

VF-rapport nr. 11-2024

Nordic Survey

Summary report

Author and data analysis: Marta K. Jansen (author, survey design and data) and Joaquin Zenteno Hopp (data and survey design)

VESTLANDSFORSKING

VF-rapport	11-2024
Utgitt av	Vestlandsforskning, Western Norway Research Institute
Adresse	Postboks 163, 6851 Sogndal
Prosjekttittel	Exploring risk ownership linked to transboundary climate risks affecting the Nordic countries
Oppdragsgivar	Nordic Council of Ministers- NORDIC WORKING GROUP FOR CLIMATE AND AIR
På framsida	
ISBN	978-82-428-0479-2

Creative Commons Namngiving 4.0 Internasjonal lisens
Vestlandsforskning 2021: CC BY-NC 4.0

www.vestforsk.no

Content

Preface	3
Summary	4
1 Survey on transboundary climate risk and risk ownership in the Nordic	5
1.1 The respondents.....	5
1.2 Type of transboundary climate risk the informants are concerned about	7
1.3 The informants' point of view on risk ownership.....	13
2 Appendix.....	18

Preface

In this study we wanted to develop a survey to map how representatives of most relevant stakeholder groups reflect on transboundary risk and risk ownership. The survey has informants from the three nations cooperating in this study: Finland, Sweden and Norway. The results from the survey will be presented in short stories of the main results at the website of Norwegian Climate monitor (www.klimamonitor.no). Thanks to Alexandra Malmström at University of Helsinki, for translating the survey to Finnish.

The survey is a part of the study «Exploring risk ownership linked to transboundary climate risks affecting the Nordic countries" (NORD-TCR-OWNER) financed by the Nordic Council of Minister's Working Groups for Climate and Air (NKL).

Sogndal, 11/27/2024

Marta Karoline Jansen

Researcher, Vestlandsforskning

Summary

Transboundary climate risks are increasingly prominent on the research and policy agenda, yet actions to address these risks remain limited. This survey goes to a selected group of experts and policymakers from across the Nordic countries – spanning both the public and private sectors – to collect information about the implications of transboundary climate risks in the Nordic region.

Findings in this survey try to picture how transboundary climate risk could manifest and how we should handle this risk in the Nordic countries. The respondents are pointing to the supply chains, trade, food sector and energy sector to be very exposed to risk.

Main message on risk ownership is that the ones with the resources to do something to reduce the risk might not be the same group that need to cope with the risk. Responsibility to act might not reflect the resources and can prevent handling the risk.

1 Survey on transboundary climate risk and risk ownership in the Nordic

Transboundary climate risks (TCR) are increasingly prominent on the research and policy agenda, yet actions to address these risks remain limited. This survey goes to a selected group of experts and policymakers from across the Nordic countries – spanning both the public and private sectors – to collect information about the implications of transboundary climate risks in the Nordic region. The results from this survey will be used to explore actionable strategies towards transboundary climate risks.

To explore risk ownership linked to transboundary climate risks affecting the Nordic countries, 22 questions were used for an in-depth survey. See attachment nr 1 for full list of questions. In this report we will focus on a selection of the most interesting results.

1.1 The respondents

The respondents of the survey are from Norway, Sweden and Finland. The respondents have been selected in sectors of special interest to the topic of TCR:

- Infrastructure
- Finance, insurance and investments
- Petroleum and other energy imports
- Primary industry (agriculture, forestry, fisheries, farming)
- Manufacturing, processing
- Research and academia
- Public services (government authorities in local, regional and state)



Figure 1: Survey response numbers, results from Nordic Survey on transboundary climate risk September 2024 (Q1). A total of 54 respondents in Nordic Survey on transboundary climate risk September 2024.

All respondents did get up to 3 reminders to complete the survey. About one third of the respondents did answer, see Figure 1. Most of the group that did not reply did not open the survey at all. This might be a result of different things, for instance overload of surveys leading to “survey tiredness”. We did observe that there was a great variety of engagement between the categories of stakeholders. The public services, primary industry, research and academia were the stakeholders’ categories with the highest response rate. They were also the focus groups with the most representation of the invited stakeholders. Category of Finance, insurance and investments had very few respondents. The respondents from the categories Infrastructure, Petroleum and other energy imports and Manufacturing and processing did not reply to the survey but the theme itself might to some degree be covered by the national governmental agencies or researchers working within the field and thereby not showing in the data set.

1.2 Type of transboundary climate risk the informants are concerned about

In the first questions the survey focus on which “pathway” transboundary climate risk (TCR) will affect the Nordic countries, see information box.

Transboundary climate risks flow across borders, regions and the world through 7 pathways of impact (Carter et al. 2021):

- **Trade links:** including the flow of goods, services and commodities
- **Financial:** including the flow of capital and foreign investment
- **People:** human mobility, including migration, forced displacement or tourism
- **Geopolitical:** climate-related impacts on international relations, resource access and strategy),
- **Biophysical:** connections through physical systems (such as rivers, lakes, oceans) and ecosystems that span neighbouring countries and entire regions (movement of species, pests or pathogens)
- **Infrastructure:** (e.g., transport and telecommunications links)
- **Psychological:** impacts brought about by actions of different actors and particularly the media. This pathway will not be included in this survey to reduce the complexity.

The response shows that Trade, Geopolitical and Biophysical are the three highest ranked pathways, see Figure 2.

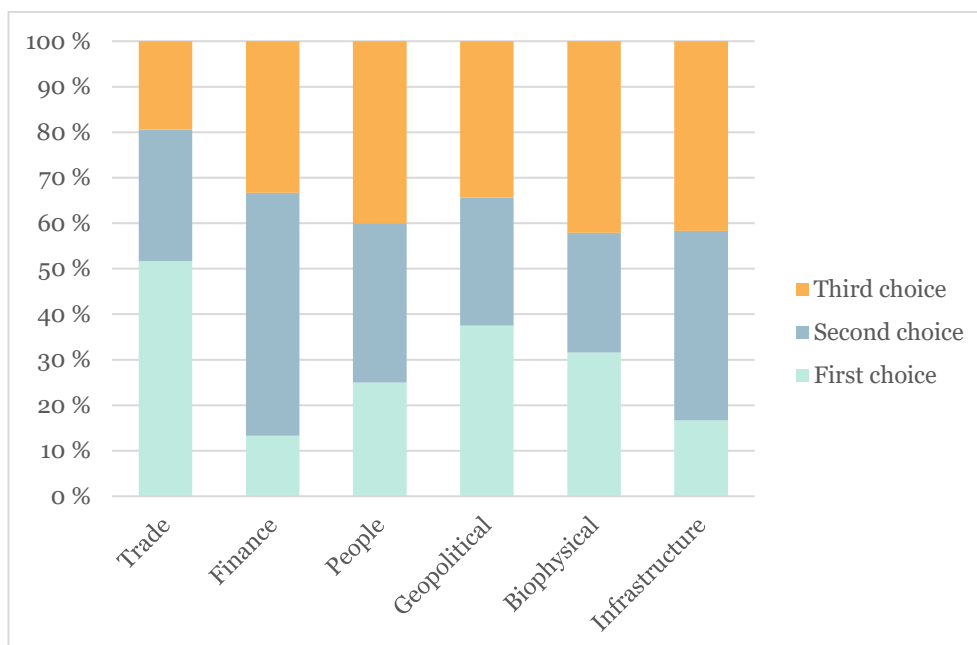


Figure 2: Through which "pathway" do you think transboundary climate risk will affect the Nordic countries? Choose the three most important pathways, in your opinion. Results from 54 respondents in Nordic Survey on transboundary climate risk September 2024 (Q4).

In the following question we try to see where the TCR will affect society and link this to the different pathways of TCR.

Based upon the chosen pathway of TCR we asked the respondents that chose **Trade** as top 3 pathway to choose where this might have the biggest consequence for the society. For all three nations summarised primary industry, secondary industry, tertiary industry and household were subsequently listed highest for **Trade** pathway, see Figure 3. Looking at variation within the countries, Finnish respondents had a higher focus on IT and communications and tertiary industry than the other nations and no votes for secondary industry.

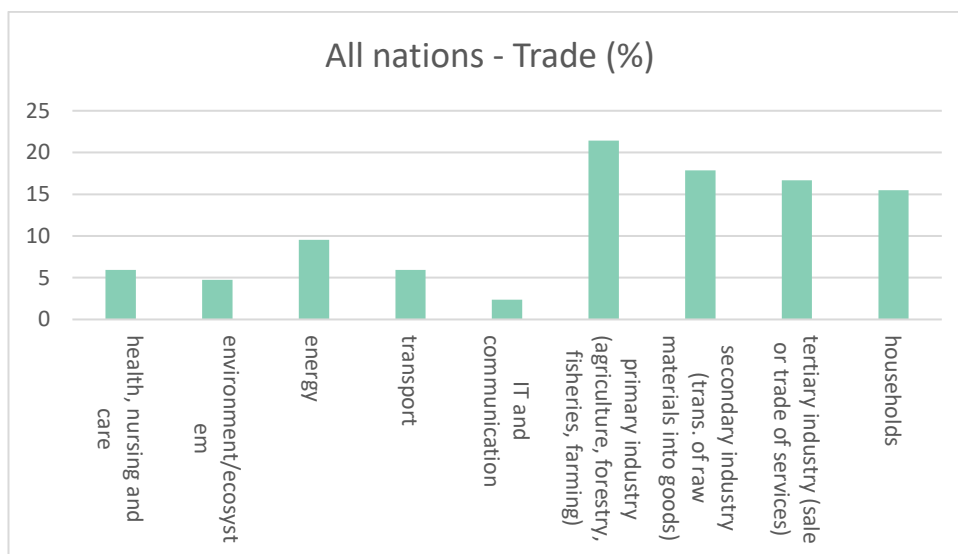


Figure 3: Based upon the "Trade pathway", where do you think this will have the biggest impact on society? Results from respondents in Nordic Survey on transboundary climate risk September 2024 (Q5-Q7).

Based upon the chosen pathway of TCR we asked the respondents that chose **Geopolitical** as top 3 pathway to choose where this might have the biggest consequence for the society. For all three nations summarised primary industry, energy, tertiary industry and secondary industry were subsequently listed highest for **Geopolitical** pathway, see Figure 4. Looking at variation within the countries, Norwegian respondents are the only ones that chose health and household on the list, while the Finnish respondents have a much higher focus on tertiary industry than the other nations.

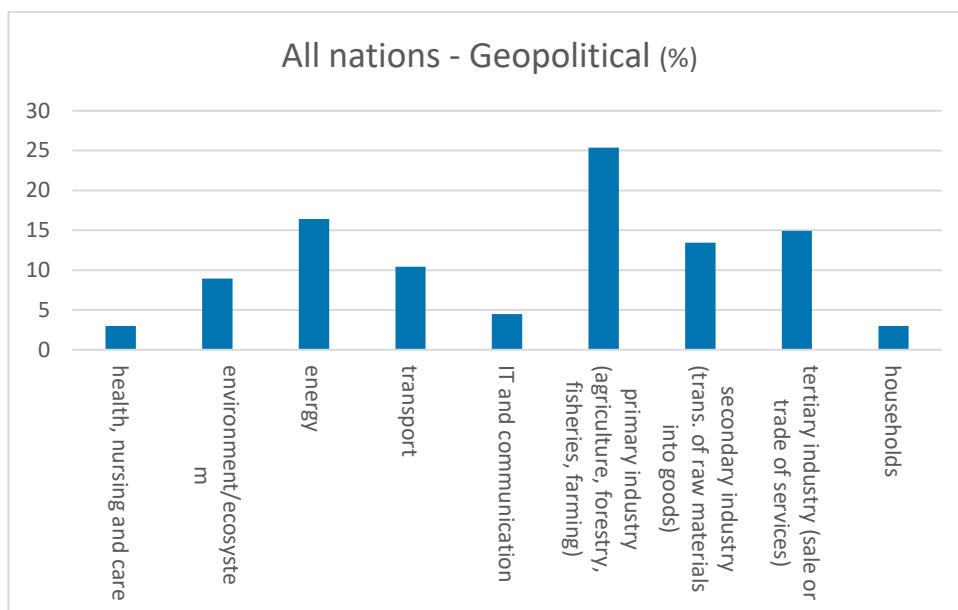


Figure 4: Based upon the "Geopolitical pathway", where do you think this will have the biggest impact on society? Results from respondents in Nordic Survey on transboundary climate risk September 2024 (Q5-Q7).

Based upon the chosen pathway of TCR we asked the respondents that chose **Biophysical** as top 3 pathway to choose where this might have the biggest consequence for the society. For all three nations summarised environment, primary industry and health had quite clear higher ranking than other for **Biophysical** pathway, see Figure 5. Looking at variation within the countries, the Finnish respondents did not include energy, transport or household on the list.

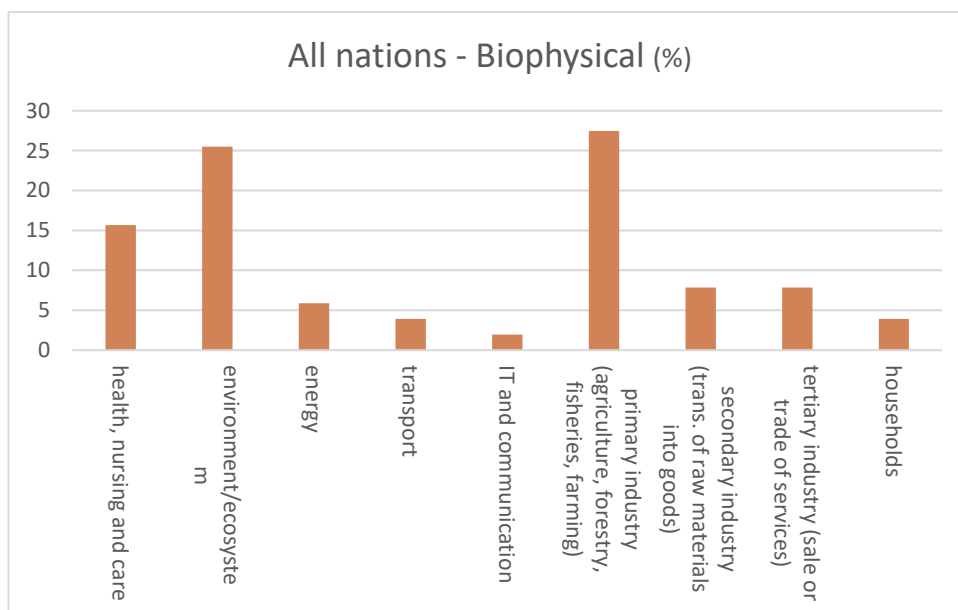


Figure 5: Based upon the "Biophysical pathway", where do you think this will have the biggest impact on society? Results from respondents in Nordic Survey on transboundary climate risk September 2024 (Q5-Q7).

In the optional box choosing "other", the respondents listed these key words: Great political consequences, will affect all aspects of society, Welfare state, Security/safety, Increased protectionism - seafood business is very dependent on an open market.

In the following question we try to figure out which governmental sector might be negatively exposed to transboundary risks. We choose to use the governmental sector categories pointed out in the Norwegian white paper ([Meld. St. 26 \(2022–2023\)](#)). Both the Norwegian and the Swedish respondents had very similar profile of answers, rating these categories on top, see Figure 6:

- Food/water safety and security
- Nature and ecosystems
- International relations
- Economy and business

Which of the following areas do you think may be negatively exposed to transboundary climate crisis?

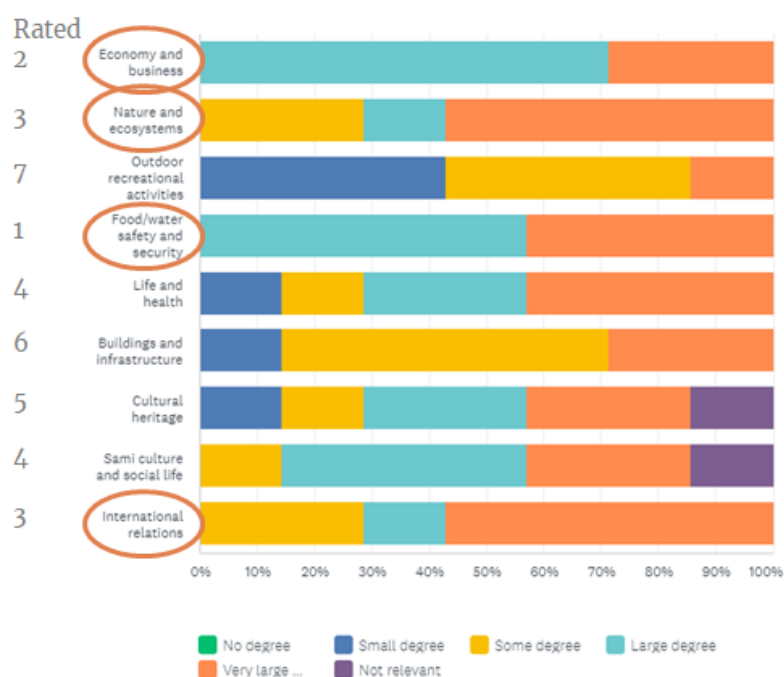


Figure 6: Which of the following areas do you think may be negatively exposed to transboundary climate risk? Results from 14 Swedish respondents in Nordic Survey on transboundary climate risk September 2024. Very similar response to the Norwegian group of respondents in the same survey.

The Finnish response, however, did list “Sami culture and social life” on top of the exposure list, see Figure 7.

Which of the following areas do you think may be negatively exposed to transboundary climate crisis?

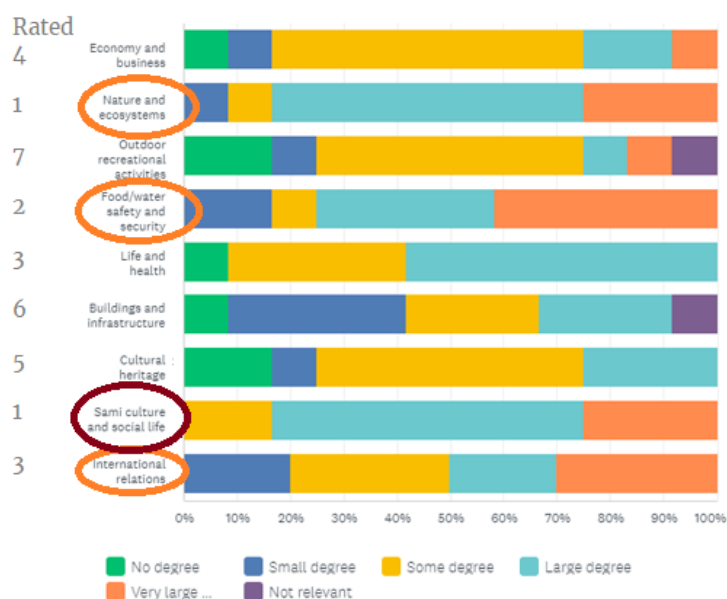


Figure 7: Which of the following areas do you think may be negatively exposed to transboundary climate risk? Results from 19 Finnish respondents in Nordic Survey on transboundary climate risk September 2024.

1.3 The informants' point of view on risk ownership

To find out the respondents view on risk ownership, we have questions that go into who has the formal responsibility to do something to reduce the risk and how. The respondents were asked to specify which mechanism is most relevant for the different actors to reduce the risk: preventing, coping or compensating. Results in Figure 8 show that state level and private sector is perceived as the main actors for preventing the risk. While the municipality, the private sector, household and county are perceived to be the main actors for coping with the risk. National differences are observed within the results. In Norway, the private sector is ranked higher on coping than preventing the risk. In Sweden, the private sector is ranked higher on preventing than coping with the risk.

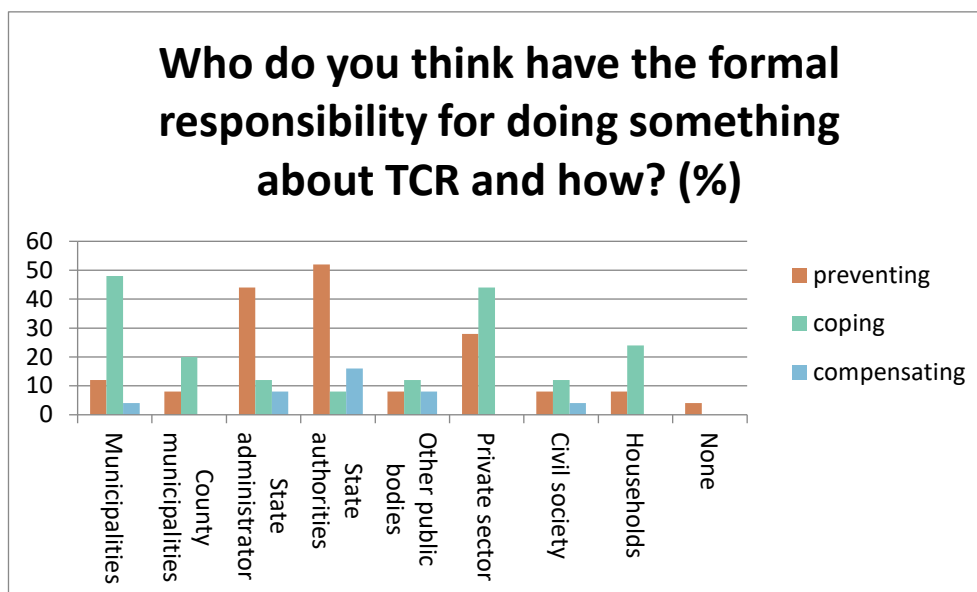


Figure 8: Who do you think has formal responsibility for doing something about TCR and how? Summarised results from 54 respondents in Nordic Survey on transboundary climate risk September 2024.

In the following question the respondents are asked about who has the resources to do something about the risk. The results in Figure 9 show that the state level, private sector, other public bodies and county level are ranked as the actors who can best act on reducing TCR. Although, these are not the same actors listed highest as the ones that need to cope with the risk, see Figure 8.

Norway and Finland responders state that the municipality has very little resources, but the Swedish responders answer that the municipality has equal possibility as the state to take action.

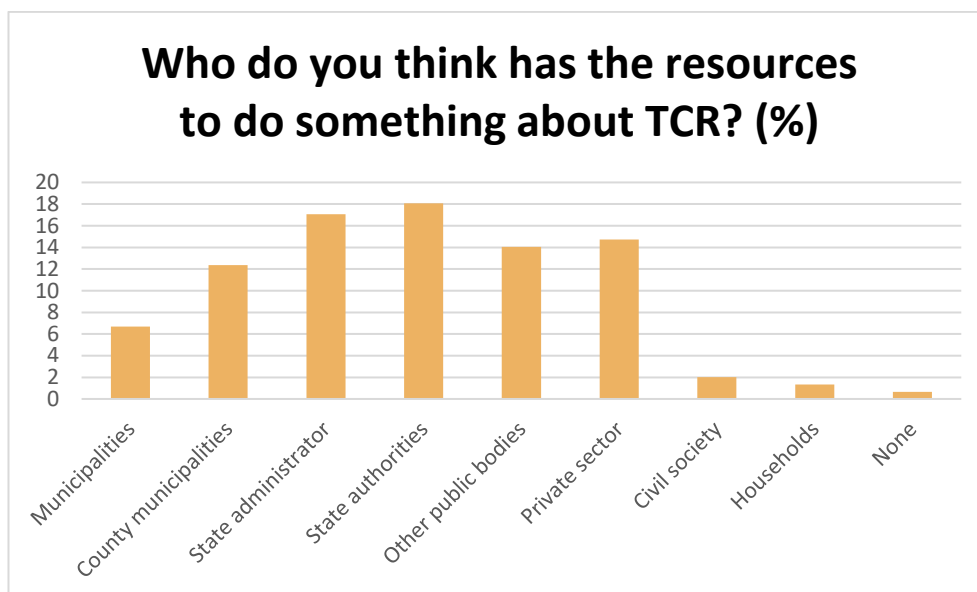


Figure 9: Who do you think has the resources to do something about TCR? Summarised results in percentage from 54 respondents in Nordic Survey on transboundary climate risk September 2024.

In the next questions the responders are asked to choose the main tools or instruments that may reduce TCR in the Nordic, see Figure 10. The tools political will, policy instruments and coordination with other policy areas had highest score. The response is a bit different for all countries. No country focus on penalty as a main tool. Norwegian responders did not include system for monitoring and evaluation as the main tool, in contrast to the Swedish and Finnish respondents.

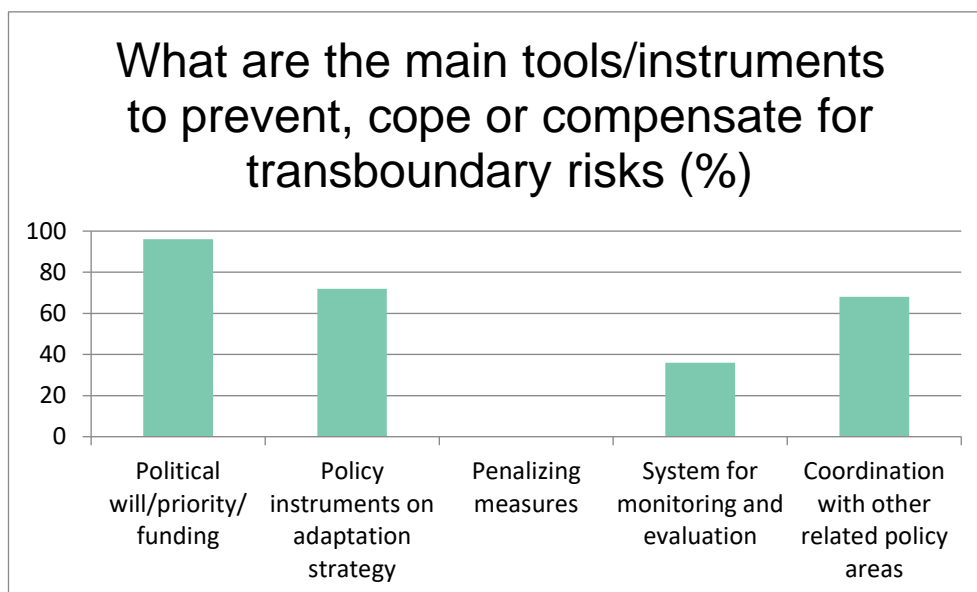


Figure 10: What are the main tools/instruments to prevent, cope or compensate for transboundary risks? Results in percentage from 54 respondents in Nordic Survey on transboundary climate risk September 2024.

Looking into which of the listed tools need to be **improved or enhanced**, we find that all categories have been selected, see Figure 11. Penalizing measures have only been chosen by a few Norwegian respondents, not by the other countries in the survey. This might mean that the penalizing measures might still be a bit immature for TCR issues.

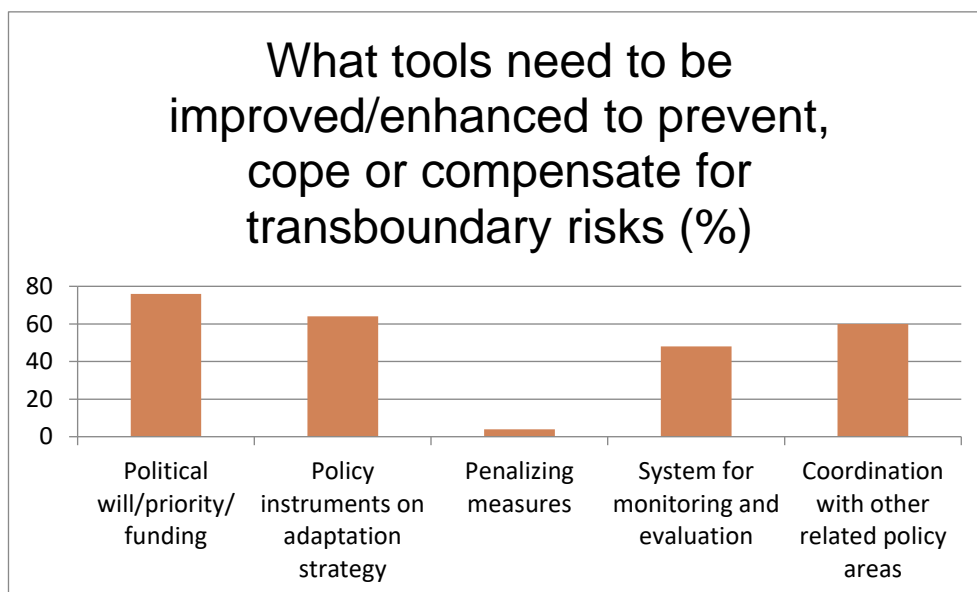


Figure 11: What tools need to be improved/enhanced to prevent, cope or compensate for transboundary risks? Results in percentage from 54 respondents in Nordic Survey on transboundary climate risk September 2024.

2 Appendix

Q1 **In which country do you currently reside?**

- a Finland
- b Sweden
- c Norway

Q2 **What sector are you representing?**

- a Health, nursing and care
- b Infrastructure
- c *Finance and investments*
- d Transport
- e Petroleum and other energy imports
- f Primary industry (agriculture, forestry, fisheries, farming)
- g Manufacturing, processing
- h Research and academia
- i Public services (government authorities)
- j Other

Q3 **What is your role in the organisation?**

See information sheet about transboundary climate risk

Type of transboundary climate risk the informants are concerned about

The following questions will be based on distinguishing between six pathways of impact addressed in Nordic policy studies and documents. Please follow [this link](#) for a short description of The characteristics of transboundary climate risks

Nr **Question**

Q4 **Through which "pathway" do you think transboundary climate risk will affect the Nordic countries? Choose the three most important pathways, in your opinion. (Remember your ranking as it is important for several of the following questions).**

- a Trade (e.g., flows of commodities on international markets)
- b Finance (the movement or change in value of public and private capital)

- c People (through migration, forced displacement or tourism)
- d Geopolitical (e.g., climate-related impacts on international relations, resource access and strategy)
- e Biophysical (e.g., water transfer among hydrological systems and movement of species, pests or pathogens)
- f Infrastructure (e.g., transport and telecommunications links)

Q5 Based upon the first "pathway" you selected in Q4, where do you think this will have the biggest impact on society? Choose all the options you need.

- Public business and administration, with subcategories**
- a health, nursing and care
- b environment/ecosystem
- c energy
- d transport
- e IT and communication
- f primary industry (agriculture, forestry, fisheries, farming)
- g secondary industry (private service provision of various kinds)
- h tertiary industry (industry, etc.)
- i Household**
- j *Comment box optional: Feel free to specify sectors you think could be affected*

Q6 Based upon the second "pathway" you selected in Q4, where do you think this will have the biggest impact on society? Choose all the options you need.

- Public business and administration, with subcategories**
- a health, nursing and care
- b environment/ecosystem
- c energy
- d transport
- e IT and communication
- f other
- Private sector**
- g primary industry (agriculture, forestry, fisheries, farming)
- h secondary industry (private service provision of various kinds)
- i tertiary industry (industry, etc.)
- Households**
- j *Comment box optional: Feel free to specify sectors you think could be affected*

Q7 Based upon the third "pathway" you choose in Q4, where do you think this will have the biggest impact on society? Choose all the options you need.

Public business and administration, with subcategories

- a health, nursing and care
- b environment/ecosystem
- c energy
- d transport
- e IT and communication
- f other
- Private sector**
- g primary industry (agriculture, forestry, fisheries, farming)
- h secondary industry (private service provision of various kinds)
- i tertiary industry (industry, etc.)
- Households**
- j *Comment box optional: Feel free to specify sectors you think could be affected*

Q8 **What risks are associated with the 3 pathways you chose?**
Please write your answer for each of the top 3 pathways you selected in Q4.
(Examples: reduced access to raw materials, increased disease pressure, reduced access to medicines).

- a Pathway nr 1
- b Pathway nr 2
- c Pathway nr 3

Q9 **What social vulnerabilities (livelihoods, human health, human mobility) may exacerbate transboundary risks?**

Please specify your answer for each of the top 3 pathways you selected in Q4.

- a Pathway nr 1
- b Pathway nr 2
- c Pathway nr 3

Q10 **What economy vulnerabilities (industrial supply chains, energy, agriculture commodities) may exacerbate transboundary risks?**

Please specify your answer for each of the top 3 pathways you selected in Q4.

- a Pathway nr 1
- b Pathway nr 2
- c Pathway nr 3

Q11 **What environmental vulnerabilities (natural resources on land and sea, biodiversity, pollution) may exacerbate transboundary risks?**

Please specify your answer for each of the top 3 pathways you selected in Q4.

- a Pathway nr 1
- b Pathway nr 2
- c Pathway nr 3

Q12	Which of the following areas do you think may be negatively exposed to transboundary climate risk?
a	Economy and business
b	Nature and ecosystems
c	Outdoor recreational activities
d	Food/water safety and security
e	Life and health
f	Buildings and infrastructure
g	Cultural heritage
h	Sami culture and social life
i	International relations
j	<i>Other</i>
Q13	Do you think there are other ways in which transboundary climate risks could manifest?

The informants' point of view on risk ownership

Q14	For the first pathway you selected as the most important (Q4), who do you think has formal responsibility for doing something about it, and how? (Choose only the three most relevant)
a	Municipalities
b	County or regional level administration
c	State administrator
d	State authorities
e	Other public bodies
f	Private sector
g	Civil society
h	Households
i	None
j	<i>Others</i>
Q15	For the second pathway you selected as the most important (Q4), who do you think has formal responsibility for doing something about it, and how? (Choose only the three most relevant)
a	Municipalities
b	County or regional level administration
c	State administrator
d	State authorities
e	Other public bodies
f	Private sector
g	Civil society

- h Households
- i None
- j *Others*

Q16 For the **third** pathway you selected as the most important (Q4), who do you think has formal responsibility for doing something about it, and how? (Choose only the three most relevant)

- a Municipalities, local authorities
- b County or regional level authorities
- c State administrator
- d State authorities
- e Other public bodies
- f Private sector
- g Civil society
- h Households
- in None
- j *Others*

Q17 What are the main tools/instruments to prevent, cope or compensate for transboundary risks. Choose all that are relevant in your opinion.

- a *Political will/priority/ funding*
- b *Policy instruments on adaptation strategy*
- c *Penalizing measures*
- d *System for monitoring and evaluation*
- e *Coordination with other related policy areas*

Q18 What tools need to be improved/enhanced to prevent, cope or compensate for transboundary risks. Choose all that are relevant in your opinion.

- a *Political will/priority/ funding*
- b *Policy instruments on adaptation strategy*
- c *Penalizing measures*
- d *System for monitoring and evaluation*
- e *Coordination with other related policy areas*

Q19 For the **first** pathway you selected as the most important (Q4), who do you think has the resources to do something about the risks? (Choose only the three most relevant)

- a Municipalities, local authorities
- b County or regional level authorities
- c State administrator
- d State authorities

- e Other public bodies
- f Private sector
- g Civil society
- h Households
- in None
- j *Others*

Q20 For the **second** pathway you selected as the most important (Q4), who do you think has the resources to do something about the risk? (Choose only the three most relevant)

- a Municipalities, local authorities
- b County or regional level authorities
- c State administrator
- d State authorities
- e Other public bodies
- f Private sector
- g Civil society
- h Households
- in None
- j *Others*

Q21 For the **third** pathway you selected as the most important (Q4), who do you think has the resources to do something about the risks? (Choose only the three most relevant)

- a Municipalities, local authorities
- b County or regional level authorities
- c State administrator
- d State authorities
- e Other public bodies
- f Private sector
- g Civil society
- h Households
- in None
- j *Others*

Q22 **Do you wish to add any final remarks on this topic?**