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REVIEW

Climate change: a bioethical emergency and health priority



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Summary

Background. — This article reflects on the consequences and challenges that humanity is facing in the context of the current climate change. It is argued that bioethics should, as applied ethics, assume the emergence of climate change and, as a consequence, the health system should prioritize mitigation policies.

Methodology. — Through the non-systematic review, we tried to extract the documents' contribution to bioethics and public health.

Discussion. — Climate change is a bioethical problem because it causes damage to all (biosphere) which implies a reflection on values and responsibility. On the other hand, the consequences of climate change on the health of the population lead us to demand urgent measures for the well-being of the population.

Perspectives. — It follows from this reflection that bioethics must address climate change as an emergency in its agenda because the survival of humanity is at stake. Simultaneously, this measure should be taken by the health sector, particularly public health, to implement mitigating measures for the consequences of climate change on the health of populations.

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Introduction

The UN Secretary-General, António Guterres, in an opinion article on climate change in the New York Times, in April 2020 stated: "[...] we are running out of time approaching

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a point of no return for human health, which depends on planetary health” [1]. Effectively, the climate change that we are witnessing or know of through the media is transforming the world and jeopardizing human health and the very survival of the biosphere. If we do a little memory exercise and recall the last two decades, extreme meteorological phenomena, such as forest fires -especially in the great Amazonian forest-, long periods of low rainfall, heat waves, hurricanes, and floods will come to mind relatively frequently.

What we currently know is that there is an increasing cause-effect relationship between greenhouse gas emissions and climate change [2]. We also know that the average temperature of the planet has increased by 1 °C since pre-industrial times. If we do not reduce gas emissions, we can be certain of a temperature increase of between 1.5 °C and 3 °C by the middle of this century, and of between 4 °C and 8 °C by 2100 [3,4]. Additionally, as D.B. Resnik states: “Population growth has widespread impacts on the climate because it increases the production of greenhouse gases and decreases the removal of atmospheric CO₂ by forests” [4].

If nothing is done, this increase in global temperature will have a devastating impact on nature, causing irreversible changes in many ecosystems and a consequent loss of biodiversity. Rising temperatures and intensified weather phenomena will also result in enormous costs to the world economy. In addition, there is evidence of a relationship between climate change and public health [5]. The Lancet Countdown report of 2021, calls this situation a global health crisis, illustrating the catastrophic consequences for the health of populations, especially in the most vulnerable countries [6].

In these terms, we see that climate change is a global challenge that requires global consensus solutions that mitigate the consequences for the biosphere in general and the health of humankind in particular. Some advocate the development of climate literacy in the framework of an integral formation of the person. In these terms, a person with climate literacy is equipped with the means to understand the complex effects of climate change on human health and thus can recognize the causal link between climate change and health, evaluate and interpret scientific data, make informed and responsible decisions, and advocate for policies that protect health [7]. There are some changes in the environmental thinking of citizens and politicians. On the one hand, we have witnessed social demonstrations such as the Climate Strike, alerting people to climate change, especially young people, inspired by Greta Thunberg – a Swedish teenager who started a personal protest outside her country’s parliament - and, on the other, we have seen political documents such as the Paris Agreement in 2015 [8], the most recent Glasgow Climate Pact of 2021 [9], the United Nations Agenda 2030 for Sustainable Development [10], the European Green Deal [11], UNESCO’s Universal Declaration on Bioethics and Human Rights (2005) [12], the UNESCO’s Declaration of Ethical Principles about Climate Change (2017) [13].

In this line of thought, we believe it is important to make a bioethical reflection on climate change: how do bioethics face this problem in its scientific domain? What biopolitics is at work on this issue?

Climate change: a bioethical emergency

Alistair Campbell, Director Emeritus of the Centre for Bio-medical Ethics and Visiting Professor of Medical Ethics at the National University of Singapore, warns in his book, *Bioethics the basics*, that the most significant of all bioethical issues we must face at present is not the dilemmas of health care from birth to death, greater than all these challenges is whether we can safeguard our planet and life, for ourselves and future generations [14].

Indeed, climate change is a bioethical problem because it entails harm to all (biosphere), and allowing this to continue, implies a reflection on values and responsibility [15,16].

Recognizing that there are denialist currents in this area of scientific knowledge, which does not believe in the impact of human action, especially in the massive use of fossil fuels as a primary contributor to climate change [17], we take the opposite position, that is, despite some uncertainties that science itself may have, we consider that the human hand is not uninvolved in the increase of the so-called greenhouse gases (which trap heat in the atmosphere) such as carbon dioxide – the most abundant – nitrous oxide and methane, which have contributed to the increase of the earth’s temperature with inevitable consequences on life [18]. Even people who are not from the scientific world recognize the gravity of the situation, as is the case of Pope Francis who wrote the *Encyclical Letter Laudato Si’* (about the care of the common home) in 2015 and stated: “If the annual trend continues, this century could witness unprecedented climate change and an unprecedented destruction of ecosystems...” [19]. Also, according to Bill Gates:

There is no scenario in which we can continue to increase levels of carbon dioxide in the atmosphere without the planet warming up, and the hotter it gets, the harder it will be for humanity to survive, let alone thrive.

The scientific community and organizations such as the United Nations Intergovernmental Panel on Climate Change (IPCC) state that only substantial and sustained reductions in greenhouse gas emissions can limit global warming and thereby reduce the risks and impacts of climate change [20].

Faced with these facts, how can we affirm that this problem is a bioethical emergency? It seems obvious to us, given the very nature of bioethics and its origins. According to Potter:

My bioethics has always been defined as an attempt to combine biological science and knowledge of the humanities, stressing that ethics cannot be separated from biological facts. In *Global Bioethics* (Potter, 1988) I argued that medical ethics and environmental ethics should not be separated from each other [21].

We would say that this seminal insight of Potter needs to be rescued so that:

In the face of the new powers that science gives man over life and himself, it is imperative that society becomes aware of all its long-term consequences and, in an interdisciplinary and pluralistic dialogue, open to an increasingly informed public, taking all the necessary decisions to promote sustainable development [22] [our translation].

However, we understand that it is necessary the face of the seriousness of climate change, revealed by scientific data, that bioethics declares this issue as an emergency. In other words, if the survival of human beings could, in extreme situations, be compromised by climate change, then we will not be able to achieve what is stated in the aforementioned declaration. Moreover, some academics, such as Cherly Macpherson and others, consider that the dilemmas and threats posed by climate change receive relatively little attention in bioethics publications or conferences, despite the gravity, injustice, and health burdens it imposes worldwide [4,15].

In any case, we know that the transdisciplinary nature of bioethics generates debate aimed at social and political awareness [23], which is particularly relevant here. This awareness is the driving force behind the concern about the real consequences for humanity of climate change and the search for consensus responses for the survival of humanity. In this particular case, we agree with Rivert-Carnac and Figueres who in their book, *The Future We Choose – How to survive the Climate Crisis* (2020), clearly and directly expose that those who are aware of climate change should be concerned about:

- social justice – because climate change affects the poorest and most vulnerable on the planet, both in the clash with weather phenomena and in the lack of resources available to respond to crises;
- health issues – the burning of fossil fuels not only has consequences for the climate, but the emissions of microscopic pollutants seriously affect various systems in the human body. This is so serious that it is estimated that seven million people a year could die from air pollution;
- economic stability and the value of investments – we must make a gradual but decisive transition to clean energy, there is no possibility of going back to the past and investing in technologies that are not only devaluing in the short term but are also polluting in the same time;
- intergenerational justice – this is a cause of ethical responsibility, if we act we can still somehow keep the environmental heritage intact for future generations. Our inaction will determine the future generations' inability to reverse the planet's inexorable consequences.

Health, biopolitics, and survival

We can say, without any hesitation, that these concerns should be present in the bioethical discourse on the environment. And so, we may ask whether, in this emergency, we already have some legal or similar documents that guide towards environmental protection in general, and health protection in particular, taking into account the safeguarding of the present generation and future generations and the intrinsic value to nature.

We share the idea of Hans Küng, a German philosopher and theologian, that “the human being cannot become better than he is by an increasing profusion of laws and regulations...” [24]. However, states in democratic countries have their political and legal organization functioning based on an ethical consensus that will be embodied in the national constitutional text. It is based on this ethical mandate that world leaders, in 2015, at the 25th Conference

of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC, COP25) in Paris, reached an agreement on combating climate change, called the Paris Agreement [8]. In this agreement, an action plan was established with all countries to:

- keep the increase in the global average temperature well below 2 °C compared to pre-industrial levels and make efforts to limit the increase to 1.5 °C;
- present comprehensive national climate change mitigation plans to reduce emissions;
- report to other governments and the public on their performance in meeting their targets, ensuring transparency and oversight;
- continue to provide climate finance from developed countries to help developing countries reduce emissions and build resilience to the impacts of climate change.

Despite this consensual action plan, a first indication of some degree of failure was soon seen when the national contributions to the decarbonization of the 196 countries that signed the 2015 Paris Agreement were presented in advance. These contributions were still not sufficient to avoid exceeding 2 °C, leading to a temperature increase of close to 3.5 °C [18]. Reaching 2021, a new meeting was held in November in the Scottish city of Glasgow (COP26), providing a new opportunity to deepen the commitments of the Paris Agreement. However, expectations were high and, according to some analysts, an agreement as audacious as expected was not reached [25]. The UN climate conference, COP26, ended with an agreement called the Glasgow Climate Pact, but just to give an idea of the difficulty in reaching a consensus, it should be noted that the final text does not point to fossil fuels as the main cause of climate change and does not call for the complete elimination of their use, but only calls on the signatory countries of the document to gradually reduce energy obtained by burning coal and to gradually eliminate subsidies for fossil fuels [5].

And this reality is overwhelming because even if all climate commitments are met and all measures fully implemented, the most realistic report is that a temperature increase of 2.7 °C will occur by the end of the century, with catastrophic implications for human health. Indeed, at current levels of warming (1.1 °C), climate change is already exerting devastating health impacts worldwide [26–29]. In some empirical data from the Lancet Countdown report of 2021 [6], it is stated that:

- many infectious diseases are sensitive to climate change and are increasing in incidence: e.g. *Vibrio cholera*, and its environmental adaptation and transmission potential in the northern latitudes of the planet, has increased by 56% since the 1980s; the number of months suitable for malaria transmission has increased by 39% in developing countries and, during the last 5 years, environmental adaptation for transmissions of emerging arboviruses (e.g. dengue, chikungunya, and Zika) was between 7% and 13% higher than in the 1950s;
- the heat waves of 2016 and 2020 had an enormous impact on the health of populations, deteriorating their physical and emotional well-being and even the efficiency of agricultural work (by 2020, 79% of all potential work hours were lost due to extreme heat in developing countries occurred in the agricultural sector);

- high temperatures and low rainfall in recent decades have provided the perfect breeding ground for large-scale fires, jeopardizing food production (unproductive soils) and access to water in many parts of the world;
- in addition, there are millions of deaths per year due to exposure to gases from burning fossil fuels and, at the same time, the high rates of respiratory morbidity.

This data allows us to state that also in the area of health, the implementation of measures to mitigate climate change is a priority. It was in this line that at the UN Climate Conference in November 2021 in Scotland (COP26), the World Health Organization (WHO) through its participation emphasized the link between health and climate, and some countries assumed goals in the COP26 Health Programme, subscribing to this document, to make health services more climate resilient and actively participate in reducing greenhouse gas emissions [4]. This is a structural commitment because it is estimated that health systems worldwide emit 4.9% of greenhouse gas emissions [26].

Europe, more specifically the European Union, has been assuming a greater political protagonism in the measures to be implemented to mitigate climate change. Indeed in December 2019, the presentation by the European Commission of the European Green Deal, which aims to boost the efficient use of resources by shifting to a clean and circular economy and restoring biodiversity, and reducing pollution [11]. As a result of this Pact, in March 2020, the same Commission is presenting a proposal for a European Climate Act to enshrine climate neutrality in law, that is, to propose a legally binding target for zero net emissions of greenhouse gases by 2050 for European society. This initiative is currently following its legislative course in the European bodies so that it can be incorporated into the domestic law of each European Union country as soon as possible [27].

Mention should also be made of the United Nations (UN) resolution entitled “Transforming our world: the 2030 Agenda for Sustainable Development”, consisting of 17 goals, broken down into 169 targets, adopted by world leaders, on September 25th, 2015, at a summit at UN headquarters in New York (USA). The 2030 Agenda addresses several dimensions of sustainable development (socio, economic and environmental) and promotes peace, justice, and effective institutions. Although the 17 goals should be inter-linked, in a holistic perspective, we would highlight the Climate Action goal 13 – take urgent action to combat climate change and its impacts –, which intersects with the measures implemented in the documents mentioned above [10].

We could not fail to mention UNESCO’s Universal Declaration on Bioethics and Human Rights (2005), which, as we have already pointed out, will be strongly affected in the application of its principles by climate change. Regardless of this circumstance, we refer to article 17, which aims to protect the environment, the biosphere, and biodiversity:

It is important to take into account the interaction between human beings and other forms of life, as well as the importance of adequate access to and proper use of biological and genetic resources, respect for traditional knowledge, and the role of human beings in protecting the environment, the biosphere and biodiversity [12].

Reference should also be made to UNESCO’s Declaration of Ethical Principles in relation to Climate Change (2017) [13]. This is a declaration, which has been signed by 195 countries, and for the first time establishes a reflection between ethics and climate change. It is undoubtedly an important document, but it does not highlight the emerging nature of the issue and, above all, it has not been adopted as a legal document, i.e. countries have not taken it to the parliaments to be adopted as internal law. Moreover, the dissemination of these principles has been residual in the vast majority of the countries that signed this document.

Final considerations

Climate change is a challenge to humanity. We need to discuss this environmental problem because it has serious consequences for all ecosystems and threatens the survival of our common home [19]. Humanity needs a more acute awareness of this situation and more effective and timely action. Some say that the issue of climate change is the mother of all issues [2] because of the magnitude of the effects it may cause on life on earth. We believe that this vision is the right one and the most adequate to rescue the planet from disaster. According to some authors, we are still in time to achieve such a feat, if we act immediately [2,3].

In this sense, bioethics, going back to its foundational origin [30], should, within the scope of its scientific teaching, put climate change as a top priority on its agenda. This is because the survival of humanity is at stake and, in this sense, we need the response of applied ethics, which includes in its reflection the protection of the environment, the biosphere, and biodiversity.

This reflection will be reinforced if we are aware of the consequences of climate change on the health of populations, especially in less developed countries and with health systems with less resilience capacity to respond to this global challenge. We need the health sector, especially public health, to assume climate change as a priority in its attention, to introduce mitigating measures, and above all, measures to promote population health.

There is some ground to be covered in environmental bioethical reflection, especially in the political area. There are legislative or similar documents that point to some consensus in dialogue and action. However, we believe that this suggestion of bioethics to present an emergency policy line in the field of climate change will make an invaluable contribution to the health of the planet. Our position, as a proposal, is that there is a need for this emergency to be transformed into a bioethics convention on climate change to serve as an element of reinforcement of countries’ mitigation policies.

Recalling what the philosopher Maria José Varandas tells us:

Current events force ethical reflection to leave the intra-human walls and to morally consider non-human beings and the planet. However, we should not forget that it is not so much nature that depends on man but, above all, man that depends on nature. Therefore, fundamentally, what is at stake, from every angle and approach, is the fate of humanity [31].

Human and animal rights

The authors declare that the work described has not involved experimentation on humans or animals.

Informed consent and patient details

The authors declare that the work described does not involve patients or volunteers.

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