Climate Change

28 March, 2021

# Introduction

## What is Climate Change?

Before diving into the discussion about the existing actors and pathways for addressing climate change, we will briefly go through some key terms and concepts that will frame the way you understand the timeline of events.

First off, what is climate change and more specifically what does “anthropogenic” mean?

* Anthropogenic cc: development + fossil fuels = emissions, warming etc. (50 words)
  + Legacies of colonialism and racial injustice (35 words)
  + Example(s): extraction from X country to be used in Y country to accumulate wealth/develop
* Climate Justice
  + Example: Lowest emitting nations feeling the most violent impacts (former colonies)

When talking about climate change, two main dimensions come up in this conversation: mitigation and adaptation. These two dimensions are usually talked about in terms of solutions or responses to their associated issues. To familiarize ourselves with these concepts, we will look into their definitions and illustrate a few examples.

UNFCCC defines climate change mitigation as “the human intervention to reduce the sources or enhances the sinks of greenhouse gases.”[[1]](#footnote-20) Some these interventions include national-level policies to reduce GHG emissions by regulating various sectors, such as industry or transportation. Another mitigation intervention would be individuals reducing their consumption of fossil fuels or GHG-emitting activities. Lastly, increasing the capacity of carbon sinks that absorb CO2 from the atmosphere through planting trees or implementing other technologies that capture and store Carbon is an example of climate change mitigation.

Climate change adaptation, on the other hand, is defined as the responses to either real or expected climate change-related events that reduce the harms from these effects or produces potential opportunities.[[2]](#footnote-22) Some example of climate change adaptive responses are national adaptation plans (NAP), projects that protect communities from sea-level rises, and agricultural policies that respond to persistent droughts.

* What is loss damage (max 20 words)
  + Real-world example (max 30 w) Finally, the increasing climate-related events have caused much harm to many communities around the world. These impacts brought on a global conversation on issues of loss and damage due to climate-related events.[[3]](#footnote-23) **[MISSING EXAMPLES OF LOSS AND DAMAGE]**

In order to fully get the picture of how these concepts and terminologies came about in the conversation on global development and climate change, it is important the history of actors and frameworks that shaped the ideas and translated **(?; didn’t want it to sound too academese)** these concepts into the indicators that we will later talk about more in-depth.

* How do these all relate to development? (25 words)
* Transition sentence to timeline history section (25 words)

# History

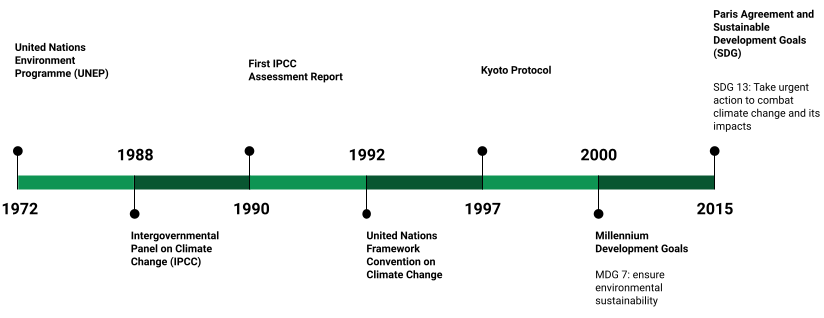


Figure 13.: major actors and frameworks in climate change and development

# Data Landscape

## GHG Emissions

## Climate Finance

## Climate change vulnerabilities

Climate change vulnerabilities with respect to physical, human, and socio-economic systems vary widely across sectors and geographies. Measuring these vulnerabilities is usually complicated because of these context-specific differences. For example, measuring the impact of climate change on sea-level rise is not the same as measuring impacts on soil degradation. They each require different indicators, but ultimately they measure the same concept, i.e. climate vulnerability.

UNFCCC defines vulnerability as “the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity.”[[4]](#footnote-30) As you can tell, this definition is pretty loaded, and it even includes concepts that need further explanation than just defining vulnerability alone. For the purpose of this chapter, we will explore metrics that measure the consequences of these vulnerabilities in the face of climate-related disasters.

Therefore, when it comes to SDGs, target 13.1 on “strengthening resilience and adaptive capacity to climate hazards and natural disasters” highlights the dangers of structural vulnerabilities to these events, and the need to strengthen communities as a response to them. One of the associated indicators uses direct human losses to climate-related events as the main metric to measure community vulnerabilities, specifically the “number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population.”[[5]](#footnote-31)

The United Nations Office for Disaster Reduction (UNDRR) is responsible for collecting the data on indicator 13.1.1, and counts impacts of climate-related events on human systems based on three criteria: deaths, missing, or directly affected. Deaths are straightforward in that a person dies during or after experiencing a climate-related event such as flooding, extreme heat/cold exposure, or any other climatic disaster. The ‘missing’ criteria, on the other, measures the number of people “whose whereabouts is unknown since the hazardous event.” Finally, the ‘directly affected’ criteria counts the number of people that have experienced at least one of the following conditions since a hazardous event:

* “Injury, illness, or other health effects”
* Evacuation, displacement, or relocation
* Any “direct damage to their livelihoods, economic, physical, social, cultural, and environmental assets”[[6]](#footnote-33)

The three criteria attributed to indicator 13.1.1 is also part of the Sendai Framework for Disaster Risk Reduction 2015-2030, specifically Targets A and B which aim to “substantially reduce global disaster mortality,” and “the number of people affected globally by 2030,” respectively.[[7]](#footnote-34) These specific indicators were produced by an expert working group and endorsed by United Nations General Assembly (UNGA) in 2017.[[8]](#footnote-36) The Sendai Framework defines a disaster as “a serious disruption of the functioning of a community or a society involving widespread human, material, economic, or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.”[[9]](#footnote-38)

The main compilers of global disaster mortality data is the Center for Research on the Epidemiology of Disasters (CRED), which maintains the Emergency Events Database (EM-DAT) covering more than “22,000 mass disasters around the world from 1900 to present day.”[[10]](#footnote-40)[[11]](#footnote-42) The database also disaggregates the data by types of hazard, number of deaths, number of missing people, number of injured people, and a total monetary value of total impact of the disaster. EM-DAT collects this data from many sources such as international organizations, national governments, and even the press.[[12]](#footnote-44)

It is worth noting, however, in order to record an entry into the database the impact of the disaster needs to "meet at least one of the following conditions:

* **Death**: 10 or more people deaths
* **Affected**: 100 or more people affected/injured/homeless
* **Declaration/international appeal**: Declaration by the country of a state of emergency and/or an appeal for international assistance."[[13]](#footnote-46)

# Politics of Numbers

## GHG Emissions

## Climate Finance

## Climate change vulnerabilities

The politics of counting human impacts from climate-related events can be quite contentious. One of the main issues of counting impacts is that it does not disaggregate dead, missing, or injured people by sex, age, disability, or income. This type of disaggregation allows to paint a clearer picture of the intensity of the impact. For example, the economic impact of the death of a person who is the prime income earner of a household might be felt differently from one household to another.

Another drawback of SDG’s 13.1.1 indicator is that it only focuses on those that are *directly* affected by the climate-related events. It does not take into account indirect losses due to environmental disasters such as business interruptions, lost time at school, or foregone income, which do impact communities in the long-run.

Finally, the indicator only focuses on “small-scale sudden-onset disasters” and does not take into account disasters that are long in duration such as persistent droughts or epidemics.[[14]](#footnote-51) For example, the Global Burden of Disease Study found that almost two million people died from “non-optimal temperature,” an increase of approximately 500,000 people since 1990.[[15]](#footnote-53) These slow-onset trends are not represented in indicator 13.1.1 which is a missed opportunity to address climate change impacts that affect more livelihoods than we are willing to count.

The main argument for not counting slow-onset climate impacts has to do with attribution.

# Conclusion

# Endnotes

# Bibliography

CRED. “About EM-DAT.” Centre for Research on the Epidemiology of Disasters, March 2021. <https://www.emdat.be/about>.

———. “EM-DAT Guidelines: Data Entry, Field Description/Definition,” March 2021. <https://public.emdat.be/about>.

Disease, Global Burden of. “Global Deaths by Non-Optimal Temperatures (1990-2019).” Global Health Data Exchange, 2021. <http://ghdx.healthdata.org/gbd-results-tool?params=gbd-api-2019-permalink/66c8de5e1901291e28943e67c681e17c>.

UNDRR. “Disaster Data & Statistics,” 2021. <https://www.preventionweb.net/knowledgebase/disaster-statistics>.

———. “Indicator 13.1.1: Number of Deaths, Missing Persons and Directly Affected Persons Attributed to Disasters Per 100,000 Population.” Metadata. United Nations Office for Disaster Reduction, March 2018. <https://unstats.un.org/sdgs/metadata/files/Metadata-13-01-01.pdf>.

———. “Sendai Framework for Disaster Risk Reduction 2015-2030.” United Nations, 2015. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>.

———. “Technical Guidance for Monitoring and Reporting on Progress in Achieving the Global Targets of the Sendai Framework for Disaster Risk Reduction (New Edition).” Technical Report. United Nations Office for Disaster Reduction, 2017. <https://www.undrr.org/publication/technical-guidance-monitoring-and-reporting-progress-achieving-global-targets-sendai>.

UNFCCC. “Glossary of Climate Change Acronyms and Terms,” 2021. <https://unfccc.int/process-and-meetings/the-convention/glossary-of-climate-change-acronyms-and-terms>.

———. “Report of the Conference of the Parties on Its Nineteenth Session.” Report. Warsaw: United Nations General Assembly, November 2013. <https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-i.pdf>.

UNGA. “Report of the Open-Ended Intergovernmental Expert Working Group on Indicators and Terminology Relating to Disaster Risk Reduction.” Report. United Nations General Assembly, December 2016. <https://www.preventionweb.net/publications/view/51748>.

UNISDR. “2009 UNISDR Terminology on Disaster Risk Reduction.” United Nations, 2009. <https://www.undrr.org/publication/2009-unisdr-terminology-disaster-risk-reduction>.

1. UNFCCC, “Glossary of Climate Change Acronyms and Terms,” 2021, <https://unfccc.int/process-and-meetings/the-convention/glossary-of-climate-change-acronyms-and-terms>. [↑](#footnote-ref-20)
2. Ibid. [↑](#footnote-ref-22)
3. UNFCCC, “Report of the Conference of the Parties on Its Nineteenth Session,” Report (Warsaw: United Nations General Assembly, November 2013), <https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-i.pdf>. [↑](#footnote-ref-23)
4. UNFCCC, “Glossary of Climate Change Acronyms and Terms.” [↑](#footnote-ref-30)
5. UNDRR, “Indicator 13.1.1: Number of Deaths, Missing Persons and Directly Affected Persons Attributed to Disasters Per 100,000 Population,” Metadata (United Nations Office for Disaster Reduction, March 2018), <https://unstats.un.org/sdgs/metadata/files/Metadata-13-01-01.pdf>. [↑](#footnote-ref-31)
6. Ibid. [↑](#footnote-ref-33)
7. UNDRR, “Sendai Framework for Disaster Risk Reduction 2015-2030” (United Nations, 2015), <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>. [↑](#footnote-ref-34)
8. UNGA, “Report of the Open-Ended Intergovernmental Expert Working Group on Indicators and Terminology Relating to Disaster Risk Reduction,” Report (United Nations General Assembly, December 2016), <https://www.preventionweb.net/publications/view/51748>. [↑](#footnote-ref-36)
9. UNISDR, “2009 UNISDR Terminology on Disaster Risk Reduction” (United Nations, 2009), <https://www.undrr.org/publication/2009-unisdr-terminology-disaster-risk-reduction>. [↑](#footnote-ref-38)
10. CRED, “About EM-DAT” (Centre for Research on the Epidemiology of Disasters, March 2021), <https://www.emdat.be/about>. [↑](#footnote-ref-40)
11. UNDRR, “Disaster Data & Statistics,” 2021, <https://www.preventionweb.net/knowledgebase/disaster-statistics>. [↑](#footnote-ref-42)
12. CRED, “EM-DAT Guidelines: Data Entry, Field Description/Definition,” March 2021, <https://public.emdat.be/about>. [↑](#footnote-ref-44)
13. Ibid. [↑](#footnote-ref-46)
14. UNDRR, “Technical Guidance for Monitoring and Reporting on Progress in Achieving the Global Targets of the Sendai Framework for Disaster Risk Reduction (New Edition),” Technical Report (United Nations Office for Disaster Reduction, 2017), <https://www.undrr.org/publication/technical-guidance-monitoring-and-reporting-progress-achieving-global-targets-sendai>. [↑](#footnote-ref-51)
15. Global Burden of Disease, “Global Deaths by Non-Optimal Temperatures (1990-2019)” (Global Health Data Exchange, 2021), <http://ghdx.healthdata.org/gbd-results-tool?params=gbd-api-2019-permalink/66c8de5e1901291e28943e67c681e17c>. [↑](#footnote-ref-53)