SPECIAL SECTION

Under the Apocalypse Shadow: A Personal Testimony of 50 Years in the Environmental Cause

Rubens Ricupero

Abstract: Personal testimony by Rubens Ricupero on the 50 years of his involvement with the environmental cause, since the Stockholm Conference on the Human Environment in 1972; describing the negotiations of the Amazon Cooperation Treaty; the birth in 1988 of the Intergovernmental Panel on Climate Change; the United Nations Conference on Environment and Development, 1992 Earth Summit or ECO92; and the Brazilian Ministry of Environment and the Legal Amazon region's creation period. Success in the environmental cause should not be measured in terms of profits and losses but based on the time limit available to achieve the agenda's objectives, which is not elastic but finite.

Keywords: environment; biography; Stockholm Conference; 1992 Earth Summit.

Some say the world will end in fire,
Some say in ice.
From what I've tasted of desire
I hold with those who favor fire.
But if it had to perish twice,
I think I know enough of hate
To say that for destruction ice
Is also great
And would suffice.
- Robert Lee Frost, *Fire and Ice*

My personal involvement with the environment began with the 1972 Stockholm Conference and had nothing to do with professional activities or with my intellectual training. At the time, I was the head of the Ministry of Foreign Affairs Cultural Diffusion Division (DDC) and worked disseminating Brazilian culture and arts abroad. As a diplomat, I was not very interested in issues associated with the United Nations (UN), which seemed too abstract and out of touch with the minutiae of daily life I had grown accustomed to dealing with when I served in Vienna, Buenos Aires, and Quito.

I had no training in the so-called mathematical sciences. Still, I had been a passionate student of geography, especially human geography, as taught by my late instructor at the Rio Branco Institute in 1959, Fábio Macedo Soares Guimarães, founder of the geography section of the Brazilian Institute of Geography and Statistics (IBGE). Thanks to him, I discovered a book that fascinates me to this day, a classic of human geography: *A Geography of Man* by Preston James (1949). The book reviews the diversity of each habitat on the planet, from arctic regions to equatorial jungles, and shows how humans adapted to the diverse physical conditions around the globe. That must have been the origin of my interest in the climate and the atmosphere, the geographer's passion for that which is concrete, which Antonio Cândido mentioned about Caio Prado Júnior, a geographer by vocation.

Ambassador Miguel Ozório de Almeida, a respected scholar of economic development and scion of a family of scientific and positivist tradition, led the pre-

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parations for the Ministry of Foreign Affairs position for Stockholm. I followed his appointment for that position from the outside without any influence on its preparation. I must say that from the very beginning, I had an inkling that, while correct in some respects, our position placed far greater emphasis on economic development than on the severity of the environmental risks to the planet as a whole, including ourselves. The spirit that led to the organization of the first UNCTAD, the United Nations Conference on Trade and Development, in 1964, in Geneva, had by then not yet peaked in Brazil and some other major developing countries.

The conference reflected at the international level the heightened interest in economic development that had become a national ideology of sorts in Brazil during the Juscelino Kubitschek administration (1955-1960), and that would be enthusiastically rekindled by the military regime, especially during the government of General Emílio Garrastazu Médici (1969-1974), when the so-called "Brazilian economic miracle" reached its zenith. It is understandable that in such an environment, Miguel Ozório and his staff should focus preferably on the design of what came to be known as the principle of "common but differentiated responsibility" for climate issues. The differentiation was due to the different levels at which industrialized and underdeveloped countries had contributed to the accumulation of greenhouse gases since the dawn of the industrial era.

The problem didn't lie so much in the principle, whose fairness the international community would recognize twenty years later, but instead in the suspicion that the priority the rich gave to environmental pollution could raise hurdles to the growth of economies that had lagged behind in the industrialization process. That fear was often accompanied by inattention or indifference to the damage caused by pollution. Planning Minister João Paulo dos Reis Velloso was even unfairly accused of complacency for giving the impression that the Brazilian government would heartily welcome highly polluting industries whose operations were restricted in other countries. I already thought then what I think today: issues of different natures should be clearly separated. On the one hand, there are those pertaining to trade, to finance, that can be the appropriate subject matter of North-South negotiations based on each party's national interest; and on the other hand, there are those that affect the planet and the international community at every level of development.

Concerning the latter, the principle of solidarity when facing a common threat should take precedence over negotiations for short-term gains. Solidarity obviously implies that each economy's contributions should correspond to its historical responsibility in creating the problem and to its economic and technological capabilities. As Minister Marina Silva well says, differentiated responsibility doesn't mean no responsibility.

The United Nations Conference on the Human Environment, or Stockholm Conference, was held fifty years ago at the initiative of the Swedish government. It was the unsteady beginning of a long process of awareness of the complexity of the environmental issue in all its facets. The debate in Stockholm didn't focus on the climate but on pollution of the atmosphere, air, and water. The concept of climate change, then already under discussion among climate experts, was not yet mature enough to make it to the agenda of an international conference. None of the twenty--six principles approved in the meeting referred to the climate or global warming.

Stockholm took place at a difficult geopolitical time. In the midst of the Cold War, the refusal to admit the participation of East Germany (at the time neither Germany was a UN member) led the Soviet Union and other communist nations to boycott the conference. The participation of the People's Republic China, then newly admitted to the United Nations, had a strictly political-ideological tinge. It was then suspected, and confirmed only thirty years later when certain secret British documents were declassified, that a secret group of advanced countries (the United Kingdom, the United States, France, Belgium, Italy, and the Netherlands) – self--styled the Brussels Group – conspired to limit the scope and results of the meeting, fearing that they could restrict trade and economic activity – ironically enough, including damaging the future of the failed Concorde supersonic airplane!

Considering these many unfavorable factors, it's surprising that Stockholm came to be the watershed moment when environmental issues began to gain traction on national and international agendas. The relative success of that initiative – at first seen as some Nordic mania – was in large part due to the patient, intelligent, and tireless work of the Secretary General of the Conference, the Canadian Maurice Strong (1929-2015), who would again play a similarly decisive role in the 1992 Earth Summit. At the multilateral level, the Conference approved the creation of the first specialized UN environmental agency based in Nairobi, Kenya. It

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was initially limited to just one "program," the United Nations Environment Program (UNEP). At the same time, many countries decided to create ministries or national offices for the environment, Brazil included. The Special Environmental Office (SEMA) of the Ministry of Home Affairs was organized in 1973.

The Brazilian delegation to Stockholm was headed by the Minister of Home Affairs, General José Costa Cavalcanti, who earlier had been Minister of Mines and Energy and later was president of Itaipu Binacional. Miguel Ozório was Deputy Head. Another member of the delegation, secretary general of the Ministry of Home Affairs Henrique Brandão Cavalcanti (1929-2020), played a decisive role in implementing the decisions taken at the meeting. I didn't know him then and later became close friends with him, with Hazel, his Canadian wife, and his family. He worked with me as head of the Office for the Environment and for the Amazon Region of the Ministry of the Environment and succeeded me as Minister. Henrique was a highly notable and enlightened member of Brazil's skilled government staff of the 1970s and 1980s. He was a hydroelectric engineer trained at McGill University in Montreal, Canada, with extensive professional experience in Brazil's steel and hydropower industries. Above all and in stark contrast to the vast majority who were mere bureaucrats, Henrique had a genuine environmentalist soul.

His fingerprints are all over the great administrative achievements of that time of rapid economic growth, with more lasting effects on the creation of SEMA and on the invitation to University of São Paulo zoologist Paulo Nogueira Neto (1922-2019) to head SEMA. Together they managed to navigate an unresponsive environment to achieve the remarkable feats of creating Brazil's first government environmental governance entity from scratch and putting in place much of the environmental protection legislation that survives to this day despite the recent attempts at its destruction. Paulo remained in office from 1973 to 1985, all through the last three administrations of the military regime (Generals Medici, Geisel and Figueiredo). Paulo's simplicity hid the legacy and vocation for public service of his ancestor José Bonifácio, as well as the tradition of progressive agriculture of the great São Paulo farmers. He was one of only two Latin American members of the Brundtland Commission in the late 1980s. In my opinion, Henrique Brandão and Paulo Nogueira embody the highest ideal of public service, for even in the darkest of times they advanced humanity's best ideals.

At an incomparably more modest scale, something similar happened to me when I returned to Brasília in 1977, at the behest of then Foreign Minister Antonio Francisco Azeredo da Silveira (1917-1990), to work on a cooperation treaty involving all Amazonian countries. During the three years I served as a counselor at the Brazilian Embassy in Washington, I never ceased being involved with environmen-

tal issues. I was a delegate to a meeting of UNESCO's Man and the Biosphere program at the State Department in the mid-1970s. More or less simultaneously with the program, James Lovelock (see 1982) developed his Gaia hypothesis or theory, the idea that living organisms interact with the inorganic elements of Earth to form a complex synergistic and self-regulating system that helps maintain living conditions on the planet.

I was made head of the South America Division II (DAM-II), in charge of relations with all Amazonian countries, from Bolivia to Venezuela and the Guianas. The key task entrusted to me was to initiate the negotiation of the Amazonian Cooperation Treaty (TCA) and to bring it to fruition. Brazil had circulated the idea of the treaty, but some countries – Venezuela in particular – were reticent and suspicious. One of my duties was representing the Ministry of Foreign Affairs at Brazil's Amazon Development Office (SUDAM) Board meetings, usually in Belém or Manaus. I soon realized that, with the exception of Air Force General Ottomar Pinto, who would govern Rondônia several times, and myself, all other members were completely impervious to the environmental issue. The debate then still was dominated by the abominable slogan of the Medici administration "the Amazon will be conquered with cattle hooves."

The treaty was negotiated and approved in record time despite that fateful legacy. It included the principle that the full development of Amazonian territories required balancing economic growth and environmental preservation. The strict equality of those two goals may sound natural today, but at that time, we were instructed to resist any reference to human rights and the environment in all diplomatic documents. The reluctant consent of the military could be obtained only with the argument that almost all our partners insisted on including the issue as a condition for them to join the agreement.

The two decades that followed Stockholm were initially marked by efforts to address the threats associated with the hole in the ozone layer, the best successful example of the human capacity to resolve an environmental issue thus far. Two meetings addressed the ozone layer issue: the 1985 Vienna Conference and the 1987 Montreal Conference, which approved the Montreal Protocol. This protocol remains an

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inspiring example of what can be achieved when scientists and governments come together to follow policies scientific evidence recommends.

The creation of the World Commission on Environment and Development by the United Nations in 1987, chaired by Norway's Prime Minister Gro Harlem Brundtland, represented a second significant step forward. The main product of the commission, the report Our Common Future (1987), introduced conceptual advances that forever changed how we look at development. The most important such advance is the idea of sustainability or sustainable development. Inspired by the joint responsibility of generations that succeed each other in time, the concept of sustainability rests on the postulate that each human generation must satisfy its needs in such a way that doesn't jeopardize the ability of future generations to do the same.

The Intergovernmental Panel on Climate Change, or IPCC, was created in 1988 as a sort of corollary to all those advances. I was present at its birth in Geneva as Brazil's representative to the World Meteorological Organization (WMO), one of the two UN organizations that founded the IPCC (the other was the UNEP). I participated in the first meetings to design the IPCC as an intergovernmental body made up of scientists appointed by governments but who act with scientific independence. The panel's role is not to conduct fresh research. Its mission is to gather and evaluate research carried out in research centers. From time to time, the IPCC produces reports reflecting the then "state of the art" of climate science knowledge, both in relation to physical elements and to societal consequences. Almost everything that has been done regarding environmental mitigation and adaptation policies ultimately stems from IPCC recommendations.

The first major IPCC report, published in 1990, had a huge impact. The report confirmed, with a high degree of scientific certainty, that the world's climate was becoming increasingly warmer largely due to human action. From then on, something totally unheard of was established: the idea that human activity since the Industrial Revolution in the mid-18th century had altered the planet's atmosphere and climate for the first time in the millennia since man appeared on Earth. Hence the name Anthropocene that Paul J. Crutzen (see 2002), winner of the 1985 Nobel Prize in Chemistry, gave to the current geological era. The shock caused by the report paved the way for a major negotiation that would culminate in the United Nations Framework Convention on Climate Change (UNFCCC). A supplemental convention was being negotiated simultaneously: the United Nations Convention on Biological Diversity (CBD).

The great 1992 Rio de Janeiro Earth Summit occurred in that context. Its

official name, United Nations Conference on Climate and Development, reflected the reaction to the fear raised in Stockholm that environmental concerns would become an obstacle to the development of the poorest countries. In contrast to Stockholm, the Earth Summit took place in an auspicious geopolitical climate, never to be seen again in the future. The fall of the Berlin Wall in 1989, a little over two years before the conference, triggered the fast-paced dissolution of all Communist regimes in Central and Eastern Europe, culminating with the disintegration of the Soviet Union in December 1991.

The division of the world into two ideologically antagonistic blocs, which until then had paralyzed all significant efforts at international cooperation, disappeared for the first time since the October 1917 Revolution. By mid-1992, when the conference met in Rio de Janeiro, the end of the Cold War had inaugurated an extraordinarily favorable phase for cooperation which lasted at least until the terrorist attacks of September 11, 2001. Once the duality of the USSR x U.S. poles had been eliminated, a kind of quasi-U.S. unipolarity was established in a scenario where China's rise was still in its infancy. One felt in those years that everything was possible, that the solution to intractable problems was suddenly at hand: the division of Berlin, of Germany, of Europe, the relatively peaceful dissolution of the Soviet Union giving birth to fifteen new countries, even the apartheid regime of South Africa, hardened issues that apparently would remain unchanged for centuries!

The unification of the planet and the globalization process boosted consensus around the two major conventions (with the exception of the United States in relation to the Convention on Biodiversity). That context contributed above all to the indisputable success of the Earth Summit, which went down in history as the time when environmental negotiations reached their zenith. The impressive opening ceremony where the two conventions were signed by more than one hundred Heads of State and of government created the momentum that would lead to Agenda 21, the Principles on Forest Management, the creation of the Sustainable Development Commission, and the 27 Rio Principles.

I was head of the Finance Committee, which prepared Chapter 33 of Agenda 21 on sources of funding. At the time, I wrote a "chronicle of negotiations" of the finance group, which I believe is the only document of its kind in relation to the conference. Originally published in the *Colorado Review of Environmental Law* (Ricupero 1993), the text appeared in Portuguese under the title *UNCED and Agenda 21 During the Earth Summit: Chronicle of a Negotiation* (Ricupero 2012).

I remained in Washington as Ambassador until, in mid-1993, the mass murder of a group of Yanomami Indians in the Brazil-Venezuela border region suddenly

set in motion a chain of events that would bring my mission in Washington to an early end. Not quite knowing how to respond to the public outcry, President Itamar Franco decided to create a ministry for the Amazon region. I don't know if because of my past involvement with Amazonian affairs or of some other mysterious reason, I was called to organize the new ministry. And so, an episode in the endless extermination of the indigenous peoples by criminal greed came to disrupt my fate and to redirect it onto an unexpected path.

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To quote the poet Vinícius de Moraes, the Ministry of the Amazon was "a funny house with no ceiling, with nothing." With no staff, no funding, no chairs to sit on, I was at the mercy of the President. To everyone's surprise, he gave me an office suite at the Annex to the Planalto Palace that he had used when he was Vice President and had refused to allocate to other supplicants. Myself and a handful of colleagues from the Ministry of Foreign Affairs who had worked with me at the Americas Department – Sérgio Danese, Débora Vainer Barenboim, later Sérgio Amaral – pretended we were a real ministry.

As luck would have it, the Minister of Environment, Senator Fernando Coutinho Jorge, left the government soon after. The government took the opportunity to merge those two recently-created ministries (President Franco had elevated the Special Environmental Office to ministerial status) to form the Ministry of Environment and the Amazon Region. Once Congress enacted the act that organized the new ministry, we inherited an initial structure and, more important, the staff and funding of the Brazilian Environmental Institute (IBAMA), which had offices in all states.

Working with the environment coupled joy with learning. It had nothing to do with what I did before. My experience in the area was until then limited to the diplomatic aspects of the issue. When dealing with the "real" environmental issues involving forests, the oceans, protected areas, endangered animals, I discovered an

endless universe. I had to ask for help from people who knew the matter and who guided me through this process of discovery. We were dazzled every day by some new place we visited while on duty: the Rio Botanical Garden, the Tijuca Forest, the Serra dos Órgãos Park, the Iguaçu Park, the bases of the Sea Turtle Project (Tamar Project), the old iron foundry at the Ipanema farm, near Sorocaba, in São Paulo, where Varnhagen's father was manager and where were manufactured cannons for the Paraguay War.

And, as a bonus, we met human beings who were passionate about animals, birds, fish, flowers, trees. People who would teach us the name of plants, the habits of the Amazon manatee and of the nearly extinct small blue macaw of Bahia's caatingas, the best techniques to reintroduce into nature jaguars, the golden lion tamarin, the primates of the Atlantic Forest. It was the universe of infinite variety, the museum of all things.

It would have been a dream job as manager of an earthly paradise had not some predators entered the garden: chainsaws to annihilate century-old hardwood trees, bulldozers to clear hectare upon hectare of virgin forest before they were set alight, water jets to demolish river banks in search of gold that is separated from impurities using mercury that would poison fish and riverside populations for generations.

In the more traditional domain of environmental action, I found IBAMA to have fairly reasonable human resources thanks to more than ten years' worth of the organizational efforts of Paulo Nogueira Neto and his coworkers. IBAMA housed personnel originally from the Brazilian Institute of Forestry Development (IBDF), from the Fisheries Development Office (SUDEPE) and from the Rubber Office (SUDHEVEA). Born from the merger of those entities, IBAMA suffered from the incomplete integration and unification of its components into a common institutional culture.

Despite these imperfections, there was a base that could be used as a springboard for more effective action. In contrast, everything remained to be done in the Amazon, a vast issue that had acquired unprecedented visibility following the creation of the Ministry. As early as at the time of the Amazon Treaty, I had been impressed to find that neither Brazil nor our neighbors had clear ideas about what to do with the Amazon.

Development initiatives and projects became plentiful since the military regime: the Manaus Free Zone, SUDAM, the Amazon Bank, the Transamazon, the Perimetral Norte and other highways, Tucuruí and other hydropower plants. Some large urban centers, mainly Manaus, became magnets that emptied hinterlands of

their population. And worse: vast tracts of forest-covered land were awarded to large businesses for extensive cattle ranching. The agricultural frontier had advanced over the southern periphery, Rondônia, Mato Grosso, Tocantins, southern Pará.

The net result of decades of effort and billions invested was to create in the region an unsustainable process that generated continuous and increasingly serious imbalances. On the one hand, predatory methods threatened long-term sustainability even from a strictly economic perspective. On the other, the process worsened the concentration of property and income and failed to promote social inclusion and to reduce inequality.

This realization led to the idea that the first step to rationally control federal actions in the region was to create a structure for coordination. I suggested, and President Franco accepted, organizing a National Council for the Legal Amazon region (Amazon Council) whose main purpose was to assemble and coordinate federal actions in the region. It seems simple – unfortunately the Brazilian bureaucratic tradition equates coordination with subordination. Nobody accepts to be coordinated by equals. That's why the Council had to be headed by the President himself. Only he has the power to convene Ministers who will otherwise send second- or third-level representatives without authority to decide and to engage their departments.

Once the Council had been created and made operational, we moved on to a second objective: to give a rational direction to by then already full-blown economic activities through environmental and economic zoning based on the aptitudes of each subregion. Although we are in the habit of speaking of a single Amazon, as if it were all the very same, the truth is that there are many different Amazons in terms of soil, vegetation, microclimates, rainfall regimes, flood-prone lowlands or dry highlands, plant and animal life, sanitation, transportation and communication infrastructure and countless other aspects.

Policy discontinuity is precisely what has always impeded the design and implementation of a coherent long-term strategy for Amazon. Indeed, the very Amazon Council had an ephemeral life in its original design. President Fernando Henrique Cardoso decided to rid his office of all appendages and, within that general movement, the Amazon Council was transferred to the Ministry of Environment. There it began to wither because the Minister would obviously never have the authority to convene, let alone to coordinate, stronger ministries and powerful companies like Petrobras.

Over time, the Ministry lost its "Statutory Amazon Region leg," was stunted with only its "Environment leg," and faded into irrelevance. In the wake of resurgent forest-clearing fires and destruction and largely as a gesture to assuage the universal

outcry, the Council was recently resurrected as an inapt entity devoid of authority and means of action. Like any collective entity, the Amazon Council obviously has no vocation for action, its nature is to coordinate and to discuss. Action falls under the remit of the pertinent ministries and entities, basically the Ministry of Environment and its executive arms, IBAMA and the Chico Mendes Institute for Biodiversity Conservation (ICMBio).

The Council was now recreated to do the job that had been sabotaged by the only authority that could see it through, the Ministry of Environment! The impossible task of chairing it was given to the Vice President, who had been ejected from the inner sanctum of power and who the president distrusted. Everything indicates that the mission was given to him with the expectation that he would become a scapegoat for Amazonian destruction. It's not at all surprising that month after month, more and more fires are recorded and that deforestation progresses at an alarming rate. Antonio Callado's prophecy, in an article in which he referred to my leaving the Ministry as a kind of desertion that would leave the Amazon orphan, came to pass.

Callado was right not because I had any imaginary powers and qualities (none were attributed to me in that article) but rather in perceiving that my leaving endangered a still recent and unconsolidated vision. This vision essentially was that there should be within the government a focal point to address all the issues of a region unlike any other. In practice, like it or not, the whole world sees Brazil through the prism of the Amazon.

The incomparable specificity of the region, the ecological characteristics that make it a unique case still poorly known to science, make it different from more familiar regions whose challenges are manageable. Everything gets more complicated there, starting with the State's rarefied presence, the precariousness of the education and health systems, the acute lack of transportation and communications, and ignorance about extremely vast regional aspects.

All of that requires the unified treatment of issues that are inextricably associated with each other but fall under the remit of various government entities and ministries. How does one separate the issue of the originary peoples, massively concentrated in the Amazon and dependent on FUNAI, from environmental problems, forest preservation, the threat of invasion by land-grabbers, loggers and miners, issues over which other entities had authority? State and municipal governments are limited by their parochial perspectives at best and do not see the big picture. At the opposite extreme, they represent the worst of politics in Brazil, verging on the criminal.

Just consider the widespread corruption that not even the pandemic could stop; it's enough to remember how Manaus and the state of Amazonas at a certain

moment became the focal point of a health catastrophe that made headlines the world over. In no other region of Brazil can one find a similar concentration of large-scale environmental attacks, criminal appropriation of public lands, repeated massacres in prisons, invasions of indigenous lands, unpunished murder of indigenous peoples and rural leaders, constant intervention by federal forces. Those are clear signs that the machinery of government has broken down and that the State is coming undone: the military regime's dream of the Eldorado has become the Brazilian version of a western B-movie.

I don't know what my life would have been like had I stayed in the Ministry of Environment. I had almost a year ahead of me, insufficient time for great achievements but perhaps enough to consolidate the guidelines that we had barely sketched. I never found out, as things soon took a different turn when I was appointed to succeed Fernando Henrique Cardoso as Minister of Finance in late March 1994.

These recollections already are too long. I don't have the energy to go on and my potential readers won't have the patience to continue reading. The key things have been said. After that, I was Minister of Finance, for a fleeting time ambassador in Rome, Secretary General of the United Nations Conference on Trade and Development (UNCTAD) in Geneva for nearly a decade. Every once in a while, I would again deal with environmental issues, almost always from the periphery, in a secondary position. But my passion for the environment, which today defines how I see myself in relation to Brazil and to the world, not only didn't die – instead, it grew.

I began this article thinking of reporting how the environmental issue progressed since the Stockholm Conference half a century ago. Or rather, more than an actual report, I wanted to discuss the difficulties in doing this, the specificity of the issue, what makes the environment an issue that requires different criteria. When describing such a long process, one tends to use an accounting approach: profits and losses, deficits and surpluses, lights and shadows, the stereotyped image of the glass half-full, half-empty.

That method goes well with almost any major United Nations issue that has guided the advancement of humankind's moral conscience since the end of World War II: human rights, promoting equality between women and men, achieving most of the Sustainable Development Goals (SDGs) that succeeded and expanded the Millennium Goals. One could plot a chart for all those issues showing ascending or descending curves, advances and setbacks based on the assumption that there will be time to later do what couldn't be done now, on the assumption that time may not be infinite but is elastic.

In this regard, what makes the environment different is that the time avai-

lable is limited. If we can't substantially reduce greenhouse gas emissions within a few years, there will be no more human or biological time because the rise in temperature will reach levels at which most animal and plant species will disappear. When looking back at everything that has happened since Stockholm, one cannot deny the significant progress made in raising awareness of the issue, in the gradual construction of an impressive regime of treaties and conventions and in creating specialized institutions. It was perhaps unrealistic to expect humankind to make greater progress. But it just wasn't enough.

That's why, among other reasons, I didn't describe what happened after the 1992 Earth Summit: the Kyoto Protocol (1997), Rio+10 in Johannesburg (2002), Rio+20 in Rio de Janeiro (2012), the 26 conferences of the Contracting Parties to the Climate Convention, the Paris Agreement (2015). If we fail at the ultimate challenge, none of that will matter. I write on October 28, 2022. UNEP (2022) days ago published a report confirming that what we've done so far is insufficient. Despite all our achievements, emissions continue to increase. Without more ambitious commitments, by the end of the century the world's average temperature will have risen by 2.4-2.6°C – far beyond the 1.5°C limit set in the preamble to the Paris Agreement. As theExecutive Director Inger Andersen (UNEP 2022) said:

...what makes the environment different is that the time available is limited. If we can't substantially reduce greenhouse gas emissions within a few years, there will be no more human or biological time because the rise in temperature will reach levels at which most animal and plant species will disappear. When looking back at everything that has happened since Stockholm, one cannot deny the significant progress made in raising awareness of the issue, in the gradual construction of an impressive regime of treaties and conventions and in creating specialized institutions. It was perhaps unrealistic to expect humankind to make greater progress. But it just wasn't enough.

> *This report tells us in cold scientific terms what nature has been telling us, all year, through deadly floods, storms and raging fires: we have to stop filling our atmosphere with greenhouse gases, and stop doing it fast.*

The bottom line is clear: we are still in the red and time is running against us. The game of life has a time set to end. We just don't know when that hour will strike. For some, it's past midnight and we've entered a phase where damage is likely to be irreversible. That's true, for example, in relation to the disappearance of glaciers, the extinction of animals and plants, the melting of the polar ice cap, the rise in sea levels, the increase of more than one degree centigrade recorded in the Earth's average temperature. We don't know exactly how much time we have to avoid the worst, we just know it's short and it's running out.

Here we find ourselves in the realm of end-of-the-world events, of the end of humankind, of what the ancients called eschatology, described in the visions of Revelation. Or in the magnificent peroration of the Apostle Paul's warning: "time is short." And of his exhortation: "they that weep, as though they wept not; (...) they that use this world, as not abusing it: for the fashion of this world passeth away" (Jerusalem Bible, Corinthians 7: 29-31).

To end with the same poetic and apocalyptic note with which I began, I refer to one of my favorite writers, the old Johann Peter Hebel of the naive almanacs of the early nineteenth century, and his description of the comet of 1811 as if it foreshadowed the death of the Earth disfigured by violence:

> *Did it not every night appear like a blessing in the evening sky, or like a priest when he walks around the church sprinkling holy water, or, so to speak, like a good and noble friend of the earth who looks back at her wistfully, as if it had wanted to say: I was once an earth like you, full of snow flurries and thunderclouds, hospitals and Rumford's soup kitchens and cemeteries. But my Day of Judgment has passed and has transfigured me in heavenly light, and I would fain come down to you, but I may not, lest I become sullied again by the blood of your battlefields (Hebel apud Sebald 2005, 21).*

Hebel's comet reminds us that one day the Earth will pass away and will be nothing more than a bright star. But first, we, our brilliant and pretentious civilizations, our vain quarrels, our corrupt and mean-spirited politicians, will pass. If we don't want to rush the transformation of a smiling Earth into a gigantic inanimate rock,

we must hurry to take advantage of the time that remains.

São Paulo, October 28, 2022

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