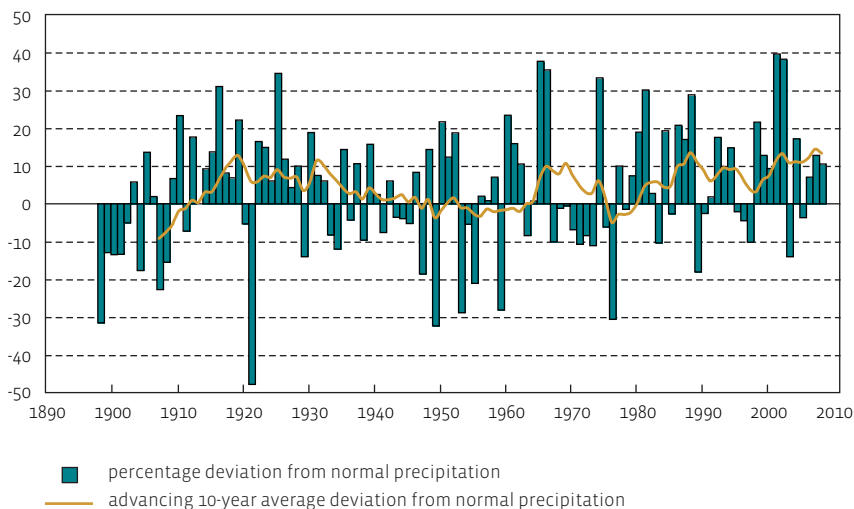




deviation from normal precipitation (%)



normal precipitation = 780.1 mm

Source: MIRA based on data from the KMI

Precipitation pattern changes under the influence of human activities

In 2007, it was shown for the first time that human activities are the main cause of the changes in precipitation on Earth observed between 1925 and 1999. Between 40° and 70° latitude – within which most of Europe also falls – the precipitation has increased on average by 62 mm per century. The contribution of human activities to this is estimated to be 50 to 85 %.

Just like in the rest of North and West Europe, the average annual amount of precipitation has been increasing in Belgium for several decades. Since records started, 2001 (1 088.5 mm) and 2002 (1 077.8 mm) are the absolute record years with amounts of precipitation 40 % and 38 % respectively above the normal 780.1 mm. There are also clearly more wet than dry years. 2007 (879.5 mm) and 2008 (861.5 mm) were also slightly wetter years than normal.

More important though regarding the possible impact, are the shifts per season and the occurrence of periods of extreme precipitation. It appears that in Belgium the increasing trend in precipitation occurs mostly in the winter months. The number of days with heavy precipitation (≥ 20 mm/day) seems to be increasing. The record year was 2004 with 12 days of heavy precipitation.

Precipitation influences the flooding risk

Both at the global level and in Europe and Belgium, since 1970 the number of heavy floods has increased significantly. Although floods have always occurred in Flanders, it is noticeable in the last 15 years we have had a lot of major floods. During these, areas were often flooded that had never in human memory been flooded before. In Flanders floods are a widespread phenomenon. The recent increase can certainly not be attributed solely to climate change. In general the effect of climate change on the risk of flooding is much less than the changes in soil use, population size, etc. But together with an accelerated rise in the sea level the changing precipitation pattern will increase the risk of flooding even further in the decades to come.