# KMA'S BRIEFING IN CLIMATE CHARACTERISTICS

(total 5 pages)

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## January, 2009 Climate

◇ National Mean temperature is 0.1℃ higher than normal.
◇ Precipitation for the national average is 49% relative to normal.

※ Every data in this text are shown in Tables 1~2.

□ Climate characteristics of January, and their long-term trends are analyzed based on 60 Korean meteorological stations (national average) for the period 1973-2009 (1908-2009 in Seoul).

□ January, 2009 climate is as follows:

o For the national average,
- the mean temperature (-0.9℃) is 0.1℃ higher than normal.
- the mean maximum temperature (4.9℃) is 0.6℃ higher than normal.
- the mean minimum (-5.8℃) temperature is 0.2℃ lower than normal.
- the amount of precipitation (15.3mm) is 48.6% relative to normal.
- the average rainy days (6.4 days) are 1.0 day shorter than normal.
- the average duration of sunshine (173.7 hours) is 5.2 hours greater than normal.
- days with daily minimum temperature below 0℃ (26.8 days) are 0.5 days greater than normal

o For Seoul,
- the mean (-2.0℃), mean maximum (2.3℃), and mean minimum (-5.5℃) temperatures are 0.5℃, 0.7℃, and 0.6℃ higher than normal, respectively.
- the amount of precipitation (5.7mm) is 26.4% relative to normal.
- the average rainy days (3.0 days) are 4.1 days shorter than normal, making it the second lowest record since the observation begins in 1908.

□ For the national average, mean, mean maximum, and mean minimum temperatures of January 2000s are 0.7℃, 0.7℃, and 0.8℃ higher than during the January of 1970s, respectively.

□ For Seoul, mean, mean maximum, and mean minimum temperatures of January 2000s are 1.1℃, 0.4℃, and 1.2℃ higher than during the January of 1970s, respectively.

※ Normal: average from 1971 to 2000.
※ National average is used average values of 60 meteorological stations starting from 1973.
※ In Seoul, data are analyzed from 1909.
※ 1910s: average from 1911 to 1920
※ 1970s: average from 1973 to 1980
※ 2000s: average from 2001 to 2009

Fig. 1. Time series of January temperatures (mean, mean maximum, and mean minimum), and precipitation across the South Korea for the period 1973-2009.
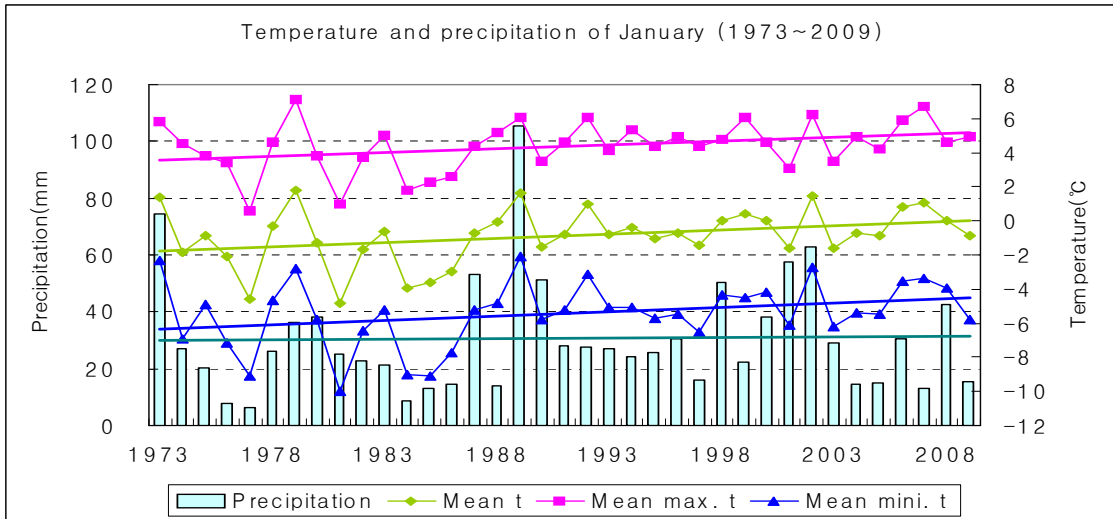


Temperature and precipitation of January (1973~2009)

Fig. 2. Time series of January temperatures (mean, mean maximum, and mean minimum), and precipitation in Seoul for the period 1908-2009.
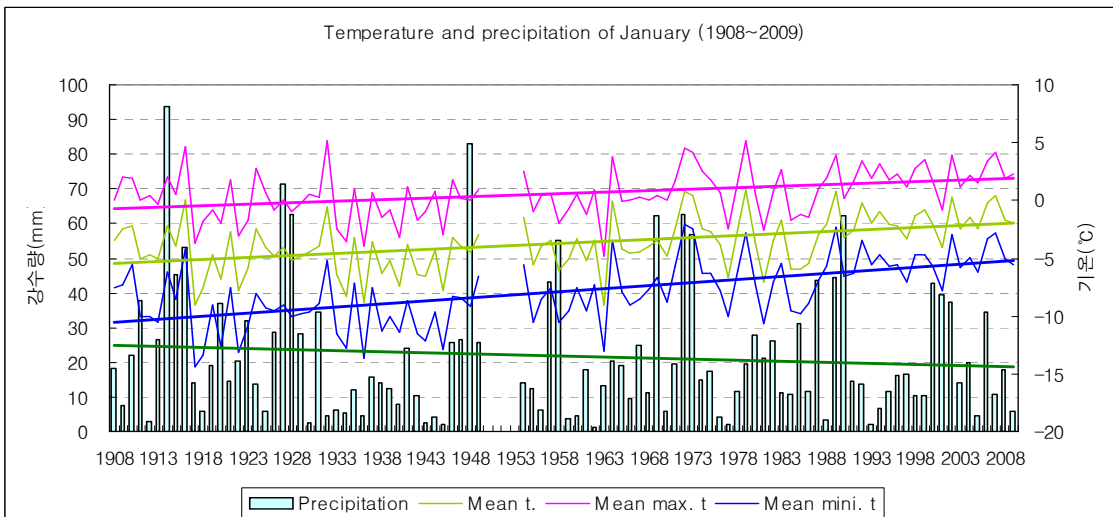


Temperature and precipitation of January (1908~2009)

Table 1. National average values of January meteorological elements (1973–2009)

| Elements (National) average) | January 2009 (a) | Normals of January (1971-2000) (b) | a-b | rank since 1973 (within 5th) | Jan., 1970s (1973-1980) (c) | Jan., 2000s (2001-2009) (d) | d-c |
|---|---|---|---|---|---|---|---|
| mean temperature(℃) | -0.9 | -1.0 | 0.1 | - | -1.0 | -0.3 | 0.7 |
| mean maximum t (℃) | 4.9 | 4.3 | 0.6 | - | 4.2 | 4.9 | 0.7 |
| mean minimum t(℃) | -5.8 | -5.6 | -0.2 | - | -5.5 | -4.7 | 0.8 |
| amount of precipitation (mm) | 15.3 | 31.5 | -16.2 (48.6%) | - | 29.7 | 31.2 | 1.5 (5.1%↑) |
| rainy days | 6.4 | 7.4 | -1.0 | - | 7.5 | 7.0 | -0.5 |
| precipitation intensity (mm/day) | 2.4 | 4.3 | -1.9 | - | 3.9 | 4.5 | 0.6 |
| diurnal temperature range (℃) | 10.7 | 9.9 | 0.8 | - | 9.7 | 9.6 | -0.1 |
| sunshine duration(hours) | 173.7 | 168.5 | 5.2 | - | 169.0 | 162.2 | -6.8 (4.0%↓) |
| cloud amounts (among 10) | 3.6 | 4.3 | -0.7 | - | 4.3 | 4.2 | -0.1 |
| relative humidity(%) | 59.8 | 66.0 | -6.2 | 3rd lowest | 67.5 | 61.8 | -5.7 |
| foggy days (days) | 0.5 | 1.2 | -0.7 | 3rd lowest | 1.1 | 1.1 | 0.0 |
| days with daily minimum temperature below 0℃ | 26.8 | 26.3 | 0.5 | - | 26.1 | 25.6 | -0.5 |
| maximum depth of total fresh snow cover | 10.2 | - | - | - | 14.1 | 11.6 | -2.5 |

**Table 2. Average values of January meteorological elements in Seoul (1908-2009)**

| Elements (Seoul) | January 2009 (a) | Normals of January (1971-2000) (b) | a-b | rank since 1973 (within 5th) | Jan., 1910s (1911-1920) (c) | Jan., 1970s (1973-1980) (d) | Jan., 2000s (2001-2009) (e) | e-c | e-d |
|---|---|---|---|---|---|---|---|---|---|
| mean temperature(℃) | -2.0 | -2.5 | 0.5 | - | -4.9 | -2.6 | -1.5 | 3.4 | 1.1 |
| mean maximum t (℃) | 2.3 | 1.6 | 0.7 | - | -0.1 | 1.8 | 2.2 | 2.3 | 0.4 |
| mean minimum t(℃) | -5.5 | -6.1 | 0.6 | - | -9.9 | -6.1 | -4.9 | 5.0 | 1.2 |
| amount of precipitation (mm) | 5.7 | 21.6 | -15.9 (26.4%) | - | 33.5 | 19.4 | 20.4 | -13.1 (39.1%↓) | 1.0 (5.2%↑) |
| rainy days (days) | 3.0 | 7.1 | -4.1 | 2nd lowest | 7.8 | 6.9 | 5.2 | -2.6 | -1.7 |
| precipitation intensity (mm/day) | 1.9 | 3.0 | -1.1 | - | 4.3 | 2.8 | 3.9 | -0.4 | 1.1 |
| diurnal temperature range (℃) | 7.8 | 7.7 | 0.1 | - | 9.8 | 7.9 | 7.1 | -2.7 | -0.8 |
| sunshine duration(hours) | 210.6 | 158.4 | 52.2 | - | 176.2 | 156.8 | 153.1 | -23.1 (13.1%↓) | -3.7 (2.4%↓) |
| cloud amounts (among 10) | 2.5 | 4.0 | -1.5 | - | 4.2 | 4.0 | 3.6 | -0.6 | -0.4 |
| relative humidity(%) | 50.0 | 62.6 | -12.6 | 2nd lowest | 67.3 | 64.1 | 56.6 | -10.7 | -7.5 |
| foggy days (days) | 1.0 | 1.4 | -0.4 | - | - | 2.3 | 1.3 | - | -1.0 |
| days with daily minimum temperature below 0℃ | 27.0 | 28.0 | -1.0 | - | 29.5 | 28.1 | 26.8 | -2.7 | -1.3 |
| maximum depth of total fresh snow cover | 9.0 | 11.8 | -2.8 | - | - | 10.4 | 10.7 | - | 0.3 |
| ground temperature at 1m (℃) | 5.1 | 4.8 | 0.3 | - | - | 4.5 | 5.1 | - | 0.6 |
| ground temperature at 3m (℃) | 13.6 | 13.2 | 0.4 | - | - | 13.2 | 13.8 | - | 0.6 |
| ground temperature at 5m (℃) | 16.2 | 15.5 | 0.7 | - | - | 15.2 | 16.1 | - | 0.9 |