



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

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.

Welcome to the October Issue of LEAVES!

This has been an exciting month for the IEF with the Annual Conference and the General Assembly! In this newsletter, you will find

- a welcome to new IEF members and associates (p. 2)
- brief reports about the IEF General Assembly and the IEF Board election (p. 2)
- links to the recordings of the IEF conference (pp. 2-4)
- information about valuable new resources on the IEF website:
 - Course materials on *Sustainable Development and Human Prosperity* (p. 4)
 - Presentations on issues relevant for youth (p. 5)
- reflections by BIC representative Daniel Perell on *From Consultation to Effective Action*
- a link to an inspiring short video of youth voices reflecting a new understanding of collective responsibility and a peaceful world: *Embracing Interdependence: Foundations for a World in Transition* (p. 6)
- reports about activities by IEF members
 - from Ottawa, Canada on an environmental fair (p. 8)
 - from Fiji on Saving Coral Reefs (p.9)
- three interesting articles:
 - Nature and Health (p. 10)
 - Report on the Summit of the Future (p. 11)
 - Earth's 'vital signs' show humanity's future in balance (p. 12)

Members Corner

We warmly welcome the following new members and associates:

Members

Heide Madden, USA
Aram Zaeri, UAE

Associates

Mridul Bhatia, Germany
Greg Duly, Canada
Beverley Peden, Canada
Dr. Monika Rastogi, India



IEF General Assembly

The 28th General Assembly of the International Environment Forum was held over the Internet on the Zoom platform on 5 October 2024. The meeting was held twice to accommodate members and associates from different time zones. Altogether, there were 19 participants from 8 countries with IEF President Arthur Dahl attending and chairing both meetings. There were fewer participants than last year but the consultations in both sessions were excellent! You can read all about them in the General Assembly Report here: <https://iefworld.org/genass28>

IEF Board Election

Members voted by email on 23 September to 3 October. This year, the IEF had three tellers: Michael Richards, Carmel Momen, and Diana Cartwright.

The Governing Board for the coming year consists of Arthur Dahl (Switzerland), Christine Muller (USA), Sylvia Karlsson-Vinkhuyzen (Netherlands), Wendi Momen (UK), Victoria Thoresen (Norway), Halldór Thorgeirsson (Iceland), and Laurent Mesbah (Bosnia and Herzegovina), the same as last year.

For more information about the election, visit the [General Assembly Report](#).

28th Annual IEF Conference

The 28th Annual Conference of the International Environment Forum took place 14 – 28 September 2024 alongside the [UN Summit of the Future \(SoTF\)](#). It aimed to contribute to the global discussion about our planet's future and the transformative changes essential for our collective survival and progress. The overall conference theme was *A World-embracing Vision for a Sustainable Future*.

The four events had on average 68 participants coming from a total of 42 countries: *Australia, Austria, Belgium, Bolivia, Bosnia Herzegovina, Brazil, Canada, China, Colombia, Denmark, France, Germany, Haiti, Iceland, India, Indonesia, Italy, Ireland, Japan, Kenya, Latvia, Malaysia, Mexico, Namibia, Netherlands, Nigeria, Norway, Portugal, Puerto Rico, Romania, Serbia, Singapore, Slovenia, South Africa, Sweden, Switzerland, Turkey, United Arab Emirates, Ukraine, United Kingdom, United States, Zimbabwe*

Saturday, 14 September

A vision for a Sustainable Future - a Conversation with Youth

Watch the four [brief video highlights](#) of the conversation between moderator Khela Baskett and Roya Meshki-Kataria (25 years old, United Kingdom), Zayha Loyalka (17 years old, USA), Lua Janny Mbuzi (31 years old, Kenya), and Ronit Mohapatra (21 years old, Canada/USA)

This is the link for the entire conversation:

https://www.youtube.com/watch?v=w_mNGCzqWY

You can also read a report of the lively conversation and the speakers' biographies here:

<https://iefworld.org/conf28-1>

Tuesday, 17 September

Developing a vision for global collaboration

For a recording, a summary of the event and speaker biographies, go here:

<https://iefworld.org/conf28-2>

Panelists:

[Sovaida Maani Ewing](#): Director of the Center for Peace and Global Governance

[Professor Payam Akhavan](#): International Human Rights Lawyer

[Joshua Lincoln](#): Senior Fellow Center for International Law and Governance (CILG) at the Fletcher School of Global Affairs, Tufts University

Moderator: Dr Wendi Momen, MBE, FRSA

Sunday, 22 September

Building Futures in Communities

For a recording, a summary of the event and speaker biographies, go to

<https://iefworld.org/conf28-3>



Panelists:

[LEONG Lau Kheng Janice](#), member of the Baha'i community in Singapore, social activist

[Halldór Thorgeirsson](#), Chair Icelandic Climate Council, Iceland

[Ayman Reyhan](#), Cluster Coordinator for the Junior Youth Spiritual Empowerment Program in Ajman, UAE

[Lucas Umpierre Center](#), biomedical scientist with PhD in Molecular and cellular biology

[Louisa Yazdani](#), Psychologist, therapist for individuals and families, Brazil

[Dr. André Akhavan](#), physician specialized in anesthesiology and pain medicine, Brazil

Moderator: [Peter Adriance](#), former Representative for Sustainable Development, U.S. Baha'i Office of Public Affairs, retired

Saturday, 28 September

Where Do We Go from Here? - Deeds not Words

For a recording, a summary of the event and speaker biographies, go to <https://iefworld.org/conf28-4>

Panelists:

Dr. [Arthur Lyon Dahl](#), Environmental scientist, President of the International Environment Forum

[Liliane Nkunzimana](#), Representative of the Baha'i International Community's UN Office in New York

[Monica Maghami](#), International regulatory lawyer, focused on sustainability and technology

Moderator: [Victoria Thoresen](#), emerita and former UNESCO Chair for Education about Sustainable Lifestyles

For recordings and reports of all the events, visit the conference page: <https://iefworld.org/conf28>.

Thanks go out to the conference planning team Aaron Kelly, Philippe Gerling, Anisha Prabhu, Elsa Deshmukh, Khela Baskett, Rebecca Teclemariam Mesbah, Arthur Dahl, Christine Muller, and to Bill Kelly and Aaron Kelly for editing all the recordings of the IEF conference and the IEF webinars!

New Resource on the IEF Website: Sustainable Development and Human Prosperity

A six-unit course

which anyone can study and use

This course explores the environmental, economic and social dimensions of sustainability from both scientific and ethical/spiritual perspectives inspired by Bahá'í principles. It includes both readings and videos to illustrate the latest thinking on these issues that are at the centre of community concern, social action, public discourse and global debate.

The six units are:

1. [Introduction to the Concept of Sustainable Development](#)
2. [The Environmental Challenge and Bahá'í Approaches](#)
3. [Economic Development and Sustainability: Poverty and Wealth](#)
4. [Social Development: Crises and Solutions](#)
5. [Future Perspectives on Human Prosperity](#)
6. [Education for Sustainable Development: Individual and Community Action](#)

The course materials, with each unit requiring a few hours, can be studied individually at your own pace, or used to organise your own class or discussion group among friends, in a community or organisation, discussing the materials as appropriate. You simply need to share the link with those participating. Each unit has a supplementary page of additional resources if you want to go further.

For many years, this course developed by IEF members was offered annually through the Wilmette Institute under the National Spiritual Assembly of the Bahá'ís of the United States.

However, a recent change in policy requiring faculty to be resident in the USA is replacing this course with one specifically addressing American concerns. The IEF therefore decided to make these materials with a global perspective available to anyone in the world through its own website.

If you have difficulties accessing the content, comments or suggestions for improvements, please contact the IEF at ief@iefworld.org.

New Resource on IEF Website: Discourse for Youth

Presentations on Issues Relevant for Youth

Youth of today are deeply concerned and often anxious about the crises facing their world and the lack of evident solutions. The Sustainable Development Goals are far behind in implementation. We face existential crises in climate change, biodiversity and pollution. The Bahá'í principles for the oneness of humanity and the environmental, economic and social dimensions of sustainability, both individual and collective, can help to instill hope and inspire positive social action. Youth can be empowered to discourse with their fellow youth by understanding both the scientific nature of these challenges and the Bahá'í-inspired responses.

This page provides access to presentations in pdf on a range of issues that trouble youth which can be studied in about a half hour. They may be useful in junior youth groups, youth discussions, classes and institutes. They briefly explain each issue and include relevant quotes from the Bahá'í writings, statements of the Bahá'í International Community, and other sources.

Issues for youth study and discourse

The Environment - Nature and Spirituality
Bahá'í Participation in Environmental Discourse
The Environment - Ecology and Climate Change
Science and Religion 1 - Complementary, in Harmony
Science and Religion 2 - Science for Everyone
Systems Thinking - Integrated Holistic Approach to Unity
Systems Thinking - Cooperation in a World System
Achieving Peace 1 - The Lesser Peace
Achieving Peace 2 - Steps to Peace
Education
Gender Equality
Racism
Poverty
Hunger
Water
Agriculture
Health and Wellbeing
Migration
Biodiversity
Climate Change
Eco-Anxiety and Hope
Justice
Economy-Rethinking the Economic System



Economy-New Economic Values
Economy-Work
Inequality
Service
Seeking True Happiness - Not Drugs, Alcohol, Sex
Politics
Global Governance
Corruption

Embracing Interdependence: Foundations for a World in Transition

The Baha'i International Community created a short video as one of their contributions to the UN Summit of the Future.

8 min. video: **Youth voices reflecting a new understanding of collective responsibility and a peaceful world** (8 1/2 minutes) <https://www.youtube.com/watch?v=Os-KcydBXPg>

Quote of the Month

To acknowledge the oneness of the human family is not to call for uniformity or to abandon the strengths of many established systems of governance. Rather, it implies that all human beings share an all-encompassing, transcendent identity inclusive of an infinite range of diverse and intersecting cultural and historical expressions. And the age we live in is increasingly one of interconnection and integration, requiring new models of decision-making.

Excerpt from *Embracing Interdependence: Foundations for a World in Transition*, a statement of the Bahá'í International Community, on the occasion of the United Nations Summit of the Future, 4 September 2024

From Consultation to Effective Action

Reflections on the 'Road to the Summit' Discussion Series

Perspective by Daniel Perell
A representative of the BIC to the UN
New York, 16 September 2024

How does discussion on matters of concern lead to concrete change in the lives of people around the world? Skeptics of the United Nations might simply say "it doesn't." But it is hard to argue that a world without any exchange of ideas between states, and in the neutral setting the UN tries to offer, would be better than what we have today.

Consultation—whether in the family, the neighborhood, or the municipality—is how problems are identified and solutions and initiatives are proposed. We already know this from local

experiences around the world. Nor is it new in human experience. But effectively scaling it to the level of intergovernmental negotiations is an aim never before achieved.

How might we take a method of problem solving that works at the local level and bring it to life on the international stage?

Such was the question that animated our “Road to the Summit” discussion series. The series began over two years ago and will conclude later this week. Organized by the Baha’i International Community (BIC) and the Coalition for the UN We Need (C4UN), the 16 sessions of the series held thus far have drawn over 1,200 participants from nearly 80 UN Member States, 20 UN agencies, and hundreds of Civil Society organizations. Our discussions built on previous dialogues hosted by the BIC ahead of the Post-2015 agenda, and focused on the upcoming Summit of the Future and its related processes.

Why have we chosen to invest our time and energy in this way? Central in my mind is the fact that, in addition to conveying substantive content, the series aims to offer a space that is difficult to create within the UN today: one where participants enter as human beings first, and only second as representatives of their nation, organization, or constituency.

We have found that there is profound value in not being bound to a particular institutional position. It can facilitate a more genuine pursuit of solutions, a posture of learning, and a search for common ground, in ways that positional debates cannot. In fact, this is one of the key dimensions of problem-solving that we have learned from action undertaken in many communities around the world, at the grassroots; when participants see themselves, individually, as active agents and protagonists in a collective process, they become more committed to its success.

We also sought to bring into the series a different posture of engagement. While the substance of the conversations is serious, bringing joy into a space can constructively change the dynamics at play. It helps foster a sense of trust, borne of shared experience, honesty, and ultimately a sense of common cause. All participants were explicitly encouraged to assume the good intentions of others, and to be the embodiment of those good intentions themselves. Each of these unique features helped participants be more open to the ideas of others.

Clearly there are limits inherent in the structure of 90-minute sessions held both in-person and online. And we know that everyone who attended our “Road to the Summit” sessions returned to more traditional modes of dialogue later. Even so, certain features stood out:

- The shared goal of those participating in the space was to deepen understanding. We therefore needed to enter without attachment to any one desired outcome. This required humility and detachment from preconceived notions, in favor of openness to better ideas, since none of us have a monopoly on truth.
- Changing opinions was taken not as a sign of weakness, but rather as a sign of openness to refining understanding, to learn, and to empathize with others.
- The objective was not to convince, but to come to deeper and shared understandings of pressing challenges and responses to address them. In this, there are no winners and no losers.
- All human beings are equal in dignity, so all were understood to have equal agency and value in the conversation. Giving everyone an opportunity to contribute is not a matter of tokenistic representation, but a recognition that the complexity of contemporary challenges demands diverse perspectives to pursue truth.

These qualities are relatively rare in the international arena as currently organized. Yet they are vital if we are to develop relationships of trust and to advance shared endeavors, which are key to overcoming the challenges we face. Ultimately, such qualities allow us to respect one another and see the humanity in each other. They are the same qualities that should characterize conversations in the halls of the UN, where deliberations can have profound international implications.

What did we learn from the series? Many participants commented on the distinctive nature of the space. In a world where hope is in short supply, attendees said they left feeling energized or inspired. Some expressed surprise that those not often in agreement with one another were able to find consensus. Colleagues mentioned that they planned to replicate elements of the approach in their own events. And the quality of the dialogues improved over time, participants told us, which was accompanied by a rise in attendance. I'd like to attribute this to a growing awareness among participants of what to expect when they come into the room.

We can all learn to express these principles and ideas in the format and structure of the UN itself. What might this look like? Meetings could omit name cards and roles, for example, to offer greater latitude of thought. Spaces could be organized around the objective of building understanding, rather than achieving a negotiated result. They could feature only a small number of initial speakers, to get the conversation started, rather than full panels that take up a majority of the session. They could frame dialogue in ways that are exploratory, rather than positional. There are many ways forward with these positive experiences.

We are one people living on one planet: that is the reality. Increasingly, our processes will have to mirror that reality. The "Road to the Summit" series was one small effort to encourage a new way of talking, exploring, and making decisions. It was imperfect in many ways, and we will keep experimenting. We hope you will continue to join us as we do.

SOURCE: <https://www.bic.org/perspectives/consultation-effective-action-reflections-road-summit-discussion-series>

Ottawa Cluster Environment Group's 3rd Annual Environment Fair

By IEF Members Bill Kelly, Aaron Kelly, and Sherri Kelly, Canada

This year's fair was held at the Ottawa Baha'i Centre on a beautiful fall Sunday. The fair offered information on solar, electric cars, gardens, pollinators, incentives, home efficiency, resilience, kids activities, and more. The Rotary Club, Ecology Ottawa, Greening Sacred Spaces, and other groups were present. A new addition to the fair was a "how to build a garden box" table.

While attendance was noticeably less than last year, the quality and depth of meaningful conversations between representatives of the various community groups participating in the Fair reflected a strong improvement. Visitors were very focused on learning about actions that could be taken to improve their own environment profile in areas of personal carbon reduction, resilience to climate change impacts, and opportunities to leverage their efforts by working with others in their communities.

We noted a strong attraction to the Baha'i principle of unity and the One Planet One Habitation message of a global humankind seeking to live sustainably and peacefully in our shared home.

Some participants expressed an interest in attending the Environmental Cafe 613 Devotional and Speaker Presentation Series and in working directly with our Baha'i-inspired group to

assist in common goals such as interfaith collaboration, youth engagement, and event development and coordination.

There seems to be a coming together of individuals and groups seeking to leverage the potential of our collective capacities in raising awareness and taking action around the existential threat of the environmental crisis to our communities.

Our group looks forward to facilitating the further maturation of the community's awareness of the need for a unified, spiritual approach to advocacy and actions to address climate change. We are seeking to enhance our contributions to the efforts of other groups, and we will be welcoming participation of members of other groups in helping to bring our efforts forward.

Saving Corals

**Latest news from IEF member
Austin Bowden-Kerby in Fiji
28 September 2024**

UN OCEAN DECADE

Sustainable tourism is a powerful tool for fostering cultural understanding and building bridges between people from diverse backgrounds, contributing to peace and cooperation globally.

A perfect example of this is the role coral reefs play in tourism. These vital ecosystems not only captivate millions of visitors but also provide essential economic support. Tourism linked to coral reefs promotes environmental awareness and helps fund conservation efforts that protect these fragile ecosystems.

Fiji's BULA Reef, an initiative led by Corals For Conservation and endorsed by the #OceanDecade, demonstrates how sustainable tourism can be a force for good. BULA Reef is the largest rescue reef of its kind in history, made up of over a thousand heat-adapted "super corals", taken from areas of extreme heat stress where the corals were in danger of dying. It not only protects marine biodiversity but also empowers local communities by creating jobs and enhancing their role as environmental stewards

With the UNESCO endorsement, and with Bula Reef as the first successful major coral rescue in the face of an approaching severe marine heat wave, we are getting a lot of attention. The UN Ocean Decade is singling us out Reefs of Hope from among the multiple projects out there.

We are presently the only UN-endorsed coral focused climate change adaptation programme on the planet, and while we have a long way to go to get the funding and to build the capacity needed, all of the many Reefs of Hope partners in Fiji and the South Pacific who endorse and practice the strategies will in time benefit as part of a major regional programme.

I am in Kiribati and just met with the Permanent Secretary of Fisheries and the Director, and our next step will be to draft a national coral species recovery and restoration plan for the horrifically damaged coral reefs here, on the leading edge of coral reef collapse due to climate change. We will need to develop similar plans for Tuvalu, which was just hit by a mass coral die-off bleaching event, and for Samoa, Vanuatu, and Fiji all of whom just lost more corals. Fiji suffered our first back-to-back bleaching years and it looks like 2025 will be a third coral bleaching year for the region.

News from Belize shows a horrific die off worse than last year occurring in the Fragments of Hope sites. The time is approaching when all of the hot pocket reefs of Fiji and other reefs will be gone, so time is running out. But even then not all will be lost, as two new reports from Australia show that some of the heat-adapted diversity has worked its way out into cooler waters, where it might survive. But it is clear that time has run out, we cannot wait any longer!

SOURCE: <https://www.facebook.com/share/p/25gxngfVfYsSyMXW/>
UN Ocean Decade: <https://ow.ly/hgfb50TwUQQ>

Nature and Health

New Scientist 31 August 2024 Summary by IEF President Arthur Dahl

Being in nature is good for our health and well-being. Recent research is showing what happens in our brains and bodies when we interact with nature, as described in Kathy Willis' new book Good Nature. There are benefits from what we see, smell, hear and touch.



When we look at nature, our heart rate and blood pressure fall, stress hormones like adrenalin decrease, and our brainwave activity shows we are calmer and more clear-minded. Patients recovering from surgery recover three times faster and need less pain medication if they see greenery from their window. Physiological markers of calmness are higher with green-and-white leaves and yellow or white flowers, while preferences lean towards radially symmetrical or blue flowers.

The best landscape visually is open with a few scattered trees. It provides general background attention rather than focused attention, giving a mental mini-break. Our eyes respond to the fractal dimension of complexity, with mid-fractal complexity resulting in brainwaves with heightened alpha and beta frequencies and reduced delta frequencies associated with increased focus and a feeling of calm.

When you smell a plant scent, it passes across your lung membrane into your blood, and many scents affect biochemical pathways in the same way a prescription drugs, often with long-lasting effects. Lavender contains linalool, which has anti-anxiety effects. Pinene from pine forests also reduces stress. Plants in the cypress family have sesquiterpenoids that increase activity in the parasympathetic nervous system indicating relaxation, but also reduce adrenalin and elevate immune cells that attack cancers and viruses. Limonene in citrus fruits is an anti-inflammatory molecule.

Sounds are known to calm us. Birdsong reduces physiological symptoms of stress, while water sounds improve mood and cognitive performance. Bad sounds like the squawking of a crow or parrot do not relax us. Listening to nature sounds during an operation with epidural anaesthesia leads to lower levels of a stress-related enzyme indicative of pain.

Touching wood lowers your blood pressure, and feet touching wood is calming, with different responses depending on the kind of wood. Children planting plants in the classroom perform better academically and feel calmer and happier than those playing a planting game on a smartphone.

The environmental microbiome of bacteria and viruses in the air is richer in naturally biodiverse areas, reducing non-communicable diseases like asthma and allergies. Children playing in soil from a boreal forest, or adults with a green wall in their office, had more good bacteria on their skin and in their gut, with reduced inflammatory markers in their blood.

To maximise the benefits, spend at least 20 minutes at a time in nature, and at least 120 minutes each week, walking in a park away from unhealthy road sounds, or where you can smell scented plants and hear the birds. Avoid dense tree cover as it can stress you out.

Gardening has huge benefits as it combines sight, sound, smell and touch in contact with the environmental microbiome. Gardening in your front yard is better than your back yard as you walk through it more, and gardening in a allotment is better than your private garden because of community cohesion and the variety of plantings all year round.

In homes and offices, plants add sight and smell. Increase the amount of natural untreated wood. Look out the window on greenery. Schools also need greenery, with trees providing shade as well. There is some evidence that prescribing nature in hospitals can be as cost-effective and effective in terms of treatment as prescription drugs. More biodiversity in cities is good for nature and for our well-being.

SOURCE: 'Certain landscapes, flowers and trees are better for our health than others', Kathy Willis interviewed by Kate Douglas, New Scientist 31 August 2024, pp.41-43

Summit of the Future

United Nations, New York
22-23 September 2024
Report by IEF

Summit of the Future - Report

The proposal for a Summit of the Future originated in the Our Common Agenda report. The report was a response by the UN Secretary-General to a call from Member States for ideas on how better to respond to current and future challenges.

The Common Agenda report called for a renewal of trust and solidarity at all levels – between peoples, countries and generations. It made the case for a fundamental rethink of our political, economic and social systems so that they deliver more fairly and effectively for everyone. It also recommended a corresponding renewal of the multilateral system, with the Summit of the Future as a defining moment to agree on the most critical improvements necessary.

The Summit was a high-level event, bringing world leaders together to forge a new international consensus on how to deliver a better present and safeguard the future.

Here is the link to the summary report: https://iefworld.org/sof_report

Earth's 'vital signs' show humanity's future in balance

The Guardian, Damian Carrington, Environment editor

8 October 2024

Record emissions, temperatures and population mean more scientists are looking into possibility of societal collapse, report says.

Many of Earth's "vital signs" have hit record extremes, indicating that "the future of humanity hangs in the balance", a group of the world's most senior climate experts have said.

More and more scientists are now looking into the possibility of societal collapse, says the report, which assessed 35 vital signs in 2023 and found that 25 were worse than ever recorded, including carbon dioxide levels and human population. This indicates a "critical and unpredictable new phase of the climate crisis", it says.

The temperature of Earth's surface and oceans hit an all-time high, driven by record burning of fossil fuels, the report found. Human population is increasing at a rate of approximately 200,000 people a day and the number of cattle and sheep by 170,000 a day, all adding to record greenhouse gas emissions.

The scientists identified 28 feedback loops, including increasing emissions from melting permafrost, which could help trigger multiple tipping points, such as the collapse of the massive Greenland icecap.

Global heating is driving increasingly deadly extreme weather across the world, they said, including hurricanes in the US and 50C heatwaves in India, with billions of people now exposed to extreme heat.

The scientists said their goal was "to provide clear, evidence-based insights that inspire informed and bold responses from citizens to researchers and world leaders – we just want to act truthfully and tell it like it is." Decisive, fast action was imperative to limit human suffering, they said, including reducing fossil fuel burning and methane emissions, cutting overconsumption and waste by the rich, and encouraging a switch towards plant-based foods.

"We're already in the midst of abrupt climate upheaval, which jeopardises life on Earth like nothing humans have ever seen," said Prof William Ripple, of Oregon State University (OSU), who co-led the group. "Ecological overshoot – taking more than the Earth can safely give – has pushed the planet into climatic conditions more threatening than anything witnessed even by our prehistoric relatives.

"Climate change has already displaced millions of people, with the potential to displace hundreds of millions or even billions. That would likely lead to greater geopolitical instability, possibly even partial societal collapse."

The assessment, published in the journal *Bioscience*, says the concentrations of CO₂ and methane in the atmosphere are at record levels. Methane is a potent greenhouse gas, 80 times more powerful than CO₂ over 20 years, and is emitted by fossil fuel operations, waste dumps, cattle and rice fields.

"The growth rate of methane emissions has been accelerating, which is extremely troubling," said Dr Christopher Wolf, formerly of OSU, who co-led the team.

While wind and solar energy grew by 15% in 2023, the researchers said, coal, oil and gas still dominated. They said there was "stiff resistance from those benefiting financially from the current fossil-fuel based system".

The report includes the results of a Guardian survey of hundreds of senior climate experts in May, which found that only 6% believed that the internationally agreed limit of 1.5°C of warming would be adhered to. “The fact is that avoiding every tenth of a degree of warming is critically important,” the researchers said. “Each tenth places an extra 100 million people into unprecedented hot average temperatures.”

The researchers said global heating was part of a wider crisis that included pollution, the destruction of nature and rising economic inequality. “Climate change is a glaring symptom of a deeper systemic issue: ecological overshoot, [which] is an inherently unstable state that cannot persist indefinitely. As the risk of Earth’s climate system switching to a catastrophic state rises, more and more scientists have begun to research the possibility of societal collapse. Even in the absence of global collapse, climate change could cause many millions of additional deaths by 2050. We need bold, transformative change.”

Among the policies the scientists recommend for rapid adoption are gradually reducing the human population through empowering education and rights for girls and women; protecting, restoring or rewilding ecosystems; and integrating climate change education into global curriculums to boost awareness and action.

The assessment concludes: “Only through decisive action can we safeguard the natural world, avert profound human suffering and ensure that future generations inherit the livable world they deserve. The future of humanity hangs in the balance.”

The world’s nations will meet at the UN’s COP29 climate summit in Azerbaijan in November. Ripple said: “It’s imperative that huge progress is made.”

SOURCE: <https://www.theguardian.com/environment/2024/oct/08/earths-vital-signs-show-humanitys-future-in-balance-say-climate-experts>

