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Ethical Principles for Climate Change: Adaptation and Mitigation

Report of COMEST

At its 8th Extraordinary Session in October 2014, COMEST renewed the composition of the Environmental Ethics Working Group, entrusted with the preparation of a draft report in conformity with 190 EX/Decision 10 of the Executive Board. It was decided that the draft report should include reflections on ethical principles for climate change mitigation, while reinforcing the conclusions made in its previous reports on "The Ethical Implications of the Global Climate Change" (2010) and on "Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation" (2013), as well as reiterating its 2012 "Statement on Issues Relevant to Consideration of the Desirability of Preparing a Declaration on Ethical Principles in Relation to Climate Change". The Working Group concluded its consultation on this document at the end of May 2015, and then transmitted it to the entire Commission for further comments and approval. Following the discussion of the draft, the Report was adopted by the Commission at the 9th Ordinary Session of COMEST (UNESCO Headquarters, 28 September – 2 October 2015).

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I. INTRODUCTION

1. The present report identifies ethical principles that can address the problem of climate change beyond the issues raised by climate change adaptation, namely the ethical issues relevant for climate change mitigation. This allows for a more comprehensive approach that can embrace the variety of worldviews of nature that have been noted by COMEST during the course of its consultations with various stakeholders.

2. In addressing the challenges posed against the "language of universal principles" during its consultations, COMEST offered in its 2013 Report entitled *Background for a Framework of Ethical Principles and Responsibilities for Climate Change Policies*[1], a list of responsibilities with respect to climate change adaptation while taking into account the validity of such inclusive principles as avoiding harm, fairness in the distribution of burdens and benefits, equitable access to medical, scientific and technological developments, the moral solidarity of humankind and environmental sustainability.

3. To deal with the global challenge of climate change both adaptation and mitigation measures are important.[2] Adaptation[3] alone is not enough. As noted, among others, by Dale Jamieson, "a policy of adaptation without mitigation, the one we may be slouching toward, runs serious practical and moral risks. The practical risk, which itself has moral dimensions, is that a greenhouse gases (GHG) forcing may quite suddenly drive the climate system into some unanticipated, radically different state to which it is virtually impossible to adapt."[4]

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[1] COMEST. *Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation*. Paris: UNESCO, 2013.
[Available at: http://unesdoc.unesco.org/images/0022/002264/226470E.pdf]

[2] The Intergovernmental Panel on Climate Change (IPCC) in its *Fourth Assessment Report*, released in 2007 also came to the conclusion that "There is high confidence that neither adaptation nor mitigation alone can avoid all climate change impacts; however, they can complement each other and together can significantly reduce the risks of climate change." For more details, see: IPCC. Summary for Policymakers. In: *Climate Change 2007: Synthesis Report*, edited by Core Writing Team, R.K. Pachauri and A. Reisinger. Geneva: IPCC, 2007, p.19.
[Available at: https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_full_report.pdf]

[3] According to IPCC, adaptation means "Adjustment in natural or human systems to a new or changing environment. Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation." IPCC, 2001. "Appendix II: Glossary" in Climate Change 2001: Working Group III: Mitigation. [Available on-line at: http://www.grida.no/publications/other/ipcc_tar/?src=/climate/ipcc_tar/wg3/454.htm]. See also: IPCC, 2007. Climate Change 2007: Working Group II: Impacts, Adaptation and Vulnerability. [Available on-line at: http://www.ipcc.ch/publications_and_data/ar4/wg2/en/annexessglossary-e-o.html].

[4] D. Jamieson. "Adaptation, Mitigation, and Justice." In *Perspectives on Climate Change: Science, Economics, Politics, Ethics*, edited by W. Sinnott-Armstrong and R.B. Howarth. Boston: Elsevier, 2005, pp. 222-223.
[Available at: http://bioethics.as.nyu.edu/docs/IO/1192/Adaptation_Mitigation_Justice.pdf]

4. Thus, in addition to an adaptation policy, a vigorous policy of mitigation[5] is required. Mitigating climate change may help humanity and other members of the biotic community to have time to adapt and to reduce the risks of a brutal climate disruption. As IPCC's *Fifth Assessment Synthesis Report* puts it:

> Without additional mitigation efforts beyond those in place today, and even with adaptation, warming by the end of the 21st century will lead to high to very high risk of severe, widespread, and irreversible impact globally (*high confidence*).[6]

5. It is equally true that mitigation alone is not sufficient particularly in developing countries, as they are vulnerable to current effects of climate change. So, both mitigation of climate change and adaptation to the impacts of climate change are necessary. Despite the growing scientific consensus on the existence of climate change and the progress toward addressing the problem, there are still major challenges to the political and societal implementation of solutions. The integrity of climate scientists has been questioned; there is a debate about the approaches and mechanisms to tackle climate change and conflicts of interests between different groups. This means that clarification of the ethical principles remains an important contribution to the international debate.

II. MORAL DELIBERATION IN THE CONTEXT OF CLIMATE CHANGE

6. COMEST, in its 2010 Report on *The Ethical Implications of the Global Climate Change*, raised the question of "whether it is at all *possible* to take ethical action in response to climate change"[7] due to the complexity and uncertainty of the natural processes it entails. The interconnectedness of living systems and their environments and the effects and counter-effects of human actions on the environment produce unexpected consequences such as: the emergence of new organisms (for example: viruses, bacteria), species migration and ecosystems destruction resulting from the confluence of events and the various combinations of

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[5] According to IPCC, "Mitigation is a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Mitigation, together with adaptation to climate change, contributes to the objective expressed in Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC): "The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner". For more details, see: IPCC. Summary for Policymakers. In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by O. Edenhofer et al.Cambridge and New York: Cambridge University Press, 2014, p.4. [Available at: http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policymakers.pdf].

[6] IPCC. *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by Core Writing Team, R.K. Pachauri and L.A. Meyer. Geneva: IPCC, 2014, p.17.
[Available at: http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf].

[7] COMEST. *The Ethical Implications of the Global Climate Change*. Paris: UNESCO, 2010, p.20.
[Available at: http://unesdoc.unesco.org/images/0018/001881/188198e.pdf].

relationships among different parts of the socio-techno-ecological systems. The complexity of climate change is exacerbated by the limitations imposed by the current incompleteness of its scientific knowledge base and the global dispersal of responsibilities in relation to its anthropogenic origins.

7. In the same 2010 Report, COMEST identified the following list of potentially relevant principles:

(i) Precautionary principle;
(ii) The common but differentiated responsibilities;
(iii) Safeguarding and promoting the interests of the present as well as future generations;
(iv) Protection of human rights;
(v) Equitable access to medical, scientific and technological developments, as well as the greatest possible flow and the rapid sharing of knowledge concerning those developments and the sharing of benefits, with particular attention to the needs of developing countries;
(vi) The cost of pollution should be borne by the polluter; and
(vii) Sustainability, notably in connection with development.

8. Furthermore, in this Report, COMEST argued that "even if the contribution of humanity to climate change is denied, adaptation to the effects is clearly within the sphere of human agency."[8] The 2013 Report renewed COMEST's commitment to responding to the plight of the vulnerable groups of society by emphasizing that "in view of the nature and extent of the scientific, social and human challenges of global climate change, which necessitate adoption of policies at the global level to address the pressing needs of the most vulnerable in the face of major uncertainties and exigencies of international cooperation, it is urgent to determine universal ethical principles to guide responses to such challenges."[9]

9. The 2013 Report then enumerated six ethical principles for climate change adaptation and identified specific responsibilities that stakeholders can adopt:

(i) *Avoiding harming people and the environment* by failing to respond to climate change or by responding to it in an ill-considered way;
(ii) *Fairness:* giving special consideration to the poorest countries and people, given their greater vulnerability and direct exposure to climate change for which they very often are the least responsible;
(iii) *Equitable access* to actions that enhance capabilities and resilience;
(iv) *The Intellectual and moral solidarity of humankind* enshrined in UNESCO's constitution;
(v) *Environmental sustainability,* understood as embracing the protection of biodiversity and the integrity of ecosystems as the very basis of life on Earth; and

[8] COMEST. *The Ethical Implications of the Global Climate Change*. Paris: UNESCO, 2010, p.20.
[Available at: http://unesdoc.unesco.org/images/0018/001881/188198e.pdf]
[9] COMEST. *Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation*. Paris: UNESCO, 2013, p.1.
[Available at: http://unesdoc.unesco.org/images/0022/002264/226470E.pdf]

(vi) *Common but differentiated responsibilities* articulated in the United Nations Framework Convention on Climate Change (UNFCCC) (Article 3) and the Rio Declaration on the Environment and Development (Principle 7).

10. It was proposed that a more comprehensive extension of these principles and responsibilities articulated for climate change adaptation be undertaken to take into account climate change mitigation. The expanded list of principles identified in relation to climate change includes:

(i) Biological diversity;
(ii) Cultural diversity;
(iii) Interdependence of life on Earth;
(iv) Intellectual and moral solidarity of humankind;
(v) Global justice;
(vi) Resilience;
(vii) Sustainability (frugality, renewable energy, reforestation, water resources);
(viii) Precautionary principle;
(ix) The duty to share scientific knowledge; and
(x) Integrity of scientific research.

11. All principles identified in the two previous reports and in this report are interrelated and should all be considered in arriving at a coherent response to climate change challenges and should inform mitigation policies adapted to the diversity of contexts.

III. ETHICAL PRINCIPLES FOR CLIMATE CHANGE MITIGATION

III.1. Biological diversity

12. The *United Nations Convention on Biological Diversity* defines biological diversity as the variability among organisms and other ecosystems and the ecological complexes of which they are a part. The protection of biological diversity upholds not only the importance of individual species and their unique environments as key elements that constitute the web of entities that support life on earth, but also emphasizes the critical distinction and importance of "the combination of life forms and their interactions with each other and with the rest of the environment that has made Earth a uniquely habitable place for humans."[10] Therefore, merely conserving the variety of organisms and species cannot guarantee the survival of entire ecosystems because it only affords an immediate advantage to predators and disadvantage to prey. From a holistic point of view, the more important key to the survival of individuals and their environments lies in maintaining and sustaining the diversity of relationships between species and their ecosystems. It is the equilibrating dynamics between species and systems rather than mere diversity of organisms and species that make the difference between the eventual demise or survival of organisms and their species.

[10] See the *United Nations Convention on Biological Diversity* (1992) official website: http://www.cbd.int/convention/.

13. The systemic nature of climate change ethics requires actions that keep the equilibrium between ecological complexes in order to maintain, if not to strengthen, the diversity of relationships between organisms and their ecosystems. An imbalance in their relationship can have catastrophic consequences not only for the species that dwell in them but for other ecosystems that are imbedded in the network of relationships to which an ecosystem belongs. The Convention on Biological Diversity exemplified this complexity by elucidating the interactions between terrestrial and marine systems as functional units.

III.2. Cultural diversity

14. In 2005, UNESCO adopted the *Convention on the Protection and Promotion of the Diversity of Cultural Expressions*[11] which refers to cultural diversity as:

> …the manifold ways in which the cultures of groups and societies find expression. These expressions are passed on within and among groups and societies. Cultural diversity is made manifest not only through the varied ways in which the cultural heritage of humanity is expressed, augmented and transmitted through the variety of cultural expressions, but also through diverse modes of artistic creation, production, dissemination, distribution and enjoyment, whatever the means and technologies used.[12]

15. The Convention considered the principle of respect for human rights and fundamental freedoms as condition to the promotion of cultural diversity. Furthermore, the Preamble of the Convention recognized that:

1. "… the diversity of cultural expressions, including traditional cultural expressions, is an important factor that allows individuals and peoples to express and to share with others their ideas and values"[13]; and that
2. " … the importance of the vitality of cultures, including for persons belonging to minorities and indigenous peoples, as manifested in their freedom to create, disseminate and distribute their traditional cultural expressions and to have access thereto, so as to benefit them for their own development."[14]

16. In this perspective, the principle of cultural diversity affirms the diverse modes of participation by all nations in climate change mitigation and adaptation. It acknowledges various worldviews of nature and allows these worldviews to propose their own way of addressing the problems of climate change from within their cultural contexts. For example, indigenous philosophies give priority to harmonious relationships with nature wherein humans merely conform to the laws of nature.[15] The principle of cultural diversity gives voice to a more pluralistic framework of worldviews and diversity of practices.

17. In this connection, COMEST suggests that in order to reduce their respective greenhouse gas emissions, different nations should engage in genuine ethical dialogue that respects global climate justice and equity. Otherwise, there will be no lasting solution to this

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[11] UNESCO. *Convention on the Protection and Promotion of the Diversity of Cultural Expressions*. Paris, 2005. [Available at: http://en.unesco.org/creativity/convention/2005-convention/2005-convention-text].
[12] Ibid (Section III, Article 4, Sub-Article 1)
[13] Ibid (Preamble)
[14] Ibid (Preamble)
[15] UNESCO Bangkok, Regional Unit for Social and Human Sciences in Asia and the Pacific.*Universalism and Ethical Values for the Environment*. Bangkok: UNESCO, 2010.
[Available at: http://unesdoc.unesco.org/images/0018/001886/188607e.pdf].

challenge. An ethical approach to the dialogue of cultural traditions will clarify the responsibilities of the concerned parties and help them to be accountable for their decisions. Ethical dialogue with a view to arriving at consensual decisions is essential when cultural traditions are deemed to be inimical to the wellbeing, or to be "causing harm" either to their own society, to other nations or to the global environment.

III.3. Interdependence of life on Earth

18. COMEST also distinguished the unique capacity of humans to ascribe value judgments from the "practical priority" given to their own survival in its 2013 Report. The shared challenges imposed by climate change, however, foreground the importance of a common world to be protected and enhanced as a common basis for solidarity among peoples of different backgrounds and the interdependence of human beings and their surroundings[16]. The responsibility for the sustenance of Earth as a living system, nevertheless, cannot be left to anyone else since it is a responsibility that resides among human beings themselves. The unique situation and obligation of the human species lies in the fact that only humans are able to argue in this direction of articulating an ethics of climate change and are able to undertake obligations to act accordingly.

19. The scope of climate change implicates not only the past and future generations of humans but also the life-support systems that make human life possible. Life forms allowed for the emergence of humans who can care for the environment not only for the sake of human survival but for the benefit of other species as well. The principle of interdependence entails that the survival of one species contributes to the survival of others. Therefore, it is the responsibility of humans who benefit most from others that these be allowed to flourish for the sake of their own existence and not because they are needed for human utility.

III.4. Intellectual and moral solidarity of humankind

20. Respect for the intellectual and moral solidarity of humankind is enshrined in UNESCO's Constitution[17] in terms of the cooperation of the "peoples of the world" and is particularly relevant to the challenges of global climate change since it implicates the fate and destiny of humanity beyond national boundaries, gender, age and ethnicities. The effects of environmental degradation are felt not only by the weakest and most vulnerable groups, but by everyone who must rely on the life-giving powers of the Earth – its water, air, and soil – in order to survive and flourish.

21. In the context of climate change, the principle of solidarity offers a solid ethical foundation on which to base responsibilities according to affordability and needs, particularly towards affected individuals and populations, but also more broadly towards the environment and future generations.

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[16] COMEST. *Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation*. Paris: UNESCO, 2013, p.12-13.

[17] The principle of the intellectual and moral solidarity of humankind is also enshrined in the *Universal Declaration on Bioethics and Human Rights* (2005) and the *Declaration on the Responsibilities of the Present Generations Towards Future Generations* (1997). [The relevant texts are available at the official website of UNESCO:
http://portal.unesco.org/en/ev.php-URL_ID=12024&URL_DO=DO_TOPIC&URL_SECTION=201.html].

III.5. Global justice

22. In its 2013 Report, COMEST notes that

> … questions about compensation for harms imposed by climate change and about reallocating the costs of mitigating it or adapting to it are particularly delicate questions of justice at the international level. That some issues of justice in this arena are presently beyond the reach of consensual solutions, however, by no means implies that considerations of justice should simply be set aside.[18]

23. With regard to the principle of fairness, the report also underlines that

> … [it] is difficult to transfer this conception of justice directly to the international level, because other interests, conceptions of state sovereignty, and power relations among States complicate the issue of justice. For the moment, there is no consensual concept of global justice and or of the institutions that would impose it. Still, the United Nations through the Universal Declaration of Human Rights (articles 22, 25) is morally engaged in promoting a conception of justice as fairness through actions and programs in helping poor countries on the path of welfare for the poorest people (health, education, economic opportunity). Dignity and justice for each and every human being are central concerns of the Universal Declaration of Human Rights. By affirming values of non-discrimination and equality, the Declaration reaffirms a commitment to universal justice and the recognition of inherent human dignity.[19]

24. In addition to the paradox that the vulnerable groups of society made little contribution to the exacerbation of the problem of climate change and yet were the ones most victimized by it, COMEST noted also, that the vulnerable groups of society are not mere victims of the regime of climate change but can also be engaged as active participants in finding solutions to the complicated problems entailed by climate change.[20]

25. Global justice in relation to climate change requires the participation of all members of human society regardless of their contribution to the problem. The unique worldviews that different cultures and peoples bring to the arena of discourse will certainly enrich the pool of ideas and resources that can be harnessed towards finding solutions to this global problem. Although some justice theorists are reluctant to address the need for justice to the non-human part of the world, duties of justice can be owed to other non-human beings who cannot defend their interests. Human beings have committed different forms of injustice against non-human beings and their ecosystems. Thus, global justice should take also the interests of non-human animals and the health of Mother Earth into account.

26. The effects of climate change are not only experienced by those who happen to be situated in hazardous locations in the world but can also be a burden to other nations when the victims of climate change and the migrants engendered by this phenomenon begin to demand their human rights and the right to live together as citizens of the world.

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[18] COMEST. *Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation*. Paris: UNESCO, 2013, p.9.
[19] Ibid, p.14.
[20] Ibid, p.23.

27. It is therefore of mutual benefit to all humankind to address this common problem not only in order to maintain a healthy equilibrium among peoples and their environments but also to promote the other benefits, the *co-benefits* of a healthy environment in terms of a well-balanced economy and political arrangements. The environment does not only supply the necessary goods that generate economic systems, the latter also create political conditions that support the maintenance of ecosystems and their by-products.

28. The transversal nature of the problem of climate change necessitates consideration of critical issues such as inequality, absolute poverty, health, and governance.

29. Justice requires developed countries (which have contributed significantly to the emission of greenhouse gases) to provide developing nations with finance, adapted technologies and capacity-building support in order to not only solve the problem of climate change but at the same time eradicate poverty and promote sustainable development.

30. Related to global justice the "Do No Harm" Principle deserves special attention. Although the "no harm" principle is found in the Preamble of the United Nations Framework Convention on Climate Change (UNFCCC), many countries do not seem to observe this principle in their policies and actions. According to this principle, States have "the responsibility to ensure that the activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."[21] COMEST, in the 2013 Report, has already underlined the principle to avoid harm as a strong motivation to act collectively in a responsible manner.[22]

31. COMEST strongly suggests that all nations should pay attention to the principle of "do no harm", as this can make a practical difference. This principle reminds countries to care about their greenhouse emissions and their negative impacts on the environment and vulnerable people, especially in the developing world. All nations have ethical duties and a legal responsibility to avoid harming others unnecessarily by avoiding unnecessary activities that aggravate greenhouse gas emissions while at the same time instituting "environmentally friendly" measures to substantially reduce these emissions.

III.6. Resilience

32. Resilience is associated with the development of strategies that promote procedures and systems that lead communities to optimize the resolution of climate related disasters through self-organization and feedback mechanisms at various levels of society. Resilience includes the use of traditional or local knowledge and experience of past natural or technological catastrophes.[23, 24]

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[21] See the *United Nations Framework Convention on Climate Change* (1992) official website: http://unfccc.int/essential_background/convention/items/6036.php (Paragraph 8 of Preamble).

[22] COMEST. *Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation*. Paris: UNESCO, 2013, p.13.

[23] Ibid, p.15.

[24] A complex discussion of the concept of resilience can be found in: J. Plodinec. *Definitions of Resilience: An Analysis*. Community and Regional Resilience Institute (CARRI), Savannah River National Laboratory, November 2009.
[Available at: http://www.resilientus.org/library/CARRI_Definitions_Dec_2009_1262802355.pdf]

33. Resilience therefore measures the ability of individuals and local communities to bounce back from the debilitating effects of climate-induced disasters and to be able to reduce risks and damage to human life and infrastructures in the future by rebuilding their lives, livelihood and homes from the debris of climate-related catastrophes.

34. Resilience is constituted by the cultural and spiritual reservoir of peoples who have endured and survived natural calamities that are not directly of their own making. Although resiliency is built from the harrowing experiences of victims, it can also be developed by instituting social and technological mechanisms that will allow people to predict and avoid the onslaught of these calamities. COMEST's formulation of the Precautionary Principles meant to promote resilient procedures and social structures that can lead communities towards self-organization and feedback mechanisms that can optimize their resolution of climate-related problems at various levels of the social system but most effectively at the local level.[25]

35. In this perspective, to develop and enhance the resilience of people is particularly important for vulnerable groups. "In many of these contexts, women are more vulnerable to the effects of climate change than men - primarily as they constitute the majority of the world's poor and are more dependent for their livelihood on natural resources that are threatened by climate change. Furthermore, they face social, economic and political barriers that limit their coping capacity. Women and men in rural areas in developing countries are especially vulnerable when they are highly dependent on local natural resources for their livelihood. Those charged with the responsibility to secure water, food and fuel for cooking and heating face the greatest challenges. Secondly, when coupled with unequal access to resources and to decision-making processes, limited mobility places women in rural areas in a position where they are disproportionately affected by climate change. It is thus important to identify gender-sensitive strategies to respond to the environmental and humanitarian crises caused by climate change."[26]

III.7. Sustainability

36. In terms of climate change, sustainability entails discernment of the earth's carrying capacity and continuity of regenerating enough resources for the sake of future generations and the vulnerable sectors of society. A "business as usual" in economic activity is no longer possible on a moral ground, and a path to a more sustainable economy is inescapable in regard to the anthropogenic causes of climate change. Many practical initiatives and new frameworks for a green economy show different ways to sustainability and new opportunities.

III.7.1 Frugality

37. *Frugality* as a practical principle balances the levels of consumption and production so that wastes are reduced to a minimum while the extraction of resources is limited to the replenishing capacity of nature. Ecological footprints are then reduced so that ecological niches are not extended beyond their carrying capacities. Technological innovations that follow the

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[25]COMEST. *The Precautionary Principle*.Paris: UNESCO, 2005, p.29.
[Available at: http://unesdoc.unesco.org/images/0013/001395/139578e.pdf].

[26] 52nd Session of the Commission on the Status of Women (2008) « Gender perspectives on climate change », Issues paper for interactive expert panel on Emerging issues, trends and new approaches to issues affecting the situation of women or equality between women and men. Fact sheet "Women, Gender Equality and Climate Change". [Available at:
http://www.un.org/womenwatch/feature/climate_change/downloads/Women_and_Climate_Change_Factsheet.pdf].

principle of frugality induce proportionality between the production costs and the financial capacity of consumers. Frugality does not mean sacrificing one's needs. It requires a discernment of the distinctions between needs and wants. Wants are simplified so that others may live simply according to their needs.

38. As an ethics of virtue, resilience and frugality will challenge individual and collective dispositions toward the environment and the less advantaged so that the latter can also participate in a well-ordered society.

III.7.2 Renewable Energy

39. As the word population, estimated at 7.3 billion as of mid-2015, is expected to reach 8.5 billion by 2030 (United Nations Department of Economic and Social Affairs)[27], humanity's dependence on fossil fuels has become vital mainly for transportation as well as for the production of diversity of plastic products and fertilizers (petrochemicals). At the same time, the dependency on fossil fuel leads to emission of many GHG among which the mostly abundant are carbon dioxide (CO_2) and methane (CH_4). These GHG are responsible for the climate change and global warming. The Intergovernmental Panel on Climate Change (IPCC) stated that the global average temperature in the mid-20th century has increased with the increase in greenhouse gas concentrations in the atmosphere. Moreover, the fossil fuel reserves will be exhausted in less than a century, as predicted by the World Energy Forum.

40. Climate change mitigation requires reducing our dependence on fuels that cause global warming by shifting to renewable resources that abide by nature's cycles of regeneration. The production of fossil fuels is complex and is conceived as a centralized and close technical system. Moreover, it generates an increase in cost at each point of transfer of energy. In contrast, renewable energies can be installed at the local level, closer to the location of consumers themselves. However, it is sometimes the case that renewable energy projects themselves can have negative climate change impact (for example wind farms constructed on deep peat areas have been shown to result in only marginal CO_2 reduction in comparison to deep peat areas that are the most effective carbon sinks). In developing renewable energy systems, risk-benefit analyses must be undertaken in order to assess their environmental and social impacts.

41. The renewable energy approach mainly consists of solar energy, geothermal energy, wind energy, ocean energy, hydropower, and biofuel (biodiesel and bioethanol). The framework of renewable energy evolved rapidly in recent years. The total share of renewable energy in 2011 reached almost 19% from the global final energy consumption.[28]

42. In this sense there are some options which can contribute to the reduction of GHG while maintaining the global demand for energy and abiding by nature's cycles of regeneration. These options can contribute to sustainable development in meeting risks and costs criteria, such as energy efficiency, carbon capture and storage, renewable energy. In addition, renewable energy

[27] United Nations, Department of Economic and Social Affairs, Population Division, 2015. *World Population Prospects: The 2015 Revision, Key Findings and Advance Tables*. Working Paper No. ESA/P/WP.241, p. 1.
[Available at: http://esa.un.org/unpd/wpp/Publications/Files/Key_Findings_WPP_2015.pdf]
[28] Renewable Energy Policy Network for the 21st. Century, 2013 – REN 21.
[Available at:http://www.ren21.net/Portals/0/documents/Resources/GSR/2013/GSR2013_lowres.pdf].

offers other benefits for security of energy supply to the whole world; for example, reducing dependence on fossil fuels multiply supply of energy in reducing vulnerability to price fluctuations. Also, renewable energies can be installed at the local level, closer to the location of consumers. People are ethically responsible for harm they cause to the environment, especially in the absence of laws and regulations. The issue of global warming is vital for humankind and future generations, therefore adapting to climate change through renewable energy is *a sine qua non* condition for humanity and the environment.

III.7.3 Reforestation

43. A progressive component of climate change mitigation is the generation of carbon sinks that will absorb CO_2 emissions. This requires not only massive reforestation but also a carefully planned system of regenerating the forests that puts premium on indigenous species over exotic ones while making sure that the plant species complement and support each other in preventing soil erosion while at the same time allowing nutrients from the forests to cascade to the rivers and oceans in order to support the growth of planktons and marine life.

44. In agriculture, for example, a lot can be done in supporting agrobiodiversity by selecting native trees and plants that enhance diversity of production, lowering the use of pesticides and fertilizers, and, in addition to biodiversity, incidentally strengthening cultural diversity. Moreover, climate change has crucial impact on water resources, the quality of the soil and air, land use, and food security. Therefore appropriate mitigation measures should be developed and undertaken.

III.8. The Precautionary Principle

45. COMEST's working definition of the precautionary principle (PP) in its 2005 Report states that "When human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm"[29]. Instances of moral unacceptability were identified as follows: "threatening to human life or health, or serious and effectively irreversible, or inequitable to present generations, or imposed without adequate consideration of the human rights of those affected."[30]

46. The same document also emphasized that "PP applies to a special class of problems that is characterized by (1) complexity in the natural and social systems that govern the causal relationships between human activities and their consequences and (2) unquantifiable scientific uncertainty in the characterization and assessment of hazards and risks."[31]

47. There are different arguments for and against the place of the precautionary principle in environmental policy-making. Although there is no universal agreement among scholars about the precautionary principle, its proponents suggest that they share a common core. According to Carol Raffensberger and Joel Tickner, "[i]n its simplest formulation, the precautionary principle has a dual trigger: if there is a potential for harm from an activity and if there is uncertainty about

[29] COMEST.*The Precautionary Principle*. Paris: UNESCO, 2005, p.14.
[Available at: http://unesdoc.unesco.org/images/0013/001395/139578e.pdf].
[30] Ibid, p. 14.
[31] Ibid, p. 25.

the magnitude of impacts or causality, then anticipatory action should be taken to avoid harm."[32] From this characterization one can identify three components of the PP, namely: (i) threat of harm; (ii) uncertainty of impact and causality; (iii) precautionary response.[33] However, the interpretation of these components can generate arguments for and against the precautionary principle.

48. Environmental risk assessment is not solely science-based; its requirements relate also to value commitments. As COMEST has previously indicated in its report on the Precautionary Principle, this principle "cannot be based on purely non-scientific concerns". "Precaution needs always a basis in science. However, uncertainties are indisputable parts of science and they need to be managed sensibly given the values that are at stake."[34]

49. The *Third North Sea Conference* (1990) and the *Ozone Layer Protocol*, *the United Nations Framework Convention on Climate Change* (1992)[35], the *Rio Declaration on Environment and Development* (1992), the World Trade Organization's (WTO) *Agreement on Sanitary and Phytosanitary Measures* (SPS Agreement) (1994), and the *Biosafety Protocol* approved in Montreal in January 2000 mentioned some aspects of the precautionary principle.[36] Also, some major institutions including the United Nations Environment Program (UNEP) (1989), the European Union in its environment policy (1994) and the President of the United States of America's Council on Sustainable Development (1996) have endorsed precautionary approaches.[37] Moreover, the Kyoto agreement about emission quotas reflects the precautionary principle.

50. The precautionary principle suggests that humanity should design strategies to reduce the possible negative effects of climate change. We should not wait until such serious dangers undermine the survival of human beings, other species and "Mother Earth". Accordingly, although there are still some doubts and uncertainties in our knowledge about climate change, the "better safe than sorry" approach, formally referred to as "the Precautionary Principle", has proven itself to be very useful in our attempts to avoid what could otherwise lead to extremely disastrous outcomes as recently noticed in different places in the Mother Earth.

51. In this connection, it should be noted that several companies have already recognized the importance of precaution that "involves public consultations, deliberations and hearings that may focus on selected side effects or possible harms."[38] Such consultations will help companies

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[32] C. Raffensberger and J. Tickner. "Introduction: to foresee and forestall." In: *Protecting Public Health and the Environment: Implementing the Precautionary Principle*, edited by C. Raffensberger and J. Tickner. Washington, D.C.: Island Press, 1999, pp.1-11.

[33] S.M. Gardiner. "A Core Precautionary Principle." *The Journal of Political Philosophy*, 14(1), 2006, pp.33-60. [Available at: http://www.public.iastate.edu/~jwcwolf/Papers/Gardiner%20on%20Precautionary%20Principle.pdf].

[34] COMEST.*The Precautionary Principle*. Paris: UNESCO, 2005, p.42. [Available at: http://unesdoc.unesco.org/images/0013/001395/139578e.pdf].

[35] Cited in S.M. Gardiner. "A Core Precautionary Principle." *The Journal of Political Philosophy*, 14(1), 2006, p.36. [Available at: http://www.public.iastate.edu/~jwcwolf/Papers/Gardiner%20on%20Precautionary%20Principle.pdf].

[36] COMEST. *The Precautionary Principle*. Paris: UNESCO, 2005, p.8. [Available at: http://unesdoc.unesco.org/images/0013/001395/139578e.pdf].

[37] Cited in S.M. Gardiner. "A Core Precautionary Principle." *The Journal of Political Philosophy*, 14(1), 2006, p.35. [Available at: http://www.public.iastate.edu/~jwcwolf/Papers/Gardiner%20on%20Precautionary%20Principle.pdf].

[38] COMEST. *The Precautionary Principle*. Paris: UNESCO, 2005, p.41. [Available at: http://unesdoc.unesco.org/images/0013/001395/139578e.pdf].

to avoid negative consequences of their product. Thus, the Precautionary Principle does not necessarily stifle innovation or hamper scientific progress. As COMEST notes,

> While the PP indeed may impose a 'no-go' or a 'go-slow' on certain directions of innovation and scientific progress, the PP at the same time acts as a stimulant for other innovations and clean technological progress. The PP promotes the development of innovative alternatives for potentially risky technologies.[39]

52. What has been stated above indicates that both adaptation and mitigation are linked to precaution, as they are both relevant in minimizing the harm of climate change. Climate change adaptation and mitigation are preemptive measures against threats to human life and the environment that entails systems complexity and unquantifiable scientific uncertainty and thus both adaptation and mitigation fall under the purview of the precautionary principle.

III.9. The Duty to Share Scientific Knowledge

53. COMEST defined the scope of ethical action within the ambit of the capacity of human beings to anticipate the consequences of their actions in accordance with the extent of current knowledge claims[40]. The Precautionary Principle, formulated as an attempt to account for the plausible ethically unacceptable risks that threaten to harm human populations and the environment within the context of the incompleteness and uncertainty of scientific knowledge, is a complementary moral obligation and practical tool.

54. Climate change exposes the most vulnerable populations to higher levels of risk because of the limitations imposed on them by their lack of access to material and reliable information about actual climatic conditions and the consequences entailed by them. They usually rely on established patterns of experiential observations that can be improved by a broader knowledge of scientific information.

55. The dissemination of scientific information among the vulnerable groups, therefore, is a matter of human rights in terms of enhancing not only the material conditions of existence but also of the intellectual and indivisible heritage of humankind. The transfer of scientific knowledge and technology can be made more effective if vulnerable populations who are exposed to similar risks and threats can have access to, share and aggregate their best practices on climate change adaptation and mitigation.

56. As mentioned in the 2015 COMEST Report on the *Ethical Perspective on Science, Technology and Society: A Contribution to the Post-2015 Agenda*[41], lay competence and traditional knowledge should interact with and contribute to scientific knowledge, especially concerning climate change. For example, lay observations on migration or disappearance of species are valuable contribution to scientific research. Memories and practices concerning catastrophic situations (flood, famine, epidemic) are part of local, indigenous knowledge or cultures; therefore they should be mobilized by scientists in co-construct research. This collaboration is also an efficient tool to enhance awareness about the impacts of climate change and human–nature interdependence.

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[39] Ibid, p.16.
[40] COMEST. *The Ethical Implications of the Global Climate Change*. Paris: UNESCO, 2010, p.28-29. [Available at: http://unesdoc.unesco.org/images/0018/001881/188198e.pdf].
[41] COMEST. *Ethical Perspective on Science, Technology and Society: A Contribution to the Post-2015 Agenda*. Paris: UNESCO, 2015.

III.10. Integrity of Scientific Research

57. The 2013 COMEST Report has recognized certain issues considering integrity of scientific research that constitute the backdrop against which ethical problems of climate change must be framed. These include *access to an adequate scientific knowledge base*, *risk assessment* and *the integrity of climate science*[42]. What connects these three themes is the *notion of uncertainty* as reflecting not just the limits of scientific knowledge – though these are real – but also the fundamental characteristics of the socio-ecosystems to which such knowledge applies. Science does not provide certainty, but it does provide the consensus of experts, based on the organized accumulation and scrutiny of evidence[43]. Decisions in the face of uncertainty give rise to specific burdens of responsibility, which are inherently ethical in nature.

III.10.1. Access to an adequate scientific knowledge base

58. In the 2013 Report, COMEST recognized the basic ethical responsibility of stakeholders to establish an adequate scientific knowledge base about the causes of climate change, the different effects it has on different regions, the different adaptation needs it generates in different parts of the world and the possible mitigation actions that could be undertaken. This includes the establishment of the capacity to generate this scientific knowledge, to interpret it, and to share it with those who may require it for adaptation and mitigation, wherever they are, regardless of financial affordability. Building and maintaining the climate change knowledge, including basic science, assessment, monitoring and early warning data, were also defined as the first strategic objective of the *UNESCO Strategy for Action on Climate Change.*[44] Expanding on climate change policies, as defined by UNESCO Climate Change *Initiative,*[45] good access to scientific knowledge can help achieve the following three key objectives in promoting the science – society dialogue: (1) Climate change service and resilience can be improved through regular interactions between providers and users; (2) Interdisciplinary climate change knowledge base can be continuously strengthened through integrating natural and social sciences, culture, education and communication and accessing international, regional and local expertise; (3) Resilience can be improved through regional and national climate risk management policies that integrate scientific, local and indigenous knowledge, and ecological and socio-cultural systems.

III.10.2. Risk assessment

59. Providing risk assessments of climate change is one of the main objectives of climate science. However, as environmental ethicist Dale Jamieson puts it, societies are now facing the dilemma of how to incorporate into their daily decision-making process the assessment of risk

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[42]COMEST. *Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation*. Paris: UNESCO, 2013, p.8.

[43] N. Oreskes and E. Conway. *Merchants of Doubt*. London: Bloomsbury, 2011.

[44] UNESCO. *UNESCO Strategy for Action on Climate Change*. Paris: UNESCO, 2011. [Available at: http://unesdoc.unesco.org/images/0016/001627/162715e.pdf].

[45] UNESCO. *The UNESCO Climate Change Initiative. Four core thematic areas – Science, Education, Ecology, Ethics – brought together to address climate change*. Paris: UNESCO, 2009. [Available at: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/sc_climChange_initiative_EN.pdf].

that science provides. On the one hand, we already live in a "risk society"[46] in which science is no longer seen as a neutral bearer of universal privilege, but as another important institutional player in public decision making, with its own interests and values; on the other hand, this can lead to epistemological nihilism, where the loss of epistemological privilege and authority of science results in denialism of climate change[47]. Fair evaluation of scientific uncertainty is inherent to scientific method and must also be communicated in the key documents that target primarily general public and policy-makers, such as Executive Summaries of the Intergovernmental Panel on Climate Change Reports. However, scientific uncertainty of risk assessments must not be used as a pretext for abandoning climate change adaptation and mitigation policies. It is necessary to identify and overcome the common obstacles that undermine the ability of stakeholders to appropriately respond and adapt to the challenges of climate change, such as the priority given to short-term social consequences, prejudice and bias, cognitive constraints, and the use of inappropriate methods of cost-benefit analysis, financial discounting, and impact assessment.

III.10.3. Integrity of climate science

60. In its 2015 Report concerning science and society,[48] COMEST has recognized that an ethical approach to science is not an external imposition and that the quest for knowledge and understanding incorporates essential ethical values, such as integrity, truth and respect for reasoned argument and evidence. The criteria for what counts as "good science" are, in part, ethical. This intuition is especially important for climate science which has such an important societal impact – only ethical science can have and must have a moral impact on the society.

61. Some of the general principles of scientific and research integrity that apply are: honesty in presenting research goals, methods and results; reliability in performing research and in communication of results; objectivity; impartiality; open communication; fairness in giving due credits to the work of others; education and responsibility for future science generations.[49]

62. Climate science also faces some specific challenges to its claim of integrity - because of its societal importance, climate science and climate scientists are under constant public scrutiny to reveal internal procedures, communications among scientists and the level of consensus in scientific community. The society can expect climate scientists to follow the highest standards of scientific and research integrity, but it also has a duty to protect the integrity of climate scientists when they are criticized for economic, ideological or other non-scientific reasons.

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[46] U. Beck. *Risk Society: Toward a New Modernity*.London: SAGE Publication, 1992.

[47] D. Jamieson.*Reason in a Dark Time: Why the Struggle Against Climate Change Failed -- and What It Means for Our Future*.New York: Oxford University Press, 2014.

[48] COMEST. *Ethical Perspective on Science, Technology and Society: A Contribution to the Post-2015 Agenda*. Paris: UNESCO, 2015.

[49] UNESCO. *The Recommendation on the Status of Scientific Researchers*. Paris: UNESCO, 1974. [Available at: http://portal.unesco.org/en/ev.php-URL_ID=13131&URL_DO=DO_TOPIC&URL_SECTION=201.html].European Science Foundation and All European Academies (ALLEA).*The European Code of Conduct for Research Integrity*.Strasbourg: Ireg, 2011. [Available at: http://www.esf.org/fileadmin/Public_documents/Publications/Code_Conduct_ResearchIntegrity.pdf].

IV. CONSIDERATION OF THE DESIRABILITY OF PREPARING A DECLARATION ON ETHICAL PRINCIPLES IN RELATION TO CLIMATE CHANGE

63. The present report builds upon and reinforces the conclusions made by COMEST in its previous work, namely that global climate change poses unprecedented scientific, social and human challenges with ethical dimensions which necessitate adoption of policies at the global level to address the pressing needs of the most vulnerable groups of population in the world and the increasing fragility of the ecosystems.

64. Over recent years, COMEST has been working on three different reports concerning climate change (*The Ethical Implications of the Global Climate Change* (2010); *Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation*(2013); and the present report *Ethical Principles for Climate Change. Adaptation and Mitigation* (2015)) to identify a set of ethical principles to be used in addressing the ethical dimensions of global climate change from already existing relevant international conventions and literature and also its own expertise.

65. These general and specific ethical principles related to climate change adaptation and mitigation constitute a solid framework for normative and educational actions at different levels. Globally, it could also be an inspirational basis for a potential process to elaborate a Declaration of ethical principles and responsibilities in relation to global climate change, if so desired by the Member States of UNESCO.

66. In order to ensure the follow-up to the work related to a comprehensive framework of ethical principles in relation to climate change, COMEST may be inspired by the example of the UNESCO Bioethics Core Curriculum, prepared by an *ad-hoc* committee composed of both members of COMEST and the International Bioethics Committee (IBC). This core curriculum elaborated key concepts of bioethics derived from the principles enshrined in the *Universal Declaration on Bioethics and Human Rights* (2005), and developed them as chapters for teaching purposes. Thus, one possible way forward, within the framework of its future work, is for COMEST to develop a similar core curriculum based on the ethical principles identified in its reports on climate change adaptation and mitigation. Such a document could be a useful educational tool and inspire guidelines and informed policies at both the national and international levels.

V. CONCLUSIONS

67. COMEST reiterates the validity of its 2012 *Statement on Issues Relevant to Consideration of the Desirability of Preparing a Declaration of Ethical Principles in Relation to Climate Change*[50]. Relevant universal ethical principles would provide invaluable support to climate change responses at various levels and in particular to design appropriate and equitable adaptation and mitigation policies.

68. In this report, COMEST identified the following principles that provide the ethical basis on which responsibilities in respect of climate change adaptation and mitigation may be established: biological diversity, cultural diversity, interdependence of life on Earth, intellectual and moral solidarity of humankind, global justice, do no harm, resilience, sustainability, frugality, precautionary principle, the duty to share scientific knowledge, and integrity of scientific research. These principles are meant to address the complex issues of climate change that affect individual and collective persons who must come to terms with their natural and social environments.

69. The complexity of the reality of climate change requires equally complex responses that entail the cooperation of stakeholders across the various levels and sectors of the global community. Taking into account the economic and political forms of living together, we must necessarily address also the cultural and lifestyle practices that affect the way human beings deal with the environment and their fellow human beings during the course of their everyday life. Such practices are ethical in nature since they involve ways of understanding and transforming the natural world and the manner in which human beings relate to one another.

70. Such ethical imperatives will ultimately affect and challenge prevailing political and economic systems since the trajectory of contemporary economic and political practices are leading the global community towards unacceptable consequences. Re-visioning current worldviews and questioning deeply entrenched perspectives that will allow for the emergence of a more considerate and caring human community that responds to the vulnerabilities of nature and their fellow human beings will have to be articulated and inculcated. The principles enumerated above seek to contribute to the development of this noble purpose.

[50] Available at: http://unesdoc.unesco.org/images/0021/002188/218834E.pdf.

ANNEX

History of the process of the work of COMEST on climate change

2003

1. Mindful of the importance of science and technology for avoiding environmental damage, UNESCO's World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), as from its Third Ordinary Session, held in Rio de Janeiro (Brazil), in 2003, has focused on the issues of environmental ethics, with a special reference to the complex phenomenon of climate change.

2009

2. Taking into account that the various effects of global climate change raise many ethical questions, COMEST has developed reflection about the moral basis of our responses to climate change, both on the policy level, as well as in the domain of action. This work led to the adoption, at its Sixth Ordinary Session held in Kuala Lumpur, Malaysia, from 16 to 19 June 2009, of the Report on "The Ethical Implications of Global Climate Change", with a view "to make ethics a core and necessary element of any debate about climate change and its challenges". The report concluded that it was urgent to determine universal ethical principles to guide responses to climate change challenges and recommended that UNESCO should develop an ethical framework of principles in relation to climate change.

3. The 2009 report and recommendation of COMEST were among the factors that led the 35th session of the General Conference of UNESCO, in October 2009, to adopt a resolution (35C/Resolution 36) which initiated the consideration of the desirability of preparing a draft declaration of ethical principles in relation to climate change, based on consultations with Member States and other stakeholders, alongside with further examination of the matter by COMEST.

2010

4. In 2010, the Report of COMEST on "The Ethical Implications of Global Climate Change" was published as a book.

5. The Executive Board, at its 185th session in 2010, adopted 185 EX/Decision 13 in which it requested the Director-General to undertake a further study in this area, taking account of the views expressed in document 185 EX/13, namely: (1) the contribution of environmental ethics could be best ensured by means other than a declaration of ethical principles in relation to climate change; (2) it was unclear whether an agreed basis of relevant principles was available or capable of being developed in a reasonably short time-frame; and (3) there was no consensus among Member States that preparation of such a declaration would make a useful contribution to international response to climate change.

2011

6. Building on its 2010 Report on “The Ethical Implications of Global Climate Change” and in line with 185 EX/Decision 13, COMEST has continued its own substantive work on ethical principles of climate change in consultation with expert communities. In 2011, COMEST adopted, at its 7th Ordinary Session (Doha, Qatar, 9-12 October 2011), “A Framework of Ethical Principles and Responsibilities for Climate Change Adaptation” that identified five specific principles to guide climate change adaptation: (1) avoiding harm, (2) fairness, (3) equitable access, (4) the intellectual and moral solidarity of humankind, and 5) environmental sustainability.

7. At the 186th session in May 2011, the Executive Board of UNESCO reaffirmed its view that “the outcome of UNFCCC COP 16 and related international processes have not yet resulted in clear and sufficient information to proceed with the preparation of a declaration of ethical principles in relation to climate change” (186 EX/Decision 9), a view subsequently noted and endorsed by the General Conference at its 36th session in November 2011 (36 C/Resolution 36), which considered that “it would not be appropriate at the present time to proceed with the drafting of a declaration of ethical principles in relation to climate change”.

2012

8. In 2012, COMEST at its Extraordinary Session held at UNESCO Headquarters adopted the “Statement on Issues Relevant to Consideration of the Desirability of Preparing a Declaration of Ethical Principles in Relation to Climate Change”, which expressed the view that, by developing universal ethical principles in relation to climate change, UNESCO would, if it saw fit, complement other efforts under way within the United Nations system and provide invaluable support to climate change responses at various levels, and in particular to the design of appropriate equitable adaptation policies.

9. According to 190 EX/Decision 10, adopted by the Executive Board in October 2012, the desirability of preparing a declaration of ethical principles in relation to climate change should be further considered at the 38th session of the General Conference on the basis of: “(i) the technical work of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), (ii) the outcome of negotiation processes under the United Nations Framework Convention on Climate Change (UNFCCC), and (iii) prior discussion by the Executive Board to be scheduled in 2014”.

2013

10. Responding to 190 EX/Decision 10, at its 8th Ordinary Session (Bratislava, Republic of Slovakia, 30-31 May 2013), COMEST finalized and adopted its report on “Background for a Framework of Ethical Principles and Responsibilities for Climate Change Adaptation”, which provides a detailed justification of its 2011 ethical framework for climate adaptation and which is available on-line. Furthermore, COMEST adopted an action plan for the preparation of its comprehensive report on a framework of ethical principles for climate change which should be ready by June 2015 prior to the 9th Ordinary Session of COMEST scheduled in 2015.

2014

11. In conformity with its action plan, adopted in 2013 and revised in 2014, COMEST prepared a consolidated draft of its report on “Ethical Principles for Climate Change: Adaptation and Mitigation” which was discussed at a private meeting during the COMEST Extraordinary Session, held in Quebec, Canada, on 1-2 October 2014.

12. The Executive Board considered the issue of desirability of preparing a declaration on ethical principles in relation to climate change at its 195th session in 2014 and noted the progress made by COMEST in its work on a framework of ethical principles related to climate change (195 EX/5 Part I(C)). A summary of the work of COMEST on this matter was published on UNESCO’s website on the occasion of the United Nations Climate Change Conference 2014 (COP20), held in Lima (Peru) on 1-12 December 2014.

2015

13. By 15 June 2015, the final Draft of the Report of COMEST on the “Ethical Principles for Climate Change: Adaptation and Mitigation” has been prepared for discussion, finalization and possible adoption at the 9th Ordinary Session of COMEST (UNESCO Headquarters, Paris, France, 28 September – 2 October 2015). The document was presented at the public joint meeting of the 9th Ordinary Session of COMEST and the 22nd Session of the International Bioethics Committee (IBC) in Paris on 30 September 2015 and was adopted by COMEST on 1 October 2015. It was then transmitted to the Director-General of UNESCO.