

Popular scientific summary

How municipalities consider the planning and implementation of nature-based solutions

As cities become more crowded and the climate changes, many challenges have to be solved in limited space. Nature-based solutions (NbS), using nature to adapt areas to the effects of climate change, also aim to address many societal challenges, such as human health and biodiversity loss. When NbS are used in practice, those working with them need to make sure that they fit into their existing context. This way, potential downsides can be avoided, and the benefits that NbS can provide can reach their full potential. For this research, people working with NbS for and with Malmö and Rotterdam municipalities were interviewed to see how they take this into account in the planning for and implementation of NbS projects

This research looked at how two cities, threatened by the effects of climate change, work with NbS. For example: after extreme rainfall, the water cannot drain because of non-permeable concrete in the city. The same concrete also holds heat, which makes cities up to 4 degrees Celsius hotter than other areas in summer. Nature can be used as a solution to address these and many other challenges, and provide benefits. Including more parks and trees in urban areas, for example, can help drain excess water, provide shade to cool an area, and make it an enjoyable space for recreation. Because there is limited space in cities, it is essential to create multifunctional spaces.

When NbS are implemented in cities, the projects are carried out in areas where the context already exists. This thesis found that adapting NbS to this context is essential, but there are many different needs and wants that have to be prioritised. Economic aspects play a crucial role in deciding if NbS should be implemented, and they are often included by 'piggybacking' on other projects to save money. Rather than starting with a specific solution, the focus is on first identifying the problems at hand. Informal involvement processes seem to be the best way to make sure that projects fit their local context but often depend on who is in charge. The visibility of NbS projects is seen as a benefit in various ways, including giving the municipality a good reputation, but measuring their benefits can be challenging.

The study provides valuable insights into how NbS can be adapted to fit their socio-spatial context in such a way that they provide benefits. These results can be helpful to keep in mind

when implementing NbS projects and when carrying out further research, as the concept needs a shared perspective between practice and research to help NbS reach their full potential.