

Indicator	
24	Water consumption.
Measurement	
24.1	Number of days of reduced supply.
What should the measurement tell us?	
<p>Water supply has become an expected part of modern urban living. The uninterrupted stream of drinkable water that flows from an urban consumer's tap is, perhaps, how most people perceive and understand water supply reliability.</p> <p>All water supply systems fail and they do so for many reasons, such as natural causes exceeding the design parameters of the system (e.g., droughts and floods) and human causes such as population growth that raises the system's demands above its capacity. In addition to the long-standing issue of relatively scarce water resources and their uneven distribution across the territory, some European countries are still conditioned by unresolved financial/economic, technical and institutional problems (including structural inadequacies), that have built up over time and ultimately lead to a critical situation in a number of regions. Consequently, the number of days of reduced supply is conceptually related to the probability of supply system failure (whatever the reason) and the rate, occurrence and consequences of failure can be measured.</p>	
Parameters	
(i)	Annual number of days of reduced water supply in coastal and non-coastal NUTS 5.
Coverage	
Spatial	Temporal
Coastal and non-coastal NUTS 5 of the reference region.	Annually for the period 1995-2005.
Data sources	
Data on the number of days of reduced supply can be obtained from the competent national or regional water agencies and/or authorities responsible for monitoring and reporting their own water supply situation.	
Methodology	
Steps	Products
1	<p>For each NUTS5 (coastal and non-coastal municipalities) of the reference region, obtain data sets containing starting date and duration⁽¹⁾ of each reduced water supply event for the required period of time.</p> <p>List of reduced water supply events within the reference region during the last ten years, including duration (in days) and cause of each event.</p>

2	For each year, add the total number of days of reduced water supply in coastal and non-coastal NUTS5 and represent the result graphically.	<u>Annual number of days of reduced water supply in coastal and non-coastal NUTS5 within the reference region (Graph 1).</u>
3	For the period 1995-2005, calculate the mean annual number of days of reduced water supply at each coastal municipality and display data visually on a quantitative map for the reference region.	<u>Mean annual number of reduced water supply by municipality in the reference region (period of 1995-2005)(Map 1).</u>
Presentation of the data		
Graph 1	Bar chart showing the trend in the number of days of reduced water supply in coastal and non-coastal NUTS 5.	
Graph	Coastal NUTS 5, trend in the number of days of reduced supply.	
Map 1	Map showing mean annual number of days of reduced water supply at each NUTS5 (period 1995- 2005), classified into 5 levels-colours based on 20%, 40%, 60% and 80% of the maximum.	
Adding value to the data		
<p>If the data providers can offer data relating to the cause of the reduced water supply it would be interesting to separate the reduced water supply occurrences originating from natural causes to examine the significance of drought or flood episodes in the water supply system and to evaluate the probability of the occurrence of an excessive demand.</p> <p>It may be useful to express and characterise the expected length of time between successive failures (i.e., time-to-failure), similar to the notion of a 100-year flood event - an event that is expected to occur on average once in 100 years.</p>		
Aggregation and disaggregation		
The same methodology can be used to calculate the measurement at different levels, aggregating data at the provincial (NUTS 3), regional (NUTS 2) or national NUTS 0 levels.		

Notes:

⁽¹⁾ if the duration of the reduced water supply event is shorter than 1 day, calculate the duration of this event as a fractional unit (i.e. 6 hours = $6/24 = 0.25$ days)