

Bangladesh

In this section explore the latest projections about climate change

What is Bangladesh's climate like?

- Bangladesh is a low-lying country in South Asia located at 21-26°N. The country has a tropical monsoon climate with a hot, humid summer from March to June, a cooler monsoon season from June to September and a dry winter from October to March
- January is the coolest month, with temperatures around 26°C and April is the warmest month with temperatures around 35°C
- Most parts of the country receive over 2000mm of rainfall each year with 80% of it falling during the monsoon
- Northeastern Bangladesh receives the highest rainfall, being just south of the Himalayas
- Cyclones hit Bangladesh in April to May and September to November
- Bangladesh is very vulnerable to future changes in sea level

Graph one: How did Bangladesh's temperature change between 1960 and 2009?

- The black line shows the actual temperature anomaly for each year from 1960 to 2000. This is the difference in temperature between the year's recorded temperature and the average of all years between 1970 and 1999. If the anomaly is positive, that year was warmer than the 1970-1999 average. If it is negative, that year was colder than the 1970-1999 average
- The brown line shows past temperature anomalies as produced by a computer model with the brown shading showing the range of temperatures produced by the model
- Temperature has increased in Bangladesh since 1960, particularly in JJA and SON by up to 0.5°C per decade
- The green, blue and red lines show projected future temperatures from 2006 to 2100, according to three different emission scenarios – green (low), blue (medium) and red (high). The shading around each line shows the range of temperature that might be possible with each emission scenario
- Bangladesh is expected to warm by 0.9-2.6°C by the 2060s and 1.3-4.1°C by the 2090s

Graphs two to four: How will Bangladesh's annual temperature change during the 2030s, 60s and 90s?

- These 3 maps show projected temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded deep orange will be 6°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be the same as the 1970-1999 average
- The numbers in the centre of each grid box is the average projected temperature; numbers in the upper and lower corners give the highest and lowest possible annual mean temperature
- Bangladesh is expected to warm by 0.9-2.6°C by the 2060s and 1.3-4.1°C by the 2090s

Graphs five to seven: How will Bangladesh's temperature change seasonally? – December, January, February

- These 3 maps show projected December, January and February (DJF) temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)

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- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded red will be 6-7°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be the same as the 1970-1999 average
- The number in the centre of each grid box is the average projected temperature; numbers in the upper and lower corners give the highest and lowest possible DJF mean temperature
- Bangladesh will warm less in DJF and MAM than in JJA and SON

Graphs eight to 10: How will Bangladesh's temperature change seasonally? – March, April, May

- These 3 maps show projected March, April and May (MAM) temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded red will be 6-7°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be about the same as the 1970-1999 average
- The number in the centre of each grid box is the average MAM temperature anomaly we expect having had high carbon dioxide emissions; the smaller numbers in the upper and lower corners give the range of average temperature anomalies that might occur
- Bangladesh will warm less in DJF and MAM than in JJA and SON

Graphs 11 to 13: How will Bangladesh's temperature change seasonally? – June, July, August

- These 3 maps show projected June, July and August (JJA) temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded red will be 6-7°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be about the same as the 1970-1999 average
- The number in the centre of each grid box is the average JJA temperature anomaly we expect having had high carbon dioxide emissions; the smaller numbers in the upper and lower corners give the range of average temperature anomalies that might occur
- Bangladesh will warm less in DJF and MAM than in JJA and SON

Graphs 14 to 16: How will Bangladesh's temperature change seasonally? – September, October, November

- These 3 maps show projected September, October and November (SON) temperatures in the 2030s, 60s and 90s (according to a high carbon dioxide emissions scenario, A2)
- All values are anomalies – the difference in temperature to the average of 1970 to 1999 temperatures
- Areas shaded red will be 6-7°C hotter than average temperatures from 1970 to 1999, whereas areas shaded green will be about the same as the 1970-1999 average
- The number in the centre of each grid box is the average SON temperature anomaly we expect having had high carbon dioxide emissions; the smaller numbers in the upper and lower corners give the range of average temperature anomalies that might occur
- Bangladesh will warm less in DJF and MAM than in JJA and SON

Graphs 17 to 18: How will Bangladesh's frequency of hot days change?

- These two maps show the percentage of hot days expected during the 2060s and 2090s given high carbon dioxide emissions through the century (scenario A2)
- A hot day is defined by the temperature exceeded on 10% of days in 1970-1999. So, in 1970 – 1999, you would have expected 1 in 10 days to be hot. If the map shading indicates that more than 10% of days are hot, then there has been an increase in the number of hot days
- In areas shaded deep red, every day will be a hot day. Yellow areas will have 30% hot days

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- The number in the centre of each grid box is the number of hot days we expect; the smaller numbers in the upper and lower corners give the range of numbers of hot days that might occur
- Hot days are expected on 17-39% of days by the 2060s and 16-52% of days by the 2090s

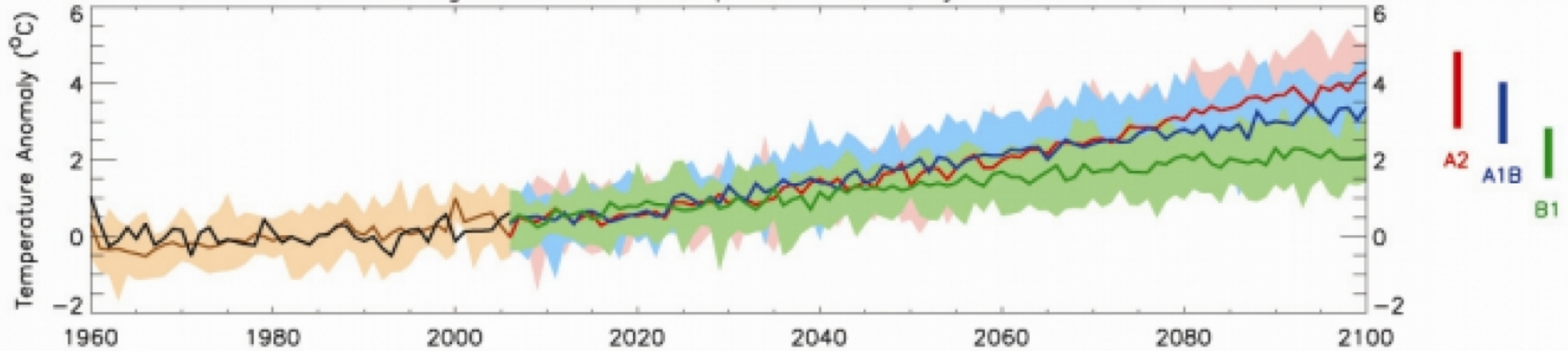
Graphs 19 to 20: How will Bangladesh's frequency of hot nights change?

- These two maps show the percentage of hot nights expected during the 2060s and 2090s given high carbon dioxide emissions through the century (scenario A2)
- A hot night is defined by the temperature exceeded on 10% of nights in 1970-1999. So, in 1970 – 1999, you would have expected 1 in 10 nights to be hot. If the map shading indicates that more than 10% of nights are hot, then there has been an increase in the number of hot nights
- In areas shaded deep red, every night will be a hot night. Yellow areas will have 30% hot nights
- The number in the centre of each grid box is the number of hot nights we expect; the smaller numbers in the upper and lower corners give the range of numbers of hot nights that might occur
- Hot nights are expected on 26-37% of nights by the 2060s and 30-50% of nights by the 2090s

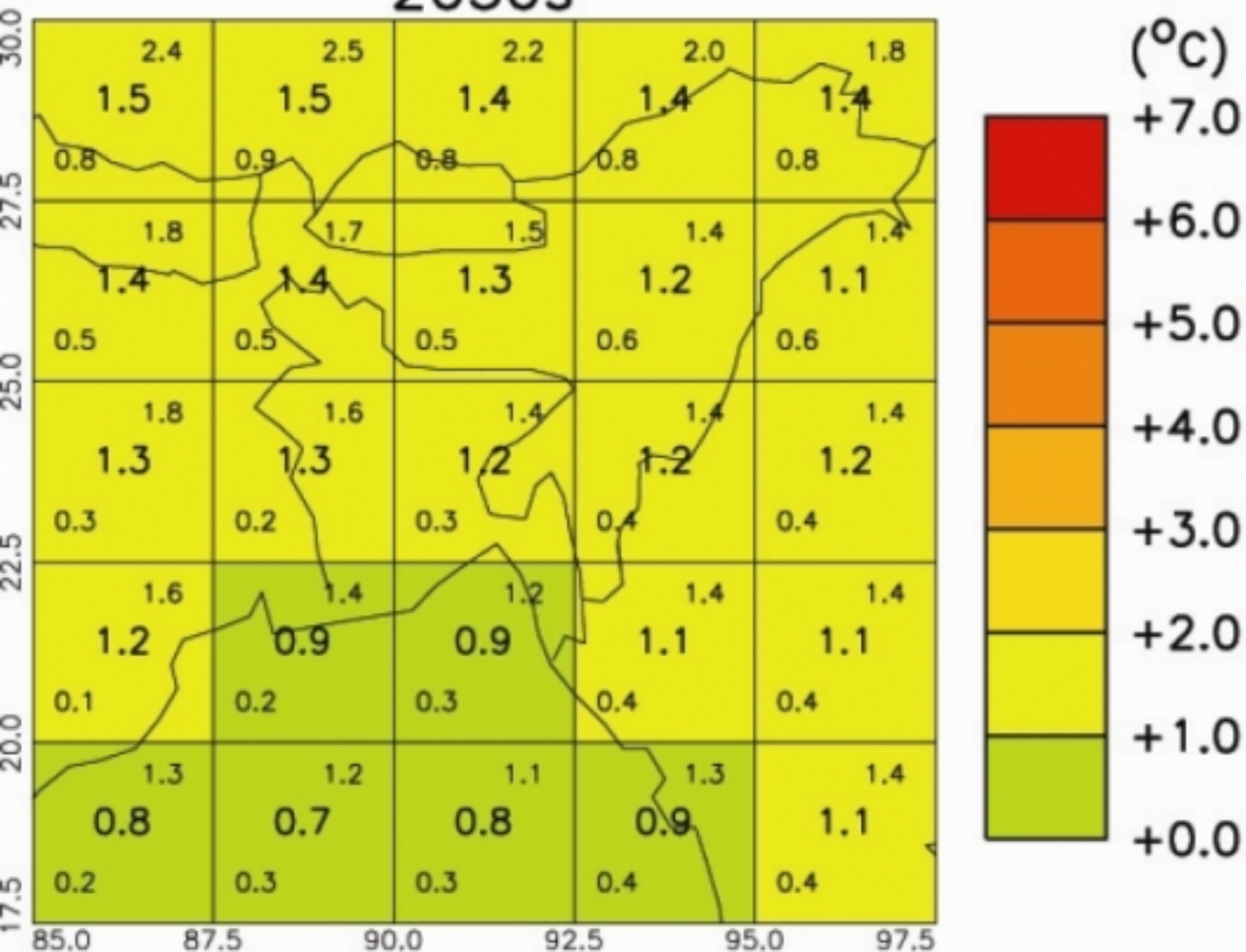
Graph 21: How will Bangladesh's precipitation change?

- This graph shows the 'precipitation anomaly' – the difference in rain or snowfall to the 1970-1999 average. If the graph shows a positive number, then it is wetter than the 1970-1999 average. If the graph shows a negative number, then it is drier
- The black line shows the actual precipitation anomaly for each year from 1960 to 2006. This is the difference in rain/ snowfall between the year's recorded precipitation and the average of all years between 1970 and 1999
- The brown line shows past precipitation anomalies as produced by a computer model with the brown shading showing the range produced by the model
- The green, blue and red lines show projected future precipitation from 2006 to 2100, according to three different carbon dioxide emission scenarios – green (low), blue (medium) and red (high). The shading around each line shows the range of precipitation that might be possible with each emission scenario
- Rainfall has fallen in Bangladesh by 1.1mm per month since 1960. Rainfall in the monsoon season (JJA) has fallen more than this. Rainfall has actually increased in MAM
- In the future, there will be small increases in rainfall in Bangladesh. It is particularly hard to make rainfall projections for Bangladesh, as the monsoon is relatively poorly understood

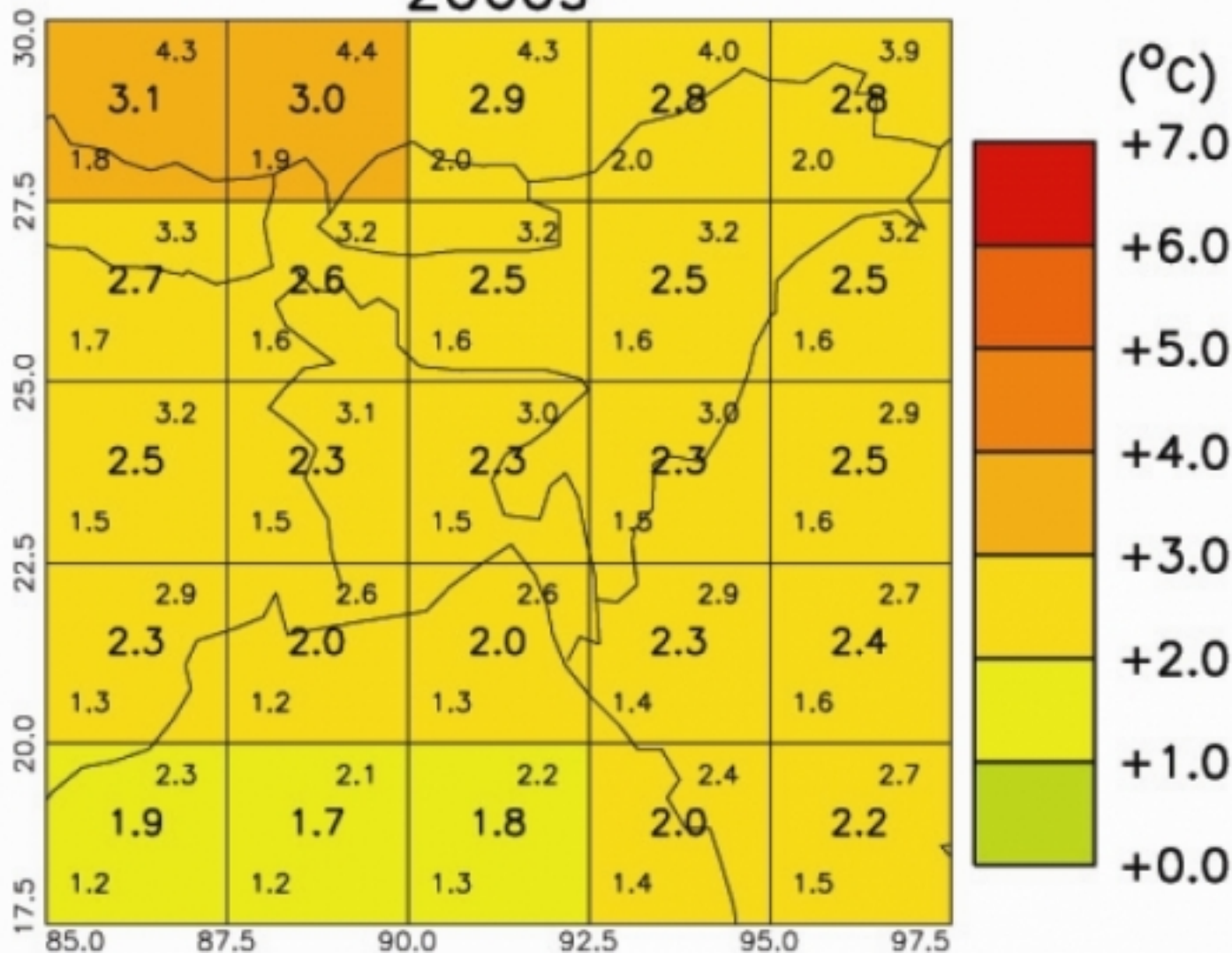
Bangladesh: Mean Temperature Anomaly Annual



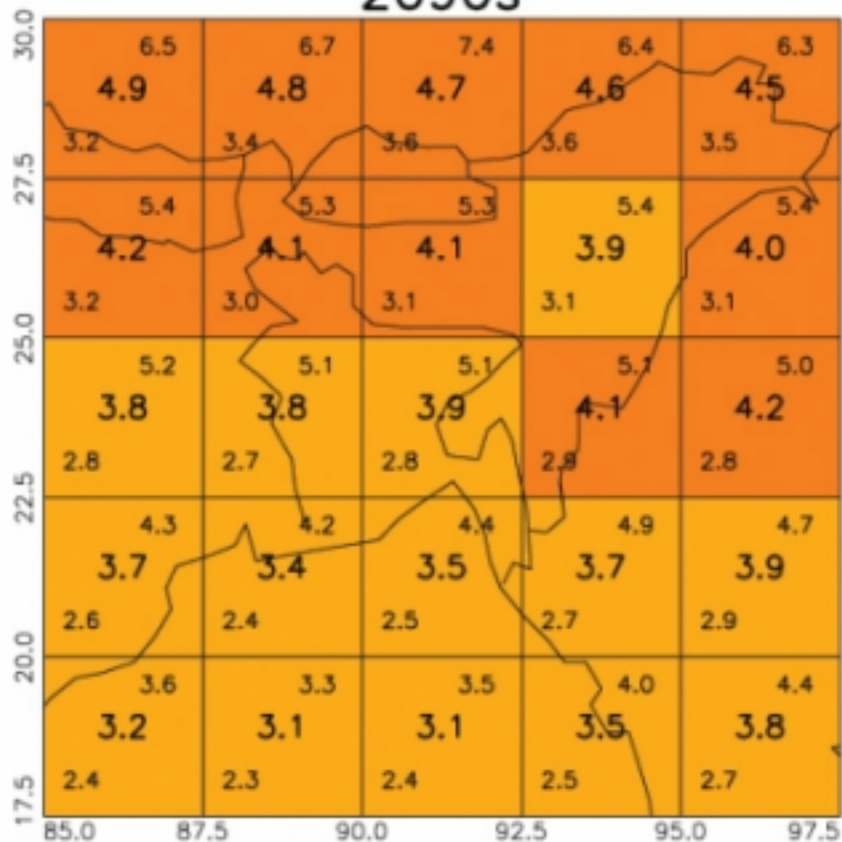
2030s



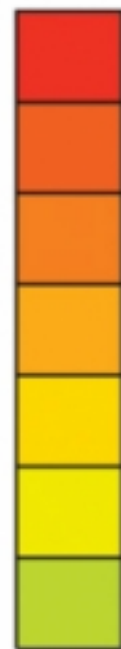
2060s



2090s



(°C)



+7.0

+6.0

+5.0

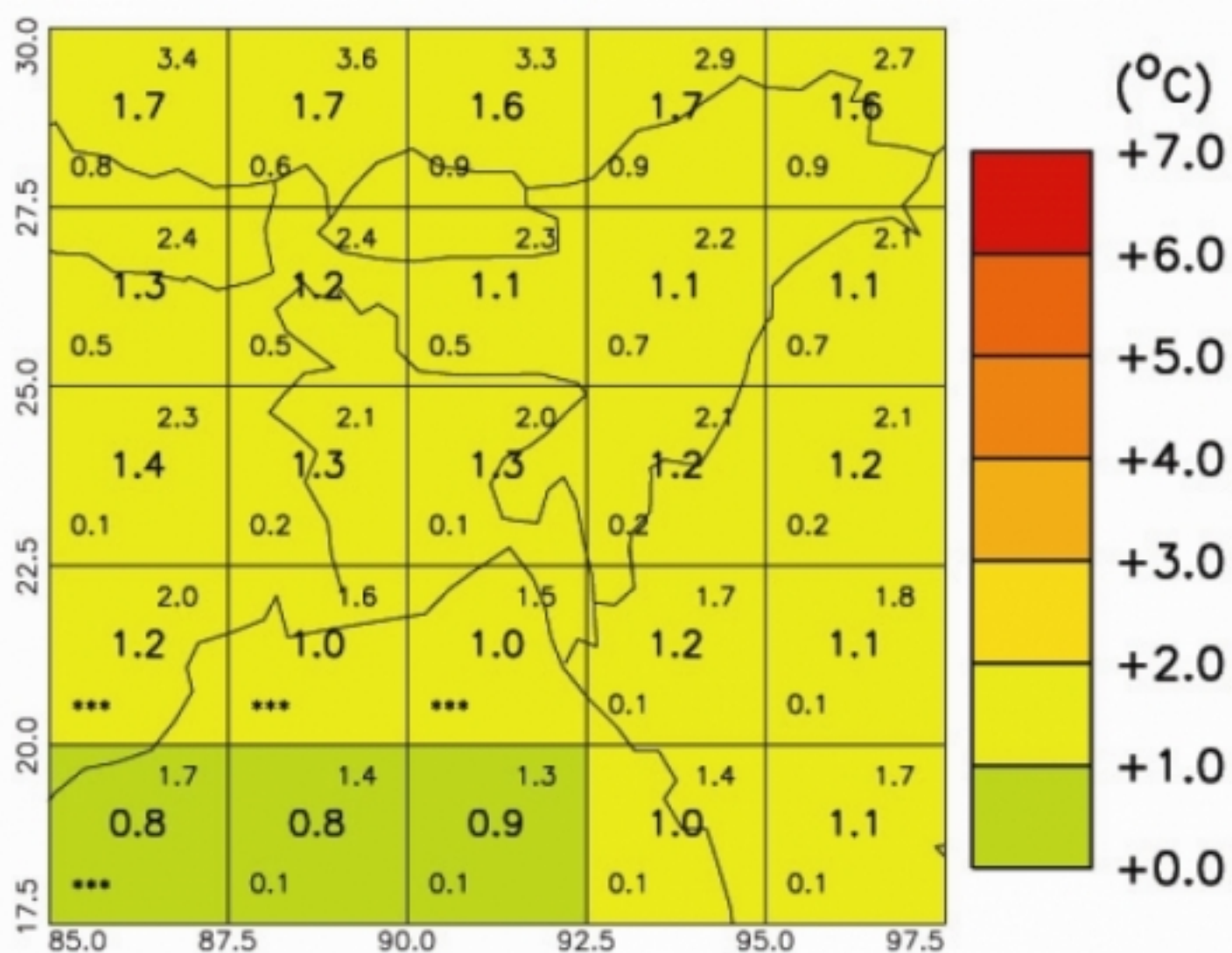
+4.0

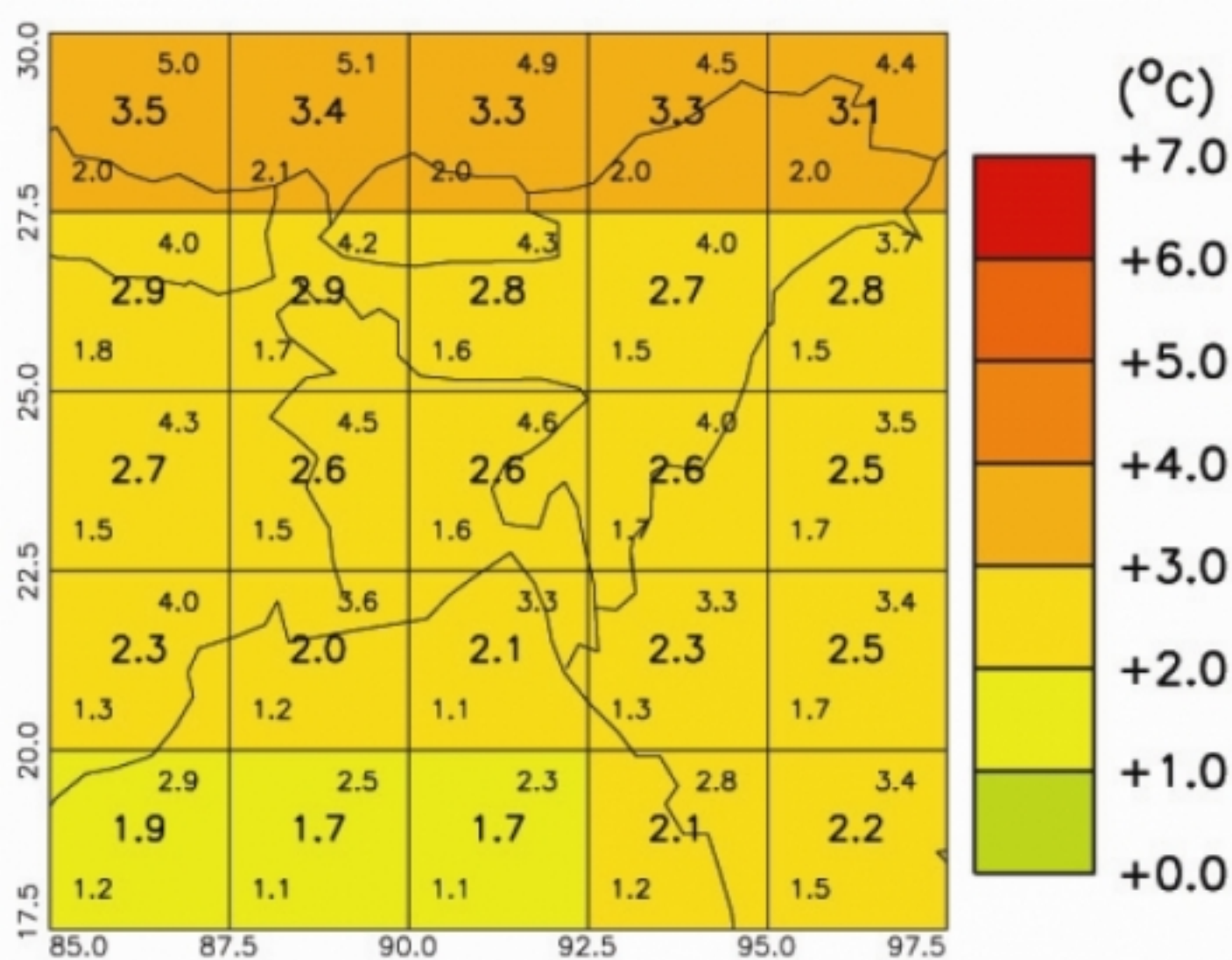
+3.0

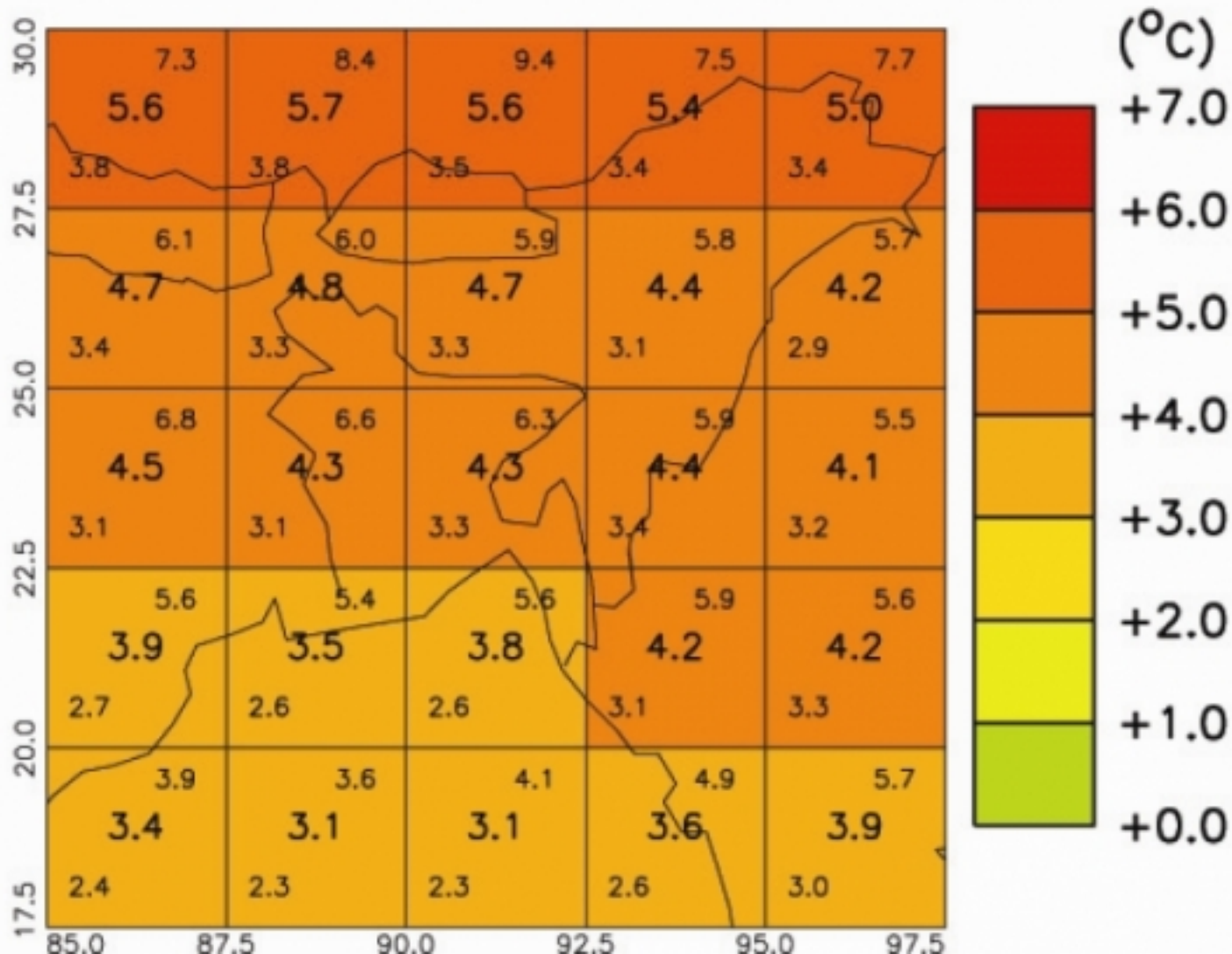
+2.0

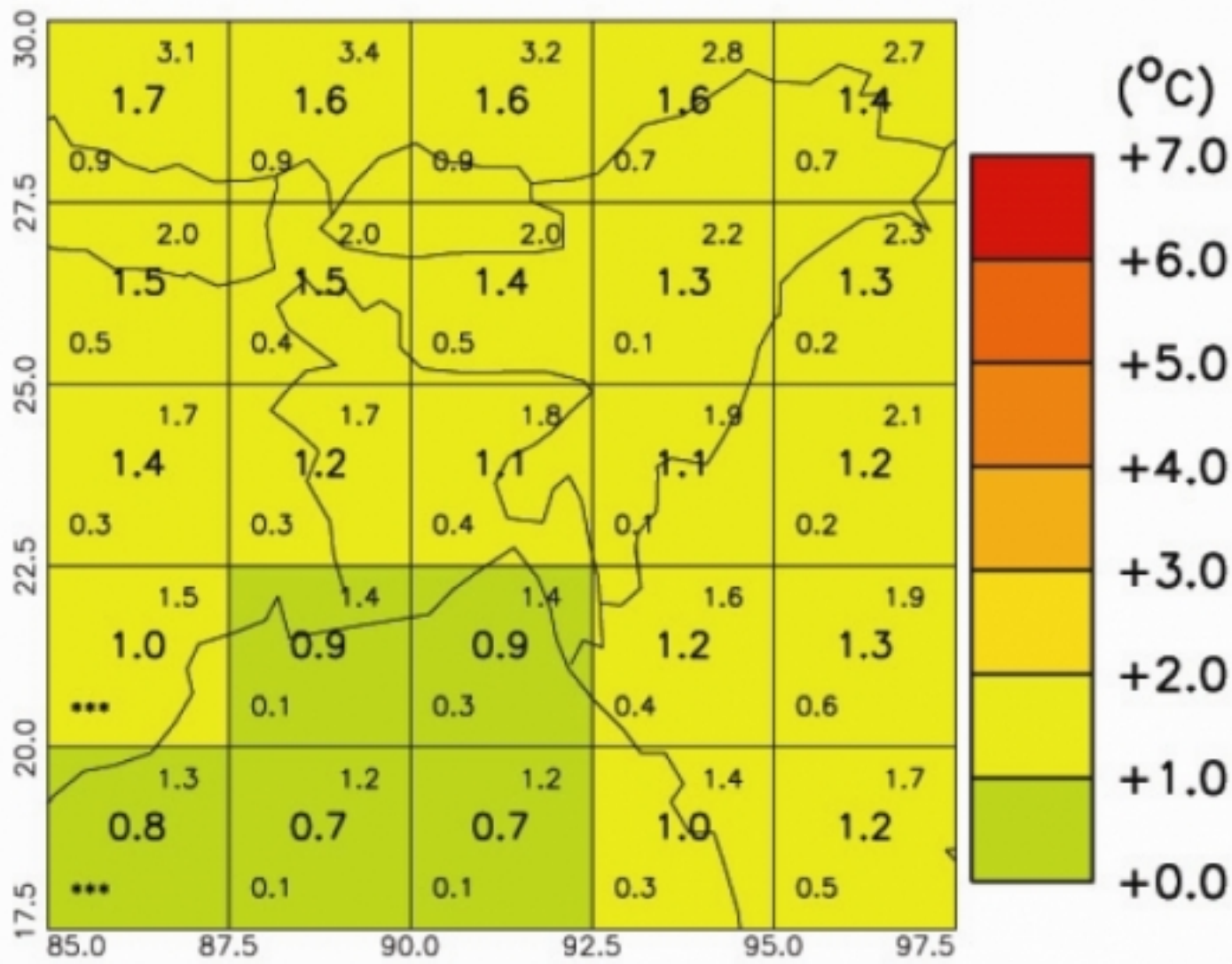
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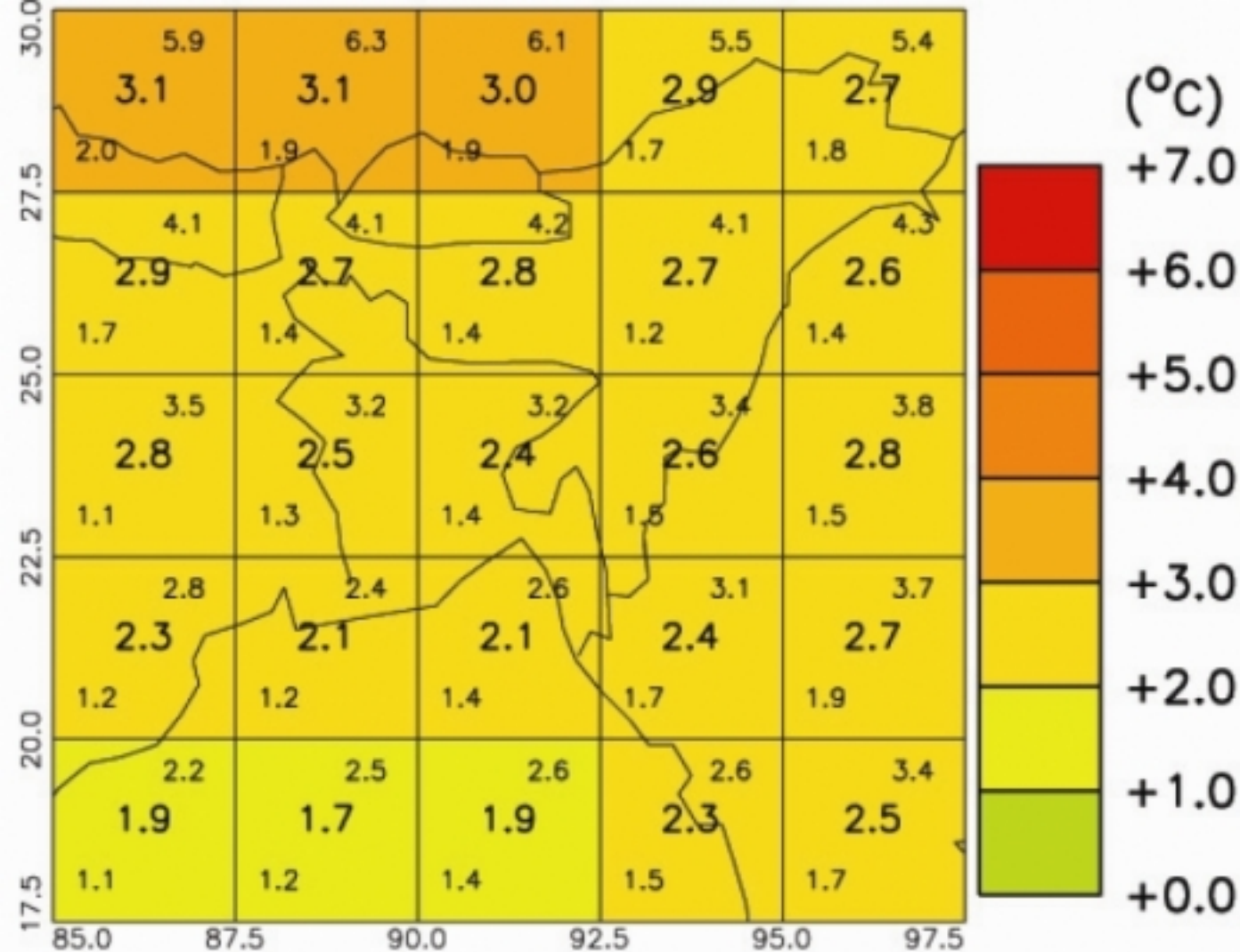
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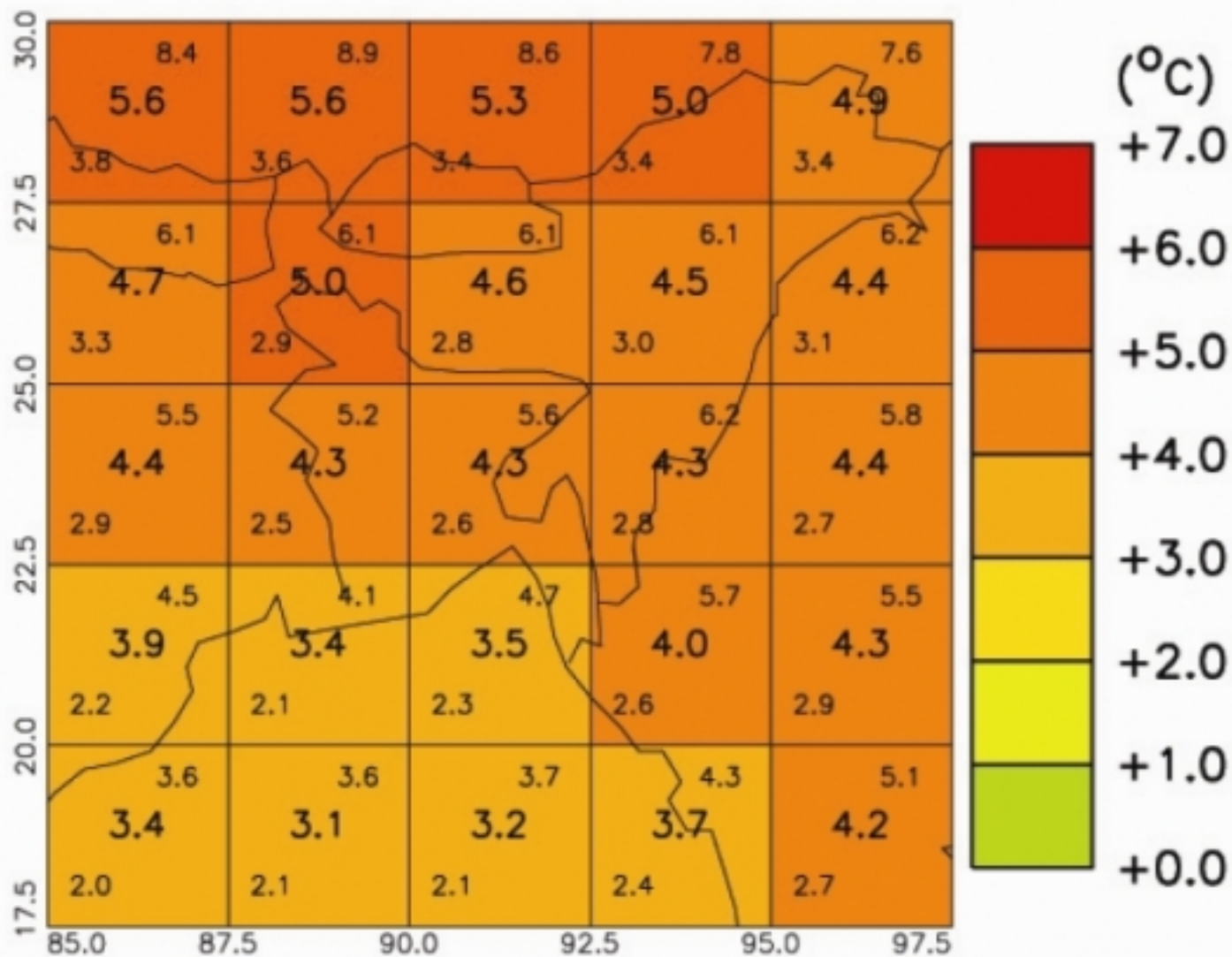


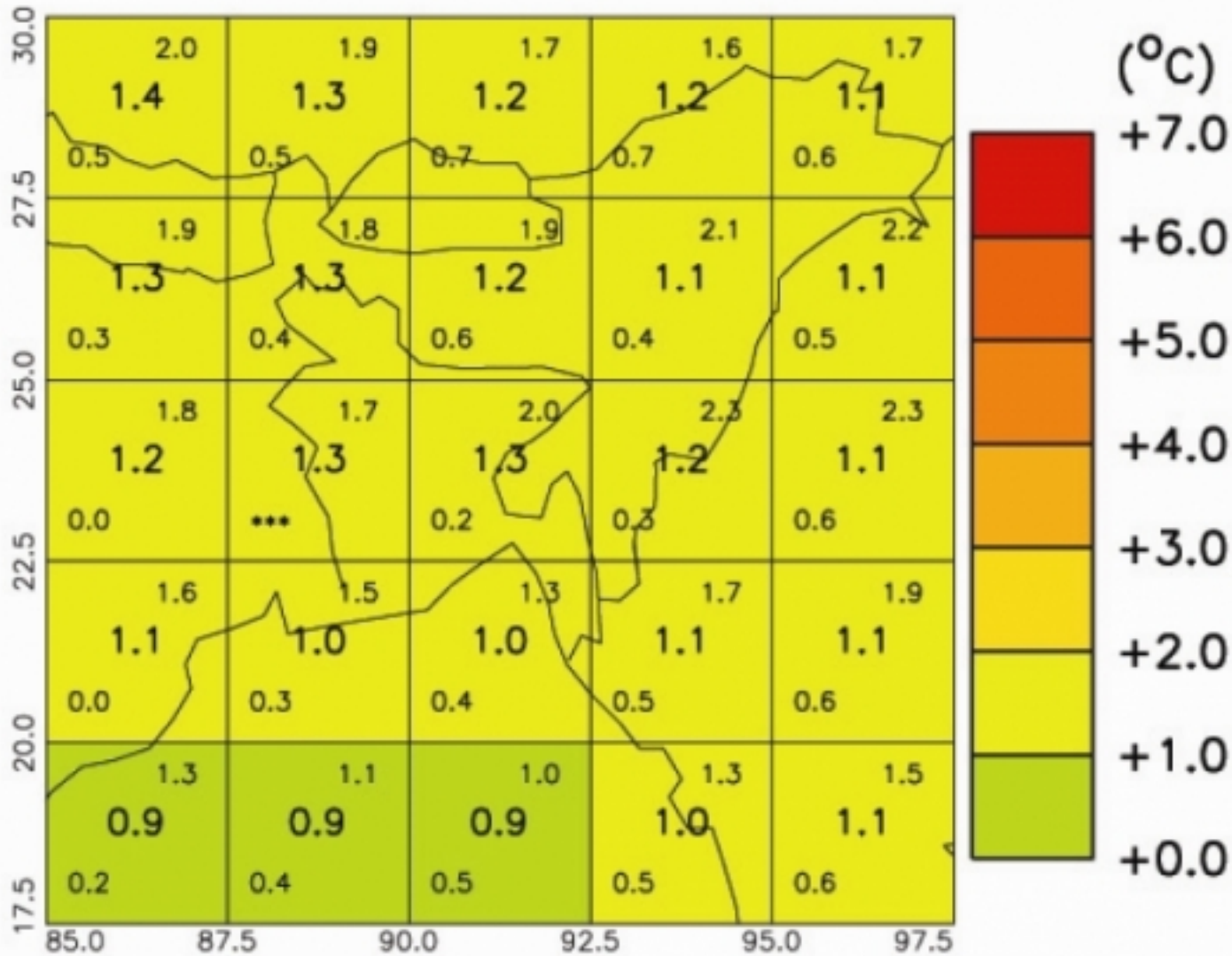


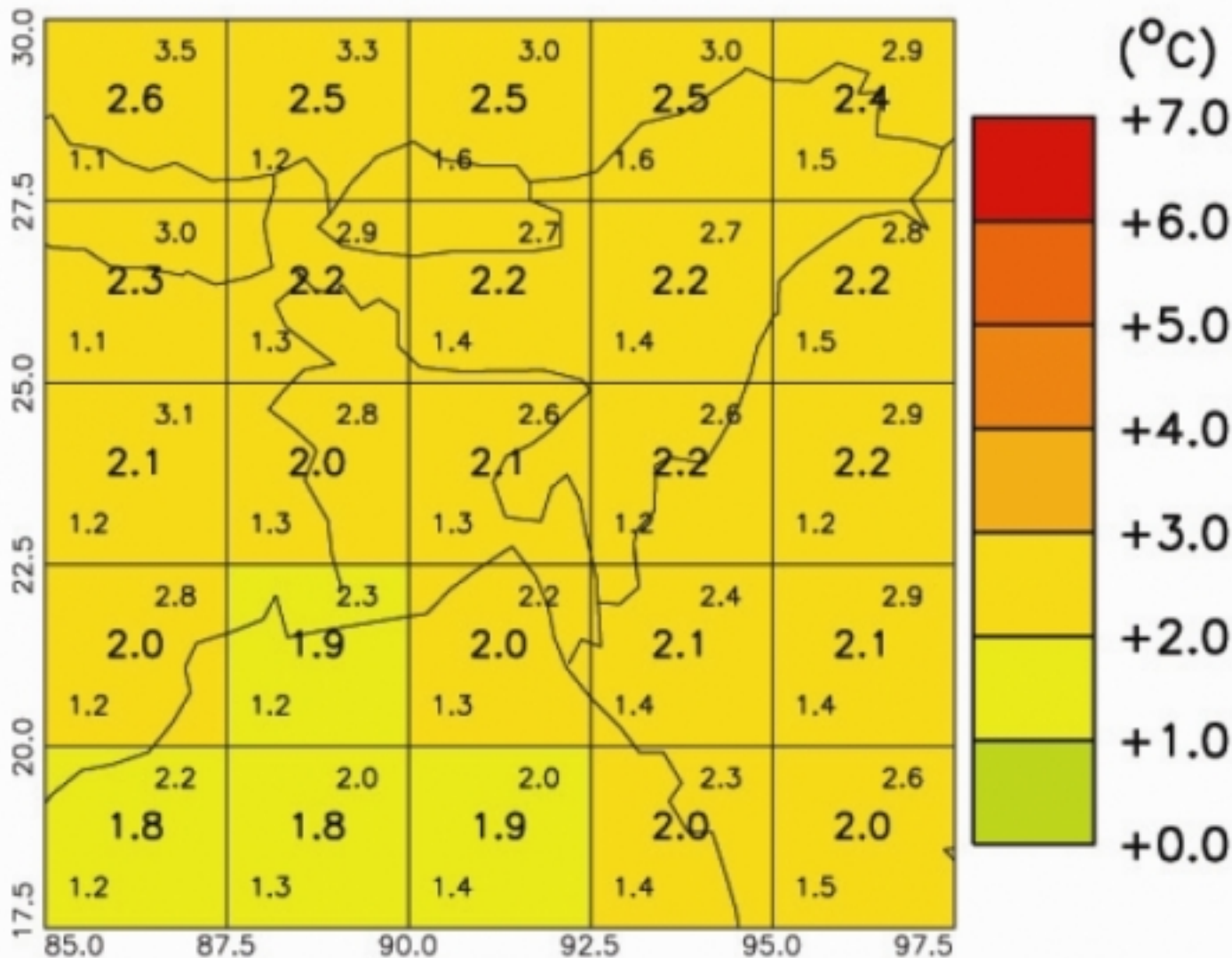


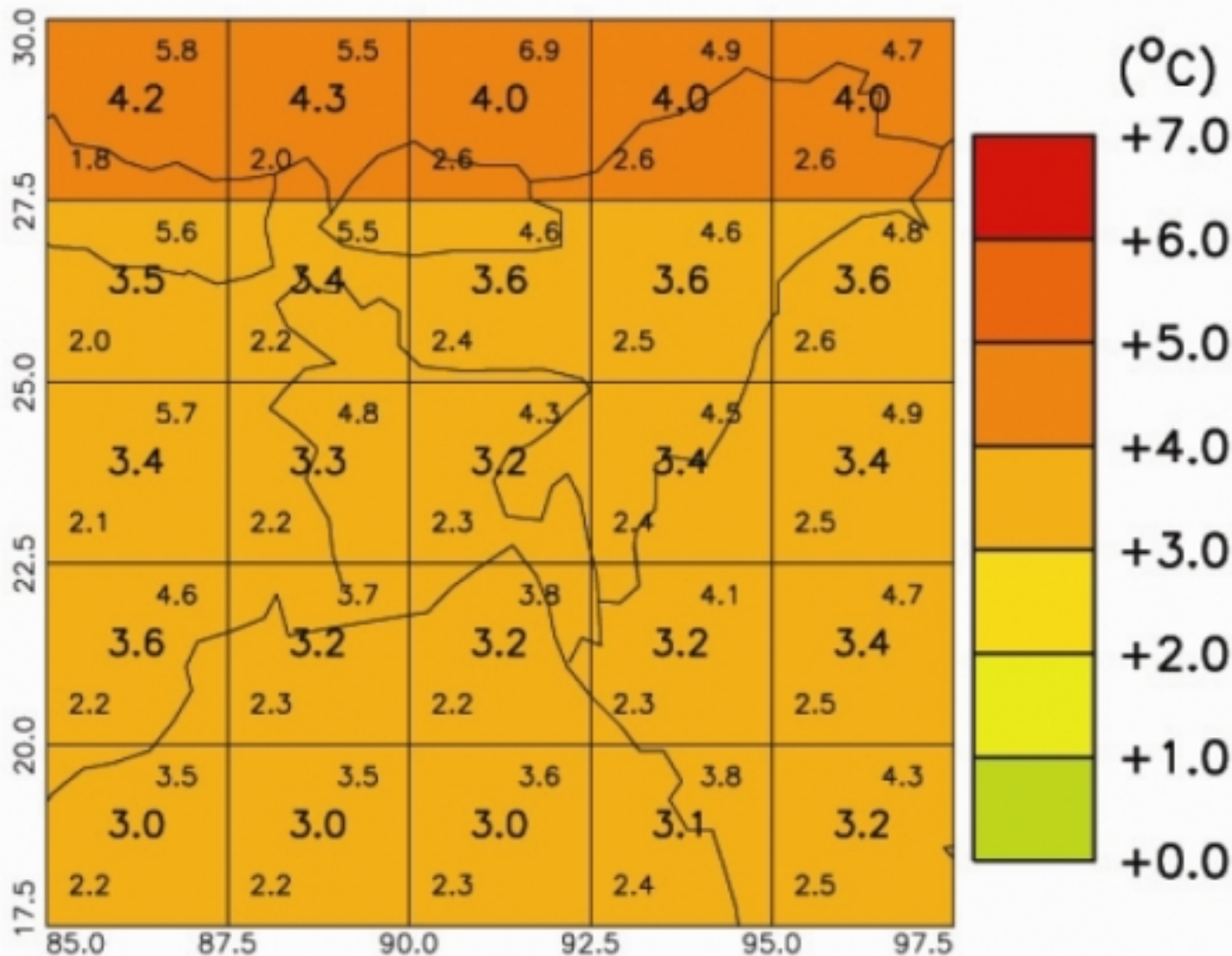


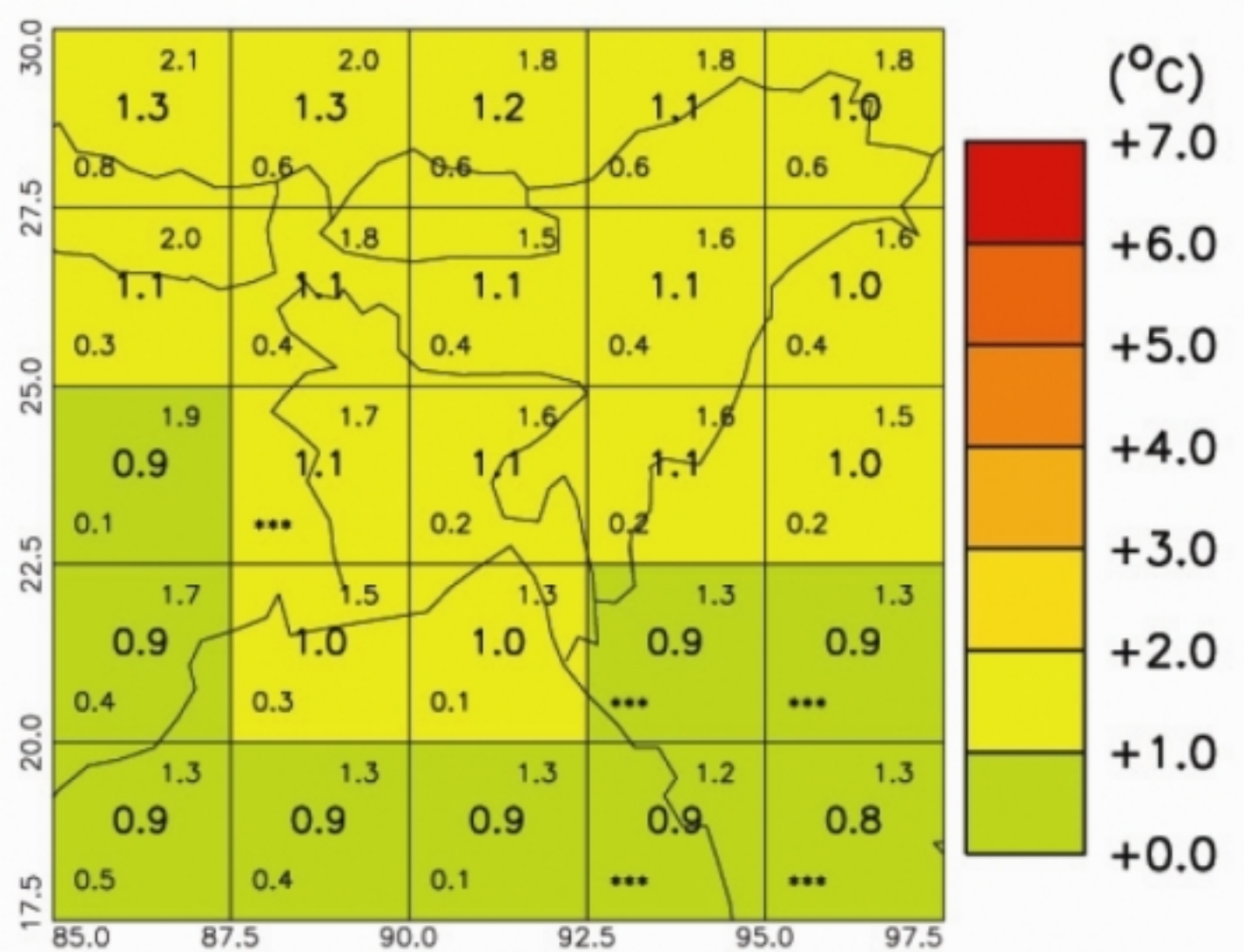


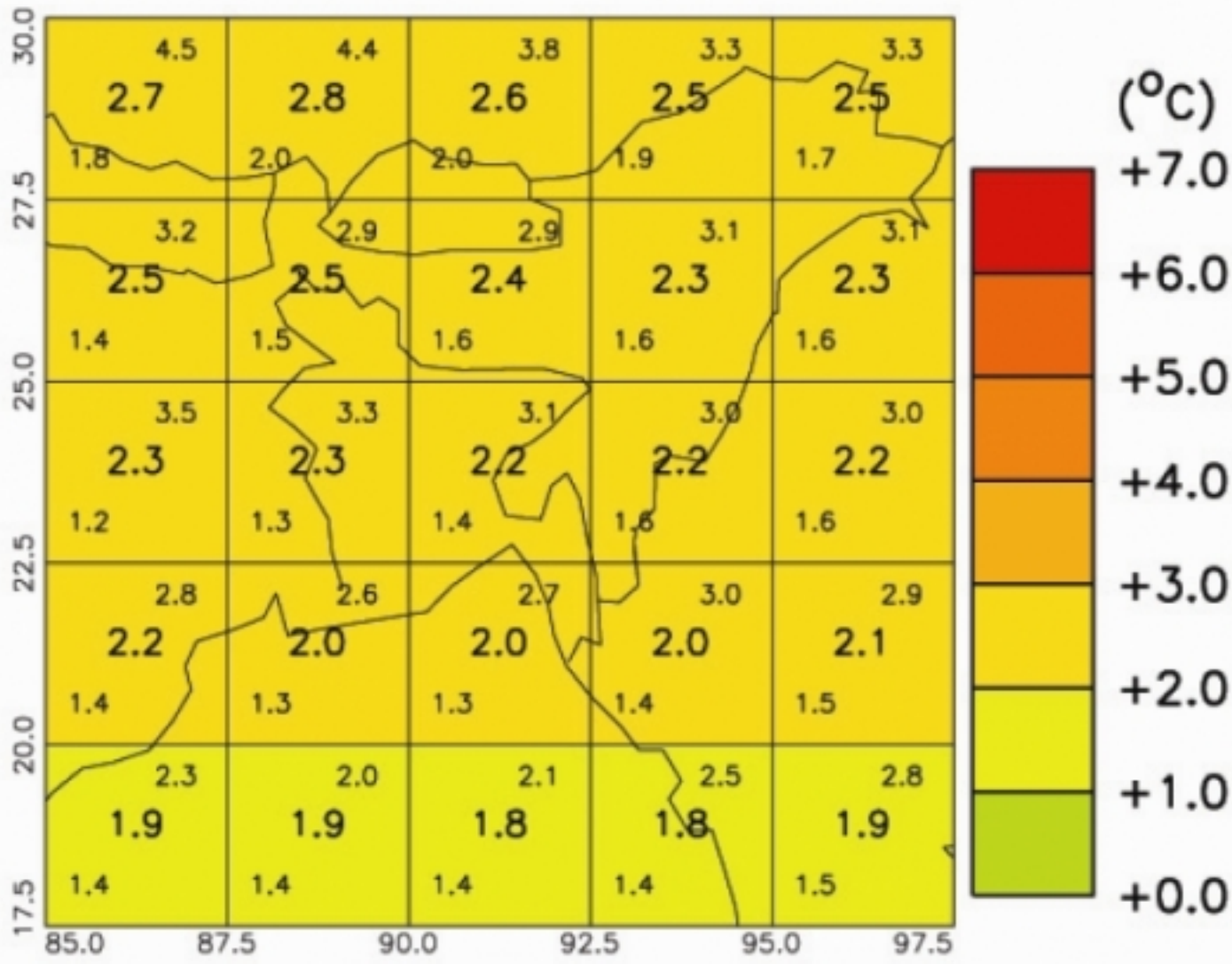


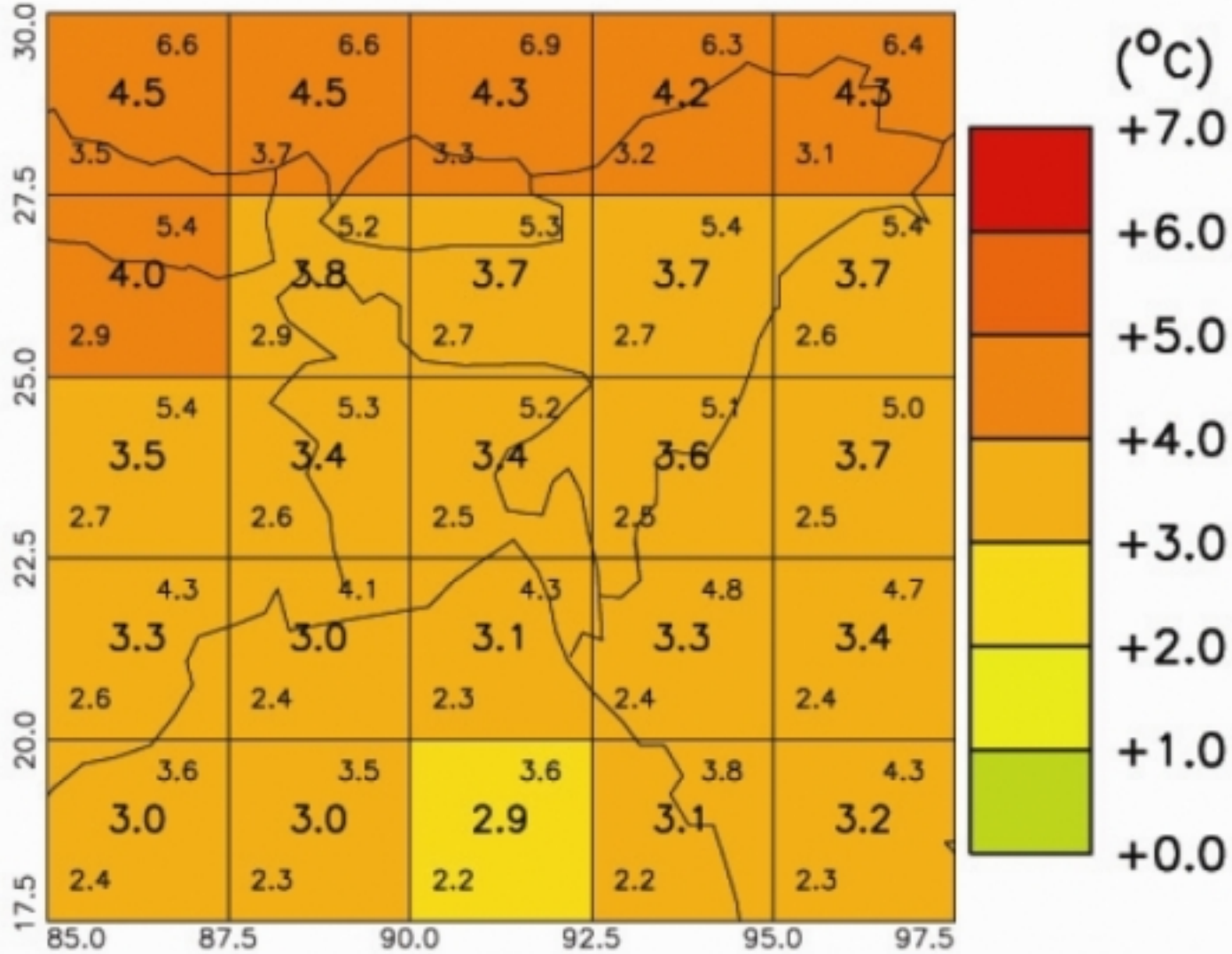




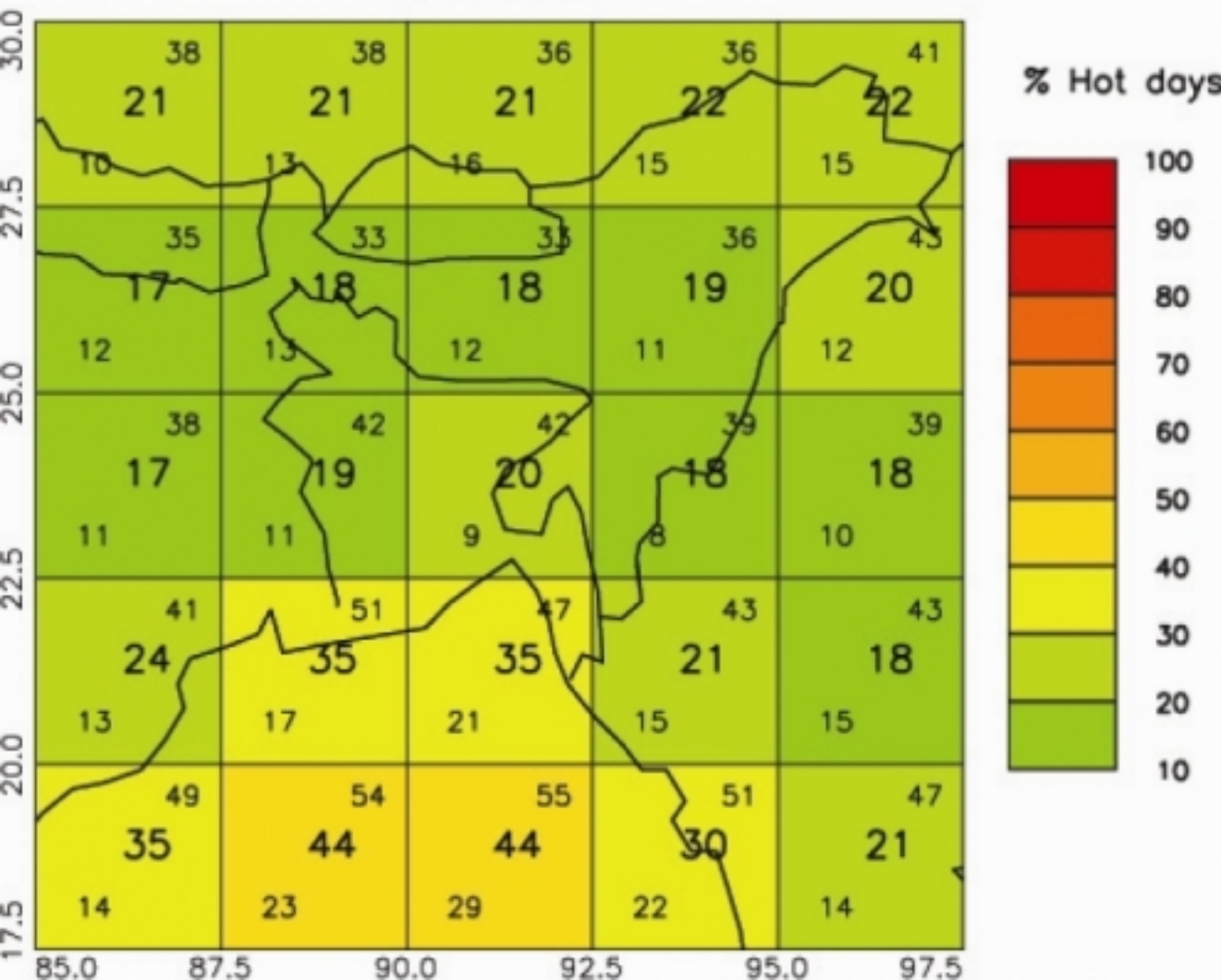




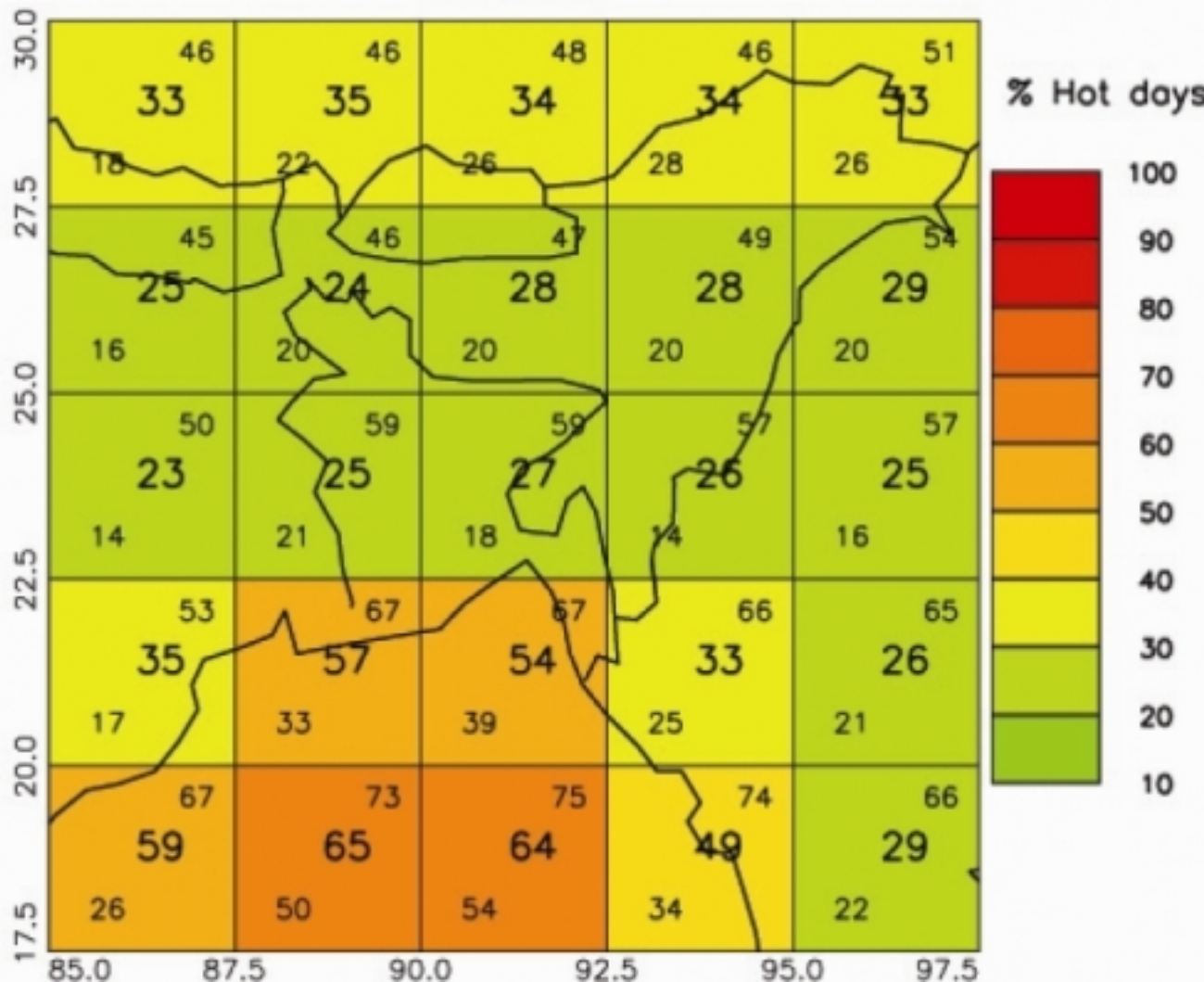




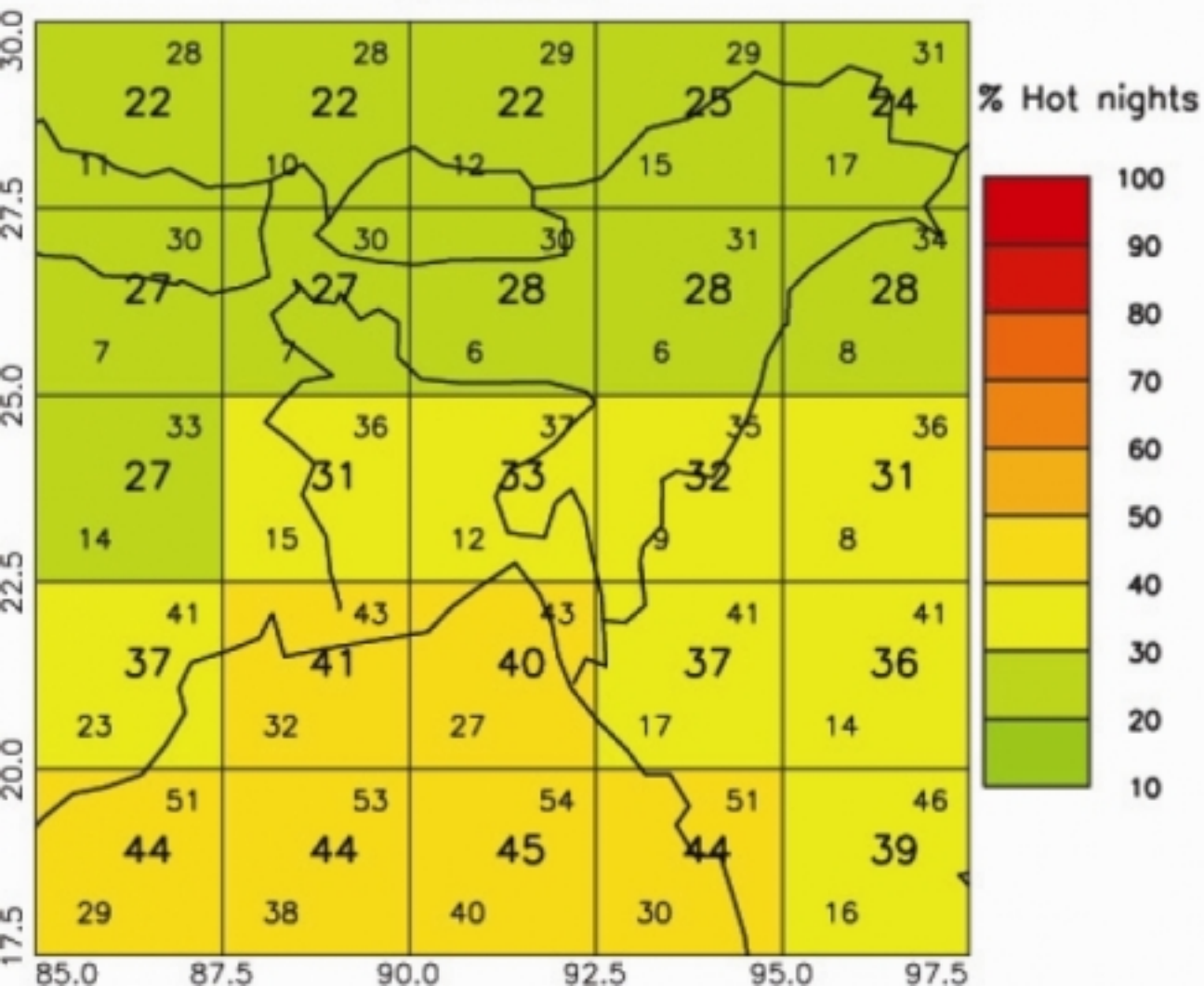
2060s



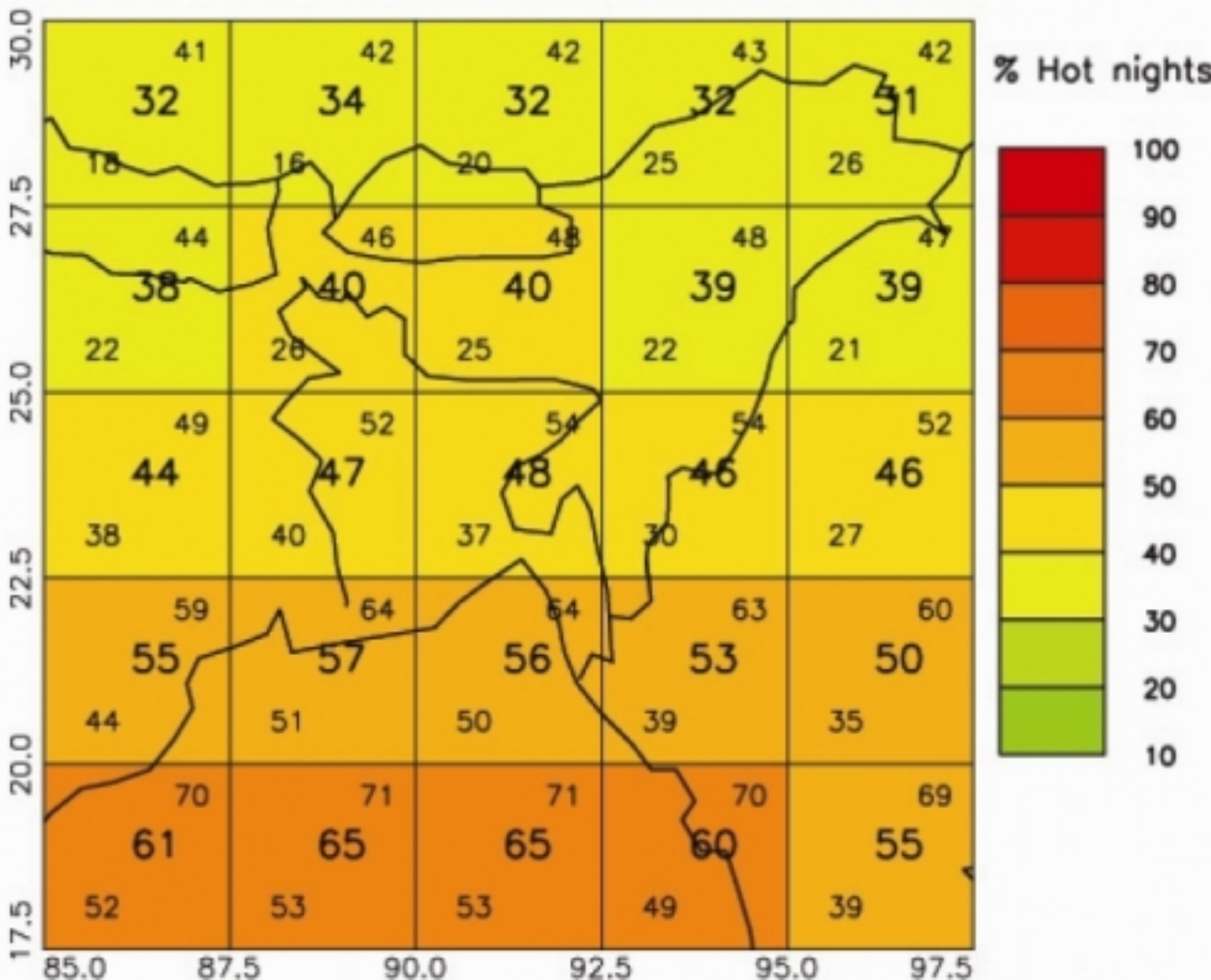
2090s



2060s



2090s



Bangladesh: Monthly Precipitation Anomaly Annual

