

Towards enhanced climate change adaptation in the Nordic Region

Policy recommendations based on an
assessment of best practices and key
challenges for adaptation policy in the
Nordic countries



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Towards enhanced climate change adaptation in the Nordic Region

Policy recommendations based on an assessment of best practices and key challenges for adaptation policy in the Nordic countries

June 2023

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About the report

The report "Comparison and analysis of national climate change adaptation policies in the Nordic region" was commissioned by the Nordic Working Group for Environment and Economy (NME) within the Nordic Council of Ministers. The work has been conducted by Western Norway Research Institute in collaboration with Stockholm Environment Institute, University of Helsinki, and the Technical University of Denmark, based on a review and analysis of policy documents and interviews with national adaptation experts.

The policy recommendations presented here are directly drawn from the final two chapters of the report. The full report can be accessed [here](#).

The recommendations express the perspectives of the report authors and do not represent the Nordic Council of Ministers or any of the national governments.

Summary

The following policy recommendations are based on a mapping and comparative analysis of national adaptation policies in the five Nordic countries, Denmark, Finland, Iceland, Norway, and Sweden.

The recommendations are situated within a growing recognition of the need to increase adaptation efforts substantially, include new emerging categories of climate risks (in particular transboundary climate risks) and approach adaptation deliberately and systemically within a larger context of sustainable development (Berninger et al., 2022; IPBES, 2019; IPCC, 2023; O'Brien et al., 2022). This is in turn understood to enhance the potential of adaptation processes and outcomes to support just and equitable transformations towards sustainability.

Key findings

- The Nordic countries have come a long way in developing policies that enable them to assess climate change-related risks and vulnerabilities across sectors and geographies and identify and implement necessary adaptation measures, and most countries have completed at least one adaptation policy planning cycle. Yet, the lack of comprehensive systems for conducting risk and vulnerability assessments and for monitoring, reporting, and evaluating progress means that the Nordic countries are largely operating “in the dark” when it comes to furthering climate change adaptation nationally and locally. This is especially the case with transboundary climate risks, which is a policy area of growing concern, but which currently lacks systematic policy initiatives.
- The Nordic countries generally take a mainstreaming approach to adaptation, meaning that adaptation is integrated into the responsibilities of public bodies across societal sectors. In addition, some countries have a ministry with the overarching responsibility for coordinating adaptation efforts nationally. Yet, adaptation is marked by low political priority across all the Nordic countries, which shows both in the political mandate of the coordinating ministry as well as a low level of funding for adaptation, especially when seen in comparison with mitigation.
- There is a lack of policy instruments on adaptation across the Nordic countries. Most notably, there is a significant gap in the existence of economic measures to support and incentivize adaptation nationally and locally. While some funding and insurance schemes exist, these do little to incentivize proactive adaptation, especially for private sector and individual

citizens. None of the Nordic countries have penalizing measures, such as taxes.

- There is a growing awareness among both public authorities and adaptation practitioners of the importance of ensuring that adaptation is coordinated with other related policy areas, such as mitigation, civil protection and the Sustainable Development Goals (SDGs). Yet, in practice, adaptation is still largely working with in isolation, which increases the risk of goal conflicts and misses the potential for synergy.

Policy recommendations

- Reframe adaptation as transformation and support the alignment of adaptation with other societal goals.
- Establish mechanisms for systematic knowledge generation and develop appropriate indicators for measuring and evaluating adaptation, including for transboundary climate risks.
- Break down silo-structure between sectors and develop a clearly articulated policy cycle.
- Enhance adaptation financing and economic incentive mechanisms and translate knowledge on risks and vulnerabilities to local adaptation measures.
- Enhance the political mandate for adaptation and strengthen international commitments, including through Nordic collaboration.

Along with the recently published report on transboundary climate risks in the Nordic countries (Berninger et al. 2022), the present report supports enhanced knowledge sharing and collaboration between the Nordic countries in terms of adaptation policy.



Key progress factors

Through the mapping and comparison of adaptation policy in the Nordic countries and drawing on the central debates within the scientific literature on adaptation, certain aspects stand out as being particularly important for assessing and furthering national adaptation. These can be identified as key progress factors, and include:

- The existence and active use of national adaptation strategies and plans (NAS and NAP).
- The clear articulation of responsibility across public bodies, including identification of Ministry and/or cross-sectoral body with coordination responsibility and the political mandate to follow up non-compliance.
- The clear involvement and support of county- and/or local-level authorities.
- A clearly articulated policy cycle, including risk assessments (RA) and systems for monitoring, reporting and evaluation (MRE).
- The availability and active use of policy tools that incentivise climate change adaptation across societal actors, including economic measures.

Element	Denmark	Finland	Iceland	Norway	Sweden
Strategies and action plans guiding adaptation nationally	NAS (2008) and NAP (2012, update underway)	NAS (2005) and NAP (2014, 2023)	NAS (2021) (NAP process underway)	NAS (2008) and NAP (2013, 2023, expected)	NAS (2018, 2023, expected) and SAPs* (2015-2019)
Superior government bodies with responsibility for adaptation	Responsibility: The Government Coordination: Environmental Protection Agency	Responsibility: The Government Coordination: Ministry of Agriculture and Forestry	Responsibility: Ministry of Environment, Energy and Climate Coordination: Same	Responsibility: Ministry of Climate and Environment Coordination: Environment Protection Agency	Responsibility: Ministry of Climate and Enterprise Coordination: Same
Public body with main responsibility for adaptation at the subnational level	Municipalities	None (county authorities and municipalities are involved)	None (municipalities responsible for mitigation)	Municipalities and county municipalities	Municipalities and county administrative boards
Systems for risk assessments (RA) and monitoring, reporting and evaluation (MRE)	RA: Regularly for certain sectors (e.g., coastal authorities) MRE: No	RA: Regularly, national MRE: Under establishment	RA: Ad hoc for certain sectors MRE: No	RA: Ad hoc for certain sectors MRE: No	RA: Regularly for certain sectors MRE: Partially
Availability of economic incentives **	Low (some funding and insurance schemes)	Very low (some insurance schemes)	Very low (some funding schemes)	Low (some funding and insurance schemes)	Low (some funding and insurance schemes)

* While there is no National Adaptation Plan (NAP) in Sweden, there are numerous sector-specific plans (SAP)

** The general lack of economic incentives in the Nordic countries makes it challenging to speak to progress within this area.



Best practices and key challenges

Through the mapping and comparison of national adaptation policy, a wide range of best practices and main challenges emerge, some of which are common for all countries and some of which are unique to individual countries. The identification and analysis of best practices and main challenges is in part based on how adaptation has been evaluated within each country as well as by the interviewees. In the table below, we have prioritized those issues that are relevant for two or more of the Nordic countries. For issues that are unique to individual countries, please refer to the report.

We have synthesized best practices and main challenges across three interrelated themes:

1. Policies, systems, and tools
2. Responsibility, coordination, and collaboration
3. Integration

Table 2. Synthesis of best practices and main challenges

Policies, systems, and tools	
Best practices	<ul style="list-style-type: none"> • All Nordic countries have official steering documents (laws, White Papers, strategies etc.) that guide the work on adaptation and provide a common reference point for collaboration and strategic action. • All Nordic countries have well-established scientific communities that can provide the scientific basis for risks, vulnerabilities and adaptation needs. • All Nordic countries have well-developed platforms and websites for easy access to adaptation-related information.
Main challenges	<ul style="list-style-type: none"> • A majority of the Nordic countries lack mechanisms for systematic knowledge generation on climate change related risks and vulnerabilities, including the socio-economic costs and benefits of action and inaction. • Most Nordic countries lack systems for monitoring, reporting and evaluation (MRE) and all lack appropriate indicators for how to measure progress and results. • Most Nordic countries lack a clearly articulated policy cycle where planning documents, knowledge generation, and MRE procedures are situated in relation to one another and support the continuous development of adaptation work nationally and sub-nationally. • All Nordic countries lack appropriate indicators and measures to account for compounding, cascading and cross-border risks. • All Nordic countries lack sufficient economic measures to incentivise adaptation, resulting in a growing gap between adaptation needs and available finances. • All Nordic countries lack adaptation funding that meets the actual adaptation needs. • Most of the Nordic countries struggle with translating knowledge on risks and vulnerabilities to local adaptation measures.
Responsibility, coordination, and collaboration	
Best practices	<ul style="list-style-type: none"> • Some Nordic countries have an official government body (e.g., ministry, council etc.) with the official responsibility for coordinating climate change adaptation at the national level. • Some Nordic countries have cross-ministerial working groups that focus on cooperation and collaboration on issues pertaining to adaptation. • Most Nordic countries have a clearly articulated role for municipalities in developing and adopting adaptation measures at the local level. • In most Nordic countries, municipalities are highly proactive in identifying needs for and developing measures to adapt to climate change.

Main challenges

- Most Nordic countries **lack a political mandate** within the leading government body and the cross-sectoral working groups to put adaptation on the domestic political agenda. The lack of a political mandate further challenges their ability to **assume responsibility** and be held accountable to local-level actors, as well as **accept risk ownership** and ensure that all risks are accounted for in both planning and execution.
- In all Nordic countries, public administration is marked by a **"silo" structure**, which prevents effective cooperation and synergies across sectors and authorities.
- In most Nordic countries, a lack of **coordination and collaboration between adaptation and mitigation** leads to missed opportunities for synergies and enhancing the risk of goal conflicts.
- In most Nordic countries, there is a lack of clarity concerning the **responsibility of property owners** to ensure appropriate adaptation of their property.

Integration

Best practices

- All Nordic countries take a **mainstreaming approach** to adaptation, which means that all public authorities engage with adaptation to some degree.
- The interviewees in all Nordic countries are **aware** of the benefits of taking an integrative approach and seek to create synergies between their work and that of others.
- In some Nordic countries, adaptation at the municipal and county level is approached **in relation** to mitigation through integrated plans.
- In all the Nordic countries, approaches such as **Nature-based Solutions (NbS)** are becoming more prominent (at least in theory), enabling adaptation to be integrated with other related societal challenges.

Main challenges

- In all Nordic countries, there are concerns that a mainstreaming approach can lead to a situation where **no one is responsible** and adaptation is lost within the existing work of public authorities.
 - All Nordic countries **lack knowledge** about how to take an integrative approach to adaptation, e.g., how to align adaptation with goals for mitigation and the SDGs in a way that benefits from synergies and mitigates conflicts.
 - All Nordic countries lack **appropriate indicators** for measuring societal impact from adaptation measures beyond reducing immediate risks (e.g., wellbeing, empowerment, and dignity).
 - According to interviewees in some Nordic countries, the prioritization of **economic growth** and quantitative criteria undermines the potential of adaptation to consider and integrate social and ecological concerns for the benefit of people and planet in a long-term perspective.
-



Main policy recommendations

The policy recommendations draw on the overarching recommendation in the last Assessment Report of the Intergovernmental Panel on Climate Change on Impacts, Adaptation and Vulnerability (AR6) (IPCC, 2022) that the world needs to move from the prevailing incremental form of adaptation to more transformational adaptation. On a more concrete and instrumental level, the recommendations draw on the four aspirational goals for adaptation within the EU adaptation strategy (European Commission, 2021): smarter, more systemic, faster, and more internationally oriented adaptation. While not all Nordic countries are EU member states, all report to the European Environment Agency on their adaptation efforts. The EU strategy thus provides an aspirational framework for adaptation across the Nordic countries.

To enable operationalization, when relevant the recommendations are directed at different levels of governance across the Nordic countries, including national governments, national authorities, and local-level authorities (including municipalities and counties).

The five main policy recommendations are summarized in the figure below.

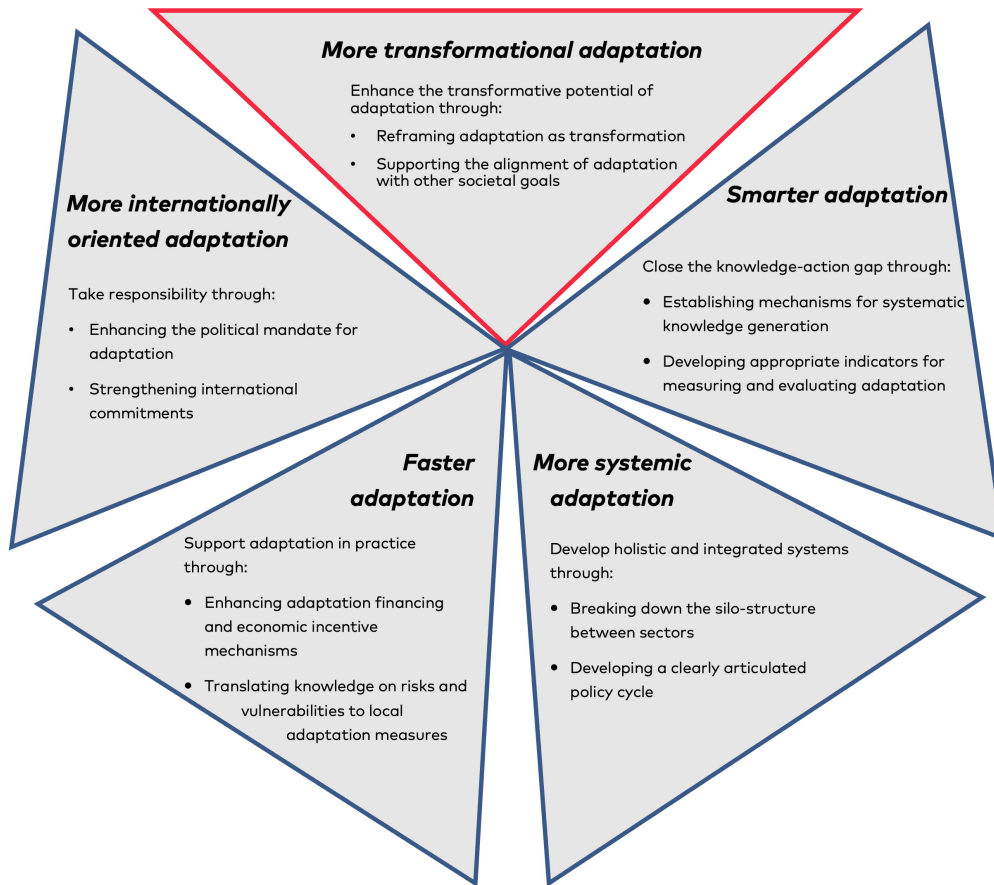


Figure 1. Visual summary of policy recommendations

Enhance the transformative potential of adaptation

The Nordic countries are uniquely positioned to take a transformative approach to adaptation as they have historically been on the forefront of transformative social movements based on justice and equality. Now is the time to show foresight and courage in climate change adaptation. Transformational adaptation is defined by the IPCC as “Adaptation that changes the fundamental attributes of a socio-ecological system in anticipation of climate change and its impacts”. Besides avoiding risks and taking advantage of opportunities, it presents an understanding of adaptation as a mechanism for mobilizing societal resources for the enhancement of equitable, just, and sustainable societies. Transformational adaptation indicates a particular depth and quality of change, guided by values of equity, justice and compassion for humans and nature.

- Reframe adaptation as transformation (All governance levels):** In all Nordic countries, adaptation is framed as a response to climate change to avoid the risks and take advantage of the opportunities that result from a changing climate. Yet climate change science suggests that transformation is becoming inevitable: transformation will be either by design or by disaster. This points to the need for reframing adaptation as transformation. Reframing adaptation as transformational and sustainable adaptation can help to ensure that adaptation efforts align with and support equitable and just change within the Nordic countries and globally. This is not primarily a technical exercise of changing the language of strategies and plans. Rather, it requires a deep-rooted cognitive and cultural shift within the adaptation community and beyond, both nationally and locally. This shift includes aiming more at proactive than reactive measures and at addressing the drivers of vulnerability, including the 'new' transboundary climate risks. Such a shift will need to be supported in various ways, for instance through programmes and platforms that help identify the linkages between adaptation and sustainability and how to work in an integrative way within specific sectors and locations.
- Support the alignment of adaptation with other societal goals (All governance levels):** While the benefits of taking an integrative approach to adaptation are increasingly recognized, in all Nordic countries there is a lack of knowledge about how to do so. For example, there needs to be more clarity on how to align adaptation with climate change mitigation and the other SDGs in a way that creates synergies and avoids conflicts. The integration of adaptation within other societal goals requires cross-sectorial conversations and collaboration explicitly aimed at operationalizing integration and developing strategies for such work. It could involve the inclusion of "integration criteria" in reporting and funding applications, to enable integration to become the "new normal". Such "box-ticking" must be backed up by institutional capacity building to ensure that authorities have the skills and resources necessary within their sector. Aligning adaptation with other societal goals invites a conversation about societal priorities. More transformational adaptation will likely involve critically questioning the current prioritization of economic growth as the overarching goal for societal development. It will be important for the Nordic countries to ensure that economic development does not undermine adaptive capacity, in the Nordic region and beyond, recognizing economic activity as interdependent with social and ecological wellbeing in a multi-generational perspective.

Close the knowledge-action gap

The Nordic countries have some of the best conditions for generating state of the art knowledge on climate change. Nevertheless, there are challenges in most countries with translating existing knowledge into action and making knowledge sufficiently actionable. Smarter adaptation is about enabling knowledge-based decision-making. It emphasizes the need for anchoring decisions in the latest science and enhancing the understanding of the interdependencies between climate change, ecosystems, and their services.

- **Establish mechanisms for systematic knowledge generation (National authorities):** Despite the existence of relevant knowledge institutions, most Nordic countries lack mechanisms for systematic knowledge generation on climate change-related risks and vulnerabilities, including the socio-economic costs and benefits of action and inaction, and the inclusion of relevant user groups in co-production of knowledge. Funding for climate change-related research is predominantly directed at mitigation, while research on adaptation receives a fraction of the funding. Similarly, natural science research tends to be prioritized over social science research. This results in a persistent "black box" of how authorities and individuals can effectively, sustainably, and equitably respond to climate change. Systemic knowledge-generation should also include transboundary climate risks as well as the insight that climate risks rarely occur alone. The latter point being captured in the term multi-hazards and illustrated through how the unprovoked war by Russia in Ukraine and the corona pandemic interact with various forms of climate risk.
- **Develop appropriate indicators for measuring and evaluating adaptation (National authorities):** In all Nordic countries, effective and transformational adaptation is limited by a lack of appropriate indicators for measuring vulnerabilities and adaptation efforts, as well as evaluating adaptation outcomes. The Nordic countries also lack appropriate indicators and measures to account for compounding, cascading and transboundary risks, including that of assigning responsibilities among stakeholders and government levels for addressing these risks. Evaluation work must move beyond current indicators of describing climate hazards and immediate natural hazard risks (e.g., flooding and avalanche risks). More emphasis should be placed on developing indicators or proxies for evaluating qualitative aspects of sustainability, such as wellbeing, empowerment, and dignity.

Develop holistic and integrated systems

In the Nordic countries, there is a growing awareness of the benefits and necessities of integrated approaches to social-ecological change. Yet persistent silo structures within both policy and business stand in the way for this awareness to lead to action. More systemic adaptation is about developing holistic and inclusive approaches to adaptation. It draws on the latest science to develop systems for MRE and enhance policy coherence. This can help support adaptation through mainstreaming adaptation, avoiding maladaptation and malmitigation, and ensuring alignment between risk ownership and responsibility.

- **Break down the silo structure between sectors (National governments; National authorities; Local and county-level authorities):** In all Nordic countries, public administration is marked by a silo structure, which prevents effective cooperation and synergy across sectors and authorities. Specifically, in most Nordic countries, there is a lack of coordination and collaboration between adaptation and mitigation, missing opportunities for synergies and enhancing the risk of goal-conflicts. Breaking down silos can be aided by a coordinating body with the political mandate to follow up non-compliance. Breaking down silos can also make room for more integrative approaches such as Nature-Based Solutions (NbS) that can consider the interlinkages between climate change, biodiversity, and social justice.
- **Develop a clearly articulated adaptation policy cycle (National authorities):** Most of the Nordic countries lack a clearly articulated policy cycle where planning documents, knowledge generation, and monitoring, reporting and evaluation (MRE) procedures are situated in relation to one another and support the continuous development of adaptation work nationally and sub-nationally.

Support adaptation in practice

The Nordic countries have highly sophisticated communications and knowledge exchange networks, which supports the development and accessibility of knowledge and tools. Yet, thus far, there has been little to no development and use of policy tools that directly incentivise adaptation at the local level and in the private sector. Faster adaptation is about developing effective and accessible tools for adaptation. It focuses on enabling swift and effective responses through enhancing financing of adaptation and access to actionable solutions, including through support systems and technical advice.

- **Enhance adaptation financing and economic incentive mechanisms (National governments):** All Nordic countries lack sufficient financial incentives for adaptation, resulting in a growing gap between identified adaptation needs and available finances, most notably and concretely related to protecting, maintaining, and upgrading physical infrastructure. The lack of financial incentives reflects a general lack of adaptation funding across the Nordic countries. There is a clear need to increase the use of "positive" economic policy measures, such as financing, and the Nordic countries are applying these to some extent. However, there is an equally clear need to assess how and to what extent "negative" measures such as taxes and fees can be used for adaptation in the same way that such measures are used within the emissions part of climate policy. The same applies to developing and applying approximations of the cost-benefit method that can work within adaptation. For individuals, insurance schemes can be enhanced to incentivise proactive measures. The recently adopted law in Norway, which requires insurance companies to make publicly available data on payments for natural perils, can be a source of inspiration to develop a common Nordic model for natural perils insurance that better facilitates prevention against future natural perils caused by climate change. In addition, there is a need for innovative financial mechanisms that allow municipalities and private actors to capitalize on linkages between adaptation, biodiversity, and the SDGs, e.g., through nature-based solutions. There is also a significant potential in co-funding mechanisms, like public-private partnerships, that can create incentives for private property owners to implement adaptations.
- **Enhance efforts to translate knowledge on risks and vulnerabilities to local adaptation measures (National authorities; Local and county-level authorities):** Despite the existence of knowledge platforms, most of the Nordic countries struggle with translating knowledge on risks and vulnerabilities to local adaptation measures. There is a need for "scaling down" climate predictions and operationalizing adaptation measures to fit local contexts, which in turn will require assigning more resources to local and

country-level authorities for both planning and implementation. Knowledge translation could be done through expanding the role of existing knowledge-generating bodies and platforms to include a wider set of climate risks (not merely the local physical climate risks), and to bridge the gap between climate and other types of risk that can contribute to intensifying the negative effects of climate change and should therefore be seen in context.

Take responsibility

The Nordic countries have an international outlook and understand the need for collaboration and commitment beyond the national borders. Yet, when it comes to adaptation, the outlook is largely national, undermining both cross-border learning and ethical commitments. More internationally oriented adaptation is about taking responsibility for loss and damages and enabling the scaling of solutions outside the national and Nordic contexts. It calls for adaptation efforts to match mitigation efforts in priority and scale through increased support for international climate resilience and preparedness to avoid climate related conflict, account for transboundary climate risks and take responsibility for historic emissions.

- **Enhance the political mandate for adaptation (National governments):** Leading government bodies and cross-ministerial working groups in most Nordic countries lack the mandate to put adaptation high on their national political agendas within all relevant sectors as well as to be a leader internationally. Increased political mandate will make it easier for the Nordic countries to embrace their responsibility and be accountable to local-level actors involved in adaptation nationally as well as international actors. It can further enable public bodies to accept risk ownership and ensure that all risks are accounted for in both the planning and implementation of adaptation measures. Finally, enhanced political mandate will increase the likelihood of developing cross-Nordic strategies and collaborations in areas such as transboundary climate risks.
- **Strengthen international commitments (National governments):** For the Nordic region to continue to be a trustworthy and visionary leader for social justice and equality, national leaders must actively take upon themselves to speak up on behalf of nations and groups with less political and economic power and follow up with courageous action. No country is safe from climate change impacts until all countries are safe from climate change impacts. Therefore, Nordic governments and the Nordic region must take responsibility for climate change risks and impacts manifesting in other countries (many of which are in the Global South) that result from Nordic patterns of production and consumption.

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About this publication

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Nord 2023:014

ISBN 978-92-893-7637-2 (PDF)

ISBN 978-92-893-7638-9 (ONLINE)

<http://dx.doi.org/10.6027/nord2023-014>

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Cover photo: Yadid Levy / Norden.org

Other photos: iStock and AdobeStock

Published: 21/8/2023

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