

Science for Environment Policy

Water management and spatial planning's resilience to climate change: key proposals

Eight key features for increasing the climate change resilience of water management and spatial planning projects are presented by new Dutch research. These include: focusing on the long term, integrating the projects with other sustainability measures and encouraging stakeholder participation.

Addressing [climate change](#) will require action, not only to reduce CO₂ emissions, but also to provide adaptation to its unavoidable effects. Many countries have begun to develop and implement such adaptation measures aimed at increasing their resilience to climate change.

Typically the design and implementation of adaptation projects is performed at a local scale for each project. Governments supply the relevant tools and information required to the local authorities who develop and implement projects based on the requirements of their location.

Two areas where climate change adaptation is particularly important is spatial planning, which manages the future distributions of people and activities, and [water](#) management. However, there has been little work published, beyond individual case studies, on how local and regional authorities design and implement adaptation strategies in these areas.

To address this gap, the researchers analysed one hundred Dutch spatial planning and water management projects that included climate resilience as an objective. Using data compiled from a range of sources on each project, such as project websites, reports and telephone interviews, they assessed the quality of each project, and identified common characteristics of effective adaptation strategies.

The researchers found eight characteristics that would increase climate resilience, as well as the overall quality of a project. Together, they convert climate change adaptation from problem to opportunity:

- A longer timeframe for the project – looking beyond the near future, from 40 to 100 years ahead.
- An integrative and sustainable approach – broadening the scope of projects beyond their primary objective.
- Consideration of new functions for different areas – combining climate adaptation with, for example, nature protection, housing, economic development or transport.
- A 'broader spatial context' – taking a larger area into account in the project design, which may influence or be influenced by the project.
- Participation of multiple stakeholders – this leads to increased support and understanding of the chosen direction and solutions.
- New opportunities for entrepreneurs – taking advantages of new opportunities opened up by a project, in recreation, agriculture or transport, for example.
- Increased cost effectiveness – The broad scope and long-term nature of a project can offer additional benefits, outside climate adaptation, such as health and entrepreneurial opportunities, and does not necessarily increase costs.
- Enhanced 'quality' of the project area – defined as climate-proof locations where existing characteristics and cultural heritage are preserved or where new elements have been added which improve quality, such as increased biodiversity.

Overall, the authors of this study found that including climate change adaptation into spatial planning and water management projects aids their implementation, stimulates the development and improves their overall quality. However, as the study focused on the Netherlands, they acknowledge that it is difficult to know if these recommendations will also apply to other countries and regions.



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