DELIVERABLE 1.8

Knowledge exchange on stakeholder analysis in regard to cause – effect relations and potential systemic effects in replicating regions

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Land4Climate

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Deliverable 1.8

Knowledge exchange on stakeholder analysis in regard to cause – effect relations and potential systemic effects in replicating regions

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Abbreviations

CRA	Climate risk assessment
CIC	Climate impact chain
DEL	Deliverable
FRR	Front-running region
EU	European Union
LAND4CLIMATE	Utilization of private land for mainstreaming nature-based solution in the systemic transformation towards a climate-resilient Europe
NbS	Nature-based solution
RR	Replicating Region
WP	Work Package

Executive Summary

The LAND4CLIMATE project aims to mitigate climate risks by implementing nature-based solutions (NbS) on private land across six front-running regions (FRR) in Germany, Austria, Slovakia, Romania, Italy and Czechia. The objective is to upscale and replicate the projects results and experiences to enhance climate resilience throughout Europe. Therefore, knowledge exchange events are planned with the replicating regions (RR) assigned to the FRR, enabling the exchange of experiences and insights gained throughout the different work packages (WP) of the project. Knowledge exchange workshops were conducted to familiarize participants with the key concepts from the first WP, focusing on experiences exchange on NbS implementation within the RR and the selection process of suitable NbS within LAND4CLIMATE to help mitigate climate risks. This report summarizes materials from academic partners, workshop processes, and detailed results while providing an out-look on future deliverables**.**

Keywords

nature-based solutions, knowledge exchange, replicating, upscaling

1. Introduction

Climate change is driving an increase in global temperatures, which is expected to result in more frequent extreme hydrometeorological hazards in the future. These natural hazards include heat-waves, droughts, heavy rainfall, and flooding. To address these climate risks, it is crucial to enhance climate resilience. In this regard, nature-based solutions (NbS) serve as effective climate adaptation measures that provide a wide range of benefits.

The objective of the LAND4CLIMATE project, funded the European Union (EU), is to improve climate resilience across Europe by implementing NbS on private land within the continental biogeographical region. This initiative encompasses various NbS measures being implemented on private land in six front-running regions (FRR) located in Germany, Romania, Austria, Italy, Slovakia, and the Czech Republic. Each FRR has an associated replicating region (RR), where the project's outcomes are intended to be replicated and upscaled for broader application throughout Europe.

In Germany, the county of Euskirchen serves as the FRR with Vulkaneifel determined as its corres-pondding RR. The Lafnitz catchment area represents Austria's FRR, while Weinviertel is its associated RR. In the Czech Republic, National Park Bohemian Switzerland and Krásná Lípa act as the FRR; Staré Křečany and Růžová are designated as the RR. In Italy, Emilia-Romagna functions as the FRR with the Eastern Po Valley and Delta Po serving as its RR. The upper Timiș River catchment represents Romania's FRR while its RR includes the lower Timiș river catchment area. In Slovakia, the Roňava river catchment serves as the FRR with Košice Region identified as its RR.

The experiences and insights gained from each FRR will be shared with their respective RRs to facilitate successful replication and upscaling of project outcomes. To support this effort, several knowledge exchange events are planned within the project framework. Two knowledge exchange workshops were organized to familiarise the RRs with topics addressed in the first work pack-age (WP). The first workshop focuses on climate risk assessments (CRA) while the second addres-ses NbS related topics. These workshops were conducted by the FRRs with academic partners from TUDO and RWTH preparing the relevant workshop content. This deliverable (DEL) presents part of the results of the second conducted knowledge exchange workshop between the FRR and RR in the context of WP1. The focus of this part of the workshop is to familiarize the RR with the selection approach to find a suitable NbS developed within the LAND4CLIMATE project.

First, the deliverable presents the prepared materials regarding the NbS selection approach used in LAND4CLIMATE. Then, it outlines the discussion results from the workshop part addressing the knowledge exchange regarding the implementation experiences of the RRs. Finally, the report concludes with a brief summary and an outlook on the upcoming DEL.

2. Replication Region Workshops Overview

Initially, the Grand Agreement outlined five knowledge exchange workshops between the FRR and their assigned RR. However, due to overlapping topics and time constraints the planned workshops consolidated into two workshops. One workshop focused on the CRA and the other addressed topics related to NbS. The following figure provides an overview of the workshops. The workshops were structured around five key topics, with the corresponding deliverables presenting their results. DEL 1.2 documents the results of the workshop about climate adaptation scenarios, while DEL 1.4 summarizes the knowledge exchange on the fundamental understanding of CRA. DEL 1.6 presents results of the knowledge exchange about the basics of climate impact chains and the NbS concept, DEL 1.8 about the selection process for identifying suitable NbS for a region, and DEL 1.10 focuses on the results of the knowledge exchange regarding no-regret NbS.

Climate Risk Assessment	**DEL 1.2** – Knowledge exchange on future-oriented local climate adaption scenario development for replicating regions
	DEL 1.4 – Knowledge exchange workshop on climate risk analysis for replicating regions
Nature-based Solutions	**DEL 1.6** – Knowledge exchange workshop on cause-effect relations and systemic effects for replicating regions
	DEL 1.8 – Knowledge exchange on stakeholder analysis in regard to cause-effect relations and potential systemic effects in replicating regions
	DEL 1.10 – Knowledge exchange workshop on stakeholder-led no-regret NbS measures identification and evaluation for replicating regions

Figure 1: Assignment of deliverables to the knowledge exchange workshops conducted with the RR within WP1

In preparation for the knowledge exchange, ideas of the objective, the contents as well as a possible structure of the workshops were collaboratively developed in online calls between TU Dortmund, RWTH Aachen, DEN Institute and the project partners in the FRRs. This allowed the workshop content to be tailored to the types of organizations and the diverse stakeholders participating in the workshops as well as the existing knowledge within the RRs.

Both knowledge exchange workshops were structured into two sections. The first section focused on presenting thematic foundations, key findings and experiences from WP 1 to the RR through a presentation. The presentation materials were prepared by the WP leaders, TU Dortmund and RWTH Aachen. TUDO prepared the slides for the workshop on CRA and RWTH provided the materials for the workshop on NbS.

The second section of the workshop centred on discussion, facilitating an exchange of ideas between the FRR and RR. This session enabled the RR to share their experiences with CRA and NbS. To support these discussions, the academic partners developed guiding questions, which served as both a discussion framework and a basis for documenting the workshop outcomes. In addition to the guiding questions, three evaluation questions were formulated for each workshop

(CRA and NbS), to be answered by each RR and participating organization. The protocol regarding the NbS knowledge exchange, including both the guiding and evaluation questions, is provided in the appendix of this report.

3. Knowledge exchange on stakeholder analysis in regard to cause – effect relations and potential systemic effects in replicating regions

This deliverable addresses the knowledge exchange between the FRR and the RR regarding the selection process of suitable NbS for identified Hotspots. The slides prepared by RWTH could be translated by the FRR into the national language as required in order to avoid language barriers and to ensure clear communication of the contents of the first WP. This way, all participants can understand the content and participate in the discussion.

Figure 2 illustrates the NbS decision-making process applied within LAND4CLIMATE to find suitable NbS for hotspots identified by conducting a CRA and developing CIC. This process builds upon the methodology outlined in Deliverable 1.1 – Future – oriented local climate adaption scenarios – front running regions, describing the approach for conducting a CRA. Additionally, it draws on insights from Deliverable 1.5 - Visualisation of cause - effect relations and potential systemic effects - front-running regions, which provides basic insides into developing climate impact chains, the fundamentals of the NbS concept and example NbS that can be implemented on private land. Once potential NbS have been identified collaboratively to mitigate climate impacts, these measures must undergo further assessment to evaluate their benefits and limitations. This process aims to determine no-regret NbS, which provide long-term advantages with minimal risk. The concept of no-regret measures is further explored in Del 1.10 – Knowledge exchange workshop on stakeholder-led no-regret NbS identification and evaluation for replicating regions.

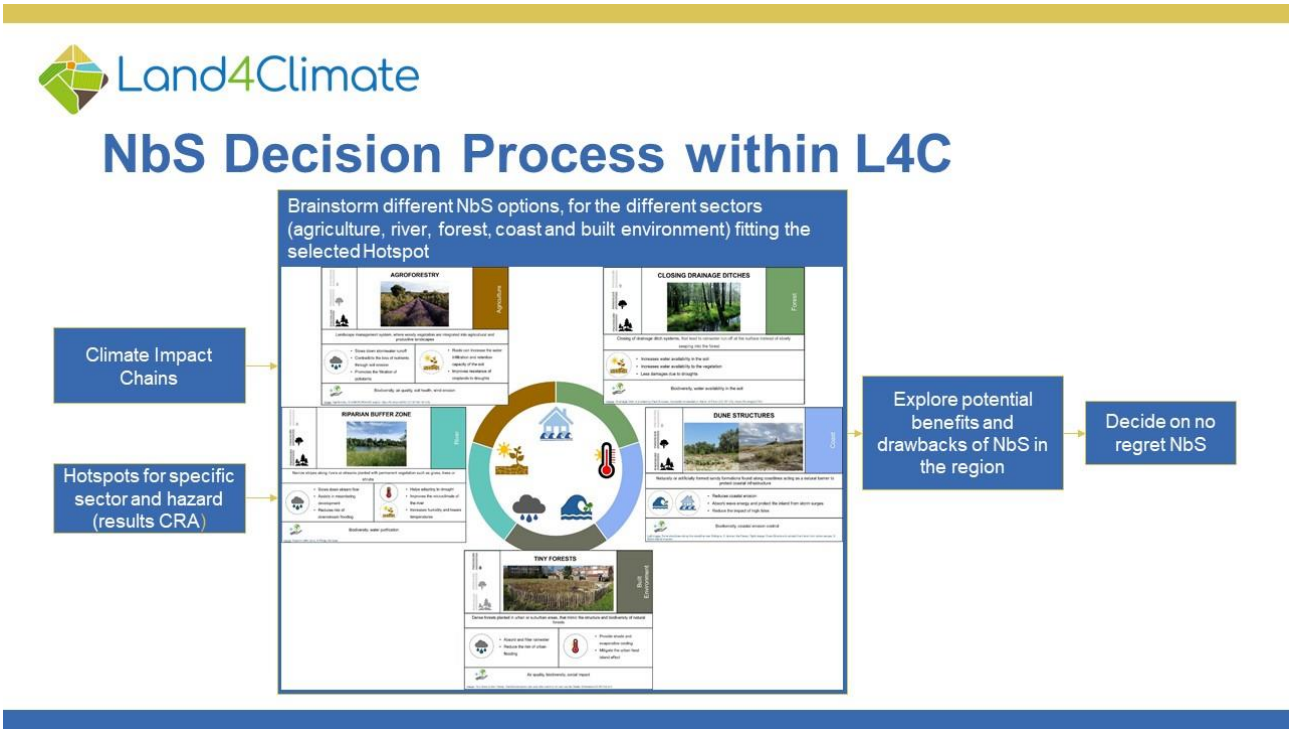

Figure 2: Overview over the decision-making process to select suitable NbS to mitigate climate risks at identified Hotspots

Figure 3 provides a more detailed overview of the brainstorming process used to find suitable NbS for mitigating the impacts of climate hazards. As part of the LAND4CLIMATE project, a set of factsheets was created for each NbS presented in Del 1.5. These are suitable as a possible tool for collaboratively developing initial ideas for implementing suitable NbS on private land during workshops. The general structure of these factsheets is illustrated on the right side of the slide presented in figure 3. The NbS were categorized into different sectors based on their implementation field. How-ever, the individual factsheets are not discussed further in this DEL; detailed descriptions of the NbS can be found in DEL 1.5.

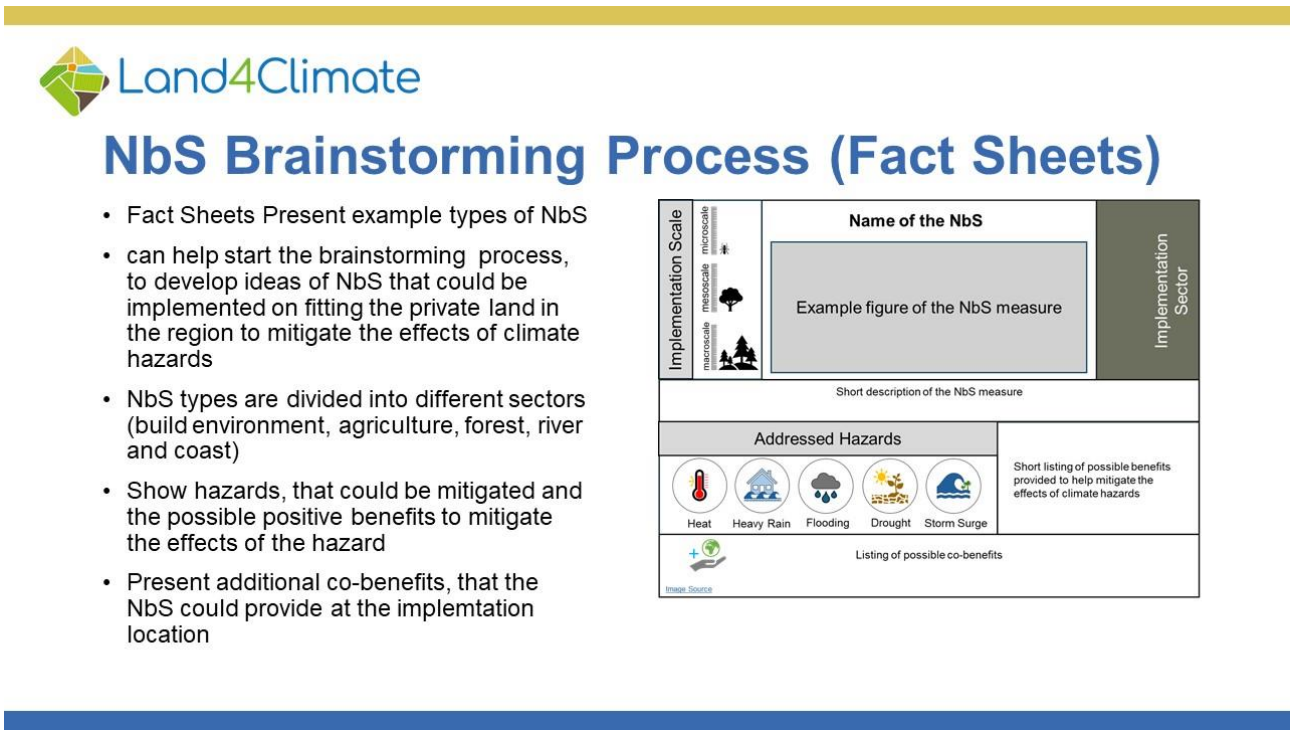

Figure 3: NbS Brainstorming Process developed within LAND4CLIMATE

The academic partners provided the FRRs with a proposed structure for conducting the workshop with the RRs. However, the FRRs were free to determine how to organize the transfer of knowledge and experience with their respective RRs. This flexibility allowed them to adapt the content to the regional contexts and specific needs of the RRs. This deliverable focuses on the workshop segment addressing the decision-making process for selecting suitable NbS to mitigate the impacts of climate risks, as well as the exchange of experience regarding NbS implementation in the regions. In this deliverable the responses of the RRs to the following guiding questions are presented.

Process of choosing NbS in the RR

1. How experienced are you with choosing a NbS in your region?
2. What have been the criteria of choice for past NbS within your region?
3. Would you consider the L4C approach helpful in your region?

NbS implementation within the RR

1. What is your experience with NbS implementation in the RR?
2. Have you implemented any NbS specifically on private land yet?

The RR were asked to respond to the following evaluation questions, prepared by the academic partners.

1. How experienced are you with the NbS concept, did you already implement NbS in your region?
2. How confident are you about finding a suitable NbS to mitigate climate hazards in your region?

4. Results of the knowledge exchange

This chapter presents the results of the knowledge exchange workshops between the FRRs and their assigned RRs. The workshop framework conditions are not discussed in detail within this deliverable, as it serves as a continuation of the results from the second workshop on NbS, conducted within the scope of the first WP. Details regarding the framework conditions of the individual knowledge exchange workshops can be found in Deliverable 1.6 – Knowledge Exchange Workshop on Cause-Effect Relations and Potential Systemic Effects for Replicating Regions. This deliverable focuses exclusively on presenting the outcomes of the workshops regarding the knowledge ex-change on NbS selection and implementation.

4.1 Czech Republic

During the workshop held on November 22, 2024, in Staré Křečany, it became evident that the region selects NbS for implementation based on local expertise, as well as current and historical knowledge. The community has a deep understanding of areas at risk of long-term drought, flooding, and water retention issues, informed by historical maps and direct field observations. These sources provide insights into the historical presence of smaller watercourses, polders, pond cascades, and wetlands.

The region has successfully completed several NbS projects and has numerous plans that require further development into detailed studies and design documents. However, as a small municipality, Staré Křečany faces significant challenges due to limited financial and human resources. Additio-nally, there are currently no suitable long-term funding opportunities available that the municipality could apply for to support NbS implementation in their region.

The region has already gained experience in implementing NbS. In 2022, 40 white fir trees were planted as a windbreak at the cemetery to prevent soil erosion. Currently, the RR, in collaboration with nearby forest managers, is reforesting areas nearby with mixed tree nurseries in response to the bark beetle disaster. Several additional projects are planned and awaiting implementation. This year, the municipality intends to plant 80 linden trees along the newly constructed cycle path to Skřivánek. Additionally, a complete repair is planned for the water reservoir in Brtníky, which serves as both a local water retention measure and a water supply source for the community. Furthermore, it contributes to water retention for the northern part of the Bohemian Switzerland National Park. The reservoir has a capacity of approximately 1500 m^3, and funding for the repairs has already been secured. The project is scheduled for implementation in 2025.

Furthermore, there are several projects that still need to be granted. A restoration of an old water pool near the post office is planned. This water reservoir holds water in the centre of the village. It holds around 1050 m^3 of water. For the project implementation a subsidy will be applied for in the spring of 2025, possible implementation in 2025/26. Another project intends to restorate an old water reservoir near the drive, aiming to retain water in the landscape and regulate water flow toward the

lower part of the village, Dolní Křečany. With a capacity of 1000 m^3, the reservoir is intended to enhance water retention and contribute to flood management in the area. The project is currently in the planning phase, with an application for a subsidy scheduled for submission in the spring of 2025. If the grant is awarded, implementation is expected to take place in 2025 or 2026. For two other projects within Staré Křečany, the RR is still looking for funding. The region plans to implement several polders in the direction from Skriváncí pole/Dymník towards Staré Křečany. In case of a heavy rain event the polders are supposed to function as a protection barrier for the inhabitants and their properties in the central part of Staré Křečany around the town hall and towards Dolní Křečany. Further polders are also to be installed between Panský and the Havlák pond. The aim of this measure is to drain water in the landscape and protect the inhabitants from flooding in the upper part of Staré Křečany.

Due to past challenges in collaborating with private landowners, the RR has not yet gained experience in implementing NbS on private property.

The following tables present the responses of the RR to the evaluation questions. Table 1 illustrates the RR's assessment of their ability to identify a suitable NbS to mitigate the impacts of climate hazards in their region.

Table 1: Evaluation of workshop participants' assessment on selecting suitable NbS for the Czech RR

Appropriate fit: How confident are you about finding a suitable NbS to mitigate climate hazards in your region?	1 Choosing a suitable NbS for specific needs in our region is really challenging	2	3	4	5 I know which NbS works well in our region
				X	

Table 2 presents the RR's assessment of their level of experience with the implementation of NbS in their region.

Table 2: Self-assessment by the workshop participants to evaluate their experiences with NbS implementation within the Czech RR

Knowledge: How experienced are you with the NbS concept, did you already implement NbS in your region?	1 I have never heard of the concept	2	3 I heard of the concept but haven't implemented NbS yet	4	5 I know the concept very well and already implemented NbS
				X	

Figure 4: Workshop participants visiting possible NbS implementation locations in the Czech RR, © Czech FRR

Figure 4 illustrates the workshop participants during an excursion focused on NbS and climate hazards within the RR.

4.2 Germany

The workshop held on the 10th of February 2025 showed, that the German RR Vulkaneifel has some experience in the implementation of NbS within the region. In the county of Vulkaneifel a school roof was recently renovated and greened as part of the refurbishment. An additional planned NbS is the de-sealing of a schoolyard, which is currently fully paved with asphalt. The implementation of NbS measures that involve transferring funds to private landowners presents a challenge, as the county lacks its own financial resources and is therefore initially dependent on external fundings. Nevertheless, the RR has collected experiences in implementing NbS on private land as the region cultivated Silphium in the base of the ZENAPA project, which aims to achieve CO_2 neutrality in large protected areas, including national parks, biosphere reserves, nature parks, and their surrounding regions. A key requirement to archive this goal is the implementation of national and European climate protection targets (CAP 2020 and CPP 2050), while considering national and European biodiversity and bioeconomy strategies. Silphium was cultivated as an alternative energy crop to reduce soil erosion and promote biodiversity within the implementation location. The region had the opportunity to implement hedgerows within the project as well but the measure did not gain sufficient acceptance among the local farmers.

Figure 5: Screenshot of the online knowledge exchange between the German FRR and RR, © Janine Lilia Freyer

In the past the German RR selected NbS based on available financial resources. The promotion of Silphium as an energy crop for example emerged from the ZENAPA project and is funded through it. In the near future it is planned to develop a climate adaption concept, once it is finished additional funding sources can be accessed and furthermore, measures can be implemented using compensation funds for nature conservation.

Table 3 shows that the participants of the Kreisverwaltung Vulkaneifel are medium confident to find a suitable NbS to mitigate climate hazards in their region.

Table 3: Evaluation of workshop participants' assessment on selecting suitable NbS for the German RR

Appropriate fit: How confident are you about finding a suitable NbS to mitigate climate hazards in your region?	1 Choosing a suitable NbS for specific needs in our region is really challenging	2	3	4	5 I know which NbS works well in our region
			X		

Furthermore, the RR has already heard of the concept of NbS but has limited experience with the implementation of NbS.

Table 4: Self-assessment by the workshop participants to evaluate their experiences with NbS implementation within the German RR

Knowledge: How experienced are you with the NbS concept, did you already implement NbS in your region?	1 I have never heard of the concept	2	3 I heard of the concept but haven't implemented NbS yet	4	5 I know the concept very well and already implemented NbS
			X		

The German FRR provided valuable guidance to their RR on potential funding opportunities for NbS implementation. As part of their support, they presented various funding options during their presentation. The funding opportunities outlined by the FRR are illustrated in Figure 6.

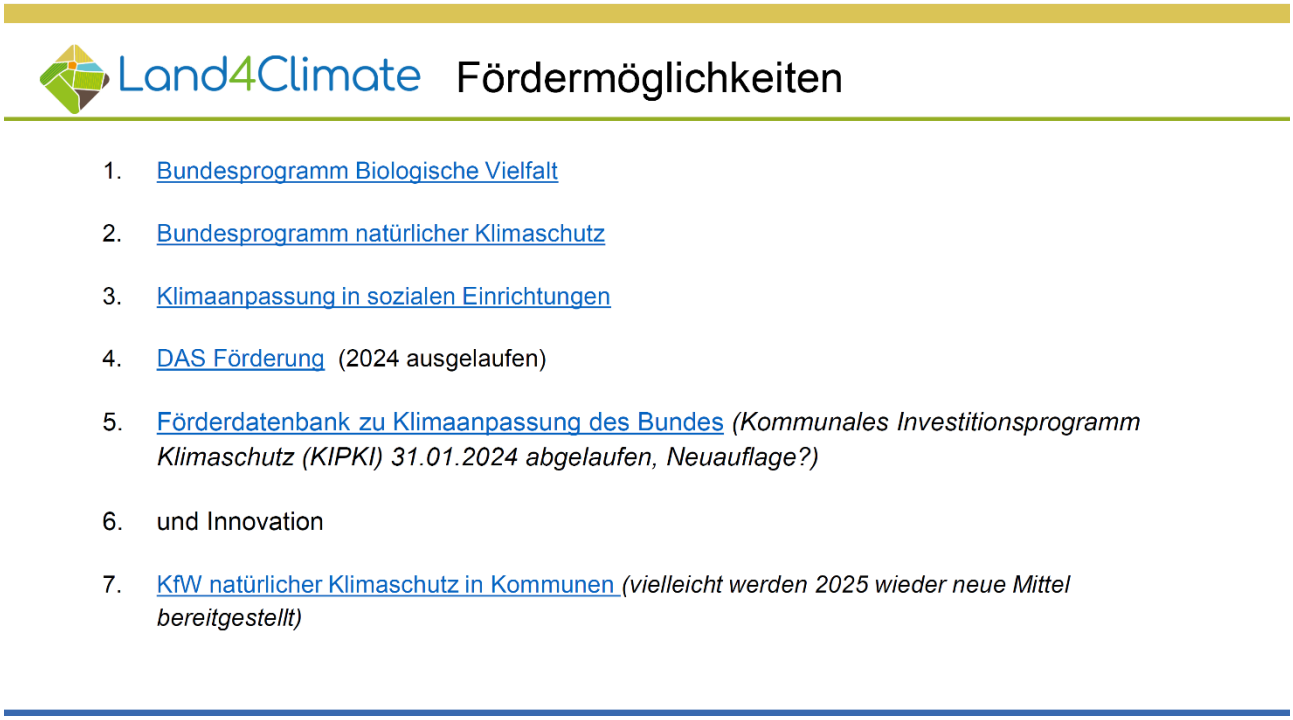

Figure 6: Possible funding programms for NbS implementation in Germany, slide created by Jonathan Schulze

4.3 Romania

Most of the participants of the knowledge exchange between the Romanian FRR and RR have little to moderate experience with choosing NbS in their region only a few participants were experienced on the matter of NbS implementation.

Table 5: Evaluation of workshop participants' assessment on selecting suitable NbS for the Romanian RR

Appropriate fit: How confident are you about finding a suitable NbS to mitigate climate hazards in your region?	1 Choosing a suitable NbS for specific needs in our region is really challenging	2	3	4	5 I know which NbS works well in our region
	1 participant	**4 participants**	**4 participants**	**5 participants**	**2 participants**

In the past the selection for specific NbS was primarily guided by legislative constraints, targeted development goals for certain areas and the need to mitigate the impacts of climate change. The LAND4CLIMATE approach is considered helpful by the workshop participants but relatively difficult to implement due to the private ownership of the lands. Environmental NGO's within the RR are the most welcoming of the LAND4CLIMATE approach of selecting suitable NbS to mitigate the impacts of climate hazards.

Within the RR, NbS were implemented in municipal green spaces and on public university land. However, the region has no prior experience with NbS implementation on private land. The level of experience with NbS implementation varies among workshop participants, as illustrated in Table 6.

Table 6: Self-assessment by the workshop participants to evaluate their experiences with NbS implementation within the Romanian RR

Knowledge: How experienced are you with the NbS concept, did you already implement NbS in your region?	1 I have never heard of the concept	2	3 I heard of the concept but haven't implemented NbS yet	4	5 I know the concept very well and already implemented NbS
	3 participants	**2 participants**	**4 participants**	**3 participants**	**4 participants**

4.4 Austria

In the Austrian RR Weinviertel, watercourse maintenance concepts serve as a tool to identify areas where measures such as NbS can be implemented along watercourses. One potential NbS for implementation within the RR could involve planting hedges along the watercourse on private farmland. This approach would facilitate a limited dynamic development of the river by gently sloping the banks. Farmers could receive subsidies for this measure, creating a mutually beneficial outcome.

As indicated in Table 7, the RR is confident in its ability to identify and implement suitable NbS to mitigate climate hazards in the region.

Table 7: Evaluation of workshop participants' assessment on selecting suitable NbS for the Austrian RR

Appropriate fit: How confident are you about finding a suitable NbS to mitigate climate hazards in your region?	1 Choosing a suitable NbS for specific needs in our region is really challenging	2	3	4	5 I know which NbS works well in our region
				X	

The self-assessment of knowledge regarding the experience of the RR implementing NbS within their region shows that the region is well experienced with the Nbs concept as well as the NbS implementation.

Table 8: Self-assessment by the workshop participants to evaluate their experiences with NbS implementation within the Austrian RR

Knowledge: How experienced are you with the NbS concept, did you already implement NbS in your region?	1 I have never heard of the concept	2	3 I heard of the concept but haven't implemented NbS yet	4	5 I know the concept very well and already implemented NbS
					X

In the RR various NbS were already implemented within their region. As part of the "Klimawandel Anpassungsmodellregionen" project, short KLAR!, the RR and other participating regions planted trees along the watercourses to provide shade in order to minimize the water temperature within the rivers. Additionally, the RR has experience with implementing NbS on private land. A renaturation measure was carried out on the Pulkau River, within private land in the municipality of Seefeld-Kadolz. This measure was secured through a servitude and approved by water law permits, with the primary goal of enhancing the landowner's forested area. Furthermore, the region has expertise in

land acquisition and compensation for NbS implementation. In cases where flood retention basins are constructed, the dam areas are typically purchased, while the land subject to flooding remains the property of the owner and is compensated when flooding occurs.

4.5 Italy

The Italian RR has no prior experience in selecting or implementing NbS within their region. However, they have expressed a strong interest in learning more about NbS to identify the most functional and adaptable solutions for their municipality.

As shown in Table 9, while the Italian RR is familiar with the concept of NbS, they have not yet carried out any implementation. This highlights an opportunity for capacity building and knowledge exchange to support future NbS initiatives in the region.

Table 9: Self-assessment by the workshop participants to evaluate their experiences with NbS implementation within the Italian RR

Knowledge: How experienced are you with the NbS concept, did you already implement NbS in your region?	1 I have never heard of the concept	2	3 I heard of the concept but haven't implemented NbS yet	4	5 I know the concept very well and already implemented NbS
			X		

Table 10 illustrates that the region has identified the key climate-related challenges affecting their area. Additionally, the RR expresses confidence in their ability to identify suitable NbS to effectively mitigate these impacts.

Table 10: Evaluation of workshop participants' assessment on selecting suitable NbS for the Italian RR

Appropriate fit: How confident are you about finding a suitable NbS to mitigate climate hazards in your region?	1 Choosing a suitable NbS for specific needs in our region is really challenging	2	3	4	5 I know which NbS works well in our region
				X	

4.6 Slovakia

During the knowledge exchange between the Slovakian FRR and RR on December 17, 2024, it became evident that the Košice region (RR) has already gained substantial experience in NbS implementation. For the past decade, the city district of Tahanovce has focused on water retention through NbS, leading to the development of bioclimatic parks and drainage systems under residential areas. Additionally, the municipality has collaborated with private landowners and urban forestry initiatives to enhance water retention efforts. Plans are underway to expand NbS initiatives further, including the establishment of an additional bioclimatic park.

The Botanical Garden in Košice has implemented NbS on a 30 ha site, incorporating rainwater collection from roofs into a 100 m^3 underground retention basin. Additionally, a wetland was created to support biodiversity, including endangered species such as the golden carp. The project was primarily funded through Interreg funds and private donations from companies such as US Steel and VSE.

The Mlynský Náhon project also aims to implement NbS but it was only thoroughly developed because of lacking funds for full implementation. Meanwhile, the “Biodiversity and Climate Park Kysak” project was completed in 2024. As part of this initiative rain gardens were implemented at secondary schools across the region through the regional volunteer centre, demonstrating the RRs commitment to further extend NbS implementation in the region. Additionally, at the secondary technical school in Spišská Nová Ves seven types of NbS were implemented, further highlighting the local engagement in climate adaption. Moreover, Košice has successfully executed climate adaption initiatives like the "ClimaUrbanKošice" project, which received €1.39 million in funding from EEA and Norway Grants.

Furthermore, the Kosice region has experience with NbS implementation on private land. On a private farm in Žehra, a small pond for water retention was created using a backhoe, with an estimated cost of €300 and external funding. The farm remains committed to expand NbS implementation in the future, reflecting a growing interest in NbS across the RR.

Figure 7: Factsheets developed within LAND4CLIMATE presented at the workshop between the Slovakian FRR and RR, ©Slovakian FRR

The Kosice region has collected significant experience in selecting and implementing of NbS. Projects such as the bioclimatic park in Tahanovce and water retention initiatives in the Botanical Garden demonstrate a practical, hands-on approach to NbS implementation. On the private land in Žehra, the farm implemented NbS based on locally available resources and practical knowledge, despite the absence of external funding. Additionally, the region explored opportunities for NbS through detailed studies, including a 2005 assessment quantifying the water retention needs in the region.

The selection of NbS in the region has been guided by several factors:

- **Local Knowledge and Expertise:** Decisions were based on in-depth local knowledge of the regions conditions, leading to intuitive site selection for NbS projects, as seen in Tahanovce and Žehra.
- **Resource Availability:** Project implementation was often determined by the available funding (e.g., the Botanical Garden's use of Interreg and private donations from US Steel and VSE) and logistical feasibility.
- **Environmental and Social Impact:** Key considerations in NbS selection have included water retention, biodiversity conservation, and erosion control, as demonstrated by the creation of wetlands and retention ponds.
- **Collaboration with Stakeholders:** Many NbS projects involved collaboration with local authorities, private landowners, and institutions, such as the cooperation with the forest management in Tahanovce.

In the Kosice region the L4C approach would be helpful, as it provides a structured framework for selecting and implementing suitable NbS, focusing on integrating land use with climate adaptation strategies. The region has experience with implementing NbS such as water retention and green infrastructure but the RR could benefit from further guidance and support in formalizing these initiatives and expanding them to private land. Moreover, the L4C approach could help with securing necessary funding and addressing the gaps in knowledge and technical support, such as the need for more advanced studies or clearer implementation guidelines.

Conclusions

In this deliverable, part of the workshop that conveyed the contents of the first WP related to NbS to the RRs, was presented. In this part of the workshop, the RRs were introduced to the process used within the LAND4CLIMATE project to select suitable NbS to mitigate the impacts of climate hazards. Additionally, the objective of this workshop section was to facilitate an exchange of experiences between the FRRs and the RRs regarding the selection and implementation of suitable NbS in their respective regions.

The workshop results indicated that all regions were already familiar with the NbS concept. With the exception of the Italian RR, NbS have already been implemented in all RRs. In the German, Austrian, and Slovakian RRs, NbS have even been implemented on private land. All RRs expressed strong interest in the outcomes of the LAND4CLIMATE project to learn from its findings and further expand the implementation of NbS in their regions.

The next deliverable will present the results of the final part of the workshop on NbS. As part of Deliverable 1.10 – Knowledge Exchange Workshop on Stakeholder-led No-Regret NbS Measures Identification and Evaluation for Replicating Regions, the concept of no-regret NbS will be addressed. This deliverable will first provide a brief introduction to the concept before results of the exchange between the FRRs and RRs, regarding the possible challenges and problems associated with implementing no-regret NbS in their regions.

References

Holtkötter, S, Tholen, A., et al (2024). Future-oriented local climate adaptation scenarios – front running regions (LAND4CLIMATE Deliverable 1.1)

Freyer, J., Tholen, A., Holtkötter, S. (2024). Visualisation of cause-effect relations and potential systemic effects – front-running regions (LAND4CLIMATE Deliverable 1.5)

Appendix

Protocol including guiding and evaluation questions

Protocol: Knowledge exchange workshops between FRR and RR			
Front running region			
Replicating region			
Date			
Start time – End time			
Location			
Main Speaker			
Number of Participants	Total:		
Gender	Male:	Female:	Divers:
Department			

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Knowledge exchange workshop on NbS between FRR and RR

Objective: Knowledge exchange about the climate impact chains and the selection process of NbS on private land between the FRR and RR

1. Nature-based solutions in the region

Additional material:

- Definition for NbS (1 slide)

Guiding questions:

- What is your experience with NbS implementation in the RR?
- No experience: Do you see NbS as a useful tool to mitigate climate hazards specific to your region?
  - Why? Or why not?
- Experience: Have you implemented any NbS specifically on private land yet?

2. Process of choosing NbS

Additional material:

- Definition climate impact chain (1 slide)
- Schematic of NbS decision process within L4C (1 slide)
- Fact Sheets of NbS (1 slide, fact sheets are available on sciebo)
- Table with no-regret measures per FRR (1 slide)

Guiding questions:

- How experienced are you with choosing a NbS in your region?
- What have been the criteria of choice for past NbS within your region?
- Would you consider the L4C approach helpful in your region?

3. Challenges and local situation

Additional material:

- None

Guiding questions:

- What challenges have you faced during NbS implementation?
  - Examples for challenges:
    - Engaging local stakeholders
    - Convincing landowners
    - Finances
    - Technical knowledge
    - Permits
- What challenges can you imagine to possibly arise in your region?
- Do you see any special situations in your region that might have an effect on NbS implementation on private land?

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4. Impact from L4C project in region

Additional material:

- None

Guiding questions:

- What support would you appreciate from L4C project?
- Is there any additional training you would appreciate?
- Is there any information or theoretical background you would appreciate?

Please take the time to fill out this questionnaire (one per organisation)

Region: Country: Organisation:

Knowledge: How experienced are you with the NbS concept, did you already implement NbS in your region?	1 I have never heard of the concept	2	3 I heard of the concept but I haven't implemented NbS yet	4	5 I know the concept very well and already implemented NbS
Knowledge: How well do you know the different types of NbS?	1 I know hardly any types of NbS	2	3	4	5 I am confident I know most types of NbS
Appropriate fit: How confident are you about finding a suitable NbS to mitigate climate hazards in your region?	1 Choosing a suitable NbS for the specific needs in our region is really challenging	2	3	4	5 I know which NbS works well in our region

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