**Human Rights Council Advisory Committee**

**Questionnaire on the impact of new technologies for climate protection on the enjoyment of human rights [[1]](#footnote-1)**

**Core questions (for all stakeholders)**

1. Which new technologies for climate protection (NTCP) are of particular importance when it comes to impact on human rights? List three most relevant and explain your choice.

Stratospheric Aerosol Injection (SAI). SAI has the potential to dramatically reduce the effects of climate change with a relatively rapid, global, affordable, and far-reaching deployment. It is one of the technologies with the highest degree of certainty of effectiveness to limit global temperature increase. Therefore, it poses as one of the most feasible solutions to ensure environmental human rights, especially for the most vulnerable communities.

Marine Cloud Brightening (MCB). MCB is another technology for Solar Radiation Management (SRM) which has the potential to control incoming solar radiation, by increasing the albedo effect in some clouds in the ocean. The benefits of MCB over other NTCP is that the particulates linger in the atmosphere for a shorter time (weeks). There is growing evidence, primarily from climate models, that MCB would cause relatively small effects due to the particles lingering less time in the stratocumulus clouds than other NTCP: this would minimize adverse unprecedented risks for human rights, while having a considerable potential to reduce climate-induced risks.

Cirrus Cloud Thinning (CCT). CCT aims to eliminate or thin cirrus clouds, to allow for reflected radiation to return to space. CCT is the least studied technology of the three yet poses as a potential technological solution to allow for more heat to escape to space. CCT, as the other NTCP mentioned, has the potential to mitigate some of the most pressing effects related to temperature rise, which would impact positively on population regarding the human right to live in a safe environment.

1. What kind of NTCP may contribute to human rights promotion and protection? Please, explain how.

Those NTCP that have the highest potential to deliver equitable risk reduction against climate change are the most suitable to promote human rights. As a representative of one of the most climate vulnerable countries in the world, adaptation and mitigation actions generally create inequalities, and are not implemented at a scale that is suitable for the wellbeing of the most vulnerable populations. Conversely, SAI and MCB have the potential to deliver rapid temperature rise reduction globally, with lower expected adverse effects than Business-As-Usual (BAU) scenarios from elevated temperature rise projections, even though more research is needed. This pertains to the human right to a clean, healthy, and sustainable environment, under resolution HRC/RES/48/13. Furthermore, this pertains to the historic resolution A/HRC/RES/45/30, where States must take all measures to protect children’s rights from environmental harm.

1. What are the key human rights challenges and risks arising from NTCP and from which in particular? Do NTCP create unique and unprecedented challenges or risks, or are there earlier precedents that help us understand the issue area?

There is a potential risk of regional side effects from solar radiation management technology deployment that could potentially affect some substantive human rights that could emanate from water access (from decreased precipitation), such as potential effects as droughts or induced loss on biodiversity (low certainty), slowing the recovery from stratospheric ozone depletion (MCB), or other unidentified side effects. However, more research is required to better understand the possible regional effects and implications of solar climate intervention technologies. An earlier precedent to better understand the issue area is the Montreal Protocol, as it provides an important outlook for effective governance and international coordination for implementation.

What specific human rights may be affected by the use of NTCP? Please, explain how. Who are the rights-holders that potentially would be the most affected by the use of NTCP? Are they also the most affected by climate change? How could they and the society at large be engaged in the decision-making process?

The same human rights that originally aimed at being strengthened could be affected by unintended or regional side effects of SAI or MCB implementation. The human right to a clean, healthy, and sustainable environment, and its counterpart on children, could be violated by potential alterations to climatological patterns that could stem from the implementation of these technologies. Those populations most vulnerable to climate change, particularly children, women, and Indigenous groups, could potentially be the most affected using NTCP. These populations must be facilitated to science-based capacity building and sensitization programs to raise awareness and attend misconceptions, as well as being facilitated in decision making spaces to voice their concerns and proposals. Scientists and vulnerable groups must be facilitated dialogue spaces, to address misinformation or the “broken-telephone” gap. Both groups must be included in decision-making spaces.

1. Is the existing international and your national human rights framework adequate to safeguarding human rights of those affected by the use of NTCP? Why or why not? If not, what principles may be identified in order to address the gaps? List them according to priority.

Until a certain extent. Despite that SAI and MCB do not have their own specific framework for implementation, the current human rights framework covers an adequate portion of potential risks to safeguard human rights. As youth organizations, we established dialogues to determine a set of guiding principles to promote research and advocacy prior to implementation of climate intervention, or SRM. These are: mitigating impacts, equity, urgency, diversity, constructive dialogue, and mutual respect/acceptance; ordered according to priority while filling the gaps with current human rights frameworks. These priorities were systematized by a team of young climate leaders, including two (myself and another) global south referential climate policy leaders, emanating from inputs recollected from the Safe Climate Youth Summit 2021. A more thorough roadmap from a youth perspective for inclusive research and dialogue is found here:

[https://static1.squarespace.com/static/5bbac81c7788975063632c65/t/61856e74167c7323ffb218bc/1636134517318/YCA+Final.pdf](https://static1.squarespace.com/static/5bbac81c7788975063632c65/t/61856e74167c7323ffb218bc/1636134517318/YCA%2BFinal.pdf)

1. Given that NTCP may present potential risks for the enjoyment of human rights, to what extent do human rights legal obligations require the States to pursue other climate protection policies presenting less risks of harm, including mitigation and adaptation measures?

First, extensive research is required to better identify the “risks for the enjoyment of human rights” that could come from the implementation of NTCP. As youth organizations, we are clear that the effects of inaction to address climate change, including the current mitigation gap (as established by UNDP in 2017) will be much greater than potential side effects of some NTCP, especially from preliminary modeling results from SAI and MCB. It is important to acknowledge that there is clear indication and evidence that mitigation and adaptation advances will not maintain the planet at 1.5°C of temperature rise, to the detriment of the most vulnerable population groups and countries. Therefore, before deciding to discard a potential NTCP due to human risks, the NTCP must be thoroughly modeled, researched, and discussed, with appropriate governance structures put in place that emulate the most successful environmental governance models that we currently see today, such as the Montreal Protocol.

1. As opposed to focusing on selected few technologies, do you think a holistic and inclusive approach will help reduce any gaps in the existing system for addressing human rights challenges from NTCP?

Not necessarily. It is important to give each technology careful discussion and research to address their differences in implementation; being too broad can and has been counterproductive when it comes to positioning climate actions. One key example is carbon capture and sequestration (CCS), which is commonly categorized as a form of geoengineering. Its reiterated appearance in policy discussions, such as on the IPCC Assessment Reports, has cemented its position as a “climate solution” in most scenarios, while other select few technologies with a similar degree of uncertainty have been traditionally left out of the policy debate. This exacerbates uncertainties, limits informed and honest discussions, and does not help to reduce any gaps to address human rights challenges. NTCP must be considered in scenario-building processes for climate and risk mitigation, and for that, it is essential to consider these technologies separately based on their own implications and characteristics. However, it is equally important not to get lost in sight of what these technologies are in comparison to what is being implemented presently (for example, cloud seeding).

1. What should be the responsibilities of key stakeholders (UN agencies, states, NHRIs, civil society, technical community and academia, private sector) in mitigating the risks of NTCP to human rights and/or fostering its protection?

The first step is to foster research and debate of NTCP. Key stakeholders must fund and engage in research to better understand the potential trade-offs and vulnerabilities of NTCP and must establish pathways for escalating the discussion to scientific and technical bodies. Without extensive research, it is difficult to identify potential risks that could affect human rights. Furthermore, due to the urgency and scale of climate change, it is important that key stakeholders advance in the research outside of the technological realm; including analysis on international policy, ethics, communication, political implementation, and other essential sectors that could enable a swift deployment if required.

**Specific questions for civil society organizations**

1. Please describe the relevant work that your organization has done on the issue of NTCP and human rights. What are the key accomplishments? What challenges has your organization faced?

Sustenta Honduras has focused on the promotion of children and environmental human rights, including the Escazu Agreement and the Declaration for Children, Youth and Climate Action. Sustenta Honduras is increasingly creating awareness and sensitizing to the public, especially youth, about NTCP such as SAI and MCB, and their potential role to mitigate risks against climate change. A key accomplishment was to contribute, as part of the steering committee, to the first global positioning paper as youth organizations on climate intervention - the Youth Call to Action on Climate Intervention. This was a product of the Safe Climate Youth Summit 2021, which was held with other esteemed youth-led organizations on climate change. Further constructive dialogue on NTCP was accomplished at parallel events at COP 26, including in the Global Peace Climate Summit and at the University of Strathclyde. The principal challenges we have faced with some of these developments is resistance to research - particularly from non-global south communities, namely European. This is based upon the misinformed and presumptive conclusions that these technologies could only ever lead to negative effects, are a distraction from mitigation strategies, and that research is equal to deployment. It also comes from a lack of awareness of what climate intervention research is - it is practically impossible to separate it from atmospheric research more generally and is an area of science where there are critical unknowns, regardless of if the goal is to research the atmosphere or climate intervention. As we know, climate interventions are not researched enough so we cannot hypothesize the effects and how these would be in comparison to what we know would be the effects of climate change: The principal logic is that they would be used in compliment to mitigation since we are not mitigating at a necessary scale, and research does not equal deployment to a large scale. Often, those people holding these misconceptions are staunch in their stance. Such dynamics - the misconceptions in combination with entrenched viewpoints - have made it difficult to have constructive dialogues on the issue. Therefore, we would like to continue with establishing spaces and opportunities to foster more constructive and open dialogues on the issue.

1. Should your organization be involved in the use of the NTCP (for instance, in a monitoring role) how would it contribute to the assessment of human rights impacts and ensuring its protection?

On the spaces where we have addressed the use of NTCP as an organization, our role has been exclusively limited to promote research and dialogue on the matter. We are convinced that strengthening interdisciplinary and transversal research will allow for a clearer understanding of potential human rights impacts that could come from unintended side effects, as well as a clearer perspective of the potential trade-offs between current projections of climate pledges and the potential implementation of NTCP. We believe that youth organizations, particularly those from the most climate-vulnerable areas of the world like ourselves, should be included in every step of research and policy dialogues on the matter.

1. What will be the impact of NTCP on the enjoyment of human rights in the field that your organization covers? What are the main human rights challenges that these technologies pose? Is the international human rights framework well equipped to address them? What are the policy gaps in national policies? What actions at national and international level would be required in order to effectively address these challenges?

Currently, most projected impacts of NTCP such as SAI and MCB in the field of children and environmental rights are positive. NTCP have the potential to fortify the human right to a clean, healthy, and sustainable environment, as established under the resolution of HRC/RES/48/13. Moreover, the potential of a rapid and successful deployment of technologies such as SAI and MCB to mitigate the most pressing effects of climate change on a massive scale would fortify the right that every child must grow up in a safe environment, to lead a healthy life and develop positive prospects.

Some of the human rights challenges posed by NTCP are related to potential regional side effects from implementation, including changes in patterns of temperatures or rainfall which could induce droughts or other adverse effects that could affect the livelihoods of certain communities. However, more research is needed to better understand the possible effects or trade-offs of climate intervention technologies. The international human rights framework lacks some aspects to ensure safeguarding under the context of SAI or MCB, for example, ensuring the mitigation of risks at research before deployment.

1. How should the rights to access information, to participate in environmental decision-making and to access to remedy be applied in the context of NTCP-related research, experimentation, development and deployment?

There must be open access for information from all stages of research, as well as mechanisms to make this information easily available and easy to reach for the public. Decision-making processes should be made on an informed basis and must particularly include the representation of historically vulnerable population groups such as youth, women, and Indigenous groups. Relevant stakeholders must also ensure that there are capacity building programs to better inform of the technology, its implications, and its potential trade-offs from a scientific perspective.

1. How do you evaluate citizens’ awareness of the potential impact of NTCP on human rights? Does your organization have a roadmap to enhance public awareness of the issue?

There is significant misinformation and information gaps regarding the citizens’ awareness of potential NTCP impacts on human rights. Yes, our organization, in support with other global youth organizations, are working on enhancing public awareness of the issue, and have partnered with more experienced organizations for guidance and internal capacity building. The task, however, is monumental, and the support of key stakeholders such as UN agencies, NHRIs and the private sector, particularly, is required to reach broader audiences.

1. What are the means to ensure meaningful public participation in the debate and decision-making process over the use and potential risks of NTCP, particularly of those most vulnerable or affected?

From our organization’s standpoint, it is primordial to establish guiding principles, and to promote education & awareness, research, youth cooperation & inclusion, youth agency & empowerment, and youth advocacy. This comes from the “Youth Call to Action on Climate Intervention,” emanating from the Safe Climate Youth Summit 2021, which has the purpose to present a youth position on the subject with a goal of advocating for research and dialogue on climate intervention. Its objective is to provide a blueprint for inclusive climate change policy making, therefore helping to achieve greater intergenerational justice for young people within the climate change policy decision making process. As youth, one of the most vulnerable and affected population groups, we established several demands within each of the six categories which enable a more meaningful public participation; these are accessible through the following link:

[https://static1.squarespace.com/static/5bbac81c7788975063632c65/t/61856e74167c7323ffb218bc/1636134517318/YCA+Final.pdf](https://static1.squarespace.com/static/5bbac81c7788975063632c65/t/61856e74167c7323ffb218bc/1636134517318/YCA%2BFinal.pdf)

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1. The term *new technologies for climate protection* for the purpose of this questionnaire broadly refers to techniques of deliberate intervention in the Earth’s natural system in order to prevent further climate change or reverse it. The two main kinds are (1) Solar Radiation Management SRM (i.e. stratospheric aerosols) and (2) Carbon Dioxide Removal CDR. CDR solutions can be nature-based (forestation, soil carbon sequestration, biochar, etc.) or technological (enhanced weathering, bioenergy with carbon capture and storage, direct air capture and storage, etc.). [↑](#footnote-ref-1)