

Climate mitigation and adaptation strategies of metropolises and medium-sized cities in Germany

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Background

Cities are responsible for up to 70% of global greenhouse gas emissions, but they can also be severely affected by impacts of climate change, such as extreme weather events (Figure 1). Hence, cities are important actors in climate policies and many of them have started to develop strategies or action plans that explicate how the city aims to mitigate and/or adapt to climate change.

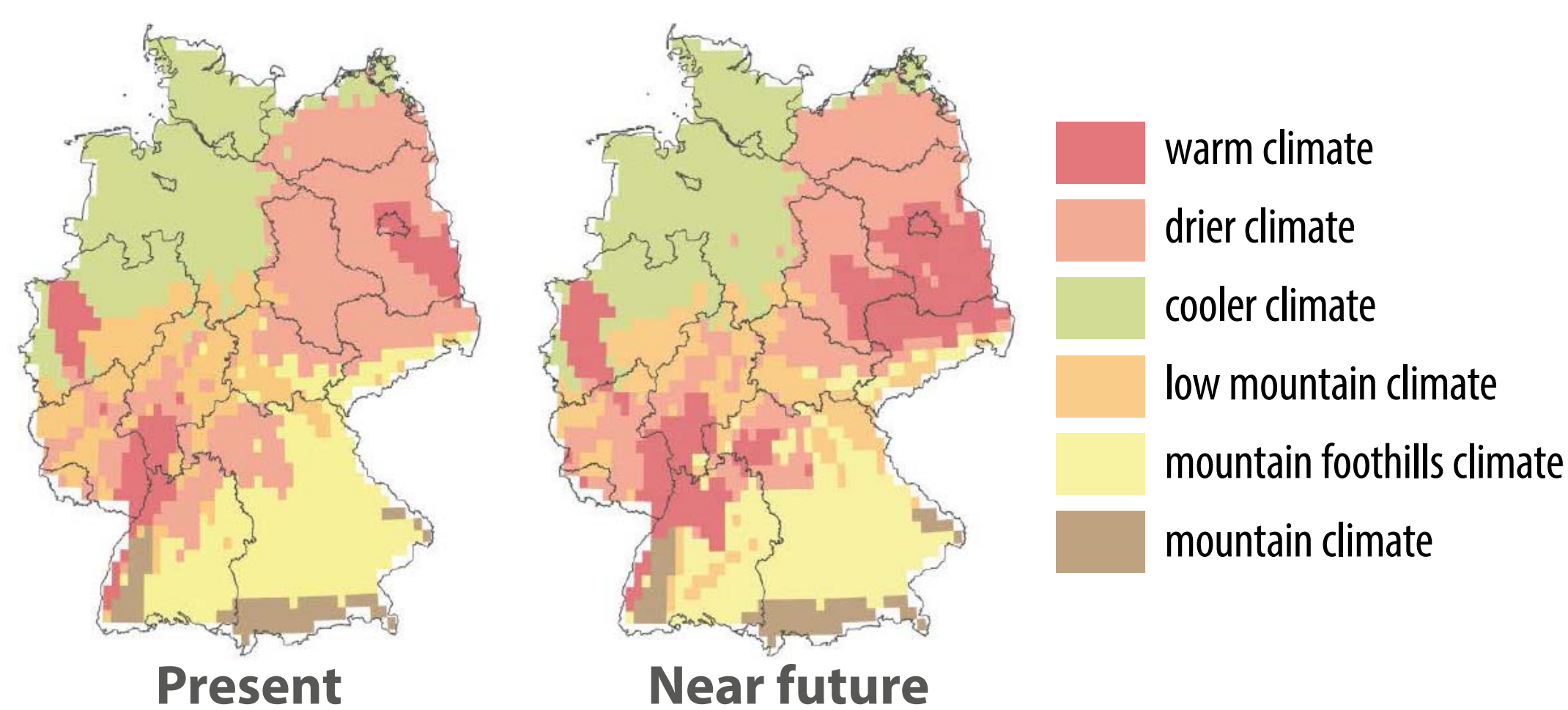


Figure 1: Climate area types in Germany for the identification of "similarly affected areas"
Source: adelphi, plan + risk consult & Europäische Akademie (2015): Germany's vulnerability to Climate Change, p. 50; Compiled based on the German Weather Service 2013.

Research Design

Although climate mitigation and adaptation have been on the political agenda for many years in Germany, an overview of municipal strategies is missing. Therefore, this study provides a comprehensive synthesis of such strategies.

Altogether, mitigation and adaptation plans of 99 German cities were searched while distinguishing three city sizes: big metropolises with more than 500,000 inhabitants, small metropolises having 100,000 to 500,000 inhabitants, and medium-sized cities with more than 50,000 inhabitants that have the same statutory framework than metropolises. The research was conducted via the internet and direct contacts to city representatives. All current plans were analysed by content analyses.

Findings and Discussions

The analysis reveals that mitigation plans are much more common than adaptation plans: 98 cities had a mitigation plan, while only 44 had an adaptation plan by July 2017 (Figure 2). With regard to adaptation plans, there is a clear dependence on the city size: in only two (out of 23) medium-sized cities adaptation plans were found. This highlights that climate change adaptation is still a young policy domain: a national funding programme that supports cities to develop adaptation plans was launched in 2015, while a comparable programme for climate mitigation was already established in 2008.

With regard to the contents, measures to reduce greenhouse gas emissions in the transportation sector and in urban development are the most popular with regard to climate mitigation (Figure 3). With respect to adaptation, planned actions and measures are much more diverse and thus context-specific. It is, however, striking that fields of actions that were identified by national and European policies as being important, such as the health sector, are often neglected in the municipal plans (Figure 4). Hence, more cooperation and exchange are needed between different policy levels. This is further supported by the fact that city networks – such as the Mayors Adapt network – were identified as an important driver for the development of mitigation and adaptation plans.

Outlook

Based on these findings, influencing factors for cities to engage (early) in climate mitigation and adaptation will be analyzed. Factors which will be considered are inter alia economical, demographic and institutional characteristics. Next to this analysis, the question of how best-practice measures in the field of climate adaptation can be transferred between different cities will be focused on.

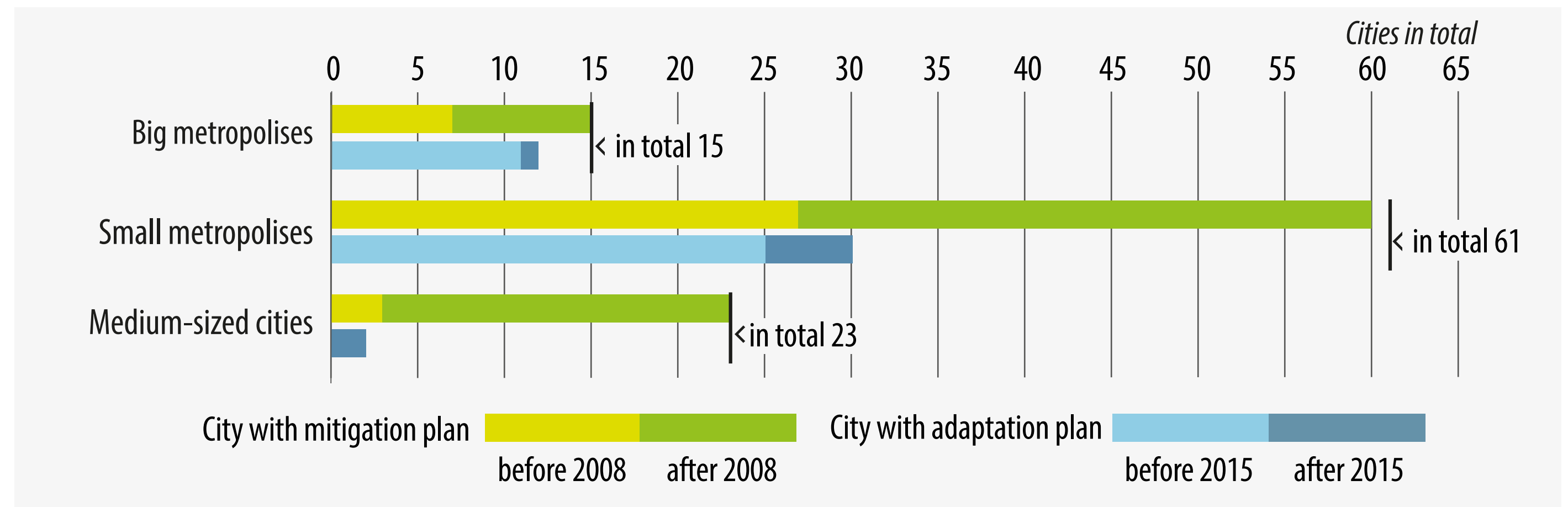


Figure 2: Existence of climate mitigation and adaptation plans in 99 cities in Germany before and after nationwide funding programmes were launched (state of data collection: 5th July 2017).

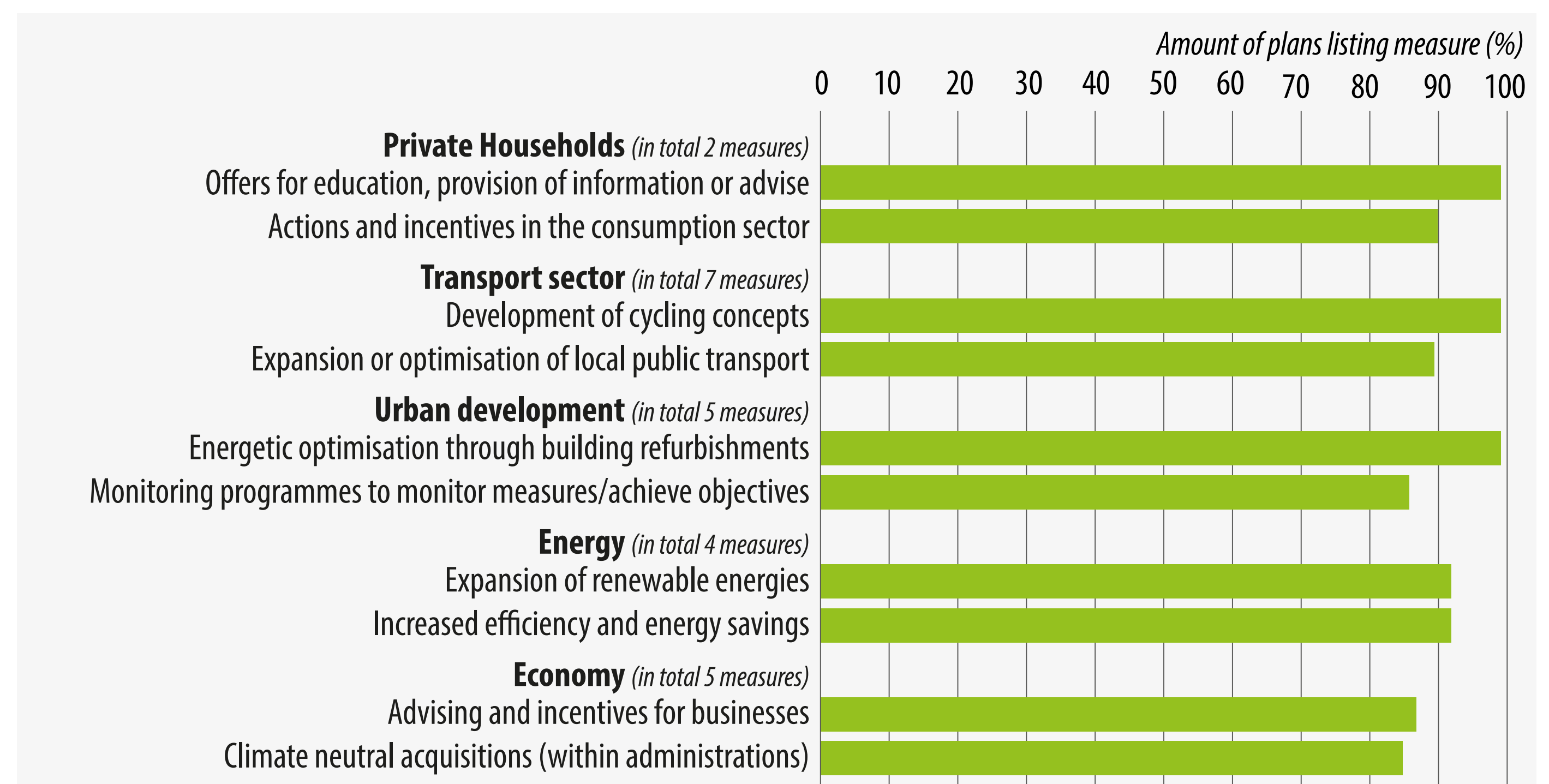


Figure 3: Climate mitigation plans: Fields of action with the two most often listed measures each (state of data collection: 5th July 2017; n=98).

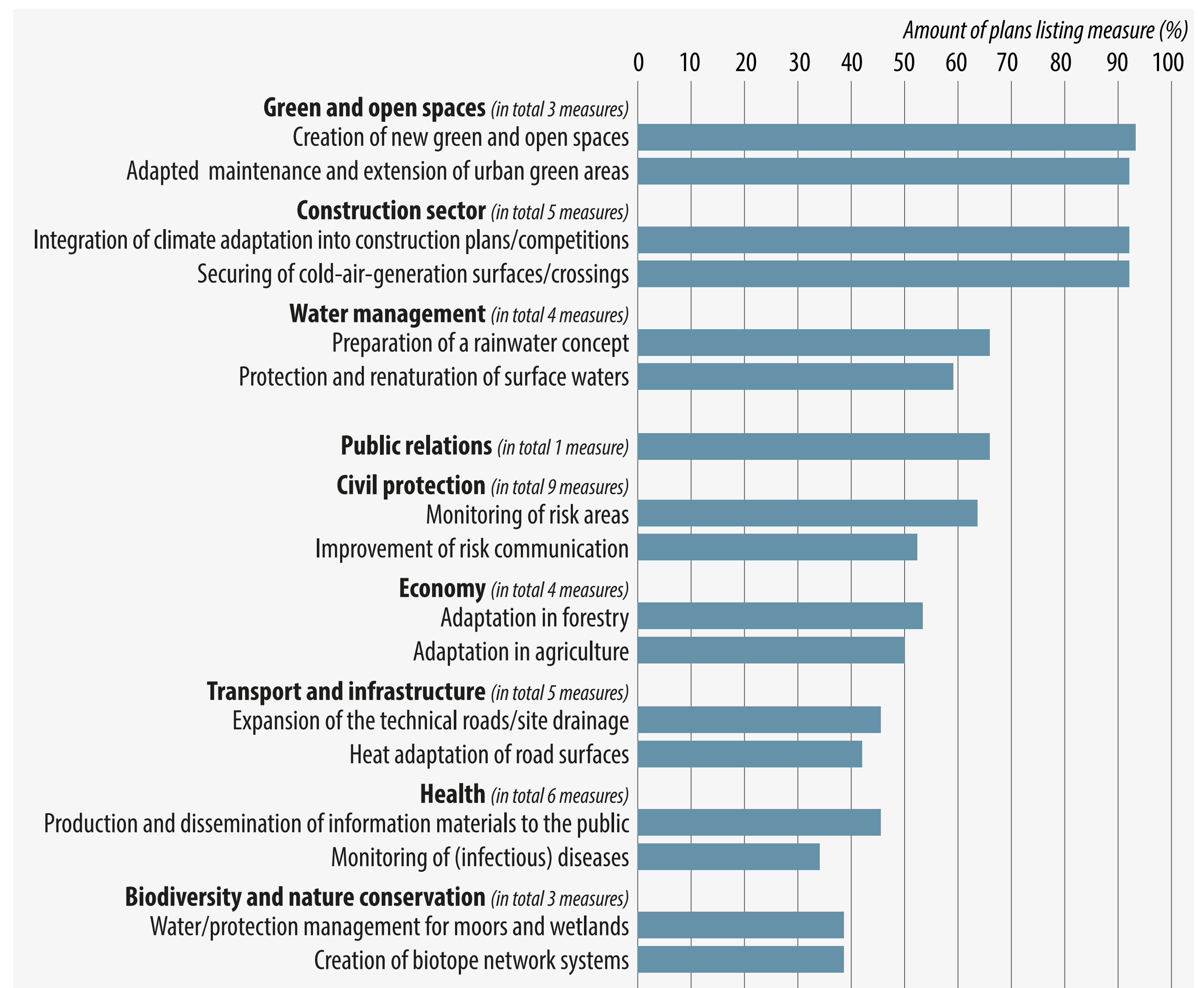


Figure 4: Climate adaptation plans: Fields of action with the two most often listed measures each (state of data collection: 5th July 2017; n=44).