Palestinian peasants were particularly opposed to the diffusion of Monsanto seeds by Israeli settlers.

As things are currently, in spite of the efforts of numerous activists and NGOs, seeds continue to represent a central element in capitalist accumulation and a major source of inequalities. Attempts to make piecemeal corrections to intellectual property law in the area of plants have failed, as technological innovation has systematically moved ahead of efforts to draft and implement rules aimed at limiting abuse. Even the idea of seeds being considered as common heritage of humanity – initially thought to be a radical claim – was ultimately appropriated by large seed corporations and turned to their advantage. It is possible to prohibit patents on plants and leave peasant communities free to develop their own seeds locally. This solution is
tempting; it would bring agrarian practices closer to ecosystems and bring these closer to small-scale economic activities, without actually giving up on markets.

Naturally, ordinary economists will reply that without protection of private property, there would be scarcely any innovation at all and the world economic system would grind to a halt. Historical experience refutes this argument; the link between intellectual property protection and innovation is uncertain, if not ineffective. Moreover, this link says nothing about the impact of innovations in terms of the environment and social inequalities. In reality, we would have to combine the empirical studies and applications carried out by peasant communities with renewed public research. Many researchers at the French national institute for agriculture, food and the environment (INRAE) support these goals. Even in its most recent strategic positioning, the INRAE has defended the public nature of genome research and the non-patentability of plants derived from editing the genome. However, these ambitions are tempered by the ministers concerned (agriculture, research) who emphasize the importance of public-private partnerships. As long as this attitude prevails, it will be impossible to decompartmentalize INRAE’s work and encourage them to work with rural communities (though this approach has also developed in recent years) instead of private companies (Danone, White Technologies, etc.) – companies who are supposed to provide funds, though in reality they appropriate public infrastructures and resources. It is vital that we return to fundamental, public research, oriented to new goals: the well-being of peasant communities, a fairer and more equal distribution of food staples, and agronomic innovation no longer aimed at increasing yields but, on the contrary, at restoring resources while reducing inequalities and maintaining close dialogue with small farmers. Public money is supposed to be used with these aims in mind and not for private, productivist ambitions based on inequality, as is currently the case. Biodiversity, rather than standardization, can only be achieved in limited-scale projects, carried out in interaction with small farmers. Large research projects that have been dominated by political orientations for decades should be replaced by smaller projects, adapted to local diversity and truly aimed at improving our lives rather than the balance sheets of multinationals, the reports of a few neo-liberal ministers and their technocrat friends in research institutes.

- Restoring the centrality of labor

Whether we are talking about seeds, access to land, the stock market or fiscal and environmental policies, the measures suggested here only make sense if they are accompanied
by an overhaul of practices and the very notion of labor. In the world of before there were three main regimes of labor: the first (from the 12th century to 1870, chapter 1), where labor constituted the main resource everywhere and where extreme coercion was prevalent; the second (1870-1970, chapter 5) where the gradual emancipation of wage workers in countries of the North was accompanied by dependence in the colonies and countries of the South; and the third (since 1970, chapter 9) in which the dismantling of the welfare state in the North parallels the persistence of dependence in other regions of the world, all of them more and more connected. Associating profits with coercion is an integral part of different capitalist regimes, all the more so given that labor has been the principal source of energy over the very long term. The capitalization of economies does not exclude the exploitation of labor, but it shifts it within global production chains. It is time for labor to be recognized as the principal value and resource of our societies and for this centrality to be reflected in the distribution of wealth and in political and institutional capacities, which has never been the case. When labor is at the heart of production, wages are lowest. And when wage conditions improve, physical and virtual capital replaces labor. Introducing real democracy into labor constitutes a prerequisite for any improvement to working conditions. The rights of workers' representatives have come increasingly under attack from employers in France as in most Western countries. In a way, employers dream of a return to the world before the 20th century when, as we have shown, labor unions were not permitted and workers had little or no means of defense. Piketty, Cagé and others highlight two aspects: the acquisition of stocks and/or part ownership of a company by employees and the introduction of truly democratic bodies within companies. More than managers and boards of directors, workers are better able to orient investment strategies. These measures are indispensable, but we mustn't fall into the error made repeatedly by unions and left-wing parties in the 19th and 20th centuries, that of considering the industrial and urban sectors to constitute the entire world of labor. How can we protect agricultural labor in particular?

In this area too, cooperatives have a role to play. They give meaning to agricultural work and stave off the ghettoization of peasants. Policies supporting agricultural credits and limits imposed on land speculation and products help to protect agrarian work and the incomes of small farmers. The latter would not be forced to migrate to cities, often in miserable conditions as is currently the case in most countries of the South. In Cameroon and Benin, for

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example, cooperatives have contributed not only to the preservation of small local farmers, but also to the education of their children. In Morocco, an association of several exclusively female cooperatives defends the employment, wages and living conditions of women. Female agricultural cooperatives have also been started in Abidjan and in numerous other African countries, India, and Latin America.

In addition to cooperatives, other means of defending labor have come to the fore. Rural migrants, all too often ignored by national labor unions and by labor law in Europe and elsewhere, are starting to benefit from renewed attention from certain local unions and NGOs. In Italy, the Flai-CGIL was one of the first organizations to take action on the exploitation of agricultural workers. On 21 October 2006, along with other organizations, this union held a demonstration in Foggia against the exploitation of immigrant workers in the countryside. Starting in 2009, the same association launched a public campaign to denounce the phenomenon of oro rosso (red gold), i.e. the exploitation of informal workers in tomato growing areas by the caporalato – black market recruiters (formally prohibited) who bring in field laborers, taking control of their passports and wages.

In 2010, a similar situation occurred in the same region of Apulia, but this time it sparked a much bigger protest. Two migrants from Africa were injured in an assault with an air rifle. In the aftermath of this event, over a period of several days, a series of demonstrations and riots broke out between seasonal migrants working as orange pickers, the local population and police. It became known as the "Rosarno revolt ".

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In France, major conflicts over the exploitation of foreign seasonal workers have broken out, specifically aimed at the use of OMI contracts. These clashes have taken place in the Bouches-du-Rhône region where a large proportion of seasonal labor has been recruited using this system since the 1970s. Codetras is an association involved in defending the rights of foreign seasonal workers that was created in 2002 by individuals and organizations (particularly CGT and CFDT, major French labor unions). Codetras has organized demonstrations and has taken legal action to have the rights of seasonal workers recognized and be granted residence permits. In reaction to several cases won by these migrants and by Codetras, Sarkozy changed the law in 2006, eliminating an exemption whereby seasonal contracts could be prolonged by 6 to 8 months – an exemption that served as part of the legal argument for workers obtaining legal residency (law n° 2006-911 of 24 July, Sarkozy II). Employers then turned to other ways of recruiting workers, notably transnational services provided by temporary work agencies, most often Spanish. This decentralization of employment relations seriously complicated the efforts of Codetras and workers to have their rights upheld and wages defended, given that they now had to deal with intermediaries in Spain, through an extremely complicated international administrative and legal process. These actions were of the utmost importance; they revived the activity of unions which for too long had been skeptical of taking legal action (compared to collective and union action) and were only concerned about national workers and industry. Unions could only survive in the new world by steering clear of the nationalist current and by playing the global and solidarity card.

This requirement is valid for social policies in general. On one hand, the welfare state was conceived in a national – if not nationalist – perspective where residents and citizens are protected, while immigrants are excluded. This attitude goes back to the very origins of the welfare state at the turn of the 19th century and has never changed, except for the limited case of bilateral agreements between "powers" of the same standing. A slight opening of European borders after the second World War was soon replaced in the 1970s by a much more rigid closure. At the start of the new millennium, the UN estimated there were around 200 million illegal migrants in the world and since then the situation has only gotten worse. In

65 Contracts that allow foreign workers to be employed for a period of three months without a residency permit, which they may subsequently apply for.


67 Stanziani, Les metamorphoses.
addition to countries in the North closing their borders, there is the refusal of several countries in Africa and Asia to ratify any treaty on the trafficking of human beings. The trafficking of workers, servants, children and women is widespread between Nepal and Bangladesh (countries of emigration) and India and the Gulf states (importers). Genocides and the massive displacement of populations, with their columns of refugees in Africa, South Asia and Southeast Asia have expanded the areas where human beings are bought by unscrupulous traffickers.\textsuperscript{68} We can add the persistent spread of sex slavery in those same regions,\textsuperscript{69} while children are sold, forced into prostitution, sent off to war or, in the best of cases, put to hard labor in numerous countries of Africa and Asia.\textsuperscript{70} The more capitalism develops outside of Europe, based on speculation, the more these practices spread. Economic development in countries of the South – always expected to put an end to poverty, slavery and human trafficking – does not appear to offer any solutions. On the contrary, in a neo-liberal context it encourages these practices.\textsuperscript{71}

Meanwhile, international organizations limit themselves to a few generic declarations. Even worse, in the official definitions of the UN and the International Labor Office, "immigrants" comprises a single category, implying that they willingly accepted their displacement.\textsuperscript{72} Any other circumstances (coercion, forced displacement, abuse) must be proven, which aggravates the vulnerability of these populations before leaving their country of origin, during the trip, and upon arrival.\textsuperscript{73}

In Europe and in the United States, closed borders encourage people smugglers and intermediaries of all sorts to take advantage of the situation. Once there, regulating the conditions of immigrants is harder and harder: severely reduced formal rights and all sorts of

\textsuperscript{68} Campbell, Stanziani, \textit{The Palgrave Handbook of Human Bondage}.  
\textsuperscript{70} Gwyn Campbell, Suzanne Miers, Joseph Miller eds, \textit{Children in Slavery through the Ages}, Athens, Ohio University Press, 2009.  
abuses of power. Amnesty International, La Cimade and other humanitarian organizations denounce these increasingly numerous abuses. Without residency papers, one has almost no rights. Even for immigrants with papers, the difficulties are enormous: they are frequently exploited in the labor market, receiving lower wages for the same work or qualifications as nationals.\textsuperscript{74}

In the face of these abuses, there is only one solution: a welfare state open to all, including immigrants.\textsuperscript{75} This solution would help defuse the increasingly serious tensions between national workers and immigrant workers, tensions that stem less from realities on the ground than from right-wing arguments. Unemployment is not a consequence of immigration – immigrants mainly end up working jobs that national workers refuse – but of capitalist policies. Unemployment is caused more by offshoring and the endless quest for profits that benefit managers and shareholders than by immigration. Moreover, many studies have shown that immigration finances a large share of public expenses and a social security system that is in the red.\textsuperscript{76} The influx of immigrants contributes to increasing GDP thanks to their contributions to work, social security and consumption.\textsuperscript{77} The problem is not economic, but political and ideological, involving a broad spectrum of political parties, including some on the "left", which in Europe are now making right-wing arguments and pointing a finger at immigration.


