Towards Consistent and Transferable Climate Planning in Europe

Insights from the LOCALISED project

Gerard Martínez Görbig, Diana Reckien

Policy Brief
September 2025

Key Messages:

- Climate action repositories are extremely useful for municipalities when developing climate plans. **Having a unified framework would enhance transferability, comparability, and learning.**
- **From a practical perspective, not all climate actions have the same role.** While some directly impact climate goals – "measures", others are used to facilitate the implementation of these measures – "instruments". A standardised use of the wording will facilitate planning and implementation processes. All terminology needs to be defined sharply.
- The **Integrated Database of Adaptation and Mitigation Measures in Europe (IDAMME)** provides policymakers and practitioners with a harmonised and practice-oriented evidence base to design coherent climate actions. IDAMME systematically categorises 191 adaptation measures, 188 mitigation measures, 97 measures serving both response types, and 609 associated instruments, along with providing data on corresponding sectors, climate action costs, times for implementation, and synergies and trade-offs between adaptation and mitigation.
- **IDAMME improves effective climate planning and implementation, as well as municipal Monitoring & Evaluation & Learning.** Its reproducible and transparent methodology, based on an easy-to-follow decision tree, enables systematic categorisation, harmonisation, and expansion of the dataset with many more actions and data.

The LOCALISED project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036458.

The LOCALISED project

The Horizon 2020 Project ***LOCALISED*** disaggregated national decarbonisation plans, consistent with Europe's net-zero target, to NUTS3 (regional) and LAU (local) levels across the EU [1]. It provides regions and municipalities with various climate action measure sets optimised for investment costs, emission reduction, climate vulnerability, and social impacts, which are made accessible and customisable through the Climate Action Strategiser web application. Previously, this was possible only with great effort and detail for individual regions.

To achieve the ***LOCALISED*** targets, the project uses a mixture of disaggregated national plans, regional statistics, and a newly developed model approach. For this purpose, LOCALISED utilises a large measure database to calculate an optimal regional response to reach its national decarbonisation pathway. As a secondary goal, the project did not only approach the database as a source for optimisation calculation, but took the opportunity to develop a unique repository that can be used as a tool/catalogue for practitioners, ensuring transferability of data on measures and instruments.

Background

International assessments such as the IPCC AR6 have made clear that climate action to date is insufficient to reach the goals of the Paris Agreement [2]. Climate action needs to be accelerated across all sectors, levels, and regarding all hazards to allow for resilient development and a sustainable future.

To do so, wide-spread and profound climate actions are necessary to allow societies to leave the resource-intensive economic pathways and accelerate change to a sustainable socio-economic future. To do so, a number of databases of adaptation and mitigation actions are available.

However, these databases typically either focus on a particular type of response, sector, or hazard. National governments and international initiatives often talk about different options or actions than those of regional and local databases and information systems. Moreover, tools and guidelines to facilitate the development of climate actions, e.g., as used in international climate networks, again use different typologies, while monitoring initiatives are based on different frameworks again [3].

The definitional mix results in a lost opportunity to improve climate actions' knowledge transfer [4,5]. Moreover, the lack of precision in using the terms shows a lack of rigour and knowledge about how climate action takes place on the ground. We argue that bringing more definitional clarity into the discussions improves our understanding of climate action. Hence, more definitional clarity can improve the implementation of climate action, transferability, comparison, and Monitoring & Evaluation & Learning.

Integrated Database of Adaptation and Mitigation Measures in Europe (IDAMME)

Clear Definitions and Definitional Decision Tree

Developing and comparing climate actions, climate plans and strategies is often more difficult than it should be because different databases and projects use different frameworks and wording. For example, both "Change to Renewable Energy Sources" and "Installing solar panels on municipal buildings" can be listed in a single database. The issue is that, while the first one refers to a broad concept covering several possible measures or instruments, ranging from wind turbines to geothermal energy, and many others, the second one is listed as a single, very specific measure. Such variation makes it challenging to assess comparability across sources or directly integrate actions into city or regional plans.

Similarly, not all actions have the same role from a planning-policy-implementation perspective:

a) Climate actions is used as a general term. Climate actions are those climate-related activities where (adaptation/ mitigation/ implementation) purpose is undefined.

b) Measures are specific actions, addressing mitigation and/or adaptation goals within a given context and sector. Measures have measurable outcomes (indicators) that directly relate to the adaptation and mitigation goal, and potential side-effects [3,6]. Examples are, for instance, installing solar panels or building a park.

c) Instruments are actions by governments or stakeholders that enable, mandate, or speed up the implementation of a certain measure or of a set of measures. Examples are, for instance, subsidies, grants, regulations (laws and guidelines about legal restrictions, usage rights, access rights, building codes, zoning law - see more further below) [3,6]. For instance, countries can provide subsidies or adapt building regulations to install solar panels, and municipalities can provide updated zoning regulations to enable park construction.

d) Options are suites/groups/clusters of related measures or related instruments grouped by sector, indicator, hazard, or target; e.g., resilient energy systems or nature-based solutions.

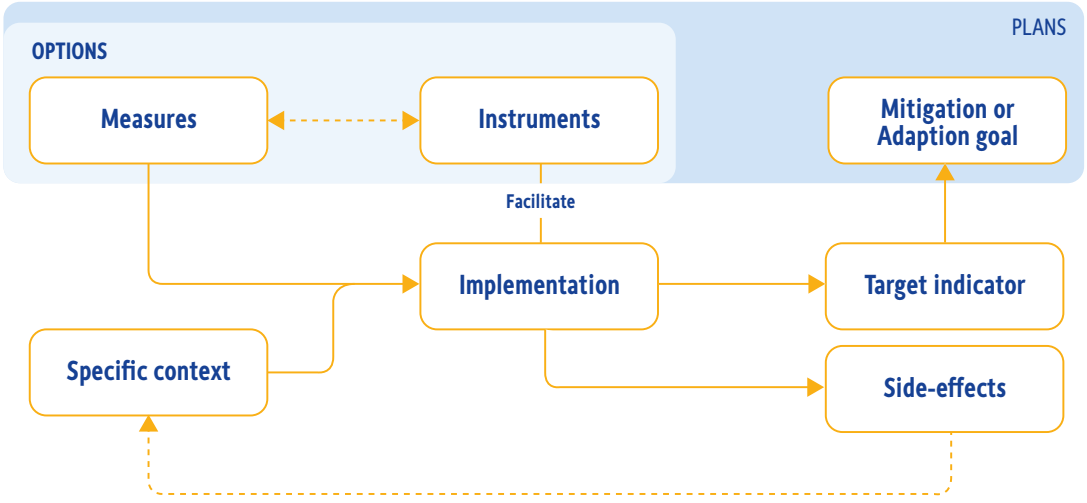

Figure 1. *The role of the different climate action types in the planning and implementation process. Source: Authors.*

IDAMME

Methodology and scientific back-up

To fill the database and ensure the reproducibility of the categorisation, the LOCALISED project developed a decision tree to classify climate actions into measures, instruments, and options, based on five yes/no questions derived from literature-based definitions: (1) *Can someone implement the action?*; (2) *Does the climate action have a mitigation and/or adaptation goal?*; (3) *Considering an option as a suite of measures and instruments, is the action composed of other more specific actions?*; (4) *Does the action directly affect one or more specific assets of the implementation's environment?*; (5) *If a policy, law, or regulation is the action being used to facilitate or promote the implementation of other actions?* These questions determine whether an action is implementable, has a mitigation/adaptation goal, represents a bundle of actions, directly affects assets, or is an instrument facilitating other actions.

The Data

As part of the ***LOCALISED*** project, we collected, categorised, and harmonised measures and instruments found across six different databases into one uniform dataset. The resulting dataset contains 191 adaptation measures, 188 mitigation measures, and 97 measures serving both response types. The range of measures goes from flood protection infrastructure or road drainage infrastructure for adaptation, to solar panels, building retrofit, or behavioural changes for mitigation. Recognising the importance of integrated responses, the database also identifies 97 combined measures that simultaneously address adaptation and mitigation; for instance, urban greening that reduces heat stress while also storing carbon. All measures are categorised by sector and hazard.

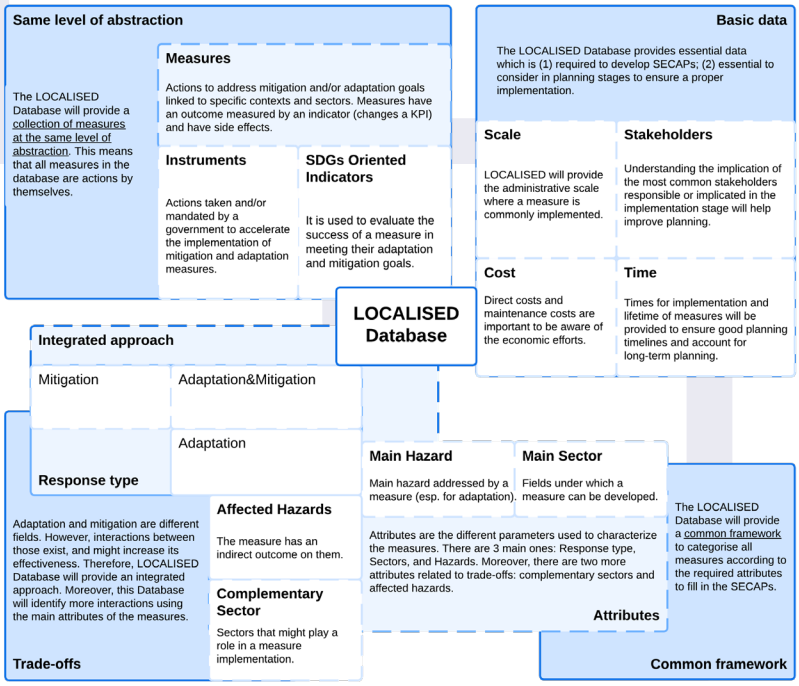

Figure 2: *Conceptualisation of the database and the data made available. Each concept has proven valuable for practitioners and is aligned with the Global Covenant of Mayors Sustainable Energy and Climate Action Plans (SECAPs) Template[1]. Source: Author.*

[1] More information on how to develop a SECAP can be found in: Reporting | EU Covenant of Mayors

However, the database also contains data on measure costs, their time for implementation, lifetime, and potential sectors of synergies or trade-offs, if available [7–11].

Beyond measures, the database documents various instruments, i.e. the mechanisms that enable a measure's implementation. In total, 609 instruments are included in the database, spanning five different types: financial – like subsidies, regulatory – e.g., management plans, legislative – prohibition laws, knowledge – for instance, awareness-raising campaigns, and participatory – like creating strategic partnerships. These instruments highlight how measures are supported in practice. Finally, the database incorporates 93 Sustainable Development Goals (SDGs) -oriented indicators, providing links between climate action and broader societal objectives.

Policy Recommendations

Based on the integrated database of climate measures, instruments, and indicators, we propose the following recommendations to strengthen climate planning and implementation in Europe:

Standardise Climate Action Definitions: Establish a harmonised classification of measures, instruments, and options across European, national and local reporting systems to improve comparability and facilitate knowledge transfer between municipalities.

Strengthen Implementation Support: Encourage the systematic use of enabling instruments together with the measures planned to be implemented, so that every measure is paired with at least one mechanism that facilitates its implementation and increases feasibility and long-term impact.

Foster Integrated Adaptation - Mitigation Planning: Prioritise dual-benefit actions that address both adaptation and mitigation, such as nature-based solutions, to maximise co-benefits and ensure efficient use of resources.

Align Local Action with the SDGs: Link monitoring of local climate actions to the indicators of the Sustainable Development Goals, ensuring that climate planning also delivers on broader social, economic, and environmental objectives.

Promote Realistic Timelines and Costs: Require climate plans to be grounded in evidence-based estimates of costs and implementation timelines, ensuring strategies are both ambitious and achievable.

Facilitate Knowledge Transfer Across Municipalities: Create dedicated platforms and peer-learning initiatives that allow cities and regions to exchange best practices and replicate successful measures and instruments, brought about by using a harmonised terminology, common frameworks, and comparable data.

References:

[1] Shruthi Patil, Noah Pflugradt, Jann M. Weinand, Detlef Stolten, Jürgen Kropp, A systematic review of spatial disaggregation methods for climate action planning, Energy and AI, 2024, 100386, ISSN 2666-5468, https://doi.org/10.1016/j.egyai.2024.100386

[2] IPCC, Summary for Policymakers, in: Clim. Chang. 2022 – Impacts, Adapt. Vulnerability, Cambridge University Press, 2023: pp. 3–34. https://doi.org/10.1017/9781009325844.001.

[3] G. Martínez Görbig, J. Flacke, M. Keller, N. Pflugradt, R. Sliuzas, D. Reckien, Fitting consistent knowledge into the planning process: An integrated database on adaptation and mitigation measures in Europe, Data Br. 55 (2024). https://doi.org/10.1016/j.dib.2024.110580.

[4] F. Gulde, M. Witting, F. Neuber, C. Baatz, M. Garschagen, Frameworks to assess climate change responses—a systematic analysis to enhance frameworks for carbon dioxide removal, Environ. Res. Lett. . 20 (2025). https://doi.org/10.1088/1748-9326/adcad3.

[5] J. Jebeile, J. Roussos, Usability of climate information: Toward a new scientific framework, Wiley Interdiscip. Rev. Clim. Chang. 14 (2023) 1–9. https://doi.org/10.1002/wcc.833.

[6] P. Busch, A. Kendall, C.W. Murphy, S.A. Miller, Literature review on policies to mitigate GHG emissions for cement and concrete, Resour. Conserv. Recycl. 182 (2022) 106278. https://doi.org/10.1016/j.resconrec.2022.106278.

[7] A. Sharifi, A. Shari, Co-benefits and synergies between urban climate change mitigation and adaptation measures: A literature review, Sci. Total Environ. 750 (2021). https://doi.org/10.1016/j.scitotenv.2020.141642.

[8] M. Landauer, S. Juhola, M. Söderholm, Inter-relationships between adaptation and mitigation: a systematic literature review, Clim. Change. 131 (2015) 505–517. https://doi.org/10.1007/s10584-015-1395-1.

[9] S. Grafakos, G. Viero, D. Reckien, K. Trigg, V. Viguie, A. Sudmant, C. Graves, A. Foley, O. Heidrich, J.M. Mirailles, J. Carter, L.H. Chang, C. Nador, M. Liseri, L. Chelleri, H. Orru, K. Orru, R. Aelenei, A. Bilska, B. Pfeiffer, Q. Lepetit, J.M. Church, M. Landauer, A. Gouldson, R. Dawson, Integration of mitigation and adaptation in urban climate change action plans in Europe: A systematic assessment, Renew. Sustain. Energy Rev. 121 (2020) 109623. https://doi.org/10.1016/j.rser.2019.109623.

[10] P.A. Williams, N.P. Simpson, E. Totin, M.A. North, C.H. Trisos, Feasibility assessment of climate change adaptation options across Africa: an evidence-based review, Environ. Res. Lett. 16 (2021) 073004. https://doi.org/10.1088/1748-9326/ac092d.

[11] D. Reckien, A. Buzasi, M. Olazabal, N.-A. Spyridaki, P. Eckersley, S.G. Simoes, M. Salvia, F. Pietrapertosa, P. Fokaides, S.M. Goonesekera, L. Tardieu, M. V. Balzan, C.L. de Boer, S. De Gregorio Hurtado, E. Feliu, A. Flamos, A. Foley, D. Geneletti, S. Grafakos, O. Heidrich, B. Ioannou, A. Krook-Riekkola, M. Matosovic, H. Orru, K. Orru, I. Paspaldzhiev, K. Rižnar, M. Smigaj, M. Szalmáné Csete, V. Viguié, A. Wejs, Quality of urban climate adaptation plans over time, Npj Urban Sustain. 3 (2023) 4–6. https://doi.org/10.1038/s42949-023-00085-1.

Contact:

Gerard Martínez Görbig, Faculty of Geo-Information Science and Earth Observation – University of Twente
Enschede 7522 NH, the Netherlands
g.martinezgorbig@utwente.nl

Diana Reckien, Faculty of Geo-Information Science and Earth Observation – University of Twente
Enschede 7522 NH, the Netherlands
d.reckien@utwente.nl

LOCALISED partners:

Acknowledgements:

LOCALISED has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036458. The final editing and design was realised by T6 Ecosystems S.r.l.

Further information on LOCALISED:
Website: www.localised-project.eu
X: @LOCALISED_EU
BluSkye: @localisedeu.bsky.social
LinkedIn: @localisedproject
YouTube: @localised-project