

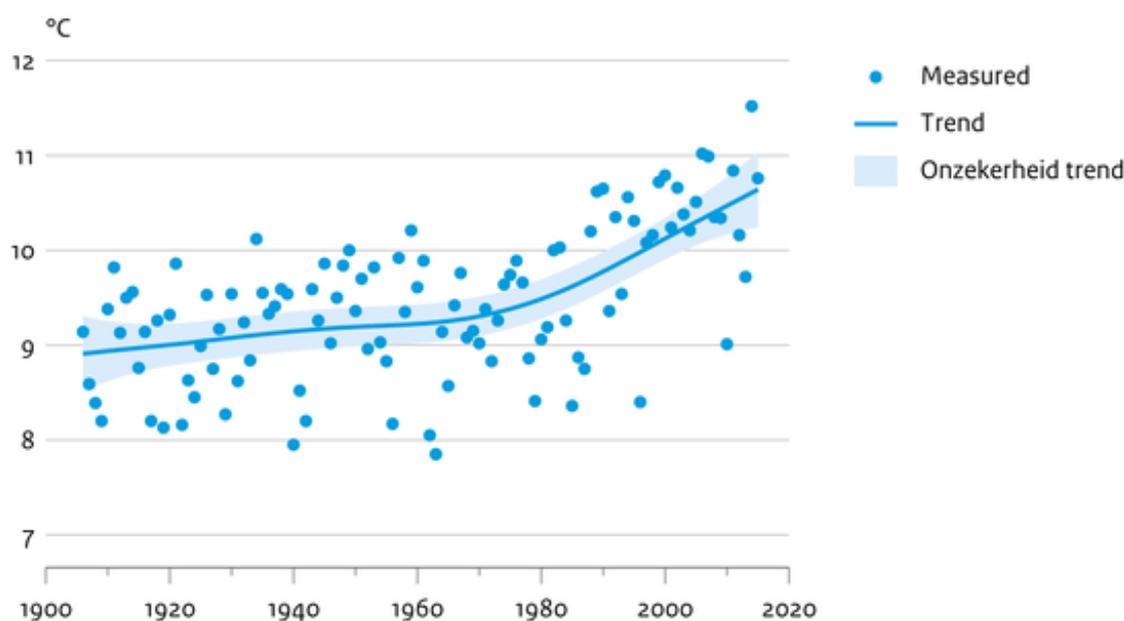
## Temperature trends: the Netherlands and worldwide, 1906-2015

Indicator | 16 November 2016

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The annual mean temperature in the Netherlands has increased by 1.7 °C since 1906. The spring and summer seasons have warmed up the most. The average global temperature has increased since 1880 by about 0.9 °C.

### Temperature in the Netherlands



Source: KNMI

PBL/feb16  
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### Temperature increase in the Netherlands continues unabated

The annual mean temperature in the Netherlands has steadily increased and is now  $1.7 \pm 0.6$  °C higher than 110 years ago. This is a statistically significant warming. There has been an increase of about 0.03 °C a year over the last 20 years. The year 2014 had the warmest annual mean temperature since the beginning of the CNT temperature series in 1906. Here, CNT stands for Central Netherlands Temperature (Schrier et al. 2011). For station De Bilt the year 2014 was the warmest since 1706.

### Temperature increased unequally over the seasons

Warming in the Netherlands varies according to the season. Most warming over the last 100 years was seen in the spring and summer, and least in the winter:

- warming in spring:  $1.8 \pm 0.8$  °C
- warming in summer:  $2.1 \pm 0.8$  °C
- warming in autumn:  $1.5 \pm 0.6$  °C
- warming in winter:  $1.3 \pm 1.2$  °C

Furthermore, the variability in annual temperatures around the long-term trend is highest for winter temperatures. That implies that cold winters cannot be excluded in the present climate of the Netherlands.

## Global temperature is also increasing

The global temperature has increased steadily over the last 136 years by 0.9 °C. The three decennia 1980-1989, 1990-1999 and 2000-2009 showed a continuous warming and were all three warmer than all preceding decades since 1880 (IPCC, 2013). The year 2015 was an all time record (Tollefson, 2016).

The rate of change in global temperatures is not constant but shows periods with lower and higher rates. After an acceleration at the end of the 20<sup>th</sup> century warming has slowed down over the past 15 years. These fluctuations are not unique and can be well explained from natural variability of the climate system (PBL/KNMI, 2015; Marotzke and Forster, 2015; Trenberth, 2015).

## The Netherlands is warming much faster than rest of world

Until now, it was expected that the Netherlands would warm at about the same rate as the world average. After all, the Netherlands is situated at mid-latitudes and affected by both land and sea climates. However, the Netherlands has warmed more than twice as much as the rest of the world since 1950 (Oldenborgh et al., 2003; 2009). This more rapid warming is probably not due to natural variations, but to the fact that land masses warm more quickly than oceans. In addition, the Netherlands has - as have other parts of Western Europe - been affected by more westerly and south-westerly winds in the late winter and early spring, reduced cloud cover, rising North Sea temperatures and an increase in the amount of solar radiation (due to cleaner air) in the spring and summer.

## References

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## Relevant information

## Technical information

## Reference for this page

CBS, PBL, RIVM, WUR (2016). [Temperature trends: the Netherlands and worldwide, 1906-2015](#) [12] (indicator 0226, version 12, 16 November 2016). [www.environmentaldata.nl](http://www.environmentaldata.nl). Statistics Netherlands (CBS), The Hague; PBL Netherlands Environmental Assessment Agency, The Hague; RIVM National Institute for Public Health and the Environment, Bilthoven; and Wageningen University and Research, Wageningen.

**Source URL:** <https://www.clo.nl/en/indicators/en022612>

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[http://www.pbl.nl/sites/default/files/cms/publicaties/PBL\\_KNMI\\_2015\\_Klimaatverandering\\_Samenvatting\\_van\\_het\\_vijfde\\_IPCC-assessment\\_1405.pdf](http://www.pbl.nl/sites/default/files/cms/publicaties/PBL_KNMI_2015_Klimaatverandering_Samenvatting_van_het_vijfde_IPCC-assessment_1405.pdf) [10]

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