Title of Traditional Paper Presentation:

How the quality of urban adaptation plans in Europe has evolved over time: indication of progress? Judgement by way of an assessment framework

(Abstract: Maximum 800 words, excluding references)

Since the Paris Agreement, there has been an increasing focus on assessing the progress of climate change adaptation across multiple sectors and regions (Lesnikowski et al., 2017; Tompkins et al., 2018; Berrang-Ford et al., 2019). An important question is what 'progress' means and how it could be assessed, at the international, national, and local levels.

Hitherto, there is a wealth of information on climate responses at sub-national levels (Hale et al., 2021). Cities and urban areas are increasingly recognized as important actors in climate response (Sanchez Rodriguez et al., 2018). In urban adaptation studies, most assessments focus on tracking and analysing policy outputs, such as approved adaptation plans (Castan Broto et al., 2020; Dodman et al., 2022). Analysing plans cannot tell the whole story in terms of actual progress in the collective reduction (or redistribution) of climate risks. However, it can provide information about the quality and relevance of adaptation processes and actions, and help to assess the likelihood that cities' advance adaptation goals by reducing risks and increasing resilience equitably (Olazabal et al., 2019; Woodruff & Stults, 2016). Scholars have argued that 'the best method to ensuring robust adaptation is to ensure rigorous adaptation planning processes' (Preston et al., 2011).

Indeed, whether local governments are learning and improving in their abilities to plan for adaptation over time is an important and under-explored question, especially because of the lack of policy data repositories and methods to compare adaptation policy contents. Based on the assumption that processes of collective learning – through parallel and sequential peer-to-peer transfer of knowledge, capacity building and transnational networks and other types of science-policy collaborations – enhance urban adaptation planning, this paper examines whether the quality of these plans has actually improved. The paper has been accepted for publication in Nature Urban Sustainability, Reckien et al 2023.

Objectives

We test whether urban adaptation plan quality in Europe has increased over time. To do so we create an index of adaptation plan quality—the 'ADAptation plan Quality Assessment' index (shortly named ADAQA) and identify strengths and weaknesses of urban adaptation planning processes in European cities.

Methodology

We create the ADAQA index based on six well-established principles of plan quality: 1. fact base; 2. goals; 3. measures; 4. implementation; 5. monitoring & evaluation of measures; and 6. societal participation. Within ADAQA we calculate three sub-indices to allow an ad-hoc sensitivity analysis of the results obtained from the application of this index. The first two indices assess depth and detail (ADAQA-1), and breadth and diversity, with a focus on sectoral measures (ADAQA-2). The third index represents our expert judgment of the most relevant topics (ADAQA-3) stressing equal importance of

adaptation principles and the need for consistency between impacts/ risks/ vulnerabilities, adaptation measures, monitoring and evaluation, and participation (Fig. 1).
We calculate these indices for a representative sample of 327 European cities (former EU-28; Eurostat Urban Audit database); 167 (51%) of which have an adaptation plan dating from 2005 to 2020.

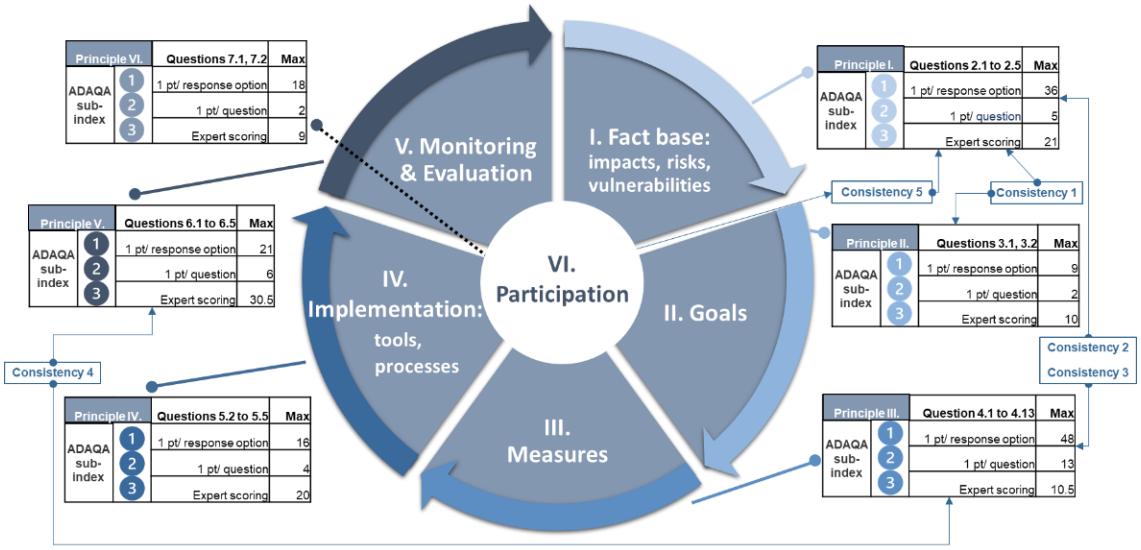

Fig. 1: ADAQA-3 index construction rationale

Findings
Plan quality significantly improved over time, on an annual basis as well as from older, medium-old to recent plans. Assuming linearity, plan quality increased by about 1.3 points per year from 2005 to 2020 (for ADAQA-3). The average score of ADAQA-3, is 34 compared to a maximum score of 100 (with a standard deviation of SD=13.6), meaning that plans on average reach about 1/3 of the total quality score. Plans reach on average 1/5 of maximum performance in terms of depth & detailedness (ADAQA-1) and about 1/2 in breadth and diversity (ADAQA-2).

Plans are best in detailing adaptation measures (51 % of the maximum score), followed by naming adaptation goals (50 %) and implementation tools & processes (46 %). They report much less on public participation during plan creation (17 %) and monitoring and evaluation (20 %).

One of the most useful applications of ADAQA-3 is the analysis of consistency, i.e. alignment/coherence between identified climate risks and measures planned or monitored. Consistency in ADAQA-3 improved slightly for almost all principles over time, except for the impacts/ risks on vulnerable groups and respective adaptation measures. That means over time, plans got worse in aligning adaptation measures with climate impacts on vulnerable groups. Consistency between climate impacts/ risks and adaptation measures for vulnerable groups is now lower than the alignment between vulnerable sectors/ industries and adaptation measures. Moreover, vulnerable groups are rarely involved in participation processes and the vast majority of plans make no mention of monitoring & evaluation to address their specific needs.

Significance of the work for policy and practice
In the absence of comparable, globally available indicators of adaptation and its outcomes, a plan quality evaluation framework is a valuable proxy indicator—assuming good plans are necessary, though not sufficient, for successful advances in adaptation implementation. Adaptation plans need to identify and set out how to coherently address specific climate threats. In this study, we identify critical planning components and use them to evaluate the quality and progress of urban adaptation planning in European cities.

We argue that quality assessments of climate adaptation plans and policies should be included in the portfolio of adaptation evaluations regarding success and effectiveness, such as the Global Stocktake of the Paris Agreement in 2023 and related adaptation monitoring and tracking procedures. The ADAQA index is an example of how a methodological approach to large-scale adaptation plan quality assessment could unfold.

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