

## Policy Relevant Information with Respect to Climate Change

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### 1. Introduction

This paper is identifying policy relevant information with respect to climate change building on the consideration of the Global Stock take under the Paris Agreement (1) and the research article “Addressing. The Risks of Climate Change” (2). The identification of that information might help to inform the identification of research topics and topics that might be worth to be assessed by bodies such as the Intergovernmental Panel on Climate Change (IPCC) in order to inform discussions at the policy level.

### 2. Materials and Method

The World Resource Institute (WRI) summarized the Paris Agreement’s Global Stocktake which is a two-year process that assesses the global response to the climate crisis. The research article (2) identified that mitigation and adaptation alone might not be enough to avoid dangerous interference with the climate system given the ongoing increase in global GHG emissions and suggested that all approaches to limit climate change risks, including carbon dioxide removal at scale, and radiative forcing modification (SRM) including stratospheric aerosol injection (SAI) might be required to manage climate change risks, provided a governance framework that is fit for purpose is available. Thus, this paper identifies information that might be relevant in addition to the information that will be considered under the Paris Agreement’s Global Stocktake:

- slash greenhouse gas emissions enough to limit global temperature rise to well below 2 degrees C and ideally 1.5 degrees C;
- build resilience to climate impacts; and
- align financial support with the scale and scope needed to tackle the climate crisis.

### Key Questions

This information should help to answer the following key questions:

- Where are we?
- Where do we want to go?
- And critically important, how do we get there?

### 3. Results

(a) On mitigation, the Global Stocktake under the Paris Agreement will assess what effect countries’ NDCs will have on global temperature.

(b) In addition, it seems to be important by when net zero GHG emissions will be achieved on a global level and what amount of carbon dioxide will have to be removed from the atmosphere in order to allow stabilization of the temperature at a safe level.

(c) In addition, it also seems important to provide information on the current scale of carbon dioxide removal (CDR) combined with long-term storage as well as information on the current costs of CDR.

(d) In addition, it seems also important to share the recent information about the options and risks linked to RFM and in particular SAI including precautionary approaches that have been suggested before implementation;

NOTE: For the first time, the quadrennial U.N.-backed Montreal Protocol assessment report included an entire chapter addressing stratospheric aerosol injection, more colloquially called solar geo-engineering (3).

(e) On adaptation, the Global Stocktake under the Paris Agreement will assess progress toward enhancing countries’ collective capacity to address climate impacts, strengthen resilience and reduce vulnerability to climate change.

(f) In addition, it seems important to identify the risks of crossing tipping points, e.g. in relation to melting of the Greenland and Antarctic ice sheets, Permafrost, Ocean circulation and temperature (AMOC), Monsoons, rainforests (in particular in the Amazonas).

NOTE: Most recent research results with respect to the warming of the ocean has been published in January 2023 (4).

(g) On means of implementation, including finance, technology and capacity-building, the Global Stocktake under the Paris Agreement will assess progress toward making financial flows consistent

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with the cutting of GHG emissions and ensuring climate-resilient development.

(h) In addition, it seems important to have information on losses and damage at the global level attributable to climate change.

(i) In addition, it seems important to identify the options how to enhance the speed of mitigation, of adaptation, of deployment of CDR combined with long-term storage and of closing the research gaps with respect to RFM and SAI.

NOTE: The principle of extended producer responsibility (EPR) to fossil fuels has been suggested as policy option which could deconflict energy security and climate policy at an affordable cost by stopping fossil fuels from causing further global warming. (5)

(j) The stock take should also identify gaps, their consequences, the reasons for those gaps and options how to close those, in particular with respect to CDR and SRM.

NOTE 1: The gaps to be assessed might relate to issues (or combination of issues) such as Adaptation, Carbon dioxide removal, Governance, Loss & damage, Mitigation, Monitoring, Radiative forcing management, Reporting, Research, Stratospheric aerosol injection, Tipping points, verification.

NOTE 2: The options how to close those gaps might require a request from the policy level in order to avoid becoming too policy prescriptive – what might be counter-productive.

(k) Last but not least the stock take should also consider how the IPCC might contribute to the Global Stocktake in the future, e.g. by providing up-to-date information on the above topics that has undergone the well-designed review process of the IPCC.

NOTE: Given that the Global Stocktake under the Paris Agreement will happen every 5 years, starting in 2025, the IPCC could support it with two Special Reports, one on the information described above and another on the policy options based upon a mandate from the policy level.

#### 4. Conclusions

This paper makes suggestions to broaden the scope of the information to be considered under the Global Stock take and how the IPCC might contribute to it. Those suggestions have the goal to speed up the actions which need to be decided at the policy level. More speedy action is required given the very limited time available to avoid dangerous interference with the climate system. Delayed action has the high risk that more people would have to suffer from the impacts of climate change.

It is likely that the process of the Global Stock Take as currently planned would come to a similar comprehensive scope – but only in about 10 years, given that such stock take will only happen each 5 years.

This article thus might help to react significantly faster. It should be seen as an invitation to countries under the Paris Agreement to work together more effectively for a better future.

#### References

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