

# Forms of Climate Change: When Climate, Forest, and Local Community Collide

Erland Måråld, Isabella Hallberg-Sramek, Janina Priebe & Elsa Reimerson

**To cite this article:** Erland Måråld, Isabella Hallberg-Sramek, Janina Priebe & Elsa Reimerson (2025) Forms of Climate Change: When Climate, Forest, and Local Community Collide, *GeoHumanities*, 11:1, 188-200, DOI: [10.1080/2373566X.2025.2479776](https://doi.org/10.1080/2373566X.2025.2479776)

**To link to this article:** <https://doi.org/10.1080/2373566X.2025.2479776>



© 2025 The Author(s). Published with license by Taylor & Francis Group, LLC



Published online: 25 Apr 2025.



Submit your article to this journal [↗](#)



Article views: 394



View related articles [↗](#)



View Crossmark data [↗](#)

# Forms of Climate Change: When Climate, Forest, and Local Community Collide

Erland Mårald<sup>a</sup> , Isabella Hallberg-Sramek<sup>b,c</sup>, Janina Priebe<sup>a</sup>, and Elsa Reimerson<sup>a</sup>

<sup>a</sup>*Umeå University, Sweden;* <sup>b</sup>*Swedish University of Agricultural Sciences, Sweden;*

<sup>c</sup>*Wageningen University, The Netherlands*

This article explores the dynamic interplay between climate change, people, and regions heavily dependent on forests. Based on Levine’s form analysis, it conceptualizes climate as a relational pattern where collisions between different forms create interstices, opening avenues for alternative comprehension and action. The article argues that climate change is not an external phenomenon but an integrated process that shapes forests and communities, challenging established national forestry frameworks. By rooting the global climate crisis in the forest and its local cultural context, the results reveal climate change as a multifaceted issue, offering opportunities for reconfigurations and kaleidoscopic changes. Through two collaborative processes conducted in northern and southern Sweden, the study highlights how local perspectives and historical practices can foster subtle yet transformative shifts in collective perceptions, ultimately reshaping how societies understand and address the climate crisis. **Key Words:** climate change, forests, forms, kaleidoscopic shifts, local communities.

Forests, deeply intertwined with local cultural, social, and economic contexts, offer a powerful lens for making climate change more tangible for humans. Drawing on two collaborative processes conducted in northern and southern Sweden during 2019, this article examines how individuals rooted in forest-adjacent communities perceive climate change in relation to their local surroundings. The aim of this article is to explore how participants connect the concepts of forest, climate, and local community, and to investigate whether these connections and shifts in perspective can open pathways for rethinking dominant views on both forests and climate. Although no unified perspective emerged, the analysis suggests that subtle, interconnected changes in collective perceptions can act as quiet yet transformative forces, reshaping how societies understand and address the climate crisis.

This article draws on Levine’s (2015) analysis of forms to illuminate how the same forms operate across different contexts – in this case climate, forests, and local communities. By extending literary analysis of how forms create order in texts to encompass how social institutions structure specific places and times, Levine identifies wholes, rhythms, hierarchies, and networks as forms that organize both the social and esthetic world. Arranging space into units and boundaries, organizing time into periods and events, ranking high and low, and assembling parts into joint systems are political processes—a continual political struggle to determine the “proper places for bodies, goods, and capacities” (p. 3). Although the forms themselves are immutable, they are thus part of changing cultural and political contexts where they are filled with content, generate patterns and, as they “travel” between levels, domains and times, mutually influence each other. Forms may collide, creating complex environments with multiple, sometimes

---

## ARTICLE HISTORY

Initial submission, March 2024; revised submissions, May and December 2024; final acceptance, March 2025

**CORRESPONDING AUTHOR** Erland Mårald  [erland.marald@umu.se](mailto:erland.marald@umu.se)

© 2025 The Author(s). Published with license by Taylor & Francis Group, LLC

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on

conflicting, organizational patterns—potentially leading to a reconfiguration of what becomes conceivable and achievable.

The key point is that encounters between forms in specific situations never produce a singular order or total dominance; there is always potential for openings. According to Levine, these clashes give rise to “fissures and interstices, vagueness and indeterminacy, boundary-crossing and dissolution” (p. 9). von Redecker (2021) argues that it is precisely in such interstices that established patterns can be reshaped, leading to a kaleidoscopic restructuring of constellations. Like a kaleidoscope, new patterns are not created by new forms; the forms remain the same, but change results from their shifting positions and relations to each other. Such shifts are rarely grand and clear from the beginning, but can start in the local and seemingly trivial: “It is a question not of an abrupt scenechange, but of the structures that make it possible to elevate an underground praxis, turning it into a new paradigm” (von Redecker 2021, 19). Not everything is form. In a kaleidoscope, there are also joints between the forms, and sometimes forms are missing in the resulting patterns. It is in these interstices that shared meanings, practises, and relationships take shape with the potential to reconfigure constellations that we cannot yet see.

Levine (2023) has expanded her formalistic analysis into a method aimed at fostering practical action in the climate crisis, to enable common conditions for continuance. This “expansive version of formalism” (p. 23) describes, for instance, strategies for designing meetings, using infrastructures to connect various elements, and building institutions to sustain common conditions. From a formalistic perspective, institutions are noteworthy due to their ability to channel political endeavors, organize various parts, maintain routines, and create stability over time. While institutional arrangements can lock and hinder change, they are also a prerequisite for coordinated action and for creating continuities to sustain societies. Institutions provide “attention to *attainable* social worlds that we might in fact fight for and build here and now” (Levine 2023, 21, italics in the original).

To build something “here and now, by us” was also the ambition of the collaborative processes (Reimerson, Hallberg-Sramek, and Priebe 2024). On the one hand, the process emphasized outlooks and perspective shifts to bring about openings for rethinking; on the other hand, the focus was placed on local conditions and institutions as ways to begin creating conditions for change in the present. Because the forest has long been an essential part of these communities—serving as a kind of institutional common ground—the forest landscape functioned as a meeting ground for both participants and diverse perspectives. Similarly, Mathews (2022) offers a compelling example through his study of how assemblages of trees, landscapes, and communities in central Italy evolve over time, continuously shaping and reshaping relationships as individuals perceive and respond to these changes. In this context, climate change becomes interwoven with a broader spectrum of experiences and transformations, prompting efforts to maintain a secure and fulfilling order. Mathews interprets this as a distinct form of climate action—indirect and different from conventional notions of “climate mitigation.”

Likewise, in the two Swedish collaborative processes, a recurring theme emerged: a shared commitment to utilizing, managing, and caring for trees and landscapes to support community resilience and tackle climate change. In both processes, a positive atmosphere emerged, fostering an intensive exchange of positions and perspectives. This, in turn, led to a more nuanced and diverse understanding of the relationship between climate, forests, and local communities (Hallberg-Sramek et al. 2022, 2023; Priebe et al. 2022; Reimerson, Hallberg-Sramek, and Priebe 2024). However, there were widely differing and often conflicting views on how the forest should be managed and used to

drive positive development—both in counteracting climate change and simultaneously supporting local communities. Despite these disagreements, this shared concern created spaces of opportunity for exchanges, shifts in perspective, and unexpected openings.

## APPROACH AND ANALYSIS

The collaboratory processes comprised four consecutive workshops (eight full-day sessions in total) conducted over six months in two nearby municipalities in southern (Lessebo and Våxjö) and northern (Vindeln and Umeå) Sweden (for an extended description see: Hallberg-Sramek et al. 2022, 2023; Priebe et al. 2022; Reimerson, Hallberg-Sramek, and Priebe 2024). Both regions are heavily influenced by the forest and forest-related industries, including sawmills, pulp industries, glass manufacturing, and tourism, as well as influential regional forest owner movements and, in the North, Sámi reindeer husbandry. Participants were recruited from local forest-related organizations active in the study areas, intending to represent a balanced distribution regarding gender, age, and a broad range of interests, including private forest owners, forestry companies, entrepreneurs, environmental movements, outdoor recreation, education, civil society, and, in the North, reindeer husbandry. Recruitment ceased when the groups comprised 14 and 16 individuals in southern and northern Sweden, respectively. About half of the participants in each group came from the regional urban centers (Våxjö and Umeå), and the rest from rural municipalities (Lessebo and Vindeln).

Despite the geographical distance between the regions, both have been shaped by the same forest management system—the Swedish forestry model—with the ambition to combine highly productive forestry with the conservation of biodiversity and social considerations in the same landscape (Lindahl et al. 2017; Mårald, Sandström, and Nordin 2017; Westholm, Lindahl, and Kraxner 2015). Recently, the model has faced criticism for prioritizing timber production and the interests of the forestry industry over social, conservation, and climate adaptation aspects (Andersson and Keskitalo 2018; Holmgren and Arora-Jonsson 2015; Jakobsson, Olofsson, and Ambrose-Oji 2021; Röstlund 2022). It was in this polarized context that the participatory process took place in 2019.

The processes resulted in material consisting of interviews, recorded group and plenary discussions, presentations from group work, and anonymous individual reflections after each workshop session. Using a formalistic approach, the material has been examined to identify recurring and conflicting patterns of hierarchy, temporal arrangements, interconnected links, and composite entities (Levine 2015). This involves a reading of the material with attention to how forms, stories, and explanations create overlapping patterns of both cultural imaginaries and social institutions, technical solutions, political arrangements, and concrete events. A formalistic analysis highlights and compares properties of different entities that are normally perceived as separate. In our case, a forest, the climate, a community, and a city have some inherent similarities because they share some formal attributes. The formalistic analysis can reveal how the same form can be filled with different content, but also what happens when forms meet at sites where they undermine one another.

The focus in this article is not on the processes themselves—their purpose, implementation, or outcomes—but rather on using the material as an source to examine how the participants, individually and collectively, understood climate change in relation to local and forest contexts. As

the authors of the article were the ones who designed and implemented these processes, the article is also an attempt to take step back and reflect on the wider cultural basis of such processes and their significance. Through this analysis, this study contributes to humanities-oriented climate research that highlights integrated ways of incorporating climate into local contexts (Callison 2015, 2024; Elixhauser, Bösch, and Vogel 2018; Mathews 2022; Norgaard 2011), how dominated and predetermined frames limit people's opportunities to address changes (Aykut, Foyer, and Morena 2017; Bess 2022; Heymann 2019; Lynch and Veland 2018; Mahony and Hulme 2018; Priebe, Mårald, and Nordin 2021), and how broader cultural perspectives on climate change might open up other possibilities and actual actions (Coen 2019; Hoffman 2015; Hulme 2017, 2020; Knox 2020; Levine 2023; Tyszczuk and Smith 2018). In sum, this analysis attempts to capture the forms of climate change in its complex, yet simultaneously concrete and grounded, contexts.

## HIERARCHIES OF CLIMATE, FOREST, AND PLACES

Hierarchy, ranking things and phenomena in superior and inferior as well as high and low, is a salient form in the material. From a local perspective, a sliding scale emerges between tangible everyday phenomena related to climate change and the abstract notion of the climate crisis. In pre-workshop interviews, participants predominantly framed their personal connection to climate issues in terms of concrete actions, material aspects, or social institutions, encompassing activities such as recycling, driving, plastic use, littering, composting, garbage collection, locally produced food, and construction of wooden houses. Initially perceived as scattered and seemingly irrelevant, these responses, when viewed as interacting forms, resulted in a larger pattern that signifies a dynamic approach to climate change.

Abstract concepts and qualities, including carbon dioxide, environmentalism, nature conservation, climate-smart practices, planetary boundaries, sustainable development goals, and the cessation of burning fossil fuels, also contribute to creating order. Some participants depicted the climate as a media issue on a higher level, linked to public figures such as Greta Thunberg, with varying perspectives ranging from perceiving the issue as "exaggerated" to viewing it as a "survival issue" or "frightening." A hierarchy emerges between the individual understanding of climate in everyday life and the overarching "climate crisis," which is positioned as a scientific and media issue ranked above and detached from the participants' lived and related places.

A similar ranked pattern becomes evident in how participants perceive decision-making power over climate and forests. Given the global nature of the climate crisis, participants predominantly asserted that climate policy should be managed by international entities. The European Union and the United Nations were frequently cited as key decision-making bodies. As one participant put it: "The climate issue is so much bigger. It cannot be kept on the local level. It must be tackled directly on the international level." This perspective reflects an idea of climate as a global issue and a perception of an inherently hierarchical form. Participants suggested that, due to the magnitude of the climate issue requiring significant changes, international institutions are better suited to address it. Consequently, the climate issue should be addressed at the international level, with solutions trickling down to all levels, from global to individual.

By contrast, decision-making about the forest was largely perceived as a national or even local and individual matter. Participants commonly identified the Swedish Government,

Parliament, Swedish Forest Agency, and County Administrative Boards under the Forestry Act as key decision-makers regarding forests. Participants, particularly those with connections to forestry, expressed reluctance to relinquish decision-making power to international levels, especially the European Union. Instead, there was a preference for further decentralization of decisions to regional forest programs, the local level, and ultimately, through private property rights, to individual landowners. This perspective positioned the forest as an individual concern, with participants asserting, “It is I who know my forest, and it is I who mostly decide.”

Notably, participants critical of the forest industrial system saw the dominance of the national level as problematic, attributing national economic incentives to the destruction of the forest through monocultural plantations. In this context, the international level was recognized as a higher corrective force capable of disrupting the lower nationally controlled forest policies, thereby opening ways for alternative priorities and local management methods.

In summary, the initial stages of the process revealed that climate and forest, respectively, constitute two distinct wholes with different hierarchical structures. The climate as an entity tended to subordinate the actions of individuals and lower decision-making levels, emphasizing a hierarchical shift of responsibility upwards. Conversely, the forest as an entity was predominantly understood as governed by national policies, limiting the scope for action within a national framework, and constraining possibilities at the local level.

## COLLIDING RHYTHMS

Rhythm is a form that defines time periods, paces, shifts, and that synchronizes events and developments. For example, ideas of the climate were often linked to weather events experienced in their local forests. The summer of 2018, which preceded the workshop series, was, until then, the warmest summer on record in Sweden. Almost all participants from the South, where the heat wave was more intense, commented on the extremely hot summer, with stressed forests and subsequent bark beetle infestation. The same area had been hit by the storm Gudrun in 2005, one of the strongest storms ever measured in Sweden. Although several participants indicated that it was difficult to link these individual weather events to climate change, they nevertheless made a synchronization of these temporally separate momentous events with contemporary reports of the predicted consequences of climate change, which together formed a readiness for more to come. The participants from the North found it more difficult to see direct connections between climate change and singular weather events, with the exception of representatives of reindeer husbandry, who understood drier summers and altered vegetation in the mountains as signs of climate change.

The interacting rhythms of climate and society were initially expressed through two distinct approaches to dealing with climate change using forests. Participants involved in forestry, particularly in the North, emphasized the synchronization of forest and climate through forest management, timber production, and consistent economic income. According to this view, production forests managed through clear-cutting were seen as the most effective carbon sinks. Clear-cutting involves uniformly harvesting a stand of trees, regenerating the site with a new even-aged stand, and cyclically harvesting of the trees after 60–125 years, depending on species and region. This view held that active forest management was “extremely important” to optimize forest growth, capture more carbon, and thereby mitigate climate change.

Participants connected to environmental interests viewed the increasingly short space for action created by the escalating climate crisis as incompatible with production-oriented forestry. From this perspective, clear-cutting forestry was seen as a threat to the slow pace of the forest ecosystem's adaptability and to the rhythms that ensure long-term carbon storage. Instead, allowing the forest to evolve naturally and leaving the trees standing was believed to enable a better storage of atmospheric carbon dioxide and create versatile, adaptable, and robust living forest environments. The forest-based production of biofuels, in particular, aroused criticism. Although biofuels could replace fossil fuels, this process was understood to rapidly convert long-stored forest carbon into atmospheric carbon, perpetuating a resource-intensive society and short-term economic growth.

Despite these different perspectives on temporal patterns, there was a consensus that international agreements, such as the Paris Agreement and Agenda 2030, set overarching time frames to work toward. The idea of storing carbon dioxide in trees was also, by both sides, hailed as panacea to achieve this goal. As we have seen, however, the paths to achieve this goal differed radically, where an optimistic belief that an increase the pace of industrial forestry can slow down climate change was juxtaposed with a notion that we must start from the slow pace of nature to adapt to the accelerating climate change.

Patterns of hierarchies and rhythm were thus linked and reinforced each other. When the forest was related to the global climate crisis and international institutions, sustainable forests were prioritized for carbon sequestration and biodiversity over short-term national and individual economic interests. Conversely, when the climate crisis was viewed through the national forest production system with associated social institutions linked to ownership and economic income, an accelerated production emerged as the most logical option to face accelerating climate change. These ways of thinking created a polarization with locked orders regarding climate and forests. In the continuing process, temporal outlooks and local perspectives were emphasized, and these patterns began to be disrupted.

### KALEIDOSCOPIC SHIFTS

As is standard procedure in such collaborative processes, the participants were tasked with developing future visions for their communities and pathways to achieve them. In contrast to the usual way of working, they also had to work on reconnecting to their local history and how change has been dealt with in the past. By looking back at historical experiences of the local abilities to change the situations that have arisen, the participants identified the importance of "strong leaders with local roots," democracy, active civic associations, and social cohesion as vital ingredients. In terms of governance, they emphasized local politics, positive examples, and strategic work as basis for unifying individual and common interests in the municipality. Overall, the "principle of proximity" was singled out as having been crucial for ensuring flourishing local networks in past times of changes. Crises in the past that affected people personally and directly were seen to have initiated positive change through commitment, support, and cooperation but also disobedience, born out of concrete situations. Disobedience and opposition, as one participant pointedly stated, indicate a societal "tipping point" that leads to action and constructive change.

When looking ahead, descriptions often became more abstract, summarized in buzzwords like “visions,” “challenges,” “freedom” or “role models” without specified meaning. It was also clear that futurity as a feature of form was already filled with established perspectives and positions, where today’s prevailing conflicts emerged most clearly. There was a tendency to discuss future “challenges,” framing the future as a politically contested arena where optimistic visions clashed with narratives of decline. However, a future perspective grounded in local networks also emerged. To face the future, many emphasized the need for better cooperation and local exchanges to create incomes, local development, and ability to adapt to rapidly changing situations. Developing this required an ability to listen to each other, show compassion, and understand different conditions and situations. At the same time, there was a widespread realization that local municipalities depended on the outside world and on collaboration with other places and levels. Access to information and knowledge, as well as power and resources, was essential to enable change.

In an excursion to model forests in northern and southern Sweden (the third workshop), the discussions displayed a belief that the ability for positive change could be developed locally with the help of connections to the forest. While visiting these forest sites, several participants emphasized that historical practices and local knowledge could provide good examples of, for example, selective forestry to get the best quality out of the timber. The problem, however, was that many participants expressed concern that this knowledge was at risk of being lost.

Another problem was the polarization of the debate about the role and management of the forest. The highly polarized debate of forest-related issues was seen as a hindrance for both local development and diversification of management tools and goals. Positions that were once closely aligned were disconnected and moved further apart through the centrifugal forces of the debate. The form of the debate, filled with given ideas, fixed networks, opposing imaginaries of the future, and locked differences, thus appeared in itself as an order that discouraged local initiatives. However, many felt that improved local collaborations and networks – that is, a new form of collaboration within – could foster a greater understanding of others’ interests and perspectives and promote the exchange of knowledge. Such collaborations could also lead to new small businesses and potential income from the forest, as well as a diversification of management. In other words, from a local perspective emerged a willingness to disengage from the locked international and national debate and find ways to bridge differences to benefit the local community.

The methods of forest management were clearly understood as relational, forming parts of different arranging networks with different possible outcomes. Seeing the forest as part of a production system created relations consisting of industry, national and local community development, forest ownership, and considerations of profitability. In relation to climate change, the networks shifted shape as their elements were woven together with other issues, such as biodiversity, conservation issues, wood constructions and carbon sequestration, and with perceived changes and upcoming threats. Finally, when the perspective was turned toward the local community, other links, aspirations, and problems appeared. From this local perspective, joint development, local self-determination, a good living conditions, and proximity to neighbors and the environment became important.

It was like turning a kaleidoscope. In the intersections between these shifting patterns of constellations, there were occasional openings to rethink the state of things. The global climate issue was not only something that was best handled by superior societal institutions, nor was forestry by definition part of a national production system. These kaleidoscopic shifts in perspective



created increased reflexivity and the fixed orders of forms at the national and international levels began to dissolve. Interstices emerged, and, at least in the temporary and performative space of the collaborative process, possibilities for re-configurations were revealed.

## INSTITUTIONAL FORMS

In the concluding task of the collaboration process, under the motto “here and now, by us,” the participants were assigned to go from visions to concrete plans of how their communities could develop in the present in relation to the forest and climate change. As participants divided into smaller groups, individuals with similar positions tended to end up in the same group. The consequence was that their plans largely reflected established positions in the public debate. But not entirely. Seen from the perspective of this article, it is interesting to see how institutions created different narratives about concrete measures and how these enabled comparisons with other contexts.

One such storyline emphasized the local place and its collective power for achieving the desired change. One recurring aspect was climate-neutral, sustainable local communities. New consumption patterns allowed for reduced use of resources and new local identities. Visions of “more time for each other and sustainable solutions” emerged as both the final goal and the way to reach it. Another key aspect was the central role of knowledge and knowledge dissemination. Knowledge about nature should be elevated in school curricula, facilitated through well-informed politicians and local centers for sustainability transformation. The group with this storyline in the southern workshop location went even further and said that their storyline centered on “nature’s right to clean air and water.” Aiming at a similar goal, one group in the northern location emphasized legislation, “uniting opinions,” strong local leaders, and cooperation. The use of close and collective institutional forms was thus a path toward sustainable societies.

Another storyline displayed a global and collective orientation, reflecting the climate as a global whole to be governed by distant powerful actors and within the framework of the 2030 Agenda. Key players were, for instance, a stronger United Nations organization for improved international conflict management and more effective agreements on biological diversity. In this storyline, global goals were given priority over local goals to ensure an ecologically based economy and reduced consumption. Again, impartial research, dissemination of information, knowledge, education with global perspectives, and “well-educated politicians” were central. Participants in the northern workshop location highlighted the need to change forest legislation and to strengthen forest conservation as well as social benefits from forests. In the South, emphasis was instead placed on fossil-free transports, active decision-making, economic incentives for biodiversity, and the inclusion of environmental aspects in public procurement. Global institutional forms here became a lever to bring about a range of local measures.

Forestry was a main emphasis in other storylines in different ways, which all came together in a view anchored in a local and individual order. In both the northern and southern workshop location, the forest, forest management, the role of individual forest owners in the sustainable transformation of society, and the creation of incomes and vibrant rural communities were highlighted. In the North, the participants focused on a clear and predictable institutional system of decision-making that would facilitate the setting of common goals and thriving entrepreneurship. Key tools to facilitate these influences were seen in strategic planning, less bureaucracy, and, again, the emphasis on forest- and climate-related knowledge in school education. Long-term

stable governance of forests was a key element to generate development. In the southern workshop location, the tools to ensure this predictability included stronger property rights and profitability as a guarantor of reliability. In these storylines, that kind of reliable framework was the basis for the entrepreneurship and local development, while at the same time allowing for the promotion of various ways for mitigating climate change.

In all these storylines, societal institutional forms emerge as either hinder or provide opportunities for change. These include decision-making processes, bureaucratic structures, laws, and education. However, these forms could be situated close by or far away, be individual or collective, be tailored to specific locations or be general, and create power for change from the bottom up or the top down. For some groups, development was based on the individual, income, ownership, and entrepreneurship. For others, it was nature, climate, and biological diversity that constituted the basic form to which society had to adapt. To overcome differences, all groups emphasized the importance of research, knowledge, and information as forms that could be filled with “objective” content. Similarly, all groups highlighted education and schooling as a panacea to achieve the desired change in the present. Even though the task was to anchor the climate issue in their own communities and be open to new measures, the main features of these stories are familiar from elsewhere.

At the same time, the forms in these stories were filled and reshaped by the local conditions and the participatory process, revealing movements from the initial frameworks of understanding. Among participants with forest industry interests, property rights were seen as an inviolable cornerstone. However, the storylines emphasized cooperation and ensuring accessibility for other forest users. With increased local self-determination, it would be possible to carry out forestry with other methods than the dominant clear-cutting forestry. Regardless of the management method, the most important thing for these participants was to actively “take care of” the forest in order to contribute to the community and its development. More surprisingly, participants in groups with strong environmental interests also included clear-cutting forestry as a central practice. In these storylines, clear-cutting was significantly reduced and limited to areas already “destroyed,” but it was still represented as being important for binding carbon dioxide and for replacing fossil-based materials with renewable ones. Moreover, intensive forestry, enhanced by artificial fertilization, was seen as a desirable means to increase carbon binding and protect even more forest elsewhere. Clear-cut forestry and artificial fertilizers, two phenomena that have long been seen as leading environmentally harmful practices, took on new meanings in relation to the impending climate threat.

These movements are hardly revolutionary, but change does not mean that everything has to be new. Instead, there are practices, underlying meaning and relational shifts within and between existing institutions that can bring about changes in prevailing constellations. In the participants’ narratives of institutional forms, the handling of climate change became part of different contexts, where the maintenance of societal relations and links to other levels, as well as the care of the forest, were seen as prerequisites for joint development.

## CONCLUDING DISCUSSION

In this article, we have brought together three constellations of forms—climate, forest, and the local community. When the dominant ways of thinking concerning the climate and the forest are juxtaposed, two incompatible wholes emerge, each with its own hierarchies, networks, and rhythms, pointing toward different political paths. The discussions within the studied collaborative processes

reflect conflicts and forms as pre-filled containers recognized at both national and international levels. For some participants, climate was perceived as a comprehensive issue that must be hierarchically controlled from above, prioritized over local concerns, and used to challenge the dominance of the industrial and national perspective on the forest as a form of thinking. Conversely, from a forestry perspective, the forest is presented as a national entity intrinsically linked to ownership and individual use, where optimized forestry rhythms can control and regulate the climate.

However, there was a weariness of this tenacious tug-of-war, where boundary-crossing cooperation in local contexts was highlighted as a transformative opportunity. Interestingly, collaboration became even clearer from a local perspective when looking back at past events. In the past, networks and rhythms seemed more adaptable and influential, with many positive personal examples. Looking to the future, however, issues appeared more urgent and threatening, and decision-making became more monolithic, distant, and difficult to influence—something easily left to higher levels to govern. Although the future is said to be open, in today's forward-looking society, it is already filled with accelerating threats, anticipated opportunities, contested paths, and entrenched positions (Bess 2022; Lynch and Veland 2018). Depending on the context, the past can also be filled with contested political positions, but in our case, there was a lack of a habit of thinking of history as a source of change, leading to more unconditional reflections.

In the processes, the participants struggled to understand and create order in the forms of climate change in relation to forests and local communities. It is clear that climate change is no longer perceived as a passive backdrop, neutral in decision-making regarding forest use and community development (Mahony and Hulme 2018). This perception encompasses climate change manifesting through shifting seasons, extreme weather events, and an international political hierarchy increasingly dictating conditions at lower levels (Elixhauser, Bösch, and Vogel 2018). Consequently, the climate “lifts” the forest and forestry from their established national arrangements and cultural frameworks, placing them within an other arrangement that includes experienced natural occurrences and local changes as well as broader knowledge frameworks, international decision-making structures, and relevance contexts (Knox 2020). This new situation challenges established constellations of forms for the forest, creating both resistance and conflicts as well as opportunities for reconsideration (Levine 2023). Conversely, by illuminating climate change through the forest, firmly rooted in a specific place and with developed networks to society and culture, the global climate crisis is “pulled down” to earth, broken up into many forms, and integrated into efforts to care for the forest landscape and sustain local communities (Hulme 2020; Mathews 2022).

Finally, we conclude that while dominant narratives about climate and forests remain rigid, the interplay and tensions between these constellations of forms in local contexts create opportunities for subtle yet transformative shifts. These shifts challenge fixed ideas and open new pathways for reimagining relationships. Crucially, it is in the gaps—those interstices between forms—that shared meanings, practices, and relationships emerge, offering the potential to refigure societal constellations and transformative futures.

## ACKNOWLEDGMENTS

We wish to thank the local stakeholders for contributing their time and insights; our fellow researchers Annika Nordin, Camilla Sandström, and Anna Sténs who contributed to the research design and

investigation; Malin von Essen for professional facilitation of the workshops; and Annika Mossing for skillful communication.

## FUNDING

This work was supported by Formas—a Swedish Research Council for Sustainable Development under Grant no. 2017-01956 and by Future Forests, a platform for interdisciplinary forest research and research communication in collaboration between the Swedish University of Agricultural Sciences, Umeå University, and Skogforsk (the Forestry Research Institute of Sweden). The funding sources had no involvement in study design; in the collection, analysis and interpretation of data; in the writing of the article; or in the decision to submit the article for publication.

## ORCID

Erland Mårald  <http://orcid.org/0000-0002-2291-9910>

## REFERENCES

- Andersson, E., and E. C. H. Keskitalo. 2018. Adaptation to climate change? Why business-as-usual remains the logical choice in Swedish forestry. *Global Environmental Change* 48:76–85. doi:10.1016/j.gloenvcha.2017.11.004.
- Aykut, S. C., J. Foyer, and E. Morena, eds. 2017. *Globalising the climate: COP21 and the climatization of global debates*. London, UK: Routledge.
- Bess, M. D. 2022. *Planet in peril: Humanity's four greatest challenges and how we can overcome them*. Cambridge, UK: Cambridge University Press.
- Callison, C. 2015. *How climate change comes to matter*. Durham, NC: Duke University Press.
- Callison, C. 2024. Rethinking our histories and relations with climate change. In *Climate, science and society*, ed. Z. Baker, T. Law, M. Vardy, and S. Zehr, 19–26. Abingdon, UK: Routledge.
- Coen, D. R. 2019. *Climate in motion: Science, empire, and the problem of scale*. Chicago, IL: University of Chicago Press.
- Elixhauser, S., S. Bösch, and K. Vogel. 2018. Meshworks and the making of climate places in the European alps: A framework for ethnographic research on the perceptions of climate change. *Nature and Culture* 13 (2): 281–307. doi:10.3167/nc.2018.130205.
- Hallberg-Sramek, I., E. M. Nordström, J. Priebe, E. Reimerson, E. Mårald, and A. Nordin. 2023. Combining scientific and local knowledge improves evaluating future scenarios of forest ecosystem services. *Ecosystem Services* 60:101512. doi:10.1016/j.ecoser.2023.101512.
- Hallberg-Sramek, I., E. Reimerson, J. Priebe, E. M. Nordström, E. Mårald, C. Sandström, and A. Nordin. 2022. Bringing “climate-smart forestry” down to the local level—identifying barriers, pathways and indicators for its implementation in practice. *Forests* 13 (1):98. doi:10.3390/f13010098.
- Heymann, M. 2019. The climate change dilemma: Big science, the globalizing of climate and the loss of the human scale. *Regional Environmental Change* 19 (6):1549–60. doi:10.1007/s10113-018-1373-z.
- Hoffman, A. J. 2015. *How culture shapes the climate change debate*. Redwood City, CA: Stanford University Press.
- Holmgren, S., and S. Arora-Jonsson. 2015. The Forest Kingdom—with what values for the world? Climate change and gender equality in a contested forest policy context. *Scandinavian Journal of Forest Research* 30 (3):235–45. doi:10.1080/02827581.2014.1002216.
- Hulme, M. 2017. *Weathered: Cultures of climate*. London, UK: SAGE.

- Hulme, M. 2020. *Climate change: Key ideas in geography*. London, UK: Routledge.
- Jakobsson, R., E. Olofsson, and B. Ambrose-Oji. 2021. Stakeholder perceptions, management and impacts of forestry conflicts in Southern Sweden. *Scandinavian Journal of Forest Research* 36 (1):68–82. doi:10.1080/02827581.2020.1854341.
- Knox, H. 2020. *Thinking like a climate: Governing a city in times of environmental change*. Durham, NC: Duke University Press.
- Levine, C. 2015. *Forms*. Princeton, NJ: Princeton University Press.
- Levine, C. 2023. *The activist humanist: Form and method in the climate crisis*. Princeton, NJ: Princeton University Press.
- Lindahl, K. B., A. Sténs, C. Sandström, J. Johansson, R. Lidskog, T. Ranius, and J. M. Roberge. 2017. The Swedish forestry model: More of everything? *Forest Policy and Economics* 77:44–55. doi:10.1016/j.forpol.2015.10.012.
- Lynch, A. H., and S. Veland. 2018. *Urgency in the anthropocene*. Cambridge, MA: MIT Press.
- Mahony, M., and M. Hulme. 2018. Epistemic geographies of climate change: Science, space and politics. *Progress in Human Geography* 42 (3):395–424. doi:10.1177/0309132516681485.
- Mårald, E., C. Sandström, and A. Nordin. 2017. *Forest governance and management across time: Developing a new forest social contract*. London, UK: Routledge.
- Mathews, A. S. 2022. *Trees are shape shifters: How cultivation, climate change, and disaster create landscapes*. New Haven, CT: Yale University Press.
- Norgaard, K. M. 2011. *Living in denial: Climate change, emotions, and everyday life*. Cambridge, MA: MIT Press.
- Priebe, J., E. Mårald, and A. Nordin. 2021. Narrow pasts and futures: How frames of sustainability transformation limit societal change. *Journal of Environmental Studies and Sciences* 11 (1):76–84. doi:10.1007/s13412-020-00636-3.
- Priebe, J., E. Reimerson, I. Hallberg-Sramek, A. Sténs, C. Sandström, and E. Mårald. 2022. Transformative change in context—Stakeholders’ understandings of leverage at the forest–climate nexus. *Sustainability Science* 17 (5): 1921–38. doi:10.1007/s11625-022-01090-6.
- Reimerson, E., I. Hallberg-Sramek, and J. Priebe. 2024. “Here and now, by us”: Co-production of climate action pathways in forest landscapes. *Environmental Policy and Governance*. doi:10.1002/eet.2140.
- Röstlund, L. 2022. *Skogslandet: En granskning [The forest country: A scrutiny]*. Stockholm: Forum.
- Tyszczyk, R., and J. Smith. 2018. Culture and climate change scenarios: The role and potential of the arts and humanities in responding to the “1.5 degrees target.” *Current Opinion in Environmental Sustainability* 31:56–64. doi:10.1016/j.cosust.2017.12.007.
- von Redecker, E. 2021. *Praxis and revolution: A theory of social transformation*. New York, NY: Columbia University Press.
- Westholm, E., K. B. Lindahl, and F. Kraxner. 2015. *The future use of nordic forests*. Heidelberg: Springer International.

ERLAND MÅRALD is a Professor at the Department of Historical, Philosophical and Religious Studies at Umeå University, S-90187 Umeå, Sweden. E-mail: [erland.marald@umu.se](mailto:erland.marald@umu.se). His research interests include historical and interdisciplinary studies on the relationships between humans, ideas, and the environment.

ISABELLA HALLBERG-SRAMEK is a Researcher at the Department of Forest Resource Management at Swedish University of Agricultural Sciences, S-907 36 Umeå, Sweden. E-mail: [isabella.hallberg.sramek@slu.se](mailto:isabella.hallberg.sramek@slu.se). She is also a visiting researcher at the Forest and Nature Conservation Policy Group, Department of Environmental Sciences, Wageningen University, Wageningen 6700, The Netherlands. Her research explores the relationships between people and forests, focusing on how these interactions shape the contributions forests provide to people today and in the future.

JANINA PRIEBE is an Associate Professor at the Department of Historical, Philosophical and Religious Studies at Umeå University, S-90187 Umeå, Sweden. E-mail: [janina.priebe@umu.se](mailto:janina.priebe@umu.se). Her research interests include sustainability, sustainability transformation, and natural resource development in Arctic contexts and from a historical and cultural perspective.

ELSA REIMERSON is an Associate Professor in the Department of Political Science at Umeå University, S-90187 Umeå, Sweden. E-mail: [elsa.reimerson@umu.se](mailto:elsa.reimerson@umu.se). Her research interests include environmental politics and policy, with a focus on collaborative governance, conservation, and the rights of Indigenous peoples.