

Introduction

Climate change is one of the most complex issues in the world today and in global decision-making. International negotiations on climate change are the best way to find an effective solution to the problems of global climate change. The negotiations started more than 20 years ago with the aim of reducing greenhouse gas emissions, i.e., carbon dioxide (CO₂) emissions. In order to find a solution to this problem and other related climate issues, the international negotiations experienced many ups and downs until the Paris Agreement was agreed. The Paris Agreement is the most important global decision on climate change and, compared to previous debates, contains policies and strategies for all governments. Copenhagen, for example, was one of the most unsuccessful negotiations to reach a common global decision (see Asadnabizadeh, 2020).

The 2015 Paris Agreement is a breakthrough in international diplomacy and global decision-making on climate change. It represents the most ambitious outcome possible in a deeply divisive political context. The Paris Agreement breaks new ground in international climate policy by recognizing the primacy of national climate policies and allowing countries to determine their own level of commitment to mitigating climate change. It provides a mechanism to make voluntary commitments that can be measured and verified globally, in the hope of increasing the global integrated ambition of governments. The most important question, then, is how the Paris Agreement is actually structured as a global decision on the politics of climate negotiations and what the politics of implementing the Paris decision will look like in the future phase. Therefore, the author has decided to look at this agreement differently and develop a new approach, namely IID. To define IID, the author points out that the Paris Agreement consists of a set of rules and policies for all governments that integrate the decisions of governments based on the inter-consensus for the politics of global climate negotiations. This approach consists of a set of thematic categories comprising 5 types of criteria, namely: decision

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situation, decision centre, decision process, decision, and implementation, which are interlinked. The application of this approach enables the author to systematically analyze the content of the above category (e.g. using rules, policies from the Paris Agreement and post-Paris).

The discussion of the main approach of this book, namely IID, has not been precisely, but somewhat hinted at in the literature. In order to clarify this approach in the context of decision-making for the politics of global climate negotiations, the author would like to take a look at the literature here and make a comparison. Some classic authors such as Richard C. Snyder, H. W. Bruck and Burton Sapin (1963–2002) have identified the decision-making approach as an approach to the study of international politics that seeks to explain the importance of states in empirical work that captures the vision of participation in global decision-making, as the field of international politics is not just an idea from the past. Feldman (1991) discussed decision-making on global climate change issues. He argued that practical international co-operation is the result of a gradual and iterative learning process between scientists, environmental groups and policy makers who have different views and interests on resource controversies. Todd Sandler (1992) analyzed the logic of collective behavior and discussed the issues of international regimes in relation to international environmental cooperation and decision-making, including the international regime and process of climate change. Parson and Fisher-Vanden (1997) highlighted integrated assessment modelling of global climate change. Integrated assessment models aim to combine knowledge from different disciplines in formal, integrated representations, inform policy, structure knowledge, prioritize key uncertainties and improve knowledge of broad system linkages and feedback, particularly between socio-economic and biophysical processes.

In Climate change, decision-making: science, policy, and economics study, the strands of the literature have changed somewhat since 2000. Mohan Munasinghe (2001) noted that predictions about climate change, its impacts and the costs of its mitigation are essential to the policy dimension and decision-making, as climate change issues are integrated into the broader issues of better decision-making and sustainable development. van den Hove (2000) looked at participatory approaches to environmental decision-making. The essence of this process

is to create interfaces between four criteria, such as 1 the research community, 2 the EC climate negotiation team and through it the representatives of the EU Member States, 3 other stakeholders of the Commission (the ‘internal stakeholders’), 4 a range of ‘external’ stakeholders including industry, finance and trade, employment, environment, consumers and citizens’ interests. Adger and colleagues (2003) consider the environmental policy decisions of individuals, civil society, and the state. Four criteria, namely economic efficiency, environmental effectiveness, equity, and political legitimacy have become the dominant rhetorical tools of environmental decision-making and governance.

Dernbach (2003) also deals specifically with environmental policy decisions. Dernbach, a law professor at Widener University Law School, argues that integrated decision-making is the foundation for environmental problems and sustainable development. It is a response to policy failures that cause and contribute to unsustainable development. Due to the complexity of environmental issues, Kiker et al. (2005) consider the method of multi-criteria decision analysis (MCDA) as a scientific-theoretical approach. This method is used for contaminated sites, land-use planning, and official procedures. Delreux (2006) found that most international environmental agreements are mixed. The internal decision-making process between EU states in relation to mixed agreements is somewhat complicated and the framework of the EU decision-making process must be considered. Antto Vihma (2014) explores ideas for reforming decision-making at the UN-FCCC Conference of the Parties (COP) and the importance of COP decisions for the 2015 PA, arguing for improving consensus building through presidency leadership, expectation management and transparency to achieve more systematic and efficient decision-making at the COP. One of the most recent studies – *From Integrated to Integrative: Delivering on the Paris Agreement* – suggests that the Paris Agreement represents a truly integrative approach to supporting climate change policymaking (Doukas et al., 2018). Another recent study suggests that the Paris Agreement has improved the global governance of climate change through the Nationally Determined Contributions (NDCs) of participating governments (Sun et al., 2022).

The author compares these bundles of literature and approaches that can help evaluate IID as an original robust approach. These approaches and IID share some

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similarities. Some of the literature focuses either on integration or on collective action in the process of decision-making or policymaking. Both IID and these approaches include the concept of a state function. These studies had sought to explore strategies and models that maximize the performance of decision-making in the context of the Paris Agreement, which is not exactly the subject of the global climate change process and decision-making. Thus, the IID and most of these approaches use a qualitative method to link the decision-making process of the Paris Agreement to global climate change issues. However, in terms of key differences, both the IID and these approaches differ in their analytical approach: they mainly analyze environmental decision-making and not specifically the politics of global climate negotiations in the context of decision-making since the Paris Agreement entered the international debates and the process of policy implementation, and they use different models (e.g. MCDA) to gather information. There is a gap in the literature on IID and other models of decision making. From 1970 (classical literature) to somewhat more modern work (e.g. Vihma (2014) and the most recent (Sun, Gao, Deng & Wang, 2022), no one has attempted to examine the politics of global decision-making on climate change using the Paris Agreement and the 5 key analytical steps (i.e., situation, centre, process, decision, and implementation). Decision-making in the context of global climate policy is truly complex, and the literature to date has not fully captured this analysis. However, another difference is that IID is an adaptive approach to look at the policy process of global decision-making on climate change under the Paris Agreement and the way forward, because this approach supports the global decision-making process to define the best pathways for politics of implementation. Another difference is that IID links national and international politics and governance under the Paris Agreement. For this reason, this approach is also referred to as integrated inter-governmental decision-making. Therefore, the book contains a separate chapter on the perception of decisions and intergovernmental integrated rules and policies. To briefly explain the structure of this book, Chapter 1 describes the factors that are important for understanding the global climate change situation and why global decisions need to be made.

This chapter was compiled from climate science research information, the National Oceanic and Atmospheric Administration (NOAA), and other related

sources. As an example of a centre, Chapter 2 analyses the center's key national and international actors. In this chapter, the epistemic community approach, regime theory, cited by Peter M. Haas and Young, Keohane and Nye, is discussed and explained. Based on the IID approach, Chapter 3 presents the process of global decision-making under the Paris Agreement. This chapter is prepared by the two-stage structure for the global decision-making process with political and economic phases. Chapter 4 is prepared by the idea of decision-making, focusing on the main rules of the Paris Agreement. And the last chapter explains and evaluates the most modern and important criterion for the global climate change decision from Paris to Glasgow, the future path, namely implementation.

"Climate change is a huge and dramatic event that requires collective thinking and collective action."
-Majid Asadnabizadeh-

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Global climate change situation

1.1 Overview of the factors leading to global climate change

In this chapter, the author deals with the decision situation of the primary approach, namely IID. The decision situation involves the observation, monitoring and evaluation of the pragmatic and affective variables considered in the specific situation. It contains the identified options as well as the principles that are typical for the decision situation approach. Considering the decision-making situation (DMS) in the context of the Paris Agreement (PA) means understanding and following the decision-making situation of the Paris Agreement. Effective international decisions on climate change such as the PA have many perspectives and angles. To ensure the effectiveness of the DMS for PA, the author monitors the gradual situation that has emerged at this stage in the global climate change arena. This includes defining challenges such as the following.

1. Natural causes
2. Anthropogenic
3. Science (perception) of climate change: what it is and scientific evidence
4. The politics behind the global climate change situation (precursors): 6 years before the Paris Agreement (i.e., Asadnabizadeh, 2022). These points will help the author to speed up the process of verification. The application of this evidence is useful for the DMS-PA and to achieve the objective of this chapter. Decision makers need to understand the DMS in the first step. At this stage, valuable and timely information about the criteria and consequences of climate change threats, the perception of these threats, and the preliminary stages of global decision-making related to

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climate change (Figure 1) is essential. To better understand the situation of global decision-making before the PA, the author will go through the natural and anthropogenic causes of climate change. Expand new ways of thinking about what is known about climate change and the possibilities for negotiating climate change before the final decision is made.

This chapter provides a global overview of the situation category that international decision-makers could use to address the combination of rudimentary problems and information that climate change brings. I use the term situation to describe the underlying principles that form the general basis for other decision-making steps. To be even clearer, the situation of global climate change is better understood in the climate change negotiations. The DMS encompasses the vulnerable issues of climate change that arise from the lack of transparent knowledge and the need to establish guidelines that allow us to understand the imprecision of global climate change measurements. These issues, which play a role in climate change debates, make up the global DMS.

Our planet is affected by environmental problems that deplete natural resources and put a strain on livelihoods. Environmental issues related to climate change are a notable variable in global research and projects and continue to increase as environmental changes and problems (e.g. air and water pollution) are recognised as the world's most important problems.

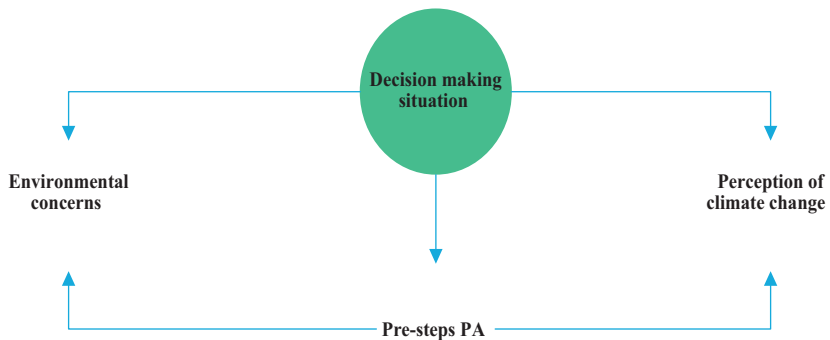


Figure 1. Decision-making process for the structure of Paris Agreement.

Source: Author own-constructed.

1.1 Overview of the factors leading to global climate change

Global climate change has already had an impact and the effects of climate change are now materializing. These impacts go far beyond a rise in temperature and are affecting ecosystems and communities around the world. In other words, ecosystems are affected, and habitats are changing due to climate change. The factors that trigger climate change can be divided into two categories: natural processes and man-made factors (i.e., anthropogenic factors). Natural causes of climate change lie within the climate system, such as variability.

1.1.1 Natural causes

Natural variables outside the climate system, such as changes in volcanic activity, solar output and the Earth's orbit around the Sun, tectonic plates, and El Niño, La Niña and ocean currents, can influence the Earth's climate (Figure 2). Simply put, natural weather influences include changes in solar energy, naturally occurring atmospheric water vapour and CO₂, volcanic aerosol and cyclical ocean fluctuations. These factors affect climate by influencing the amount of solar radiation that reaches the Earth's surface, by changing how much heat reaches the atmosphere, and by altering ocean and atmospheric circulation. The Earth's rotational motion and its rotation around the Sun also affect the trend of incoming solar radiation over centuries to tens of thousands of years and influence climate on geological time scales (Leggett, 2018).

Changes in volcanic activity

Some of the most significant short-term climatic and social upheavals in human history have been volcanic eruptions. Massive eruptions release ash, dust, sulphur gases (e.g. SO₂, H₂S), halogens (e.g. HCl) and water vapour into the Earth's atmosphere. Sulphur-containing emissions mainly affect the climate by transforming into sulphate aerosols, which reduce incoming solar radiation, warm the stratosphere, and alter ozone formation, lower the global mean surface temperature, and suppress the hydrological cycle (Allegra et al., 2015). Ash clouds can block sunlight and visibly darken the sky, leading to reduced solar heating. However, these effects are generally short-lived and geographically limited, as the ash disappears quickly and locally from the atmosphere due to gravity. Water vapour, carbon dioxide,

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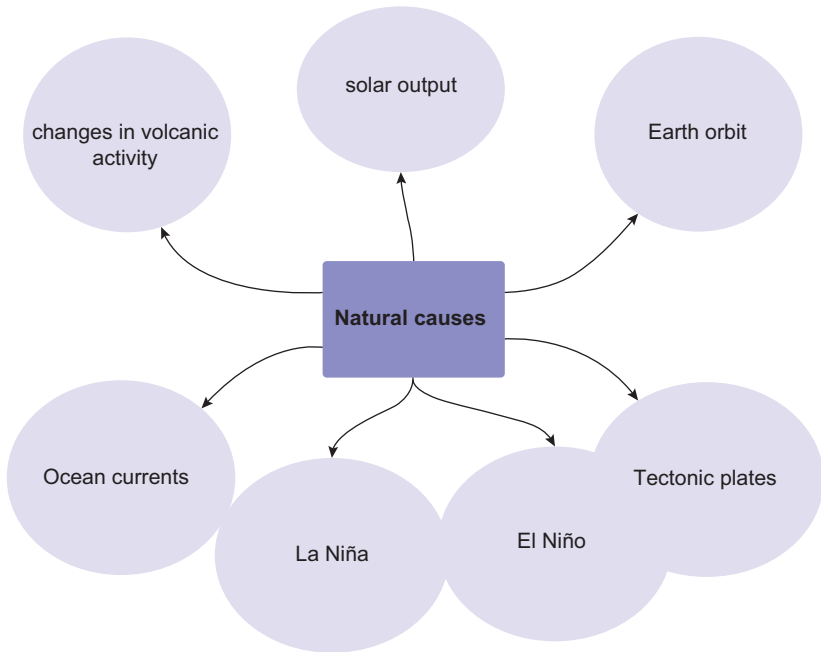


Figure 2. The most important natural causes of climate change.

Source: Author own-constructed.

reduced sulphur chemicals (mostly SO), nitrogen and halogen compounds make up the majority of gaseous emissions. They become components of the atmosphere and their residence time in the atmosphere is subject to the biogeochemical cycles of the elements (O, C and S). The amounts of water vapour and carbon dioxide emitted by volcanoes are negligible compared to the size of the atmospheric reservoir of these gases, and therefore their impact on climate is insignificant (Cole-Dai, 2010). After the devastating explosion of Mount Tambora in Indonesia, the year 1816 took place, also known as the “year without a summer”.

The explosion of Mount Tambora was perhaps the most significant known event in the memory of human civilization. In June, snow fell in the northeastern United States and Canada, causing regional crop failures, food shortages and increased mortality. Many prominent weather events are accompanied by relatively