



LEAVES, A Newsletter of the INTERNATIONAL ENVIRONMENT FORUM

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Christine Muller, General Secretary
Arthur Lyon Dahl Ph.D.

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.

IEF Webinars

By IEF Webinar Coordinator Khela Baskett

28th IEF Webinar

Saturday, June 1st 2024

Reefs of Hope: Helping Coral Reefs Adapt to Rapidly Warming Seas

Speaker: Austin Bowden-Kerby

Register here: <https://tinyurl.com/IEF-ReefsOfHope>

IEF member Austin Bowden-Kerby in Fiji and his organisation **Corals for Conservation** have developed a programme *Reefs of Hope* to respond to the threats to coral reefs from climate change and global heating. They identify the most heat-resistant corals and move them to where they may have the best chance of surviving the hot water. Ocean temperatures have been far above even the worst predictions the last two years.

See [Reefs of Hope](#)

Here you can learn more about Austin Bowden-Kerby's work: "Emergency Measures to Secure Heat-adapted Corals": <https://iefworld.org/index.php/node/1564>

Call for Volunteers

As the International Environment Forum is growing and is engaging with more activities, we need more volunteers for the many tasks at hand.

Everyone is welcome to volunteer for the IEF. We will try to find an area for you to serve where you either have specific skills, or an area you are interested in and where you can develop knowledge and skills while serving the IEF.

Currently, we are especially looking for members and associates who are interested in **contributing to the IEF conference planning** and **assisting with its Facebook Page**. We are also looking for someone who would be able to **manage the IEF newsletter**.

To volunteer, just send an email to the IEF secretariat at ief@iefworld.org
We look forward to collaborating with you!

Emergency Measures to Secure Heat-adapted Corals

Austin Bowden-Kerby
Corals for Conservation

Austin Bowden-Kerby of Fiji gave a Keynote Talk on *Reefs of Hope* at the Cairns Reef Resilience Symposium in Australia.

A Climate Emergency has emerged for Coral Reefs globally which potentially threatens ongoing Coral Breeding and Restoration programmes. Urgent and immediate action is required to secure brood-stock corals against sudden and widespread loss of bleaching resistant, heat adapted corals which these highly invested programmes depend on. An extinction-level coral bleaching event occurred in 2023 in Florida and the Caribbean, with nearshore temperatures as high as 38.4°C, resulting in the loss of uncountable numbers of corals and tens of millions of dollars in investment. With the recent surge in mean ocean temperature, https://climatereanalyzer.org/clim/sst_daily/ the Southern Hemisphere winter of 2024 could be the last few months of survival for millions of corals on the Great Barrier Reef and southern oceans, including tens of thousands of bleaching resistant corals that might be used in ongoing coral reef adaptation and restoration programs. A rescue and mass evacuation effort to save and secure as many of these bleaching resistant corals as possible is proposed, focused on moving coral colonies from areas of extreme heat stress to cooler water reefs nearby, where these pre-adapted corals can more easily survive. This effort would provide insurance to the future of coral breeding and restoration programmes, and to the reef itself in rapidly warming seas. Time is running out for the very corals which have the greatest potential of surviving into the future.

Heat adapted coral populations of the extreme shallows are not well studied, being generally inaccessible during low tide. However, lack of data should not be used as an excuse for inaction. As the intensity of marine heat waves has increased, many heat adapted corals have undoubtedly already succumbed on many reefs, and what remains of these shallow water coral populations is largely unknown. An urgent response is justified and required.

Since the meeting, NOAA has issued a Climate Emergency for coral reefs, with the fourth and most severe global coral bleaching in history. I returned to the site last week to find that we have mass coral bleaching hitting our precious hot pocket reefs right now at the PIR Malolo site, with

loggers recording 35°C. An estimated 80% of the corals are either severely bleached or are already dead, and Crown of Thorns Starfish (COTS) are abundant and devouring the 20% or so that remain unbleached, so it is urgent that we engage in an emergency coral rescue and COTS removal program, moving corals to safety and out to cooler waters.

We ideally would be implementing these strategies globally, while some hot pocket corals still survive intact, because most of them will soon be gone. 2025 has the potential to become the year of greatest mass die-off of corals in history.

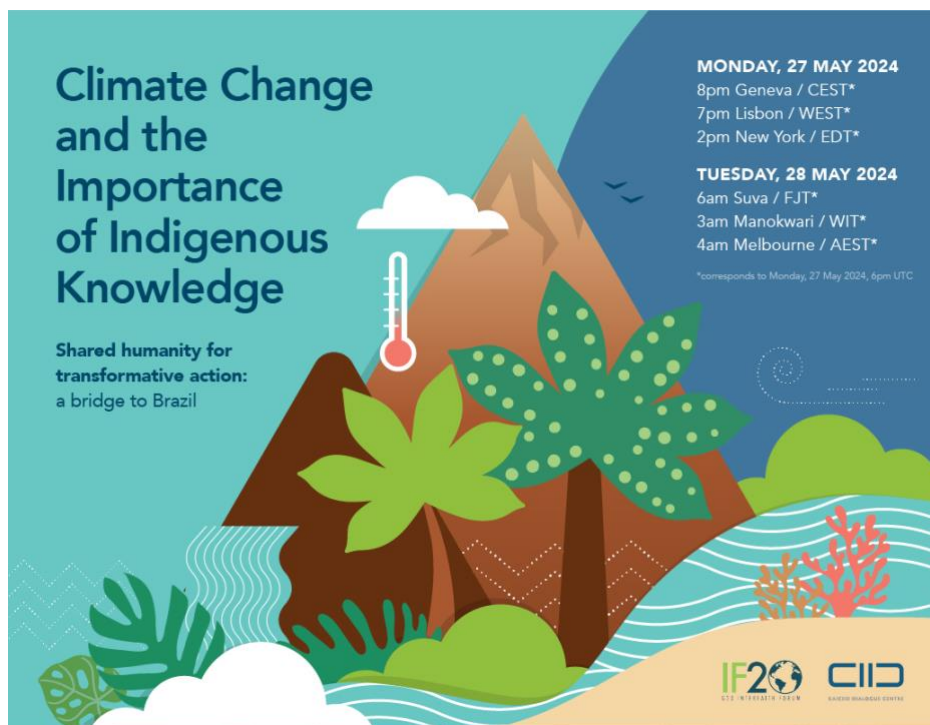
Read the full paper [here](#).

Watch his presentation in Australia at 3.23.00 <https://www.youtube.com/watch?v=tVU4D1UE9a4> (27 minutes).

Austin Bowden-Kerby will be the speaker at the upcoming 28th IEF Webinar on Saturday 1 June 2024. He will talk about Reefs of Hope, and you can ask him questions about his fascinating work. For more information and to register: <https://tinyurl.com/IEF-ReefsOfHope>

Climate Change and the Importance of Indigenous Knowledge

**Shared humanity for transformative action:
a bridge to IF20 and G20 in Brazil
Webinar Monday 27 May 2024**



REGISTER for the webinar at https://us06web.zoom.us/webinar/register/WN_TaayxE39TS-qykKPbv18mw

The International Dialogue Centre KAICIID and the IF20 Environmental Working Group chaired by IEF President Arthur Dahl are facilitating a dialogue demonstrating how Indigenous and faith approaches to spirituality and well-being can help in the pursuit of climate justice.

This second webinar will be held on Monday, 27 May 2024 at the start of the 4th International Conference on Small Island Developing States, with their rich and diverse Indigenous cultures and islands that are uniquely and unfortunately positioned at the forefront of multiple global crises, notably climate change. It will also provide input to the climate track at the upcoming G20 Interfaith Forum on 19-22 August 2024 in Brasilia, Brazil.

This webinar is a follow up to a webinar held in October 2023 which opened new perspectives by examining climate change in the Pacific and giving examples of interfaith dialogue with Indigenous spiritualities promoting environmental justice (see [REPORT HERE](#)). It highlighted how Indigenous and Native knowledge and spiritualities can assist in critically informing national and global climate strategies and climate policies, most specifically looking into the approaches Indigenous communities could offer to the climate change meetings. At the end of 90 minutes of rich exchanges, it was agreed that the webinar had only touched the surface of important issues, and further dialogue was needed to explore in more depth how Indigenous knowledge can be preserved and drawn upon in the face of climate change and other development pressures.

REGISTER for the webinar at:

https://us06web.zoom.us/webinar/register/WN_TaayxE39TS-qykKPbv18mw

Climate Change and Small Island Developing States

Arthur Lyon Dahl

Background for the 27 May [webinar](#) (see announcement above)

How would you feel if your home, your community, your culture, your country, your spiritual roots and everything you hold dear were in mortal danger? Imagine if you were told that a great flood like the biblical flood was going to swallow everything up, probably in your lifetime. This would not be a sudden torrent of water but a creeping upward of the sea inexorably drowning your country, felt most acutely when storm waves ate away at the coast and washed over you.

This is what is facing many Small Island Developing States (SIDS), especially those atoll countries whose low coral islands around lagoons are not more than a few metres above sea level. Their islands have been built by coral reefs, ecosystems of thousands of species growing first around volcanic islands and keeping up with the surface as the volcano slowly sinks into the depths over thousands of years, leaving a ring of coral at the surface, in a process already described by Charles Darwin in 1842.

The rising sea level is one of the consequences of climate change and global heating, as most of the heat energy trapped by greenhouse gases like carbon dioxide from burning fossil fuels is absorbed by the oceans. The laws of physics say that anything heated will expand, so ocean water increases in volume as it is warmed, raising the sea level. This is a slow process with great inertia, so sea level rise today is the result of past decades of global warming, and nothing can stop this from continuing long into the future. At best, ending the release of greenhouse gases might eventually slow sea level rise, but it would take hundreds of years to reverse this completely. The estimated rise of perhaps 2 meters by the end of the century would make the atoll countries disappear, and if tipping points accelerate the melting of Greenland and Antarctic glaciers, adding their volume to the oceans, the flooding would be sooner and greater. It is no wonder that the SIDS see this as an existential threat to their very existence.

The UN Secretary-General, in a report to the UN Security Council in February 2023, said that rising seas pose “unthinkable” risks to billions around the world, with profound implications for

security, international law, human rights and the very fabric of societies. The impact of rising seas is already creating new sources of instability and conflict. In the coming decades, low-lying communities – and entire countries – could disappear forever. We would witness a mass exodus of entire populations on a biblical scale, and we would see ever-fiercer competition for fresh water, land and other resources. The danger is especially acute for some 900 million people living in coastal zones at low elevations – one out of every ten people.

Continue reading this article here: <https://iefworld.org/node/1558>

Water Security and Climate Change

**Report by the Ottawa Cluster Environment Group
about a webinar talk by Darren Hedley**

This group includes IEF members Leslie Cole, Bill Kelly, and Aaron Kelly.

The Almighty Lord is the provider of water, and its maker, and hath decreed that it be used to quench man's thirst, but its use is dependent upon His Will. If it should not be in conformity with His Will, man is afflicted with a thirst which the oceans cannot quench."

— `Abdu'l-Bahá



Droughts and floods are not something that people in Ottawa think about as local problems. We have easy access to clean water to drink, flush or swim in.

But climate change is bringing foreign problems closer to home. Local farmers are worried about whether less snow this winter will mean drought conditions during the coming growing season. In recent years unusually heavy rains have caused serious flooding in our city. The problems of extreme weather events and unusual weather patterns are becoming more common.

In a presentation to the Ottawa 613 Environmental Café in February, Darren Hedley, a University of Calgary professor and member of the Association for Bahá'í Studies Climate and Environment Working Group gave a sobering overview of the issue of water security and how it relates to climate change.

He noted that a 1 degree Celsius increase in temperature increases the water vapor in the air (through evaporation and transpiration) by 7 per cent – which leads to more extreme weather events – more droughts, wildfires, heavy rains and severe storms.

At the same time, Hedley says 4 billion people now face scarcity at least one month a year and 50% of the world's people will face severe water stress in the second half of this century. Hedley shared a map that showed parts of the world with serious water shortages which include a large part of California and Australia as well as large sections of Africa and of Asia.

He also noted that 81% of species dependent on inland water and wetlands have declined in number since 1970.

Access to clean water and sanitation is one of the United Nations Sustainable Development Goals for 2030 and is considered a fundamental human right. In many places, water has to be carefully managed to make sure everyone has enough. Hedley says this can mean managing demand by limiting water use, as well as taking actions to prevent severe runoff from rains or to increase water absorption by planting vegetation that hold water in the soil and preserving natural wetlands. Technological solutions include desalination and using better sensors to monitor demand peak times and detect leaks.

Hedley described how Cape Town, South Africa in 2018 reached a low point of 15% of water in their reservoir and had to find a way to manage the supply to make sure everyone had the water they needed. They started charging fees for water, reduced leakages from the system and rationed water use to about 50 litres a day per resident. (For comparison, an average Canadian uses more than 500 litres per day.) Hedley challenged us to think about our own water footprints and provided this link: <https://www.watercalculator.org/>

Not having enough water means farmers cannot grow crops or food to sustain their families. This has forced many people in Latin America and Mexico to abandon their villages and migrate North to the border of the United States. Similar issues in Africa are driving climate refugees to Europe.

In parts of Africa commercial enterprises are setting up kiosks where people buy buckets of water, or communal wells where tokens are used to buy water. This fee for service will help pay for the maintenance and sustainability of a water supply.

In many places we are overdrawing from aquifers or surface water, which will lead to water scarcity. There is now competition between households and corporations or large farming operations in many places across the world – even in Canada. We have seen recent news stories of Alberta municipalities limiting water use for mining or fracking. Climate change has brought water scarcity problems to parts of Canada – something we thought would never come to our doorstep.

A recent Global Commission on the Economics of Water in 2022 looked at how we can make sure everyone has an adequate supply of clean water. Hedley says it will require not only financing but also good governance, political stability and transboundary cooperation to ensure everyone has a secure supply of clean water.

Source: https://www.bahai-ottawa.org/community_news_archives/02_28_2024_not_enough_water_or_too_much.html?reload

Environment, peace, and global governance, First quarter of 2024

**Report for the IEF
by IEF Associate Uros Popadic M.A.**

IEF Associate Uros Popadic wrote a concise summary for the International Environment Forum, reporting about recent conferences and initiatives for the environment, for peace, and global governance. You can read his report here: <https://iefworld.org/node/1566>

It covers:

- 1- Nordic Climate Action and the Road to COP29
- 2- The Road to COP 29 after COP28's Epilogue
- 3- EU climate policies are in peril as the parliament faces a shift to the right
- 4- The EU Green Deal is going strong
- 5- The EU council and Parliament made a deal to improve the EU's green industry
- 6- The European Environment Agency adapted its strategy to manage climate risks

Managing Global Catastrophic Risks in the 21st Century

By Richard Falk and Augusto Lopez-Claros

The just-published edited collection Global Governance and International Cooperation: Managing Global Catastrophic Risks in the 21st Century emerged from a set of conversations between two like-minded organizations: the Global Governance Forum and the Global Challenges Foundation. Both share a strong interest in assessing the effectiveness of the global order that came into being in 1945 with the adoption of the UN Charter in the face of the various institutions and practices that make up today's infrastructure for international cooperation. Both are concerned that the current framework, despite many achievements, is no longer fit for purpose, and lacks the instruments, resources and legitimacy needed to address the multiple catastrophic risks threatening our future.

Read more about this new book on the [website of the Global Governance Forum](#)

Just two years left

**Simon Stiell
Executive Secretary of the UNFCCC**

Simon Stiell, executive secretary of the UN Framework Convention on Climate Change, warned on 10 April 2024 that there were just two years left to draw up an international plan for the climate that would cut greenhouse gas emissions in line with the goal of limiting temperature rises to 1.5°C above preindustrial levels.

“There’s no room now for half measures,” he warned, referring to the global heat that has surpassed records for the past 10 months. “Averting a climate-driven economic catastrophe is core business.”

But Stiell held out a promise of global economic renewal, for the developed and developing world, if countries shift to a low-carbon economy. “Bold new national climate plans will be a jobs jackpot and economic springboard, to boost countries up that global ladder of living standards,” he said. “[They will] increase food security and lessen hunger. Cutting fossil fuel pollution will mean better health and huge savings, for governments and households alike.”

He called for reform at the International Monetary Fund, the World Bank and other development banks that would enable the governments that fund them to provide much more climate finance to the developing world. This would involve greater pledges of overseas aid and debt relief for those labouring under the heaviest burdens, but most importantly changes to the banks’ lending practices that would give poor countries greater access to finance. Leaders of developing countries, including Mia Mottley of Barbados and William Ruto of Kenya, have said such reforms could unlock hundreds of billions of dollars of finance. At present, lending practices are not geared towards tackling the climate crisis.

Continue reading this article here: <https://iefworld.org/node/1553>

SOURCE: edited from

<https://www.theguardian.com/environment/2024/apr/10/world-bank-must-tak...>

The Rise of Eco-anxiety

The leading scientific journal *Nature* has published a news feature "The rise of eco-anxiety: scientists wake up to the mental-health toll of climate change" that documents the latest research on mental illness due to climate change. It shows that this is not just a problem in the West, but impacting large numbers of people around the world including in the poorest countries. One solution that has some effect is to take action to address climate change in some way.

To read the article, go to <https://www.nature.com/articles/d41586-024-00998-6>.

Coming financial crisis from extreme heat

A. Worst global crisis ever

A recent study has modelled the economic risks of the major climate change scenarios up to 2060, concluding that the extreme heat would disrupt global supply chains and cause the worst financial crisis the world has ever seen. Severe heat waves have major health and economic impacts, with higher mortality rates, preventing people from working outside, destroying crops and disrupting industrial processes. These impacts in exporting countries at low latitudes will have severe financial impacts on importing countries in the global North. The spillover effects through supply chains will have consequences for global food security, energy supply, and sources of minerals.

Even the most optimistic scenario with the world shifting to a more sustainable path would see a 25% increase in heatwave days and 600,000 annual heatwave deaths, with a loss of 0.8% of

GDP or \$3.75 trillion by 2060. In the high growth scenario, losses increase by 500% to \$25 trillion, one quarter of the total world GDP in 2023. Heatwave days would be 100% higher, causing over a million annual heat-induced deaths. Supply chain disruption would grow exponentially. Central and Southern Africa, Southeast Asia and Latin America have the most severe total losses. Through global value chains, USA, Brazil, China and Norway suffer substantial economic ripple losses, as will the European Union.

The study illustrates from a systems perspective how vulnerable the globalised economy is to disruption in global supply chains, whether from climate change or other perturbations, as the forces of disintegration accelerate.

B. World incomes drop a fifth by 2050

A second study has estimated the cost of climate change impacts to mid-century, finding that average world incomes will drop by nearly a fifth by 2050, with the cost of environmental damage six times higher than the price of limiting global heating to 2°C. Rising temperatures, heavier rainfall and more frequent and intense extreme weather are projected to cause \$38tn of destruction each year by mid-century, according to the research published in *Nature* on 17 April.

This is far higher than previous estimates, and is already locked into the world economy over the coming decades as a result of the enormous emissions from the burning of gas, oil, coal and trees. This will inflict crippling losses on almost every country, with a disproportionately severe impact on those least responsible for climate disruption, further worsening inequality. The permanent average loss of income worldwide will be 19% by 2049. In the United States and Europe the reduction will be about 11%, while in Africa and south Asia it will be 22%, with some individual countries much higher than this. In the second half of this century, where human actions now can still make a big difference, continuing business as usual will cause a projected average income losses of more than 60% by 2100. But if emissions fall to net zero by mid century, income declines will stabilise by mid century at about 20%. Countries such as Germany (-11%), France (-13%), the US (-11%) and UK (-7%) will lose out even by mid century. Worst affected will be countries in already hot regions including Botswana (-25%), Mali (-25%), Iraq (-30%), Qatar (-31%), Pakistan (-26%) and Brazil (-21%). These are caused by the impact of climate change on various aspects that are relevant for economic growth such as agricultural yields, labour productivity or infrastructure. This scenario is still conservative and incomplete, since many major climate impacts have not yet been incorporated into the analysis, including heatwaves, sea level rise, tropical cyclones, tipping points, and damage to natural ecosystems and human health.

The changes up to 2050 are already locked into the climate system, but reducing emissions would be far cheaper than doing nothing and accepting more severe impacts. By 2050, mitigation costs, for example from phasing out fossil fuels and replacing them with renewable energy, would be \$6tn dollars, which is less than a sixth of the median damage costs for that year of \$38tn.

SOURCES: heat_crisis: Sun, Yida, et al. 2024. Global supply chains amplify economic costs of future extreme heat risk. *Nature* 627, pp. 797-804, 28 March 2024, doi.org/mm2t. Woodford, James. 2024. Extreme heat could trigger the worst global financial crisis we have seen. *New Scientist* 261 (3483) p.11, 23 March 2024.

economic cost: Maximilian Kotz, Anders Levermann, Leonie Wenz. 2024. The economic commitment of climate change. *Nature* vol. 628 pp. 551-557 18 April 2024. <https://doi.org/10.1038/s41586-024-07219-0>
<https://www.theguardian.com/environment/2024/apr/17/climate-crisis-aver...>

Fostering Sustainable Agriculture Practices in Europe

By IEF Associate Dr. Santosh Kumar Mishra

Sustainable agriculture (SA) is defined as farming with the aim to (a) "protect the environment", and (b) "make the best use of non-renewable resources". Today, there is increased need for SA in the European Union (EU) region. It is for this reason that the European Commission pushes for sustainability in agriculture in rural areas through the common agricultural policy (CAP), which sets out to tackle climate change, protect natural resources and enhance biodiversity. A series of initiatives have been undertaken in EU countries to ensure SA. One such innovative initiative is: Agrinatura (<https://www.innovationnewsnetwork.com/fostering-sustainable-agriculture-practices-in-europe/18478>), the European Alliance on Agricultural Knowledge for Development. It is a major European research organisation committed to agricultural knowledge and education for research and development. This policy brief aims to give an insight into contributions made by Agrinatura in the area of SA in the EU. The author briefly outlines the role of Agrinatura, its recent activities, achievements, and its key targets.

In view of increasing significance being attached to the Sustainable Development Goals (SDGs) globally, Agrinatura aims to provide knowledge to inform the development of innovation to tackle major global challenges, such as (a) poverty, (b) economic growth, (c) food security, and (d) sustainability. Its vision centres on building an active European agricultural research area for development. Agrinatura (a collaboration of European universities and research organisations with a common interest in supporting SA) has 36 member institutions from 17 European countries. The key collaborating partners are (a) European Commission (EC), (b) Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), and (c) Food and Agriculture Organization of the United Nations (FAO); including over 2,500 development-oriented researchers. Agrinatura, with international collaborators, seeks to nurture scientific excellence through (a) joint research, and (b) educational programmes. Also, it advocates for enhanced support for agricultural research and educational programmes to contribute to SA. The guiding principle of Agrinatura is that the framework of the SDGs should be continued in research and policy for the purpose of assessing the relevance of SA and food systems transformations across countries in the EU region.

New Climate Resilience Fund

UN High Commissioner for Refugees (UNHCR)

UNHCR, the UN Refugee Agency, has launched the UNHCR Climate Resilience Fund, seeking to boost the protection of refugees and displaced communities who are most threatened by climate change.

As part of its work to protect and assist more than 114 million people who have been forced to flee, UNHCR already seeks to build people's resilience and reduce their vulnerability to risks, including the impact of climate change. For the first time, the Fund will exclusively target financing efforts to protect the most threatened displaced communities, equipping them to prepare for, withstand and recover from climate-related shocks.

Contributions to the Fund will boost the reach and impact of UNHCR's climate action, enabling the agency and its partners to commit to climate-related projects in countries where it is already responding to major conflict-related situations of forced displacement, such as Bangladesh, Chad, Ethiopia, Kenya and Mozambique.

The Fund will increase the availability of environmentally sustainable resources in displacement settings, providing more clean energy, for example, to power the water, schools and health infrastructure used by refugees and their hosts. It will support environmental restoration and will invest in resilience by building climate-resilient shelters, supporting climate-smart livelihoods, and reducing the impact of the humanitarian response on the natural environment.

Continue reading this article here: <https://iefworld.org/node/1557>