

## Guidance

<b>Title:</b> Outline strategic vulnerability analysis							
<b>Keywords:</b> Vulnerability, adaptation, limits to adaptation.							
<b>Audience:</b> National, regional and local spatial planners, policy makers.							
<b>Messages in the ESPACE strategy to which the guidance applies:</b>	1.	2.X	3.X	4.	5.X	6.	7.X
	8.X	9.	10.	11.X	12.	13.X	14.
<p><b>Sentences linking the guidance to relevant strategy messages:</b></p> <p>2 A vulnerability analysis will be fundamental to assessing key long term climate risks.</p> <p>3 A vulnerability analysis is a fundamental part of risk management for integrating climate risks into policy making.</p> <p>5 A vulnerability analysis will be fundamental to assessing the viability of current legislation.</p> <p>7 A vulnerability analysis will be fundamental to assessing the vulnerability of key assets and how climate change may affect them.</p> <p>8 A vulnerability analysis will be essential to derive a flexible and appropriate future set of policies and measures.</p> <p>11 A vulnerability analysis will enable long term vulnerabilities and thresholds to be assessed.</p> <p>13 A vulnerability analysis will let politicians see the scale and challenge of issues that will eventually be needed.</p>							
<p><b>Overview:</b> Vulnerability analysis is intended to identify critical thresholds where current and future system states may change and have fundamental effects on spatial planning. This outline strategic vulnerability analysis is a first step in illustrating how spatial planners should address the big picture.</p>							

Photo/diagram/map:

Effects of extreme sea level rise on the Thames Estuary



Description:

The concept of vulnerability analysis has grown later in the ESPACE project from learning through the Decision Making Framework and Decision Pipelines in the Thames Estuary TE2100 project. It highlights the need to carry out long term and high level risk assessment to ensure that spatial planning will not be compromised by failing to consider where climate change may alter fundamental assumptions on potential land use. It is particularly relevant to higher level planning such as the national level. An outline process has been developed following the need for such analysis in the TE2100 project. (See also the Case Study: Limits to adaptation study)

Climate change potentially adds an extra dimension to spatial planning. Spatial planners in the past have not had to consider whether the availability of land will be significantly changed in the lifetime of their decisions. Climate change means that areas of land will be lost to sea level rise and coastal erosion. In the long term this will affect major settled areas. In addition water availability and changes in other countries may change the value of land that could be used for food production in the future.

This change in assumptions means that decisions on spatial planning need to be much more strategic at both a continental (e.g. European) and national level. Leaving decisions to a regional or local level will mean that the longer term national interest may be lost or given insufficient emphasis. The same could apply to the EC level. Long term changes in temperature and water availability may mean that populations in the south of Europe may wish to migrate further north. Adaptive capacity for this needs to be built into longer term European spatial planning.

Part of the vulnerability analysis involves assessing thresholds of change where spatial planning needs to recognise that system states pass a critical level. In the example of London the TE2100 project has commissioned a study to assess what level of sea level rise will be the limit to adaptation. Beyond this point even with extreme engineering it would be practically infeasible for the current pattern of development to continue in London. The TE2100 project is also identifying the many combinations of measures that can be utilised to manage flood risk between the present and that "end game" limit. Each combination of measures has a limit to its effectiveness in terms of sea level rise and this can be planned



into a long term flexible strategy to adapt to climate change (see Tool: Decision pipeline tool).

This approach has been summarised in a flow diagram using national and regional examples. This generic approach is recommended to address vulnerability analysis for spatial planning.

As a result of this ESPACE work a national vulnerability analysis has been recommended to the UK government by the Environment Agency responding to the draft Planning Policy Statement on climate change (PPS1).

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