

December 2020

**Keywords:** Ecological Economics,  
Environmental Conflicts, Degrowth,  
EJAtlas

## From Ecological Economics to Political Ecology

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**Ecological economics studies conflicts between environmental sustainability and economic growth. Industrial economy is not circular, but entropic. Therefore, economy seeks new natural resources at the “frontiers of extraction”. Usually, there are poor or indigenous people in these places. There are, therefore, many “ecological-distributive conflicts” which are studied by the political ecology and registered by the Atlas of Environmental Justice ([www.ejatl.org](http://www.ejatl.org)). Various social values (economic, cultural, ecological) appear in these conflicts.**

I have worked for 45 years since the 1970s on two related subjects: ecological economics and political ecology. Ecological economics criticises conventional economics because economics focuses on markets and prices and not on the use of energy and materials in the economy, the “social metabolism”. Political ecology in turn studies “ecological distribution conflicts”. I emphasise “ecological” because conflicts on pollution or land or water grabbing cannot be translated only into lost money values. There are other values in dispute.

I helped to forge ecological economics in the 1980s, together with Herman Daly, AnnMari Johnsson, Bob Costanza and others. We followed in the steps of Nicholas Georgescu-Roegen, K. W. Kapp, Kenneth Boulding, all historical figures of proto-ecological economics, as before them Patrick Geddes, Frederick Soddy, Otto Neurath.

In the 1980s, some of us in ecological economics came from ecology (like H. T. Odum) and some were dissident economists. We criticised the attempts to show that there was no contradiction between economic growth and environmental sustainability, as in the term “sustainable development” of the Brundtland Commission of 1987 (precisely the year when I published my book *Ecological Economics: energy, environment and society*). Even now the United Nations insists in the Sustainable Development Goals (SDG) or Agenda 2030 on the idea that economic growth is compatible with environmental sustainability, as in SDG Goal no. 8. We criticise this (Menton et al 2020, in the journal *Sustainability Science*). We oppose “green economic growth” and “sustainable development” because they do not exist. The ecological viewpoint implies less economic growth, and indeed some “degrowth” leading to a “steady state” as Heman Daly proposed already in the 1970s.

Economic growth meant from the beginning of capitalism the destruction of biodiversity and human lives in the sugar and cotton slave plantations in the Americas, and a bit later in the thermo-industrial revolution, the burning of coal, oil and gas. All of this is not properly accounted for by economists. We need to look at reality in physical and social terms, not in chrematistic terms.

Chrematistics was a notion coined by Aristotle, defined as the part of the economy dealing with money, markets and prices. There is another part of the real economy – the care of young and older people, and the services from nature, the soil (that we pave over and whose fertility we undermine), the water cycle that we interrupt and pollute, the air that we make unbreathable.

The field of study of “ecological economics” did not exist with this explicit name before the mid-1980s. I had published in Catalan a book on the topic (anticipating the 1987 longer book in English), and it was reviewed by Luis Urteaga in *Documents d’Anàlisi Geogràfica*, 7, 1985, pp. 193-205, with the title “La economía ecológica de Martínez Alier”. In 1987, a meeting was organised in Barcelona where the first ecological economists decided to create a journal and a society with the new name of Ecological Economics. Economic journalist Manuel Estapé wrote an article on this meeting in the main local newspaper, *La Vanguardia* (4 October 1987), with the title “First Conference of Economics of Ecology”. He interviewed me and also Bob Costanza, Bruce Hannon and Roefie Hueting, three of 39 participants who included Herman Daly, Silvio Funtowicz, Jerry Ravetz, Martin O’Connor, Mario Giampietro, Richard Norgaard, Charles Perrings, Thomas Zylicz, AnnMari Jansson, etc., the nucleus of what became the International Society for Ecological Economics. This is explained in my book of memoirs “*Demà serà un altre dia. Una vida fent economia ecològica i ecologia política*”.

Critiques from ecological economics were not only against conventional economics but also against Marxist economics because, although Marx and Engels understood that the economy implied a changing “social metabolism” (flows of energy and materials), they did not analyse this in detail and refused to believe in limits to the economy once the “productive forces” would be released from their fetters by changes in the capitalist relations of production. “Growth of the productive forces” meant (in physical language) destroying the exhaustible stocks of fossil fuels formed geologically by photosynthesis millions of years ago and also, as known since the late 19th century, changing the composition of the atmosphere.

Concepts that I helped to disseminate are “sustainable economic *degrowth*” together with Giorgos Kallis, François Schneider, Federico Demaria and the whole group in Barcelona since 2010 calling themselves Research & Degrowth; ecological economics, with the International Society for Ecological Economics and its branches in Europe, Latin America and India which I supported from their births between 1987 and 1997; and then the “environmentalism of the poor and the indigenous” or *ecologismo popular* since 1990 (together with Ramachandra Guha and others). The journal *Ecologia Política* was launched in Barcelona with Anna Monjo of Editorial Icaria and with economist James O’Connor. Reaching 60 issues in 2021, it has been successful mainly in Latin America in explaining the movements of the environmentalism of the poor and the indigenous. I see that now there is an incipient vogue for calling these movements “subaltern environmentalism”, why not? The term will be understood in India by social historians, and by Gramscians in Europe and elsewhere although Gramsci himself did not write on environmentalism.

So, I claim to be intellectually both a Zadist in Europe and a Zapatista in Mexico because Zapata in the Mexican revolution of 1910 asked for *Tierra y Libertad* meaning that land (and water) should remain as commons, against privatisation by industrial sugar mills in Morelos. Not yet being an environmentalist, Zapata was already practising the environmentalism of the poor and the indigenous. Livelihood and freedom were not to depend on the capitalist abundance promised by President Porfirio Díaz, on the contrary. I am also a Mariateguista because Mariátegui at one point (already dead) was accused of being a Narodnik, as a supporter in the Andes of the indigenous commons against the *hacendados*, and I am myself an ecological neo-Narodnik currently writing what is likely to be the last book of my life entitled *Land, Water, Air and Freedom* on the international movement for environmental justice, based on the EJAtlas<sup>1</sup>, to be published in 2022.

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1. It can be accessed at: [www.ejatl.org](http://www.ejatl.org)

## **Covid 19, the GDP and the debt economy**

The health crisis linked to the Covid-19 pandemic is causing a huge economic crisis. But we don't know if it will last long. It can be transient; the market economy is going to restart anyway. What has happened is not “degrowth by design”, it is an accident. It is not planned “sustainable degrowth” by political consensus in order to avoid climate agroecology increases by 10%, that's fine. We can take advantage of this crisis to develop local agroecology. The current crisis also allows us to talk about the benefits of a decrease in travel change and biodiversity loss, to improve the quality of city air, to support care of needed people by public expenditure, to decrease mobility, to disinvest from fossil fuels, advertising, military industries.

This moment has allowed us to think and to preach some ideas with more political courage. For example, anybody can now agree that we should forget GDP and macroeconomic accounting. If GDP falls by 10%, it does not matter provided that the unemployed are supported. It's real life that's important. If public health drops by 10%, that is terrible. But if it increases, that's fine. If less people travel, especially by air, this is all right. There is a growing international movement, *Stay Grounded*, which has been around for several years already.

Our goal should not be a growing economy again to pay off our debts. There are in fact lots of unpaid debts. For example, companies do not pay for their ecological liabilities. There are conspicuous international cases such as Chevron Texaco in Ecuador, Shell in Nigeria. Nor do the world's rich pay their debts from their excessive carbon dioxide emissions causing climate change. While ecological debts are not repaid, why should economic debts be paid? Even when people starve to death, should they pay the economic debts?

The priority is to forget about GDP. Instead of saying “GDP is going to fall by 10%, that's terrible,” we should say “we will no longer count things with GDP.” Keynesians say we need 3% or 4% growth to achieve full employment. But we can only reach those numbers with more oil, gas and coal burning. That is no longer possible. The economy must no longer grow, people must live.

The second priority is to renegotiate debts. Countries such as Ecuador, Argentina or many African countries have a lot of economic debts. They're all mental, on paper or on a computer. These countries are really creditors of large ecological and social debts. Economic debts can be negotiated away. In 1953, West Germany did not pay the debt created by Adolf Hitler. In recent years low inflation that has made it difficult to repay debts. We should not have profit-making private banks but only public savings banks unconcerned about making profits, and credit unions or cooperatives.

I think that the obsession with the GDP comes in part because public debt is given as a percentage of GDP. For example, the Italian state has a debt of 14 months of GDP. And debts are what drives the capitalist system and disciplines wage labour, they force the obligation to export cheap raw materials (see Argentina), they impose the great discipline of mortgages, etc. Ten years ago there was a big scam in Catalonia and parts of Spain against relatively poor people who bought flats, mortgaged them, paid for them almost whole, and some of them are still being evicted for not paying the full amounts including the accumulated debts. Some were immigrants from Colombia, from Ecuador, Peru, I know one or two of them. The obsession with GDP is the obsession with continuous rolling of the debt wheel and living out of interest. It is not the only time in our history that metaphysical inventions or *dispositifs* have been deployed to discipline people – for example, “If you ignore us and commit mortal sins, you will go to hell.” This is why Varoufakis and other victims of *Debtocracy* sometimes mention the “financial Inquisition”.

Covid-19 has also helped the idea of a universal basic income for all people between the ages of 18 and 65. This is a policy that does not originate in ecological economics or in the Degrowth movement but most of us support it. In Spain, the progressive government of the Spanish Socialist Workers' Party (PSOE) and Unidas Podemos (UP) is creating a “minimum vital income” in 2020. Podemos started talking about a universal income about five years ago. Now that they have entered a coalition government in a subaltern position, they are forced to back down. This

minimum income only affects some people. This requires more bureaucracy: who can have it and who can't? A universal income would be universal, everybody with a DNI or NIE would get it. It would have a good effect on people's mental and physical well-being. Women would be more independent of their husbands or fathers by having their own income. And it would also have a good effect on the labour market. For example, people could work three or four days instead of working five days a week because they would have extra an income of €400 or €500 per month from the basic universal income. They would travel less to work, would be more relaxed, they could do other things. Just as we have a right to health or school, we need to create a human right to a universal income. This would change a lot in the capitalist system.

We are wrong if we believe that GDP measures production, and that we must increase GDP to pay back debts. They say: "we must get indebted to be able to spend more money to get out of the crisis, and then we must increase GDP (in monetary terms, of course) to pay back debts". An infernal wheel because what we call "production" is largely destruction related to the mining, transport and combustion of oil, gas and coal. Pierre Charbonnier writes in *Abondance et Liberté* that we must put an end to "productionism". I think now is time to abolish the GDP, to replace it with social and physical indicators.

Polluting industries can be shut down overnight as we have already done it during confinement. Car factories started making artificial respirators. In the same way, we could convert industry into the manufacturing of more necessary things. For example, in Europe, we do not need to build new housing, because there are enough square metres of buildings and second homes. We could redistribute everything in another way. Advertising is not needed, military industries should be drastically reduced even if this creates wage-unemployment. Hence the need for a universal basic income, so that people are not forced to work for wages in damaging occupations. But urban regeneration is needed, cleaning up old industrial sites. We must think about agricultural regeneration instead of cars and motorways.

Covid 19 allows a discussion of new policies. The first is to forget about GDP. The second is to renegotiate debts. The third is a universal basic income. Let us seize this moment to 1) Stop counting Gross Domestic Product, use physical and social indicators to decide whether we are improving or worsening. Never talk about GDP again, ever again. 2) Internal redistribution, a basic universal income (rather than dreaming that wage employment will arrive for all thanks to economic growth). 3) International redistribution, enough of ecologically unequal trade and also start recognising the ecological debt of the rich. 4) Disassociate the real economy from the payment of many financial debts, not to go back to the *Debtocracy* of 2008. 5) Less travel by people and also of goods. 6) More local agroecology, more ecological urbanism. All this guided by democratic debates about how to impose some prohibitions and how to change taxes. It is not easy to raise taxes on fossil fuels, if you see what happened in France with the *gilets jaunes*. Now, I think finally everyone admits climate change exists.

The Covid-19 pandemic has been a good opportunity for remembering other pandemics, those coming to America after 1492 and causing a total demographic catastrophe, as also the Black Plague in Europe (and in Catalonia, of course) and their influence on the peasant wars of the end of feudalism that I myself had often explained in class. Particularly the 1918 flu, which is the closest. The first few weeks of confinement I remembered and learned more about the history of pandemics than I did in my entire life. We have all learnt about epidemiology and demography. The historical demography of America is part of our history as Europeans, and is not taught enough in schools. Leon Portilla, in *La Visión de los Vencidos*, explains that in Tenochtitlan, in Mexico, the Spaniards won because smallpox arrived, which they called Hueyzáhuatl. In 1992, the Fifth Centenary of the "discovery" was celebrated. With Verena Stolcke in 1990 we brought Alfred Crosby and Noble David Cook to Barcelona, great historians of the demographic catastrophes in America after 1492 due to lack of immunity and other reasons. No newspaper mentioned them, now they would be more successful. It seems that with this pandemic we are all equally vulnerable. Are all human beings initially equally lacking immunity from this virus? I don't know. It seems that

the pandemic will last a couple of years, back and forth, with excess mortality over the usual level that will not reach by far 1 percent.

After the flu of 1918-19 came the Charleston and the 1920s, economic growth, the crisis of 1929, the fascisms, the Spanish war of 1936-39, Francoism and World War II, also Japan's terrible war in China. Humans don't need any viruses to make disasters. I am impressed by the possible similarity now with the major pandemic of 1918, the "Spanish flu" that did not come from Spain. Many people died in that pandemic. But it was not like the Black Plague of the Middle Ages, or the diseases imported by the "Conquest" in Latin America in the 16th century. It will probably be less with the Covid-19 pandemic. But it can finally help confirm the global population peak. The population is not going to grow indefinitely.

### **The environmentalism of the poor and the indigenous**

In 2002 I published a book called *The Environmentalism of the Poor. Ecological conflicts and valuation*. The subtitle that I wanted was: Ecological distribution conflicts and languages of valuation. It was too long<sup>2</sup>. In this book, I presented three currents in environmental movements. The first is the "cult of wildlife." Conservationists propose that part of the land should go to industry and another part, 10, 15 or 20%, should be preserved for wildlife. It's a minority of environmentalists that promote national parks. This current was born in the United States in the 19th century and developed in Europe in the 20th century. The second trend is "eco-efficiency", with slogans such as the "green new deal", sustainable development, the "circular economy", "dematerialisation of the economy": many euphemisms for arguing that economic growth and ecology are compatible. It is a very active trend within the United Nations, social-democratic governments, the Chinese Communist Party and the European Commission.

Finally, the third current is that of environmental justice and the environmentalism of the poor. For example, the Zadists against the airport of Notre-Dame-des-Landes: people who defend the land against privatisation. In my book, I talked about the poor but I should have talked more about Indigenous peoples. Worldwide, 370 to 500 million self-identify as such. They live often in the frontiers of commodity extraction: in the Arctic, the Amazon, Africa, central India, the Andes, where there is coal, copper or iron mining, or oil or gas extraction. They are at the forefront of the fight against "extractivism". "Commodity extraction frontiers" is a concept from historian Jason Moore thinking of the Europeans who arrived in America after 1500 in Potosí in Upper Peru to extract silver to make luxury goods or to trade with China, and a bit later in the Caribbean where other Europeans grabbed the land, imported slaves to produce sugar which was very useful for feeding workers during the Industrial Revolution. These frontiers of extraction (and also of waste disposal) are constantly being pushed back: today they are in the Arctic, in the Amazon where there are also groups like the *Achuar* people protesting against oil companies. These people are not members of Greenpeace or Friends of the Earth, they are environmentalists in their own way and claim their rights to land, water and air. Our economy in Europe is based on cheap imports of raw materials and energy. This is why political ecologists in South America complain against "extractivism" with Maristella Svampa, Eduardo Gudynas, Alberto Acosta.

Political ecology studies environmental conflicts. Which values are deployed in such conflicts? For example, an indigenous people can claim the value for livelihood of a mountain for its supply of water, wood, seeds or medicinal plants. They can also argue that the mountain is sacred. On the other hand, there is the language of monetary valuation of the environment, which allows compensation in cash for environmental damage. Conventional economists try to impose this chrematistic language. However, we ecological economists say that there are incommensurable values, it's impossible to reduce all values to a single measurement unit. Economists talk about the economy merely as chrematistics. But Aristotle also spoke of the *oikonomia*, which has to do with the conditions of life. There is a double meaning to the word "economy". Marx, Frederick Soddy,

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2. In the end, the subtitle was "Ecological conflicts and valuation", although the one I preferred was "Ecological distribution conflicts and languages of valuation".

Karl Polanyi, Herman Daly and I have all emphasised the difference between chrematistics and the real economy.

In my book of 2002, I also talked about “feminist neo-malthusianism” referring to a movement in France, also in Catalonia (studied by Eduard Masjuan) and elsewhere in Europe, the US, parts of Latin America 120 years ago. It was a movement particularly strong in France. The *grève des ventres* was an expression forged by Marie Huot, a feminist activist. When shall we reach the “demographic peak”? Shall we reach 10 billion people or will we stop growing before that? Depopulation is going to be a major research topic in the coming decades. I welcome this. In Europe more than a century ago, women and men decided to have less children, and later also in many other places such as, for instance, in Southern India. A rapidly declining growth rate of the world's human population is a good trend. Perhaps the peak will be in 2050, before reaching 9.5 billion. Remember that in the 20th century population increased from 1.5 billion to 6 billion. The curve is flattening, it needs to be flattened more.

### **Pierre Charbonnier: against “productionism”**

My book *The Environmentalism of the Poor* was published in several languages, and finally in 2014 in French as *L'écologisme des pauvres. Une étude des conflits environnementaux dans le monde*. It was well received, including a long critique by philosopher Pierre Charbonnier who was then in his early 30s<sup>3</sup>.

His own book of 2020 on Western political philosophy, *Abondance et Liberté*, is very good indeed. We could be at the beginning of a new era in which ecological economics and political ecology will be the main themes of a new political philosophy. I like that very much. He praises the theory of popular environmentalism or environmentalism of the poor and indigenous people, and our Atlas of Environmental Justice. His main thesis is that from the 17th century until now the political philosophy and political economy of Grotius, Locke, the Physiocrats, the Liberals (Adam Smith), Marx and the Socialists, Karl Polanyi, the Keynesians and the Neo-Liberals all somehow realised that economic abundance depended on access to land, to colonies and slave labour, hydraulic energy, the steam engine and later coal, oil and gas, but did not put the study of social metabolism (energy and material flows) at the heart of political and economic analysis. Abundance allowed freedom (of some), and those who were not yet free would become so in a future of abundance. Political philosophers and political economists put physical realities at the background, not at the forefront of politics.

So much so that climate change caused by the burning of coal that has been well known since 1896 with Svante Arrhenius did not lead to any political reaction until the 1980s. Almost one hundred years passed without political reaction. In the 20th century, burning coal increased sevenfold, and oil and gas increased much more. Until 2020, it continues to increase and therefore there are more CO<sub>2</sub> emissions. We have not reached peak CO<sub>2</sub> emissions (at least until 2020) and much less peak concentration of CO<sub>2</sub> in the atmosphere. There is talk about climate change at international meetings; almost nothing is done. The concentration of CO<sub>2</sub> in the atmosphere was 300 ppm in 1900, 360 in 1990 and now 412 ppm en route to 450ppm by 2050, perhaps 500 ppm by 2100. The pandemic and confinements of 2020 will not be reflected in this curve, which is called the Keeling curve. The Keeling curve must be flattened (Graph 1).

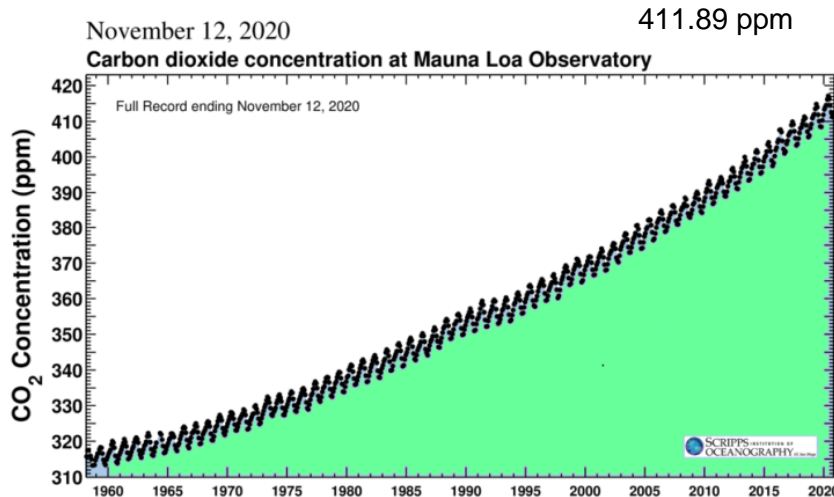
Pierre Charbonnier's question is whether climate change and in general political ecology (and the physical indicators established by human ecologists and ecological economists on Material and Energy Flows, the HANPP) will now enter into the demands of trade unions and political party programmes as central themes. Charbonnier thinks that the leftists and the diverse environmentalist fellow-travellers (I call them the Zadistas and Zapatistas) should become protagonists of this political change. They will put ecological economics (instead of conventional economics), political ecology, public health, agroecology and food, housing, at the heart of politics.

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3. <http://www.unsam.edu.ar/ojs/index.php/conhist/article/view/267>

They will stop talking about GDP, economic growth, repayment of financial debts, austerity vs. Keynesianism, as the main topics of politics. They will insist on the political relevance of social and ecological indicators. Economists must withdraw from the public arena and be replaced by ecologists, public health and agroecology experts, and by environmental urban and regional planners.

**Graph 1. The Keeling curve, reading on May 26, 2018. Carbon dioxide concentration at Mauna Loa Observatory**



Note: Full Record ending May 26, 2018

In universities, economists should study human ecology in the first semester, and then they should study social history and the societies which have existed without markets (based on reciprocity and redistribution) in the second semester, and only then would they be allowed to study markets and prices. And when they go into macroeconomics and the calculation of GDP, they should be taught that GDP should be abolished, and learn about an ecological macroeconomics without growth. They should also be taught about “ecologically unequal exchange”. Pierre Charbonnier highlights this as a leverage point for applying other economic measurement parameters. He wonders how it is possible for standard economists still to propose David Ricardo's theory of international trade. On the other hand, Marxists talked about unequal exchange of working hours but not unequal exchanges also in hectares, in energy units and tons of materials, in pollution loads and in water “incorporated” into exported raw materials. These are calculations we have proposed with Alf Hornborg and others for 25 years. There is a new economic-social history measuring these unequal exchanges and their effects. One example, Brazil exports 400 million tons of iron a year, there are disasters like Mariana, Brumadinho: hundreds of deaths and major ecological damage when iron mine waste deposits break down (*presas de jales* as they say in Mexico, *diques de relaves* in South America). Brazil exports much iron ore at a cheap price, and it does a lot of damage locally. There are protests of the environmentalism of the poor and the indigenous that started on a smaller scale in colonial times in Potosí, Zacatecas and Minas Gerais.

These are national and international “ecological distribution conflicts”. They should be discussed and brought into politics. But as Pierre Charbonnier argues, we must go beyond this; after 150 years of socialist ideas about the distribution of goods (and evils) “produced” by the economy (based on coal, oil and gas, and cheap raw materials) it is necessary for ecological socialists to wonder what “production” means as measured in GDP. And what do the expressions used in Marxist language, “development of productive forces” and “the accumulation of capital” mean? Burning fossil fuels is not “accumulating” anything physical, it is dissipating energy and producing climate change (accumulating in any case CO<sub>2</sub> in the atmosphere), and also making money that allows more money to be earned, but not actually “accumulating” energy. And if we burn agro-fuels, we eliminate other species that lose places to live. We do not accumulate anything or develop any productive force.

## The EJAtlas at ICTA UAB and the world movement for environmental justice

The industrial economy is not circular, it is entropic. Therefore, it requires new supplies of energy and materials extracted from the “commodity frontiers”. It also produces polluting waste. Therefore, ecological distribution conflicts arise.

Figure 1. The first page of the EJAtlas. Conflicts are coded by colour



The Atlas of Environmental Justice is an online inventory of such ecological distribution conflicts based on scholarly and activist knowledge. It started in 2012 and reached 3150 entries by May 2020, allowing new work in the field of comparative, statistical political ecology. We add one or two conflicts daily, they are conflicts born of projects that harm people and the environment. They also produce kilowatt-hours, or tons of soybeans, etc. Those evils and those goods cannot be measured in the same units. We make such conflicts more visible (often involving deaths, sometimes successfully stopping projects, etc.) by putting them in the EJAtlas. Some are historical and others from today (Figure 1). Academically, we do comparative, statistical political ecology. And we give a little help to the global movement for environmental justice. In the north, we must repent from our colonialism and racism. For example, the 2015 Paris Agreement on climate change did not promise enough reductions and, worse, it has a No Liability clause: rich countries are not legally responsible for the climate change we have produced with our excessive CO2 emissions. Extractive companies also practice this principle of no-liability at local level, e.g. Chevron-Exxon in Ecuador, Shell in Nigeria.

The EJAtlas classifies such conflicts in 10 main categories: nuclear energy, biomass, fossil fuels and climate justice, mining, infrastructures (such as motorways, airports), industry, biodiversity conservation, water, waste management, tourism. The EJAtlas from the ICTA - UAB is becoming well known around the world. Each entry contains a description, sources of information, and many codified variables. It is directed by Leah Temper and me, coordinated by Daniela Del Bene, and it has had hundreds of collaborators. The EJAtlas is used for research but also for university teaching in environmental social sciences and in business economics and management. It is a unique instrument co-produced with and supporting environmental movements. It allows for comparative analyses on the social actors involved in the conflicts and their forms of mobilisation, and on the behaviour of private or public companies. Research can focus on countries or regions but also on cross-cultural topics such as copper mining, sand mining, eucalyptus or oil palm plantations, dams, incinerators and other methods of waste disposal, coal-fired power plants, gas fracking, nuclear reactors, CAFOs (concentrated animal feeding operations). Cross-cultural analyses are done also on the cultural expressions (slogans, banners, murals, documentaries) of the conflicts gathered in the EJAtlas. The wealth of research coming from the EJAtlas contributes to give an affirmative answer to the question: Is there a global environmental justice movement?

In Catalonia, the EJAtlas has collected a few conflicts only and I shall explain why. This is a world atlas. There is one person in Catalonia for approximately every thousand people in the world. The



EJAtlas is concerned with the proportion between population and number of cases in the EJAtlas. We shall add soon two cases in Catalonia clearly missing still: the asbestos pollution in Cerdanyola by the Uralita factory (delayed working-class environmentalism) and the anti-nuclear movement of the 1970s in Ascó and Vandellós (Tarragona), reaching then about two cases per million inhabitants. The registered cases are: GM maize (in Lleida and Aragon); Tourism (in Vall Fosca, Pyrenees); Coal power plant, and later waste incinerator (Cercs); MAP - high voltage electric line from France; Pork industry; Potassium mining (Llobregat River); Bullfighting, prohibition of; Asphalt factory at Ateneu 9 Barris (Barcelona, Fig. 4); Waste burning at Lafarge cement factory (Montcada i Reixach); Midcat - gas pipelines industrial pollution Ercros (Flix); Water transfer (Ebro River).

It would be easy to add other cases by consensus among environmental groups and activists, and collect not the 14 but the 25 most relevant environmental conflicts in Catalonia, reaching over 3 relevant conflicts per million inhabitants. This abundance of conflicts is also true for the world as a whole. Local researchers in political ecology and environmental history would be able to collect twenty or thirty thousand relevant environmental conflicts. The EJAtlas is thus a limited sample of only 3,150 cases (May 2020), but a good sample that might grow to 5,000 by 2024 with improved geographical and thematic coverage.

**Imatge 1. The Ateneu Popular Nou Barris occupies the space of an asphalt plant (owned by Barcelona City Council) dismantled in 1977 by direct action by neighbours carrying banners: “Save our lungs - Get the asphalt plant out”**



Source: EJAtlas.

My main occupation is to cooperate with a team of researchers at ICTA UAB on the EJAtlas. We are producing articles which are recognised internationally. Here I briefly describe the last two. One (in the journal *Global Environmental Change*, July 2020) is called “Environmental Conflicts and Defenders”, it analyses the repression against environmental defenders<sup>4</sup>, co-authored by Arnim Scheidel, Daniela Del Bene, Juan Liu, Grettel Navas, Sara Mingorría, Federico Demaria, Sofía Avila, Brototi Roy, Irmak Ertör, Leah Temper, all of us living in or around Barcelona in 2020.

There is a world movement for environmental justice, composed of a myriad of local movements against fossil fuel extraction, open cast mining, tree plantations, hydropower dams and other extractive industries, and also against waste disposal in the form of incineration or dumps. This is the environmentalism of the poor and the indigenous. It took the name “environmental justice” in Southern United States in the 1980s, from movements against the unjust, disproportionate socio-environmental impacts in areas predominantly inhabited by Black, Hispanic and Indigenous populations. We continue to use the words “environmental justice” in this sense.

4. <https://doi.org/10.1016/j.gloenvcha.2020.102104>

The bulk of the information on this movement comes from activists rather than academics. Activists such as OCMAL in Latin America (Observatorio de Conflictos Mineros) started to make maps of conflicts, also Ollwatch and other organisations born in the 1980s and 1990s. Another civil society organisation, Global Witness (and not a UN department or an academic organisation), provides yearly figures and the names of environmental defenders killed defending the environment and their livelihoods. The world movement for environmental justice operates so far at the margins of the international meetings (COPs) and the Panels (IPCC, IPBES) which occupy central spaces of information and propose public policies.

This July 2020 article in *Global Environmental Change* is inspired by such grassroots movements across the world, and it aspires to support them by making their activities, their failures and successes, more visible. This article is a milestone in the field of statistical and comparative political ecology, made possible through the *Atlas of Environmental Justice*. We present quantitative analyses shedding light on the characteristics of environmental conflicts and the environmental defenders involved, as well as on successful mobilisation strategies. Environmental defenders are frequently members of vulnerable groups who employ largely non-violent forms of protest. In 11% of cases globally, they contributed to halt environmentally destructive and socially conflictive projects, defending the environment and livelihoods. Combining strategies of preventive mobilisation, protest diversification and litigation can increase this success rate significantly to up to 27%. However, defenders globally also face high rates of criminalisation (20% of cases), physical violence (18%), and assassinations (13%), which significantly increase when Indigenous people are involved. We find that bottom-up mobilisations for more sustainable and socially just uses of the environment occur worldwide across countries in all income groups, testifying to the existence of various forms of grassroots environmentalism as a promising force for sustainability.

The second recent collective academic article almost finished is on movements which are shaping climate futures from below. The article is inspired by the existence of Blockadia-type movements. It offers a systematic mapping of 649 protests against fossil fuels and also against some low-carbon energy projects, providing the most comprehensive overview of such place-based mobilisations to date. This is another article in comparative, statistical political ecology made possible by the *EJAtlas*. We find that place-based movements and related instruments such as blockades, litigation, and production bans are succeeding in curbing fossil-fuel production. Over a quarter of projects encountering social resistance have been shelved, suspended or delayed, incurring significant costs to investors as assets become stranded. The evidence highlights that low carbon, renewable energy and mitigation projects can be equally conflictive and that both project types disproportionately impact vulnerable groups such as rural communities and Indigenous peoples. This cautions that low carbon energy sources can easily replicate the logics, violence, colonialism and dispossession inherent to traditional extractive industries.

Among low carbon energy projects, hydropower is particularly socially and environmentally damaging. Other renewables (wind, solar, geo-thermal) were less conflictive and entailed lower levels of repression. Repression and violence against protesters and land defenders was high in almost all activities, and particularly in those involving hydropower, biomass, pipelines and coal extraction. Environmental defenders who protest destructive resource uses are indeed a promising force for global sustainability and environmental justice. However, their activism comes at a heavy cost: many face criminalisation, violence and murder. In 405 conflicts of the 3,155 registered in the *EJAtlas* by 30 May 2020, one or more environmental defenders (women or men) have been killed. However, evidence suggests that grassroots movements can play a substantial role in informing which fossil fuels should be kept in the soil and what low-carbon climate futures informed by environmental justice should look like.

### **A final note: optimism after the pandemic. Degrowth in practice**

Why optimism? Firstly, because the pandemic has made us learn a lot of epidemiology and demographics, we've also seen how scientists explain it and don't always agree (this is healthy), and it is even healthier to see how politicians had no idea. For example, you learn from the

epidemiology discussions between Swede Johan Giesecke and Neil Ferguson of Imperial College London and the (perhaps wrong?) changes in strategy in England<sup>5</sup>.

Now we're ready for other pandemics. Humanity is not in danger of death from this pandemic. A meteorite could be a lot worse. This pandemic has been fairly domesticated, six-year-olds are trained for other occasions. On the other hand, I think that there may soon be a serious nuclear accident, in some old nuclear power plant that is still in operation, in this I am pessimistic, or realistic. Despite Fukushima and the Chernobyl TV series, the public doesn't expect an accident like that.

Despite the mandatory confinement (very appropriate, it was already discussed and practiced in many places in 1918), we breathe democracy, a bit lukewarm but very alive. There are strong scientific and political discussions. We've all learned a lot more about China, or at least we want to know more about China. Globalised industrial capitalism is being discussed, imagine that. Universal basic income is proposed more strongly than before.

We see that we can save ourselves a lot of trips that were made simply to go to work or for no reason. A four-day week looks very reasonable. It seems to us now more than ever that housing is really essential, and we realise the number of flats, second homes and empty hotels there are in Europe and how they could be better distributed. There is consensus on public health investment. I do not believe that in Barcelona anyone has the audacity anymore to say that it is necessary to build one more runway at the airport as they said three months ago. Air trips for short distances will be discouraged. Proximity agroecology is encouraged. If we really lower global CO2 emissions by 2020, this will make us feel a little better, won't it? That decrease will hardly be noticeable in the Keeling curve that needs ten years of 50 percent declines. But it's a start. Let's not change the climate, let's change the system, we can do it. Let us enjoy the proximity of "peak human population" also.

The ideas of Degrowth and socio-environmental justice have been strengthened. The Degrowth movement in rich countries (or "prosperity without growth" as Tim Jackson calls it) must unite with the world movement for socio-environmental justice. *Leave oil in the soil, leave coal in the hole* were slogans invented by Nnimmo Bassey and others in Nigeria. The Blockadia movements that Naomi Klein explains, are "Degrowth in practice" preventing local damages and climate change.

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5. <https://unherd.com/2020/04/which-epidemiologist-do-you-believe/>