



**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.

**27<sup>th</sup> IEF Annual Conference**  
**Implementing Solidarity – Global to Local**

The IEF Conference Planning Team warmly invites you to attend the IEF Annual Conference which will take place virtually alongside the *mid-term review of the Sustainable Development Goals* in New York and the *UN Preparatory Ministerial Meeting for the Summit of the Future*.

It will take place **16 – 22 September**. Currently six panel events are planned. See the conference flyer on the next page, and visit the IEF conference website for more detailed information: <https://iefworld.org/conf27>



Registration will be set up in the next couple of weeks. You will be able to participate in one, several, or all events. Some of the programs are geared toward public discourse on the international level, and some are conversations that can inform and inspire individuals for social action that benefits their local eco-systems and the well-being of their community.

The IEF is grateful for the [Adora Foundation](#) who will create a special conference website, manage registration, and host the Zoom platform. ebbf (Ethical Business Building the Future) will support the conference with publicity.

A special thanks goes out to Conference Planning Team member Anisha Prabhu in Rhode Island, USA, who designed the beautiful flyer and the banners on the IEF website!



# IEF 27TH ANNUAL CONFERENCE

## Implementing Solidarity- Global to Local

16 - 22 September, 2023



The 27th Annual Conference of the Baha'i-inspired International Environment Forum will take place alongside the Sustainable Development Goals Summit in New York and the UN Preparatory Meeting for the Summit of the Future. The panel discussions and interactive sessions share what has been learned and contribute to discourse on what can be done next. Everyone is welcome to attend this mostly virtual conference.

### What have we learned?

16 Sept. 1pm EDT / 7pm CEST

From hands-in-the-dirt projects to devotionals and new business ventures, IEF members and friends share their experiences of environmental efforts in rural and urban communities across the globe.

### Community engagement and diverse representation for social transformation

19 Sept. 8:30am EDT / 2:30 pm CEST

Sharing how underrepresented groups at the local level have been the protagonists of social change in their community, and the potential this has for future transformation.

### Global Environmental Governance

20 Sept. 8:30am EDT / 2:30 pm CEST

IEF members share their contributions to the global discourse on environmental governance in preparation for the 2024 Summit of the Future on UN reform.

### Trust and Accountability: Bringing Values into our Future

20 Sept. 1pm EDT / 7pm CEST

Trust in decisions on global governance requires mechanisms for accountability based on agreed values. Time to be confirmed.

### Global Solidarity Accountability: Values for Well-Being

21 Sept. 8:30am EDT / 2:30 pm CEST

Co-Sponsored by the ebbf- Ethical Business Building the Future: A contribution to the discourse on ways of measuring progress beyond GDP by exploring dimensions of well-being using non-financial measures.

### Where Do We Go from Here?

22 Sept. 1pm EDT / 7 pm CEST

An interactive discussion to review the results of the UN meetings and explore what they mean for our action in support of the preparations for the Summit of the Future in 2024.

For the most up-to-date Information visit: [www.iefworld.org/conf27](http://www.iefworld.org/conf27)

You can download a pdf file of this flyer [here](#) to share with friends in personal invitations!

## Lessons learned from the Global Solidarity Accounting project

Arthur Lyon Dahl

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From December 2021 to September 2023, ebbf – Ethical Business Building the Future, and the International Environment Forum (IEF) led a number of working groups to explore alternative measures of human and environmental well-being beyond financial indicators like GDP. As that project comes to a close, IEF President Arthur Dahl summarised some of the results of the project, lessons learned, and possible ways forward. Go here to read it:

[https://iefworld.org/accounting\\_lessons](https://iefworld.org/accounting_lessons)

Also, check out the IEF conference program which includes a panel on Global Solidarity Accountability.

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## A Call for an Intergenerational Declaration of Human Responsibility Letter to the International Community

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The International Environment Forum co-signed the letter by the World Sustainability Forum to the International Community which calls for a United Nations General Assembly inter-generational Declaration of Human Responsibilities.

You can read the letter in English and in other languages here: <https://www.worldsforum.org/letter-to-the-international-community.html>

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## Transforming Education for Sustainable Futures

Research project led by University of Bristol, UK  
2019-2023

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The University of Bristol, United Kingdom, concluded on 17 July 2023 a truly unique research project on Transforming Education for Sustainable Futures (TESF) addressing today's crisis in education faced with the challenges of climate change and the need for sustainable livelihoods. Such education should build on synergies with the planet and each other, establishing a new social contract for education grounded in human rights, non-discrimination, social justice, and a plurality of voices from the global South. In responding to Sustainable Development Goals 8 on sustainable livelihoods, 11 on sustainable cities, and 13 on climate change, it turned research on its head by supporting researchers in the South to tackle the deep inequalities in their communities, strengthening relationships, and co-creating and democratising knowledge combining science, indigenous knowledge and local experience. The aim was to empower local communities to become their own agents of change.

The project coordinated out of the University of Bristol ran for three and a half years, from November 2019 to July 2023. It worked with partners in India, Rwanda, Somalia/Somaliland, South Africa, the United Kingdom and the Netherlands. It addressed the role of education in climate action, decent work and sustainable cities, with cross-cutting themes concerning inequalities relating to poverty, gender and the status of indigenous knowledge, while foregrounding marginalised voices and decolonising research. It critically reviewed colonially-inherited education systems to find more relevant approaches that come alive at the local level.

The research team led by Professor Leon Tikly was coordinated initially by IEF member Terra Sprague and including among other advisors IEF President Arthur Dahl. It accompanied 67 project teams in India, Rwanda, Somalia/Somaliland, and South Africa. This was not a typical top-down aid project, but empowered each local research team, often in the most difficult situations of extreme poverty and exclusion, to set its own priorities and to determine the educational needs responding to those priorities.

To read more about this amazing global collaboration to research sustainability education, go here: <https://iefworld.org/node/1429>

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## Sustainable Development, Education and Learning

New book by Victoria Thoresen

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IEF board member Victoria Thoresen has a new book published on 24 August: Sustainable Development, Education and Learning: The Challenge of Inclusive, Quality Education for all.



The UN's Sustainable Development Goal #4 focuses on "inclusive, quality education", galvanising efforts for substantial educational reform around the globe. Progress is being made but are the initiatives being upscaled and mainstreamed rapidly enough? Has caring become an essential aspect of learning? Have cooperative learning and creativity been given enough attention? Are teachers receiving sufficient support? These are some of the questions raised by Victoria Thoresen as she considers the goals and challenges iterated in the SDG. Thoresen argues that unless implementation of the new definitions of inclusive, quality education are prioritized everywhere, sustainable development will be severely hampered. She examines the recent evolution of education in light of political and commercial ambitions, technological advancements, and knowledge sharing and discusses the obstacles to achieving inclusive, quality education for all.

For more information about the book, go here: <https://iefworld.org/node/1437>

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## Climate Change & World Economy: When an Irresistible Force Meets an Immovable Object

Blog originally on Global Governance Forum  
by Arthur Lyon Dahl

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We find ourselves today in what seems an impossible situation. On the one hand, climate change is accelerating with irresistible force beyond the most alarmist scientific predictions, with a giant leap in global ocean temperatures and record heat waves around the world. To save us from a climate cataclysm, all new development of fossil fuel resources should stop immediately, and their use should be eliminated completely by 2050. Yet they are still highly subsidised, and producing

countries and companies are expanding production and making enormous profits. Like a drug addiction, we cannot stop even though renewable energy sources are now cheaper than fossil fuels. No one wants to abandon proven energy sources and systems that are so profitable, and we still need technological breakthroughs for some uses and major transformations in present infrastructure and products.

Then there is the present world economy like an immovable object. The wealthy minority enjoying the consumer lifestyle in the affluent countries and communities, carefully cultivated by advertising and the media to maximise corporate profits, has no interest in being concerned about planetary boundaries or addressing the needs of the half of the world population that is poor. The rich believe that economic growth and technological innovation will solve all problems. They are trapped in an ideology of individualism and personal rights that rejects any interference in the name of solidarity, sharing wealth more widely, or the common good. They use the media and even the educational system to communicate their values and maintain public support. They also control all the levers of power, and have designed the very institutions of government and the economy to protect their interests. What they cannot obtain through manipulating the legal system they pursue through corruption. Greed has become institutionalised.

To keep reading this article, go here: <https://iefworld.org/node/1428>

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## **“Nature is a Reflection of the Divine.”**

### **Junior youth Baha’i Ecological Camps in Colombia and how they fostered environmental awareness and caretaking.**

Two excerpts from an article by Pascal J. Molineaux, Cali, Colombia

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In the 1990s and early 2000s, the Ruhi Institute in Colombia organized a series of four-day Junior Youth Ecological Camps in the Cauca region as a complement to the Junior Youth Program. They sought to foster and strengthen in the participants a sense of Bahá’í identity, of belonging and sharing in service to the greater good, while developing a deep appreciation for the majestic beauty and life-sustaining properties of Nature, la Pachamama or “Mother Earth”. ...

We live in a day and age in which fewer and fewer of us have any meaningful relationship with Nature: we relate to Nature only through movies, supermarkets and very occasional outings to forest, mountain, sea or river landscapes. Especially in our cities, most youth today grow up with a very limited understanding of Nature and its essential life-sustaining properties or appreciation for its awesome majesty and intrinsic beauty. ...

To read more about the manifold benefits of these ecological youth camps and to get inspired for similar efforts, go here: <https://iefworld.org/elcyouthcamps>

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## **Words to Remember**

*When God created the first human beings, God led them around all the trees of the Garden of Eden and said: “See my works, how beautiful and praiseworthy they are! Think of this, and do not corrupt or destroy My world.*

Judaism, Ecclesiastes Rabbah 7

# Feeding the Growing World Population: Regenerative versus Conventional Agriculture

By IEF Associate Shamsideen Olawunmi Sebiotimo

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According to the United Nations, the world population is projected to reach 9.8 billion by 2050 and 11.2 billion by 2100. At the same time, global agriculture is or will be facing challenges of unprecedented land degradation, weather extremes, and diminishing water resources. To ensure food security for a growing world population, it is necessary to proactively find solutions to these challenges. As population continues to increase, resources like water and soil, which are crucial to agricultural production, are becoming limited. With an expanding world population and to meet the growing demand for food, conservation of water and soil resources is imperative.

To address the food needs of the growing population, two agricultural methods will be considered-- conventional agriculture and regenerative agriculture. A comparison of the two methods will be made to identify the best agricultural method to feed the people of the world. This comparison will focus on the following areas: 1) production, 2) biodiversity, 3) soil composition, 4) water use, and 5) energy use and greenhouse gas emissions. The production level and environmental impacts due to conventional and regenerative agriculture will help determine which method has the best capability to sustainably feed the growing population.

- 1) **Production level:** Without considering the environmental impacts, conventional agriculture is a feasible way to feed the rising population. According to a recent meta-analysis, global organic yields are, on average, 25% lower than conventional yields; nevertheless, this varies with crop types as well as species and also depends on the comparability of farming systems (Gabriel et al., 2013). Most research has shown that the regenerative method produces a much lower yield than the conventional method, but this is not always the case. For example, because of its ability to retain more water, under drought conditions the regenerative method tends to produce a higher yield when compared to the conventional method.
- 2) **Biodiversity:** To ensure food security, enhancing biodiversity and high nutrient levels is very important. These can greatly contribute to the health of crops as well as the soil which, in turn, can markedly reduce crop loss. Regenerative practices build biodiversity, whereas conventional practices, which rely on synthetic chemicals to ensure crop health, destroy biodiversity. A regenerative system produces crops which are typically richer in nutrients, and compared to a conventional system, a farm environment with more diverse organisms is created. This means that regenerative agriculture is associated with a higher level of biological activity in regard to bacteria, fungi, springtails, mites, and earthworms. This is due to practices such as crop rotations, reduced application of inorganic fertilizers, and a ban on pesticides.
- 3) **Soil composition:** Regenerative farming builds superior soil quality. Various research has shown that fields under a regenerative management system have healthier nutritional and microbiological conditions, including an increased level of total nitrogen, nitrate, and available phosphorus. These fields also have an increased microbial biomass content and enzymatic activity. In addition, organic crops are more permanent than conventional crops because they work in synergy with the soil rather than draining it of nutrients and biomass. Therefore, because the need for food is increasing globally and land is becoming less available to produce food for the enlarging population, effective soil management is imperative. Compared to conventional agricultural practices, regenerative agricultural practices enhance soil composition and prevent soil erosion due to the addition of greater amounts of plant material and biomass to the soil. Thus, without degrading the land, conventional agriculture is unable to meet the food demand of the expanding population.

- 4) **Water use:** The amount of freshwater available for consumption globally is extremely small (0.5%), and regional constraints make accessing water even more difficult. According to USDA, agriculture accounts for approximately 70% of the freshwater use worldwide. At the same time, an expanding world population is causing an increase in demand for freshwater which in turn is affecting agricultural water use. To meet food demand, it is imperative to conserve the water resource for agricultural use. To ensure this, water saving techniques must be adopted. Regenerative agricultural practices contribute to saving water as they build up soil organic matter which aids in retaining more water than soils under conventional agricultural practices. Further, regenerative practices increase the water holding capacity of soils enabling the regenerative agricultural system, during drought conditions, to produce higher yields than the conventional system. This characteristic also assists crops in adapting to the current climate change impacts.
- 5) **Energy use and greenhouse gas emissions:** Regenerative agriculture, which relies solely on using natural processes for input and recycling nutrients on-site, differs from conventional agriculture, which uses huge amounts of energy to produce, prepare, and transport food. Nonetheless, energy use is directly proportional to greenhouse gas emissions and cost of production. Therefore, energy efficiency is imperative for reducing greenhouse gas emissions and production costs. According to experts, agricultural activities account for approximately 5% of the anthropogenic emissions of CO<sub>2</sub> as well as 10–12% of the total global anthropogenic emissions of greenhouse gases. Nearly all the anthropogenic methane and one to two thirds of all anthropogenic nitrous oxide emissions are due to agricultural activities (Gomiero et al., 2011). It is therefore obvious that agriculture is responsible for a notable percentage of the greenhouse gas emissions; however, this impact can be mitigated using the regenerative agricultural method. Regenerative agriculture practices have the ability to offset global greenhouse gas emissions at a greater rate than conventional agriculture. This is because conventional agricultural systems are inefficient at capturing carbon due to soil composition, constant production, and the amount of energy being used to maintain crops. Energy efficiency (ratio of input to output), calculated as yield divided by energy use, is usually higher in the regenerative system compared to the conventional system; however, yields are usually lower in the regenerative system. This implies that conventional crop production has the highest net energy production, and that regenerative crop production has the highest energy efficiency.

In conclusion, regenerative agriculture is the best solution to sustainably feed the growing population. Presently, however, there must be a synergy between regenerative agriculture and conventional agriculture to assure enough food for the growing population. For instance, 1) planting genetically modified crops could be adopted from the conventional system to ensure maximal yields. Other helpful techniques applied to a conventional system include: 2) integrated pest management and intercropping to improve crop/soil health and promote biodiversity, or 3) soil quality improvement by practicing regenerative methods like a) no-till, b) conservation tillage, c) cover cropping, d) manure application, or e) agroforestry.

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## Nuclear Disarmament and the Conservation of the Earth's Resources

By IEF Member David Menham

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Bahá'u'lláh expounds a world view which acknowledges that the “earth is but one country, and mankind its citizens” and He calls for the promotion of “the best interests of the peoples and kindreds of the earth”.

‘Abdu'l-Bahá draws attention to the increasing interdependence of the world and the fact that “self-sufficiency” is no longer possible. He envisages that the trend towards a united world will increase

and will manifest itself in the form of “unity of thought in world undertakings” and in other important realms of existence. One critical area for unified action is that of preserving the resources of the planet.

Shoghi Effendi links the preservation and reclamation of the earth’s resources with both the “protection of [the] physical world and [the] heritage [of] future generations”. He affirms that the work of such groups as the Men of the Trees and the World Forestry Charter is “essentially humanitarian”, and he applauds their “noble objective” of reclaiming the “desert areas [of] Africa”.

It is interesting to note that among the “powers and duties” of the Universal House of Justice are “the advancement and betterment of the world” and “the development of countries”. (<https://www.bahai.org/>) However, the majority of the world’s inhabitants are unfortunately still not fully aware of how important a global vision is in regard to the advancement and betterment of the world or in respect to the development of countries or nations or even in the conservation or preservation of the earth’s resources.

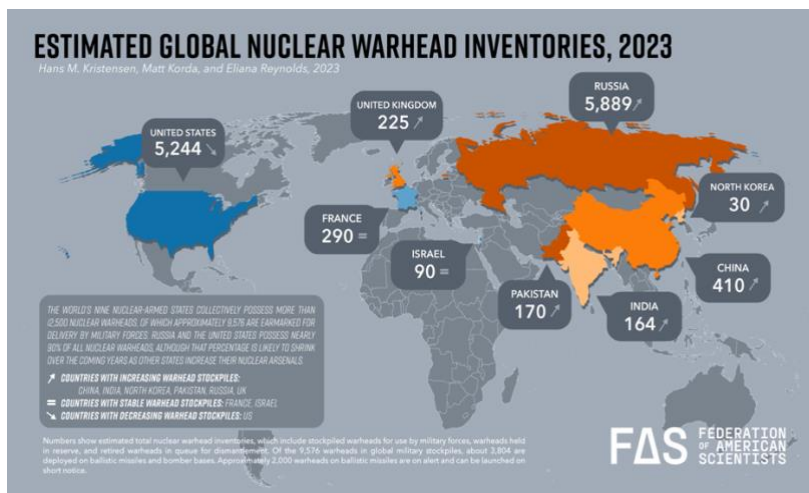


Despite the fact that we are living in a fully globalised and interdependent world, there is a total lack of unity and very little trust in order to encourage a more fruitful and flourishing set of relationships.

This absence of unity and trust is reflected in the massive military expenditures that have taken place over recent years and which are now being stoked further by the immediate threat of global conflict. Universal and Complete Disarmament is urgently needed and will help divert vital financial resources away from weapons of mass destruction towards areas of expenditure that would help alleviate the effects of climate change, help relinquish world poverty and allow us to fulfil the 17 Sustainability goals of the UN.

What follows is an overview on how far progress may or may not have been made in this direction.

The Non-Proliferation Treaty ([www.iaea.org](http://www.iaea.org)) (Signatories 189.) founded in New York in **1970** is currently regarded by its supporters as... *“the corner stone of the global nuclear non-proliferation regime and as an essential foundation for the pursuit of nuclear disarmament and general and complete disarmament.”*



It was extended indefinitely in **1995** and hit a stalemate in **1996**. The next review conference will be held in **2026**.

It’s stated aim, which was constantly repeated during the **2023** conference by state parties and others is to create “A world free of nuclear weapons”.

The above illustration however, by the Federation of American Scientists ([www.fas.org](http://www.fas.org)) illustrates the fact that this has yet to be achieved, as there are now well

over **12,500** nuclear warheads currently in existence.



According to the Women's League for Peace and Freedom ([www.wilpf.org](http://www.wilpf.org)) in their conference newsletter Reaching Critical Will:

*"This meeting provides an opportunity for all concerned states to discuss and negotiate a way through the nuclear quagmire. In times of grave peril, as we are facing now, dialogue is essential to preventing catastrophe. While the first Preparatory Committee is not usually a space for making binding commitments, it is an opportunity for governments to chart a path forward. Waiting until the Review Conference (2026) to make progress in nuclear disarmament and reducing nuclear dangers is (however) not an option."* (<https://reachingcriticalwill.org/resources/publications-and-research/research-projects>)

In fact, the whole long drawn-out review process (VCDNP doc. An Explainer. ([www.vcdnp.org](http://www.vcdnp.org)) has created a *quagmire* that is now extremely difficult for the various state parties to climb out of. No real progress has materialised to date. The obvious frustration of many people present at the conference was openly reflected in their personal statements. This you are now able to observe for yourself thanks to *UN Web TV*. (<https://media.un.org/en/webtv>)

One of the greatest overall concerns was the immediate risk of nuclear warfare and the sheer devastation that this could unleash in Ukraine and elsewhere if it were to happen and what consequences it would bring, even if it was confined to a limited conflict over the many nuclear facilities present there. This was amply demonstrated through the research findings of numerous bodies such as International Physicians for the Prevention of Nuclear War. ([www.ippnw.org](http://www.ippnw.org))

In addition, the strong presence of many Japanese delegations from Nagasaki and Hiroshima in particular, provided a constant reminder of what this actually meant in terms of the scale of humanitarian suffering that would be experienced if this risk was to be seriously overlooked.

*'Mayors for Peace'* for example ([www.mayorsforpeace.org](http://www.mayorsforpeace.org)) an NGO which has formed an ever-expanding global network of municipalities with 8,271 cities from 166 countries and regions, set out their vision in full display of all the participants, which transcends much more than just a world without nuclear weapons and goes as far as to seek a peaceful transformation to a more equitable and sustainable world.

The epic movie *'Oppenheimer'* currently showing in a number of different cinemas in Vienna at the same time, brought home these risks more widely to the general public in a very creative, timely, dramatic and impactful way.

Regardless of these obvious dangers and risks, the diplomatic statements presented by a sizeable number of state parties present, especially from the 9 Nuclear States, were far from ingenious, harmonious or even encouraging the necessary consensus.

There were some rays of hope on offer with the presence of more determined individuals and representatives from other organisations and NGOs, such as ICAN who received the Nobel Peace Prize for their work ([www.icanw.org](http://www.icanw.org)) in **2017** for encouraging the development of *'The Treaty on the Prohibition of Nuclear Weapons'*. (TPNW Signatories 92. Parties 68) which outlaws not just the use of nuclear weapons but also their production and testing.

Unfortunately, the fact that the complimentary *'Comprehensive Test Ban Treaty'* whose representatives were also present and which was introduced in 1996 following the stalemate of state parties ([www.ctbto.org](http://www.ctbto.org)) (Signatories 186. Parties 196) is still yet to enter into force and to become universally binding, held back by a small handful of nations.

In addition, the presence of a number of supporters and signatories to the growing number of treaties establishing Nuclear Weapons Free Zones throughout the world was also very encouraging. ([www.iaea.org](http://www.iaea.org)) Nuclear-Weapon-Free -Zones.

Will all these deliberations eventually lead to “*A world free of nuclear weapons*”. This is anybody’s guess, let’s hope that it eventually does so.

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## Microbial extinction is happening

Arthur Lyon Dahl's blog  
8 May-16 July 2023

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Another extinction catastrophe has been signalled by an article by Graham Lawton in *New Scientist* in April 2023 describing the loss of microbial biodiversity. For a long time, microbes were assumed to be universally distributed through the air and thus common everywhere. It is only since 2007 with the development of DNA sequencing technologies that the true diversity of microbes, including bacteria, fungi and protists, has become apparent. There are at least 6 million species of terrestrial fungus, but only 140,000 have been fully characterised. For up to a trillion species of prokaryotes like bacteria, DNA-based microbial surveys are only beginning. Protists, complex unicellular organisms like slime molds, number 200,000. This represents the majority of the Earth's biodiversity.

Microbes are essential to life on Earth. A gram of soil can contain a billion single-celled organisms of tens of thousands of different species, and its fungal strands would extend for hundreds of kilometres. Microbes are the main decomposers, breaking down organic matter. They drive the cycles of carbon, hydrogen, nitrogen, oxygen, phosphorus and sulphur. Recent studies have shown that bacterial genomes vary by location, showing that they can evolve in isolation. A common wood-decaying fungus has been shown to have nine subspecies. Many microbes are specific to their host plant or animal, such as an endangered plant found to have six species of fungi only on its leaves. If the host goes extinct, so do all the associated specific microbes.

A large microbial extinction event may already be underway. Species of soil fungi that produce mushrooms have diminished by nearly half in the Netherlands over 30 years, and more generally by 45 percent across Europe in the past century. The main causes are probably air pollution, and intensive forest management that removes the food of wood-decaying fungal species. Since most species are undescribed, they will go extinct without our knowing it. Not only are fungi decreasing in abundance, but the same common ones come to dominate and more exotic ones disappear, with intense homogenisation. Recent studies have shown that microorganisms are sensitive to the same pressures as higher organisms, including habitat loss, invasive species, pollution and wildfires. Warnings that the recent decline in insect populations would be catastrophic for planetary ecosystems, show that a microbial apocalypse would be even worse. You can't overemphasise the importance of microbes.

A first priority is to identify where microbial diversity is highest so that conservation efforts can be started. Then we need to include restoring microbial populations as part of efforts at soil regeneration and reforestation. When planting a tree, we need to plant the associated native microbiome. This has been shown to increase plant growth by an average of 64 percent. While fungi are getting more attention, other microbes are not yet the focus of conservation attention. As with the rest of biodiversity loss, we need to act quickly, as this may be our last chance to avoid catastrophe.

Another report by James Dinneen on 10 June shows that microbes on coral reefs appear to be more varied than the microbiomes of the rest of the planet's ecosystems combined. Coral reefs have a third of marine species of plants and animals. A study sampling 99 reefs across the Pacific looking at only three species of corals and two species of fish found more than half a million unique sequences of DNA from bacteria and archaea, distinct across different parts of the ocean. Extrapolating to all the other species of corals and fish would put the diversity six times higher,

greater than some estimates of the microbial biodiversity of the entire planet. In the complex coral reef ecosystem, microbes are involved in many different kinds of processes. With the threatened collapse of coral reef ecosystems from climate change, microbial extinction may be even more significant and irreversible.

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SOURCES: Graham Lawton, "The hidden extinction", New Scientist 258(3434):46-49. 15 April 2023.

James Dinneen, "Coral reef microbe community is staggeringly diverse", New Scientist 10 June 2023, p. 13

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## The Debt Bubble

Arthur Lyon Dahl

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I have long warned that one of the catastrophes threatening our civilization, alongside our triple planetary crises of climate change, biodiversity loss and pollution, or a third world war and nuclear holocaust, would be the bursting of the giant debt bubble behind our world economy. Recent studies and reports have demonstrated how frightening and fragile this debt bubble has become. If it bursts, with widespread defaulting around the world and the collapse of major currencies, we would experience a world economic depression, as trade would largely halt, our consumer society would end, and urban populations would be trapped with no means to survive. The survivors would be the rural poor still at a subsistence level outside the global economy, and small communities with strong enough solidarity to muddle through the crisis.

The UN Global Crisis Response Group has just issued its report in July 2023 "A World of Debt: A growing burden to global prosperity" (<https://unctad.org/world-of-debt>). Its focus is on the debt burden of the developing countries, and the figures are alarming. Global public debt has reached \$92 trillion, up from \$17 trillion in 2000. Thirty percent of this is owed by developing countries, and is growing faster, more than tripling since 2010. In 2020, seventy countries had public debt exceeding 60 percent of GDP. The unfair international financial architecture means that this debt burden is greater in the Global South facing cascading crises and high and rising borrowing costs. Half of developing countries are allocating at least 7.4 percent of their export revenues to external public debt servicing, when anything over 5 percent undermines recovery. They are more dependent on private borrowing and pay much more for it. In 2020, 54 developing countries had net interest payments exceeding 10 percent of revenues, and these payments are growing faster than other public expenditures, increasing 60 percent since 2010. 3.3 billion people live in countries that spend more on interest than on education or health. As they suffer more from loss and damage due to climate change without adequate compensation, this is a trap from which they cannot easily escape.

More generally, growing debt has been essential to maintain the materialistic world economy, with consumers borrowing to buy, corporations borrowing to grow, and governments borrowing for unproductive military expenditures and essential public services while reducing taxes on corporations and the wealthy. It is considered normal to barely manage interest payments, and debts may be rolled over, but there is no conceivable way that they all could be reimbursed. Most of the money supply is created by banks through their lending, not by government issue. The most publicly-indebted countries with over \$1 trillion in debt are the United States \$30,985 billion; China 13,955; Japan 11,061; United Kingdom 3,152; France 3,092; Italy 2,911; India 2,815; Germany 2,711; Brazil 1,653; and Spain 1,568.

As the most indebted country, the United States is expected, according to the Congressional Budget Office, to run an annual federal deficit of \$2 trillion over the next decade, with the interest of

over \$1 trillion exceeding the national defense budget, and a public debt of \$45 trillion by 2033, which would be 115 percent of the nation's annual economic output. How long can this continue?

To address the global debt storm and achieve sustainable development, the global financial architecture needs major reform. The Global Crisis Response Group has made some proposals for international institutional reform. The larger problem is the whole financial system itself, with banks and investors speculating and profiting using money to make money, and nations leveraging their currencies for political ends, totally divorced from the real economy producing goods and services, and many times larger in financial worth.

Perhaps the best thing that could happen, in comparison with other potential catastrophes, would be for the debt bubble to burst. While it would be painful and many would suffer, this could shut down the trade in fossil fuels and save us from a climate catastrophe, halt the destruction of tropical forests to supply the world market, slam the brakes on the multinational agroindustries destroying soils and spreading polluting chemicals, and enable a rapid transition to more moderate, smaller scale, regenerative and sustainable economic systems. We would do well to prepare for that eventuality, and whatever happens, that can do no harm.

