IJCCSM
17,1

Narratives of change: how climate change narratives have evolved since the 1970s

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Received 5 June 2024
Revised 14 November 2024
Accepted 18 November 2024

Abstract

Purpose – The purpose of this paper is twofold. First, we map the emerging climate narratives from the 1970s. Second, we examine how these narratives have shaped climate governance in addressing the consequences of climate change. Our analysis is based on a set of 12 interviews with climate change experts from various fields, including climate science, environmental policy, and environmental sustainability. The theoretical framework primarily draws from narrative analysis (Bruner, 1991; Riessman, 2005; Freeman, 2015), with a specific emphasis on its application within climate change studies (Bottici, 2010; Bushell *et al*., 2015; Fløttum and Gjerstad, 2017).

Design/methodology/approach – The period of analysis starts from the 1970s. A period marked by growing concern and the creation of national and global organizations to address the effects of climate change. Semistructured interviews were conducted with a sample of 12 experts in the field using narrative analysis. We adopted an inductive approach, allowing climate narratives to emerge organically from the interview data, and facilitating the emergence of new topics and perspectives.

Findings – Through interviews with climate experts, this study identifies three key narratives and critical shortcomings related to climate governance. The dominant climate narratives identified are apocalyptic environmentalism, greening capitalism and degrowth. Notably, greening capitalism and degrowth emerge as a dichotomous framework for understanding and interpreting climate change. By exploring these climate narratives, we highlight five critical shortcomings related to climate governance: increasing citizen participation through a bottom-up governance model, reforming the environmental subsidy framework, strengthening the science-policy interface, decoupling economic growth from energy dependence and developing innovative technological models beyond traditional green growth approaches. As a result, climate governance remains confined to these binary frameworks, and the challenges that were promised to be addressed decades ago largely remain unresolved.

Originality/value – The value of this study lies in the fact that, on the one hand, it uses narrative analysis to investigate climate governance, and on the other hand, it does so through interviews with different actors. All this facilitates a holistic approach, and from a 50-year historical perspective, this study traces an evolutionary line of narratives and identifies the critical points of climate governance.

Keywords Climate change, Climate politics, Climate governance, Climate economy, Climate narratives

Paper type Research paper

The author is grateful to Ivan Serrano and the two anonymous reviewers for their helpful comments and feedback on an earlier version of this article. All errors are the author's.

Funding: This research is supported by the UOC Doctoral School Grant Program and the Urban Transformation and Global Change Laboratory (TURBA) research group of the IN3.

Declaration of competing interest: None.

Disclosure statement: The author reported no potential conflict of interest.

International Journal of Climate Change Strategies and Management
Vol. 17 No. 1, 2025
pp. 378-396
Emerald Publishing Limited
1756-8692
DOI 10.1108/IJCCSM-06-2024-0089

1. Introduction

The evolving nature of climate narratives from the 1970s to the present does not necessarily *speak* about climate events. Rather, they implicitly show *how* the issue of climate change has been addressed. These narratives may have impacted political decisions and international agreements and guided societal behavior. For instance, narratives related to "apocalyptic climate change" (Liverman, 2009; Foust and O'Shannon Murphy, 2009), "sustainable development" (Jordan, 2008; Billi *et al.*, 2022), degrowth or postgrowth (Latouche, 2010; Hickel and Kallis, 2019; Demaria *et al.*, 2013), among others. The fact that human activity has caused changes in climate since the mid-18th century "is not a new thought" (Wagner, 2024, p. 6). Since the 1970s, the evidence in this area has become more compelling (Manabe and Wetherald, 1967; Keeling, 1970; Revelle, 1982).

The purpose of our article is twofold. First, we map emerging climate narratives from the 1970s. Second, we examine *how*, through these narratives, climate governance was articulated to tackle the consequences of climate change. We used data from a set of 12 interviews with climate change experts from diverse fields related to climate science, environmental policy and environmental sustainability. Our theoretical lens comes primarily from narrative analysis (Bruner, 1991; Riessman, 2005; Freeman, 2015) and, particularly, from narrative analysis applied to climate change studies (Bottici, 2010; Bushell *et al.*, 2015; Fløttum and Gjerstad, 2017).

Before proceeding, we rely solely on the narratives that recognize climate change as an undeniable phenomenon and its consequences for two main reasons. First, these narratives reflect the consensus (Oreskes, 2004) reached by the vast majority of international organizations and the scientific community (Ripple *et al.*, 2022), making them the appropriate basis for any discussion on climate change (Bretter and Schulz, 2023). Including a denialist narrative (Norgaard, 2011; Shue, 2023) may divert attention from efforts to tackle climate issues. They lack scientific credibility, reject scientific evidence (Farmer and Cook, 2013), promote misinformation (Johnson *et al.*, 2024) and discredit scientific institutions (Mishra, 2024). We do not downplay their importance but emphasize that the search for solutions stems from the acceptance of climate change, as suggested by the academic literature (Goldberg *et al.*, 2019; Bretter and Schulz, 2023).

Our understanding of the complexities of climate change has been expanding through ongoing research (Callendar, 1938). The pioneering work of J. Fourier, E. Foote and J. Tyndall in the late 19th century laid the foundation for later groundbreaking studies (Revelle, 1965, 1982; Manabe and Wetherald, 1967; Keeling, 1970). In the 20th century, efforts to connect CO_2 emissions from fossil fuels to global warming (Callendar, 1938; Nordhaus, 1975; Schneider, 1975) were largely disregarded due to prevailing beliefs in stable or declining global temperatures (Cooper, 1978) and the ocean's capacity to absorb excess CO_2 (Revelle, 1982). The context of the 1970s oil crises highlighted the reckless exploitation of natural resources and the urgent need for strategic planning, given their finite nature (Schelling, 1979). The 1972 Stockholm Conference depicted two key principles: to ensure environmental conditions for "a life of dignity and well-being" (Sohn, 1973, p. 452) and safeguard the natural resources "for the benefit of present and future generations" (Sohn, 1973, p. 456). Here, the goal of countering the effects of CO_2 while using natural resources was viewed through the "desired technical solution" (Hardin, 1968, p. 1243), whereas environmental preservation became a paramount issue due to the depletion of fossil fuel resources (Hafele *et al.*, 1981). Technology emerged as the central driving force and, in conjunction with economic growth, has been positioned as a critical element for the climate crisis (Peccei, 1979; Fulkerson *et al.*, 1990).

In the late 1990s, the climate crisis started to be seen as a large-scale problem (Rocha *et al.*, 2022) with an impact on health (Karlsson and Ziebarth, 2018), coastal habitat (Roy *et al.*, 2023) and the economy (Burke *et al.*, 2015), leading to the establishment of the 1994 UN Framework Convention on Climate Change (UNFCCC) and the 1988 Intergovernmental Panel on Climate Change (IPCC) to work toward stabilizing "dangerous anthropogenic interference" (IPCC, 2014, 64). In the 2000s, the "Anthropocene" (Crutzen and Stoermer, 2000) marked a new era driven by the urgent need for climate action. From the Kyoto Protocol's recognition of human-induced pollution (Edo *et al.*, 2024) to the Paris Agreement's goal of limiting global warming to 1.5°C (Sanford *et al.*, 2014), tackling climate change has become a race against time. This is why climate governance involves multiple global actors and sectors, spanning from the UNFCCC to the scientific community, national governmental initiatives, civil societies, activists, corporations, transnational companies and society itself (Jagers and Stripple, 2003; Dryzek and Niemeyer, 2019). Our approach is based on the assumption that climate governance goes "beyond the formal structures of government" (Okereke *et al.*, 2009, p. 60), i.e. beyond the territoriality of the nation-state. Indeed, we are now at a tipping point, with uncertainty matching the complexity of the issue.

This paper is structured as follows: Section 2 delves into the narrative analysis and its application to climate change. Section 3 presents the research methodology. Section 4 depicts the results, whereas Section 5 provides the discussion part. Finally, Section 6 presents the conclusions.

2. Theoretical background

In this section, we will first define the term "narrative" and, in the aftermath, examine the academic literature on climate change that has used this approach in its studies. Narratives have long been recognized as an analytical tool within the social sciences, gaining more relevance in the 1980s (Bruner, 1991; Riessman, 2005; Freeman, 2015) for their capacity to elucidate world events, social phenomena and human experiences (Connelly and Clandinin, 1990). Paschen and Ison (2014, 1085) stated that "narrative research is a qualitative methodology that complements conventional approaches [. . .] by its self-reflective and practically applicable dimensions." Narratives reveal human goals and intentions, make societies comprehensible, "humanize time," and facilitate reflection on actions, altering "the directions of our lives" (Richardson, 1990, p. 177).

Following Roe (1994), we define narrative as a vehicle through which the problem is described, the consequences are outlined and solutions are generated. We argue, along with Cortazzi (2001, p. 384), that narratives refer to the "social process or performance in action" that builds "structures of knowledge and storied ways of knowing." Scholars (Hinchman and Hinchman, 2001; Bottici, 2010) view narratives as a means to organize events connected by a meaningful message, shaping our understanding of the world. Key narrative elements include "temporality, sociality, and place" (Ntinda, 2019). Regarding temporality, narratives make sense of the ordering and linking of events both chronologically and causally (Riessman, 2005), fitting them into a larger story (Polkinghorne, 1988). This aspect of temporality elucidates how prior events or decisions lead to subsequent occurrences (Elliott, 2005). Narratives create a cohesive understanding of human actions and experiences within a timeline through event ordering (Connelly and Clandinin, 1990). This structured approach establishes a meaningful framework for interpreting events, allowing us to connect the past, present and future.

Narratives, by their nature, are "inherently social" (Elliott, 2005). They function by constructing a sequence of events (Richardson, 1990; Bruner, 1991; Elliott, 2005;

Bushell *et al.*, 2015; Ntinda, 2019), where "the significance of each event can be understood through its relation to the whole" (Elliott, 2005, p. 3). This cause-and-effect relationship (Gabriel, 2015) allows one event to lead to another, illustrating their mutual influence over time (Polkinghorne, 1988). Hence, narratives make the progression of events visible and enable the observation of the complex social dynamics that shape human experience (Wagenaar, 2014) within this dimension of sociality (Ntinda, 2019).

Recognizing that all events take place (Connelly and Clandinin, 2006) underscores the key idea that all events are *located* within particular locations or topological boundaries. Nevertheless, these boundaries may not necessarily conform to a physical framework and may instead relate more closely to collective memory (Zoran, 1984). Importantly, a *place* does not remain unchanged and is not immutable. It evolves as it relates to the dimension of temporality, where different times converge in a space to give rise to new and alternative configurations of events or experiences (Massey, 2005). This highlights the perpetually evolving nature of spatial contexts, where physical and social environments are transformed over time due to a variety of factors, such as human activities or environmental changes. Fundamentally, narratives are not isolated entities; they are intricately intertwined with the places where they unfold and the spaces they inhabit, referred to as "the complexity of relational composition" (Ntinda, 2019, p. 6).

The following section will elaborate on how narrative analysis has been used in the field of climate change. We begin with the premise that "events themselves need to be constituted in the light of the overall narrative" (Bruner, 1991, p. 8). Here, climate change serves as an umbrella concept that encompasses a wide range of climate change narratives. This aligns with Bruner's (1991) notion of the "act of constructing a narrative," which involves more than merely ordering events; it entails understanding the complex nature of a narrative. Indeed, our starting premise refers to the narratives as an integral part of politics.

The use of narratives to analyze climate change has gained prominence over the past few decades. As Cronon (1999, p. 1373) suggested, the central issue revolves around how we interpret nature, "the least human and least storied of worlds." This analysis particularly emphasizes how climate change has been instrumentalized to create narratives reflecting the interplay between nature and humanity. Shanahan *et al.* (1999) argued that narrative analysis provides valuable insights into environmental beliefs, attitudes and behaviors. Some scholars (Cronon, 1999, p. 1373) assert that examining climatic events necessitates transforming nature's processes into stories, as "nature does not tell us whether a dust storm is good or bad; only we can." Bushell *et al.* (2015, p. 41) contended that "a narrative can explain the situation, define a problem that disrupts the order of the initial situation and then provide a resolution to that problem, which re-establishes order." Their study advocates for a unifying strategic narrative on climate change while also indicating that the current presentation of climate change is ineffective. This ineffectiveness stems not only from a limited capacity for political intervention but also from a lack of strategic communication regarding climate change. This aligns with Bottici's (2010, p. 920) assertion that climate narratives provide a "sense of our political world in general and also of our place within it." This may elucidate the failure of the "Save the Earth!" narrative (Laird, 2022), which, despite advocating for decarbonization, lacks a clear roadmap for achieving a just transition. It can be concluded that "narrative is both a mode of reasoning and a mode of representation" (Richardson, 1990, p. 118).

The complexity of narratives increases progressively. Beyond displaying broader dimensions such as temporality, sociality and locality, they require additional formulas of reasoning and representation. Narratives operate as a means where the "act of constructing a narrative" (Bruner, 1991) contributes to the development of a more comprehensive

framework. An example of that is found in Liverman's (2009) identification of the "climate change as an investment opportunity" narrative. By pointing to climate change as an economic driver, this narrative shifts the focus from mitigation efforts to profit-making under the sustainable development paradigm. In addition, the studies by Barca (2011) and Bergman and Janda (2021) suggested that the narrative of economic growth has become overwhelmingly dominant over other climate-related narratives fueled by two key factors: private ownership and the energy revolution. The widespread establishment of private ownership has shifted priorities toward maximizing individual gain and economic output. The transition to new energy sources has undeniably shaped our current economic model, often at the expense of environmental sustainability. In other words, climate change has become a "structural component" (Fløttum and Gjerstad, 2017), a vehicle "for legitimating [. . .] what is regarded as normal, truthful or, indeed, "rational" (Gabriel, 2015, p. 280).

Furthermore, we introduce an additional level of complexity. Narratives reveal a mode of legitimization. For climate governance, "legitimacy is crucial for effectively addressing policy problems" (Dellmuth and Gustafsson, 2023, p. 1). Here, political legitimacy in the context of climate change (Nasiritousi and Verhaegen, 2020) may challenge the boundaries of "foundational legitimacy" and "contingent legitimacy" (Mittiga, 2022). Basically, justifying certain authoritarian narratives under the guise of climate change, especially in light of flawed democratic standards. These dynamics underscore the notion of climate as a transnational issue, which, as articulated by Paiement (2020), refers to the climate "transnational narrative." This perspective "requires legal scholars to break with the comfortable frames of the nation-state" (Paiement, 2020, p. 126) in the context of transnationalism and global climate governance. This reveals that the challenges ahead are far greater than we expected.

3. Methods

We follow Cortazzi's (2001, p. 384) consideration, where narratives refer to this "social process or performance in action" that builds "structures of knowledge and storied ways of knowing." Thus, in our research, we aim to examine these "structures" or responses that climate narratives have deployed over the past 50 years. On the basis that the main goal of our research is to map the emerging climate narratives and, through them, examine *how* climate governance was articulated to tackle the consequences of climate change, our methodology is grounded in narrative analysis applied to our interviews. Indeed, by analyzing climate change narratives, we aim to shed light on *how* climate governance was framed within these narratives.

We adopted an inductive approach, allowing climate narratives to emerge organically from the interview data. This strategy captures novel ideas and perspectives while deviating from a "fixed interview format" (Riessman, 2007) and it has been used in many studies (Gjerstad and Fløttum, 2017; Malena-Chan, 2019; Toivonen, 2022). For instance, a 2015 survey by the Norwegian Citizen Panel used this method (Gjerstad and Fløttum, 2017). Similarly, Toivonen (2022) examined interviewees' perspectives on the significance of the human role in climate change, whereas Malena-Chan (2019) applied narrative analysis to the motivations of climate activists in social contexts that downplay the significance of climate change consequences. Indeed, narratives bridge the gap *across* and *between* individual experiences and the collective "structure of knowledge" (Cortazzi, 2001). This symbiosis emerges between *external space* – different climate narratives – and *internal space*, represented by individual architectural structures.

We conducted twelve semistructured interviews with climate change experts (see Table 1). To safeguard participant anonymity, all identifying information was removed, and

Table 1. Information about our sample of interviewees

Interviewees	Expertise	No. of interviewees
Academia	Risk and disaster reduction, atmospheric sciences, climate policy and environmental politics	3
Non-governmental organization	Ozone, energy and chemicals	1
Private company	Oceanography, industrial decarbonization and net-zero	2
International intergovernmental organization (IGO)	Weather prediction science, environmental chemistry and climate change international regulation framework	3
Public media organizations	Climate communication, energy transition and design for sustainability	3

Source: Author's own work

no financial compensation was offered to the participating experts, as their involvement was entirely voluntary. We define the term "expert" in accordance with Otto-Banaszak *et al.* (2011) as an individual who contributes to and has access to specialized knowledge, particularly in relation to complex decision-making processes or policies that often represent privileged access to this domain. The interview period spanned from January 2024 to March 2024. The experts were purposely selected based on their varied backgrounds in areas such as environmental biology, decarbonization, atmospheric sciences, just transition, oceanography and climate communication, among others. Our experts hailed from nongovernmental organizations, academia and the private sector, ensuring a multifaceted perspective on the subject matter. The selection of experts was guided by "purposive sampling strategies" (Robinson, 2014, p. 32), which prioritize the inclusion of individuals with specific knowledge or experience to foster a targeted sample. In addition, we used snowball sampling to broaden our understanding based on the references provided by our experts.

Adopting an inductive approach, our interview protocol featured semistructured interviews, allowing for the emergence of new topics and perspectives. This flexible and inclusive protocol was designed to capture unforeseen dimensions. Open-ended questions included "In the early 1960s and 1970s, what were the dominant narratives surrounding climate change?", "How did global events of the late 20th century, including the oil shocks, the Bretton Woods Agreements, the Stockholm Conference and the release of the Brundtland Report, influence climate change narratives?" and "To what extent was there a change, if any, with the introduction of the UNFCCC or IPCC in the late 20th century?" Our protocol remained exploratory and adaptive, facilitating the discovery of narratives that served as a foundation for identifying the challenges they articulate. Moreover, the range of questions was adapted to each interviewee's experience to ensure a comprehensive understanding of the issues from different perspectives. In some cases, we asked experts to delve deeper into the sustainability paradigm, given their experience in that area. Similarly, we asked for more information from specialists in the degrowth movement. For instance, "How has the shift toward a more sustainable paradigm influenced the climate narratives?" or "To what extent has degrowth affected climate change narratives?" This approach fostered a holistic examination of climate narratives. The interviews were recorded using the Microsoft Teams platform to enable remote communication, and we used NVivo software to organize, code

and analyze the interview data. Each semistructured interview lasted for 1 h and was transcribed *verbatim* to ensure comprehensive data capture.

We systematically coded the interviews, examining the varied ways in which our participants articulated climate narratives. This refers to the nominal forms. Second, to construct the evolving climate narrative structures (see Figure 1), we first identified thematic clusters that allowed us to map the main thematic codes, which were then expanded into more specific themes derived from our coding framework. We organized these climate narratives into distinct groups, each with its own coding schema, using thematic analysis (Maguire and Delahunt, 2017; Toivonen, 2022). Each main thematic cluster was further divided into subtopics to refine the direction of the interviews. Indeed, through open coding (Maguire and Delahunt, 2017), codes were reviewed and revised multiple times. From these, we abstracted themes that formed the core of each narrative, paying particular attention to the climate governance aspect. Following this, we isolated elements related to climate governance. This approach enabled us to identify recurring patterns across climate narratives, subsequently tracing a cohesive thread between climate narratives and the articulation of climate governance. This highlighted the unresolved governance challenges in addressing climate change. Through this process, we identified three narratives, two of which were central and dominant, which we will discuss in Section 4.

4. Results: What are the dominant climate narratives and mobilizing frameworks?

The dominant trend observed from the interviews indicates a nonlinear trajectory of emerging climate narratives from the 1960s to the present day. The inclusion of the 1960s as a significant period resulted from these interviews. The intrinsic dynamic within the climate narratives refers to the continuous and parallel evolution and coexistence of different narratives across the analyzed decades (see Figure 1), reflecting the interplay between science, social dynamics and institutional configurations surrounding climate change. From the 1960s' radical environmentalism to the more contentious 2023 COP28 slogan *transitioning away from fossil fuels*, these narratives illustrate the ongoing evolution of the narratives surrounding climate change.

Based on our interviews, we identified three main narratives overarching other subnarratives: apocalyptic environmentalism, greening capitalism and degrowth. Apocalyptic environmentalism was often credited as a catalyst narrative during the 1960s that helped to drive awareness of human-induced environmental damage. However, it somewhat blurred under the main dominant narratives that appeared shortly thereafter on the international scene, which the interviews referred to as greening capitalism and degrowth. Notwithstanding, in the 2000s, it reemerged, highlighting the environmental damage caused by long-standing industrial activity and giving rise to the narratives that many authors cite as the Al Gore narrative (Rutherford, 2011; Bushell *et al.*, 2017) as a separate narrative, or a particular example, along with *The Day After Tomorrow*, of apocalyptic environmentalism, collectively contributing to a singular catastrophic narrative.

Regarding greening capitalism and degrowth, they emerged as two dominant and dichotomous narratives. This binary representation carries significant implications for climate governance and closely aligns with the purpose of this paper, drawing attention to what climate actions may be feasible or achievable under either greening capitalism or the more challenging concept of degrowth. Each of these narratives produces distinct impacts and imposes varying constraints on the world. While greening capitalism suggests that limits are nonconstraining, degrowth asserts the necessity of strict limits. Each narrative thus influences the scope and constraints of possible climate actions. The analysis of this will be provided in the following section.

Emerging Period	Identified climate narratives		Narrative mobilizing framework	Measures
	Context	Narrative		
1960s	The rise of radical environmentalism	***Apocalyptic environmentalism***	Pollution from chemicals detrimental to the planet Rooted in: *1962 Silent Spring*	Regulation of pesticides Promoting public awareness Species protection
			Neo-Malthusian arguments	Population control Reduced consumption
	Anthropocene as a new era	Reemerged during the **2000s**	Alarming climate rhetorics *Exampels:* *2004 An Inconvenient Truth* *2005 The Day After Tomorrow*	Climate awareness campaigns Green-oriented immediate changes *Examples:* ▫ *Energy efficiency* ▫ *Carbon capture and storage* ▫ *Eelectric vehicles*
1970s	Global cooling Energy crisis Oil shocks Resource scarcity Keeling curve data		Fossil fuel dependency Rooted in: *1972 'Limits to Growth'* *1973 'Small is Beautiful'* *1972 Stockholm Conference*	Need for a systemic change due to overconsumption Preservation of the environment Development of international environmental policy
1980s-2000s	Anti-nuclear movements Ecofeminism Climate justice 1988 IPCC	***Greening capitalism***	Ecological modernization Based on: *End of pipe solution* *Resource management* *Regulatory frameworks*	Harmonizing economic growth with industrial expansion Resource efficiency strategies Technology the measure for ecological solutions
Further evidence of global warming 1990 First IPCC Report (FAR) 1994 UNFCC enters into force 1995 Second IPCC Report			Sustainable development Coming from: *1987 Brundtland Report* *1992 Earth Summit* *1997 Kyoto Protocol*	Renewable energy Carbon Markets Mitigation strategy at the forefront Adaptation strategy overshadowed Risk management
2005 Kyoto Protocol becomes effective 2008 Economic crisis 2009 Copenhaguen Accord 2015 Paris Agreement 2023 COP 28			Green growth Rooted in: *2008 Green New Deal* *2008 Green Economy*	Emissions trading system Renewable feedstocks Green transition Tipping point 1.5ºC Loss and damage Transitioning *away* from fossil fuels
1970s-1980s		***Degrowth or Décroissance***	Challenging the dominance of expanding neoliberalism and 'Greening Capitalism'	Systemic economic change
		Reemerged during the **2008**	Coming from: *Critical analysis of 2008 crisis* *2008 The first International Degrowth Conference* *2010 The second International Degrowth Conference* *2011 The Conference Beyond Growth*	Deconstruction of the 'sustainable' rationalities (ex. avoiding climate overshooting) Underconsumption Environmental and social justice Rethinking government institutions and the role of the state Democratic choice at the forefront

Source: Authors' own work

Figure 1. Results from our interviews: geographies of climate narratives since the 1960s

Although our interviewee's sample size is not particularly large, it encompasses a diverse range of climate expertise backgrounds. Our results (see Table 2) reveal several identifiable climate governance features across nearly all of the interviews conducted. First, they all refer to the prevailing duality between the two predominant narratives: greening capitalism and degrowth. The differing nature of each of the narratives reflects a different order and structure for addressing climate change. Importantly, while the emphasis on degrowth was more pronounced among interviewees from academia, nongovernmental organizations and public media (refer to Table 1), those from private companies and international intergovernmental organizations (IGOs) supported the degrowth tendency, recognizing the economic infeasibility of continuous growth. This finding reinforces that the climate governance challenges remain highly relevant and should be restructured to better cope with the evolving demands and implications of climate change. Below, we describe the evolving nature of climate narratives (refer to Figure 1), linked to their mobilizing framework and climate measures related to climate governance aspects. In the aftermath, in Table 2, we expose the main features of climate governance challenges identified by our interviewees in the matter of greening capitalism and degrowth, extracted from our coding analysis.

The polarized world between greening capitalism and degrowth is structured around subnarratives that emerge from dominant narratives. On one side, from greening capitalism, we encounter – ecological modernization, sustainable development and green growth; on the other, we depict degrowth as an umbrella concept for deconstruction, climate overshoot and decoupling economic growth. The terms "sustainable development" and "decoupling economic growth" denote a set of characteristics identified in interviews that both dominant narratives frequently use to reinforce their messages and mobilize their frameworks. Sustainable development, as one of the core elements of greening capitalism, emphasizes a gradual transition from fossil fuel reliance to green energy solutions. The latter is considered a phenomenon symptomatic of modernization, fundamentally rooted in continuous technological acceleration. Conversely, the decoupling of the economy from neoliberal green growth arises from the detrimental use of fossil fuels, driven by human interference that disrupts the Earth's ecological and ecosystem balance. As noted by interviewee 7, "We are causing serious problems, and this has to stop. We are in serious unknown territory, and that's the worst of it."

This binary framework presents climate change as a matter of interpretation. Revealing a sequence of unanticipated and disruptive constraints destabilizes our future lives. The climate narrative surrounding greening capitalism emphasizes a logic of expansion on a cost-benefit basis. Furthermore, all subnarratives of greening capitalism are connected to the notion of a gradual, smooth and painless transition toward a world aspiring to meet established environmental standards. This conception starkly contrasts with the

Table 2. Climate governance challenges identified by our interviewees

Capitalism	Degrowth	Climate governance challenges
Carbon markets	Underconsumption	Economic costs of climate change
Private sector influence	Environmental justice	Global inequality and historical responsibility
Neoliberal practices	Democratic governments	Transnational climate policy management
Commoditization of natural resources	Deconstruction of the privatization mechanisms	The role of civil society along with society in the decision-making process

Source: Author's own work

transformative idea of degrowth. Degrowth challenges the existing social hierarchies between the Global North and the Global South, thereby integrating subjects of inequality and social justice. In addition, it underscores the critical issue of society's limited capacity to confront neoliberal practices and corporate influences. In this regard, our interviewee 6, to criticize this systemic mechanism, pointed out that "Growth cannot be sustainable; it is a total contradiction."

Our effort to identify narratives has been driven primarily by the goal of understanding how climate governance has been approached and developed over time. Through these narratives, we discover the responses that have been deployed to the impacts of climate change and, foremost, the remaining climate governance challenges. Hence, by examining the dominant narratives, we identified five climate governance challenges that will be discussed in Section 5. Importantly, these challenges reflect the responsibilities identified by our interviewees and reveal critical areas for improvement in climate governance. Drawing on Cortazzi's (2001) concept of "structures of knowledge and storied ways of knowing," we identify these challenges as the *structural components of the dominant narratives*. In other words, these key elements serve as a cornerstone in framing climate governance, depicting the persistent needs that still remain unaddressed. For instance, the inclusion of diverse actors (UNFCCC or IPCC) emphasizes the collaborative nature of climate governance, whereas the analysis of the science-policy interfaces sheds light on the complex relationship in the realm of decision-making processes. In this way, each structural component adds a layer of depth to the narrative itself, highlighting the need for climate governance that is enduring over time. Section 5 will discuss how the identified climate narratives reflect the pressing challenges of climate governance by situating these findings within the current academic literature.

5. Discussion: the main challenges of climate governance in between dichotomous framework

This study mapped dominant climate narratives over the past 50 years and examined how climate governance has evolved to address climate change impacts. Our findings show a nonlinear trajectory of the dominant climate narratives and their subnarratives coexisting over time (see Table 1). For example, the apocalyptic environmentalism of the 1960s–1970s coincided with growing scientific concern following the 1970 Stockholm Conference and the sustainable development paradigm of the 1980s under the Brundtland Report. This aligns with the research conducted by Bushell *et al.* (2017), which indicates that narratives such as the Al Gore narrative and green living effectively promote action toward addressing climate change. Conversely, narratives that hinder these efforts include those related to the "expansion of carbon fuels."

Degrowth, or *décroissance*, emerged in the early 1970s and served as a counterpoint to the dominant narrative of greening capitalism and its subnarratives. In the 2000s, the green growth narrative gained prominence, shaped by the prevailing political and economic context and highlighted the need for both theoretical and practical adaptations in climate action. During this period, the discourse on degrowth resurfaced, emphasizing the ecological crisis's urgency and challenging the sustainability of growth-focused approaches.

Our findings align with Gabriel's (2015) concept of narrative as a "vehicle for legitimating various organizational regimes." Specifically, our analysis supports the framing of "climate change as an investment opportunity" (Liverman, 2009) through the lens of greening capitalism, which acts as an overarching concept encompassing various subnarratives. By positioning climate change as a potential economic driver, the sustainable development and green growth narratives resonate with studies by Barca (2011) and

Bergman and Janda (2021). In addition, our results concur with Fløttum and Gjerstad (2017), who suggest that narratives can clarify the presence or absence of key components within a "story." Furthermore, our findings highlight a tension, indicating a binary and dichotomous framing of the climate change approach, wherein climate governance is polarized between greening capitalism and degrowth. This dualistic approach is significant in climate narrative research, as Shaw and Nerlich (2015) have similarly demonstrated the dichotomy between growth and environmental preservation, which is valuable for understanding the implications of climate change and the scope of climate science.

A notable example of greening capitalism pertains to its subnarratives, particularly the connection between sustainable development (Jordan, 2008) and green growth linked to the green economy. Sustainability was identified as a "meta-narrative, a common horizon of possibility (of meaning), granting legitimacy and coherence to an emerging "sustainability regime" (Billi *et al.*, 2022, 142), while green growth linked to a green economy (Kasztelan, 2017) was characterized as an advanced version of sustainable development aimed at harmonizing economic growth with environmentally sustainable objectives. Proponents claim that green growth can stimulate innovation, reduce environmental impacts and enhance economic resilience (Hallegatte *et al.*, 2012).

Based on the mobilizing framework and measures identified in our interviews (see Table 1), we found that they largely coincide with the climate narratives found in the academic literature. These measures collectively represent embedded cases within the overarching narrative of "green capitalism." Examples include "carbon markets as a form of governance" (Bernstein *et al.*, 2010), "climate as an investment opportunity" (Liverman, 2009) and "green consumerism" (Moisander and Pesonen, 2002), among others. Conversely, some critics perceive these concepts as threats to natural resources, the planet's resilience capacity and respect for planetary boundaries (Barbier, 2016). Critics argue that green growth may lead to the exploitation of nature under the pretext of sustainability (Hickel and Kallis, 2019), thereby undermining genuine efforts to achieve environmental equilibrium (Brand, 2012). In addition, the dominance of one narrative over others – as observed in the case of greening capitalism – can result in an inefficient transfer of scientific knowledge to decision-making processes. This scenario, in turn, gives rise to alternatives such as degrowth (Fournier, 2008; Demaria *et al.*, 2013), which remain in the shadows of constant growth. Meanwhile, key commitments made decades ago remain unfulfilled and continue to be deprioritized.

Thus, the historical perspective on climate narratives reveals the complexity and diversity of viewpoints that shape global climate governance. To effectively address climate change, it is imperative to comprehend and integrate these narratives into decision-making processes. Based on our analysis of the interview sample, we identify several areas for enhancing climate change governance:

- increasing citizen participation through a bottom-up governance model;
- reforming the environmental subsidy framework;
- strengthening the science-policy interface;
- decoupling economic growth from energy dependence; and
- developing innovative technological models that extend beyond traditional green growth approaches.

The formalization of the "bottom-up approach" in international climate governance with the 2015 Paris Agreement was highlighted in our interviews and resonated with the main idea of citizens' inclusion. Reflecting that "their level and degree of power during policy-making

processes are a major aspect in creating effective policies and thereby building climate-resilient communities" (Chitsa *et al.*, 2022, p. 16). When citizens actively participate in public policies and contribute with local knowledge, policies become more flexible and adaptable. This refers to "knowledge mobilization, social learning, enhanced sense of belonging and greater motivation for environmental stewardship" (Kiss *et al.*, 2022, p. 252). In addition, the involvement of civil society and local organizations is crucial to sustaining climate initiatives, as they can support and provide practical implementation and resource stewardship (Sillak *et al.*, 2021). This engagement also improves transparency and public institutions' accountability and empowers local communities (Mendonça *et al.*, 2023).

Another point of contention considers the call to reform the environmental subsidy framework as a prevalent model frequently favoring fossil fuel–oriented industries and perpetuating the economic growth model. Reform critics argue that "international efforts have focused primarily on ways to price carbon, arguably putting the cart before the horse" (Skovgaard and Asselt, 2018, p. 84). Notably, reducing fossil fuel subsidies is seen as a necessary measure to shift toward a less carbon-intensive economy. Even though, as it was pointed out, it "may reduce a country's potential for globally connected economic growth, which has consequences for development in the long run" (Coxhead and Grainger, 2018, p. 201). Nonetheless, as many studies depict, reforming fossil fuel subsidies may contribute to "long-term sustainable development objectives" (Rentschler and Bazilian, 2017, p. 891), guarantee social protection for the vulnerable population by integrating them into the reform strategy (Rentschler and Bazilian, 2018), encourage "politically sensitive energy subsidy" (McCulloch, 2017) and to redirect the resource utilization to improve employment opportunities (Overland, 2010), among others.

In terms of the science-policy interface, climate decisions need an integrated, informative framework about their impacts and risks. Moreover, according to Cologna and Siegrist (2020, p. 1), public trust levels in climate science are directly related to "climate-friendly behaviors." What is more, "trust requires that a member of the public know that a scientist has worked from value choices that are in line with her own" (Schroeder, 2021, p. 552). Thus grounding climate legitimacy decision-making processes in scientific knowledge and citizens' engagement with climate change issues is crucial to enhance more informed and responsible responses to climate change consequences.

Within this framework, the decoupling of economic growth from energy dependence emerged as a fundamental point aligned with sustainability values (Hickel and Kallis, 2019) during our interviews. If the goal is to rethink and reorganize energy consumption, which is deeply intertwined with the fossil fuel industry model, then advocating for degrowth not only reflects these considerations but also reconfigures the existing consumerism model (Fournier, 2008). Importantly, degrowth addresses the ecological modernization paradigm and challenges the green growth trajectory (Demaria *et al.*, 2013). Furthermore, degrowth incorporates democratic choice and citizen engagement as essential components of environmental justice and just transition, thereby deconstructing the concept of Gross Domestic Product (GDP) as a measure of consumerism (Latouche, 2010).

The fifth challenge that emerged from the interviews was the call to develop innovative technological models beyond the traditional green approach. Over the past few decades, this has formed a frequent claim that contrasts the traditional economic path-dependent model with the green economy vision (Barbier, 2010) and green technological growth and innovation (Sander, 2016). While this framework provides the rationale for advancing climate action under the sustainability framework (Centobelli *et al.*, 2020), it becomes evident – as our interviewees emphasized – that this will not be achieved without a commitment to "sustainable technological change" (Söderholm, 2020, p. 2). Indeed,

"techno-economic approaches should be complemented with frameworks that address the socio-technical dynamics" (Geels *et al.*, 2017, p. 488). On the contrary, substantial and long-term environmental transformation will remain elusive.

6. Conclusions and avenues for future research

Narratives play a pivotal role in shaping current climate change imaginaries. In this article, we focus on the evolving nature of climate narratives and identify five significant challenges that remain largely unresolved. Our analysis illustrates that climate narratives coexist within a dynamic sociopolitical arena. Moreover, this research contributes to the literature on climate narratives as well as climate governance. The identified tension between the dominant climate narratives, i.e. greening capitalism and degrowth, impacts and influences various levels of climate governance – locally, regionally and nationally. In turn, the depicted shortcomings reflect not only these territorial inequalities but also the differential impact of climate change on the distinct socioeconomic, cultural and political contexts. Moreover, climate governance implies a planetary dimension and, therefore, a gigantic management and stewardship of the issue. However, climate governance remains confined to these binary frameworks, and the challenges that were promised to be addressed decades ago remain largely unresolved. Hence, the tension between the dominant narratives establishes a dichotomy that underscores the need for a more integrated and nuanced understanding of these climate narratives and their subnarratives.

While our study offers valuable insights into the evolving nature of climate narratives and the prevalent unresolved challenges for climate governance, we must acknowledge certain limitations arising from the relatively small sample size of our interview sample. While they are informative, they constitute only a fraction of the broad spectrum of views on climate narratives and governance. We acknowledge that this paper does not tackle the subnarratives because the dominant narratives and challenges formed the bulk of this paper. We encourage future studies to delve more into the climate subnarratives and to explore the particular "stories" we tell about climate change. Furthermore, different geographies may exhibit unique cultural, socioeconomic and political dynamics that influence how climate narratives are perceived and framed. Here, we encourage future research to explore this aspect, expanding the scope of the interviews to include a wider range of voices. Our study lays an important foundation for further exploration of climate narratives and governance while acknowledging our limitations and inviting additional discussion on the complexities of these issues.

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