

THE CLIMATE RESILIENCE CLUSTER

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Towards local adaptation by unlocking the potential climate value of municipal data

The impacts of climate change vary considerably from one region to another according to different physical, environmental, social, cultural and economic characteristics, resulting in different sensitivities to climate change. Therefore, adaptation measures need to be implemented at the local level to be effective in reducing risks and vulnerabilities.

Adaptation measures need to consider both local and global drivers of resilience to compounded risks and potential cascading effects of climate change. Relevant climate information is a prerequisite for anticipating climate change, reducing uncertainty and assessing risks to biodiversity, people and infrastructure at regional and local scales, as well as for planning adaptation measures, piloting territorial transitions and evaluating the effectiveness of these measures.

However, climate information alone is not sufficient to provide a full understanding of how climate risks are experienced locally and what solutions and strategies need to be developed to manage these risks.

Local governments manage large amounts of non-climate data, such as socio-economic, demographic, land use and earth observation data. Combined with climate data, these datasets are crucial for a comprehensive characterisation of climate risks and vulnerabilities at the local level. In VALORADA, we propose that existing demographic, territorial, economic, social and earth observation **data have 'potential climate value'**. For example, demographic and geospatial data collected by local governments and hospitals - covering aspects such as age distribution, health status, place of residence and income levels - can be instrumental in understanding populations in urban areas affected by extreme heat or flooding. This helps to create detailed, context-specific socio-climatic profiles to inform decision-making processes. However, in order to unlock the potential climate value of these datasets and ensure that they provide decision-useful information to local and regional policy makers, **it is essential to clarify how data climate value is understood, defined and translated into actionable inputs for public sector decision making**. It also requires overcoming barriers such as:

1. Lack of collaboration between different stakeholders across different sectors;
2. Siloed data management practices;
3. Insufficient awareness of how data can contextualise climate risks;
4. Poor data governance practices;
5. Limited administrative capacity.

At VALORADA, we are working to unlock the climate value of socio-economic, demographic, land use and earth observation data. Our approach integrates two main strategies. First, we systematically analyse local socio-climatic risks and identify both the data available, and the data needed to characterise these risks. To support local governments, we are co-developing prototype data processing and manipulation tools that facilitate integrated analyses of climatic and non-climatic data.

The challenge is to promote such analysis using data already available to local governments. To address this, we are exploring different data sources and repositories within our demonstration regions, each containing different data types, formats, and spatial and temporal resolutions.

Second, to fully realise the climate value of socio-economic, demographic, land use and earth observation datasets, value parameters need to be defined. As the value of data is not intrinsic to the dataset, but depends on how users interpret and apply it, measuring its value in supporting adaptation planning and policy can be challenging. To address this, **we are developing a Valorisation and Valuation Framework to provide a conceptual structure for assessing the climate value of municipal data**. This framework aims to highlight the value of data, improve valorisation efforts (transforming data into actionable knowledge), and increase the uptake of data that is essential for reducing climate risks.

Finally, at VALORADA, we have allocated a full year to thoroughly test the usefulness and usability of our tools and methods. We will conduct various activities with our demonstration regions to assess both the barriers and opportunities for adopting our methodologies, thereby evaluating the legacy of our project. By testing our approach across five demonstration sites in Europe, we aim to derive generalizable recommendations that local governments can apply to enhance data governance to better support climate adaptation efforts.



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A Mission activity



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