



MAHB



A report to the Governments and Citizens of Planet Earth

Global online conference

March 20-22, 2021

*The Conference was hosted in the interests of humanity
and our home Planet by:*



MAHB

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An Open Letter to the Governments and People of the Earth

Humanity faces the greatest emergency of our existence – a crisis far deeper, graver and more complex than many yet appreciate.

The emergency comprises catastrophic risks, including: resource scarcity, ecological collapse and extinction, global overheating, food insecurity, weapons of mass destruction, global poisoning, pandemic disease, population overgrowth, uncontrolled new technologies and widespread apathy and delusion.

Many voices have raised concern about these individual threats – and we add ours to them.

However, all these risks are interlinked, and none of them can be solved in isolation. However, they can be overcome or mitigated – with universal cooperation, goodwill and determination.

No government in our world yet has a comprehensive plan for dealing with this systemic cycle of risks that endangers our civilization and our children's future.

We here call on them to develop one, urgently.

We also urge worldwide discourse, planning and action now, to overcome all of these risks, together, in ways that make none of them worse.

We call for a fairer, safer, healthier and more equitable future for all people on our Planet.

Signed:



Em Prof Paul R Ehrlich, Co-Founder MAHB



Dr John Hewson AM, Chair,
Council for the Future of Humanity



Julian Cribb, Co-Founder, Council for the Human
Future



Prof Tilman Ruff AO



[electronically signed by] Paul Barratt AO



Leilani Münter

Note: This letter is available to be signed by anyone on Earth who wishes to. See:

Avaaz <https://buff.ly/3156DqU>

Change.org <http://chng.it/RbcvK4KJm4>

GetUp! <https://buff.ly/3sbguqV>

iPetitions <https://www.ipetitions.com/petition/delivering-the-human-future>

Executive Summary

Humanity faces an existential emergency comprising many interlinked catastrophic risks which are now arriving together.

Their collective scale is so great that few grasp it. Together, these risks endanger our ability to maintain a civilization, possibly even to persist as a species.

The basic cause is the sheer scale of the human enterprise: overpopulation, overconsumption, inequality, poor choice of technologies and poor social arrangements.

The crisis is vast, complex and interconnected. It affects everyone on Earth. Dimensions described by speakers at the conference include:

- Decline in the Earth's resources especially fresh water, but also soil, forests, fish and climatic stability.
- Extinction of species and collapse of ecosystems which support human life on a scale we have never before witnessed.
- We are approaching a point of no return, where the Earth's climate could go out of control, pitching us into hothouse conditions which can spell disaster for our civilization.
- Despite the lessons of Covid, we are still unable to identify and prevent future pandemics.
- The world food supply rests on a knife-edge, endangered by declining resources and climatic instability.
- The world is facing a freshwater crisis. Millions die preventable deaths and the food supply is increasingly at risk.
- The threat of nuclear war is higher than at any time in our history. Nuclear weapons will be used – unless they are abolished.
- Global poisoning by human chemical emissions is out of control, claiming 13 million lives every year and damaging the biosphere.
- Artificial intelligence and other advanced technologies are poorly understood and even more poorly regulated, posing new threats to society and the human future.
- The human population is growing faster than ever; discussion of ways to alleviate the issue is often.
- Our interconnected social and economic systems are the main cause of the breakdown in global environmental stability. Most countries remain focussed on growth in consumption.
- The current economic model is broken and needs to be replaced.

However, the Conference also concluded that there is much that can be done to curb the danger, limit the threats, reduce the number of lives lost to them – and improve human prosperity and wellbeing as a consequence.

The Conference called on the governments, companies and communities of the world to develop and implement an urgent plan of action that addresses *all* the risks and their integrated nature.

Speakers also advocated specific measures requiring immediate action, such as:

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- The world needs a ‘survival revolution’ on a scale far larger than the ‘industrial revolution’
- If we meet the Paris targets and restore the biosphere, we may be able to stabilize the Earth’s climate. We must aim for net zero carbon emissions worldwide by 2040 at latest.
- We need to reduce consumption and limit our impacts on the natural world which are driving extinction. We need a global plan to restore the environment so it can support all life, including humanity.
- We need a global Clean Earth plan to reduce the man-made chemical poisoning that kills million every year and devastates the environment.
- There must be a universal ban on all nuclear weapons and their materials .
- We must manage freshwater for sustainability and equity. This entails new thinking, improved technologies, better economics, smarter institutions, effective outreach, and partnerships.
- We need a global surveillance and awareness system to defeat future pandemics and health threats. We need health systems which are ‘bottom up’ rather than ‘top down’ delivering healthcare as a human right.
- We can build a renewable, climate-proof food supply for everybody that will increase peace, prosperity, health and repair the environment.
- We need worldwide family planning to reduce human population growth voluntarily, everywhere. We need to discuss this issue openly and respectfully, and normalize the choice of having few or no children.
- We need far better ways to control powerful new technologies, such as artificial intelligence, to curb the risks and improve the benefits they offer.
- We need a *Green New Deal* that reduces inequality, ensures sustainability, triggers investment and transitions economics to a new model of prosperity and abundance.

The Conference agreed that these matters were of the greatest urgency for all – and were not, collectively, receiving sufficient attention and priority from the world’s governments, institutions, corporations, policy and decision makers.

It appealed to the people of the Earth to press for action, and to take it in their own lives, to deliver a safer, fairer human future.

Opening statement

Professor John Hewson, Chair of the Council for the Human Future.

Fellow Citizens of Earth, I bid you welcome to what we trust will become one of the milestone events of the decade – a worldwide conference on *Delivering the Human Future*.

Your hosts at this conference are the [Millennium Alliance for Humanity and the Biosphere](#) (or MAHB), based at Stanford University in California, the [Common Home of Humanity](#) based in Gaia, Portugal, and my own organisation, the [Council for the Human Future](#), based in Australia.

We share a common concern about the human future and the risks we all face as members of a global civilization.

The purpose of this worldwide conference is to describe these risks in ways that anyone can grasp - and to discuss how best we can overcome them.

It is no exaggeration to say that humanity faces an existential emergency – a combined threat to our very existence.

This is, by far, the gravest danger we have faced together since we first stood upright and walked from the grasslands of Africa into a world which humans now dominate, utterly.

We are victims of our own success as a species.

That very success now endangers us all.

We hear much about climate and extinction, but at the Council for the Human Future we understand that there are ten, interlocked, threats to our future. All of these must be solved *together*.

These threats have been identified, measured and re-measured by scientists working around the Planet over half a century or longer.

There is no question that they are real.

There is no question they are happening now.

There is no question they are extremely grave.

There have been countless meetings to discuss individual threats, such as climate change, nuclear weapons or extinction – and they have reached important conclusions about what must be done.

However, the central message of this conference is that we cannot solve these threats one at a time – because they are all interconnected.

They are all driven by the same fundamental forces – human overpopulation and overconsumption of the Earth's resources.

We must solve them all together – and in ways that make none of them worse. To try to prioritise one threat risks disaster from another.

Over the next two days you will hear some of the world's finest minds describe the main threats – and what we can do about them. We invite you to listen or watch carefully, wherever on Earth you may happen to be.

We invite you to contribute by considering the best ways we can achieve the survival of our civilization and our species.

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We invite you to share the online talks of our expert speakers with family, friends, workmates and your own contacts.

The modern internet and social media means that, for the first time in human history, it is possible to hold a worldwide discussion.

For humanity to start to think together about the risks we all face – and the benefits we can reap from overcoming them.

I have been encouraged by the collaboration globally in response to the COVID pandemic along with a significant shift in behaviour by governments, households, businesses and institutions. There have been important changes to the way we live, work, travel, save, spend and our reliance on government. The world has certainly demonstrated that it can pull together in a crisis.

This conference, and its talks, will go globally on social media, reaching out to everyone who is online and is concerned about their own future on an imperilled Planet.

The talks will exist online for months and years after this event. They offer a lasting influence in favour of a wiser, safer, fairer future for all of humanity.

We hope they will stimulate and inform discussion in homes and workplaces, on farms and in offices or factories, in parliaments and public assemblies, between friends and family of what we humans must do together to save ourselves – and build a brighter future.

Above all we hope this discussion will help to translate the calls for global action into clear advice about what each of us can do, as individuals, in our lives and our work, to build a safer, more sustainable world.

To solve a problem, you first have to understand it.

Our speakers describe the problems we face – and ways we can go about overcoming them without making any of them worse.

I invite you to absorb their collective wisdom – and to bring your own to this task of helping to ensure the survival of humanity, our civilization and our achievements far into the future.

There is no greater or more honourable undertaking.

There is nothing more urgent in the entire human agenda.

There is nothing more inspiring, uplifting and motivating than helping to *Deliver the Human Future*.

Avoiding a Ghastly Future

Professor Emeritus Paul R. Ehrlich, Bing Professor of Population Studies Emeritus; President, Center for Conservation Biology, Stanford University. Co-founder, Millennium Alliance for Humanity and the Biosphere.

The Issues:

- Humanity is facing a series of existential threats. Their scale is so great few can grasp it.
- They imperil our ability to maintain a civilization, maybe even to persist as a species.
- Climate disruption is a big issue and gets the most publicity, but there are other, very real, very large and interconnected threats.
- The big problem with climate disruption is that it destabilises agriculture; it will make the world food supply much more marginal.
- Tied to climate, also, is the loss of biodiversity: we are utterly dependent on the other plants and animals on the Planet – and we are losing them very fast.
- Future environmental conditions will be far more dangerous than is currently believed.
- Toxicification of the planet from man-made chemicals is another big threat; for example, by mid-century there will be more plastic than fish in the oceans.
- We're also losing our soils and groundwater, which is another major risk to our food system.
- Wiping out biodiversity also means we are likely to see fresh pandemics.
- The basic cause of all this is the sheer scale of the human enterprise: overpopulation, overconsumption, inequality, bad choice of technologies and poor social arrangements.
- This has produced the gigantic mess we now have to deal with. The worst humanity has ever faced.

The Solutions:

- The world now needs a 'survival revolution' on a scale far larger than the 'industrial revolution'.
- There is a great deal we can do as individuals to preserve our civilization – but the real task ahead is political and social.
- Thanks to science, we know we have to: stop burning fossil fuels very quickly, stop overusing our soils and groundwater, lower the size of the human population gradually and humanely, and many more, similar actions.
- We know we have to do all these things. We just don't know how to accomplish them.
- That's where we need our social scientists, our artists, communicators, media experts, religious and community leaders, our young people and so on.
- We need them to inspire the survival revolution – and get us out of the ghastly mess we are gradually slipping into.

More information:

Underestimating the Challenges of Avoiding a Ghastly Future:

<https://www.frontiersin.org/articles/10.3389/fcosc.2020.615419/full>

Pandemics and the future of global health.

Dr Soumya Swaminathan is a pediatrician and Chief Scientist for the World Health Organisation. She has served as Director General of the Indian Council of Medical Research and Secretary of Health Research in India's Ministry of Health and Family Welfare.

Issues and lessons:

- Covid-19 has infected over 120 million people worldwide, and killed more than 2.6 million. This is an undercounting of both.
- There have been huge impacts on livelihoods, on education, on women and children, on poverty and inequity. Violence against women has increased.
- We have learned there is no 'ideal' health system in the world able to cope with the shock, even those with excellent healthcare systems. Some of these had the highest death rates.
- However, countries used to fighting infectious diseases like TB or which had handled other pandemics, were able to respond more effectively and earlier.
- 80% of countries reported disruption to healthcare services, especially low-income countries.
- We need to build far more resilient systems that can handle such events.
- The global economy contracted 4-5% in 2020 and 120 million more went into poverty. Poverty rose for the first time in twenty years. Economic fallout will outlast the health crisis.
- Global human development will decline for the first time in 30 years. Recovery must include a new human rights-based social contract.
- A pandemic cannot be solved one country at a time.

Solutions:

- Health must become a human right.
- Health is a priority for investment by all governments.
- Universal health coverage is the only way back to prosperity.
- Health systems that empower people work much better than top-down systems.
- Global R&D has been the silver lining, developing new healthcare products at unprecedented speed. Three vital innovations:
 - o Development of new vaccine platforms (eg. mRNA)
 - o Rapid diagnostic tests have been a huge benefit
 - o Renewed focus on antiviral drugs
- The private sector has stepped up to deliver these innovations. We now need a new model for funding 'global public goods' (like vaccines).
- We need greater investment in our health institutions.
- Only co-operation and collaboration between governments, corporations and civil society can solve such problems and deliver equitable, affordable innovation in medical care.
- We need early warning – a global surveillance system.
- We need to communicate early and often to help people differentiate between credible and false information.
- Otherwise, we cannot prevent future pandemics.

The World Water Crisis and a Path Forward

Peter Gleick is Director Emeritus of the Pacific Institute, with a focus on the environment and global sustainability. He is an international leader, innovator and communicator on global water and climate issues and a member of the US National Academy of Sciences.

Issues:

- Earth's available resources of fresh water are limited.
- The most serious problem is society's failure to provide safe water and sanitation for billions of people, using technology we well understand.
- This failure leads to millions of cases of preventable water-borne diseases and deaths, especially among children under 5.
- Even in wealthy countries, some populations lack access to safe water and sanitation.
- There is massive contamination of the Earth's freshwater systems with industrial discharges and human waste.
- Toxic algal blooms and new contaminants pose continued water problems everywhere.
- Without water we don't have food. Today, 30-40 per cent of our food comes from unsustainable water sources. Yet the need to grow more food for more people will put more pressure on limited freshwater systems.
- Freshwater ecosystems are collapsing. There has been an 83 percent decline in fish, mammals, birds, and reptile populations in fresh waters since 1970.
- Growing water scarcity is leading to growing tensions and increased conflict over water.
- Some of the worst impacts of climate change affect water – availability, rainfall, quality.
- Natural catastrophes and extreme events are on the rise worldwide – many are related to water, weather, and climate.

Solutions:

- The 'soft path' for water offers a new way forward, to solve our water crises.
- The 'hard path' is 'build for water supply' - as we have been doing for a century.
- The 'soft path' says: rethink supply, rethink demand and efficiency, and develop ways to provide the goods and services we want with less water.
- Water is both an economic good and a human right.
- The quality of source water must be protected and matched to the quality we need.
- Ecosystem health must be protected to give us healthy water.
- There must be more community participation and flexibility in institutions.
- We are making progress to provide safe and affordable water – but we must do much more.
- Wastewater treatment/re-use, and stormwater capture can offer new "supplies" of water.
- There is huge opportunity to improve water-use efficiency across society, in industry and agriculture.
- We must restore natural flowing rivers.
- We have to change our water institutions and how they manage water – as we do our energy systems and our biodiversity systems.
- We must manage water for sustainability and equity, not for money or exclusion.
- We need new thinking, better technologies, better economics, smarter institutions, effective outreach, and partnerships.

Hothouse Earth... and what we can do to avoid it

Will Steffen is Professor Emeritus in the School of Environment and Society at the Australian National University. He is a recognised global authority on human impacts on the Earth System. He is a Councillor at the Climate Institute.

Issues:

- The Australian megafires of 2020 foreshadow what is in store for us under Hothouse Earth.
- Global surface temperature measurements show the Earth is warming exceptionally rapidly. Warming has accelerated in the past two decades.
- The last 11,700 years, the Holocene, was a time of temperature, climate and environmental stability. It enabled us to develop agriculture, villages, cities and the technologically advanced society we live in today.
- That now is now under threat as the temperature rises towards +2 degrees C.
- The increase in global temperature is well outside anything humans experienced in the Holocene.
- This is why ecosystems can't cope, coral reefs are dying, weather events are more extreme.
- On our current trajectory, by 2100 we will be +3 degrees – even 4 degrees by 2100.
- At four degrees we are looking at the probable collapse of civilization.
- We may soon pass 'tipping points' that, on their own, will take us up another 1.5 degrees C.
- Many of these tipping points lead to abrupt change. Many are irreversible. They are linked and may trigger cascades, like dominos. We are starting to see this now.
- We are now very close to a fork in the road, where the Earth system goes out of control.
- This is an existential threat to civilization. No amount of economic analysis will help.
- Once we pass this threshold, there is no return. We will experience Hothouse Earth.

Solutions:

- If we meet the Paris targets and restore the biosphere, we may be able to stabilize the Earth's climate.
- Many countries have adopted 'net zero' carbon emissions by 2050. That is a dangerous target.
- Four major tipping points will be crossed in the next 10-25 years and could start a cascade. So 2050, as a target, is far, far too late.
- We face the 'double whammy' of a rapidly degrading biosphere with a rapidly destabilising climate system.
- There are ideas for tackling this – such as 'doughnut economics' – but we have to move very quickly and decisively.
- None of the measures taken so far has had any demonstrable effect on global carbon emissions.
- We need a cut of 50% or more in carbon emitted by 2030 and net zero by 2040. If we delay five years, the task becomes *impossible*.
- We are truly facing an emergency *now*. We have *no* time left before starting deep cuts to carbon emissions.
- There must be *no* new fossil fuel developments of any kind – no more coal, oil or gas. We must have 100% renewable energy worldwide by 2030.
- We must act *now*, if we want to avoid a climate tragedy.

Taming the nuclear menace

A/Prof Tilman Ruff AO is the founding chair of the International Campaign to Abolish Nuclear Weapons (ICAN, Nobel Peace Prize 2017), Co-President of International Physicians for the Prevention of Nuclear War (Nobel Peace Prize 1985), and Honorary Principal Fellow, School of Population and Global Health, University of Melbourne.

Issues:

- Even if we manage to survive the nuclear weapons era, there are important ongoing adverse impacts of these ‘weapons’:
 - their development and testing have left a legacy of contamination, harm to health, dispossession and injustice, including 5m premature deaths from cancer and other diseases;
 - the enormous opportunity costs of spending >US\$2 trillion a year on arms which is not then available to enhance human security in other ways.
- Even a limited nuclear war in one region using less than 2% of the global nuclear arsenal would produce ice age conditions worldwide within days. Millions of tons of smoke from burning cities would loft high into the atmosphere and persist for over a decade. Beneath the smoke it would be colder, darker and drier. These effects, exacerbated by toxic and radioactive contamination, and disruption to agricultural inputs and trade, would drastically reduce world food supplies, putting >2 billion people at risk of death from starvation.
- Nuclear weapons render the distinction between ‘winners’ and ‘losers’ meaningless and are effectively global suicide bombs. No effective health or humanitarian response is possible for even a single nuclear explosion over a city.
- None of the 9 nuclear states are disarming or even negotiating to do so. Instead, modernisation programs are producing entirely new types of nuclear weapons and reducing the threshold for their use, while treaties limiting them have been abrogated.
- The danger of nuclear war is assessed as greater than it has ever been, exacerbated by increasingly frequent internationalised armed conflicts, and the vulnerabilities of nuclear weapons command and control systems to cyberattack.
- Nuclear weapons will be used if they are not eliminated first.

Solutions:

- Substantial progress has been made in controlling biological and chemical weapons, anti-personnel landmines and cluster munitions. In each case a prohibition treaty established a clear standard for all nations and drove progress to eliminate inhumane weapons.
- The UN Treaty on the Prohibition of Nuclear Weapons (TPNW) entered into legal force on 22 Jan 2021. This is the only internationally agreed, treaty-codified framework for the verified, time-bound elimination of nuclear weapons.
- It is supported by a strong majority of nations, the Red Cross/Red Crescent Movement, a wide range of civil society partners, including faith, trade union, health and humanitarian, environmental and social justice organisations. It is already driving divestment of financial institutions from companies manufacturing illegal weapons of mass destruction.
- The TPNW provides a pathway and a game-changing opportunity to reverse the otherwise darkening most acute existential danger to humans and the biosphere.
- **All nations should sign, ratify and implement the TPNW to achieve and sustain a world freed from nuclear weapons, a pre-condition for progress in every other sphere.**

Extinction and the Future of Humanity

Gerardo Ceballos is a Professor in the Institute of Ecology at the Universidad Nacional Autónoma de México. He is an ecologist and conservationist known internationally for his pioneering research into extinction risk in birds, mammals and other vertebrates and humane paths to ecological sustainability.

Issues:

- Only 1 per cent of all life on Earth (biodiversity) is known to us. Millions remain unknown.
- We have only recently discovered the largest animal on Earth, a worm 47 metres long.
- However, we are now facing unprecedented loss in biodiversity.
- This is perhaps the most urgent and challenging problem that humanity has ever faced.
- This problem is driven by our population growth, inequity, consumption of resources and inefficient technologies (like fossil fuels).
- These have caused global problems like climate disruption, land clearing and habitat loss, overexploitation, new diseases, invasive species, illegal trade and poisoning.
- As a result, we are losing ecosystems and their services essential to maintaining life on Earth, including human life.
- Even experts cannot grasp the full scale of the problem.
- 1000 vertebrate species have become extinct, mostly in the last 100 years.
- The current extinction rate is far higher than it has been in the past few million years. It correlates exactly with expansion in the human population.
- The loss of species is 100-1000 times faster than normal. It is the 6th Mass Extinction of life on Earth.
- Animal populations are also being annihilated at rates far higher, even, than extinction.
- World lion numbers have fallen from 34,000 to 23,000 in the last ten years, for example.
- At this rate there will be no elephants left in 10 or 15 years.
- 70 per cent of all the birds on Earth are now farmed poultry.
- This is an unprecedented, massive assault on the world's wildlife.
- This loss has caused 40 or 50 new diseases like Covid to enter humans.
- There can be no life on earth if we kill off all animals and plants.

Solutions:

- We have to become actors, not spectators.
- We have to galvanise mass education, engagement and action at all levels against climate and extinction.
- We need greater conservation efforts, more sustainable production and more sustainable consumption.
- If we make a major effort in the next few years we can probably change the rate of extinction and save most wild animals and plants.
- The next few years will define what happens to life on Earth.

The Risks of Artificial Intelligence

Toby Walsh is Scientia Professor of Artificial Intelligence at the University of New South Wales, Australia, and a Fellow of the Australian Academy of Science. He has authored two books on AI for a general audience, the most recent being "2062: The World that AI Made".

Issues:

- Super-intelligence is not the problem
- Stupid intelligence is
- Risks are economical, political, societal and military
- Economic risks centre around increasing inequality and the automation of jobs
- Political risks centre around disruption of political discourse by technologies such as 'deepfakes' and micro-targeting of individuals or very small groups
- Societal risks centre around invasion of privacy by surveillance technologies like face recognition and speech recognition.
- Military risks centre around lethal autonomous weapons ("killer robots")

Solutions:

- A multitude of solutions are needed. These include:
- Technical fixes, such as debiasing algorithms
- Regulatory fixes
- Financial fixes such as taxing tech giants
- AI is a dual use technology
- The great challenge is how we ensure good outcomes without bad.

Clean Earth: Humanity's Next Great Challenge

Laureate Professor Ravi Naidu is the Director of the Global Centre for Environmental Remediation (GCER) at Newcastle University Australia, Managing Director of the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment, and founder of the globalCARE Alliance.

Issues:

- A Clean Earth is humanity's next great challenge.
- Globally there are now estimated to be more than 5 million potentially contaminated sites.
- Nearly 13 million people die annually from exposure to contaminants.
- Given the risk that contaminants pose to environmental and human health, developed countries currently spend more than US\$70 billion per annum managing or remediating such sites.
- Despite growing awareness of the risks of contaminants, activities that contribute to contamination of our environment persist worldwide, often as a result of a lack of adherence to regulatory policies, especially in developing countries.
- Even in more rigorously-regulated countries, it is estimated that less than 10% of contaminated sites have been remediated.
- Uncertainties about the nature and extent of contamination are a major constraint to sustainable development in both cities and rural areas, thereby increasing pressure on the use of limited uncontaminated land.
- Many techniques available for in situ or ex situ remediation are expensive and thus poorly adopted.
- Soil is now seen as a complex heterogeneous system that, once contaminated (especially when coupled with groundwater) is not easily cleaned up.
- Furthermore, drastic risk control (e.g. cleaning up sites to background concentrations or to levels suitable for sensitive land use) is often technically or economically unfeasible.

Solutions:

- Clean Earth needs to become a global priority.
- Remedial approaches that reduce the risk of contamination are urgently needed to reduce the burden of human death and disease.
- On-site remediation, commonly known as risk-based land management, needs to be adopted far more widely.
- The globalCARE Alliance is working to define the extent of contamination at international scales, and develop cost-effective, workable solutions that can be readily adopted by industry, governments and the community.
- What we most need is: new scientific research, aggregation of existing knowledge, novel assessment and clean-up technologies, better advice to government, the community and industry, more highly trained clean-up experts and worldwide sharing of information about ways to reduce human-caused contamination in all facets of society and the natural environment.

The Age of Renewable Food:

Julian Cribb FRSA, FTSE, science writer and author. Co-founder of the Council for the Human Future.

The issues:

- Food is key to the future of human civilization
- The world food supply is balanced on a knife edge – between rising demand and shrinking resources such as water, soil, nutrients and an unstable climate.
- The world faces a water crisis – there is not enough to supply our cities, our mining corporations and to grow all our food needs.
- The world loses 75 billion tonnes of topsoil a year – a rate which is unsustainable.
- Climate change will hammer farm production globally by mid-century. 4 degrees of global warming will destroy agriculture in many regions, causing refugee crises and wars.
- The current food system is causing untold damage to the Earth's ability to support life.
- It adds 5 million tonnes of specialised poisons to the Earth system every year.
- Each meal now costs the planet 10 kilos of topsoil, 800 litres of water and 3.5 kilos of greenhouse gas: we eat 11 trillion meals a year.
- The current food system and world diet is not sustainable. It will not feed 10 billion people on a hot planet. If we do not fix it, it will lead to war.
- Our food has to change.

The Solutions:

- We need a global *renewable food revolution* more, even, than we need a renewable energy revolution.
- We need a food supply that is endlessly recycled and climate-proof. This has three pillars:
 - Regenerative agriculture that restores the agro-ecosystem and lock up carbon
 - Urban food systems that recycle nutrients and water
 - Deep ocean culture of plants, fish and marine creatures.
- We currently eat only 1 per cent of the edible plant species on the planet. The others offer unparalleled diversity, health, taste and opportunity.
- The Renewable Food Revolution can be funded with just 20% of the world weapons budget. This will feed everyone and help prevent two thirds of all wars.
- I call for a 'Stewards of the Earth' program by farmers and indigenous peoples to return half of the lands now farmed or grazed industrially to nature, and to help end the 6th Extinction.
- The vision of renewable food for all is practical, technically feasible and totally affordable.
- It will feed everyone and bring peace, prosperity, better health and prosperity.
- It is the cornerstone of our future as a civilization.

More information: [Food or War, Cambridge University Press, 2019.](#)

Facing up to Overpopulation

Dr Jane O'Sullivan is an Honorary Senior Research Fellow at the University of Queensland. She researches demographic impacts on environmental sustainability, food security and economic development, and the historical and evidential basis for policies and programs responding to population growth.

Issues:

- Population growth is a key dimension in the many crises which humanity is facing.
- A dangerous taboo has developed over global discussion of population growth.
- What the issue is really about is trying to prevent a huge die-off of people.
- Overrunning our natural resources can only lead to more deaths from starvation, conflict and disease.
- The only alternative to that is *voluntary restraint* on the number of human births.
- We must simultaneously reduce our environmental impact per person.
- To choose not to reduce population is to choose suffering on a vast scale.
- Overpopulation is a state that causes environmental deterioration leading to impaired quality of life or a population crash.
- The longer we stay in overshoot, the more our population has to fall to achieve sustainability.
- We have been successful in getting more from our use of natural resources – but that alone won't solve the problem.
- Humans and their livestock now account for 96% of terrestrial mammalian biomass.
- Population growth is not slowing: we are adding over 80m more people a year. The pace of growth has accelerated since 2000. We have more births yearly than ever before.
- Fertility is falling much more slowly since population became politically taboo. This means we are more likely to see a population crash.
- How can we solve the population problem if we are not allowed to name it?
- Many countries have reduced their fertility effectively and voluntarily due to family planning, including China.
- Population decline drives economic growth, not the reverse.
- Girls' education helps – but promotion of small families works better.
- The claim that population growth is good for the economy is a cruel hoax. It makes people poorer and more deprived of key resources like water and land.

Solutions:

- The single best way to help the poor is family planning.
- It is also a powerful way to reduce our climate and environmental impact and address resource decline.
- It saves lives, empowers women, eases water scarcity, reduces land clearing, reduces poverty, protects the environment and stimulates economic betterment.
- We need to openly advocate greater action to reverse population growth voluntarily.
- To achieve human sustainability we need fertility rates much lower than 2 babies per couple, everywhere.
- We need to celebrate depopulation, and to recognise its good outcomes for all.

Racing to Save Ourselves from Ourselves

Leilani Münter is an environmental activist, documentary filmmaker, biology graduate and retired race car driver. Discovery's Planet Green named her the #1 eco athlete in the world. She is on the boards of the Oceanic Preservation Society and Empowered by Light, a patron of Population Matters and an ambassador for Ric O'Barry's Dolphin Project.

- I took the environmental message to the racetrack because it is important not only to speak to people who already believe in the risks we face. To create change, we must hold a dialogue with people who do not agree with us.
- Our OPS documentary film Racing Extinction focuses on the sixth mass extinction of species which is happening now and is caused by humans in this era called the Anthropocene, or “Age of Man.”
- If the history of the planet was on a 24-hour clock, humans only arrived a couple seconds before midnight. We are the new kids on the block, yet we have already had a catastrophic effect on the natural world.
- Since 1974, we have had a growth rate of one billion people every 12 years. At our current rate of meat consumption, for every billion people we add, we must add 10 billion more farm animals to slaughter for food.
- Weight of land vertebrates on Earth: 67% are livestock, 32% are humans, 1% are wild animals. Farmed poultry makes up 70% of all birds on the planet.
- Climate change, ocean acidification, deforestation, pollution, species extinction and loss of biodiversity are all accelerated by human population growth.
- We need to normalize the choice of being child-free. Psychology shows that humans are social animals – peer pressure, and the need to fit in, is a big motivator for human behavior.
- Research shows that if just 10% of a population holds an unwavering belief in an idea, the majority of society will adopt that idea. 10% is the “tipping point for ideas.”
- All the changes needed to make life on Earth sustainable are possible with currently available technologies – but humans must be willing to change and adapt.
- The ultimate intelligence of our species will be determined by whether we face our population issue and get it under control – or continue to sweep it under the rug because it's an uncomfortable conversation.
 - The future of life on Earth depends on the former.

An economy to save the Earth

Laurie Laybourn-Langton is an Associate Fellow at the Institute for Public Policy Research (IPPR) and a Visiting Fellow at the Global Systems Institute, the University of Exeter. He is author of Planet on Fire: A manifesto for the age of environmental breakdown, Verso Books, April 2021.

Issues:

- The structures and resultant dynamics of interconnected social and economic systems are a leading driver of the breakdown of global environmental stability.
- Most if not all countries are focussed on encouraging growth in consumption
- The mainstream political imaginary has internalised the fallacy that ongoing growth in consumption and production is the primary cause of improvements in societal welfare.
- Inequality, the health implications of types of consumption, the provision of key public goods, cultural elements are all key determinants of overall societal welfare
- The economy is something embedded in nature. Compounding growth of material means social progress has been achieved at the expense of the environment.
- While the political-economic orthodoxy is beginning to change, constraints on policy, a lack of practical action on inequality, and a failure to challenge the current consumption could hamper the ability to tackle the environmental emergency

Responses:

- This has led a range of economists, campaigners, policymakers and more to suggest that effectively substituting dirty for clean is not enough and that the consumption model upon which economies are founded should also be questioned.
- A starting point for these alternatives is to change the goals driving policymaking, economic activity and their wider political imagery.
- Economies must transition to a new model of prosperity and abundance. Breaking the link between compounding material consumption is an imperative for physical and mental health, vibrant communities, and cohesive societies, let alone a pressing environmental necessity.
- Methods for doing so directly seek to provide the conditions for more easily achieving basic material needs, such as adequate nutrition and healthcare, and providing space outside of work for play and social interaction.
- All this requires a huge investment, which could be expedited through a *Green New Deal*.
- This is only possible with a fiscal-monetary settlement that relieves artificial constraints on public investment and ensuring financial markets are compatible with planetary stability.
- Reducing inequality is needed to increase cooperation, which can be achieved through more inclusive ownership, progressive tax policies, and tackling global power imbalances.
- This requires a new analytical framework for economics and how it is taught.
- These approaches – and strategies for change – must be made robust to the shifting socio-economic realities of coming decades, in which environmental destabilisation will accelerate.

Conclusion

The Conference concluded that all of humanity faces a common existential emergency which threatens our civilization and possibly, our very existence.

It consists of a wide range of interconnected threats which cannot be addressed one at a time for fear of making the others worse. They must be addressed systemically, with integrated and well-planned solutions across the board.

This is, by far, the gravest danger we have faced together since we first emerged from Africa into a world which humans now dominate, utterly.¹ We are imperilled by our own success as a species.

The Conference warned that this issue was not receiving sufficient attention and priority from the world's governments, institutions, corporations, policy and decision makers – and agreed this had to change.

It urged worldwide discussion of these issues in homes and workplaces, on farms and in offices or factories, in parliaments, communities and public assemblies, between friends and family, of what we humans must do together to save ourselves – and to build a safer, fairer future.

It emphasised that the internet and social media provide the first opportunity in human history for such a discussion to take place – and urged that it be respectful, fair and accessible to all. It encouraged everyone to bring wisdom and fundamental decency to the task, and to place the goal of our collective survival and wellbeing above personal, political or corporate self-interest.

In the words of conference chair, Professor John Hewson, “There is nothing more inspiring, uplifting, hopeful and motivating than helping to Deliver the Human Future”.

1

Elhacham E et al., Global human-made mass exceeds all living biomass. Nature 588. Dec 2020.
<https://www.nature.com/articles/s41586-020-3010-5>

Appendix

“Delivering the Human Future” was hosted in the interests of humanity and our home Planet by:

[The Council for the Human Future](#)

[The Millennium Alliance for Humanity and the Biosphere](#)

[Common Home of Humanity](#)

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