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Disaster Risk Reduction and Climate Change Adaptation

Lesson 3

Disaster Risk Reduction and Climate Change Adaptation

- **Policy coherence**
- **Barriers to integration**
- **Sendai in the Baltic Sea Region**

Background and explanations to the slide presentation. This lesson consists of three parts: Policy coherence (slides 5-12), Barriers to integration (slides 13-19), and recommendations for implementing the Sendai Framework in the Baltic Sea Region (slides 20-25). The last slide, no 26, is an overall conclusion of the whole chapter.

Content:

- Difference between Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR)
- Interlinkages between different frameworks and policy coherence
- Examples of policies, plans and strategies connected to CCA and DRR
- The definition and consequences of climate hazards
- The climate change adaptation process
- The barriers to climate adaptation, examples from the Baltic Sea Region
- How to overcome these barriers
- The challenges and needs for DRR in the Baltic Sea Region
- Recommendations for strengthening the Sendai framework in BSR

3. Learning outcomes

After this lesson you will:

- understand the differences between Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR).
- know that climate hazards are part of the climate risks.
- be aware of the barriers to climate adaptation, with examples from BSR.
- know about the recommendations for strengthening the Sendai Framework in the BSR.

4. Abbreviations used in this lesson

5. Policy coherence and practical overlap: DRR and CCA – two sides of the same coin

6. Climate Change Adaptation (CCA) vs Disaster Risk Reduction (DRR)?

According to IPCC (2014) Glossary, these are the definitions of adaptation and Disaster Risk Reduction (DRR).

7-8. CCA vs DRR

CCR and DRR can be seen as synonymous risk management approaches. However, conceptual differences are found.

To quote EEA (2017, p. 16-18):

At global and European levels it is becoming a high priority to implement a comprehensive, integrated risk approach by considering the full disaster management cycle (prevention/mitigation, preparedness, response and recovery), which also takes account of the importance of climate change as a driver of risk. Climate change adaptation (CCA) and disaster risk reduction (DRR) provide a range of complementary approaches for managing the risks of extreme weather- and climate-related events (weather- and climate-related natural hazards) and disasters, and both are cross-cutting and complex development issues.

Scientific and policy attention on the issue of linking CCA and DRR has been recognised at international level (e.g. SFDRR, the Paris Agreement, and the EU Action Plan on SFDRR 2015-2030), and also at national level, with various initiatives already started in some European countries.

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Potential key benefits of enhancing coherence between CCA and DRR are, at both EU and national level:

- *enhanced knowledge base, benefiting both policy areas*
- *more effective and efficient policies and practises in both areas, due to exploitation of synergies*
- *stronger collaboration between scientific and policy communities and networks*
- *more efficient use of human and financial resources*
- *better preparedness and response to disasters.*

For example, an increased coherence between CCA and DRR can be relevant to better identification and assessment of risks of natural hazards, more coherent planning of risk reduction investments and improved elaboration of financing instruments. Furthermore, closer collaboration on these CCA and DRR issues is particularly relevant as most governments have ratified the UNFCCC Paris Agreement on Climate Change, in which climate change adaptation and disaster risk reduction are key components. In conclusion, efficient and effective CCA policies and measures must build on and expand existing DRR efforts, and sustainable DRR approaches must account for the impacts of climate change.

9-10. Interlinkages to global policy frameworks

The shared concerns between CCA and DRR are illustrated in slide 9. Climate change is increasing societal vulnerabilities, such as the water availability, agriculture and ecosystems. The populations already exposed to climate-related hazards and effects will be at greater risk. The frequency and/or intensity of those hazards and effects will increase as a result of global climate change.

(Source: Worldvision,

<https://www.worldvision.com.au/global-issues/work-we-do/climate-change/climate-change-adaptation-and-disaster-risk-reduction>, further referred to Turnbull et al. (2013), <https://reliefweb.int/sites/reliefweb.int/files/resources/ECB-toward-resilience-Disaster-risk-reduction-Climate-Change-Adaptation-guide-english.pdf> (Acc 2021/03/31)

The figure at slide 10 shows the interlinkages between the head frameworks and agreement concerning management of the risk of climate extremes. The instruments need to reduce risk and build resilience through political and legislative momentum. See further explanations in Lesson 2: The Sendai Framework.

(Source: UNDRR info newsletter, January 2020,

<https://www.undrr.org/publication/undrr-info-regional-office-europe-january-2020> (Acc 2021/03/31)).

Slide 11. Examples of policies, plans and strategies in different sectors, at different levels, where there are connections to both CCA and DRR.

E.g.

- The EU Flood Risk Directive: https://ec.europa.eu/environment/water/flood_risk/
- Urban resilience strategies within the EU: <https://urban.jrc.ec.europa.eu/thefutureofcities/the-resilient-city#the-chapter>
- UNDRR, Developing National Disaster Risk Reduction Strategies: <https://www.undrr.org/developing-national-disaster-risk-reduction-strategies>

Slide 12. CCA and DRR at work at the same time

Here are some examples of professional groups with the knowledge needed for conducting holistic risk assessments, and holistic CCA and DRR strategies and plans. Can you add others to the list?

An example from the BSR: the Danish integrated planning tool for coastal protection - Kystplanlægger - <https://xn--kystplanlagger-cgb.dk/> (only available in Danish).

Slide 13. Barriers to successful integrated climate risk assessment

Slide 14. Climate hazards vs climate risks

Climate hazards are not synonymous with climate risks. The hazard is one component of climate risk, together with exposure and vulnerability. Risk of climate-related impacts results from the interaction of climate-related hazards - including hazardous events and trends - with the vulnerability and exposure of human and natural systems. Vulnerability and exposure are largely the result of socioeconomic pathways and societal conditions. However, changing hazard patterns have also an impact. Changes in both the climate system and socioeconomic processes are central drivers of the

different core components (vulnerability, exposure, and hazards) that constitute risk (Oppenheimer et al, 2014).

Slide 15. The consequences of climate hazards

When it comes to the climate hazards, there are different kinds of consequences at different levels in question. There are the well-known climate drivers, the weather-related hazards, like strong winds and increase in precipitation causing direct consequences on the environment, human health and on infrastructure. The weather-related hazards also lead to secondary events, such as droughts, flooding and wildfires, which all also have interlinkages to the direct weather-related consequences.

Furthermore, the different direct consequences interact with each other in various ways. The direct consequences on a regional and local level, also have transboundary impact on a global scale. All these categories are part of compounded events happening on the Earth, on top of each other. The consequences of climate changes are affected by non-climate events, such as financial crises and pandemics.

The stars in the figure indicate new risks for the Baltic Sea Region, detected by the Cascade project.

Reference + further reading: Tuhkanen & Piirsalu, 2020.

Slide 16. The climate change adaptation process

In the climate adaptation process, nine phases are identified. These phases form a continual management cycle. The first six phases – those relating to the understanding and planning of adaptation – are included in the process of climate risk assessment (Tuhkanen et al, 2020).

Slide 17. The barriers to climate adaptation

In the Baltic Sea region, local and regional climate adaptation strategy development has been slower than expected and varies between countries. This is due to differences in regulation between the countries, as well as how the various areas have been impacted by climate change.

These obstacles (Tuhkanen et al. 2020 + references therein) relevant to the climate risk assessment process are identified and grouped into eight categories. NB. Barriers not sufficiently addressed in the first phase of the process (Understanding, phase 1-3, see slide 16) often continue to be barriers in the subsequent stages of climate adaptation planning.

1) Conflicting timescales and conflicts of interest

- Short-termism in decision making, policies, and political cycles and pressure to show short-term results. Conflicts with the need for long-term actions, such as investments into infrastructures with longer lifespans and potential lock-in effects.
- Conflicts of interest can arise from conflicting timescales, but they can also occur due to conflicting goals and visions of how to develop. E.g. the development for commercial or conservation purposes.

2) Leadership

- Lack of local leadership
- Too many leaders

Influential leaders are needed both to start the process of the climate adaptation process and to create action spaces for other actors.

3) Resources

- Local authority resources required for climate adaptation include staff, capacities, time, and funding. Resources are essential in each planning and management stage
- A signal of recognition by leadership that these issues are prioritised.
- Gaps in resources – either lack of resources or inaccessible resources - at the local government level means that external support is needed.

4) Scientific data and knowledge

- Lack of information
- Lack of access to information
- Weak understanding or guidance on what to do with and how to understand the information
- How to deal with uncertainty

Science-related obstacles are especially relevant to the second stage of the adaptation planning phase (see slide 16). It can be hard to transfer theoretical impacts to practical actions and assess the risks holistically, where cascading risks are included. Traditionally risk assessment from extreme weather events focus on water management. However, emerging hazards, such as heat, flash floods from sewage overloads, erosion, and cascading risks related to the interconnected urban system and critical infrastructure are less often considered.

5) Governance and institutional constraints

- Legislations such as regulatory requirements, lack of legal basis for actions, or lack of official remit by specific actors.
- Coordination and cooperation obstacles with lack of formal or informal processes to collaborate. The cross-disciplinary, cross-sectoral, and multi-level work required presents a challenge to institutions that traditionally work in silos. This group can be a barrier for all the climate risk assessment phases. The most important strategies to overcome these barriers involve changes in policy, planning and management, as well as efforts to create space for continuing the adaptation process.

6) Lack of awareness and communication

- Lack of awareness about climate change and its implications
 - The role actors, assets (e.g. infrastructure) or activities play
 - The timescales
 - The costs
 - The adaptation options

- Lack of communication or miscommunication or even mistrust.

Communication to stakeholders, including the public, is key throughout the adaptation process. The communication should be tailored to actors' needs and enable them to be aware of their role in efforts.

7) Attitudes, values, and motivations

- Social and culturally derived obstacles: cultural values, beliefs, motivations, social norms, motivations, trust in science and risk perceptions.

This is critical when dealing with decision makers, influencers etc. who are expected to make changes in their behaviour as a part of the solution. Studies show that personal factors - traditional knowledge, political affiliation, educational background - affect risk perception and subsequent decision making. This category is crucial for the first three phases of the climate risk assessment (slide 16) and is likely to manifest itself in other forms, such as the lack of political will, in the later implementation phases if not overcome in the beginning.

8) Adaptation process

- The adaptation process itself: how to start, how to select the scope, criteria, etc. Municipalities might need guidance on how to start the process, identify long-term and holistic thinking etc. One challenge with adaptation is that the transferability of adaptation measures is limited. This is because local solutions should be based on risk assessments tailored to that area in terms of the specific geography, local stakeholders, regulation and financial and other resources available.

Slide 18. Barriers in the Baltic Sea Region – examples

The CASCADE project has identified which barriers that were relevant to local level emergency management and spatial planners in the Baltic Sea region through survey studies. The survey results show which sub-categories of barriers are considered to be most challenging in the represented local authorities (the results are based on a group of 15 emergency management practitioners from across the BSR and a group of 26 spatial planners from across the BSR).

Overall, spatial planners rated the barriers to be more challenging than emergency management representatives. In the BSR, adaptation-related guidance is available for local governments in the national language in seven of eleven countries.

Reference + further reading: Tuhkanen et al. 2020.

Slide 19. How to overcome the barriers

There are several guides and video clips from different perspectives which can provide inspiration on how to deal with barriers to climate hazards.

Here are some examples:

Stockholm Environment Institute, Guidelines for planning equitable disaster resilient development: <https://www.sei.org/publications/guidelines-for-planning-equitable-disaster-resilient-development/> (Acc 2021/04/08)

Climate & Development Knowledge Network, The politics of climate change at the city level – Insights from a comparative study of Buenos Aires, São Paulo and Mexico City: https://cdkn.org/resource/guide-latin-american-cities/?loclang=en_gb (Acc 2021/04/08)

The EU research project RAMSES, Science for cities in transition: <https://www.ramses-cities.eu/home/> (Acc 2021/04/08)

https://ramses-cities.eu/fileadmin/uploads/Deliverables_Uploaded/RAMSES-Handbook-and-Training-Package-final-www.pdf (Acc 2021/04/08)

A good example from BSR is the Danish coastal protection tool. The guideline is complex and detailed and detects the potential risks in the coastal areas until the year 2120. Strategies and guides for concrete actions are presented, e.g. for risk of flooding and erosion. The material is produced by Kystdirektoratet, the Danish coastal authority for municipalities. The website is only available in Danish: <https://xn--kystplanlgger-cgb.dk/> (Acc 2021/06/01).

More references on this topic, see Tuhkanen et al. 2020.

Slide 20. The Sendai Framework in the BSR - challenges, good practices, way forward

This section (slides 20-25) presents the Cascade project report “The Sendai Framework in the Baltic sea Region – challenges, good practices, way forward”.

The aim is to support the implementation of the UN Sendai Framework for Disaster Risk Reduction at the local level in the BSR. There are strong links between climate and security; therefore, experts working within both areas need to collaborate to find joint solutions to the future challenges and risks. The results presented in the report are based on discussions and a survey with the official National Focal Points for the Sendai Framework in the countries of BSR. Other representatives working with DRR issues at the local level are also heard.

The survey and report is prepared by the project partners of the Civil Security team at the Council of the Baltic Sea States (CBSS).

Reference: Jernberg, 2019.

Slide 21. DRR and Sendai Framework in the BSR: Needs, challenges, recommendations

The aim of the report is to present the current state of the implementation of the Sendai Framework in the Baltic Sea Region. The objective is to pave the way for discussions on how the work can be improved, and how cooperation and exchange between the countries could contribute to strengthening the implementation efforts.

The discussions have focused on identifying trends across the region in terms of challenges and needs. Additionally, focus has also been on identifying examples of good practices to be highlighted in the continued discussions. This report wants to contribute to initiating a regional discussion on Disaster Risk Reduction engaging the Baltic Sea Region states. At the global and the European levels, a lot of focus is on issues important for other parts of the world, and in the European context there has been a lot of focus on the south of Europe. By this report the Cascade project will contribute to tailor the Sendai Framework to the context of the Baltic Sea Region, to make it more relevant for the specific conditions of this region (Jernberg, 2019).

Slide 22. Quotes from the survey

The result in the report is based on discussions followed by a survey. The target group was the National Focal Points for the Sendai Framework for Disaster Risk Reduction in the member states of the European Union Civil Protection Mechanism (UCPM) in BSR.

Here are some examples of quotes, illustrating the current situation.

More details surrounding the collection of material, see Jernberg (2019).

Slide 23-24. Main conclusions

Eleven main conclusions have been drawn from the discussions with the national representatives responsible for the work with the Sendai Framework for Disaster Risk Reduction in the Baltic Sea Region.

Ref. Jernberg, 2019.

Slide 25. Recommendations

Four recommendations are put forward below for how the Disaster Risk Reduction capacities could be strengthened in the Baltic Sea Region countries.

1. Strengthening political and public support is key for efficient implementation of the Sendai Framework for Disaster Risk Reduction – improving the quality of the National Risk Assessments paves the way for more solid decision-making.

- Mainstreaming DRR in public policies determines resources available, prioritization, and strengthens the mandate of the coordination mechanism. The decision-makers should be made aware of the fact that inaction is also an action with consequences
- Match risk assessment methodologies with current challenges. To enable better integration of climate change risks, the models, methodologies and data used must be improved and strengthened. The higher the quality of the risk assessments, the more solid decision-making in risk treatment.
- Increase the awareness among politicians. Multilateral action, cross-sectoral and integrated risk assessments, as well as awareness raising efforts are needed.
- Include DRR issues in education. Inclusion in academic studies is one way to raise the awareness, knowledge and understanding for the phenomenon.

2. The relevance of working with the Sendai Framework in the Baltic Sea Region can be raised through tailoring the framework to the regional context.

- The Sendai Framework is a global policy framework. The objectives and targets are on a general level, often based on the needs of those countries in the most urgent needs. By tailoring the framework to the specific regional conditions, the relevance of actively working with the implementation of the framework will be easier to see. By changing the focus from the symbolic measurement of 'disaster losses' to issues that would make sense on a regional and local, measurable, level would strengthen the relevance.

3. Multi-level and cross-sectoral cooperation should be strengthened to enable a common approach. Disaster Risk Reduction, Climate Change Adaptation and Sustainable Development activities need coherence – in strategic planning, as well as in preparing and conducting the National Risk Assessments.

- DRR and CCA need to enable real prevention and preparedness for current and future climate change risks. The efforts should be coherent to achieve the greatest impact and that can only be achieved with policy coherence. I.e. there must be holistic and integrated strategies including the Sendai Framework, the 2030 Agenda, the Paris Agreement as well as the New Urban Agenda.
- One part is to strengthen the cooperation between the ministries and authorities working with the different policies, such as climate change and civil protection. The other part is to strengthen the cooperation between the different levels of governance. There needs to be coherence between the strategies and plans at the different levels – the local plans should be developed in accordance with directives and instructions presented by the national plans. This will foster coherence and more efficient communication between the levels.

4. Strong coordination mechanisms are needed to enable effective planning of implementation, cooperation and to manage the complex flows of information. This can be done by providing the National Focal Point with a sufficient mandate.

- A strong coordination mechanism is needed to get an overview of information, understand and use the guidance from UNDRR, keep track of ongoing DRR activities as well as the roles of relevant actors and resources located in different sectors and levels. The mechanism is also needed to coordinate the cooperation between stakeholders, and to connect with those stakeholders that need to be involved in the work.

Slide 26. Key messages

References:

EEA, 2017, Climate Change Adaptation and Disaster Risk Reduction in Europe – enhancing the coherence of the knowledge base, policies and practices. European Environment Agency (EEA), Report No. 15, 171 p.

<https://www.eea.europa.eu/publications/climate-change-adaptation-and-disaster> (Acc 2021/03/31)

IPCC, 2014, Annex II: Glossary [Mach, K.J., S. Planton and C. von Stechow (eds.)]. In: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, pp. 117-130.

https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_Annexes.pdf (Acc 2021/03/31)

Jernberg, N. 2019. The Sendai Framework in the Baltic Sea Region: Challenges – good practices – way forward. Report published within the CASCADE project, 33 p.

https://www.cascade-bsr.eu/sites/cascade-bsr/files/outputs/the_sendai_framework_in_the_baltic_sea_region_0.pdf (Acc 2021/04/22)

Oppenheimer, M., M. Campos, R. Warren, J. Birkmann, G. Luber, B. O'Neill, and K. Takahashi, 2014: Emergent risks and key vulnerabilities. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge

University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1039-1099.
https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap19_FINAL.pdf (Acc 2021/04/08)

Tuhkanen, H. & Piirsalu, E. 2020. Overview of climate risk drivers, hazards and consequences. Report published within the CASCADE project, 70 p.
http://www.cascade-bsr.eu/sites/cascade-bsr/files/outputs/cascade_overview_of_climate_drivers_and_hazards_final_version.pdf (Acc 2021/04/08)

Tuhkanen, H., Vilbiks, L. & Piirsalu, E. 2020. Overcoming barriers to climate adaptation. Report published within the CASCADE project, 37 p.
http://www.cascade-bsr.eu/sites/cascade-bsr/files/outputs/overcoming_barriers_to_climate_adaptation_0.pdf (Acc 2021/04/01)

UNDRR 2015, Sendai Framework for Disaster Risk Reduction 2015-2030,
<https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030> (Acc 2020/11/25)

UNDRR 2019, The UN Global Assessment Report on Disaster Risk Reduction (GAR),
<https://gar.undrr.org/> (Acc 2020/11/25)

This material is based on the material for lessons 3 and 6 in the original Cascade Curriculum, and a summary of the project report “The Sendai Framework in the Baltic Sea Region: Challenges – good practices – way forward”. Original content planned and prepared by Nina Jernberg and Katie Goldie-Ryder at the CBSS (contact: Valdur.Lahtvee@cbss.org), and Heidi Tuhkanen and Evelin Piirsalu at the SEI Tallinn (contact: evelin.piirsalu@sei.org; heidi.tuhkanen@sei.org).
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