



LEAVES, A Newsletter of the INTERNATIONAL ENVIRONMENT FORUM  
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**From the Editor, Request for information for upcoming newsletters**

This newsletter is an opportunity for IEF members to share their experiences, activities, and initiatives that are taking place at the community level on environment, climate change, and sustainability. All members are welcome to contribute information about related activities, upcoming conferences, news from like-minded organizations, recommended websites, book reviews, etc. Please send information to [newsletter@ief.org](mailto:newsletter@ief.org). Please share the Leaves newsletter and IEF membership information with family, friends, and associates and encourage interested persons to consider becoming a member of the IEF.

**IEF Working Webinar on  
Co-Designing a New and Better Global Systems Accounting for Pollution  
IEF Member Khela Baskett, IEF webinar coordinator**

This webinar will take place **Saturday 19 February 2022:**

10am PST California 1pm EST New York 6pm GMT 7pm CET Central Europe 11:30pm IST India

**[REGISTER HERE](#)**

**Description**

This working webinar will be a discussion between the participants about **how to account for pollution of various kinds**. The webinar is to support the efforts by ebbf (Ethical Business Building the Future) to carry forward Arthur Dahl's proposals in his paper: *Global Systems Accounting: Beyond Economics* [https://www.iefworld.org/ddahl\\_accounting](https://www.iefworld.org/ddahl_accounting)

Nine other ebbf working groups have already started to develop ideas in **specific areas such as Carbon Accounting, Biodiversity, Poverty/Wealth, Health, Food, Work, Knowledge and Spiritual Capital**. See <https://www.ebbf.org/global-systems-accounting>

We encourage the participants to read at least the introduction of Arthur's paper as well as the section about Pollution Accounts before the meeting. You can also find a concise explanation in the article below, "Update on Global Systems Accounting."

Arthur Dahl's webinar presentation on 8 December 2021 for ebbf (40 minutes) would also be helpful for participants to get an understanding of the subject matter:  
<https://www.youtube.com/watch?v=VWUFwHH0uX0>

This is one of a **monthly series of webinars hosted by the International Environment Forum:**  
<https://www.iefworld.org/lectures>

## Update on Global Systems Accounting

The initiative on a new concept for global systems accounting in other than financial terms, launched by IEF President Arthur Dahl and described in the December IEF Leaves newsletter, has taken off. As mentioned last month, our partner Baha'i-inspired organization **ebbf – Ethical Business Building the Future** - was so attracted to the concept that they organized for Arthur to give an introductory webinar on the proposal and called for volunteers to establish working groups to take the concept forward, creating a special page on their website for this activity: <https://www.ebbf.org/global-systems-accounting>.

After a first round of working group meetings on five of the accounting themes: minimum living standard, spiritual capital, knowledge and education, biodiversity, and health, they all reported back at a meeting on 26 January. Arthur also updated his basic article on 26 January with much of the new information: [https://iefworld.org/ddahl\\_accounting](https://iefworld.org/ddahl_accounting). Further volunteers were also recruited for most of the remaining themes; carbon accounting, food, work/employment, and generally promoting outcomes. These are now meeting, and will report back again on Wednesday 9 March at 20:00 CET. All the information on these activities is on the ebbf website, and are open to all, so you are free to join in if you are interested.

The immediate objective is to prepare a more complete working document on the concept of global systems accounting, showing what already exists and what still needs to be done to demonstrate the true determinants of human well-being and environmental sustainability, as opposed to the materialistic definition of progress as wealth, measured as GDP and profit. There will be a first presentation of the results at the ebbf annual conference in May, and at the IEF conference in association with Stockholm+50 in June. Hopefully the concept will be picked up by others and taken forward, since the UN Secretary-General, in *Our Common Agenda*, has called for measures of progress beyond GDP.

One theme still did not have volunteers, on pollution, so IEF has decided to invite people to join this working group, starting with the next IEF webinar on 19 February at 19:00 CET. Please come along if you are interested. A volunteer is also needed to guide the working group, without

necessarily being a pollution specialist. Here is the description of what is proposed for the pollution accounts.

### Pollution accounts

A pollution budget system would consider a clean environment as capital to be maintained, with no wastes accumulating in nature and diminishing its future, and no chemical threats to human health or ecosystems. All releases of pollution and discarding of wastes would increase debt. The environment has some capacity to clean itself of some pollutants, as a kind of wealth generation, but persistent pollutants are becoming an enormous debt burden on the future that is not presently accounted for. The quantification of pollution debts would permit the implementation of the polluter pays principle, with the damage to health and the environment from pollution no longer an externality to be ignored, but quantified and attributed to sources.

The accounts would need to distinguish pollution in different components of the environment. Air pollution is both highly mobile, spreading chemicals around the world and depositing them far from the place of origin, and concentrating human health impacts as in urban air pollution, where, for example, nitrogen dioxide from diesel exhaust causes high levels of childhood asthma. Water pollution has significant environmental effects and can contaminate human water supplies and groundwater. Pollutants in soils can be very persistent and affect agriculture. The ocean is the ultimate sink for many pollutants, and the quantities of pollutants and plastics now accumulating in the seas are having significant large-scale impacts.

The challenge in designing an accounting system for pollution and waste is the complexity of all the substances involved and the lack of good data on many of them. We must simply come up with an accounting system that will be capable of signaling the main problems and risks for decision-makers and the public. This would mean selecting just a few key "indicator" pollutants that would tell the story for all the others. Initially, accounts could be developed for some of the main pollutants already well known and identified in international conventions, such as Persistent Organic Pollutants and mercury. Fixed nitrogen would be another possibility because of the high human contribution

to nitrogen fixation exceeding the planetary boundary. Another possibility is a widely used antibiotic or other pharmaceutical escaping into the environment that could represent that category and is perhaps already monitored.

Global waste is predicted to grow by 70% by mid-century, so it would be necessary to select a few waste streams predicted to grow the fastest, and to relate them to the capacity for their management and treatment. The focus could be on those most likely to cause harm to human health and the environment. Plastics are at the top of the agenda, but a clear definition is needed. Electrical and electronic waste, including digital devices, are another important category with many toxic components. Used lead-acid batteries represent another high volume of waste with toxic lead. The waste streams for these are well documented, the elements are well studied through their life cycle and can be recovered, recycled and reused. Among other wastes, cement might be used as an indicator both of the greenhouse gas impact of its production and its disposal as construction waste.

It would be necessary to start with a minimum set of pollutants and wastes that would characterise the main global human health and environmental impacts, probably not more than ten. The recent scientific announcement that the planetary boundary for the release of novel chemicals and other pollutants has now been exceeded, with measurable planetary consequences, increases the urgency of this form of accounting. There are calls for a global convention on pollution and an intergovernmental science-policy process to assess and report on pollution as a support for international action, such as already exist for climate change and biodiversity.

The second challenge is conceiving of an accounting system using the full cycle of these elements or compounds as the accounting currency, from their sources through chemical transformations and uses to becoming pollutants and wastes, and hopefully being recycled or neutralised to complete the accounting circle. This makes it possible to go beyond just the negative view of pollutants to the positive view of useful materials and products, so that the negative accounting of damages can be balanced by encouraging the positive services these elements/materials can render, or their replacement by less damaging alternatives, and ultimately their circular use, rather than linear use and discard. Taxes on releases could go to finance cleanup measures, while creating a negative incentive for further production. For example, there could be a tax on nitrogen fertiliser production, and perhaps on its use in industrial-scale agriculture, to reflect its environmental costs to the global commons.

Once the pollution accounting systems are designed with relevant "currencies" that can be measured and monitored, the next step would be to develop the spatial dimension of their distribution and the dynamics of changes over time, since the impacts are ultimately seen at the local level. One could imagine an animated global map of one indicator pollutant, showing where it is manufactured, incorporated into products, traded around the world, used, and released or discarded. That would show where the responsible parties and victims are. It could also identify who the corporate actors are that profit from this, and the consumer demand that drives the market. Such an accounting system would work as a step towards overcoming the power of the present economic and corporate system that ignores environmental and health costs.

## Members Corner

### The IEF warmly welcomes the following new members and associates:

#### Members:

Suchitra Godbole, India  
Douglas Gilbert, United States  
Desta Mesbah, The Netherlands  
Nader Tashakkor, Turkey  
Rebecca Teclerariam Mesbah, Bosnia and

Herzegovina  
Johann S, Wong, Canada

#### Associates:

Dr. Tauseef Anwar, Pakistan  
Bommanna K., India  
Nikola Stojanović, Serbia

We look forward to getting to know you!

## IEF Board Update

### IEF 26th Annual Conference

This year's IEF Annual Conference will be held in association with the **Stockholm+50 conference** which will take place on **June 2 and 3**. The theme will be **"a healthy planet for the prosperity of all - our responsibility, our opportunity,"** You can check out the Stockholm+50 conference here: <https://www.stockholm50.global/>.

The IEF conference will be held shortly before, at the end of May. We plan a series of virtual and hybrid events for the public in Stockholm and online. A conference planning team has been formed and will have its first meeting on 1 March.

## Ecological Racism and Deep-Sea Mining in the Pacific

**G20 Interfaith Forum Webinar 16-17 February 2022**

The G20 Interfaith Forum, where Arthur Dahl chairs a working group on religion and environment, is organising a webinar on 16-17 February (depending on your time zone) on the topic "*Ecological Racism and Deep-Sea Mining in the Pacific*".

Feb 16th 5 PM EST Time; 11 PM European Central Time

Feb 17<sup>th</sup> 10 AM Fiji Time 2022; 8 AM PNG Time, 9 AM Vanuatu Time

90 minutes with five panelists and ensuing dialogue.

[CLICK HERE TO REGISTER](#)

#### The panelists are:

- His Eminence Sir John Cardinal Ribat, MSC, DD, KBE, the Metropolitan Archbishop of Port Moresby, Papua New Guinea, engaged with Global Climate Justice and working closely with other advocates in challenging Deep Sea Mining in the Pacific;
- Hon. Ralph Regenvanu, Leader of the Opposition in the Vanuatu Parliament, and former Minister of Lands and Natural Resources;
- Catherine Coumans Ph.D., Research Coordinator and Pacific Program Coordinator (Asia) at MiningWatch based in Canada
- Kristina M. Gjerde, J.D., Senior High Seas Advisor to IUCN's Global Marine and Polar Programme;
- Maureen Penjueli, Coordinator for the Pacific Network on Globalisation, based in Fiji.

#### The moderators are:

- Rev Professor Dr Upolu Luma Vaai, Principal of the Pacific Theological College in Fiji, whose research and advocacy focus on the intersection between theology, development, ecological and economic justice; and
- Dr Athena Peralta, programme executive for economic and ecological justice at the World Council of Churches.

**Description:** The deep seabed may become one of the last mining frontiers on our planet if the International Seabed Authority (ISA) authorizes mining in the Blue Pacific continent. This is called **deep-sea mining** (DSM). DSM concentrates on the minerals that are found in the ocean bed in the Pacific Ocean known as polymetallic nodules normally formed slowly over millions of years and found near hydrothermal vents or in rock fragments in the deep ocean. This is a desperate "race to the bottom" with scientists still unclear of what lives in that ecosystem that will be affected. Such move will rearrange the structure of ocean life, with consequences and far-reaching impacts in addition to climate change impacts. Many from the Pacific and around the world are arguing that while the move could be beneficial to the popularized clean green economic shift to solve the cli-

mate crisis, it will be detrimental not only to the ocean but in particular to communities who depend wholly on the ocean for their daily sustenance and livelihoods.

Racism in its traditional definition clusters around the notion of prejudice, discrimination, or hatred that unfairly disadvantages people because of color of their skin or ethnic and national origin. However, racism takes many forms, in particular if it flows through hierarchical and anthropocentric systems and structures. Pacific islanders and many other vulnerable indigenous communities have long suffered from systemic racism imposed by hierarchical economic structures and policies created in another context by another race that normally extract and remove resources from one race or ethnicity to benefit them. **Ecological racism** is when one race, Earth included, is unfairly disadvantaged based on someone else's economic terms and interests. The root cause of ecological racism is 'greed' hidden within our approved economic systems and structures, which threatens the legitimacy of regional stability. DSM is a process of extracting resources and life from one race to benefit another. Hence, DSM goes against everything that the Pacific stands for expressed in its 'whole of life' indigenous knowledge systems, philosophies of life, and ecological spiritualities.

## Engineering and Climate Change: Remaking the Future

By IEF Member Rafael Shayani

As a contribution to *World Engineering Day for Sustainable Development*, the International Environment Forum (IEF – <https://iefworld.org/>) invites you to participate in an engineering panel on *Engineering and Climate Change: Remaking the Future*.

This event will take place on **Friday, 4 March**, at 8pm GMT (3pm EST, 21:00 CET)

Register here for this one-hour event: <https://tinyurl.com/IEF-Engineering>

Technology is inseparable from climate change: It can accelerate it, but it is also indispensable to mitigating it. The difference lies in great measure in the choices engineers make. How do we ensure we make the right ones?

### Panelist 1: Climate action in tech: What can a technologist do about climate change?

This talk will present a roadmap to climate actions every engineer can take to make a difference and offers an overview of resources and web technologies one can use to achieve impact.

Phil Sturgeon (<https://philsturgeon.com>) works on reforestation with Protect Earth ([www.protect.earth](http://www.protect.earth)), matching land owners and non-traditional funding streams to scale up reforestation and rewilding around the UK; using Application Programming Interfaces (APIs) and software to track, maintain, and fund the tree planting. Phil also works on "Green Tech" software solutions with Green Turtle (<https://www.greenturtle.io>) teaching folks to reduce the carbon footprint of APIs and system architecture.

### Panelist 2: Social innovation in engineering education: Addressing climate change

University programs need to be modernized to align themselves with the global effort to reduce greenhouse gas emissions. Students graduating from universities need to acquire new capabilities for social innovation to deal with climate change.

Dr. Rafael Amaral Shayani, IEF member, has an electrical engineering degree with a focus on power, energy and electrical systems. He obtained his MS and PhD in photovoltaic solar energy. He is Professor of Electrical Engineering at the University of Brasilia, Brazil, and his research focuses on renewable energy, energy transition and engineering education.

### Moderator: Anisha Prabhu

Anisha Prabhu is a global public health specialist with 10 years of experience in designing and implementing projects in Southern Africa. She is passionate about human capital development and gender rights. Recipient of the Fulbright Scholarship (2013) for Masters in Public Health, she is always looking for evidence-based approaches for sustainable development outcomes.



## Teaching Sustainability to Business English Students

Report by IEF Member Pascal J. Molineaux

BSc University of New Hampshire, Master's Degree in International Agriculture and Rural Development, 22 years working with FUNDAEC in Colombia, and seven years with the Javeriana University in Cali, Colombia as a Business English Teacher.

For eight years now, I have been developing the content for a university course of Business English at the Jesuit University in Cali, Colombia. The course, taught in English to International Business Students, aims to further develop students' language skills in the context of learning about the need for social and environmental sustainability in business endeavors. It has been a rich learning experience as the course tries to familiarize the students with the most essential concepts of social and environmental sustainability through case studies, extensive readings, and analysis and group presentations.

As a Bahá'í, I have placed great emphasis on two key concepts:

The injustice and unsustainability of production cost externalizations, and the need for unity in defining environmental and labor legislation globally that truly promotes long-term well-being.

In today's world, the business model is inherently unsustainable and greed-based. Big businesses strive to reduce production costs and increase profit margins for their shareholders. Consumers around the world reward those businesses and choose to buy the products offered often using price as the only criterion to guide their decision-making. A business that most successfully finds ways to reduce production costs will outcompete other businesses that do not. One strategy implicit in this business model is to externalize production costs (defined below) and, along the supply chain, to find ways and countries that allow this. Some examples of this might be by subcontracting workers on a part-time basis – with no health insurance or pension; by investing in those countries where union rights are non-existent; by seeking to employ children in part of the supply chain; or by finding countries with 1) very weak environmental, labor, or fiscal laws, 2) weak enforcement, or 3) sanctions, in which the lack of a regulatory framework and enforcement mechanisms allow for rapid returns in

investments and big profit margins.

In these examples, the people who actually pay for these "savings" and low production costs are other stakeholders – not the producer, nor the final consumer who is happy to buy a "cheap" product. This is the definition of "externalized costs" – others, who do not produce or buy the product, are the ones who shoulder some of its production costs. These "others" might be those neighbors who live down-stream or down-wind as they have to deal with challenging health issues, noise, heavy truck traffic etc. They might be subcontracted workers who have no labor unions to protect them, no work stability, or unsafe and often undignified working conditions in which accidents are common. They might be workers in the Fast Fashion industry or Big Agricultural enterprises who work with toxic, unsafe products with very little protection gear or safeguards. They might be children who, instead of being in school, have to face grueling workdays (as was the case with a world cup contract for footballs made in India!). They might be supermarket employees who receive a minimum wage (in those countries where such legislation exists), constant work shifts, and no union rights or work stability. Even when buying a car, many externalized costs are not shouldered by the car manufacturer or the user. The massive traffic jams, accidents, air pollution, and noise caused by overdependence on private versus public transportation as the main means of getting around, generate increasing costs shouldered by society in general.

This is an ethics issue and an environmental sustainability issue.

Until a few years ago, when these externalized costs were fairly small and "manageable" with few stakeholders having to bear them, this business model was convenient. However, this is no longer the case: the multiple externalized costs of this business model have grown exponentially and are now a leading factor of ill health, loss of life, and diminishing quality of life everywhere as can be found in agricultural, transport, energy production, and manufacturing systems. This is one of the main reasons for the difficult times humanity is encountering.

Cities, for example, need a radical rethinking of

their transport systems by giving absolute priority to public transport systems and other, non-polluting means of transport. Happily, many cities around the world have started to do this. The multiple externalized costs of transport systems centered on the private car have skyrocketed over the past twenty years and these costs, for society, now outweigh any personal convenience or comfort they provide to the users. Today's industrialized agricultural systems, while very good at producing massive amounts of food, are causing such devastation to biodiversity, to soils, and to water resources, that its overall contribution to the welfare of society can be questioned. In addition, the animal husbandry systems, with massive Industrial scale meat production, are clearly cruel, highly contaminating, and a strong contributor to deforestation as well as to the climate crisis. Thus, both transport and agriculture must be fundamentally redesigned to ensure long-term sustainability of life on earth.

The other concept the course tries to emphasize is the urgent need for a unified global legislative system that truly protects worker rights, environmental services, and resources, thereby ensuring sustainability in the long-term. Big Business has become very agile at finding those countries that, either through corruption, through authoritarian rule, or through lax enforcement of laws, are "most favorable" to business investments and allow for cost externalization. This pushes

countries, eager for investments, to weaken their regulatory framework meant to protect people, workers, and the environment. Again, a greed-driven model consistently puts the short-term interests of shareholders first and rarely considers the life-threatening consequences incurred by other stakeholders.

Understanding the reality of a business model that is inherently unsustainable and a major contributor to today's environmental and climate crisis is essential before even starting to look for alternatives that put people and planet first. Luckily, there are countless examples of bottom-up and grassroots cooperative business models that provide hope. These models are encouraging and have started to accumulate a substantial body of knowledge in such areas as fair trade, environmental justice, a circular economy, a redesign of products designed for easy reuse instead of being designed for the dump, for upscale recycling, and zero waste to name a few. As fundamentals of transport, agriculture, manufacturing, and urban design are rethought, opportunities are endless and promising. Will humanity be up to the challenge? Hopefully students of today, in their capacity as future business leaders, will come to see the real benefits – for themselves and society – of business models that are not guided by greed, lack of concern for the welfare of others, and the externalization of production costs.

## **Be inspired by the Baha'is of Glasgow, UK!**

**by IEF Member Christine Muller**

Science, religion, art, and love can all be incorporated in community action. An example for that is the Eco-Pledge prepared by the Local Spiritual Assembly of the Baha'is of Glasgow, UK, in connection with the Climate Conference COP26 held in its city last November. This wonderful resource can serve "as a tool for individuals and communities to reflect on and enable practical action towards the sustainable use of the world's material resources." Each of the beautifully illustrated 19 pages contains an idea for a practical action supported by science and a quotation from the Bahá'í Writings.

We can be inspired to incorporate these actions in our own life. In addition, we can strive for similar actions in our communities.

The [Glasgow Bahá'ís' "Eco-Pledge" is available for download](#) on its website.

*Source:* Adapted from the Sustainable Living Tip for the Wilmette Institute February Newsletter:  
<https://wilmetteinstitute.org/be-inspired-by-the-lsa-of-glasgow-uk/>

## Three Great Lessons to Learn from the Covid-19 Pandemic to Help Tackle Climate Change

By Shamsideen Olawunmi Sebiotimo

In this terrible time of the COVID-19 pandemic which has affected every aspect of people's lives, it has been difficult for everyone to focus on daily activities. Millions of people have died; many more have been seriously ill; and many have spent time in the hospital responding to treatments. Ultimately, the global economy has drastically shrunk and has entered an uncertain recovery stage.

The aftereffects of COVID-19 are likely to be temporary, whereas the consequences of climate change will be more permanent. Therefore, it is imperative to learn some lessons from COVID-19 in order to help tackle the climate crisis.

During the COVID-19 pandemic, global greenhouse gas emissions have temporarily decreased due to the reduction in energy demand and usage. According to the Conservation Academic Rigour, in the first four weeks of the pandemic, coal consumption in China alone fell by 36%, and oil refining capacity was reduced by 34%. Also according to Statista, a German data company, travel restrictions induced by the coronavirus pandemic resulted in the consumption of petroleum products falling from 100.25 million barrels per day in August 2019 to as low as 80.63 million barrels per day in April 2020. Global crude oil demand in 2020 decreased for the first time since the 2009 financial crisis, falling to an estimated annual average of 91.3 million barrels per day. In addition, the coronavirus pandemic was projected to have the highest cumulative impact on final energy demand in 2020 with an 8.3% reduction in all sectors; lingering effects are expected to last until 2025. These indicators have revealed an already declining growth in some sectors of the global economy, especially the energy sector.

A few decades back, some climate change activists were maintaining that to address climate change, a sustainable but declining economy was necessary to ensure a habitable planet for future generations. It should be noted that the idea of sustainable economic degrowth is totally different from a recession. It involves contracting environmentally damaging sectors of the economy while strengthening other sectors. To achieve this, it would require the global economy to eliminate or greatly reduce carbon emissions so as to avert a climate related catastrophe.

Presently, all over the world, there is an economic crisis as a result of the COVID-19 pandemic. This provides an opportunity to implement a sustainable degrowth economy in some sectors, especially the energy sector. If this can be done, it would mean countless benefits for the climate and earth dwellers. Sustainable energy should be globally supported because it causes much less harm to the environment. All renewable energy sources such as solar, wind, geothermal, hydropower, and ocean energy are sustainable and available in abundance.

Climate change is a global emergency just like COVID-19. However, the major difference is that climate change is a relatively slow-moving crisis, whereas COVID-19 is fast-moving with a surge in confirmed cases over a few days. Despite the emergency status of climate change, the world, and especially Africa, has done little to address it. On the contrary, global response to the COVID-19 emergency has been swift and furious. Therefore, this author is strongly encouraging the world to heed the following lessons from the COVID-19 pandemic and apply them to climate change:

- **Take proactive measures to avert a catastrophe.** Scientists warned of a pandemic for a long time. Despite the warning, no country in the world took a proactive approach towards preventing the disease pandemic. Today, what we were warned of has become a reality, and the world has been destabilised because of a failure to prepare for the pre-warned disease pandemic. According to the UN Intergovernmental Panel on Climate Change (IPCC), if world carbon emissions are not reduced 45% by 2030 so as to keep the world's average temperature from rising more than 1.5°C above pre-industrial



levels, the world ecosystem could start to collapse. This would be disastrous. What proactive measures are being put in place in the world today, especially in Africa, to avert this predicted climate-related crisis in 2030? It is high time to learn from the COVID-19 pandemic to help fight climate change.

- **Take swift action.** The COVID-19 pandemic shows how important taking swift action is to contain cataclysmic consequences. For example, the governments of South Korea and Singapore acted swiftly to implement screening measures, and they experienced few incidences of COVID-19. On the other hand, Italy, Spain, and even the USA, whose governments procrastinated, were the centres of large COVID-19 outbreaks. Humanity cannot afford to delay taking action when tackling the climate crisis; action must start now to ensure a habitable planet for present and future generations.
- **Resources management.** This is essential to reducing waste. Waste disposal and treatment produce emissions of greenhouse gases which contribute to global warming. The COVID-19 induced global lockdowns that occurred to contain the pandemic pushed the global economy towards recession. However, the universal reaction to a recession is proper management of resources (i.e. being efficient). One of the greatest weapons that can be used to address the climate crisis is proper management of resources at the household level and at the local, state, and national government levels. Farmers should desist from improper use of the land. They should adopt effective soil management practices to conserve organic carbon in the soil and prevent it from escaping into the atmosphere in the form of carbon dioxide. Because of the direct relationship between waste and greenhouse gas emissions, proper resource management must be implemented. Now, the COVID-19 pandemic has taught humanity how to be more efficient with resources in homes, countries, and the world at large. Habits learned during the COVID-19 pandemic must be maintained afterward so as to reduce waste and thereby reduce greenhouse gas emissions.

In conclusion, the COVID-19 crisis continues to be devastating, but the climate crisis is much more dangerous. To help fight climate change, it is crucial to learn from the above-mentioned lessons learned from COVID-19. Everyone deserves to live on a habitable planet. Say no to carbon emissions! Say no to global warming! Say yes to a habitable planet!

God bless the world!!!

## Chemical pollution has passed safe limit for humanity, say scientists

Damian Carrington, Environment editor

*The Guardian* 18 January 2022

**Source:** <https://www.theguardian.com/environment/2022/jan/18/chemical-pollution-...>

### Study calls for cap on production and release as pollution threatens global ecosystems upon which life depends

The cocktail of chemical pollution that pervades the planet now threatens the stability of global ecosystems upon which humanity depends, scientists have said.

Plastics are of particularly high concern, they said, along with 350,000 synthetic chemicals including pesticides, industrial compounds and antibiotics.

Plastic pollution is now found from the summit of Mount Everest to the deepest oceans, and some toxic chemicals, such as PCBs, are long-lasting and widespread.

The study concludes that chemical pollution has crossed a “planetary boundary”, the point at which human-made changes to the Earth push it outside the stable environment of the last 10,000 years.

Chemical pollution threatens Earth’s systems by damaging the biological and physical processes that underpin all life. For example, pesticides wipe out many non-target insects, which are fundamental to all ecosystems and, therefore, to the provision of clean air, water and food.

“There has been a fiftyfold increase in the production of chemicals since 1950 and this is projected to triple again by 2050,” said Patricia Villarrubia-Gómez, a PhD candidate and research assistant at the Stockholm Resilience Centre (SRC) who was part of the study team. “The pace that societies are producing and releasing new chemicals into the environment is not consistent with staying within a safe operating space for humanity.”

Dr Sarah Cornell, an associate professor and principal researcher at SRC, said: “For a long time, people have known that chemical pollution is a bad thing. But they haven’t been thinking about it at the global level. This work brings chemical pollution, especially plastics, into the story of how people are changing the planet.”

Some threats have been tackled to a larger extent, the scientists said, such as the CFC chemicals that destroy the ozone layer and its protection from damaging ultraviolet rays.

Determining whether chemical pollution has crossed a planetary boundary is complex because there is no pre-human baseline, unlike with the climate crisis and the pre-industrial level of CO<sub>2</sub> in the atmosphere. There are also a huge number of chemical compounds registered for use – about 350,000 – and only a tiny fraction of these have been assessed for safety.

So the research used a combination of measurements to assess the situation. These included the rate of production of chemicals, which is rising rapidly, and their release into the environment, which is happening much faster than the ability of authorities to track or investigate the impacts.

The well-known negative effects of some chemicals, from the extraction of fossil fuels to produce them to their leaking into the environment, were also part of the assessment. The scientists acknowledged the data was limited in many areas, but said the weight of evidence pointed to a breach of the planetary boundary.

“There’s evidence that things are pointing in the wrong direction every step of the way,” said Prof Bethanie Carney Almroth at the University of Gothenburg who was part of the team. “For example, the total mass of plastics now exceeds the total

mass of all living mammals. That to me is a pretty clear indication that we’ve crossed a boundary. We’re in trouble, but there are things we can do to reverse some of this.”

Villarrubia-Gómez said: “Shifting to a circular economy is really important. That means changing materials and products so they can be reused, not wasted.”

The researchers said stronger regulation was needed and in the future a fixed cap on chemical production and release, in the same way carbon targets aim to end greenhouse gas emissions. Their study was published in the journal *Environmental Science & Technology*.

There are growing calls for international action on chemicals and plastics, including the establishment of a global scientific body for chemical pollution akin to the Intergovernmental Panel on Climate Change.

Prof Sir Ian Boyd at the University of St Andrews, who was not part of the study, said: “The rise of the chemical burden in the environment is diffuse and insidious. Even if the toxic effects of individual chemicals can be hard to detect, this does not mean that the aggregate effect is likely to be insignificant.

“Regulation is not designed to detect or understand these effects. We are relatively blind to what is going on as a result. In this situation, where we have a low level of scientific certainty about effects, there is a need for a much more precautionary approach to new chemicals and to the amount being emitted to the environment.”

Boyd, a former UK government chief scientific adviser, warned in 2017 that assumption by regulators around the world that it was safe to use pesticides at industrial scales across landscapes was false.

The chemical pollution planetary boundary is the fifth of nine that scientists say have been crossed, with the others being global heating, the destruction of wild habitats, loss of biodiversity and excessive nitrogen and phosphorus pollution.

## Planetary Boundary for Pollutants, Including Plastics, Exceeded

from UNEP Geneva Environment Network 24 January 2022

For the first time, an international team of researchers has assessed the impact of the cocktail of synthetic chemicals and other “novel entities” on the stability of the Earth system. In a [study published on 18 January](#), the team presents overwhelming evidence that chemicals and plastics have negative effects on planetary health and reveal that humanity has already exceeded the [safe planetary boundary](#) in that regard. These results call for swift and ambitious actions to reduce the production and release of pollutants. The article concludes that the recent [call for an international science-policy body with oversight over chemicals and waste](#) may provide a forum for informing such actions that are needed to help safeguard the Earth system.

Another report “[Connecting the Dots: Plastic pollution and the planetary emergency](#)”, published in January by the Environmental Investigation Agency, presents an overview of the irreversible pollution resulting from rampant overproduction of virgin plastics and their life cycle, which directly undermines human health, drives biodiversity loss, exacerbates climate change, and risks generating large-scale harmful environmental changes. The document outlines recommendations to UN members states on how to address the plastic emergency in the context of the UN Environment Assembly, the negotiation of the post-2020 Global Biodiversity Framework and the Paris Agreement.

In the run-up to [UNEA-5.2](#), discussions are steering toward the concrete aspects of a possible plastics treaty. A recent session of the Geneva Beat Plastic Pollution Dialogues offered insights into finance and technical cooperation mechanisms that could be included into the new agreement. Participants relayed the call for a legally binding UN treaty on plastic pollution from over 70 leading businesses and financial institutions in a [pre-UNEA statement](#), issued also last week.

To understand the types of international legal instruments that states can pursue to address the full life cycle of plastics, a [new publication](#) by the Centre for International Environmental Law, “[Toward a New Instrument Addressing the Full Life Cycle of Plastics: Overview of the Typology of International Legal Instruments](#)”, released last week, provides a non-exhaustive analysis of various instruments. It considers the practical distinctions, including title and the inception of the negotiation process, and provides a background on the preparation and negotiation of international instruments. The review highlights treaty-making tools to consider during current discussions and future negotiations.

## Only One Earth Science

An important initiative in the lead up to Stockholm+50 in June 2022 comes from OnlyOneEarth.Science, with striking graphics that illustrate the environmental crises we are facing as we have failed to respond to the science of climate change and biodiversity loss for fifty years and are still failing to avoid what the UN Secretary-General has called planetary suicide. The data compiled show that it is the ultra-rich countries that are largely responsible for this deplorable state of affairs. Only binding laws to force the necessary reductions might have a chance of saving us from disaster, but we are far from seeing that as a practical possibility given the powerful forces resisting any change.

Visit their website at <https://onlyoneearth.science/> to see the graphics they have so carefully assembled counting down to disaster, and share them widely.