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VALIDATED LOCAL RISK ACTIONABLE DATA FOR ADAPTATION



D3.2

Practical and usable advice on the uptake of climate data by local entities

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Introduction

1.1 Description of the deliverable content and objectives

This deliverable provides practically grounded guidance on the uptake and use of climate information in local and regional adaptation planning. Drawing on empirical evidence from VALORADA demonstrators, it analyses how institutional contexts, professional roles, and organisational practices shape the usability of climate information. Using surveys, interviews, and a persona-based approach, the deliverable identifies key drivers and barriers to climate information use and translates these insights into actionable recommendations.

The objective of this deliverable is to develop **practically grounded guidance** on how climate information can be effectively taken up and used in local and regional climate adaptation planning. Building on empirical evidence from VALORADA demonstrators, the deliverable aims to move beyond generic recommendations by situating climate information use within **real organisational, institutional, and professional contexts**.

Specifically, the deliverable seeks to (i) shed light on key drivers and barriers shaping the usability of climate information in municipal practice; (ii) analyse how different user roles, responsibilities, and institutional positions influence perceptions of value and use; and (iii) translate these insights into actionable guidance aligned with everyday planning and administrative routines. To achieve this, the deliverable applies a persona-based methodology grounded in surveys and interviews, enabling a nuanced understanding of how climate information supports learning, sense-making, coordination, and long-term capacity building rather than short-term data uptake alone.

Overall, the deliverable aims to support the development of climate information practices that are **institutionally actionable, context-sensitive, and aligned with governance realities**, thereby strengthening the conditions for effective climate adaptation decision-making.

1.2 Deviation from objectives, corrective action (if applicable)

There was no deviation from objectives.

1.3 Major outcome

Data-driven approaches increasingly underpin evidence-informed climate adaptation planning, yet their effective use at local and regional levels remains limited (Herzog, 2025; Hoffman, 2023; Bender, 2023; Slingo, 2022). While climate information is widely promoted as a foundation for local adaptation, access to data alone rarely translates into concrete policy action (Lorenz et al., 2017).

Climate information can serve multiple functions within local governance, including raising awareness, framing climate risks, informing policy design, promoting coherence across municipal activities, and supporting concrete investments (Reveco, 2023). Whether these functions are realised depends on the

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degree to which climate information helps resolve specific policy problems, and whether it fits organisational routines, decision structures, and responsibility allocation (O'Brien et al., 2003; Dilling & Lemos, 2011; Lemos et al., 2012; Vaughan et al., 2014; Lorenz et al., 2017; Reveco & Máñez, 2026). Where regulatory mandates, administrative capacity, or coordination are weak, climate data is typically used in limited or illustrative ways—such as risk mapping hazards or awareness-raising—rather than shaping concrete adaptation measures (Reveco & Máñez, 2026).

The use of climate information is shaped not only by technical quality, but also by trust, credibility, institutional arrangements, and structural constraints on action. Improving climate adaptation therefore requires moving beyond data provision towards approaches that embed climate information within everyday planning practices and governance contexts (O'Brien et al., 2000; O'Brien & Vogel, 2003; Vogel & O'Brien, 2006; Tall et al., 2014; Tang & Dessai, 2012; Lemos, Kirchhoff et al., 2012; Räsänen et al., 2017).

Drivers of usability: Attention to climate information is often triggered by extreme events, legal requirements, or growing awareness of future risks. However, such triggers alone are insufficient to embed climate information into practice. Usability requires legitimation and endorsement by key political, strategic, or operational actors, and tends to emerge only when information aligns with established standards of appropriate practice (Reveco & Mañez, 2026).

Barriers to the use of climate information: Climate adaptation in municipal planning is constrained by complex, multi-layered governance contexts in which social, political, economic, and environmental challenges converge. This creates "wicked problems" of climate policy making, characterised by unclear problem boundaries, uncertainty about future impacts, ambiguous solutions, and limited time and resources (Lonsdale 2010). These challenges are compounded by institutional mismatches, as local authorities often hold responsibility for adaptation but lack the financial, technical, or regulatory powers needed to act effectively. As a result, access to climate information does not automatically translate into adaptation policies or climate-sensitive planning. Instead, climate information use remains limited where capacity, authority, and institutional coherence are weak, reinforcing the need to address governance and usability conditions alongside data provision (Galaz et al 2008).

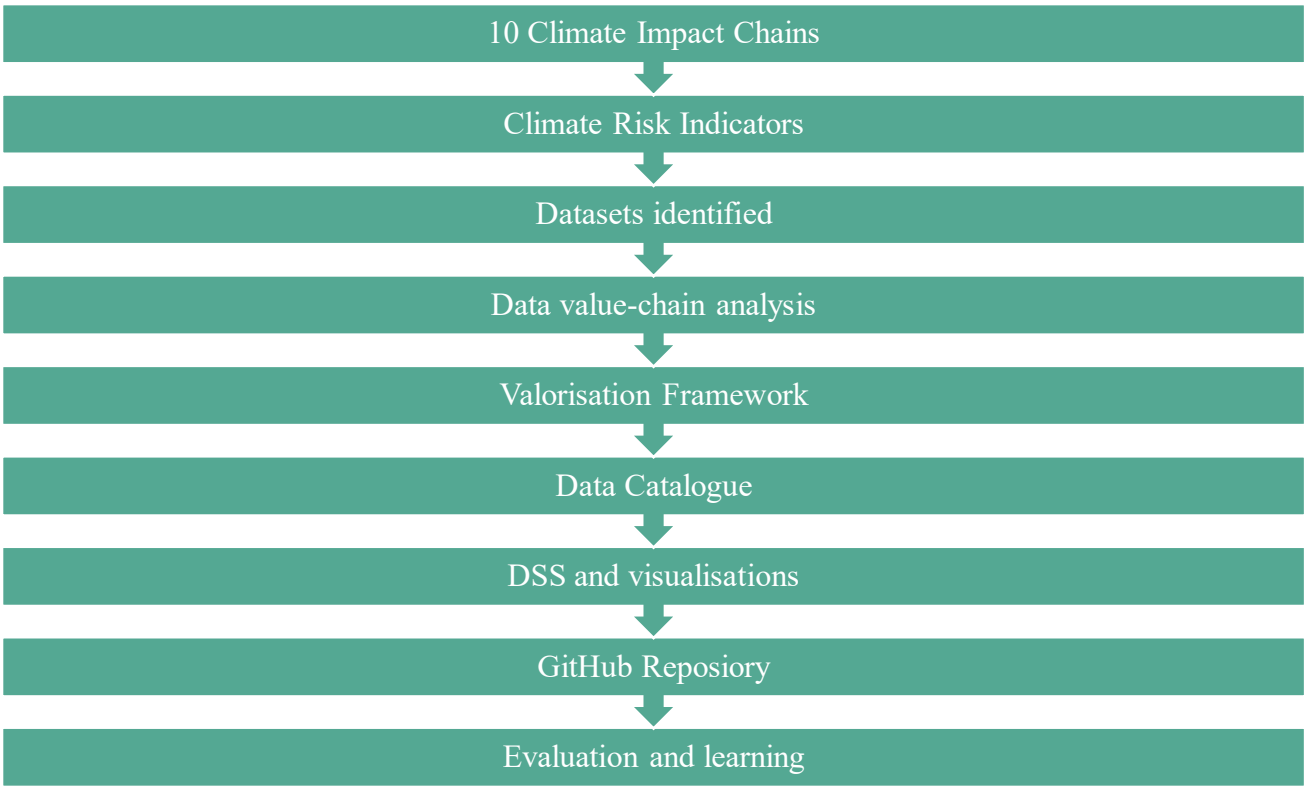
In sum, while providing generic guidelines to promote the use of climate information can serve as guiding principles, these guiding principles require a degree of connection with users' experienced reality. This perspective emphasises the difference between theoretical and practical knowledge. VALORADA aligns with the principles of practical knowledge (Gherardi, 2012), stressing that learning and knowledge production occurs as people engage in practical activities with new information or technologies, creating a shared understanding of how such technology and information accommodate into their routine activities.

In this spirit, the climate information uptake and use guidance presented in this deliverable follows the implementation of the VALORADA climate information usability pathway. Building on the experience of ten European demonstrators participating in VALORADA (located in France, Italy, Greece, Czech Republic

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and Bulgaria), the uptake of climate information is scoped within the frame of practical activities implemented, and knowledge products developed throughout the entire life of VALORADA.

Figure 1: VALORADA's pathway to using climate information



The guidelines outlined in this deliverable follow the VALORADA usability pathway. Each recommendation is accompanied by a respective deliverable, publication or website, where the reader can have a deep dive into the concepts sustaining it.

Methodology: Collecting feedback and Developing personas

As previously outlined, the use of climate information is closely linked to both individual needs and characteristics, as well as to the specific features of the social groups within which decisions about climate adaptation are debated, negotiated, and made. Providing generic guidelines that are detached from these individual and social contexts therefore risks producing recommendations that are of limited practical value. To address this risk, we developed multiple persona profiles that link user characteristics with use intentions and needs, based on the premise that meaningful guidance must recognise diverse user roles, expectations, and decision contexts.

Personas were developed as a complementary analytical and communicative tool. They allow us to interpret patterns of engagement with climate information as the result of differing roles, capacities, responsibilities, and institutional positions within municipalities. Personas help explain how different types

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of actors—such as planners, technical staff, or policy coordinators—encounter and address gaps in climate information use, even when immediate or visible uptake is limited.

By grounding the analysis in personas, the guidelines can support learning, sense-making, and long-term capacity building, rather than short-term tool adoption.

In this way, the use of personas deepens the interpretation of engagement and reframes climate information use as part of a longer-term transformation of municipal practices, whose value cannot be assessed through the provision of climate data and information alone.

The Personas developed for this deliverable were designed based on the results of the surveys and interviews undertaken in preparation of Deliverable 2.5. "Assessment of the usability of VALORADA's tools across demonstrators". The aim was to better understand how local governments involved in the VALORADA Project assessed the value of data, information and tools developed in the frame of the project. Feedback was collected through a combination of surveys and semi-structured interviews focusing on how stakeholders engage with data across the full data lifecycle. The instruments were designed to capture current data management practices, including data planning, collection, searching, storage, sharing, processing, use, and integration into decision-making, thereby representing the complete pathway connecting data to knowledge. Respondents were also asked to specify their roles within these practices (e.g. doing, deciding, overseeing, or coordinating), allowing us to distinguish between hands-on data work, managerial decision-making, and coordination or monitoring functions.

Qualitative responses were coded using an initial analytical framework that captured (i) existing data practices, (ii) potential user groups, and (iii) usability aspects, including needs, barriers, and perceived potentials. This approach enabled a structured comparison of how different roles and practices shape data use and helped identify recurring patterns in how climate information is interpreted, operationalised, or constrained within organisational contexts (detailed methodology outlined in D.2.5).

A first step included drafting personas. A selection of characteristics (needs, interests, user traits and barriers) was linked according to the respondent type (technical manager, decision maker, politician, etc). Unique descriptions of personas were generated based on each profile. Given that profiles represented real life experiences of municipal officials participating in VALORADA, the first persona-draft was delivered to them for validation and complementation. A second draft included recommendations and amendments requested by municipal officials (full persona description in Annex 1).

Results

Across all personas reviewed in VALORADA, perceptions of use and value of climate information are shaped by the user's role, responsibilities, and institutional context. Political and strategic actors need communicable evidence; administrative and technical users require credible, harmonised data; operational and project-based roles depend on actionable, localised information; and external experts need flexible,

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transparent tools. The functionalities of climate information—such as synthesised outputs, harmonised indicators, real-time dashboards, and scenario-based data—must be matched to these human contexts to be truly effective. Table 1 describes the user needs based on professional profiles, while table 2 shows key patterns in the use of climate information linking functionality to human contexts.

Table 1: User needs - Personas organised according to professional

Deputy Mayor – Legitimacy (WHY) Needs synthesised, clear data that justifies priorities and withstands political scrutiny.	**Head of Department – Argumentation (HOW)** Uses credible, comparable data to defend priorities and investments across institutions.	**Environmental Officer – Implementation (WHAT)** Needs local, actionable data that directly guides project design and implementation.
Observatory Curator – Credibility & Consistency Values harmonised, transparent indicators that ensure institutional trust and comparability.	**Heat Vulnerability Coordinator – Rapid access** Relies on simple, visual data to act quickly and protect vulnerable groups during heat events.	**Climate Plan Strategist – Alignment & Prioritisation** Uses policy-aligned indicators to prioritise actions across planning horizons.
Permitting & Compliance Analyst – Legal Defensibility Requires authoritative, well-sourced data to justify regulatory decisions.	**Emergency Preparedness Liaison – Coordination** Needs coherent, shareable hazard information to coordinate agencies during crises.	**24/7 Crisis Response Manager – Immediacy** Depends on real-time, reliable data for fast decisions and emergency response.
Environmental Regional Planner – Strategic Coherence Uses clear, trustworthy data to steer long-term resilience under capacity constraints.		**Applied Forestry Analyst – Operational Flexibility** Needs transparent, exportable data to support credible risk assessments in project work.

Table 2: Key patterns in the use of climate information according to personas: linking functionality to human contexts.

Profile	Use purpose	Needs	Context of use
Political and Strategic Decision Makers (e.g., Deputy Mayor, Climate Plan Strategist, Regional Planner)	use climate information to legitimise decisions and communicate priorities	climate data is valuable when it is synthesised into clear, defensible narratives—maps, rankings, and indicators that help justify investments and policy choices to the public and elected officials.	Their context is shaped by competing demands and the need for credible, communicable evidence.
Administrative and Coordination Roles (e.g., Head of Department,	rely on climate information to build arguments, validate interventions, and	They face challenges with fragmented datasets and inconsistent methodologies, so they value harmonised indicators,	Their use is shaped by the need for credibility, comparability, and communicability.

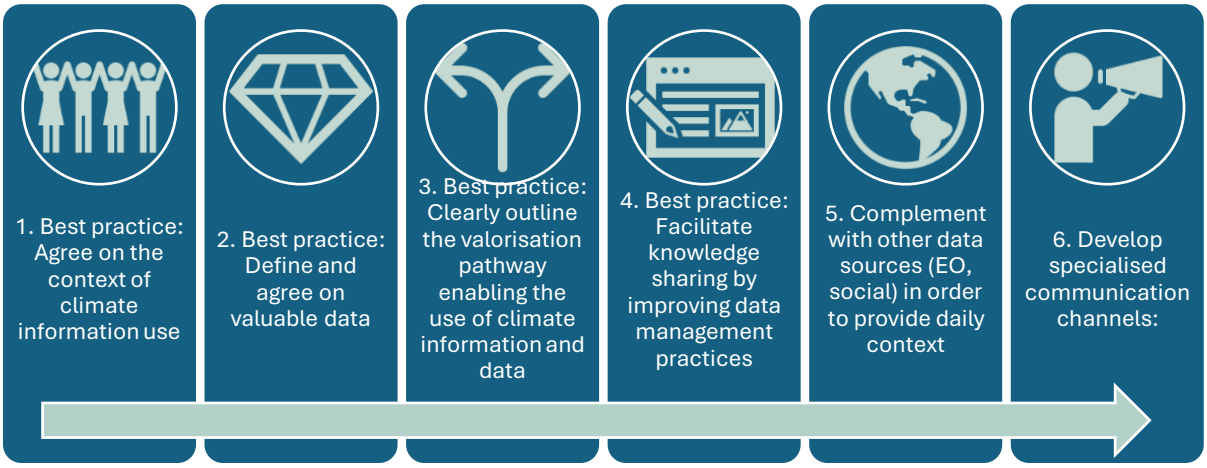
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Observatory Curator, Permitting Analyst)	coordinate across departments.	provenance tracking, and data that can withstand scrutiny in planning, budgeting, and regulatory contexts.	
Technical and Operational Users (e.g., GIS Specialist, Environmental Officer, Crisis Response Manager, Emergency Preparedness Liaison)	depend on climate information for maintaining spatial intelligence, preparing maps, and supporting rapid decision-making.	They value transparent metadata, clear indicator explanations, and outputs that integrate seamlessly into GIS and operational systems. Real-time dashboards and threshold-based warnings are essential for crisis management.	Their context is defined by limited staffing, fragmented data practices, and the need for actionable, up-to-date insights.
Project-Based and Implementation Roles (e.g., Municipal Service Manager, Heat Vulnerability Coordinator)	use climate information to guide practical interventions and respond to citizen requests.	They need information that is directly usable in project briefs and operational planning.	Their context is highly local and time-sensitive, requiring simple maps, quick summaries, and clear visuals that help prioritise actions and justify decisions.
External Experts and Consultants (e.g., Applied Forestry Analyst, Spatial Modeller)	use climate information in concentrated bursts tied to project cycles.	They value flexible, transparent tools that support independent assessments and trust information that is well-documented and easy to explain to clients.	Their context is shaped by the need for detailed, scenario-based data, clear metadata, and export functions.

2. Uptake recommendations

The VALORADA usability pathway builds on the premise that climate information is not a stand-alone product ready to be used, but rather a resource whose use-value is recognised and applied to decisions as individuals engage with it through collective learning activities and where practical knowledge is generated. Climate data and information only gain value through interpretive work that situates them within local contexts and links them to concrete patterns of exposure, vulnerability, and adaptive capacity. Based on this premise, the following recommendations to uptake and use of climate information are provided:

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1. Best practice: Agree on the context of climate information use.

Relevant personas: ALL

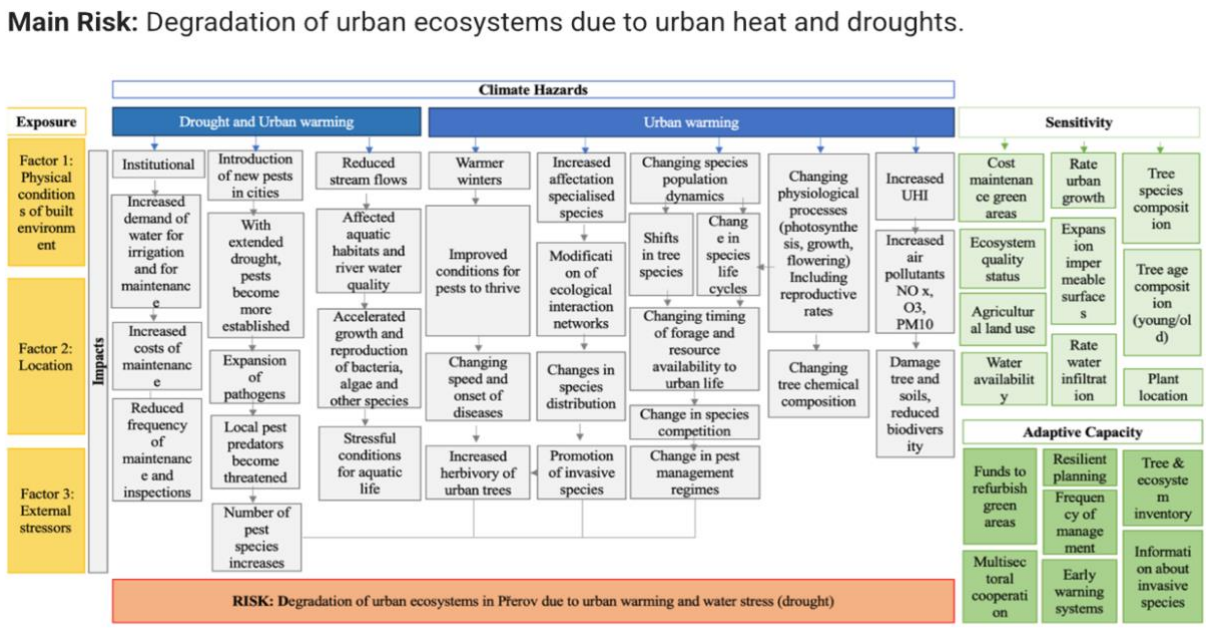
Effective use of climate information requires more than simply providing access to datasets. At a minimum, it requires making explicit decisions about which risks are prioritised and why. Local stakeholders often face two recurring challenges: limited consensus of existing risks affecting them and uncertainty about which data are relevant for addressing such risks. Addressing these challenges calls for approaches that help prospect climate information users interpret, prioritise, and connect climate risk information to concrete decision contexts. But a consensus on the key risks and information to address them is a pre-requisite.

One effective practice for building consensus around climate information use is the co-development of **Climate Impact Chains (CICs)**[4]. In VALORADA, CICs were developed through interactive workshops that brought together stakeholders from across municipal departments. Participants focused on priority risks and jointly traced how hazards translate into exposure, impacts, sensitivity, and adaptive capacity, supported by problem-tree analyses that make causal relationships explicit. This participatory process helped overcome institutional silos and resulted in shared, validated quantitative and qualitative risk descriptions that reflect how climate risks emerge across interconnected systems.

[4] Reference published in the frame of VALORADA: Reveco C, Cortekar J, Trozzo C, Vokral M, Kotova L, Kuntsi-Reunanen E, Galluccio G and Korhonen N (2025) Integrating value systems and place-based characteristics in climate risk assessments. Front. Clim. 7:1719404. doi: 10.3389/fclim.2025.1719404
In addition, see Deliverable 1.1. Demonstrator specific climate impact chain analysis

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Figure 2: Example of a Climate Impact Chain (Source: Reveco et al 2025)



As CICs mature, questions such as "how can we measure these risks?" naturally surface the indicators underpinning each component of risk. Building on this, stakeholders collaboratively identified and prioritised decision-relevant indicators across exposure, impact, and vulnerability. Indicators were assessed using the **SMART**[5] **indicator framework**[6]. Co-developing and co-selecting indicators together with stakeholders can more effectively anchor data use in planning and administrative practice, supporting relevance, shared understanding, and trust, while helping users navigate complex data landscapes.

Once key indicators are identified, then comes the question as to which data is needed to populate such indicators (which data is available and feasible to get and use). This exercise starts revealing which data matter most, where datasets are missing or underused, and **how institutional practices constrain data value**[7].

In sum, CICs provide a context to the selection of relevant indicators and climate data and information. Organising data around indicators—rather than discussing datasets alone—clarifies why specific data matter, how climate and non-climate data can be combined, and which types of decisions they support. Aligning indicators with Climate Impact Chains ensures that data are directly linked to locally identified hazards, impacts, sensitivities, and response capacities.

[5] Indicators must be Specific, Measurable, Achievable, Relevant and Time-bount.

[6] See VALORADA Deliverable 1.3. Selected climate risk indicators with detailed computing metrics (PU).

[7] See VALORADA Deliverable 2.2. Characterisation of data-value chain in each demonstrator

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2. Best practice: Define and agree on valuable data: (why some datasets over others)

Relevant personas: Administrative and Coordination Roles (e.g., Head of Department, Observatory Curator, Permitting Analyst), Technical and Operational Users (e.g., GIS Specialist, Environmental Officer, Crisis Response Manager, Emergency Preparedness Liaison), Project-Based and Implementation Roles (e.g., Municipal Service Manager, Heat Vulnerability Coordinator)

Specific tools and methodologies—such as the design and application of climate risk indicators that elucidate the nature of hazards and risks—may serve as mechanisms for enhancing the coherence and practical relevance of existing data infrastructures (Connors et al., 2025). Repurposing data in this way helps eliminate one of the key barriers to adaptation by lowering the costs associated with collecting new data right at the beginning of the adaptation process.

As indicator selection leads to discussions around data needs to populate such indicators, prioritising high-value datasets becomes an important step to take. Because climate risks span multiple domains diverse data sources are needed. Also, climate risks are not only physical threats but also affect social values such as identity, wellbeing, cultural heritage, and ecosystem services, which shape **how risks are perceived and acted upon**[8].

In local and regional contexts, there is no single, agreed framework for defining data "value"; instead, value is multidimensional, context-dependent, and shaped by trade-offs between credibility, salience, and legitimacy. Decisions about which data matter, and for what purposes, reflect locally salient risks, institutional priorities, and underlying social values. This is critical because data practices in public institutions are guided by goals that are oriented towards statutory duties, accountability requirements, and administrative routines. A valuation exercise must fully align with these requirements. Hence, clarifying what constitutes the adaptation value of climate data and information is a critical step. VALORADA treats data and information valuation as a process through which data and information gain meaning and relevance through negotiation, interpretation, and use, rather than as an intrinsic or purely technical attribute.

Against this, VALORADA develops the **Data Valuation Framework**[9], a co-designed tool that supports decision-makers in articulating, debating, and aligning around the adaptation value of existing data. The framework is not a technocratic ranking device, but a shared mental map that makes assumptions,

[8] Reference published in the frame of VALORADA: Reveco C, Cortekar J, Trozzo C, Vokral M, Kotova L, Kuntsi-Reunanen E, Galluccio G and Korhonen N (2025) Integrating value systems and place-based characteristics in climate risk assessments. Front. Clim. 7:1719404. doi: 10.3389/fclim.2025.1719404

[9] See VALORADA Deliverable 2.1. Climate Valorisation Framework

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trade-offs, credibility, and legitimacy explicit, helping translate fragmented data into usable climate services grounded in local realities. The Data Valuation Framework can be used by public officials wanting to identify and rank the priority datasets they want to focus on. More than providing a blueprint, the framework outlines key criteria and an indicator system to allocate values according to participants' consensus.

By making explicit certain attributes about data and concrete indicators to represent preferences, it is recommended that the framework is used as a consensus-making tool among public officials.

3. Best practice: Clearly outline the valorisation pathway enabling the use of climate information and data

Relevant personas: Administrative and Coordination Roles (e.g., Head of Department, Observatory Curator, Permitting Analyst), **Technical and Operational Users** (e.g., GIS Specialist, Environmental Officer, Crisis Response Manager, Emergency Preparedness Liaison), **Project-Based and Implementation Roles** (e.g., Municipal Service Manager, Heat Vulnerability Coordinator).

Having a clear understanding of the data attributes needed to populate indicators is essential. VALORADA therefore conducted a data **value-chain analysis**[10] to surface how the data needed to populate these indicators are produced, managed, shared, and governed within public administrations.

The primary objective of valorisation is not data use per se, but the production of actionable knowledge from existing data and information. From this perspective, valorisation takes place within established professional practices, shaped by municipal roles, responsibilities, and institutional mandates. As a result, valorisation is inherently linked to organisational learning processes, rather than one-off adoption of tools.

Valorisation does not follow a single, linear pathway. Instead, it varies across contexts and is shaped by multiple, often interacting barriers. In local governments, these barriers are frequently organisational, such as limited cooperation across sectors, siloed data practices, weak data management routines, or constrained administrative mandates. They can also be individual, where staff may technically access data but do not perceive its relevance for their professional responsibilities. Finally, valorisation can be limited by capability gaps, including insufficient technical infrastructure, lack of skills, or missing administrative competences to support data use beyond

[10] See VALORADA Deliverable 2.2. Characterisation of data-value chain in each demonstrator

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reporting. Supporting the valorisation of climate data and information therefore means recognising that transforming data into actionable knowledge is not a purely technical task, but a socio-technical process embedded in organisational practices.

VALORADA operationalised this through a generic **valorisation framework**[11] applied across demonstrators. Using insights from the data value-chain analysis, the framework identifies existing data flows, bottlenecks, and opportunities for improving data collection, storage, sharing, and knowledge generation.

The objectives of this approach are twofold: first, to make visible how valued data currently flows within organisations; and second, to clarify the activities that enable or constrain valorisation. Key orienting questions include which factors hamper valorisation, whether these factors are primarily data-related or institutional, and which new or adapted roles could strengthen knowledge valorisation within local and regional authorities.

Effective valorisation depends less on introducing new data or tools, and more on aligning data practices with professional routines, organisational capacities, and learning processes within public administrations.

4. Best practice: Facilitate knowledge sharing by improving data management practices

Relevant personas: Administrative and Coordination Roles (e.g., Head of Department, Observatory Curator, Permitting Analyst), **Technical and Operational Users** (e.g., GIS Specialist, Environmental Officer, Crisis Response Manager, Emergency Preparedness Liaison), **Project-Based and Implementation Roles** (e.g., Municipal Service Manager, Heat Vulnerability Coordinator).

As previously explained, effective use of climate information requires data valuation and valorisation, not just data access. Organising climate and non-climate data around decision-relevant indicators, co-developed with local stakeholders and aligned with Climate Impact Chains, helps clarify which data matter, how they can be combined, and how they support climate-resilience decisions. Grounding indicators in planning practice increases relevance, trust, and the practical use of climate information.

From a data-management perspective, good practice includes ensuring clarity, transparency, and interoperability. **The Resilience Information Catalogue**[12] was developed to address these challenges by supporting data valorisation—the process through which existing data are transformed into

[11] See VALORADA Deliverable 2.1. Climate Valorisation Framework

[12] Catalogue available at https://valorada.github.io/dashboard/#indicator=I1088

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actionable knowledge. Rather than functioning as a simple repository, **the catalogue links climate, Earth Observation and Municipal datasets to concrete resilience indicators**. This helps users understand not only *what data exist*, but *why they matter*, *how they can be combined*, and *for which types of decisions they are useful*. By connecting climate and non-climate data through indicator-based logic, the catalogue makes explicit how different data sources contribute to assessing risks related to heat, floods, droughts, or fires.

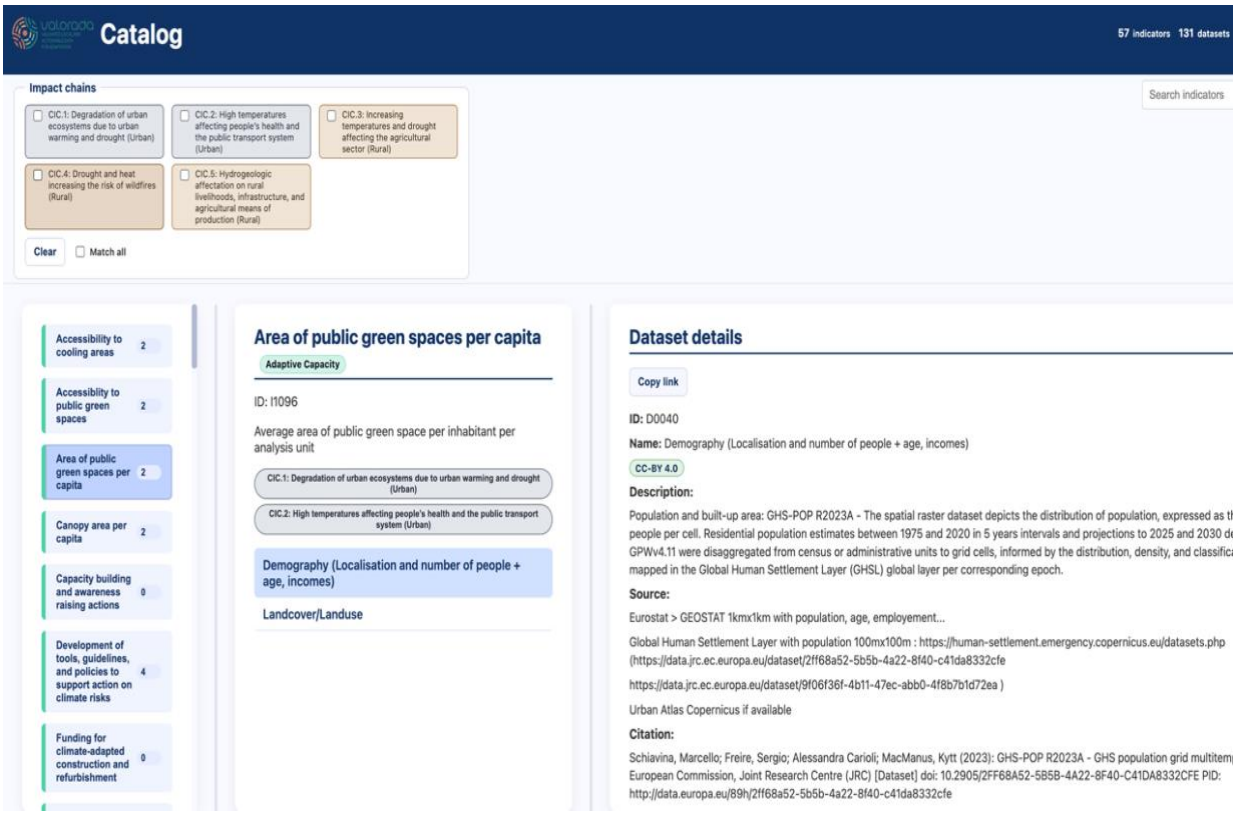
The catalogue was co-developed with local stakeholders through workshops and exchanges, ensuring that indicators reflect real planning and administrative needs. Indicators were aligned with Climate Impact Chains, so that data are directly connected to locally identified hazards, impacts, sensitivities, and response capacities. This grounding in local contexts increases relevance and trust, while helping users navigate complex data landscapes.

From a technical perspective, the catalogue is implemented as an **INSPIRE-compliant, open, and reusable digital resource**. Data properties are simplified and described in relation to their relevance for resilience indicators, improving transparency and accountability. Filtering options allow users to explore indicators and datasets by type of climatic risk, while metadata tables clearly describe data types, sources, and potential gaps. This makes it easier to identify missing data and opportunities for improvement.

Importantly, the catalogue should be understood as a **supporting and learning tool**, not a stand-alone decision system. Its main value lies in helping users make sense of available data and information, coordinate across departments, and gradually integrate climate information into planning and administrative routines. By embedding human perspectives and co-created indicators, the catalogue translates data availability into knowledge that is meaningful for decision-making.

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Figure 3: Example of VALORADA's Data Catalogue (Source: VALORADA D.2.2)



5. Complement climate data and information with other data sources (EO, social) in order to better reflect the local decision and risk context

Relevant personas: Technical and Operational Users (e.g., GIS Specialist, Environmental Officer, Crisis Response Manager, Emergency Preparedness Liaison), **Project-Based and Implementation Roles** (e.g., Municipal Service Manager, Heat Vulnerability Coordinator).

VALORADA starts from the observation that municipalities and regions routinely generate large volumes of non-climate data—including socio-economic, demographic, land-use, infrastructure, and environmental datasets—that hold substantial but often unrecognised climate relevance. While these data can meaningfully characterise local climate risks and vulnerabilities, their value is frequently obscured by institutional barriers, sectoral silos, inconsistent data practices, and limited administrative capacity. As a result, local actors often struggle to identify which data matter for adaptation and how to communicate climate risk in ways that support planning and decision-making.

Earth Observation (EO) data play a critical role in addressing this gap by enabling spatially explicit, place-based representations of climate risk that can be more readily communicated across policy,

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planning, and operational arenas. EO complements in-situ observations and reanalyses by providing spatially continuous information independent of ground infrastructure, with resolutions ranging from ~1 km (e.g. MODIS) to <10 m (e.g. Sentinel-2) and multi-decadal time series. This makes EO particularly valuable for downscaling and for visualising local manifestations of climate hazards, especially in data-sparse regions.

However, using EO requires careful treatment of technical constraints. EO data preprocessing is complex, sensor changes can introduce discontinuities, and EO variables (e.g. land-surface temperature) often differ from those used in climate models or municipal practice (e.g. 2-m air temperature), requiring additional modelling and explicit communication of uncertainty. Harmonised datasets from ESA, EUMETSAT, NASA and NOAA increasingly support this process, but fitness-for-purpose remains essential.

Aligned with Climate-ADAPT guidance, **VALORADA's advice on how to complement EO and climate data**[13] emphasises using multiple climate models and emission scenarios, matching data resolution to the decision context, and coupling climate data with appropriate impact models. Crucially, EO enhances climate-risk communication not by maximising data detail, but by translating climate information into locally meaningful spatial narratives that connect hazards, exposure, and vulnerability to existing planning practices and policy priorities.

In VALORADA; **visualisation and dashboards**[14] were created, demonstrating how existing local data can already provide clear risk maps and inform decision-making processes.

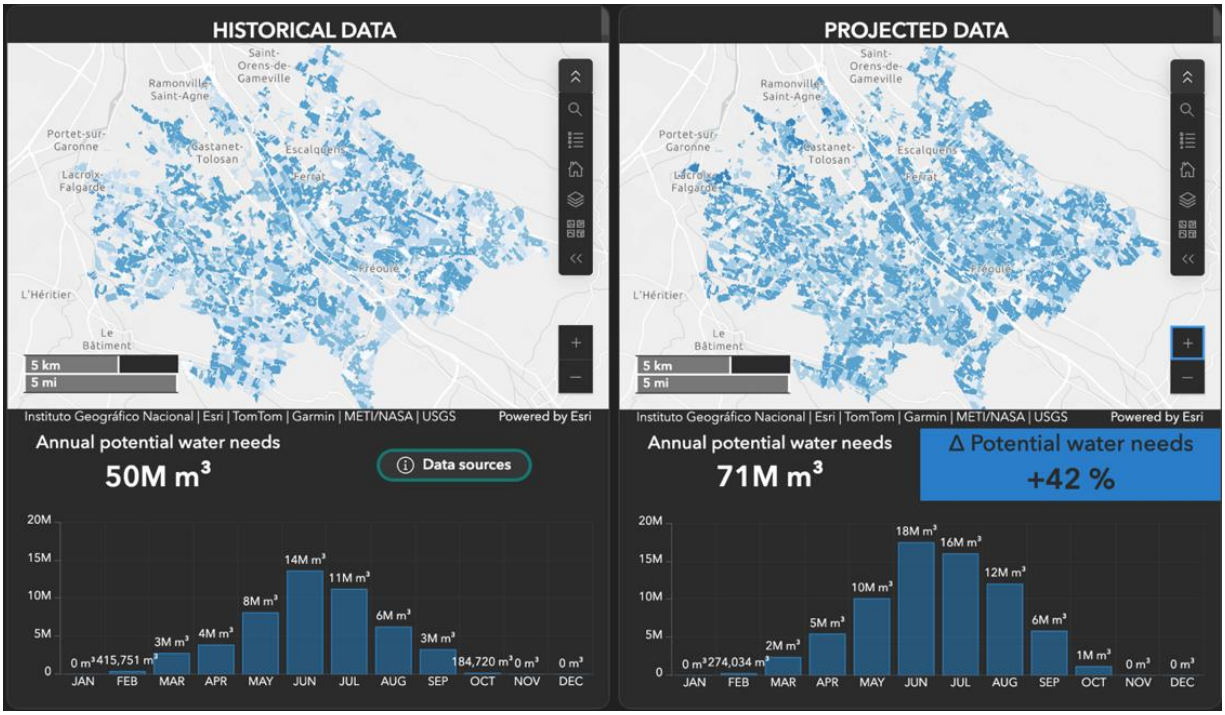
[13] Reference deliverable here on EO and climate data use

[14] See VALORADA Catalogue at https://valorada.github.io/dashboard/#indicator=I1088

See VALORADA Dashboards at https://experience.arcgis.com/experience/e7da888927ed4495816540e48886f826/

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Figures 5 and 6: Examples of resulting visualisations and dashboards generated in VALORADA. (Source: VALORADA D.4.3)



6. Develop specialised communication channels

Relevant personas: ALL

The uptake of climate information depends less on data availability alone than on the effective communication of climate risks in ways that resonate with a city's political priorities, strategic visions, and operational practices. In urban decision-making, climate information is assessed through the interplay of what is politically acceptable (legitimate to stakeholders and policy agendas), technically feasible (implementable with available resources), and strategically desirable (aligned with long-term development trajectories) (Reveco and Mañez, 2026). Climate risks become actionable when communicated in forms that can be meaningfully embedded within these collectively recognised agendas and narratives.

These findings underline that improving the usability of climate information is not primarily a matter of refining information products, but of strengthening the social and institutional processes through which climate risks are interpreted, justified, and acted upon. Effective risk communication requires an understanding of **how municipalities frame their development pathways and institutional identities**, and an explicit engagement with those narratives when presenting climate evidence.

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Communicating climate risk therefore involves not only explaining technical uncertainty or data needs, but articulating how risks relate to local priorities, responsibilities, and decision rationales.

Crucially, climate risk communication must be tailored to different use arenas—operational, strategic, and political—since actors interpret and value information differently depending on the decision context. The same dataset may support operational preparedness, strategic investment, or political legitimisation, but only if framed accordingly. Not all users respond equally to the same evidence; effective communication depends on aligning risk narratives with the specific questions, constraints, and accountability structures of each arena (see table 1 for further reference).

Place-based values further shape how climate risks are communicated and prioritised. **A VALORADA study** (Reveco et al., 2025)[15] reveals how Place-based values play a central role in shaping how climate risks are prioritised. The study shows that risk identification extends beyond biophysical thresholds and is strongly influenced by locally salient values such as sustainability, safety, security, health, identity, cooperation, and trust. These values can coexist but also conflict, particularly where resources are scarce or environmental and economic objectives intersect. Recognising and engaging with these value-laden narratives enhances the legitimacy and relevance of climate information and supports its communication to diverse audiences. For climate-service providers and risk communicators, this highlights the importance of understanding how local stakeholders and municipalities frame their development trajectories and institutional identities, and of aligning climate risk communication and adaptation options with these locally embedded narratives.

3. Progress report (main activities)

Main activities in chronological order	
Selection of relevant deliverables needed for D.3.2.	February 2026
Gathering input from evaluation process (D.2.4.)	March 2026
Drafting and validating personas	March 2026
Drafting version 1 of best practices	March 2026
Distillation workshop on best practices	General Assembly, Brussels April 2026
Drafting final draft	April 2026

[15] Reference published in the frame of VALORADA: Reveco C, Cortekar J, Trozzo C, Vokral M, Kotova L, Kuntsi-Reunanen E, Galluccio G and Korhonen N (2025) Integrating value systems and place-based characteristics in climate risk assessments. Front. Clim. 7:1719404. doi: 10.3389/fclim.2025.1719404

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4. Final remarks

A data-driven adaptation approach is not simply about acquiring “more data” or designing “better models”, but about making data value explicit and actionable in real decision contexts. By offering a structured way to identify, discuss and prioritise datasets according to their contribution to adaptation decisions, the VALORADA approach renders the climate value of local climate, EO and socio-economic data visible—helping administrations move from “we have data somewhere” to “we understand what our data can do for adaptation, and we can justify adaptation choices collectively”. In this way, VALORADA supports generating usable climate data and information that do not merely provide technical orientation, but that can potentially turn everyday municipal data into meaningful climate intelligence for informing planning and resilience.

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Annex 1

Deputy Mayor – Value through legitimacy (WHY data matters)

Operates at the political level where climate impacts are visible through citizen complaints and urban conditions. Balances climate risks against competing political priorities, favouring actions that can be publicly justified. Faces data overload rather than scarcity, with fragmented and inconsistent evidence that is difficult to explain or compare. Values data only when it synthesises complexity into clear priorities, defensible choices, and credible narratives that justify investment and withstand political scrutiny.

Head of Department – Value through argumentation (HOW data is defended)

Works at the intersection of political expectations, technical evidence, and administrative constraints. Translates interconnected climate risks into implementable actions while coordinating across sectors. Uses diverse datasets that often lack comparability or standardisation, requiring significant validation and contextualisation. Values data that is credible, comparable, and communicable, enabling robust arguments that justify prioritisation, investment, and action under institutional and budgetary pressure.

Environmental Officer – Value through specification (WHAT data actually changes)

Operates at the level where adaptation is implemented through projects and daily administrative decisions. Encounters climate impacts directly through maintenance issues, citizen requests, and degraded urban environments. Finds that available data is often too aggregated or strategic to guide concrete action. Values data when it is localised, interpretable, and translated into actionable specifications that directly inform project design, technical requirements, and procurement.

Observatory Curator – Value through credibility and consistency

Manages a multi-theme observatory producing trusted climate and social indicators used across departments. Relies on harmonised metrics, transparent uncertainty, and strict data provenance. Uses climate information daily for monitoring and long-term trend analysis, but adopts new tools only if they align with established standards and can be defended to decision-makers. Values data that ensures comparability, institutional trust, and visibility of vulnerable groups.

Heat Vulnerability Coordinator – Value through rapid access

Coordinates preparedness for heat impacts on vulnerable populations, especially during high-risk periods. Uses climate information in a time-sensitive, operational context to guide outreach and emergency actions. Needs simple, visual, and immediately interpretable outputs that can be shared

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quickly. Values data that integrates environmental and social risk, clearly identifies priority areas, and supports fast, confident decision-making during heat events.

Climate Plan Strategist – Value through alignment and prioritisation

Leads climate and energy planning, ensuring policy coherence and credible communication. Uses climate information during planning cycles, reporting, and funding applications. Requires indicators that align with established frameworks and can withstand public scrutiny. Values data that supports fair prioritisation of areas for intervention, combining short-term preparedness with long-term resilience planning without overstating certainty.

Permitting & Compliance Analyst – Value through legal defensibility

Evaluates permits and compliance in contexts exposed to multiple climate hazards. Relies heavily on geospatial evidence drawn from fragmented institutional sources. Decisions carry legal weight, making transparent provenance, precise spatial attribution, and clear uncertainty essential. Values data that can be confidently used to justify regulatory decisions, conditions, and approvals affecting high-risk and vulnerable areas.

Emergency Preparedness Liaison – Value through coordination

Coordinates emergency preparedness across agencies during climate-related hazards. Depends on timely, coherent hazard information to maintain shared situational awareness. Faces challenges from fragmented platforms and inconsistent data formats. Values stable, easy-to-share visual overviews and practical uncertainty communication that supports rapid coordination and effective response during critical events.

24/7 Crisis Response Manager – Value through immediacy

Manages continuous monitoring of extreme events using real-time data feeds. Makes highly time-sensitive decisions requiring fast, visual dashboards and threshold-based alerts. Prioritises data currency, reliability, and spatial coverage. Values climate information that supports immediate response, short-term infrastructure planning, and long-term investment justification, especially to protect vulnerable areas during crises.

Environmental Regional Planner – Value through strategic coherence

Works on regional planning under conditions of structural climate vulnerability and limited administrative capacity. Uses climate information periodically for planning cycles and strategy updates, relying on clear narratives and transparent uncertainty. Values data that supports near-term preparedness, medium-term programming, and long-term policy steering, ensuring that exposed and resource-constrained communities remain central to resilience planning.

Applied Forestry Analyst – Value through operational flexibility

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Conducts environmental and forestry assessments shaped by climate stressors affecting ecosystems and terrain. Uses climate data intensively during project cycles, relying on GIS and remote sensing. Values tools with clear metadata, exportability, and scenario-based uncertainty that can be explained to clients. Data is useful when it quickly supports credible assessments that influence how risks and interventions are prioritised.

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