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Laboratório Nacional de Energia e Geologia, I. P.

COMISSÃO EUROPEIA

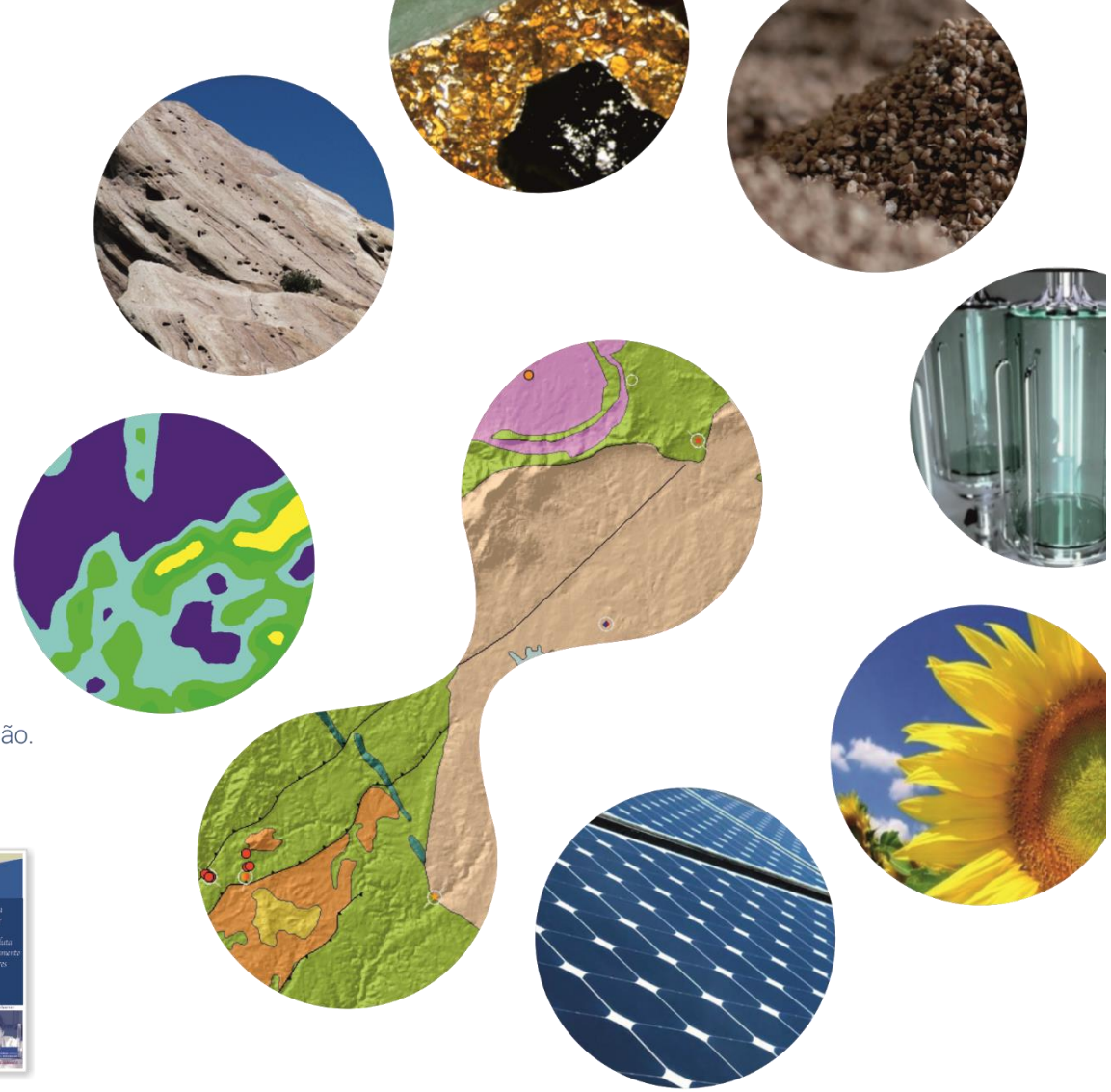
Laboratório Nacional de Energia e Geologia

RH de Excelência em Investigação

HR EXCELLENCE IN RESEARCH

Implementação dos Princípios da Carta Europeia do Investigador e do Código de Conduta para o Recrutamento de Investigadores.

Em 2010, o Laboratório Nacional de Energia e Geologia aderiu aos princípios da Carta Europeia do Investigador e Código de Conduta para o Recrutamento de Investigadores, em 2013 recebeu o Logo de Excelência em RH de Investigação.



Carta e Código do Investigador Europeu

Investigador Europeu

Profissionais que trabalham na conceção ou criação de novos conhecimentos, produtos, processos, métodos, sistemas e na gestão dos projetos.

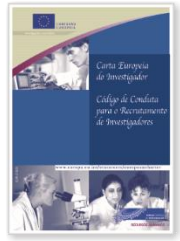
Definição de investigador do Manual de Frascati.

Investigação

A profissão de investigador abrange todas as pessoas envolvidas em I&D em qualquer fase da carreira e independentemente da categoria profissional.

Empregadores e Financiadores

- Condições de trabalho
- Estabilidade de emprego
- Financiamento e salários
- Desenvolvimento de carreira



Princípios Gerais do Investigador

- Liberdade de investigação
- Responsabilidade profissional
- Princípios éticos
- Deveres de orientação e gestão

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AMBIENTE E AÇÃO CLIMÁTICA

OS PLANOS DE ADAPTAÇÃO DAS CIDADES EUROPEIAS ESTÃO A FICAR MELHORES COM O PASSAR DO TEMPO?

Webinar / Palestra LNEG ONLINE

19 abril 2023

Sofia G. Simões

LNEG – Laboratório Nacional de Energia e Geologia

UER – Unidade de Economia de Recursos

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O webinar vai ser gravado e a apresentação será disponibilizada a quem solicitar por e-mail

Por favor desligar os microfones

Colocar perguntas via chat / bate-papo do Zoom ou oralmente (após conclusão da apresentação)

A apresentação é feita em Português (mas alguns slides estão em inglês)

OS PLANOS DE ADAPTAÇÃO DAS CIDADES EUROPEIAS ESTÃO A FICAR MELHORES COM O PASSAR DO TEMPO?

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REPÚBLICA PORTUGUESA
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LNEG's RESOURCE ECONOMICS UNITS (UER)

The unit is **crosscutting the Energy and Geology areas** of LNEG.

Develops I&D&D activities and decision-support for both public policy-makers and the private sector on **energy and geology resource economics, towards carbon neutrality and sustainable resource exploitation and use**

UER applies techno-economic & social analytical approaches in the following I&D domains:

1

Sustainable energy systems (decarbonization, systems modelling, climate change impacts)

2

Resource use for energy production and consumption

3

Classification of geological deposits in a global economy

4

Economic and social impact of the energy transition

5

Circular economy, including design of products, services, systems and business models

6

Circular and sustainable public procurement

https://www.lneg.pt/unit/unidade-de-economia-de-recursos/

LNEG

Desde o Acordo de Paris, tem havido um foco crescente na avaliação do progresso da adaptação às alterações climáticas em vários setores e regiões.

Uma questão importante é o que significa “progresso” e como ele pode ser avaliado, aos níveis internacional mas também nacional e local. O papel das cidades e áreas urbanas é cada vez mais reconhecido como vital para lidar com os desafios das alterações climáticas.

O número de planos locais de adaptação tem vindo a aumentar nas últimas décadas. Neste webinar exploramos até que ponto os governos locais estão a aprender e a melhorar a sua capacidade para planear a adaptação ao longo do tempo.

Foi analisada a qualidade dos planos de adaptação de 167 cidades europeias publicados entre 2005 e 2020. A análise foca seis princípios bem estabelecidos que determinam a qualidade deste tipo de planos: 1. articulação com impactos climáticos previstos; 2. objetivos; 3. medidas; 4. implementação; 5. monitorização e avaliação das medidas; e 6. participação social.

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REPÚBLICA PORTUGUESA
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Agenda

- **As cidades e a ação climática**
- **Mitigação versus adaptação**
- **Panorama Europeu**
- **Metodologia estudo análise da evolução da qualidade dos planos de adaptação**
- **Principais resultados**

As cidades e ação climática

*"As **áreas urbanas alojam mais de 50% da população mundial** e são onde se localizam a maior parte dos seus ativos e atividade económica.*
*Até 2050, a população nas áreas urbanas deve aumentar entre 2,5 a 3 mil milhões o que corresponderá a **2/3 da população mundial**.*

*Nas próximas três décadas, quase **setenta milhões de residentes irão relocalizar-se em áreas urbanas** todos os anos. A maioria desses novos residentes morará em **cidades pequenas e de média dimensão** nos países em desenvolvimento."*

(re)construção massiva de infra-estruturas urbanas e edifícios

A expansão urbana será um determinante chave das emissões em vários setores.

***crescimento pode ser catalisador para a adopção de novas tecnologias, edifícios e infra-estruturas com baixas ou quase zero emissões** (e adaptados às futuras alteração climáticas)*

A ação atempada é fundamental e custo-eficaz, pois o longa vida útil de infraestrutura e edifícios poderá torná-los propensas ao "lock-in" de de energia e emissões cuja alteração posterior será posteriormente mais cara.

https://www.c40.org/researches/summary-for-urban-policymakers-what-the-ipcc-special-report-on-global-warming-of-1-5-c-means-for-cities

Cidades …rumo a 2050 com aumento de temperatura de 1,5 °C

*Taxa anual de reabilitação energética de 5% nos **edifícios** existentes em países desenvolvidos e todos os novos edifícios construídos com NZEB (near zero energy buildings) e sem virem a usar combustíveis fósseis a partir de 2020*

*Nos **transportes**, os combustíveis de baixo carbono (eletricidade, hidrogénio e biocombustíveis) serão 12% do consumo de energia em 2030 e 55% em 2050. O planeamento urbano diminui a necessidade de transporte intensivo em carbono a longo prazo (cidades compactas e pedestres).*

*Recorrer a **simbioses urbanas e industriais** com trocas de água, calor, etc.*

https://www.c40.org/researches/summary-for-urban-policymakers-what-the-ipcc-special-report-on-global-warming-of-1-5-c-means-for-cities

<80 - 90%

Emissões dos edifícios

As emissões dos edifícios em 2050 terão que ser 80-90% mais baixas do que atualmente.

<30%

Uso de energia nos transportes

Será precisa uma redução de 30% do consumo de energia final no setor dos transportes.

>70-85%

Energia renovável

Em 2050 os recursos energéticos renováveis (RES) fornecem 70-85% da eletricidade

Ação climática local: adaptação *vs* mitigação

Mitigação

das alterações climáticas envolve ações que reduzem a taxa de ocorrência das alterações climáticas. É alcançada através da limitação ou prevenção das emissões de gases de efeito estufa e do aumento das atividades que removem esses gases da atmosfera.

IPCC (Painel Intergovernamental para as Alterações Climáticas) Grupo de Trabalho III. Mitigação de Alterações Climáticas

Adaptação

Ajustamento nos sistemas naturais ou humanos como resposta a estímulos climáticos verificados ou esperados, que moderam danos ou exploram oportunidades benéficas.

lcp-initiative.eu

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https://www.lcp-initiative.eu/

EURO LCP Initiative
Local Climate Plans

search

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- Geographical coverage

The EURO-LCP Initiative

Assessing the State of Local Climate Planning in European Cities:
Updates of Local Climate Plans conducted by a scholarly team of around 40 researchers across 28 European countries on as much as 885 European cities

40	28	885
Researchers	European countries	European cities

How are we preparing for climate change in European cities?

LNEG

Panorama de ação climática nas cidades na Europa

885 cidades da amostra "core" do Urban Audit (UA) através da UE-28

As cidades da UA são uma **amostra equilibrada e regionalmente representativa, i.e.**

- geograficamente dispersas e
- **variando em tamanho**, com representatividade também de **cidades mais pequenas (<50 000 habitantes)**.

ELSEVIER

Journal of Cleaner Production

Volume 191, 1 August 2018, Pages 207-219

How are cities planning to respond to climate change? Assessment of local climate plans from 885 cities in the EU-28

Diana Reckien [a], Monica Salvia [b], Oliver Heidrich [c], Jon Marco Church [d], Filomena Pietrapertosa [b], Sonia De Gregorio-Hurtado [e], Valentina D'Alonzo [f, g], Aoife Foley [h], Sofia G. Simoes [i], Eliška Krkoška Lorencová [j], Hans Orru [k, l], Kati Orru [m], Anja Wejs [n, o], Johannes Flacke [a], Marta Olazabal [p], Davide Geneletti [f], Efrén Feliu [q], Sergiu Vasilie [r] ... Richard Dawson [c]

Show more

https://doi.org/10.1016/j.jclepro.2018.03.220

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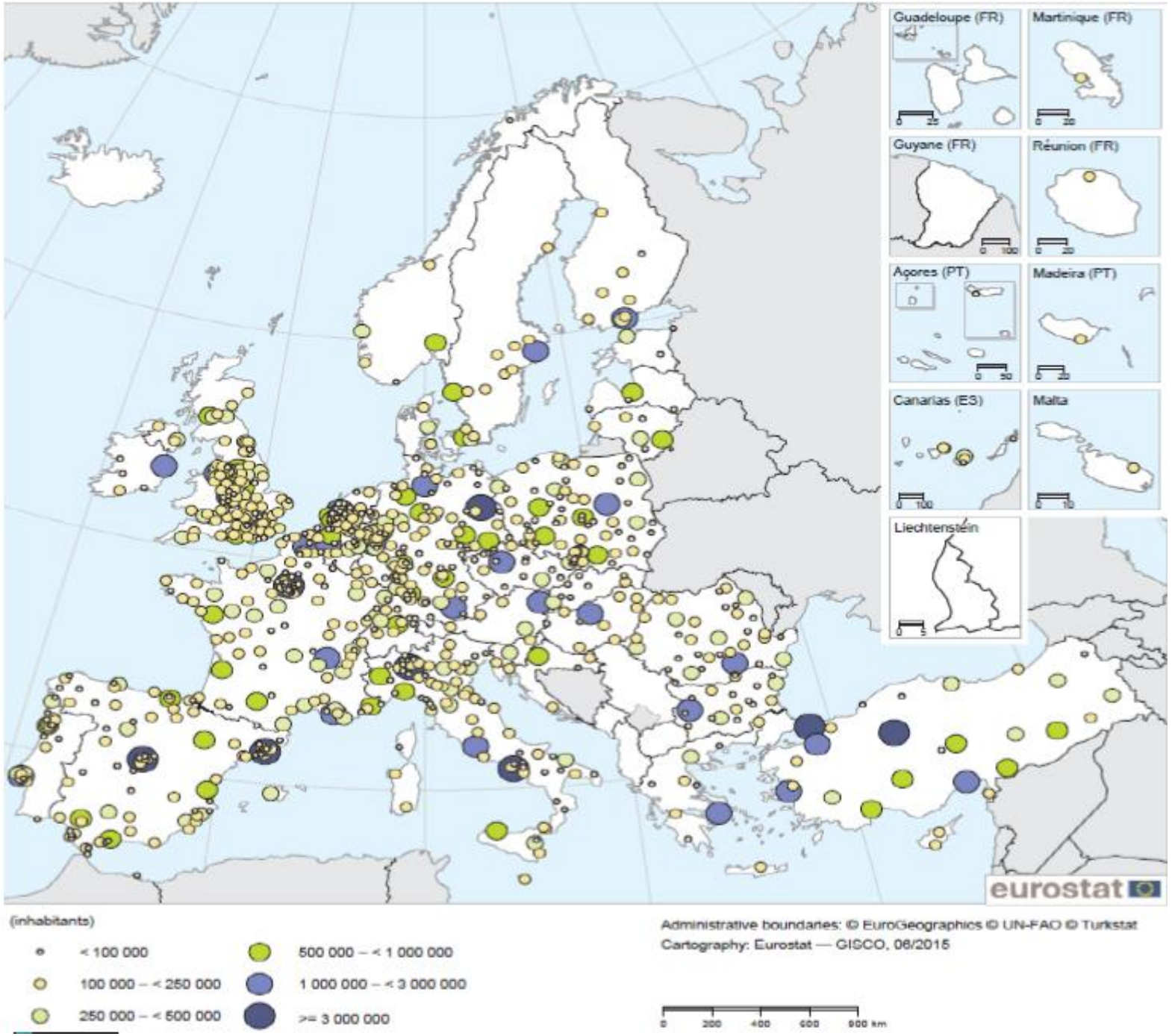
Highlights

- Analysis of different types of Local Climate Plans of 885 Urban Audit cities of EU-28.

Fonte: Reckien et al., 2018

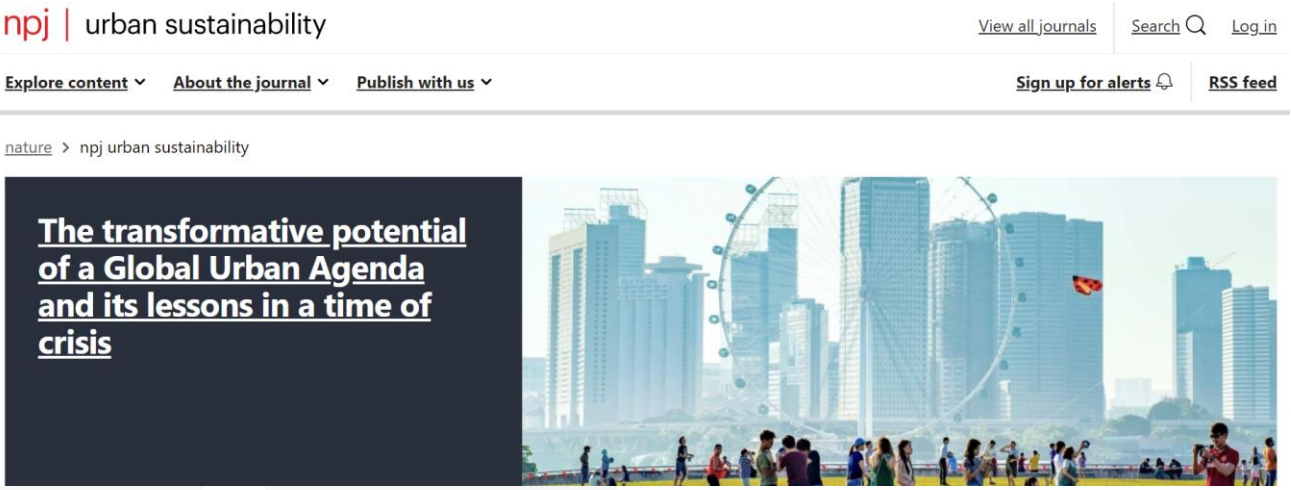
Panorama Europeu

Das 885 cidades na amostra
- 586 cidades planos de **mitigação** (66.2%)
- 226 com planos de **adaptação** (25.5%)
- 145 planos de **adaptação & mitigação integrados** (16.4%)
- 288 sem qualquer plano (32.5%)



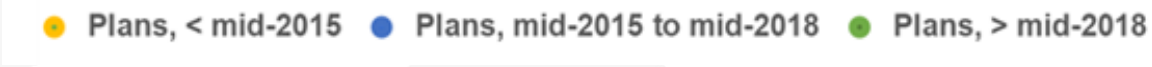
Mapa da localização das cidades na amostra **Eurostat Urban Audit** , com a população residente à data de 1 janeiro 2012 (Eurostat, 2016).

Fonte: Reckien et al., 2018



Reckien, D., Buzasi, A., Olazabal, M., Spyridaki, N-A., Eckersley, P., Simoes, S.G., et al. **Quality of urban climate adaptation plans over time**. npj Urban Sustain 3, 13 (2023). https://doi.org/10.1038/s42949-023-00085-1

Amostra 327 cidades com 167 planos publicados entre 2005 e 2020 (35 investigadores)



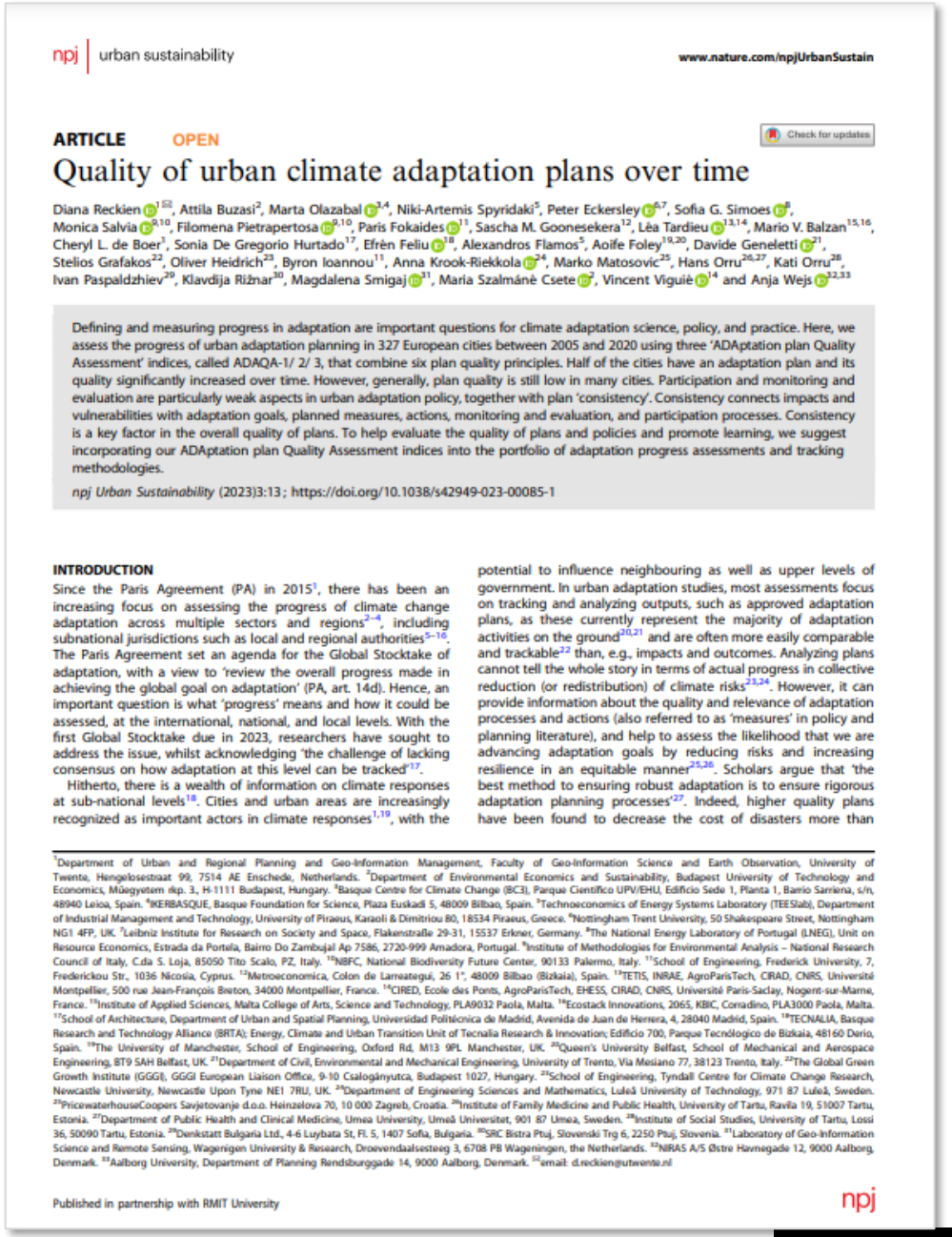
Our recent paper in Nature Urban Sustainability: https://doi.org/10.1038/s42949-023-00085-1

EM PORTUGAL – NESTE ESTUDO

1. Lisboa
2. Funchal
3. Porto
4. Braga
5. Coimbra
6. Setúbal
7. Ponta Delgada
8. Aveiro
9. Faro

Deve ter-se em conta que existem (e já existiam à altura) bastante mais cidades portuguesas com planos de adaptação (ex. Amarante, Barreiro, Bragança, Cascais, Castelo Branco, Castelo de Vide, Coruche, Évora, Ferreira do Alentejo, Figueira da Foz, Guimarães, Ílhavo, Leiria, Loulé, Montalegre, Odemira, São João da Pesqueira, Seia, Tomar, Tondela, Torres Vedras, Viana do Castelo e Vila Franca do Campo).

Estas não foram consideradas no estudo porque tivemos que recorrer à amostra representativa de cidades de cada país participante - definida pelo EUROSTAT (na altura chamava-se Urban Audit e agora chama-se "Cities"). Esta amostra é **representativa da variedade das cidades na Europa, mas não é necessariamente representativa de todas cidades com planos de adaptação em Portugal.**



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ARTICLE OPEN

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Quality of urban climate adaptation plans over time

Diana Reckien[1✉], Attila Buzasi[2], Marta Olazabal[3,4], Niki-Artemis Spyridaki[5], Peter Eckersley[6,7], Sofia G. Simoes[8], Monica Salvia[9,10], Filomena Pietrapertosa[9,10], Paris Fokaides[11], Sascha M. Goonesekera[12], Lèa Tardieu[13,14], Mario V. Balzan[15,16], Cheryl L. de Boer[3], Sonia De Gregorio Hurtado[17], Efrèn Feliu[18], Alexandros Flamos[5], Aoife Foley[19,20], Davide Geneletti[21], Stelios Grafakos[22], Oliver Heidrich[23], Byron Ioannou[11], Anna Krook-Riekkola[24], Marko Matosovic[25], Hans Orru[26,27], Kati Orru[28], Ivan Paspaldzhiev[29], Klavdija Rižnar[30], Magdalena Smigaj[31], Maria Szalmánè Csete[2], Vincent Viguié[14] and Anja Wejs[32,33]

Defining and measuring progress in adaptation are important questions for climate adaptation science, policy, and practice. Here, we assess the progress of urban adaptation planning in 327 European cities between 2005 and 2020 using three 'ADAptation plan Quality Assessment' indices, called ADAQA-1/ 2/ 3, that combine six plan quality principles. Half of the cities have an adaptation plan and its quality significantly increased over time. However, generally, plan quality is still low in many cities. Participation and monitoring and evaluation are particularly weak aspects in urban adaptation policy, together with plan 'consistency'. Consistency connects impacts and vulnerabilities with adaptation goals, planned measures, actions, monitoring and evaluation, and participation processes. Consistency is a key factor in the overall quality of plans. To help evaluate the quality of plans and policies and promote learning, we suggest incorporating our ADAptation plan Quality Assessment indices into the portfolio of adaptation progress assessments and tracking methodologies.

npj Urban Sustainability (2023)3:13 ; https://doi.org/10.1038/s42949-023-00085-1

INTRODUCTION

Since the Paris Agreement (PA) in 2015[1], there has been an increasing focus on assessing the progress of climate change adaptation across multiple sectors and regions[2–4], including subnational jurisdictions such as local and regional authorities[5–16]. The Paris Agreement set an agenda for the Global Stocktake of adaptation, with a view to 'review the overall progress made in achieving the global goal on adaptation' (PA, art. 14d). Hence, an important question is what 'progress' means and how it could be assessed, at the international, national, and local levels. With the first Global Stocktake due in 2023, researchers have sought to address the issue, whilst acknowledging 'the challenge of lacking consensus on how adaptation at this level can be tracked'[17].

Hitherto, there is a wealth of information on climate responses at sub-national levels[18]. Cities and urban areas are increasingly recognized as important actors in climate responses[1,19], with the potential to influence neighbouring as well as upper levels of government. In urban adaptation studies, most assessments focus on tracking and analyzing outputs, such as approved adaptation plans, as these currently represent the majority of adaptation activities on the ground[20,21] and are often more easily comparable and trackable[22] than, e.g., impacts and outcomes. Analyzing plans cannot tell the whole story in terms of actual progress in collective reduction (or redistribution) of climate risks[23,24]. However, it can provide information about the quality and relevance of adaptation processes and actions (also referred to as 'measures' in policy and planning literature), and help to assess the likelihood that we are advancing adaptation goals by reducing risks and increasing resilience in an equitable manner[25,26]. Scholars argue that 'the best method to ensuring robust adaptation is to ensure rigorous adaptation planning processes'[27]. Indeed, higher quality plans have been found to decrease the cost of disasters more than

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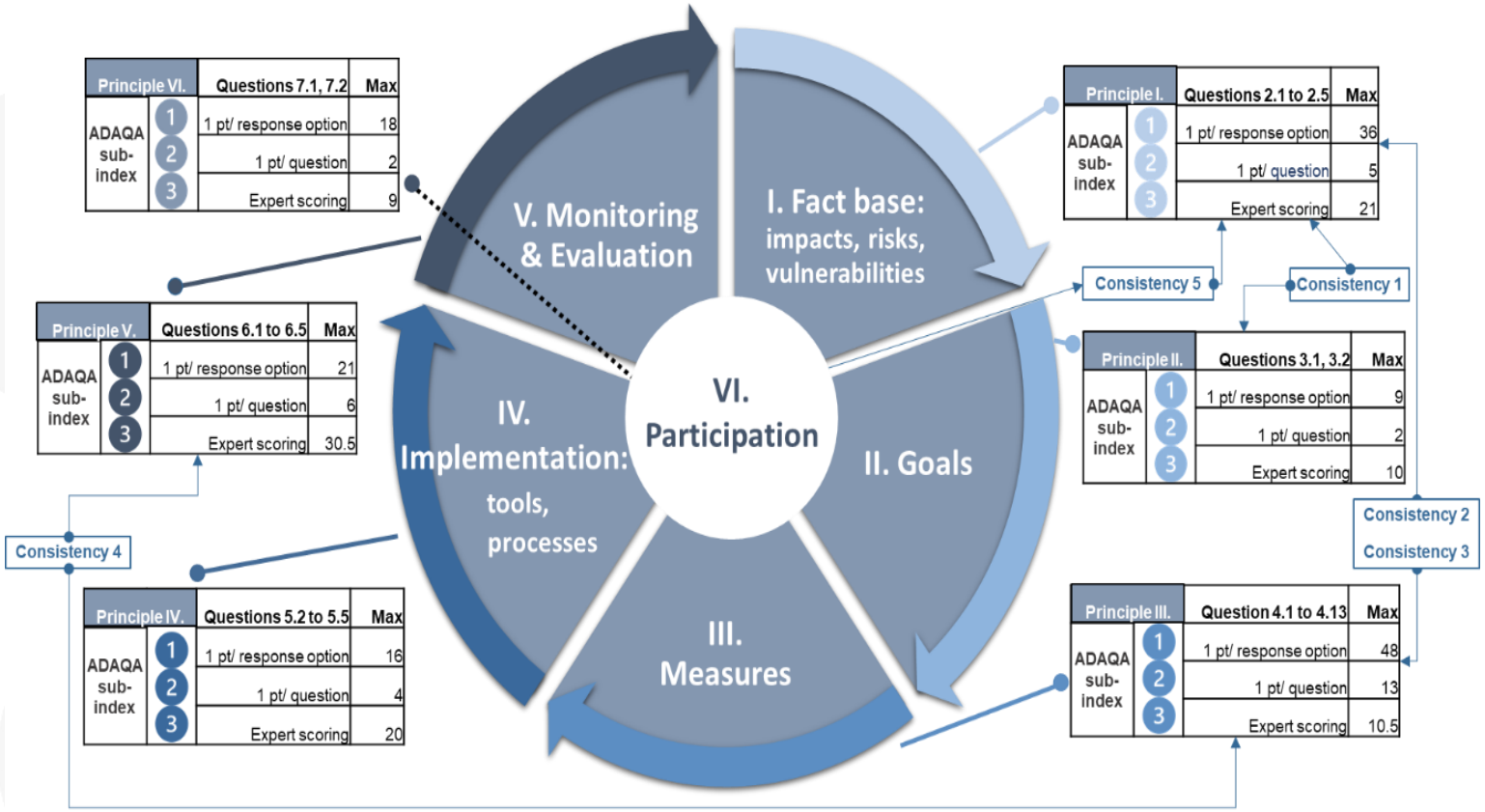
npj

Our recent paper in Nature Urban Sustainability: https://doi.org/10.1038/s42949-023-00085-1

Methods: NEW quality of adaptation planning index

New ADAQA index consisting of six well-established plan quality principles, including a measure for participation and plan consistency.



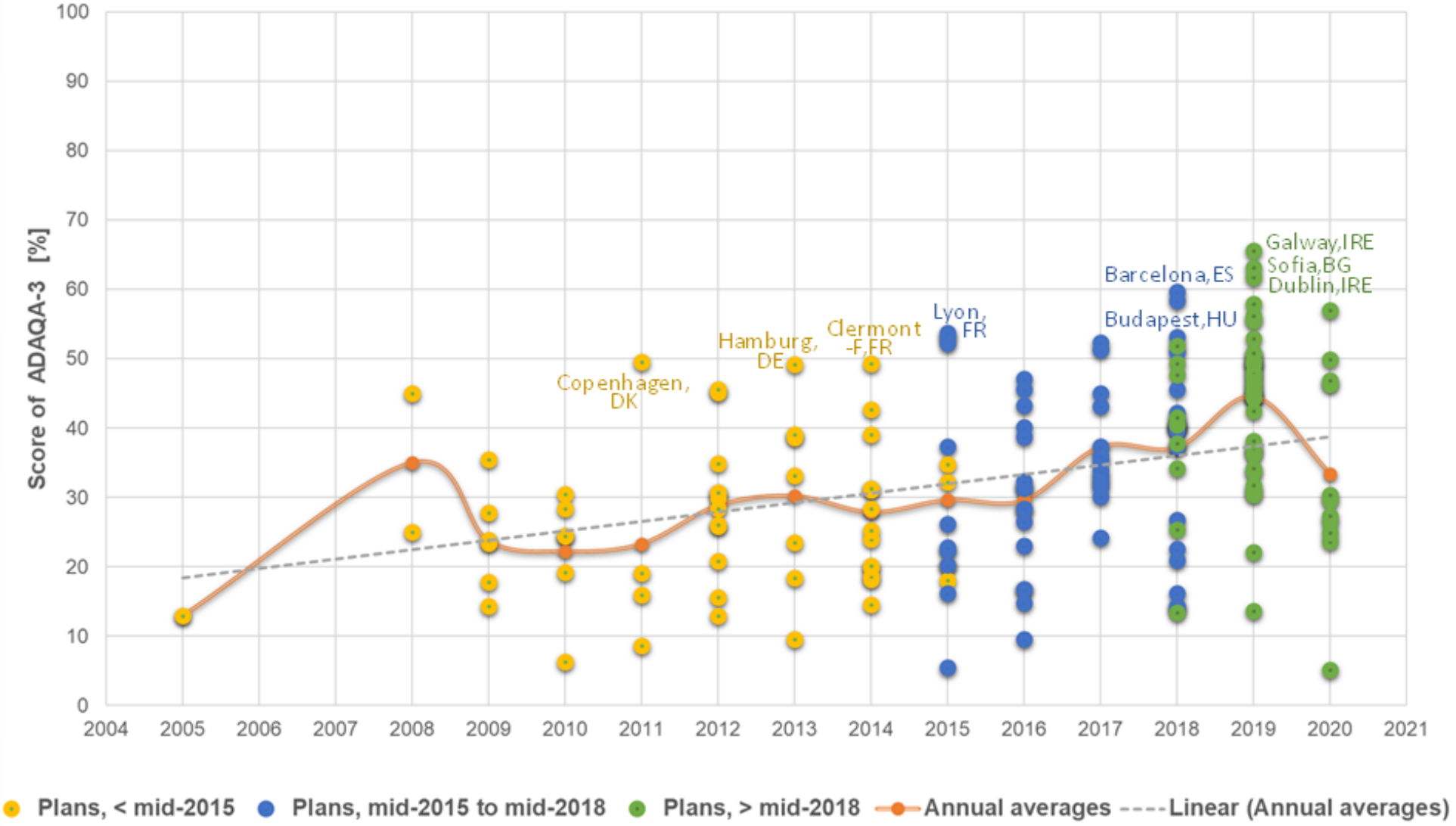
1.) **fact base of impacts and risks** in the local area;
2.) adaptation **goals**;
3.) adaptation **measures**;
4.) **details on the implementation** of adaptation measures;
5.) **monitoring & evaluation** of adaptation measures; and
6.) **societal participation** in plan creation.

relatively new aspect concerning the "**consistency**" of the plans: this means that impacts/ risks, goals, measures, monitoring, and participation are aligned with each other.

Our recent paper in Nature Urban Sustainability: https://doi.org/10.1038/s42949-023-00085-1

Quality of adaptation planning over time

Urban climate change adaptation Plan Quality in European cities is increasing from 2005 to 2020, by about 1.3 percentage points/ year



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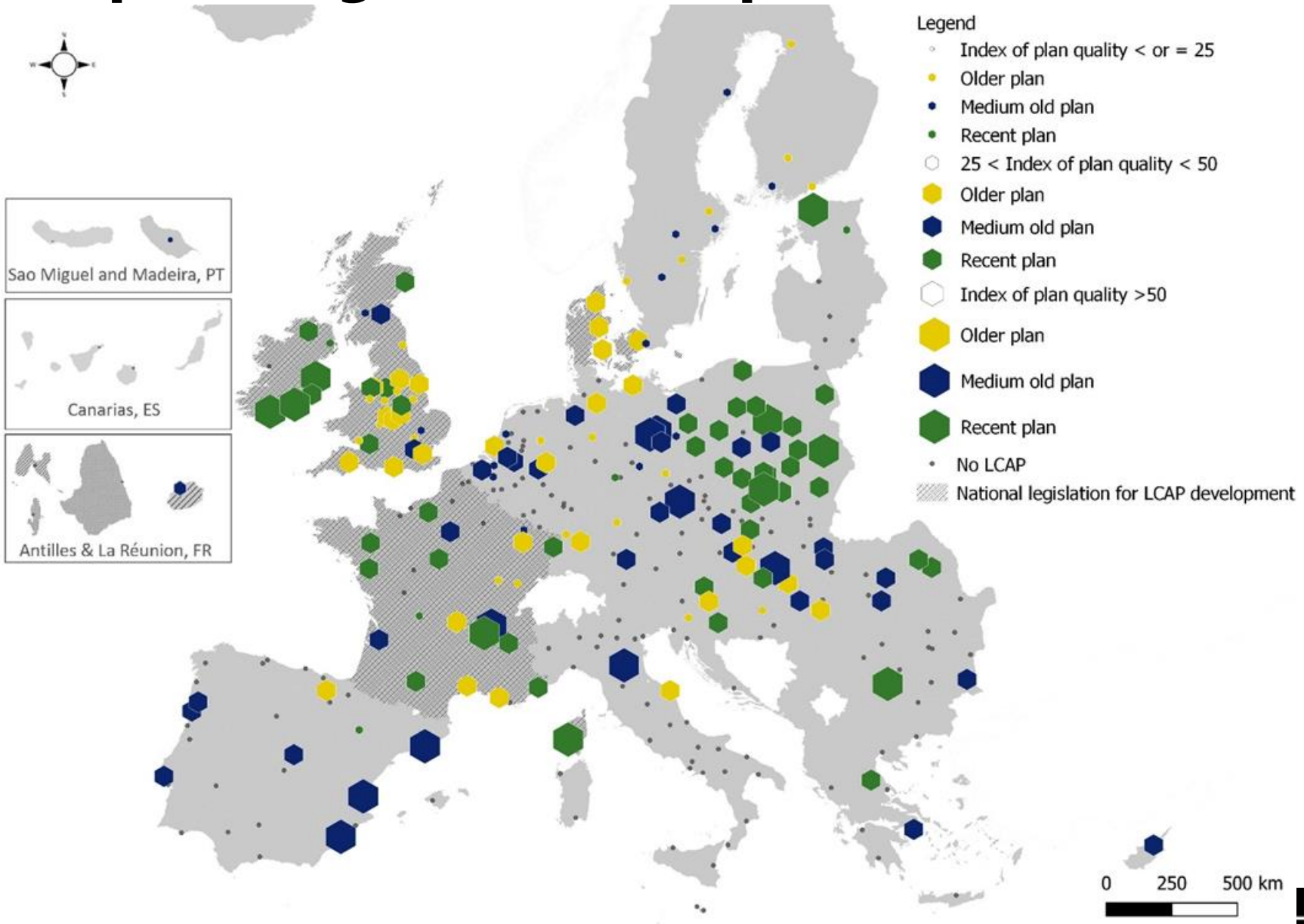
Quality of adaptation planning across European cities

Newer plans, which are higher in quality, are mainly found in cities in Ireland, France, and Eastern Europe, in particular Poland.

But there are also some good plans before 2018, spread across Europe, **mostly in larger cities**.

Top-ranking cities are:

- Sofia (BG)
- Galway (IE)
- Dublin (IE)
- Potsdam (DE)
- Waterford (IE)



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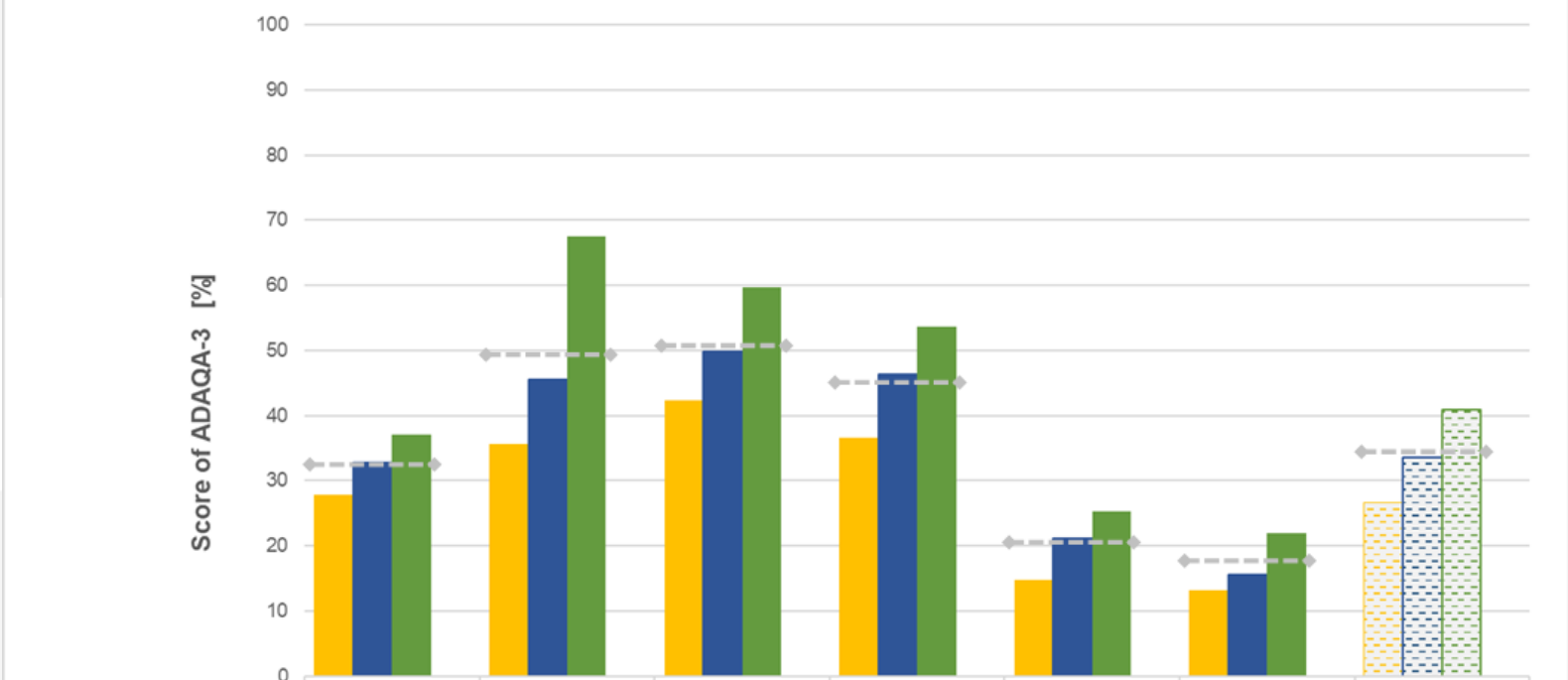
Quality of adaptation planning across principles/ components

Across principles of climate change adaptation plan quality, specifying adaptation goals improved most in recent plans



	I. IMPACTS, risk & vulnerability	II. Adaptation GOALS	III. Adaptation MEASURES	IV. IMPLEMENTATION tools & process	V. MONITORING & Evaluation	VI. Public PARTICIPATION in plan creation	Average of termporal group
Plans, < mid-2015	27,82	35,72	42,40	36,60	14,79	13,17	26,67
Plans, mid-2015 to mid-2018	32,80	45,60	49,87	46,32	21,11	15,51	33,52
Plans, > mid-2018	37,10	67,48	59,78	53,73	25,23	22,00	40,91
Average	32,58	49,60	50,68	45,55	20,38	16,89	33,70

Note that

Monitoring & evaluation, and participation is generally low…

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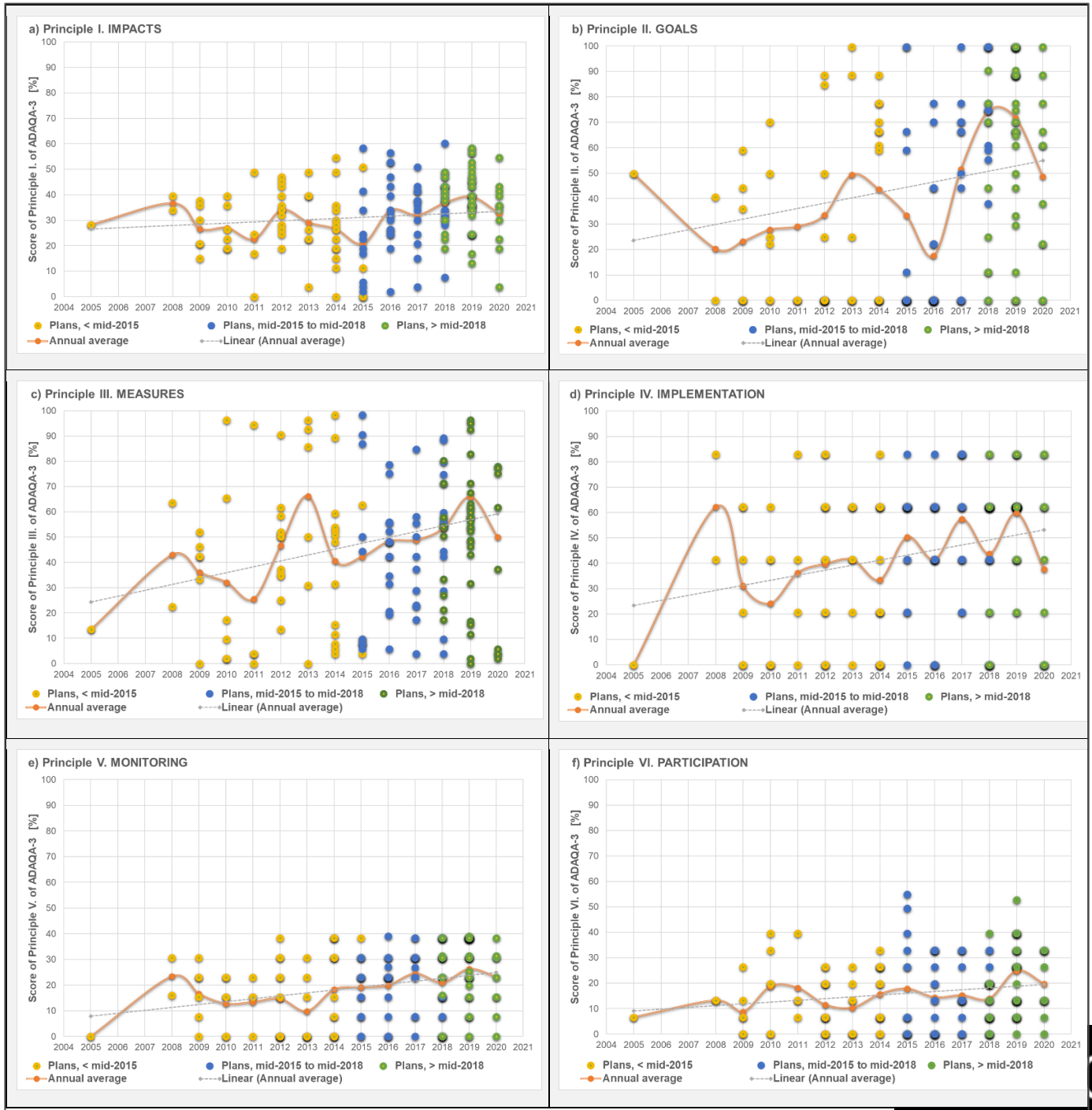
https://doi.org/10.1038/s42949-023-00085-1

Quality of adaptation planning

For individual cities

- Across principles of climate change adaptation plan quality, **adaptation goals** improved most in recent plans.
- **monitoring & evaluation**, and **participation** is generally low.



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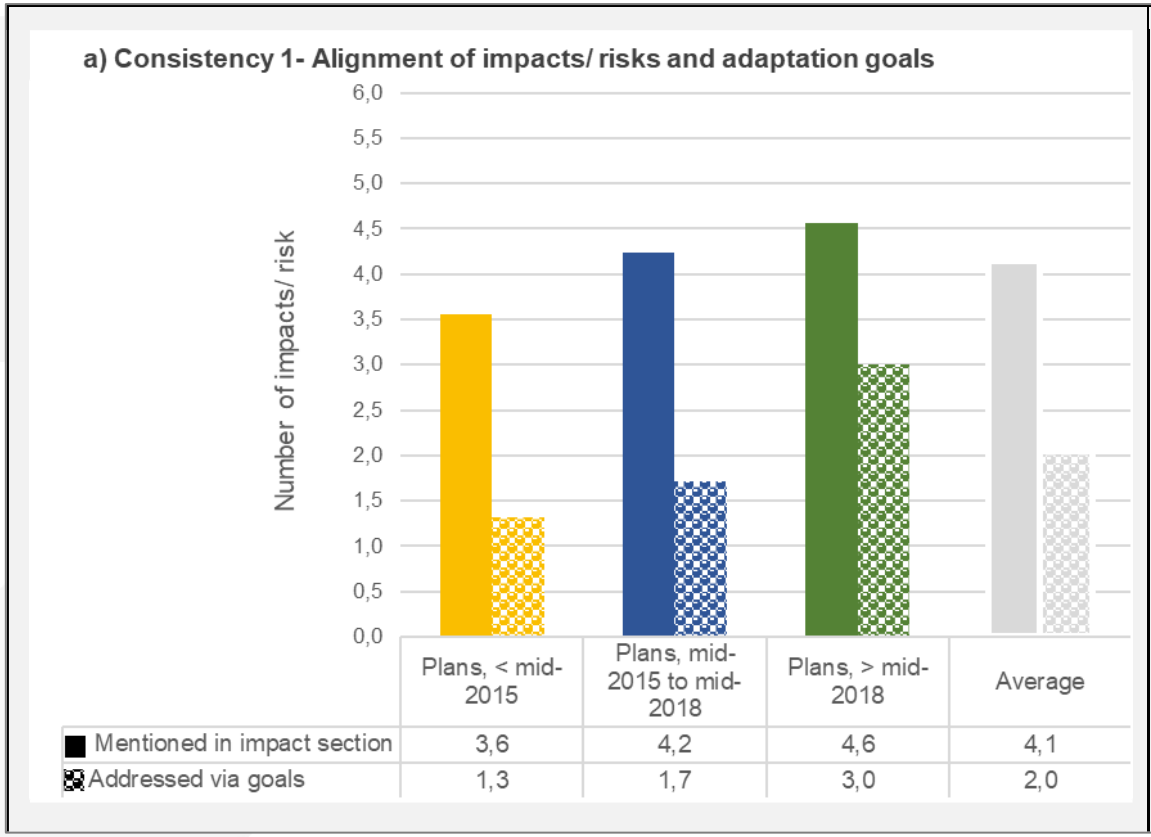
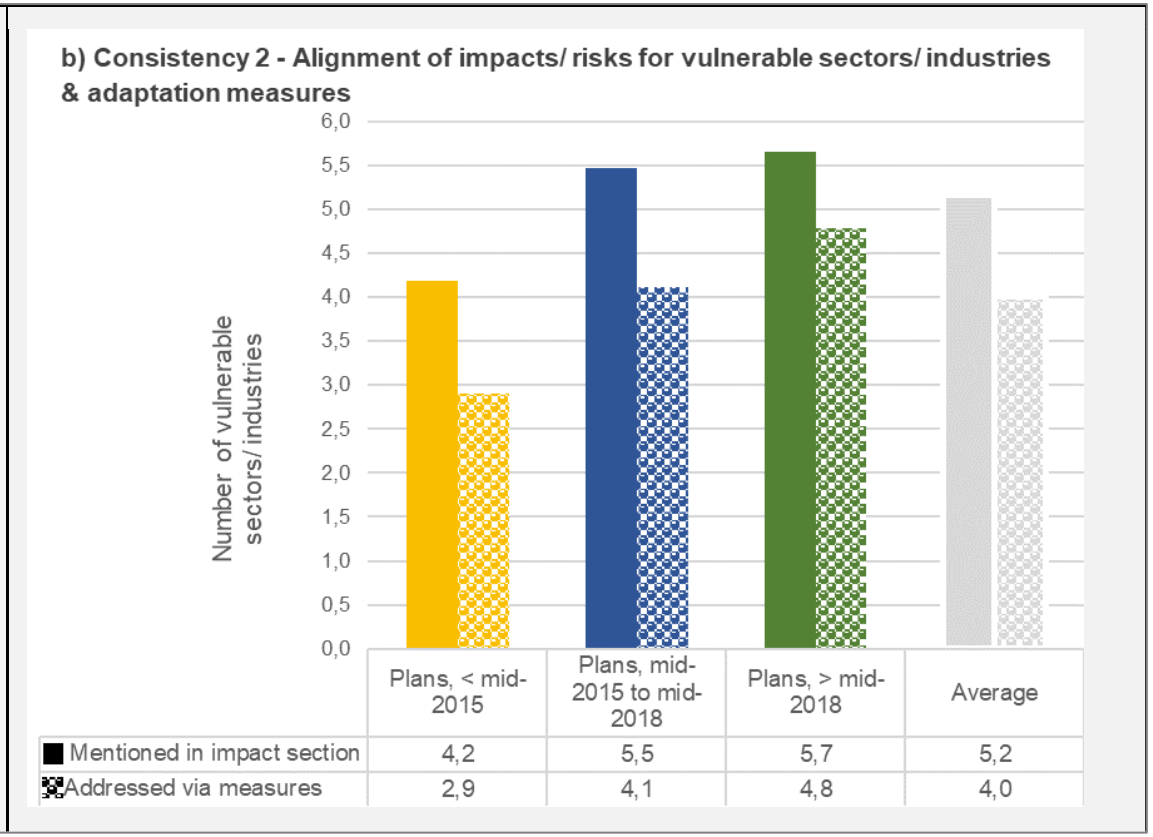
Quality of adaptation planning regarding consistency

Adaptation plans are consistent to a degree between impacts of/ risks to specific hazards and adaptation goals, and impacts of/ risks to industries and measures



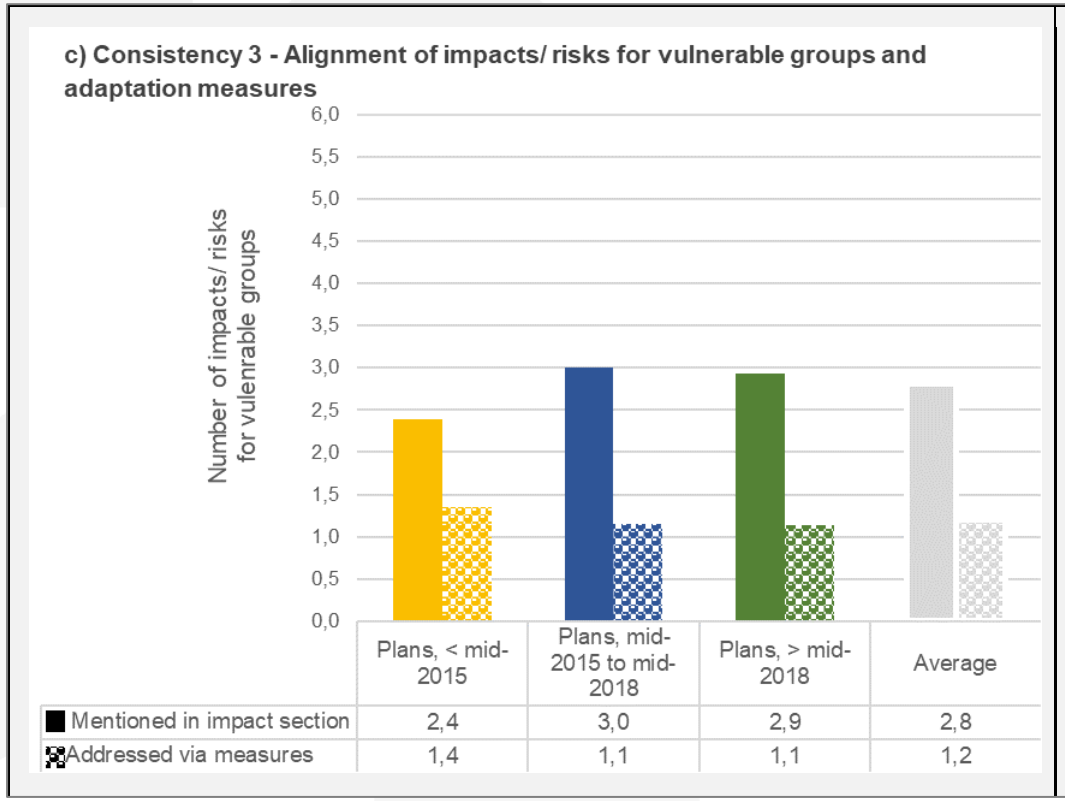


Our recent paper in Nature Urban Sustainability:
https://doi.org/10.1038/s42949-023-00085-1

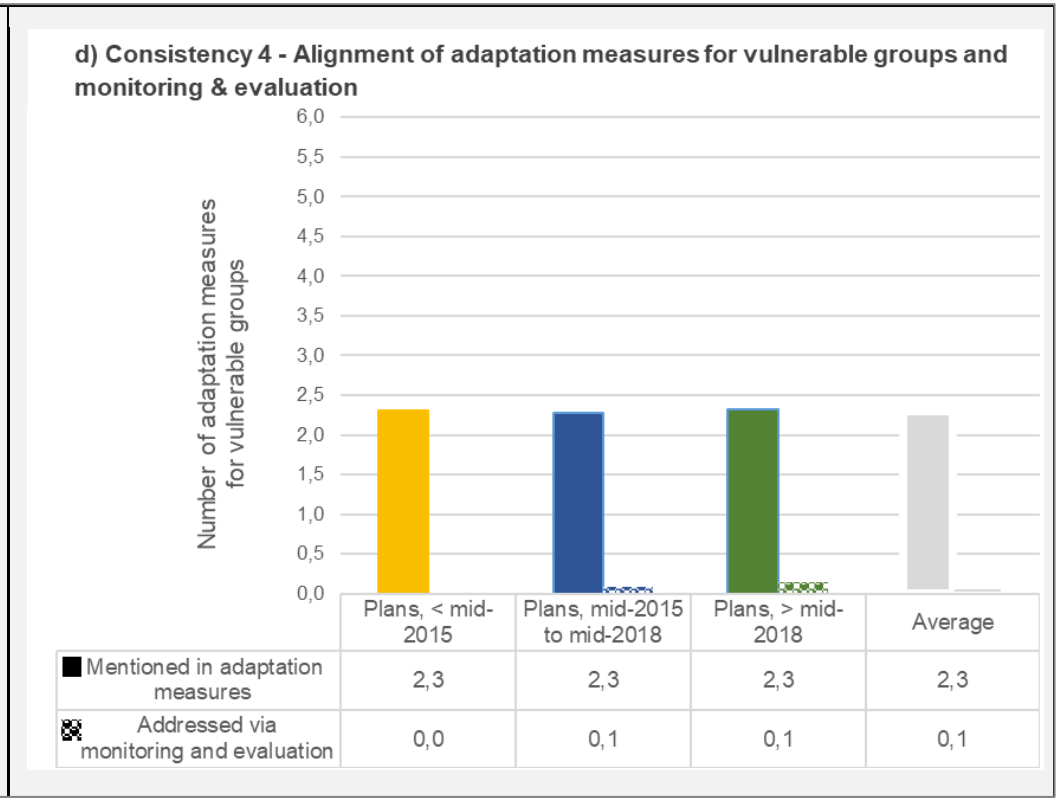
Quality of adaptation planning regarding consistency

"We are missing out on focusing on people most in need. "

Consistency decreased over time when looking at impacts on vulnerable groups and measures. Consistency between measures for vulnerable groups and M&E, and impacts on vulnerable groups and participation is very low.



	Plans, < mid-2015	Plans, mid-2015 to mid-2018	Plans, > mid-2018	Average
Mentioned in impact section	2,4	3,0	2,9	2,8
Addressed via measures	1,4	1,1	1,1	1,2



	Plans, < mid-2015	Plans, mid-2015 to mid-2018	Plans, > mid-2018	Average
Mentioned in adaptation measures	2,3	2,3	2,3	2,3
Addressed via monitoring and evaluation	0,0	0,1	0,1	0,1

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Síntese: Quality of adaptation planning over time

- **Equity/ justice concerns are increasingly reflected** in (European cities') adaptation plans, identifying impacts on vulnerable groups, and involving more vulnerable groups more often in plan development.
- However, the **extent of participation is still low in absolute terms**…. Moreover, **younger plans got worse** in aligning adaptation measures with the identified impacts on vulnerable groups.
- Largest group of concern is, rightly so**, people of low-income** → Focus on them
- Best **adaptation options for vulnerable groups**:
  - Social safety nets; Farm/ fishery practice adjustments; Diets changes/ Food waste reduction; Health and health system adaptation
  - Public administrations are extremely important for those and other adaptation

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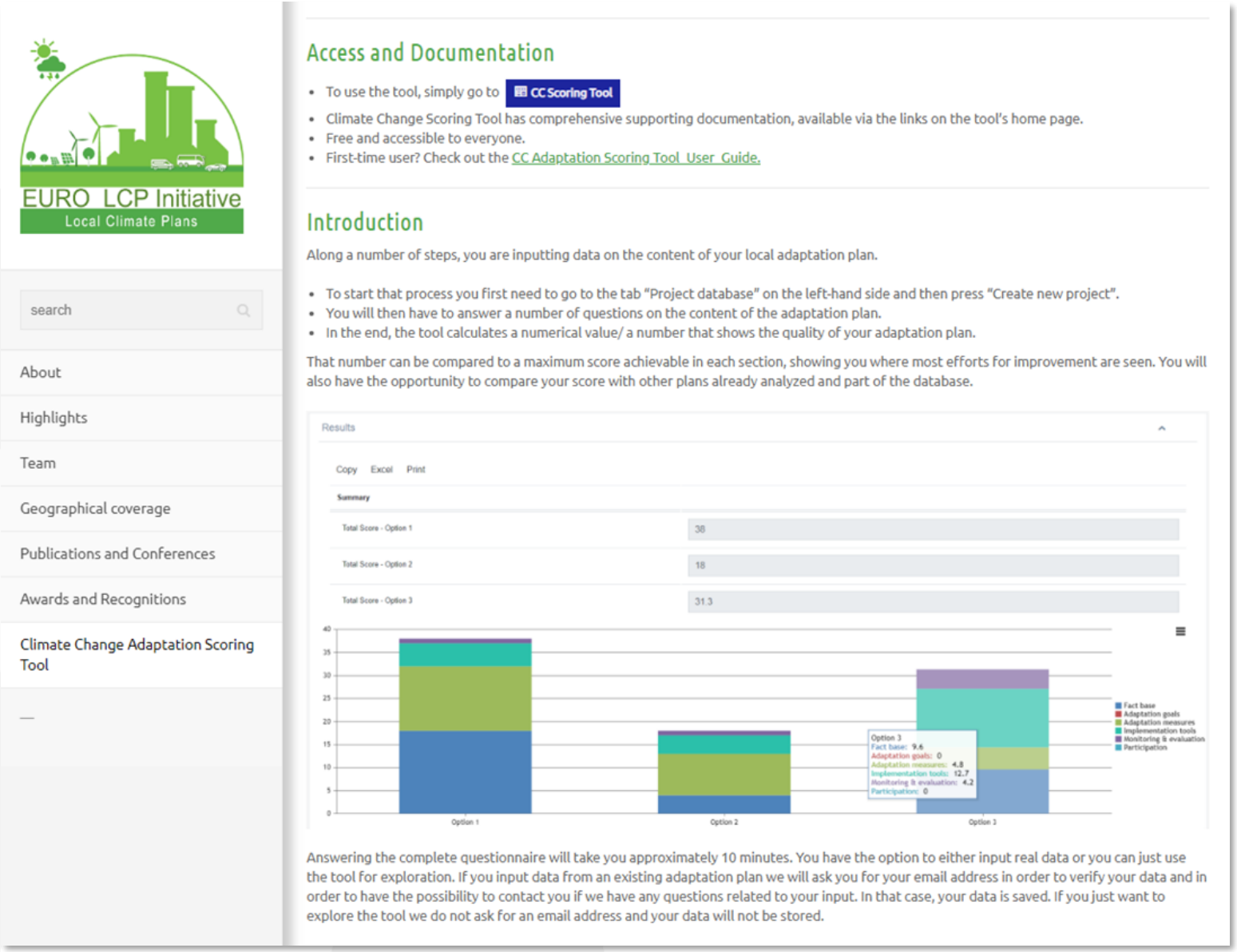
Authors developed a scoring tool here useful to compute the adaptation plan quality score of any city by inputting plan content along a questionnaire



https://www.lcp-initiative.eu/

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