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VALIDATED LOCAL RISK ACTIONABLE DATA FOR ADAPTATION



D3.1 Best Practices, Pain Points and Milestones of Development of Earth Observation-based Climate Adaptation Solution

Michelle Zheng, Stefka Domuzova
Climate KIC

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Coordinator – Administrative information	
Project coordinator name	Dr. Jörg Cortekar
Project coordinator organization name	Helmholtz-Zentrum Hereon GmbH
Address	Max-Plank-Strasse 1, 21502 Geesthacht
Phone Numbers	+49 (0)40-226 338-445
Email	joerg.cortekar@hereon.de
Project web-site	https://valorada-project.eu

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TABLE OF ACRONYMS

CBP	Capacity building programme
CBS	Capacity building survey
CIC	Climate impact chain
CKIC	Clmate KIC (project partner)
CMCC	CMCC Foundation (Euro-Mediterranean Centre on Climate Change)
CMIP6	Coupled Model Intercomparison Project Phase 6
DG	Directorate general (of the European Commission)
EARSC	European Association of Remote Sensing Companies (project partner)
EC	European Commission
ECMWF	European Centre for Medium-Range Weather Forecasts (project partner)
EIT	European Institute of Innovation & Technology
EO	Earth Observation
ESPON	European Observation Network for Territorial Development and Cohesion
EU	European Union
FAIR	Findable, Accessible, Interoperable, and Reusable (data principles)
FMI	Finnish Meteorological Institute
GAC	G.A.C. Group (project partner)
GDPR	General Data Protection Regulation
GIS	Geographic Information System
GIZ	German Agency for International Cooperation
HEREON	Helmholtz-Zentrum Hereon (project coordinator)
IPCC	Intergovernmental Panel on Climate Change
ISA	Interoperability Solutions for European Public Administrations
JPI	Joint Programming Initiatives
KIC	Knowledge and Innovation Communities
LRA	Local and regional authority
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
ROI	Return of investment
SQL	Structured Query Language
WP	Work package

1. Executive summary

1.1 Description of the deliverable content and objectives

Deliverable 3.1 Best practices, pain points and milestones of development of EO-based climate adaptation solution (D3.1) documents and synthesises the co-development process and outcomes of the five VALORADA regional demonstrators: each pairing a regional or local authority[4] with an Earth Observation (EO) service provider to develop an EO-based climate adaptation solution tailored to regional needs. The deliverable builds on the activities carried out under WP3 Demonstrator implementation (Task 3.1 *Piloting regional demonstrators*, T3.2 *Capacity building and market intelligence for the demonstrators* and T3.3 *Capacity building and stakeholder mobilisation concept for the broader community*) and is informed by close collaboration with all work packages (WPs).

The main objectives of D3.1 are to:

1. Document and assess the co-development of EO-based climate adaptation solutions, focusing on how each solution addresses concrete regional adaptation needs, integrates EO and non-EO data, and is designed for scalability and replicability;
2. Identify and synthesise best practices, pain points and key milestones in the collaboration between regional/local authorities and service providers, highlighting factors that enable or hinder the update of EO-based climate services;
3. Consolidate lessons learned from capacity building and support activities, including market intelligence, actionable climate adaptation knowledge, and upscaling pathways, to strengthen the market readiness of the developed services; and
4. Provide transferable guidance for upscaling and replication, targeting a wider community of public bodies and EO providers, and supporting further practical uptake beyond the project demonstrators.

D3.1 takes the form of a comprehensive report, delivered in M30 (January 2026). D3.1 serves as a foundational input *for D3.2 Concrete, practical and usable advises on how to make sure that local entities can uptake climate data* (M35), which will translate the report's insights into

[4] The VALORADA demonstrators take place in Burgas and Gabrovo (BG), Mlada Boleslav and Prerov (CZ), Central Greece (GR), Occitania (FR) Molise (IT) - https://valorada-project.eu/demonstrators/

practical, hands-on guidance on how local and regional entities can effectively uptake and use climate data for adaptation planning.

1.2 Deviation from objectives, corrective action (if applicable)

None.

1.3 Major outcome

D3.1 results in a structured and comparative documentation of the five VALORADA demonstrators, capturing the full co-development process of EO-based climate adaptation solutions and how regional adaptation needs, climate risk and data availability are addressed. It synthesises best practices, key success factors and common challenges in the collaboration between local and regional authorities (LRAs) and EO service provides, providing actionable lessons learned. The deliverable produces transferable methodological guidance for the design, implementation and upscaling of EO-based climate adaptation services, supported by consolidated insights for capacity building activities related to actionable climate adaptation knowledge, market intelligence and pathways to market uptake. In addition, D3.1 generates practical dissemination outputs, including user-friendly checklist and info cards, enabling broader uptake by public bodies and EO providers beyond the project demonstrators. Finally, it serves as a foundational knowledge base for subsequent VALORADA outputs, notably informing the development of D3.2 *Concrete, practical and usable advises on how to make sure that local entities can uptake climate data* and supporting further upscaling and replication activities in T5.4 *Exploitation and sustainability*.

2. Progress report

2.1 Implementation of co-design and contextualisation workshops

The VALORADA contextualisation workshops took place during the first months of the project as in-person events hosted by the LRAs involved in each demonstrator. The overarching goal was to meet with local stakeholders from different background (e.g., public administration, academia, businesses, NGOs) to better understand their perception of local realities and needs, which were later used as a basis of multiple tasks and initiatives within VALORADA. The workshops also served to establish connections and foster engagement with key local stakeholders in order to ensure interest and sustained involvement in the project throughout its duration. This was particularly relevant, as the VALORADA LRAs are not project partners, and their engagement relies solely on the interest and benefits they derive from the project processes and results. Moreover, the contextualisation workshops served as a sandbox to properly assess local needs within each demonstrator, enabling the comparison and extraction of best practices and pain points for later exchanges between demonstrators (e.g., during the VALORADA Bootcamp - see section 2.2 below, as well as in other WP tasks).



Figure 1. Participants in the Exploitation workshop in Chalkida, Greece (left) and Olomouc, Czechia (right)

These two-day workshops had the following objectives:

1. **Co-generate value propositions**, which reflect the collective, local, and systemic understanding about climate risk as an issue of a shared concern. Given the uniqueness of each setting and the specificity of climate risks, its cascading effects and the adaptation options, value propositions are based on local and temporal considerations, place-based needs of regional and local communities and demand collective endorsement;

2. Explore how value propositions are created, **contested and how they mediate the use of available climate information**. VALORADA guides the construction of value propositions and value frameworks and explores how value propositions are designed and applied to enable the use of available climate data. A robust-value concept must be based on consensus and social legitimacy granted by local stakeholders; and
3. **Explore the potential of existing data** to reflect a collective understanding about climate risk as an issue of common concern by inducing local stakeholders to select and focus on priority datasets and exploring the practices of data governance incl. collection, storage and sharing.

In order to obtain the above results, a set of interactive exercises[5] were designed and implemented:

1. **Climate impact chains**[6]

   Participants were introduced to the concept of climate impact chains and its usefulness for setting local priorities and following through on their achievement. Working with a pre-developed climate impact chain template that included basic information already available and guided by a set of questions to orient the identification of the different risk components within the impact chain, participants identified a set of priority climate risks at the end of this exercise. These priorities were then used to guide the development of VALORADA methodologies and solutions.

[5] A presentation used to introduce the exercises can be found in the Annex 1.

[6] More about the use of Climate impact chains throughout the VALORADA projects can be read in *D1.1. Demonstrator specific climate impact chain analysis (HEREON)*



Figure 2 Climate impact chains under development during the Greek workshop

2. **Use of indicators**

Workshop participants began with a short introductory session on the concept of indicators to establish a shared understanding among all attendees. They then worked in small groups, using guiding questions to identify existing indicators and, where necessary, to develop new ones. In addition, participants initiated discussions on issues to be explored in greater depth at a later stage, including the reasons why certain indicators are not yet in use, the availability and quality of data needed to support them, and the extent to which existing data align with the FAIR principles (Annex 1). Potential data gaps, blind spots, and other barriers to effective indicator use were also identified in the process. After potential indicators were selected, a discussion took place on exposure, sensitivity and adaptive capacity. This led to assignment of one or more datasets to each indicator, making them concrete and measurable.



Figure3 Workshop participants in Olomouc, Czechia

3. **Data value chain analysis**

Participants worked with a printed poster visualising the key logical steps of data value chains. They were divided into small groups and used post-it notes to discuss and document pain points, inefficiencies, and bottlenecks they had experienced in the valorisation of data. To support this exercise, participants were provided with pre-developed templates outlining the different stages of the data value chain, along with guiding questions to facilitate structured brainstorming. Additional guiding questions were used to orient the discussion and ensure consistency across groups. The activity applied a data value chain analysis approach to systematically examine how data flows through organisations, identify where value is created or lost, and highlight factors that hinder effective data valorisation. The resulting value chains

were used to visualise and structure data valorisation processes and to pinpoint specific bottlenecks and pain points across the different stages.

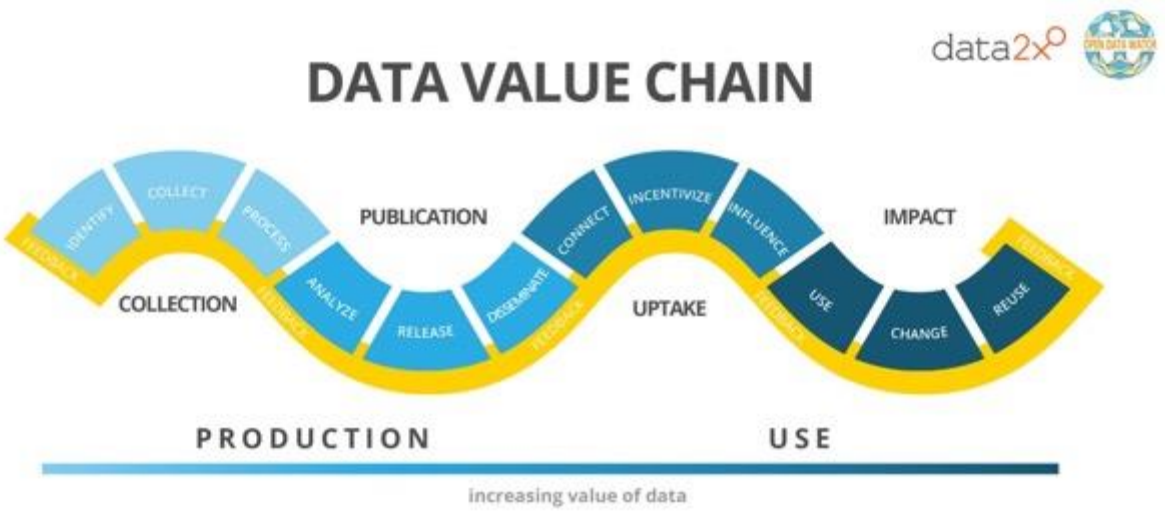


Figure 4. Data value chain. Credits: Open Data Watch

The VALORADA of co-design and contextualisation workshops at the beginning of the project were highly appreciated by local stakeholders, as it can be attested by their active support for the project in the following years and served as a ground for building fruitful collaboration.

2.2 Collection and consolidation of demonstrator feedback and evidence – the VALORADA Bootcamp

The work with each of the five demonstrators took place in parallel, making it essential to ensure that information and best practices were shared between them in a timely manner. This approach maximised the impact of the design of the adaptation solutions. Such exchanges took place during the VALORADA Bootcamp, held on 28 and 29 February 2024 in Brussels.

The primary participants in the Bootcamp were civil servants and/or elected officials from the VALORADA demonstrators. Other attendees included representatives of the consortium, as well as local companies supporting the regions in the development of the EO-based adaptation solutions. The total of 40 participants was small enough to everyone to contribute meaningfully to the interactive activities, while remaining sufficiently diverse to ensure representation of all VALORADA stakeholder groups.



Figure 5.2 Participants of the VALORADA Bootcamp and snapshots of the activities

In this unique context, the VALORADA Bootcamp was designed as the sole opportunity for the five demonstrators to meet in person, exchange best practices and get an introduction in the practices and methodologies of the project.

A short explanation of the various activities that composed the Bootcamp are contained in the following paragraphs.

2.1 Keynote Address and Messages

The coordinator of the VALORADA project – HEREON – kicked-off the Bootcamp with a **keynote presentation,** the purpose of which was to briefly summarise the first months of the project and the results obtained, as well to anticipate those still to come.

This was followed by the coordinators of the work with the pilots (WP3) –Climate KIC – whose presentation aimed at **contextualising the Bootcamp within the plan for collaboration with the pilots** and the planning of other networking and capacity building activities for them.

These two were among the only frontal presentations provided at the Bootcamp. The rest of the activities were organised in interactive and engaging formats such as **co-creation workshops** designed to allow for the creation but also the sharing of knowledge among participants.

2.2 **Interactive workshops and activities**

The Interactive workshops and activities that took place during the Bootcamp were fully aligned with the overarching objectives of capacity building and knowledge sharing with and among the demonstrators. The exercises and their underlying methodologies are described below. More detailed information is available in Annex 2.

2.2.1 **Ice-breaking exercise: getting to know each other and the topic (GAC)** took the form of a "Thinking hats" exercise, where participants were incentivized to think critically and offer diverse and sometimes conflicting perspectives. They were asked to answer the questions "How would climate information affect your life in the next 10 years?" from both a pessimistic and an optimistic perspective and "What information do you need to face the climate change?" from the point of view of decision makers and implementers as well as from the perspective of the civil society. This exercise helped to set the scene of the Bootcamp and encouraged participants to share similar perspectives and exchange on them, setting the tone for collaboration over the two days.

2.2.2 **Climate risk and data management exercise (HEREON)** took place over several sessions and sought to provide participants with the possibility to deepen their understanding about climate risks and the data-management demands

involved in the assessment and communication of such risks. The activities aimed to prioritise the key issues of concern revealed in previously implemented methodologies, such as the Climate Impact Chains. Building on these assessments, participants generated critical input needed later in the project for the development of the Valorisation Framework (to be composed of several inputs including metrics, tools, values, and practices involved in the generation of practical knowledge emerging from data and information). Further details on the exercise can be found in the Annex 2.1.

2.2.3 **Knowledge-sharing exercise (Climate KIC)** aimed at establishing common ground among the different demonstrators by 1. Identifying common hurdles and pain points and by 2. Allowing them to learn from each other through the sharing of bast practices, lessons learnt, and strategies to overcome the shared challenges. The starting point to identify the hurdles, and of the discussion, was the question “What prevents you from maximizing the relevance of data into your decision making”. Importantly, for this exercise the attendees were split into three groups, with each group having representatives from at least two demonstrator regions. The aim was to facilitate exchange between the regions and encourage them to identify commonalities between them. Further details on the exercise can be found in the Annex 2.2.

2.3 **Let's create a boardgame! Understanding climate risk and resilience: problem synthesis activity (HafenCity University)** provided an opportunity to review and synthesize the knowledge from the first day of the Bootcamp and offered the different representatives an alternative and creative format to understand what perspectives and situations they may share. Each demonstrator had the task to create a boardgame that reflects their understanding of the project themes, such as climate risk/resilience and the data needed for understanding, managing, and approaching climate risk/resilience. This allowed the participants to show how they see their role and the space for agency they have to solve climate-related issues, as well as the hurdles they need to overcome to get there. Further details on the exercise can be found in the Annex 2.3.

3 Other activities

Other activities completed the agenda of the Bootcamp, namely the poster session and the panel discussion.

3.1 **The poster session (Climate KIC)** provided the companies with solutions co-developed with the regions to showcase what type of solutions the EO-developers usually create and what can be used as a basis for the VALORADA-made solutions. This allowed the regions to exchange on best practices experienced by the EO-solution developers. Other technical platforms and tools that have the potential to support the pilot activities were also presented (by ECMWF and EARSC).

3.2 **The panel discussion (Climate KIC)** aimed at gathering different perspectives on climate change adaptation when it comes to how regions and communities tackle this challenge. Each of the panellists represented a relevant Mission Adaptation project and had a broad professional experience in accompanying regions and communities in their resilience journeys:

- Chiara Trozzo (The Euro-Mediterranean Center on Climate Change) – Magica project and JPI Climate;
- Julie Delcroix (European Regions Research and Innovation Network) - RESIST project and NetZeroCities;
- Nora Van Cauwenbergh (Mip4Adapt member state facilitator, Belgium) – I-CISK project
- Thomas Koetz (Climate KIC) - Pathways to Resilience project.

The active participation of the audience showed the observed value of the content the panel brought to the VALORADA regions and cities.

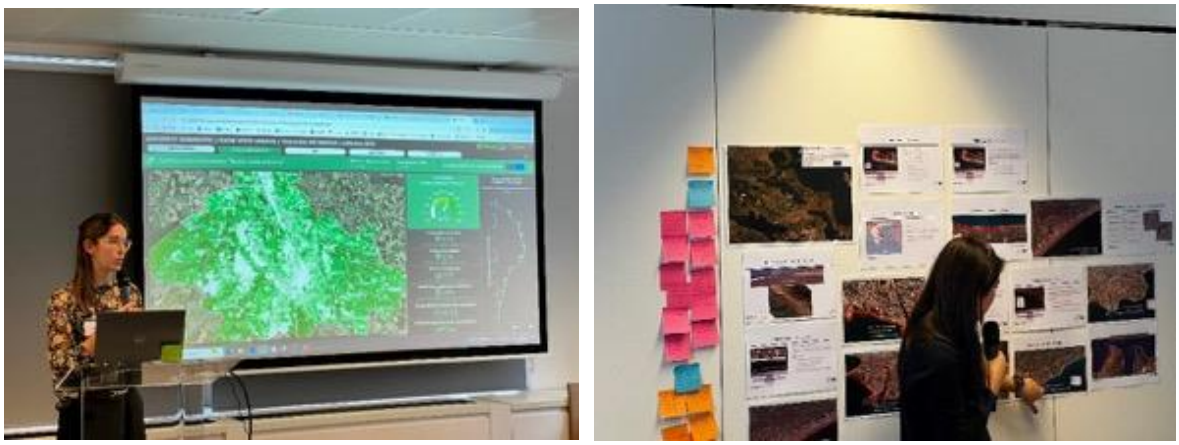


Figure 6.3 Poster session




Figure 7.4 Panel discussion

4 Networking opportunities

During the VALORADA workshops, similarly to other interactions with the demonstrators, the possibility to meet other regions and exchange on pain points and best practices has been brought up as a main outcome they were expecting from the Bootcamp, and as one of the main benefits VALORADA brings.

Hence, this was reflected in the whole structure of the bootcamp: allowing for creative exchange in mixed groups and plenty of possibilities to exchange best practices.






Figure 8.5 Photos from the VALORADA Bootcamp

The VALORADA Bootcamp was a strong example of the engagement of the demonstrators, and particularly of LRAs, in their efforts to address climate adaptation challenges. Since then, VALORADA has largely succeeded in collecting and providing the necessary tools- technical solutions, sociological methodologies, and a support network- to accompany the demonstrators throughout the remaining years of the project.

Several challenges were identified and guided the development of the overall project, such as ensuring the provision of tailored solutions for each demonstrator while simultaneously building a network and identifying common traits and best practices without diminishing the diversity of the showcases. Judging by the subsequent successful collaborative experience, the Bootcamp, together with other VALORADA activities, has demonstrated to the LRAs that VALORADA offers the right toolbox to address and tackle their needs and challenges.

2.3 Delivery of capacity building and knowledge exchange activities

Capacity building and knowledge exchange activities were implemented through a structured programme of thematic workshops, webinars and targeted exchanges, aimed at strengthening the capacity of both regional and local authorities and EO service providers involved in the VALORADA demonstrators, while also engaging with Tier 2 and Tier 3 stakeholders. The programme was designed around a systems thinking approach, aiding participants in understanding climate risks and adaptation solutions not as isolated challenges, but as interconnected components of regional and local socio-economic, environmental and governance systems (see VALORADA capacity building survey in Annex 3).

Workshop thematic	Climate risk data and assessment		Governance, policies and strategies		Risk communication	
Workshop name	Data for climate risk reduction and adaptation	Copernicus Climate Change Service Support to Regions and Cities	Local data spaces and management	Green innovation procurement	Building risk communication for people with disabilities	Making policies work for rural areas through Earth Observation data
Date	November 5, 2024	November 19, 2024	April 17, 2025	April 24, 2025	October 14, 2025	October 14, 2025
In-person/online	Online	Online	Online	Online	In-person	In-person
Length (minutes)	60	60	60	60	90	90
Collaborating organisations	Hereon, EARSC, Politecnico di Milano, Comune di Milano	ECMWF, Aerospace Valley, Forum Virium Helsinki	Cloudferro, Lisbon Council, Epsilon Italia	G.A.C. Group, Corvers Procurement Services	International Disability Alliance, United Nations Office for Disaster Risk Reduction	Samenwekingsverband P10, DG AGRI (EC), OECD, European Committee of the Regions, Region of Central Greece
Number of	42	35	16	13	40+	100+[7]

[7] CKIC requested the exact number of participants from the organising committee of EURegionsWeek as of 20 October 2025. The figures of EURegionsWeek sessions represent estimates rather than confirmed figures.

participants						
Type of participants	LRAs, NGOs, Academic/Research institute, climate service providers, EU institution, agency and interinstitutional service	LRAs, NGOs, Academic/Research institute, climate service providers, EU institution, agency and interinstitutional service and international organisation	LRAs, NGOs, Academic/Research institute, international organisation	LRAs, NGOs, Academic/Research institute, climate service providers	LRAs, NGOs, Academic/Research institute, climate service providers, EU institution, agency and interinstitutional service and international organisation	LRAs, NGOs, Academic/Research institute, climate service providers, EU institution, agency and interinstitutional service and international organisation
Number of new LRAs trained	8	2	5	3	13	24+[8]

Table 1. Summary of CBP workshops

The VALORADA CBP[9] was organised into thematic workshop series addressing key dimensions of systemic, data-driven climate adaptation (table 1). A first series focused on climate risk data and assessment, supporting participants in understanding how EO and climate data can be used to assess climate vulnerabilities and risks, and how such data can be combined with local knowledge and other European datasets to inform adaptation decision-making. These activities emphasised the role of EO-based services in enabling systemic analysis of climate impacts across sectors and spatial scales. Participants also received practical guidance from the ECMWF on FAIR data principles, climate data handling and Copernicus products and services.

A second series addressed governance, policies and strategies, with a focus on digital governance, data spaces and enabling frameworks for climate adaptation. These activities supported LRAs in navigating the institutional and policy context required to operationalise EO-based climate services, including aspects related to interoperability, data governance,

[8] Two of the participants represent associations of LRAs, thus the '+' sign is used to reflect this aspect.

[9] VALORADA (2026) *Capacity Building Programme*. Available at: https://valorada-project.eu/capacity-building-programme/

innovation procurement, and the integration of climate services into regional adaptation strategies.

A third series focused on risk communication, highlighting the importance of accessible, participatory and multi-stakeholder strategies for conveying climate risks and adaptation options. Participants explored how visualisation tools, narrative techniques and systems thinking methods can strengthen engagement and policy uptake, reinforcing systemic role of communication in enabling coordinated climate action. The series also leveraged European Week of Regions and Cities (EURegionsWeek) as an important platform, promoting VALORADA's methodology beyond the demonstrators and advocating for systems-thinking approach to climate adaptation among a wider community of LRAs and service providers.





Figure 9. Photos of risk communication workshop at the EURegionsWeek

Across all thematic areas, capacity building activities promoted peer-to-peer exchange and cross-fertilisation of experiences between regions, service providers and external initiatives. Dedicated sessions and exchanges involved contributors from other Horizon projects, including HARMONIA[10], USAGE[11], GRANULAR[12], RUSTIK[13] and related initiatives, enabling mutual learning on topics such as urban climate services, innovation procurement, public-sector uptake of EO solutions, and scalable service development. These exchanges strengthened alignment across EU-funded actions and supported the identification of transferable practices beyond the VALORADA demonstrators.

Selected participant feedback from the EURegionsWeek session:

- Expert of International Disability Alliance:

[10] HARMONIA (2026) *HARMONIA provides tools to predict Climate Change effects.* Available at: https://harmonia-project.eu/

[11] USAGE (2026) *Urban Data Space for Green Deal.* Available at: https://www.usage-project.eu/

[12] GRANULAR (2026) *Better knowledge for better rural policies.* Available at: https://www.ruralgranular.eu/

[13] Rustic (2026) *Rural Sustainability Transitions through Integration of Knowledge for improved policy processes.* Available at: https://rustik-he.eu/

"... the workshop was useful to engage with people who work outside the disability circle and important to breaking sectoral silos to develop useful risk communication tools."

- Regional authority of Cracow for Social Policy: "It was really interesting and helpful to have discussions [with] different stakeholders, putting all the pieces together to tackle risk communication challenges."

Participants responded positively to the capacity building workshops, emphasising its value in strengthening a systemic approach to climate adaptation and supporting them move beyond fragmented analyses toward a more integrated understanding of climate risks across sectors and scales. They highlighted how the combination of climate scientist, local knowledge and European EO expert enabled a more holistic risk assessment, while the focus on governance, data spaces and risk communication reinforced the interconnected roles of data, institutions and stakeholders in decision-making. Overall, the programme was seen as supportive in introducing systems thinking into VALORADA demonstrators and broader community.

3. Conclusions

3.1 Lessons learned and recommendations

The following lessons learned and recommendations are derived from the documentation and implementation of D3.1 and reflect insights gained across planning, delivery and follow-up phases. They draw on WP partner feedback, implementation experience and monitoring data, and are intended to inform future programme design and enhance relevant and sustainability of similar interventions.

3.1.1 Implementation of co-design and contextualisation workshops

As a first effort to engage local stakeholders throughout the project, the co-design and contextualisation workshops showcased patterns that could also be seen through later activities, hence its importance to address and correct early on.

1. The diversity of local stakeholders - public, private, academy and NGO - allowed to confront and complement their understanding of the problem at hand and their experience with dealing with different – or the same- processes, data and practices;

2. The organisation of the local workshops was very reliant on the local companies involved in the project and on their knowledge of local context and actors. Only through the joint effort between them and the LRAs, it has been possible to engage the optimal mix of participants (see above) to make sure that the selected place-based priorities are important for all the local systems within the region and/or cities; and
3. Language has been an advantage but also a challenge which was largely overcome through local and consortium partners, speaking the local language. This was crucial element in assuring that the stakeholders who do not necessarily speak English are empowered to contribute actively with their expertise.

All examples showcase that local peculiarities are to be taken into consideration when planning interactive workshops tailored to stakeholders with a common goal and common territorial knowledge but representing backgrounds and relying on different processes. And this goes beyond single events and in a broader project-long perspective of co-creation and co-ownership. This is also important when different local perspectives are later to be put together in search for common best practices and pain points.

3.1.2 Collection and consolidation of demonstrator feedback and evidence- the VALORADA Bootcamp

As the first opportunity for all demonstrators to meet in a joint setting, the Bootcamp surfaced patterns that reappeared in following exchanges, demonstrating the importance of addressing them early in the co-design process.

1. The mix of demonstrators in cross-regional groups revealed strong commonalities in pain points related to climate-risk data, governance structures, and decision-making workflows**,** despite differences in local context. Confronting these shared issues in mixed groups helped participants complement each other's experiences and made it evident that many challenges are systemic across regions rather than isolated locally;
2. **T**he interactive formats (storylines, scenarios, knowledge-sharing exercises, and the boardgame synthesis) proved essential for bringing together technical and non-technical actors. These approaches enabled participants to articulate decision-making needs, administrative realities, and underlying constraints more effectively than classical presentations, facilitating a stronger sense of shared understanding across all regions. Participants also highlighted the importance of narrative-based communication methods

to bridge the gap between technical information and decision-making contexts. These formats enabled non-technical actors, including elected officials and civil servants, to engage meaningfully with climate-risk concepts and understand the implications for their territories. This reinforces the value of storytelling frameworks throughout the project's engagement activities;

3. The presence and engagement of political representatives played a crucial role in shaping discussions around data mandates, administrative priorities, and feasibility of future interventions. Their involvement highlighted how political commitment influences the success of data-management improvements, interdepartmental collaboration, and the adoption of climate-service solutions. Having such representation at an early stage strengthened the legitimacy of the co-creation process and ensured alignment with real administrative dynamics and broader support among civil servants; and
4. Skills gaps (both technical and governance) were identified repeatedly during the Bootcamp's interactive sessions**,** especially in relation to interpreting climate information, integrating data workflows, and managing cross-departmental processes. Participants stressed that while data may be available, its usefulness is often limited by insufficient internal capacity. This underscores the need for targeted capacity-building as an ongoing activity, not a one-time intervention.

The VALORADA Bootcamp demonstrated the strong need for ongoing peer exchange rather than isolated events, as regions repeatedly expressed the value of meeting counterparts facing comparable challenges. The opportunity to compare approaches, constraints, and administrative cultures was identified as a major added value, and one that should be continued throughout the project to accelerate collective learning and convergence. Such considerations have gone beyond single events like the Bootcamp and become part of a project-long commitment to **co-creation, co-ownership, and structured peer learning**. This has been taken into account in the design and delivery of the VALORADA capacity building and knowledge exchange activities.

3.1.3 Delivery of capacity building and knowledge exchange activities

The delivery of the capacity building activities has provided important insights into factors that influence learning uptake, practical application and sustainability. While participants demonstrated considerable engagement and motivation, several recuring challenges were

observed that affected the efficiency and impact of the learning programme. These challenges reflect common issues seen in EU-funded capacity building projects, including Horizon and Cohesion programmes[14].

Challenges	Impacts on demonstrators	Recommendations
Baseline skills and institutional context of the five demonstrators	Capacity building efforts often begin with diverse groups whose skills and institutional contexts vary widely. While the training activities were structured based on reported needs of LRAs, the needs assessment did not take into consideration the gaps in technical skills and institutional capacity. This mirrors broader findings that capacity needs analyses are not yet standard in project design, even though they help tailor support to actual beneficiary needs.	Built into the capacity building survey (annex 3) a demonstrator-specific needs assessment process that uses targeted surveys to map skills, institutional readiness and operational constraints. Use these results to adjust curricula and support cross-learnings between the demonstrators.
Weak follow-up support and continuity post-training	Capacity building programmes commonly struggle to sustain momentum after initial thematic sessions because follow-up mechanisms (mentoring, communities of practice) are under-resourced. This limits consolidation of learning and application of learning in workplace.	Integrate structured follow-up measures linked to demonstrator learning curve, including hosting periodic cross-demonstrator exchange sessions to share experiences and assigning mentors with an in-depth knowledge of demonstrator's skills and institutional context.
Coordination and evolving political/administrative environment	Across EU programmes, local and regional beneficiaries struggle to manage complex administrative requirements and changing political mandates, which can distract	Provide targeted resource sessions on administrative and compliance navigation (e.g., GDPR compliance) tailored to each demonstrator's framework and establish

[14] OECD (2025) Building Beneficiary Capacity under EU Cohesion Policy: A Framework for Action for Managing Authorities. Available at: https://www.oecd.org/en/publications/building-beneficiary-capacity-under-eu-cohesion-policy_c2efa2e2-en.html.

	from capacity uptake and demonstration progress[15].	helpdesk to assist LRAs when such issues arise.

Table 2. Summary of challenges, impact and recommendations

These lessons highlight the need to tailor capacity building activities to demonstrator-specific skill sets and institutional context, ensuring sustained post-training support and coordination with evolving political and administrative environment. By addressing these challenges, future capacity building activities can maximise the effectiveness of learning interventions, strengthen knowledge transfer and enhance the operational impact of the regions and cities involved.

[15] OECD (2025) Building Beneficiary Capacity under EU Cohesion Policy: A Framework for Action for Managing Authorities. Available at: https://www.oecd.org/en/publications/building-beneficiary-capacity-under-eu-cohesion-policy_c2efa2e2-en.html.

4. Annex

Annex 1. Contextualisation workshop

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VALIDATED LOCAL RISK ACTIONABLE DATA FOR ADAPTATION

Workshop 1



Workshop 1 rationale

- VALORADA seeks to identify datasets with the potential to deliver **decision-making value** in relation to climate risk.
- Decision-making value is created when **data supports adaptation objectives,** when it helps to characterise and reduce exposure, sensitivity and climate impacts.
- In workshop 1, we focus on identifying the **set of indicators** that help us understand and reduce risk.

Objective:

To compile key insights needed to develop the data-valorisation framework, which will later inform the development of data-manipulation tools and data catalogues

Proposed programme and outcomes

Lead	Activity	Time (Hours)	Expected outcome
HEREON	Generation of Climate-Impact Chains	3	Visualize and structure the cause-effect-relationships of critical risks and hazards
FMI	Generation / Identification of Indicators	3	Identify and select indicators. Knowledge of data needed for the indicators and gaps (what is missing or amiss) in data/information.
EARSC + HEREON	Data Value-Chain Analysis	3	Identify major factors hindering a more effective data valorisation along the data lifecycle.

Footer title

3

General workshop guidelines

- Participants will be distributed into small 4-6 people group.
- Instructions will be given in English. **It is appreciated if local partners facilitate translating the instructions into their local language.**
- Discussions will take place in the local language.
- A rapporteur and secretariat will be chosen in each group.
- Excel templates to collect information will be delivered to all groups. These templates will be filled in English by the secretariat.
- Cross-group discussions will take place every 1 hour. Each rapporteur will lead the talk.
- VALORADA partners will be distributed in every group to assist with facilitation.
- In order to facilitate delivering concepts and methods, we will develop a storyline. The storyline will provide a common thread to give coherence and consistency throughout the workshop.

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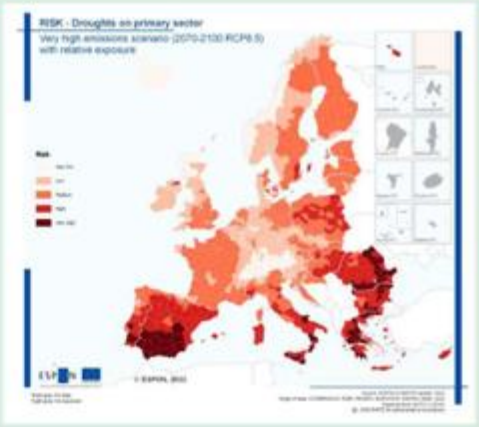
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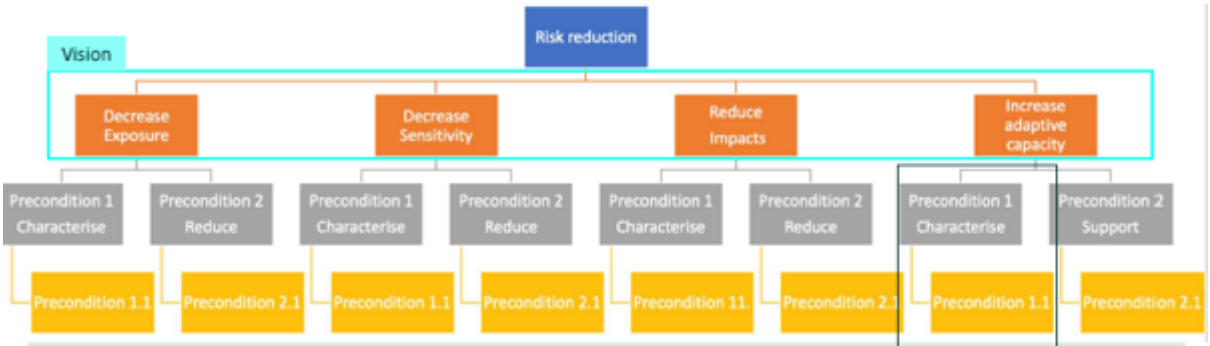
Scenario building to estimate improvements in data management systems to deal with future climate change

1. What does a robust data-management system look like against future climate change?
2. Based on the answer, how far are we from the desired vision?
   We will build a scenario to assess the gap.



Example taken from ESPON 2022

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Develop a theory of Change

Theory of change: "an explanation of how a group of stakeholders expects to reach a commonly understood... goal" (Anderson, 2005 p. 3).

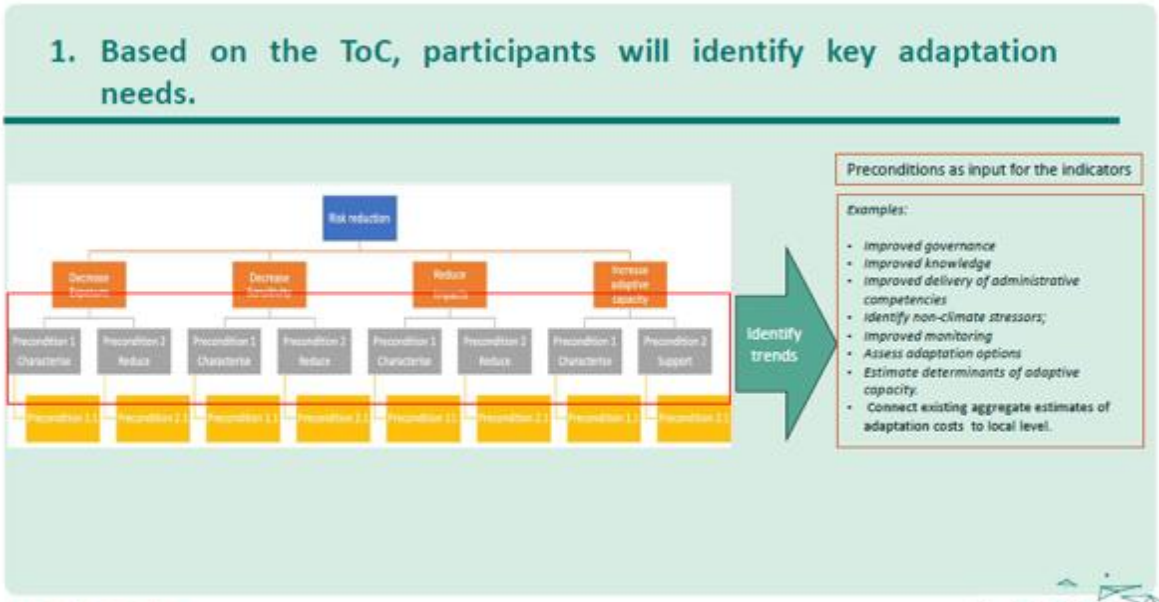
Goal:

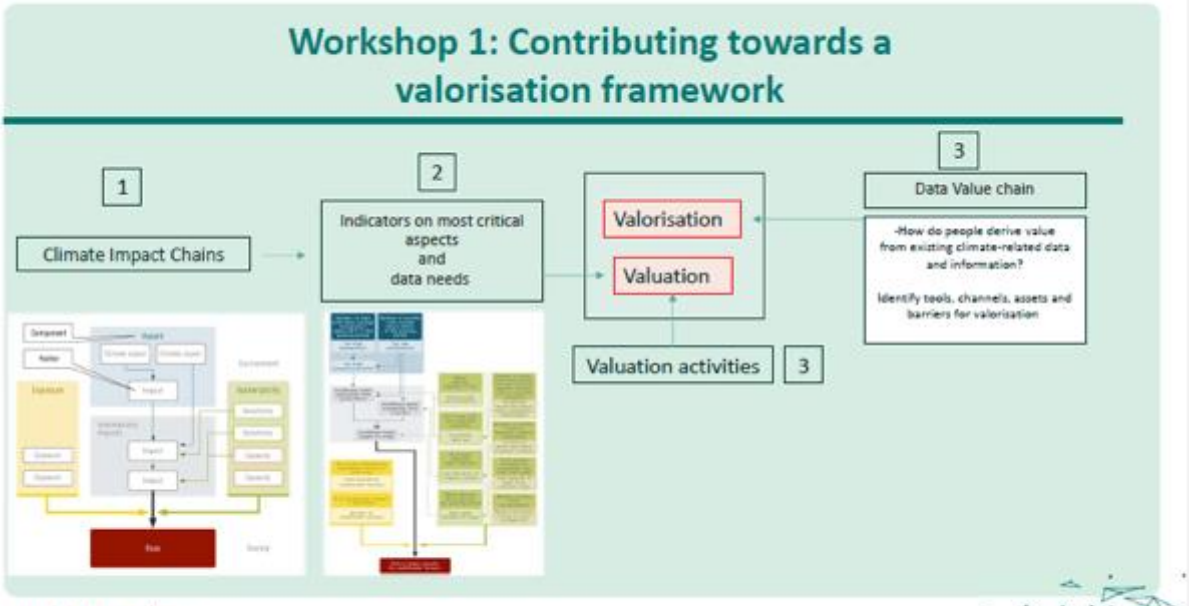
1. Articulate an adaptation 'big picture' and causal pathways in key domains;
2. Identify determinants of adaptive capacity .

Causal pathways with preconditions ('intermediate outcomes'), indicators, thresholds, and assumptions

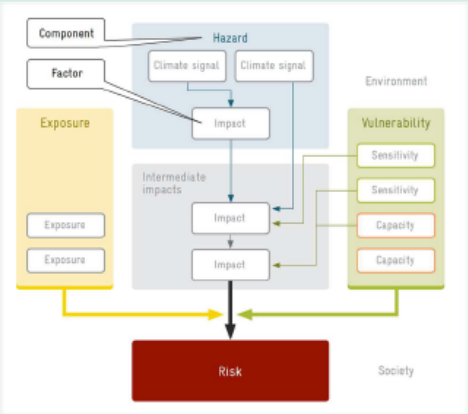
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1. Based on the ToC, participants will identify key adaptation needs.
Risk reduction
Decrease
Decrease
Reduce
Increase adaptive capacity
Identify trends
Preconditions as input for the indicators
Examples:
Improved governance
Improved knowledge
Improved delivery of administrative competencies
Identify non-climate stressors;
Improved monitoring
Assess adaptation options
Estimate determinants of adaptive capacity.
Connect existing aggregate estimates of adaptation costs to local level.
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Workshop 1: Contributing towards a valorisation framework
1
Climate Impact Chains
2
Indicators on most critical aspects and data needs
Valorisation
Valuation
Valuation activities
3
3
Data Value chain
-How do people derive value from existing climate-related data and information?
Identify tools, channels, assets and barriers for valorisation
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1. Climate Impact chains



Source: GIZ and EURAC 2017 – based on IPCC AR5-6

Definitions:

- Impact chain refers to the combination of a particular hazard and a particular receptor.
- Impact chains are defined by selecting certain hazard, exposure and vulnerability indicators.

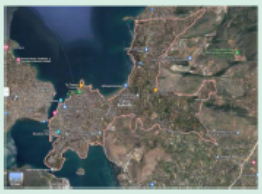
Objectives:

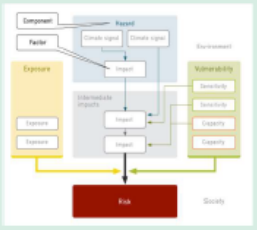
- Impact chains will be used to visualize and structure the cause-effect-relationships of risk and hazards.
- The impact chains will also be used to shed light on indicators needed to explain risk and the data needs to populate these indicators.

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1. Climate Impact chains: activity description

- A conceptual introduction to climate risks and impact chains will be given.
- We will work with a printed map (poster size) with a risk profile on it (heat islands, flood-prone areas, fire-prone areas, etc).
- Using post-sticks, participants will describe previous experiences of climate-extreme events in the map.
- We will simultaneously work with a pre-developed climate-impact chain template, which will include basic information already available (risk factors).
- Participants will receive a set of questions to orient the identification of the different risk components in the impact chain.
- While groups will work in the local language, information will be simultaneously written in an excel template in English.



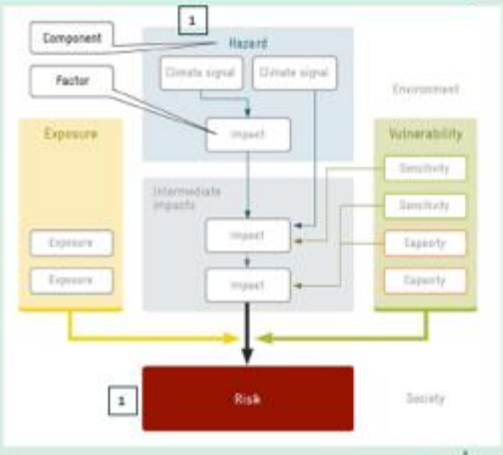


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Developing the climate impact chains will follow a step-by-step process.



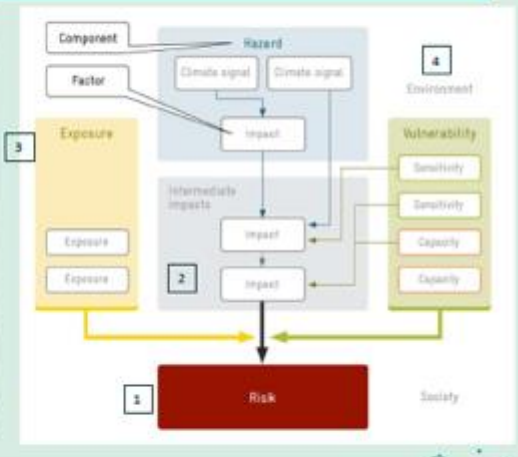
"Impact fields" with clustering exposed elements, sensitivities, capacities, and impacts. Logistics, traffic infrastructure, industry & trade, energy industry, water balance and water management, ecology/hygiene, and tourism and leisure industry). Lückerath D, Rome E and Milde K (2023)



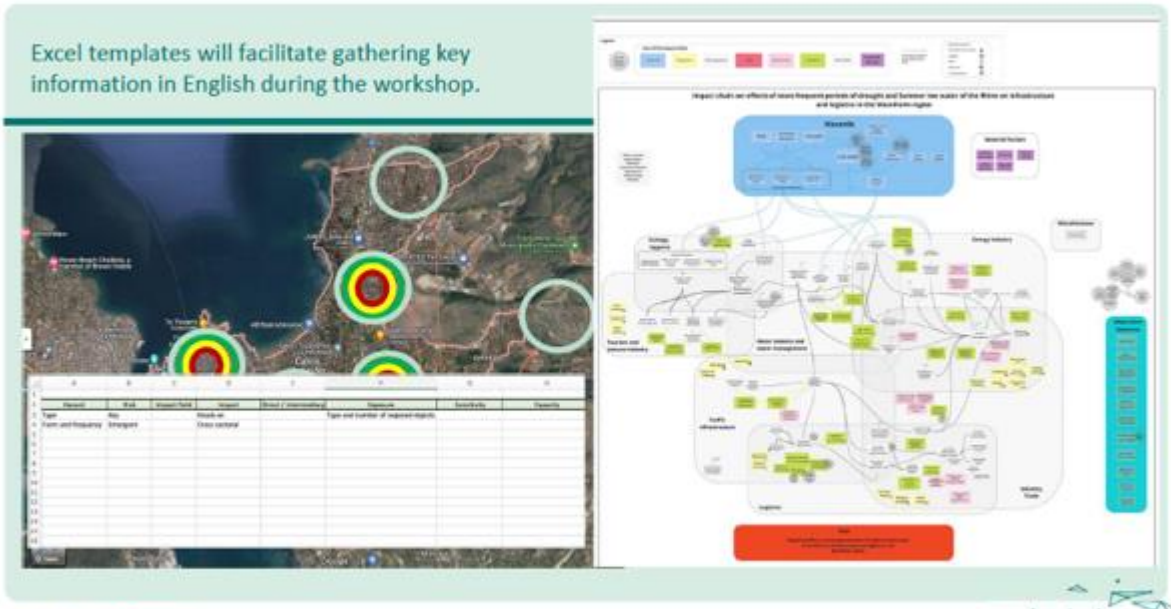
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Storylines gathered in the map will contribute to generate the Narratives of Valorisation and complement the indicators.





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2. Indicators

Assumptions:

- Each demonstrator has defined 1 (or 2) risks that they want to discuss in more detail (as example cases) during the Workshop.
- The climate impact chains detailing these risks have been discussed in Session 1.

Possible scenarios:

a) The demonstrators have already worked on the risks to be explored during the workshops.

b) The demonstrators have no or little former experience with assessing the risks to be explored during the workshops.

2. Indicators: activity description

Preparation, slightly different for scenarios (a) and (b):

a) Review of the work already done by the demonstrators and possible supplementary literature review

b) (More) extensive literature review

+ Climate impact chains from session 1

Method:

1) What is an Indicator? A short introduction, to make sure everyone has the same understanding
2) Followed by guiding questions to identify and/or create the indicators in small groups

To be explored in more detail later:

- If indicators are not yet used, why?
- Is the data needed for findable, accessible, (including comprehensible), interoperable, and reusable? (according to FAIR principle)
- Or are there gaps in data availability? Are there other blind spots or hindrances?

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An example of how the guiding questions could look like. They should also be presented alongside explanations of the central concepts (exposure, sensitivity, adaptive capacity), on a local language

Developing Regional Thematic Indicators

This should be based on the climate impact chain

Question	Example answer
What is the **goal** of the indicators?	To enhance drought monitoring and evaluation, aiming to mitigate the impact of water scarcity on small-holder agriculture.
What are the indicators needed for **exposure** and **sensitivity**?	Exposure: temperature and precipitation Sensitivity: soil type and land use
Indicator for **adaptive capasity?**	Introduction to new crops better adapted to dry conditions, number of households that practice improved land management methods

The results of this workshop: a brief description of the indicator - The factor and vulnerability components (exposure, sensitivity or adaptive capacity) the indicator represents. - A brief description outlining your reason for selecting this indicator - The spatial coverage required for the indicator data - The unit of measurement or spatial resolution required - The temporal coverage required - The required period for updating indicator values. - Potential data source

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2. Indicators & data composition

After potential indicators have been selected:

- Discussion about the data needed to perform a risk analysis with the given indicator. Discussion should include exposure, sensitivity and adaptive capacity.
- This way, different data sets/variables could be grouped & visualised, e.g., color-coded using different coloured **file cards (or some online method, e.g., flinga)**:
  - Local sources vs. European services
  - Available vs. unavailable
  - Complete vs. incomplete
  - Sufficient vs. insufficient quality (e.g., resolution)

Grouping could be done based on the following guiding questions:

- Is the data (set/variable) available locally or from the European services?
- Is the resolution sufficient? Is a higher resolution needed?
- How easy is it to find / select data sets (e.g., scenarios)?

2. Indicators & data composition

From here we could go to FAIR data principles and data acquisition. Guiding questions could be:

- Is the resolution sufficient? / Is a higher resolution needed? E(2
- How easy / feasible is it to downscale coarse data?
- How easy is it to combine different data sets? Do we have the right tools for the job?
- Can local and European data be combined to produce an overall better product?
- How to select scenarios? What are the criteria/assumptions? Different model results?
- Trade-offs: E.g., high-resolution data which is tedious to collect vs. coarser but readily available data sets.

2. Indicators

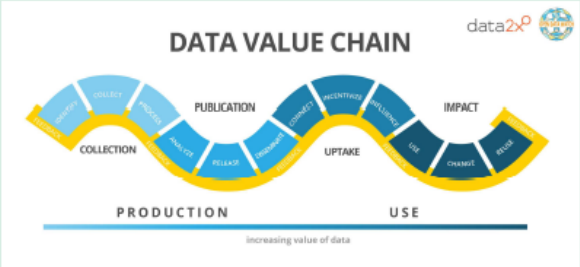
Expected outcome:

- A map of currently used indicators
- Knowledge of the indicator candidate(s) to be used
- Knowledge of the data (variables) needed to compute (a map of) the (risk) indicator over the demonstrator region / region of interest
- Gaps identified

3. Data value chain analysis: activity description

- A conceptual introduction to the concept of „data value chain“ will be given.
- We will work with a printed poster which visualises the major logical steps of data value chains.
- Creating small groups and using post-sticks, participants will discuss painpoints / inefficiencies / bottlenecks in the valorisation of the data that they have experienced.
- For this, the participants will receive pre-developed templates with the various steps of the data value chain and guiding questions to kick off the brainstorming.
- Participants will receive a set of guiding questions to orient the process.
- While groups will work in the local language, information will be simultaneously written in an excel template in English.

3. Data value chain analysis



Definitions:

- A **data value chain** analysis is a structured approach to understanding how data flows through an organization and where value is created or lost at each stage of the data lifecycle.
- **"Data valorisation"** refers to the process of creating value from data assets at various stages of the data lifecycle, involving extracting, transforming, and leveraging data to achieve specific business objectives, making informed decisions, and generating tangible benefits for an organization.

Objectives:

- Data value chains will be used to visualize and structure the different steps in data valorisation processes.
- The value chain is divided into "steps" to understand where and which factors are hampering data valorisation processes and identify bottlenecks / painpoints.

What is a data value chain analysis? / why is it important?



- Identify inefficiencies
- Enhance data quality
- Maximise ROI / benefits on data investments
- Facilitates data-driven decision-making
- Enhance competitiveness
- Support compliance
- Improves customer experience
- Enables scalability
- Reduces costs
- Fosters collaboration
- Promotes data governance
- Drives continuous improvement

Footer title

3. Potential roadblocks in the data value chain / data valorisation

Data provider side:

- Lack of financial, human, & technological resources
- Low data literacy
- Lack of trust between users & data collectors
- Blindspots in data gaps
- Lack of ownership
- Lack of government desire for transparency / open data policies

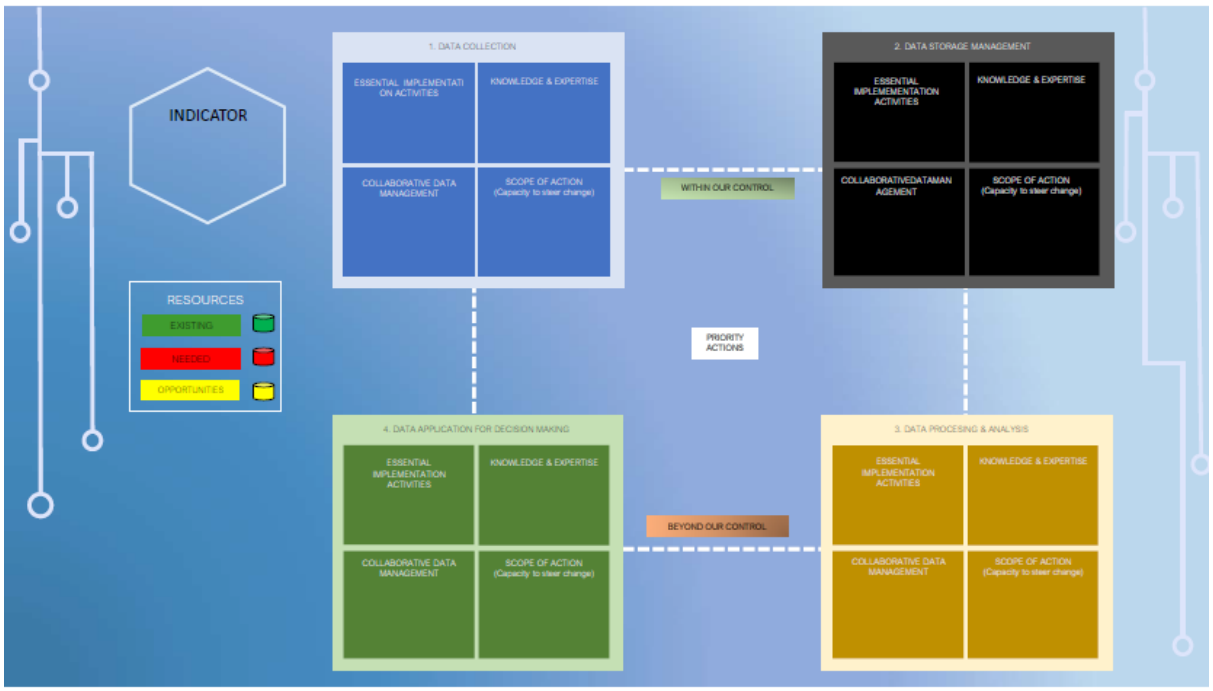
User side:

- Low political support
- Lack of data relevance to decisions
- Poor quality
- Lack of trust in government data use
- No rewards or results of data use
- Financial constraints
- Data silos
- Lack of partnerships between infomediaries

3. Guiding questions

Value chain stage	Description	Examples of Painpoints / Inefficiencies / Bottlenecks	Answer / Comments	Severity (1=critical, 2=major, 3=minor, 4=low)
Data capture & acquisition	Process of obtaining data	Are there climate-related datasets used directly by the local stakeholders? Who provides these climate-related datasets? Does the use of climate-related data/information require support from external expertise? Are there incomplete, missing or adequate data? Are the amounts of data overwhelming? Is data access efficient?		
Data pre-processing & cleansing	Process of validation, cleaning, reduction, data integration	Are there data quality issues? Inaccurate/inconsistent data requiring extensive cleaning/transformation? Is there data duplication leading to redundancy?		
Data storage	Process of saving and managing large-scale datasets	Data silos? Data stored in isolated systems can hinder accessibility? Are there problems with storage costs?		
Data analysis	Process of using analytical tools for insights	Is there a lack of skilled analysts (slows down the process)? IT resource constraints?		
Data ROI/benefits realisation /impact/use	Process of using the insights / decision-making	Ineffective communication? Poorly designed visulations to convey insights? Limited access to visualisation tools may hinder data exploration? Are (potential) users open to data-driven practices? Are there privacy concerns? Are there feedback mechanisms? (Absence of structured feedback channels can hinder improvement efforts) Inefficient iteration? Slow iteration cycles may prevent timely adjustments		
Data governance / compliance	Ensuring data security and compliance	Weak security practices? Risk of data breaches or compliance violations? Complying with regulations? (can be complex / resource intensive) Insufficient security measures leading to data breach / loss? Data access control mechanisms? Unauthorised data access?		
Data "wishes"?		What data (/ resources) are needed beyond current use?		


3.1. Valuation activity
• 3.1.1. Characterise key activities in central value-chain nots
• 3.1.2. Project data needs based on climate change projections
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Footer title


INDICATOR
RESOURCES
EXISTING
NEEDED
OPPORTUNITIES
1. DATA COLLECTION
ESSENTIAL IMPLEMENTATI ON ACTIVITIES
KNOWLEDGE & EXPERTISE
COLLABORATIVE DATA MANAGEMENT
SCOPE OF ACTION (Capacity to steer change)
2. DATA STORAGE MANAGEMENT
ESSENTIAL IMPLEMENTATION ACTIVITIES
KNOWLEDGE & EXPERTISE
COLLABORATIVEDATAMAN AGEMENT
SCOPE OF ACTION (Capacity to steer change)
WITHIN OUR CONTROL
PRIORITY ACTIONS
4. DATA APPLICATION FOR DECISION MAKING
ESSENTIAL IMPLEMENTATION ACTIVITIES
KNOWLEDGE & EXPERTISE
COLLABORATIVE DATA MANAGEMENT
SCOPE OF ACTION (Capacity to steer change)
BEYOND OUR CONTROL
3. DATA PROCESING & ANALYSIS
ESSENTIAL IMPLEMENTATION ACTIVITIES
KNOWLEDGE & EXPERTISE
COLLABORATIVE DATA MANAGEMENT
SCOPE OF ACTION (Capacity to steer change)

Next steps

- Finalise and deliver Local Climate Information Profile
- Coordinate bilateral meetings with each local partner
- Deliver final workshop guidelines to local partners

End

ANNEX 2.1 Climate risk and data management exercise – HEREON

Overall time: 2 hours and 30 minutes

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Introduction

HEREON's activities during the boot camp seek to provide participants the possibility to deepen their understanding about climate risks and the data-management demands involved in the assessment and communication of such risks.

The activities aim to prioritise the key issues of concern revealed in previously implemented methodologies, such as the Climate Impact Chains. Building on these assessments participants will generate critical input needed for the development of the Valorisation Framework.

The Valorisation framework is composed of several inputs. These include the different metrics, tools, values, and practices involved in the generation of practical knowledge emerging from data and information. A critical aspect of the valorisation framework is to be framed within the context where data users perform their activities.

Valorisation Framework (preliminary)



The activities presented in this segment seek to provide validated and co-created input to inform each of the four pillars of the valorisation framework, presented above.

This segment will consist of three interrelated activities.

Activity 1: From climate change storylines to narratives of data-information usability

Activity 2: Data-management scenario building

Activity 3: Identifying key actions to strengthen current data-management systems.

Workshop Activities

Activity 1: From climate change storylines to narratives of data-information usability

Concept:

We will work with three concepts: Narratives, storylines and data journeys and from this, we will explore the concept of narratives of valorisation within the valorisation framework. These concepts are outlined in **annex 1.**

Activity Duration: 45 minutes

Materials: printed climate impact chain; map of local region/ municipality; printed table 1 (see below); markers, post-sticks, pens.

Instructions:

Step 1. Representing risks spatially

The description provided in the Climate impact chains represents a physical climate storyline, a physically self-consistent unfolding of a past event, described in terms of causal elements (adapted from Shepherd et al 2021). The climate impact chain is provided as a way of constructing a narrative of an event, where the risk is triggered by a particular climate signal in the context of human activity.

- Select the 1-2 most relevant sequences from the CIC.
- Draw the climate sequences in the map provided.

Step 2. Building a narrative:

Based on the description of events, convey a story to a non-technical audience, thinking on the next 2 questions:

- Which is your desired audience?
- Why did you select these sequences (why are they most relevant in your context)?
- What are the most relevant features that these sequences reveal and that you want to communicate?
- Which information would further support communicating the story convincingly?

Step 3. Building a storyline.

Storylines recognize that historical events are just one realization of many possible alternatives and show that, when considering downward counterfactuals of these historical events, many disasters that took societies by surprise could have been anticipated (Ciullo et al. 2021, i). Hence, the aim is to reveal the factors responsible for system failure, thus allowing the identification of robust decision options (ibid).

Based on the sequences selected in step 1, re-build the story based on a combination of negative counterfactuals, considering:

- What could go wrong if this impact sequence occurred today? (start visualizing tentative counterfactual tracks, strengths, and damages).
- What counterfactuals are more interesting?
- Which data and information could help us avoid a worse-case scenario?

Activity 2: Data-management scenario building

Orienting question: How do people derive value from existing climate data and information?

Concept:

Data production and use within different areas of decision-making is defined by highly distinctive histories, methods, objects, materials, aims and technologies (based on Leonelli 2020).

In this activity, we will generate data-management scenarios for future climate risks. The aim is to shed light on the most pressing elements that define data-management practices and that catalyse cooperation and collaboration to reduce climate risks based on empirical data.

Duration: 45 minutes

Materials: Printed versions of boxes shown below; post-sticks (medium size), pens.

Instructions:

Five aspects involved in data management are proposed (aims, methods, standards, instruments, skills), each characterised by three variables. Participants will select the most appropriate variables they consider that reflect their interaction with data. Participants can generate additional variables or modify the examples provided to best reflect their current state.

Once variables have been discussed, these will be allocated to the **trend box** under one of the following options: (a) variable does not change, (b) variable could change, (c) we have control over the variable. Notice that trends are framed by a **year 2035 scenario.**

Once the variables selected have been allocated according to their prospective future development (trend), participants will work on box Scenario Building to generate 3 different scenarios:

- Possible scenario
- Likely scenario
- Desired scenario

Aspects	Variable 1	Variable 2	Variable 3	Variable 4
Guiding principles of data management	**Technical** Aim is to ***understand and anticipate*** social issues (poverty, violence, etc), administrative needs (construction, transport) environmental issues (air pollution, waste management, emergency management).	**Managerial** Aim is to ***manage*** social, environmental, and administrative requirements, and to ensure that data and information required to implement administrative responsibilities is delivered to each administrative unit.	**Practices** Collaboration taskforces enable data sharing through ad-hoc collaboration instances. **These practices may improve in the future**	
Methods used in data management.	**Technical** Methods available to **monitor** social / environmental issues may be accessible but are not necessarily integrated in the administration's management system. Examples: Environmental sensors, Mobile Data Collection	**Managerial** Methods available to **anticipate potential risks** may be accessible but are not necessarily integrated in the administration's management system. Examples include GIS, Dashboards and Analytics	**Practices** **Interaction among data users** may occur supported by Open Data Platforms, Collaborative Platforms, Inter-sectoral mobility programmes, Network opportunities, Co-creation spaces, etc.	
Standards used in data management.	**Technical** The administration is aware of different standards, but does not necessarily have the **capacity to comply** with them: (INSPIRE, ISA² (Interoperability Solutions for European Public Administrations, General Data Protection Regulation, etc.	**Managerial** The administration is aware of different standards, but does not necessarily have the **managerial structure to comply** with them: INSPIRE, Interoperability Solutions for European Public Administrations, General Data Protection Regulation, etc.	**Practices** Some practices enable the integration of key standards into data management. These include actions to implement the FAIR data principles, meetings with scientists to receive scientific advice, capacity building programmes, etc.	
Instruments & Technologies	**Technical** The administration may have access to **specific instruments to collect data**, for example: Census, street cameras, citizen-collected data, Mobile Data Collection Tools, surveys, Environmental sensors, etc.	**Managerial** The administration may have access to specific **technologies to manage data**, for example: Data Integration Platforms, Cloud Computing, Cybersecurity Solutions, IoT, Data Analytics, Machine Learning, Blockchain Technology, etc.	**Practices** The administration may have access to specific **technologies to facilitate collaboration** around data, for example: Different types of collaborative platforms, Data Governance platforms, etc.	
Skills & Knowledge to	**Technical**	**Managerial**	**Practices**	

harness the full potential of data for informed decision-making	Skills in data analysis using tools like SQL, Excel; ability to interpret data trends, patterns, and insights for decision-making; Skills to implement processes for data profiling, cleansing, and ensuring data accuracy	Expertise in managing databases, including data retrieval, storage optimization; understanding of how spatial data can enhance decision-making in local governance; Skills to promote the adoption of new data management processes.	Essential skills to collaborate on the use of data may be in place, including understanding of data governance principles; interpersonal and communication skills to collaborate with diverse stakeholders; Ability to communicate technical concepts to non-technical audiences; Skills in gathering and understanding requirements from various stakeholders.	

Trends box

Year 2035	Variables that do not change	Variables that could change	Variables that we control
Guiding principles (will this aspect change?)			
Methods and standards (will this aspect change?)			
Instruments & Technologies (will this aspect change?)			
Skills and knowledge (will this aspect change?)			
Political commitment (will political commitment change?)			

Scenario Building template

A. Possible scenario	B. Likely scenario	C. Desired scenario
It consists of the variables we control	It consists of the variables that do not change in time	

Activity 3: Identifying key actions to reach a desired data-management scenario.

Orienting question: How do people derive value from existing climate data and information?

Concept

In this activity, each group sketches out a mental map painted in a paper sheet showing the key interventions they consider essential to be implemented in the next 10 years in order to achieve **a desired data-management scenario** to deal with the challenges exposed in the climate impact chain.

Duration: 30 minutes

Materials: Pens, markers, pencils, large white paper sheet.

Instructions:

How do we achieve our desired scenario by 2035?

Participants draw the key interventions they consider as next steps to reach the desired scenario. The drawing must account for the following elements:

- Selected measures/actions (training, technology, legislation, knowledge creation, community engagement, etc).
- What and who is affected by the measure?
- What is the measure/action expected to produce?
- Who will implement the measure?

……

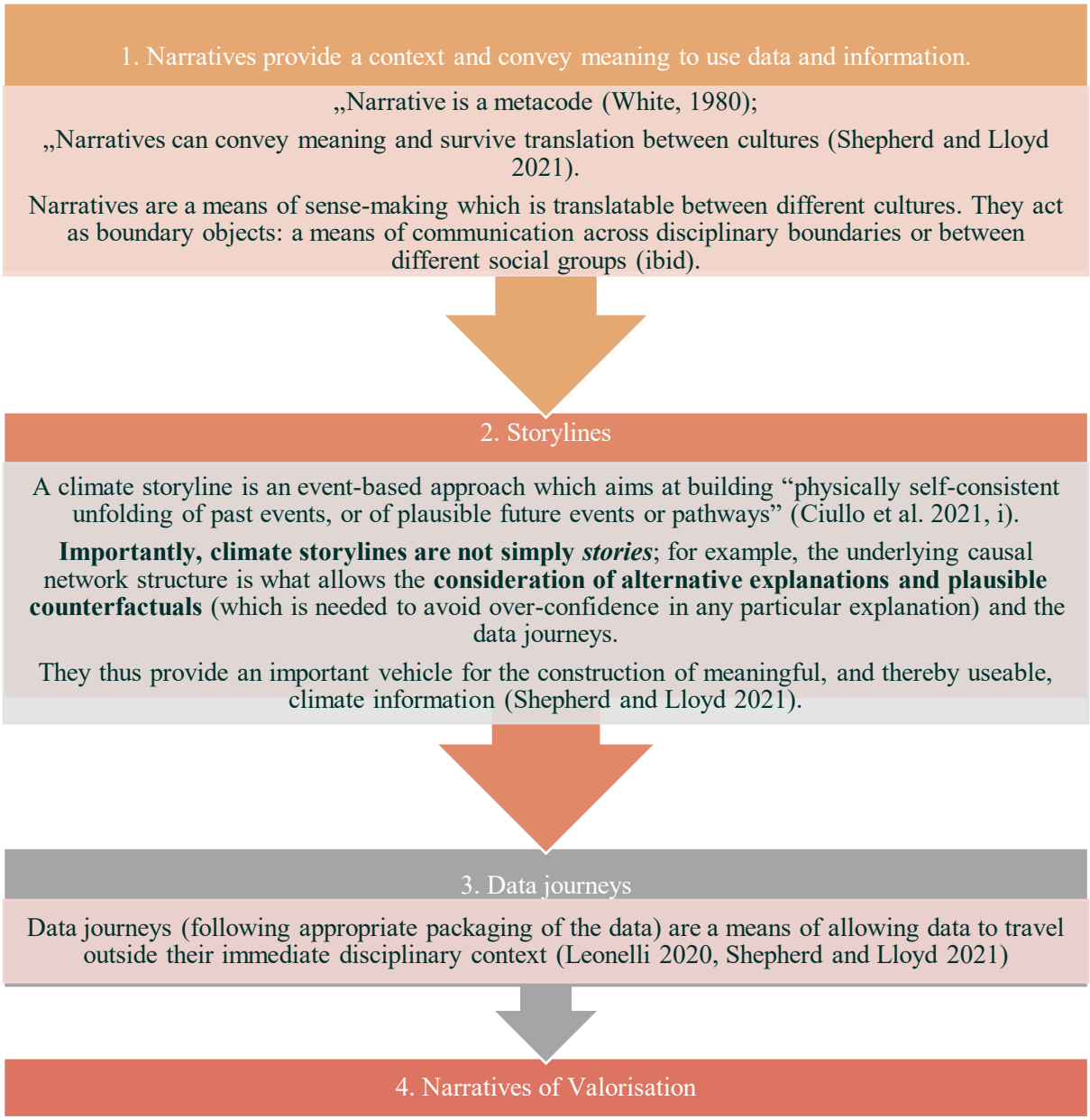
(Optional, if time allows)

Closing discussion: Exposing the data-valorisation framework

Time: 10 minutes

The Data-for-Climate Valorisation Framework will be "parked" (printed in large format) throughout the entire boot camp to enable participants to provide feedback and new ideas (post-sticks).

Appendix:



Narratives of data and information valorisation

- We propose that *narratives of data and information valorisation* convey meaning from existing data and information to local actors and outline potential pathways to act upon these datasets.
- **The Goal of narratives of valorisation is to** enhance data's *evidentiary value.*
- *Narratives of valorisation entail that the evidentiary value actionable, providing it is* framed and interpreted within the scope of administrative competencies and possibilities.

These narratives build on existing concepts of climate narratives, storylines, and data journeys. However, in the context of data and information, they would play specific roles:

Role	Explanation	Features of

		Narratives	Storylines	Data journeys
Communicate	By shedding light on existing and on emerging climate challenges.	*		
	Acting as boundary objects and supporting a better understanding about climate risk across communities of decision-makers		*	
Enable reflection and learning, while supporting the construction of both, theoretical and practical knowledge	By informing about future data and information needs.		*	*
	By informing about the pathways to access and use such datasets and information	*		
	Provide the context that enables human involvement and action			
Recognise the potential of local data and information (tap on the potential).	By enabling new analyses from existing data and information			*
Catalyse action derived from specific data	By allowing the description of the impact of CC on livelihoods by enabling a deep interaction with local, trusted knowledge, leading to a meaningful quantification and characterisation of risk.			*
	By linking information to specific type of decisions (which decisions are supported by which datasets?)	*		
	By providing a context for actors across different decision-making arenas to collaborate and coordinate actions around particular datasets and information	*		

ANNEX 2.2 Knowledge-sharing exercise – Climate KIC

1. Icebreaker activity: Shared pain points – "Dotmocracy" (15 minutes)

a. Explain the purpose and course of the activity (1min)
b. Instruct participants to write down individually the most common pain points they face *during the data-to-decision making process within their organizations – what prevents you from maximizing the relevance of data into your decision making* (8min)

GUIDING QUESTIONS FOR IDENTIFYING PAINPOINTS:

1. Do you have enough data to make decisions about your city/area?
2. Is it always clear where the decision power lays (mandates), and is it there that resources/data available/held?
3. Can you act on the data that you have, if not, why not?
4. How are you made aware of risks: from where/whom (source) and which format (data)?
5. How are these concerns addressed internally within your department and across different departments or organizations?
6. How do different departments collaborate with each other to understand and address climate service needs in the field of prevention and reaction to fires (e.g. in order to write the terms for a procurement process)?
7. Which other domains/regulations influence the response (the definition of climate services that you need)?

c. On flipchart paper/wall ask each individual to vote with "**dotmocracy**" (2), drawing dots next to the pain points that affect them the most (3min)
d. Collect and quickly select a few top-scoring pain points (3 or more) to identify common challenges. (3min)

2. Interactive group activity: Learning from each other (20 minutes)

a. Divide participants into (3-4) groups, ensuring that no two representatives from the same authority sit together,
b. Assign each group a specific pain point(s?) identified earlier in the workshop.
c. Instruct each group to collectively brainstorm and share: a) best practices, b) strategies, c) lessons learned, d) innovative perspectives (think out of the box) they believe can address the assigned pain point. Encourage them to go beyond the obvious.
d. Each group should note down their ideas on sticky notes and the provided canvas.
e. After the brainstorming session, ask each group to briefly present their proposed solutions (rapporteur), **ask them explicitly how their experiences on the topic diverged within the group (embrace the diversity approach),**fostering further discussion and feedback among participants

3. Wrap-up and Conclusion (15 minutes)

a. Summarize the main insights and key learnings discussed throughout the workshop (rapporteurs)
b. Highlight the importance of ongoing knowledge sharing and collaborative efforts in promoting effective data-to-decision making practices.

Express gratitude to all participants for their active involvement and contribution to the workshop.

ANNEX 2.3 Let's create a boardgame! Understanding climate risk and resilience: problem synthesis - HafenCity University

Background:

On day one, there will be a great deal of detailed discussion of each demonstrator's individual cases and situations. This will be a lot for the representatives of each demonstrator to digest, both about their own cases and those of the other 4. This activity will provide an opportunity to review and synthesize the knowledge from day one and offers the different representatives an alternative format to understand what perspectives and situations they may share.

For the VALORADA partners, it can provide some general insights into how the stakeholders present envision resources, actors, obstacles, potentials, overall framing, etc.

Set up:

Each demonstrator country should have its own table.

The representatives present and the local partners should work together on this activity, collaboratively. Further VALORADA partners must join if a group is too small (less than 3 people). They may also join a larger group, if interested, but no group should be larger than 6 people. (A VALORADA partners only extra table would be ok but not necessary.)

Large sheets of paper (A1) should be available, along with further creative and craft supplies:

- Dice
- Scissors
- Glue
- Colorful paper
- Markers and pens, many colors
- Rulers
- Any other little buttons, pawns, stickers, figurines, knick-knacks, etc. are nice to have

At the beginning, the tables should be set up with a couple of large A1 sheets of paper, the pens/markers, and dice. The rest of the supplies can be on another table somewhere and shared by all.

Moderation Outline:

Total available time: 2 hours

note for the tables It is totally fine to have the more detailed discussions about game topics and structure in your local language! Please try to use English when making the physical game board, though, so that it is easier for others to understand during the presentation.

Time	Activity	Description
10 min	Warm-up	A short activity to get the groups thinking about games. It's a speed brainstorming activity. We will start by brainstorming as many board games as we can think of - but don't say them yet because it's a competition! - Each group member rolls the die - They have to list as many board games as the number on the die - They should write them down on a big sheet of paper (or someone can write for them) - If they can list as many games as needed, then the die goes to the next person. If they can't, then they are disqualified. - The next person rolls the die and has to list more games (not the ones that were already mentioned!) - Go around the group until only one person is left – or until the time is up When the time is up, Kim will ask each group how many games they listed. Round of applause for the group with the most games on their list.

10 min	Introduce activity	Kim will present
		
		- Problem synthesis = 'putting the complex pieces together'
		- Project themes: climate risk/resilience and data understanding climate risk/resilience (with data) or managing data (for better climate risk/resilience)
		- Complex topics, connecting them is even trickier. But we can simplify the model of the situation.
		- We will make board games about this.
		- Examples:
		  ○ Monopoly: real estate market
		  ○ Ticket to Ride: international train travel
		  ○ Clue: solving a murder (but really, searching for things and interviewing people)
		- 4 steps
		  ○ Game topic and goal
		  ○ Game structure and parts
		  ○ Make your game: draw, build, be creative!
		  ○ Share with the others

15 min	Step 1: game topic	The team should discuss and agree on a specific topic for the game (dealing with our themes) AND on what the goal of the game is (how to determine who wins)
15 min	Step 2: game structure	Then brainstorm together structural elements of the game: do you move around a circle or towards a finish line? Do you collect money or certain items? Do the players play against each other or help each other? Are there obstacles that can pop up? Are there special benefits or bonus options that can pop up?
30 min	Step 3: make the game	You can choose a pre-designed board or make your own Grab some materials and get creative!
25 min	Step 4: share with the others	We will go from table to table and each group will explain their game, the structure, how to play, etc. - 5 min per table (4 min if we have a 6th table!)
15 min	Reflection	In the larger group: - What did you notice that certain games have in common? What differences are there? - How does the game help you imagine the themes of climate risk/resilience and data better?

For VALORADA Team:

Documentation is very important. Dedicated note-takers should write down as much as possible about each game: topic, structure, how to play, etc. We need to collect this information.

ANNEX 3 Capacity Building Survey Report 2024

Executive summary

Capacity building is an integral part of the VALORADA project, supporting local and regional authorities in the demonstrators to adapt to climate change. The VALORADA capacity building survey (CBS) is one of the foundational elements of EIT Climate-KIC's ongoing efforts to provide tailored-made training and support to the local authorities on their adaptation journey. We use the findings of the CBS to guide the overall strategy of capacity building activities for the Tier 1 VALORADA community[1], as well as take other steps to engage with the Tier 2 stakeholders[2]. We greatly appreciate the willingness of survey participants. By sharing their knowledge and experiences, they have made an extremely valuable contribution to our understanding of issues related to data use in climate change adaptation within the local and regional context.

The CBS provides comprehensive and reliable information from demonstrators about climate change, relevant data use and procedures, as well as insights into local knowledge and awareness of European data services and policies. The survey was a web-based survey administered over 23 days beginning 8 April 2024. It was completed by 23 per cent of the 82 representatives of local and regional authorities invited. While the number of participants was lower than expected, the response pool is evenly distributed across the five demonstrators.

Introduction

Between 8 and 30 April 2024, EIT Climate-KIC conducted a CBS (Annex I), tailored to local and regional authorities of the VALORADA demonstrators. From the first series of VALORADA regional workshops, the project identified a list of relevant Tier 1 stakeholders (n=82). The CBS was translated into the local language and shared with the workshop stakeholders. In addition, the CBS was promoted on VALORADA social media channels and across VALORADA sister projects (for details, please see here). It gathered 23 responses from local, regional and national authorities and citizens from 7 European countries, including Bulgaria, Czechia, France, Greece, Italy, Spain and the United Kingdom (figure 1).

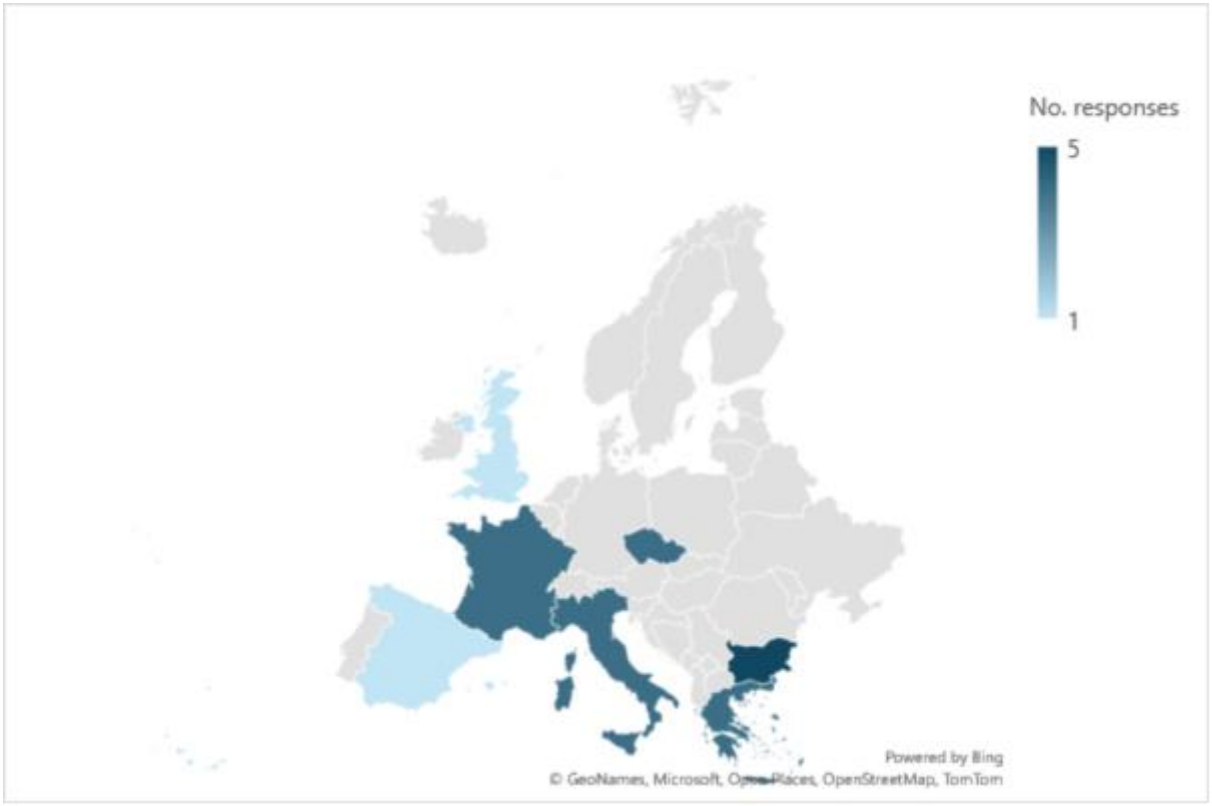


Figure1. Geographical distribution of local, regional and national authorities and individuals, highlighting the number of respondents.

The design of the CBS makes use of the findings of the contextualisation workshops, feedback from Work Package Leads of the project, *D1.1 Demonstrator specific climate impact chain analysis,* as well as *D2.2 Characterisation of local data value chain*. The CBS is structured by 4 distinctive sections that aim to gather information on governance level, local climate challenges, data needs and capacity building interests. The survey is available in the 5 local languages of the demonstrators, namely, Bulgarian, Czech, French, Greek and Italian, and hosted on EUSurvey to compile with EU data protection law.

The results provide a basis for the initial design of the capacity building programme. EIT Climate-KIC aims to support workshops and other initiatives to share current resources and best practices, as well as fostering diverse and inclusive engagement with Tier 1 community.

Findings

3.1 Governance level

Individual invitations were sent to 82 representatives of local and regional authorities across the five demonstrators, 20 authorities replied to the survey with a response rate of 23 per cent. 90 per cent of respondents are local and regional authorities while10 per cent are national authorities (table 1).

Country\Level	Local	Regional	National

Bulgaria	1	2	1
Czechia	2	1	1
France	4	-	-
Greece	1	3	-
Italy	1	3	-

Table 1. Breakdown of responses from local, regional, and national authority per demonstrator country.

3.2 Climate change challenges and consequences

Heatwave and wildfire are the most common climate change challenges for European authorities, followed by floods, droughts and water stress (figure 2). 35 per cent of authorities report significant economic losses due to climate change, affecting sectors including agriculture, tourism, salt mining, chemical, housing and transportation. 20 per cent of contributions also indicate the need to monitor the environmental impacts of warming, highlighting freshwater and forest ecosystems, parks and wetlands as important indicators. 68 per cent of respondents identify seniors, children and lower-income and unsheltered population to be most affected by the impacts of climate change.

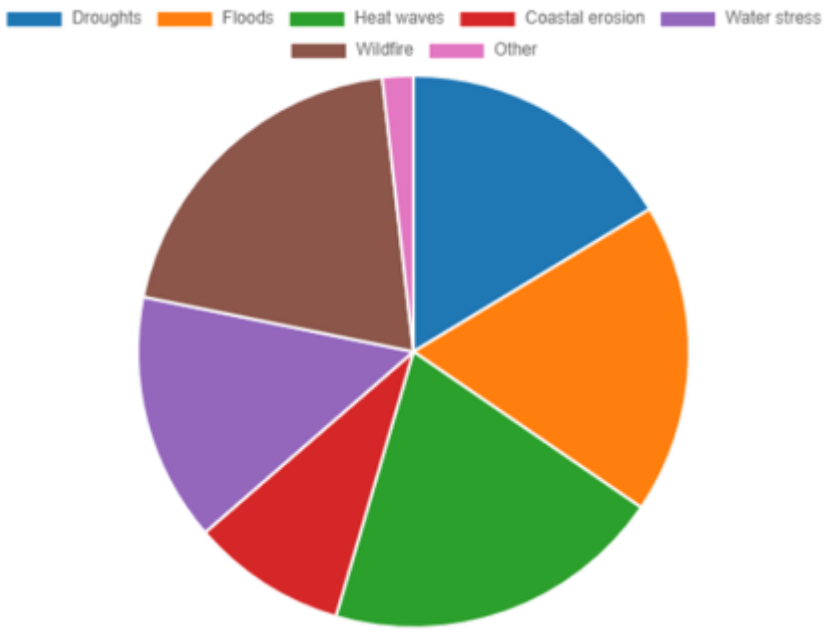


Figure 2. Pie chart of climate change challenges local, regional, and national government face in the last 5 years.

A regional authority from Bulgaria comment that: “people in disadvantaged positions… are likely to be most affected by climate change. They typically live in more vulnerable areas, where they are exposed to natural disasters such as floods, storms, and wildfires. Additionally, they often have limited access to resources and services that would help them adapt to changing conditions.” Similarly, local authority from Greece echoes that: “People with lower income, they have limited possibility to adapt (especially [to] heatwaves).”

3.3 Local dataset, needs and procedure

Across the five demonstrators, local, regional, and national authorities prefer a mix of datasets to understand, communicate and tackle local climate challenges (table 2). 75 per cent of authorities use national or regional data, including socio-economic, demographic and civil protection, as well as weather forecast. Between 20 and 40 per cent of respondents also utilise global Earth Observation (EO) satellite data and climate projection. In addition to the listed datasets, authorities from France report using European EO data to monitor crop growth, coverage and type.

Dataset\Country	Bulgaria	Czechia	France	Greece	Italy
Sentinel 2	2	-	1	1	2
Landsat 8	2	-	1	-	1
OpenStreetMap	1	-	-	-	-
CMIP6 climate projection	2	-	3	1	1
Greenhouse gas emissions	2	1	-	2	1
Carbon sequestration	2	-	1	1	1
Land consumption	1	1	3	1	3
Weather forecast	2	2	4	4	1
National/regional data (including, socio-economic, demographic, civil protection, etc.)	3	1	4	2	4
I don’t know	-	2	-	-	-

Table 2. Key datasets used in understanding, communicating and tackling local climate challenges, count per demonstrator.

12 of the 20 authorities state that current collaboration with local and/or regional departments support them to gain a better understanding of their climate data needs. EU projects, EU Best Practices Portal and municipal ordinances are also helpful in enhancing local understanding of data demand. Local authorities also comment on the need to acquire more climate data, conduct web searches, and advocate a data strategy that include exchanges with national spatial space agencies.

3.4 Capacity building topics and format

Across the five demonstrator regions, local, regional and national authorities identify climate tools, software and models, exchange of regional best practices and knowledge transfer of operational climate data services at the regional level (e.g., Copernicus services and data platforms) as key topics for the capacity building programme (figure 3).

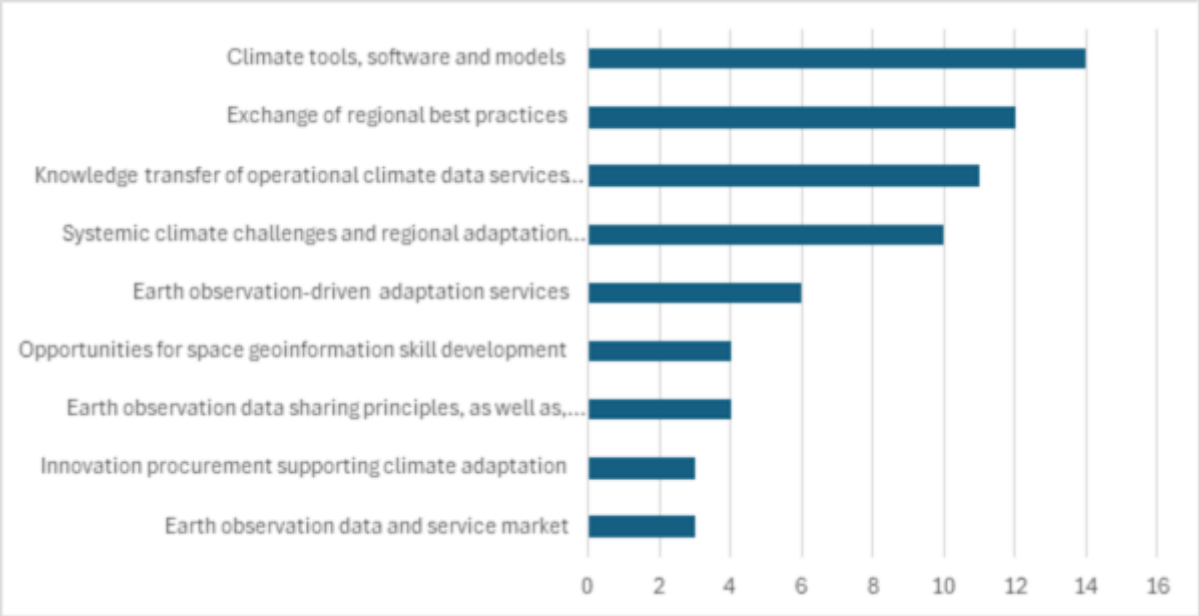


Figure 3. Ranking of the different capacity building topics.

A detailed breakdown of demonstrators' interests in the various capacity building topics shows a relatively even distribution across the topics (table 3). Local authorities in Bulgaria, France, Greece and Italy are most interested in climate tools, software and models, while in Czechia, authorities are most keen to exchange with other regional best practices. On the contrary, EO data and service market and EO data sharing principles, as well as certification and standards are lower on the priority list of local authorities.

Topic\Country	Bulgaria	Czechia	France	Greece	Italy
Climate tools, software and models	3	2	3	3	3
Systemic climate challenges and regional adaptation strategy	3	2	2	1	2
EO-driven adaptation services	2	-	2	1	1
EO data and service market	-	-	1	1	1
Knowledge transfer of operational climate data services at the regional level (e.g., Copernicus services and data platforms)	2	1	2	2	3
EO data sharing principles, as well as certification and standards	1	-	1	1	-
Innovation procurement supporting climate adaptation	1	2	-	-	-
Opportunities for space geoinformation skill development	1	-	2	-	1
Exchange of regional best practices	2	3	2	2	2

Table 3. Expressed interest in different capacity building topics, noting that multiple-choice response allowed.

In addition to the proposed capacity building topics, two regional authorities suggest comparing historical data and forecast data on a geographical basis. 20 per cent of authorities of all levels comment on the need to include environmental indicators (e.g., data on freshwater and forest ecosystems, wetlands, biodiversity, etc.) to understand the impacts of climate change on the local and regional landscape. Overall, respondents prefer tool demonstrations and workshops, followed by information sessions and conference lectures, for the format of the capacity building events.

Looking forward

Based on the findings of the survey, EIT Climate-KIC intends to use the data collected for its capacity building strategy regarding: (1) Identification of capacity building themes, clustering interconnected topics (figure 4) and (2) Format of activities to ensure that trainings are appropriate to the preferred learning style of stakeholders.

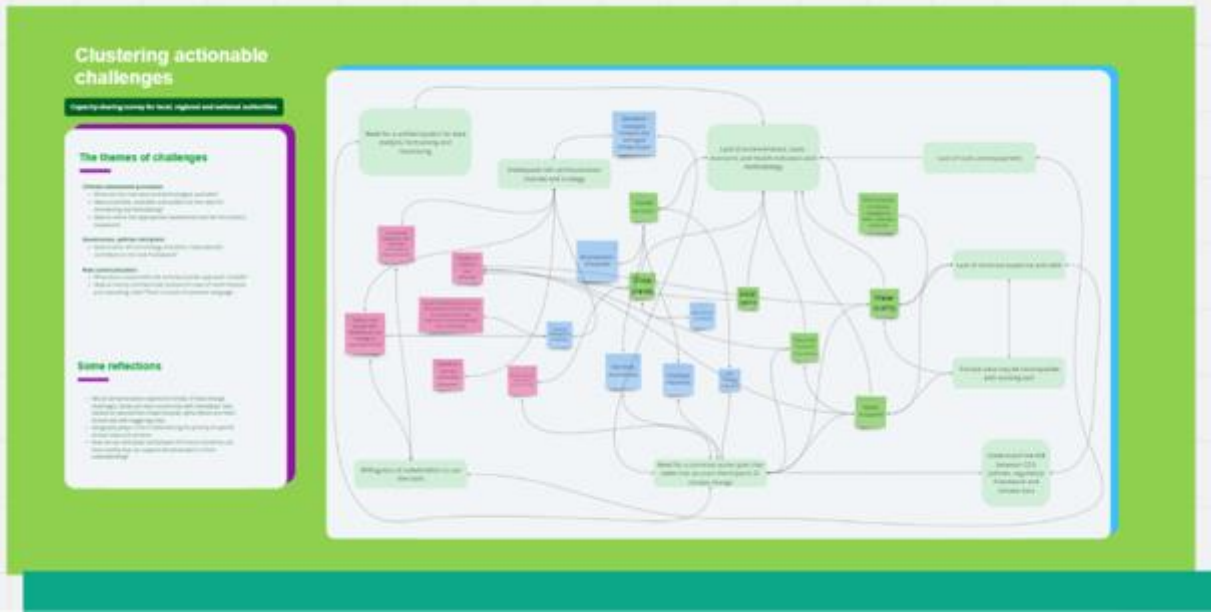


Figure 4. Clustering exercise to identify possible capacity building themes based on reported needs by local, regional and national authorities.