The ARCH Resilience Assessment Dashboard

An Online Scorecard Approach to Assess the Resilience of Historic Areas

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Intro

The growing recognition of resilience's significance in various sectors, such as disaster risk management, climate change adaptation, and urban planning, has led to an increasing demand for effective tools and frameworks to measure and evaluate resilience. In recent years, scorecard approaches have gained prominence for assessing resilience. These approaches offer a structured and quantitative method for evaluating resilience, enabling the monitoring of progress in building resilience in different systems or communities. Given the complexity and interconnectedness of modern systems, a comprehensive assessment of resilience is essential, considering multiple dimensions and factors. Scorecards provide a holistic perspective by incorporating various indicators and metrics, offering a more comprehensive understanding of resilience, including its strengths and weaknesses. Moreover, scorecard approaches facilitate decision-making and planning by providing clear and actionable information, allowing stakeholders to identify areas for improvement, prioritize interventions, and track progress over time. Until recently, there was no scorecard approach specifically designed for assessing the resilience of historic areas. To address this gap, the ARCH project developed the ARCH Resilience Assessment Dashboard (RAD). The RAD offers an online scorecard, that enables heritage managers, urban planners, disaster risk managers, and other stakeholders to collaboratively self-assess the resilience of their historic area.

ARCH RAD – the tool

The RAD is an openly accessible online tool for the collaborative assessment of the resilience of historic areas. **Link:** http://rad.savingculturalheritage.eu/

The question catalogue

The core of the RAD are 221 questions, categorized into ten overarching so called Essentials - an adapted version of the Ten Essential for Making Cities Resilient [1] (see Fig. 1). The questions were based on the UNDRR Disaster Resilience Scorecards for cities [2] and buildings [3] and were iteratively developed in collaboration with ARCH project partners holding different expertise in climate change adaptation, disaster risk management, heritage management, social justice and inclusion and local case study knowledge. The tool also offers the option of reducing the number of questions if a less detailed, quicker assessment is required or one only wants to focus on assessing specific essentials.

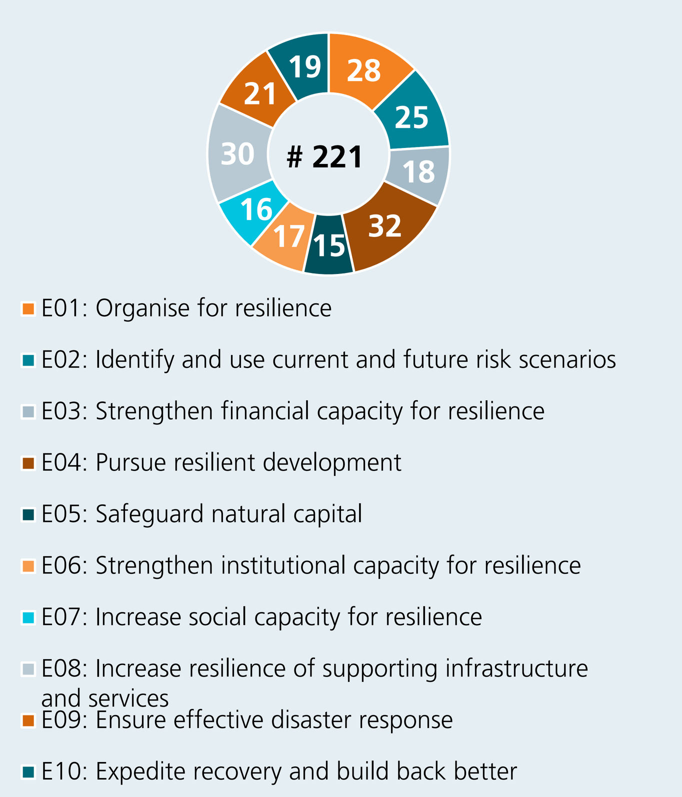


Fig. 1: Overview RAD Essentials and respective number of questions

The answering process

For each question, pre-defined answers on a 6-point Likert scale are provided that can be chosen as an answer. In addition, each question is accompanied by explanatory information that includes the identification of potential stakeholders possessing the necessary information to respond to the question. In addition, users of the ARCH RAD can write comments in the tool, to make notes about their indicated answers or verify their answers, so other users that work collaboratively on the resilience assessment can view their comments. Users can request a so called "historic area workspace", where they are linked to other users and where they can store background information on their historic area as well as conduct the collaborative assessments.

The scoring

For each question, either a score from zero to five can be achieved, or the question can be excluded from the scoring. The RAD then provides an overall score, which indicates the performance in the different aspects relevant to building resilience. The score is subdivided into the ten Essentials and their Sub-Essentials, but can also be displayed in other categories:

- Three disaster risk management phases and sub-phases;
- Four topics (disaster risk management, climate change adaptation, heritage management, social justice);
- Six resilience dimensions (built environment, natural environment, economy, policy, society, and culture).

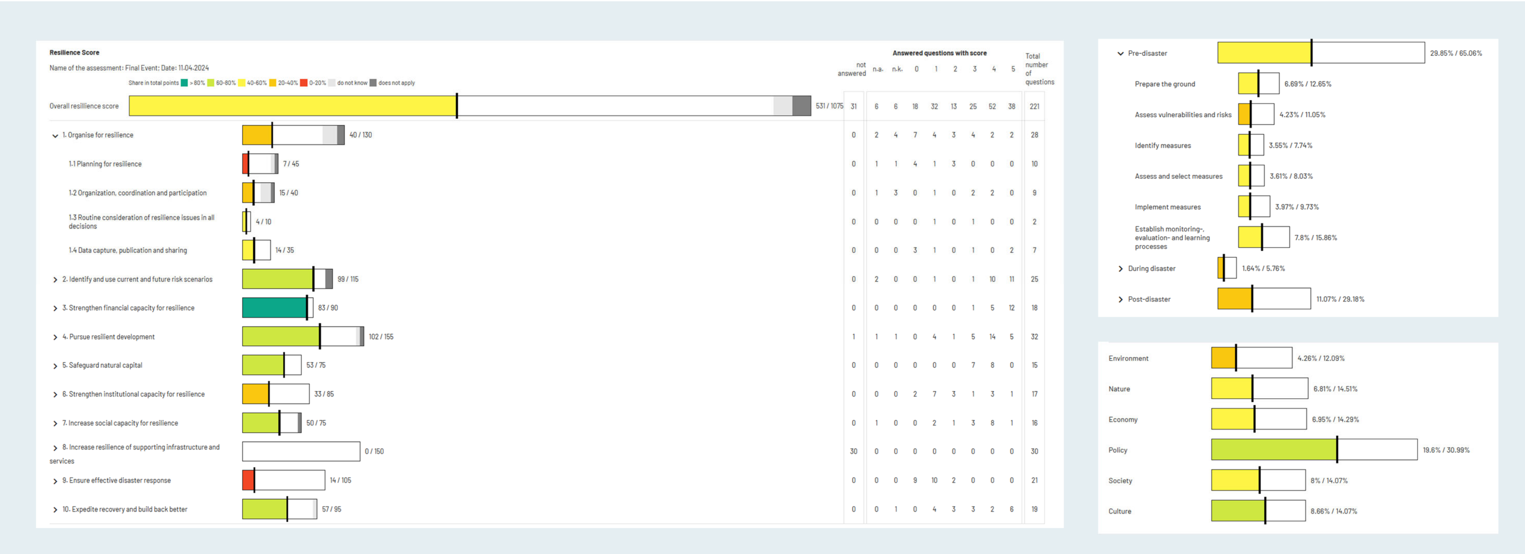


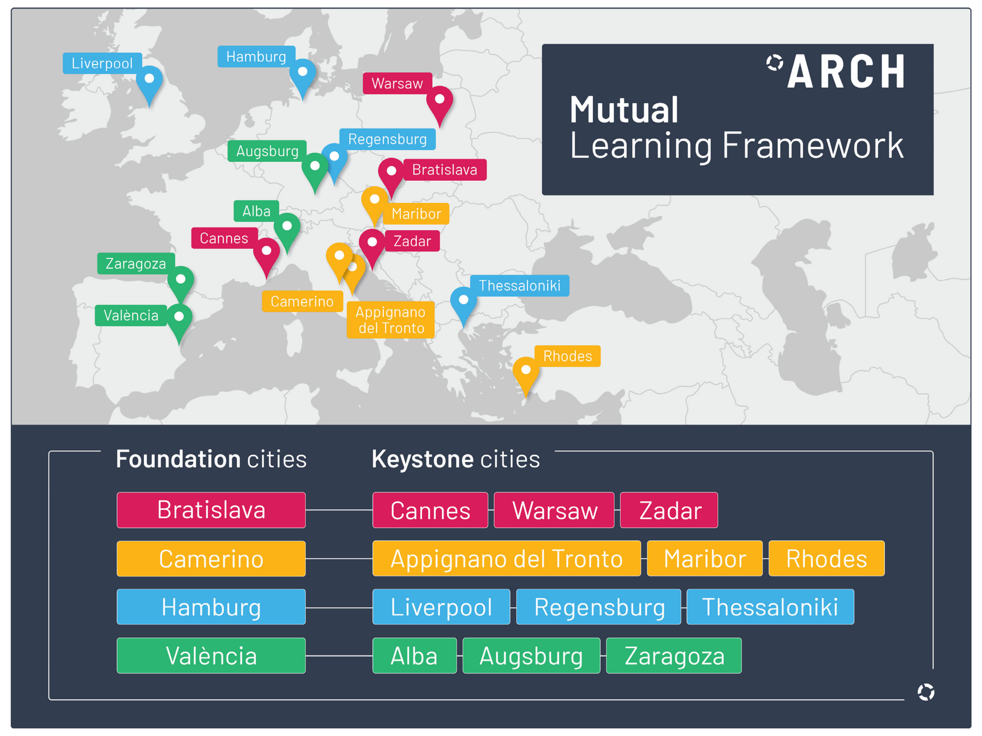
Fig. 2: View of example resilience score: Left side: Ten Essentials view and Sub-Essentials of Essential 1 and table with detailed information on answered questions; right side, upper part: disaster risk management phases and sub-phases of „pre-disaster" phase; right side lower part: resilience dimension phases

Evaluating the results and identifying resilience measures

The RAD provides users with a score, which indicates the performance in the different aspects relevant to building resilience. By analyzing the results, users can identify weak points in the resilience of the historic area. Based on these results, users can formulate a list of actions for increasing the resilience. The tool offers a separate page, where users can note these actions and additional information. To support this process, the RAD is linked to the ARCH Resilience Measures Inventory [3], an online database of resilience measures compatible with the Essentials of the RAD. By conducting several resilience assessments, the RAD can also be used to monitor resilience over time.

Results of co-creation activities and trial applications

In ARCH, the RAD was co-created and applied together within four case studies and introduced to twelve additional cities. The RAD is available English and the respective local languages of the case studies. During the co-creation process, the case studies tested early prototypes of the RAD and provided feedback on the concept of the tool, the workflow as well as the whole questionnaire and additional content. Based on the feedback, questions were adapted, and the UI design and functionalities were updated.



Finally, all case studies applied the RAD on their own. They chose Essentials that are most relevant to them and consulted additional stakeholders, if necessary. All city partners stated that the assessment is useful and most stated, that the final scoring reflects an accurate state of the resilience in their respective historic area. One city partner pointed out, the score might 'not reflect the actual strengths of the community'. This could be due to a certain focus in the selection of Essentials for their assessment. Answering the whole questionnaire could lead to a different result. It was also identified, that the scope of the RAD provides a good focus on historic areas and therefore results can not be compared with assessment results archived with the UNDRR Disaster Resilience Scorecard for cities [2].

More detailed descriptions of the tool development, the underlying resilience framework and the co-creation and application of the tool can be found in the official ARCH project deliverables D7.3, D7.6 and D3.6.

Outlook

RescueME started in February 2023 and ends in July 2026. Website: https://resilientculturallandscapes.eu/ In RescueME, the questionnaire of the ARCH RAD is used as basis for a resilience assessment in five case studies.

References

[1] UNDRR, "The TEN Essentials for Making Cities Resilient," 2017. [Online]. Available: https://mcr2030.undrr.org/ten-essentials-making-cities-resilient

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