FutureWater

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Climate Change and Adaptation Initiative (CCAI)

# A P P E N D I C E S

# Development of baseline climate data set and trend analysis in the Mekong Basin

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# Appendix 1: Monthly LMB bias grids for temperature and precipitation

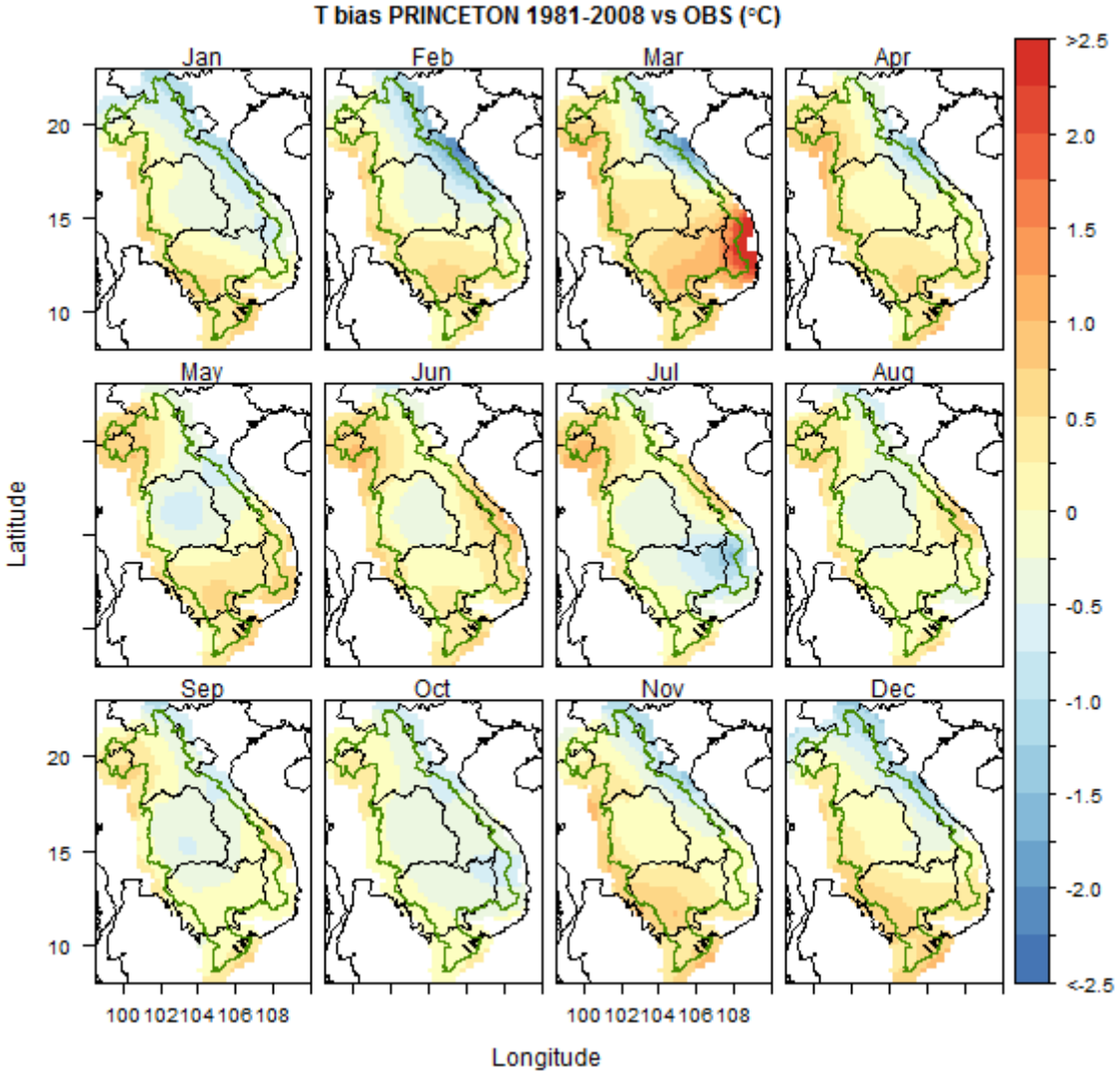



**Figure 1: Average temperature bias per month for 1981-2008. A positive bias indicates overestimated temperature in the PRINCETON product with respect to ground observations; a negative bias indicates underestimated temperature in the PRINCETON product with respect to ground observations.**

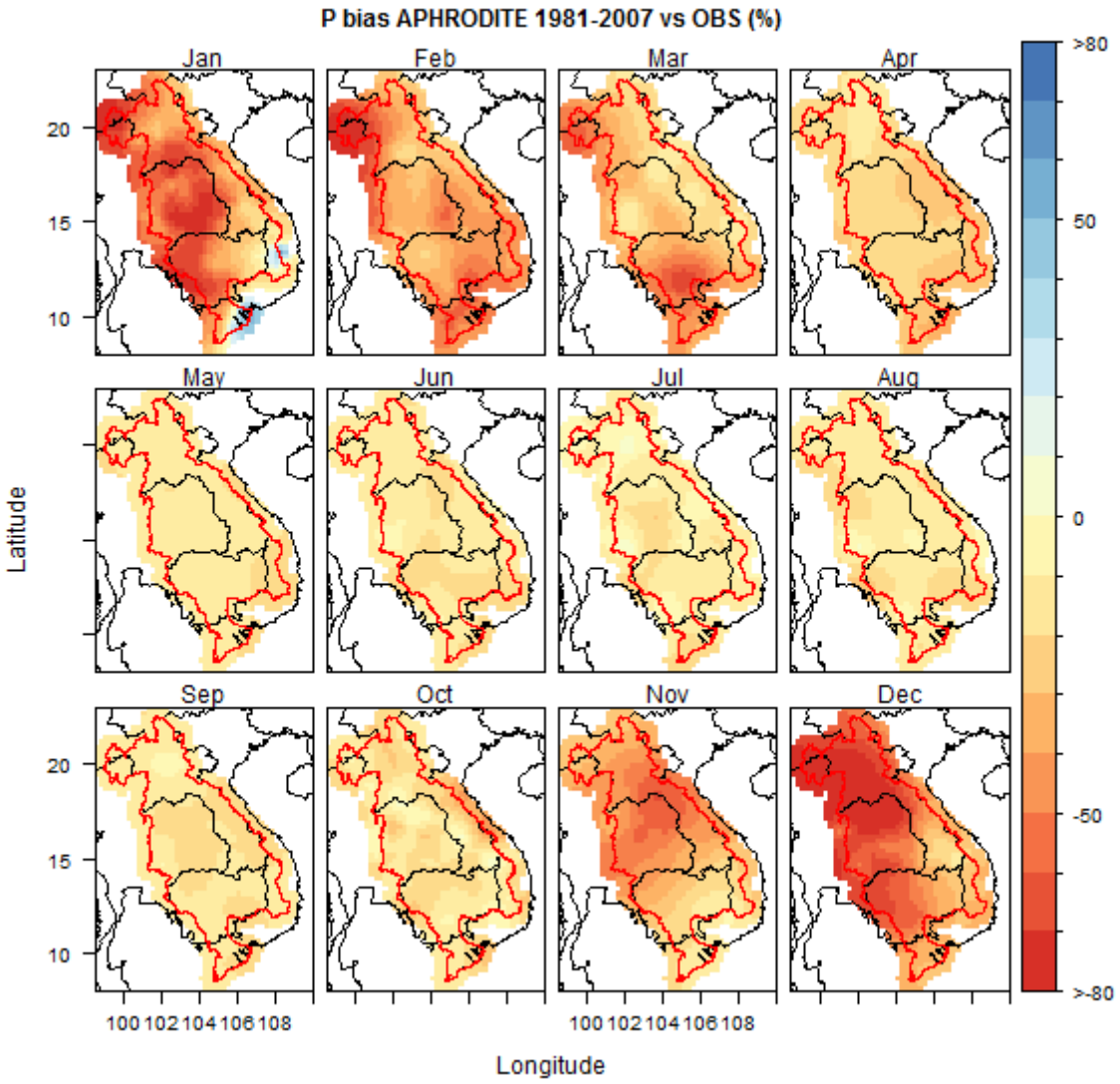
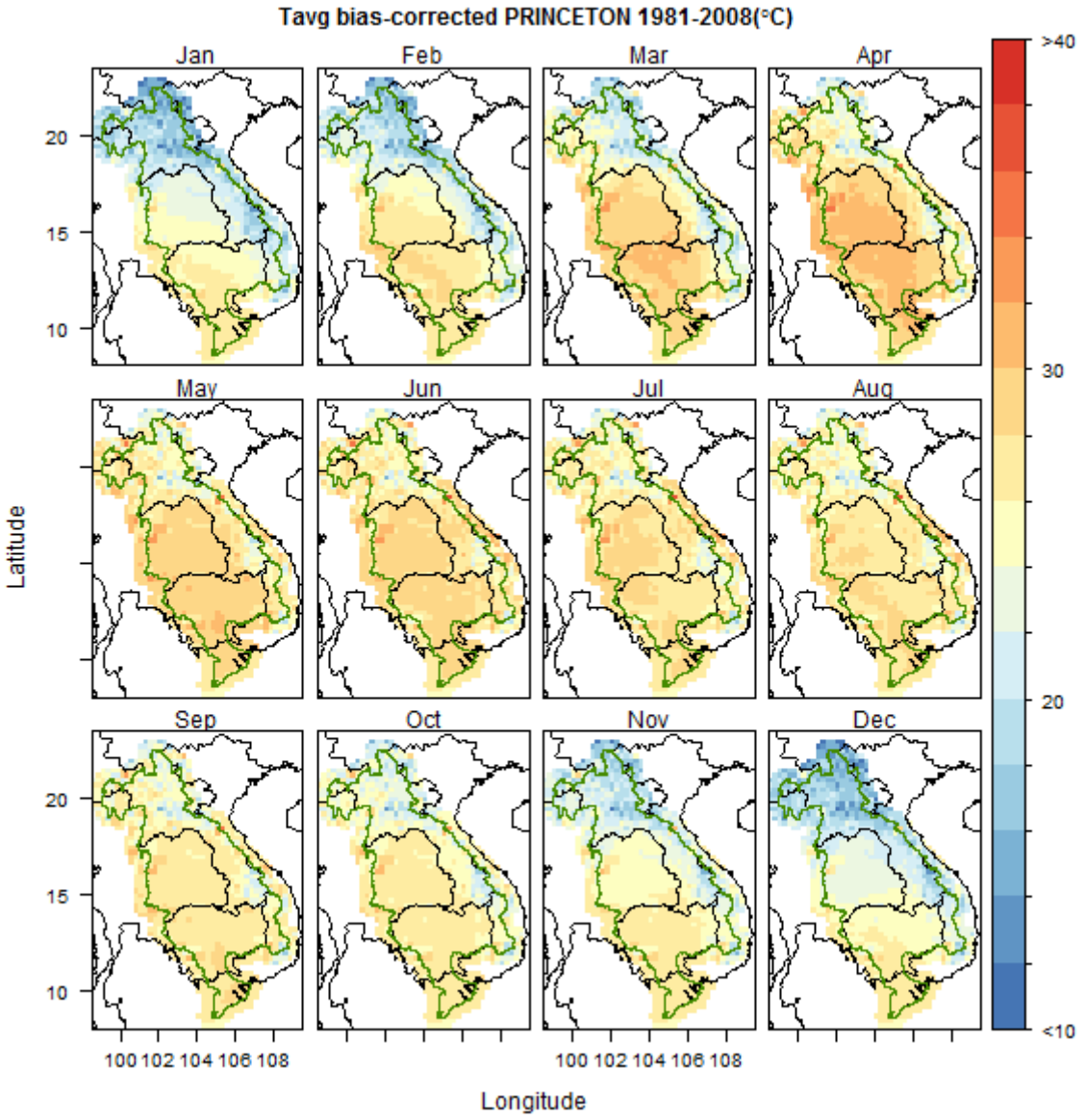
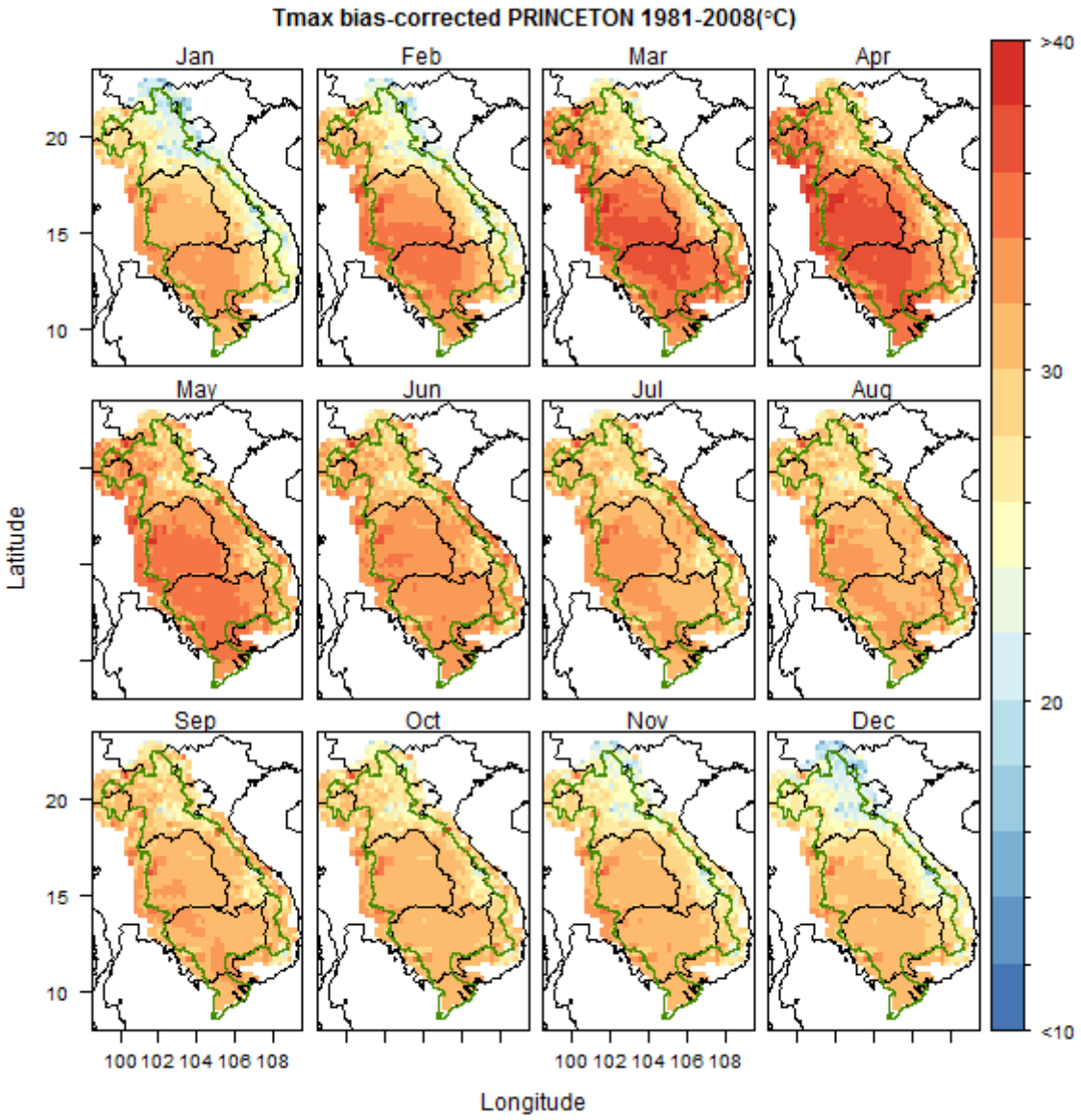
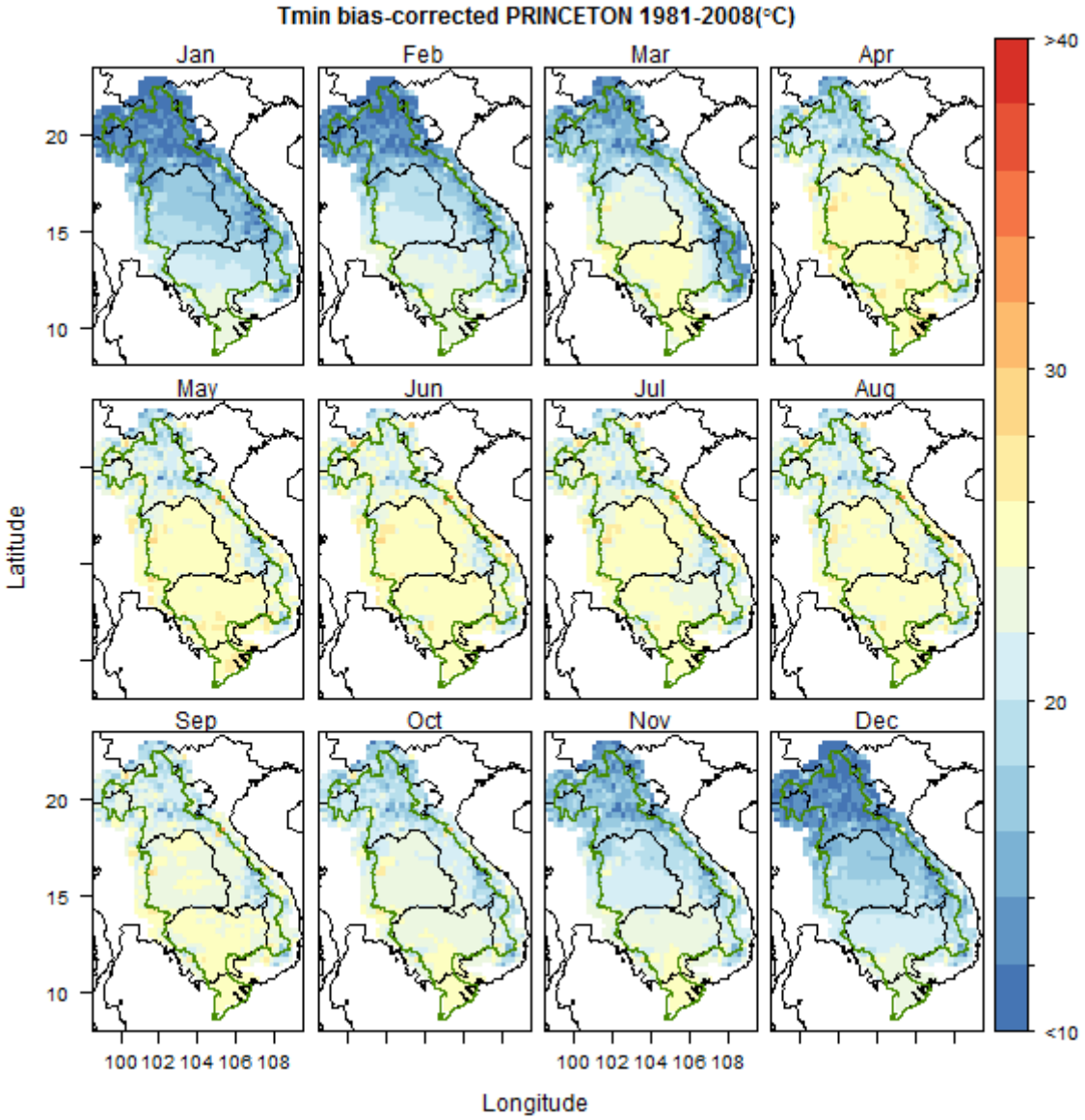


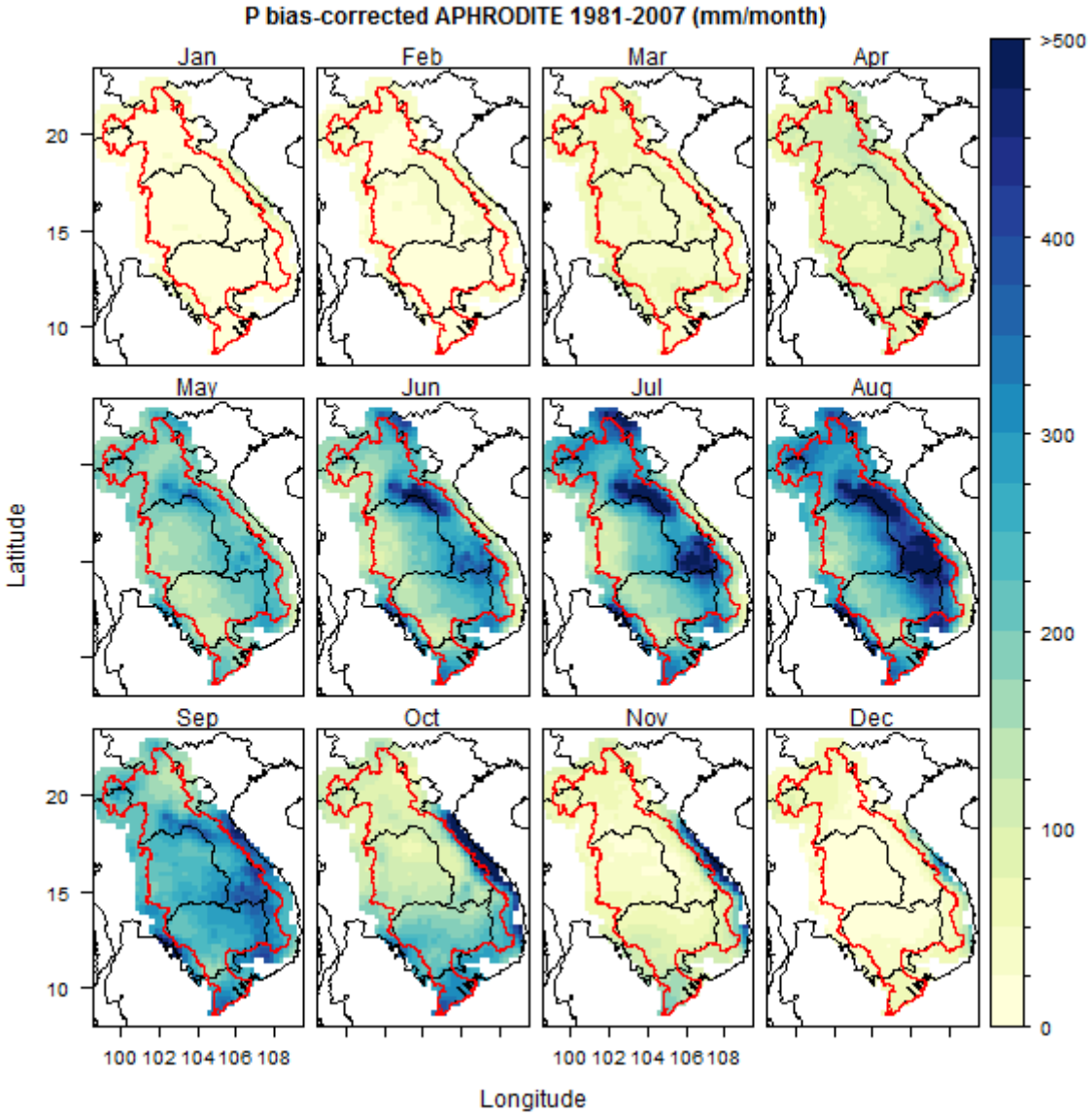

**Figure 2: Average precipitation bias per month for 1981-2007. A positive bias indicates overestimated precipitation in the APHRODITE product with respect to ground observations; a negative bias indicates underestimated precipitation in the APHRODITE product with respect to ground observations.**

# Appendix 2: Monthly average temperature and precipitation in bias-corrected baseline climate dataset




Tmax bias-corrected PRINCETON 1981-2008(°C)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Latitude
Longitude
10
15
20
100 102 104 106 108
>40
30
20
<10


Tmin bias-corrected PRINCETON 1981-2008(°C)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Latitude
Longitude
10
15
20
100 102 104 106 108
>40
30
20
<10


P bias-corrected APHRODITE 1981-2007 (mm/month)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
20
15
10
100 102 104 106 108
Latitude
Longitude
>500
400
300
200
100
0

# Appendix 3: Long-term monthly LMB averages for precipitation and average temperature

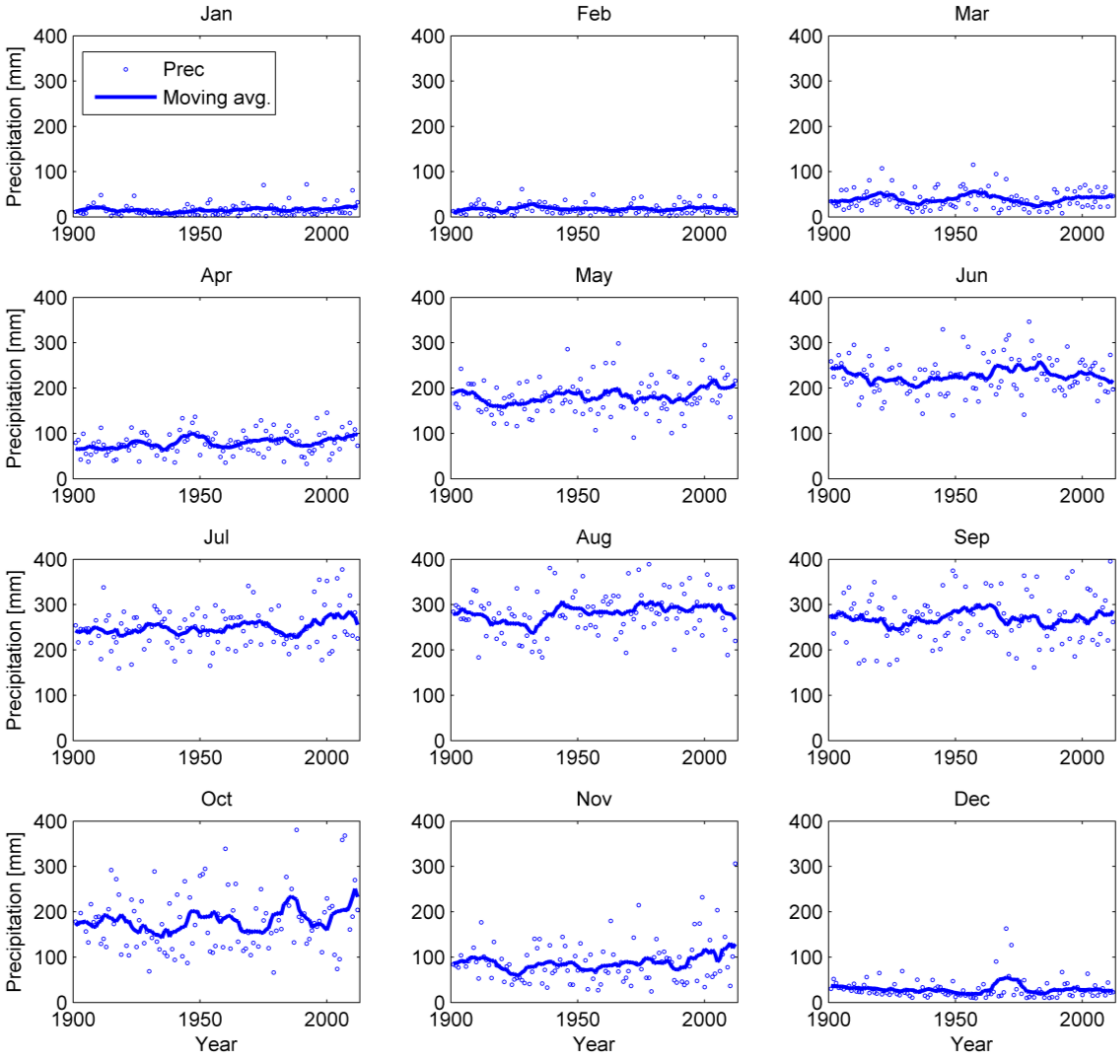



**Figure 3: Monthly basin precipitation for the period 1901-2012, averaged over the 15 sub-basins. Solid lines represent the 10-year moving average.**

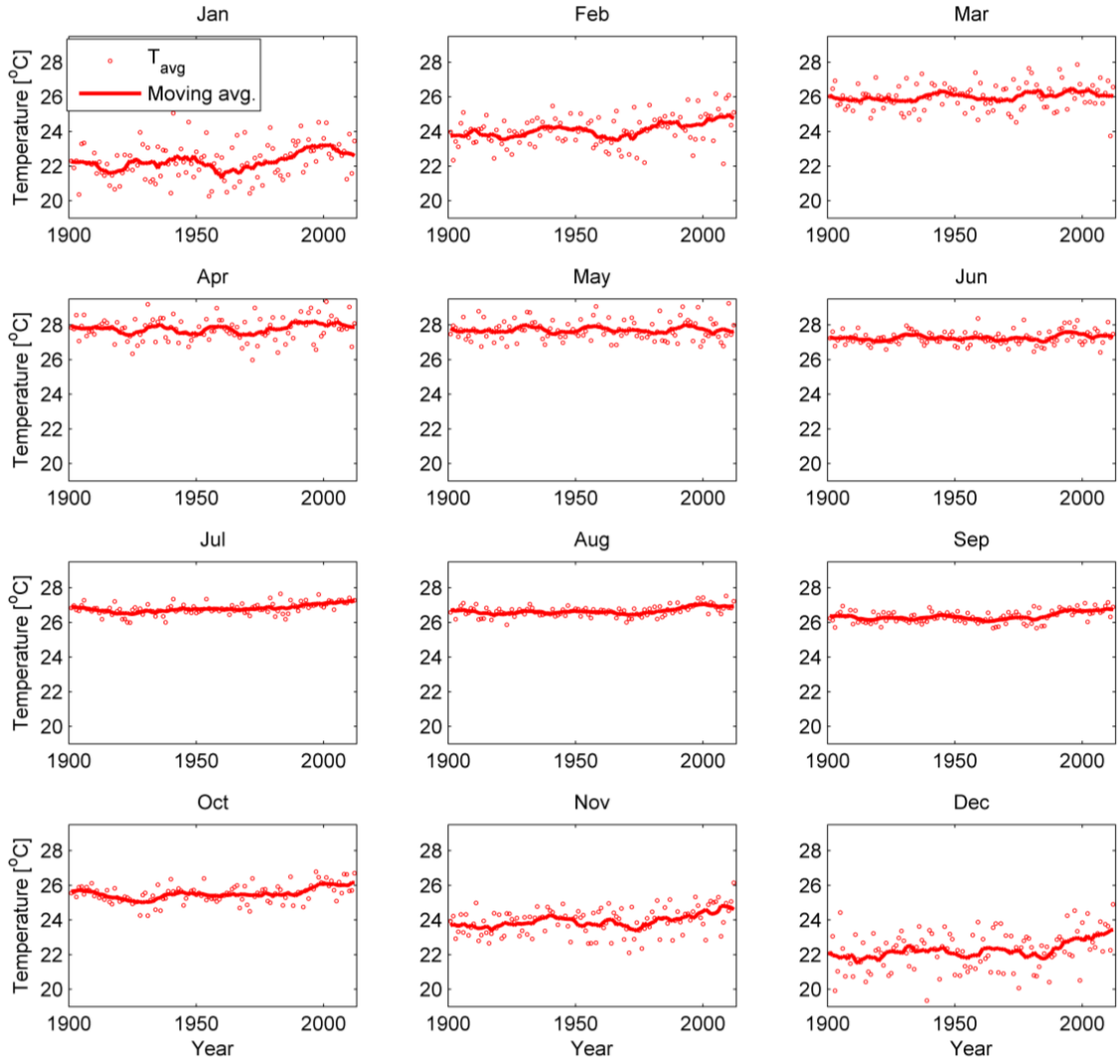



**Figure 4: Monthly basin average temperature for the period 1901-2012, averaged over the 15 sub-basins. Solid lines represent the 10-year moving average.**

# Appendix 4: Se San / Sre Pok / Se Kong river basins (ID 1) climate figures – long-term

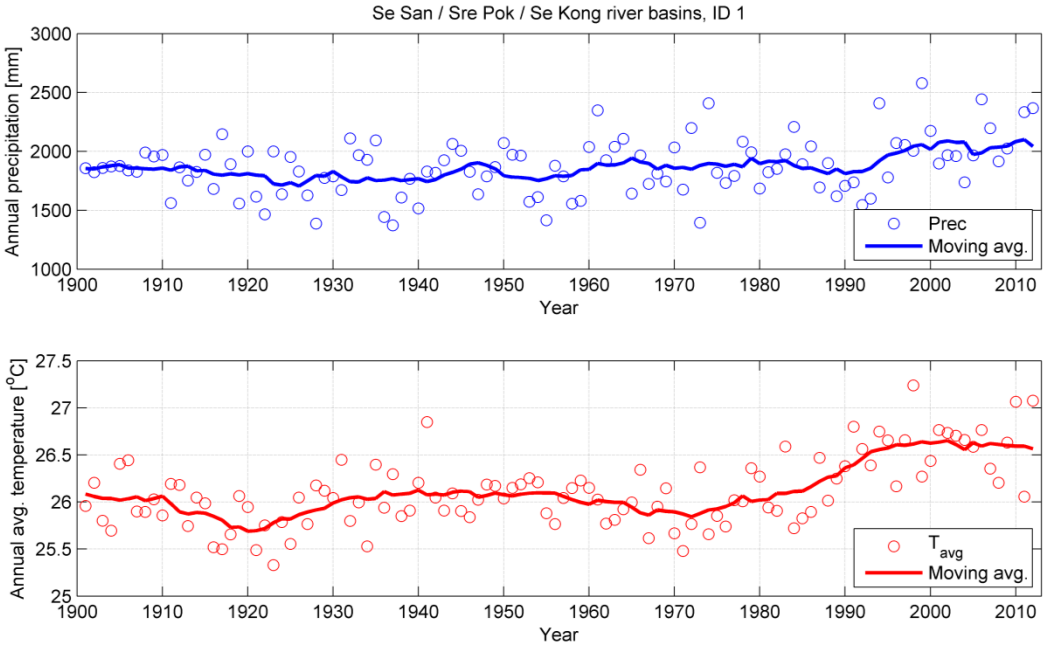



**Figure 5: Se San / Sre Pok, Se Kong river basins (ID 1) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

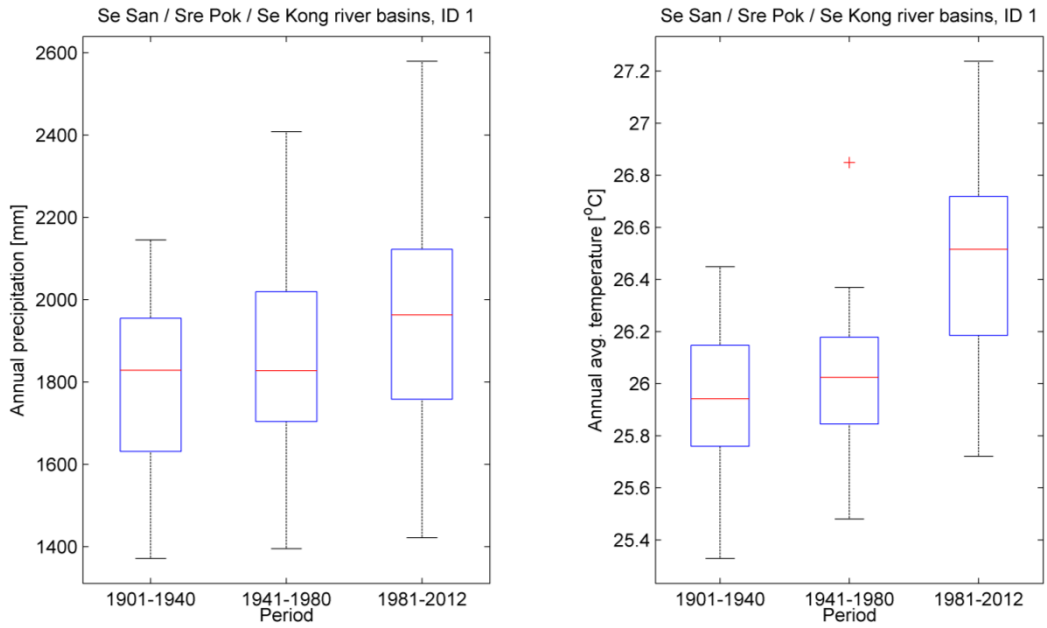



**Figure 6: Se San / Sre Pok, Se Kong river basins (ID 1) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 1: Summary of Se San / Sre Pok, Se Kong river basins (ID 1) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Se San / Sre Pok / Se Kong river basins ID 1 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 26.1 | 25.9 | 26.0 | 26.5 |
| Trend [°C/10 year] | 0.06 | 0.00 | -0.06 | 0.22 |
| Monthly Average [°C] | | | | |
| Jan | 23.5 | 23.2 | 23.4 | 23.4 |
| Feb | 25.3 | 25.0 | 25.2 | 25.2 |
| Mar | 25.7 | 25.5 | 25.8 | 25.8 |
| Apr | 28.2 | 28.2 | 28.0 | 28.0 |
| May | 27.8 | 27.8 | 27.8 | 27.8 |
| Jun | 27.4 | 27.4 | 27.4 | 27.4 |
| Jul | 27.0 | 26.8 | 26.9 | 26.9 |
| Aug | 27.1 | 27.0 | 27.0 | 27.0 |
| Sep | 26.5 | 26.3 | 26.3 | 26.3 |
| Oct | 26.0 | 25.7 | 25.9 | 25.9 |
| Nov | 25.1 | 24.8 | 24.9 | 24.9 |
| Dec | 23.8 | 23.5 | 23.6 | 23.6 |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1865 | 1792 | 1858 | 1966 |
| Trend [mm/10 year] | 20.0 | -51.9 | 10.6 | 85.4 |
| Monthly Average [mm] | | | | |
| Jan | 18 | 18 | 18 | 18 |
| Feb | 19 | 21 | 19 | 19 |
| Mar | 30 | 31 | 35 | 35 |
| Apr | 59 | 55 | 60 | 60 |
| May | 162 | 151 | 162 | 162 |
| Jun | 221 | 217 | 232 | 232 |
| Jul | 269 | 261 | 277 | 277 |
| Aug | 267 | 257 | 277 | 277 |
| Sep | 321 | 318 | 312 | 312 |
| Oct | 287 | 272 | 268 | 268 |
| Nov | 167 | 148 | 150 | 150 |
| Dec | 45 | 44 | 50 | 50 |

# Appendix 5: Se San / Sre Pok / Se Kong river basins (ID 2) climate figures – long-term

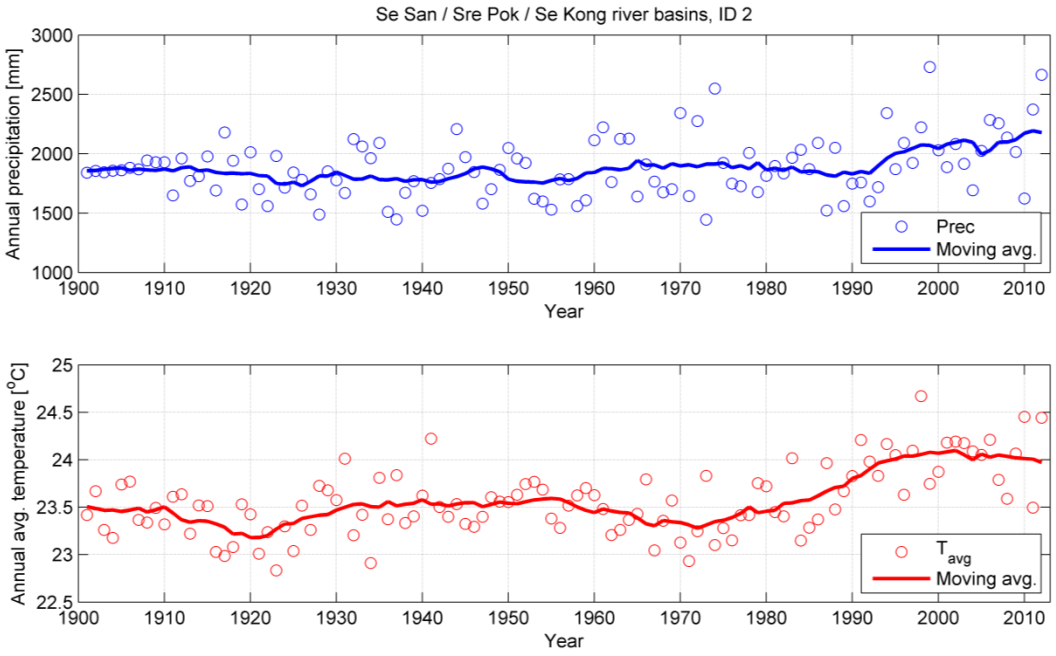



**Figure 7: Se San / Sre Pok, Se Kong river basins (ID 2) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

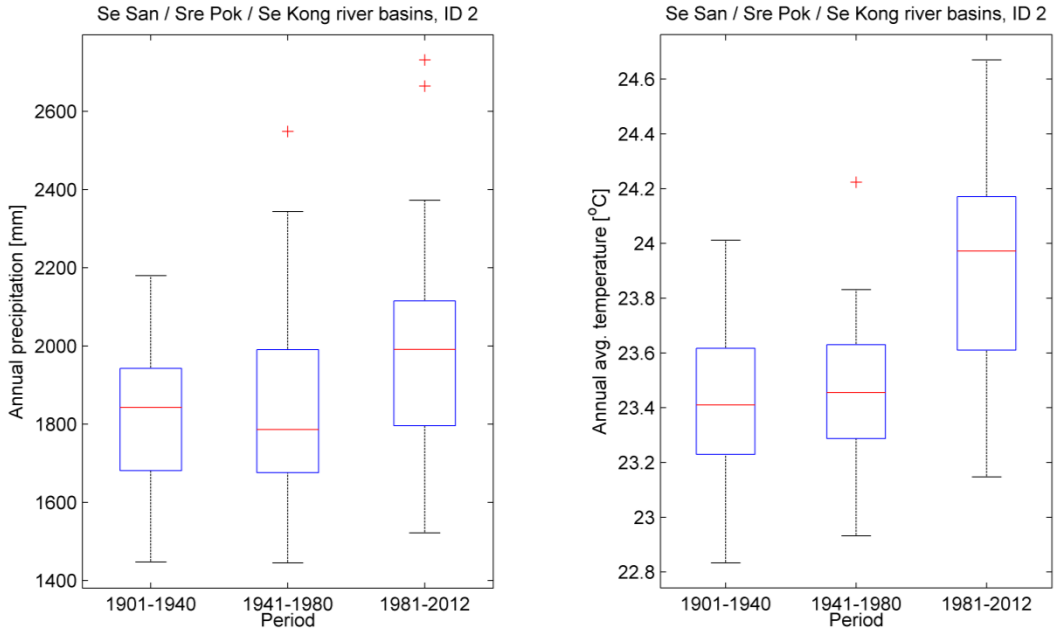



**Figure 8: Se San / Sre Pok, Se Kong river basins (ID 2) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 2: Summary of Se San / Sre Pok, Se Kong river basins (ID 2) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Se San / Sre Pok / Se Kong river basins ID 2 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Temperature | *1901-2012* | | *1901-1940* | | *1941-1980* | | *1981-2012* | |
| Annual Average [°C] | 23.6 | ↓ | 23.4 | → | 23.5 | ↑ | 23.9 | |
| Trend [°C/10 year] | 0.06 | | 0.01 | | -0.06 | | 0.20 | |
| Monthly Average [°C] | | | | | | | | |
| Jan | 21.0 | ↓ | 20.7 | → | 20.9 | → | 20.9 | |
| Feb | 22.0 | ↓ | 21.7 | ↓ | 21.8 | ↓ | 21.8 | |
| Mar | 20.5 | ↓ | 20.3 | → | 20.5 | → | 20.5 | |
| Apr | 24.8 | → | 24.8 | ↓ | 24.6 | ↓ | 24.6 | |
| May | 25.4 | → | 25.4 | → | 25.3 | → | 25.3 | |
| Jun | 25.5 | → | 25.5 | → | 25.4 | → | 25.4 | |
| Jul | 25.4 | ↓ | 25.2 | → | 25.3 | → | 25.3 | |
| Aug | 25.5 | ↓ | 25.3 | → | 25.4 | → | 25.4 | |
| Sep | 24.6 | ↓ | 24.4 | → | 24.5 | → | 24.5 | |
| Oct | 23.9 | ↓ | 23.7 | → | 23.8 | → | 23.8 | |
| Nov | 22.7 | ↓ | 22.5 | → | 22.6 | → | 22.6 | |
| Dec | 21.6 | ↓ | 21.4 | → | 21.5 | → | 21.5 | |
| | | | | | | | | |
| Precipitation | *1901-2012* | | *1901-1940* | | *1941-1980* | | *1981-2012* | |
| Annual Total [mm] | 1880 | ↓ | 1814 | ↓ | 1855 | ↑ | 1994 | |
| Trend [mm/10 year] | 22.0 | | -42.5 | | 17.2 | | 125.8 | |
| Monthly Average [mm] | | | | | | | | |
| Jan | 34 | → | 33 | → | 35 | → | 35 | |
| Feb | 28 | → | 30 | → | 28 | → | 28 | |
| Mar | 37 | → | 39 | → | 42 | → | 42 | |
| Apr | 52 | → | 50 | → | 52 | → | 52 | |
| May | 137 | → | 130 | → | 136 | → | 136 | |
| Jun | 162 | → | 161 | → | 167 | → | 167 | |
| Jul | 191 | → | 186 | → | 196 | → | 196 | |
| Aug | 182 | → | 178 | → | 188 | → | 188 | |
| Sep | 308 | → | 307 | → | 302 | → | 302 | |
| Oct | 379 | ↓ | 363 | ↓ | 359 | ↓ | 359 | |
| Nov | 283 | ↓ | 255 | ↓ | 259 | ↓ | 259 | |
| Dec | 85 | → | 82 | → | 91 | → | 91 | |

# Appendix 6: Mekong delta (Cambodia, ID 7) climate figures – long-term

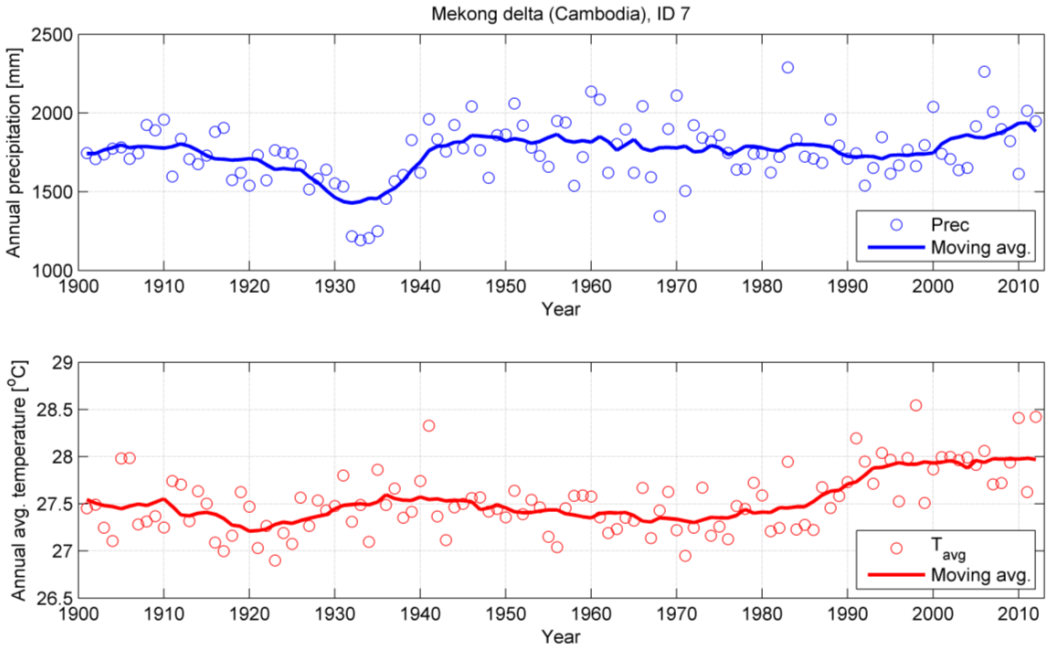



**Figure 9: Mekong delta (Cambodia, ID 7) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

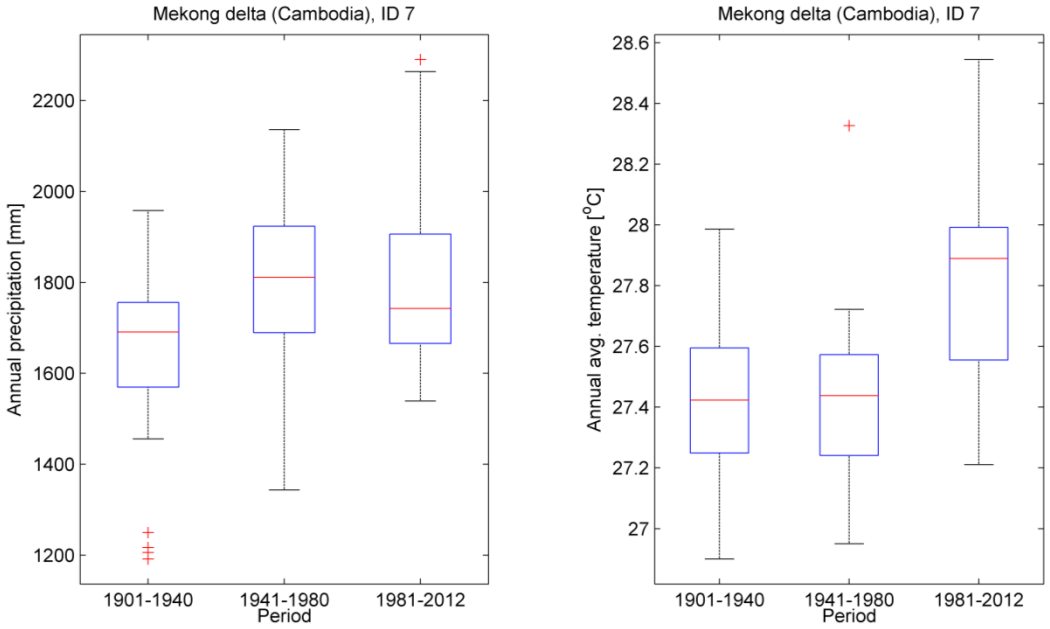



**Figure 10: Mekong delta (Cambodia, ID 7) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 3: Summary of Mekong delta (Cambodia, ID 7) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Mekong delta (Cambodia) ID 7 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 27.5 | 27.4 | 27.4 | 27.8 |
| Trend [°C/10 year] | 0.05 | 0.01 | -0.04 | 0.22 |
| Monthly Average [°C] | | | | |
| Jan | 26.1 | 25.8 | 26.0 | 26.0 |
| Feb | 27.0 | 26.7 | 26.9 | 26.9 |
| Mar | 28.3 | 28.3 | 28.3 | 28.3 |
| Apr | 29.2 | 29.3 | 29.0 | 29.0 |
| May | 28.9 | 29.0 | 28.9 | 28.9 |
| Jun | 28.2 | 28.2 | 28.1 | 28.1 |
| Jul | 27.7 | 27.6 | 27.6 | 27.6 |
| Aug | 27.8 | 27.7 | 27.6 | 27.6 |
| Sep | 27.5 | 27.4 | 27.4 | 27.4 |
| Oct | 27.2 | 27.0 | 27.1 | 27.1 |
| Nov | 26.6 | 26.4 | 26.4 | 26.4 |
| Dec | 25.8 | 25.6 | 25.7 | 25.7 |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1749 | 1651 | 1807 | 1800 |
| Trend [mm/10 year] | 13.5 | -96.3 | -33.2 | 39.5 |
| Monthly Average [mm] | | | | |
| Jan | 15 | 15 | 14 | 14 |
| Feb | 14 | 15 | 14 | 14 |
| Mar | 42 | 44 | 47 | 47 |
| Apr | 72 | 65 | 75 | 75 |
| May | 179 | 169 | 183 | 183 |
| Jun | 227 | 220 | 231 | 231 |
| Jul | 239 | 219 | 248 | 248 |
| Aug | 236 | 222 | 243 | 243 |
| Sep | 280 | 261 | 297 | 297 |
| Oct | 255 | 234 | 259 | 259 |
| Nov | 139 | 132 | 144 | 144 |
| Dec | 51 | 55 | 52 | 52 |

# Appendix 7: Kratie (ID 8) climate figures – long-term

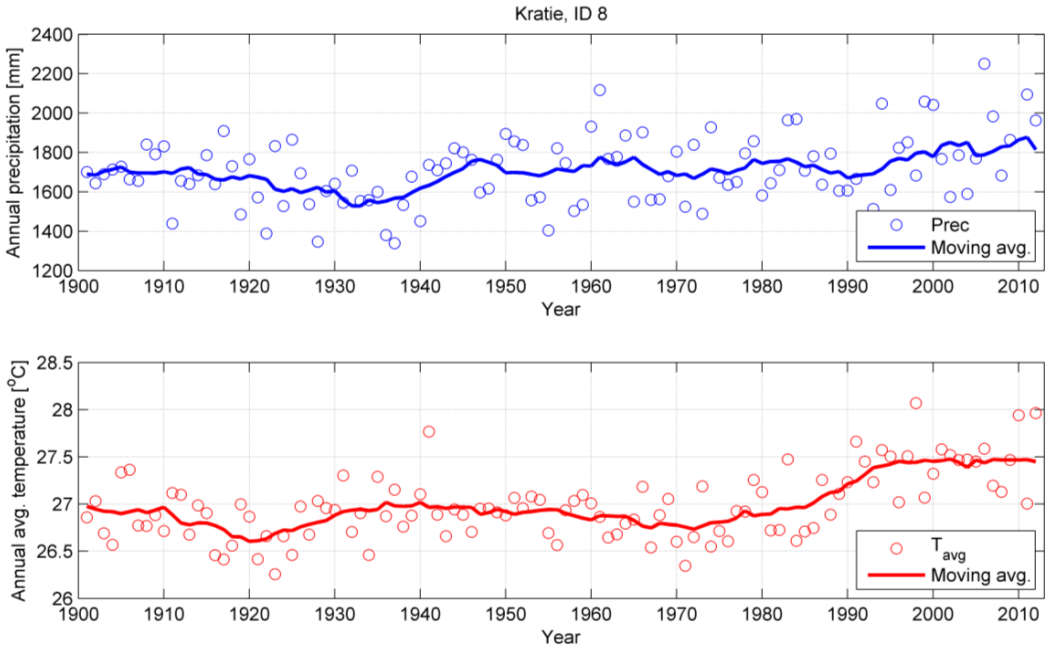



**Figure 11: Kratie (ID 8) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

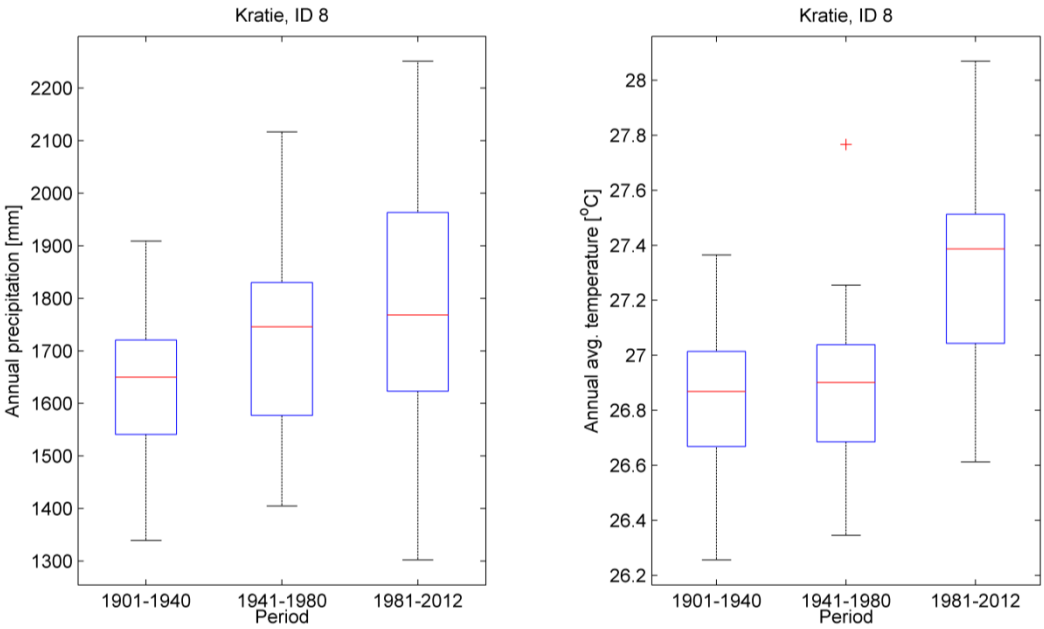



**Figure 12: Kratie (ID 8) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 4: Summary of Kratie (ID 8) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Kratie ID 8 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Temperature | *1901-2012* | | *1901-1940* | | *1941-1980* | | *1981-2012* | |
| Annual Average [°C] | 27.0 | ↓ | 26.8 | → | 26.9 | ↑ | 27.3 | |
| Trend [°C/10 year] | 0.05 | | 0.01 | | -0.04 | | 0.23 | |
| Monthly Average [°C] | | | | | | | | |
| Jan | 25.0 | ↓ | 24.7 | → | 24.9 | → | 24.9 | |
| Feb | 26.5 | ↓ | 26.2 | → | 26.4 | → | 26.4 | |
| Mar | 27.9 | → | 27.8 | → | 27.9 | → | 27.9 | |
| Apr | 29.2 | ↑ | 29.3 | ↓ | 29.0 | ↓ | 29.0 | |
| May | 28.5 | → | 28.5 | → | 28.4 | → | 28.4 | |
| Jun | 27.9 | → | 27.9 | → | 27.8 | → | 27.8 | |
| Jul | 27.3 | ↓ | 27.1 | → | 27.2 | → | 27.2 | |
| Aug | 27.4 | → | 27.3 | → | 27.3 | → | 27.3 | |
| Sep | 27.0 | → | 26.9 | → | 26.9 | → | 26.9 | |
| Oct | 26.6 | ↓ | 26.4 | → | 26.5 | → | 26.5 | |
| Nov | 25.8 | ↓ | 25.6 | ↓ | 25.6 | ↓ | 25.6 | |
| Dec | 24.8 | ↓ | 24.5 | ↓ | 24.6 | ↓ | 24.6 | |
| | | | | | | | | |
| Precipitation | *1901-2012* | | *1901-1940* | | *1941-1980* | | *1981-2012* | |
| Annual Total [mm] | 1704 | ↓ | 1634 | ↑ | 1720 | ↑ | 1773 | |
| Trend [mm/10 year] | 14.4 | | -57.8 | | -9.4 | | 43.6 | |
| Monthly Average [mm] | | | | | | | | |
| Jan | 6 | → | 6 | → | 5 | → | 5 | |
| Feb | 11 | → | 12 | → | 11 | → | 11 | |
| Mar | 29 | → | 30 | → | 34 | → | 34 | |
| Apr | 63 | → | 59 | → | 65 | → | 65 | |
| May | 174 | → | 164 | → | 176 | → | 176 | |
| Jun | 221 | → | 215 | → | 229 | → | 229 | |
| Jul | 275 | ↓ | 262 | → | 283 | → | 283 | |
| Aug | 241 | → | 231 | → | 248 | → | 248 | |
| Sep | 310 | → | 303 | → | 307 | → | 307 | |
| Oct | 248 | ↓ | 235 | ↓ | 237 | ↓ | 237 | |
| Nov | 104 | → | 94 | → | 99 | → | 99 | |
| Dec | 24 | → | 23 | → | 26 | → | 26 | |

# Appendix 8: Tonle Sap basin (ID 9) climate figures – long-term

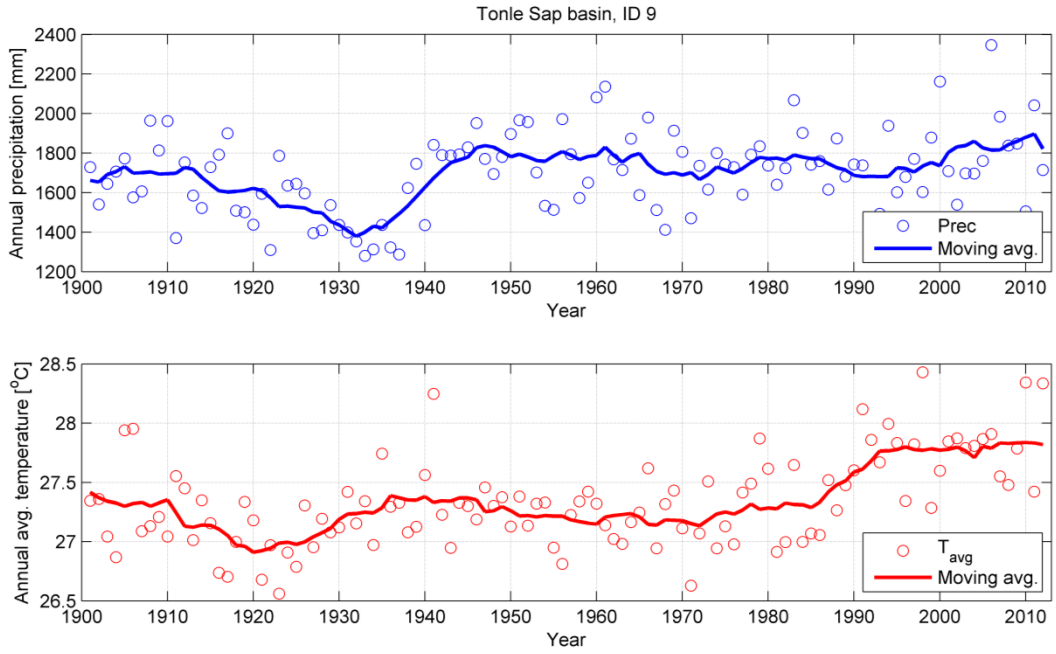



**Figure 13: Tonle Sap basin (ID 9) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

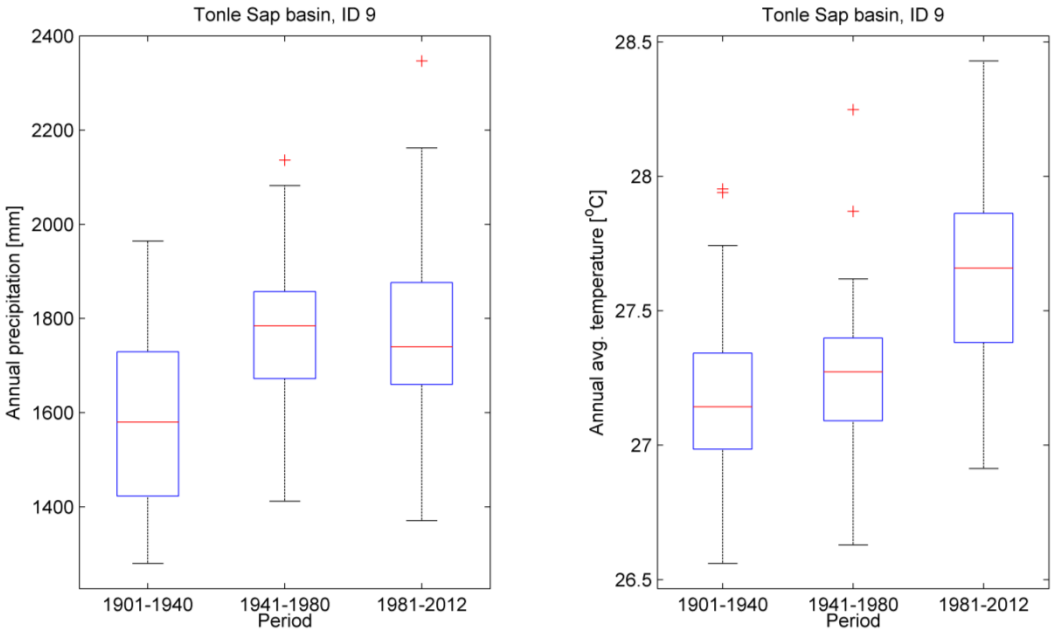



**Figure 14: Tonle Sap basin (ID 9) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 5: Summary of Tonle Sap basin (ID 9) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Tonle Sap basin ID 9 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Temperature | *1901-2012* | | *1901-1940* | | *1941-1980* | | *1981-2012* | |
| Annual Average [°C] | 27.3 | → | 27.2 | → | 27.3 | ↑ | 27.6 | |
| Trend [°C/10 year] | 0.06 | | -0.02 | | -0.01 | | 0.25 | |
| Monthly Average [°C] | | | | | | | | |
| Jan | 25.2 | ↓ | 24.9 | → | 25.1 | → | 25.1 | |
| Feb | 27.0 | ↓ | 26.7 | → | 27.0 | → | 27.0 | |
| Mar | 28.9 | → | 28.8 | → | 28.9 | → | 28.9 | |
| Apr | 29.5 | ↑ | 29.6 | → | 29.4 | → | 29.4 | |
| May | 29.0 | → | 29.0 | → | 29.0 | → | 29.0 | |
| Jun | 28.2 | → | 28.2 | → | 28.2 | → | 28.2 | |
| Jul | 27.6 | ↓ | 27.4 | → | 27.5 | → | 27.5 | |
| Aug | 27.5 | → | 27.5 | → | 27.4 | → | 27.4 | |
| Sep | 27.3 | → | 27.2 | → | 27.2 | → | 27.2 | |
| Oct | 26.8 | ↓ | 26.6 | → | 26.8 | → | 26.8 | |
| Nov | 26.0 | ↓ | 25.7 | ↓ | 25.8 | ↓ | 25.8 | |
| Dec | 25.0 | ↓ | 24.6 | → | 24.9 | → | 24.9 | |

| Precipitation | *1901-2012* | | *1901-1940* | | *1941-1980* | | *1981-2012* | |
|---|---|---|---|---|---|---|---|---|
| Annual Total [mm] | 1699 | ↓ | 1574 | ↑ | 1766 | ↑ | 1771 | |
| Trend [mm/10 year] | 19.5 | | -88.4 | | -32.2 | | 34.6 | |
| Monthly Average [mm] | | | | | | | | |
| Jan | 5 | → | 4 | → | 4 | → | 4 | |
| Feb | 17 | → | 17 | → | 17 | → | 17 | |
| Mar | 52 | → | 55 | → | 56 | → | 56 | |
| Apr | 88 | ↓ | 77 | → | 92 | → | 92 | |
| May | 186 | ↓ | 168 | → | 192 | → | 192 | |
| Jun | 231 | ↓ | 220 | → | 238 | → | 238 | |
| Jul | 262 | ↓ | 239 | ↑ | 277 | ↑ | 277 | |
| Aug | 271 | ↓ | 249 | ↑ | 285 | ↑ | 285 | |
| Sep | 298 | ↓ | 281 | ↑ | 312 | ↑ | 312 | |
| Oct | 214 | ↓ | 192 | → | 219 | → | 219 | |
| Nov | 64 | → | 62 | → | 63 | → | 63 | |
| Dec | 10 | → | 10 | → | 10 | → | 10 | |

# Appendix 9: Southern Lao PDR (ID 12) climate figures – long-term

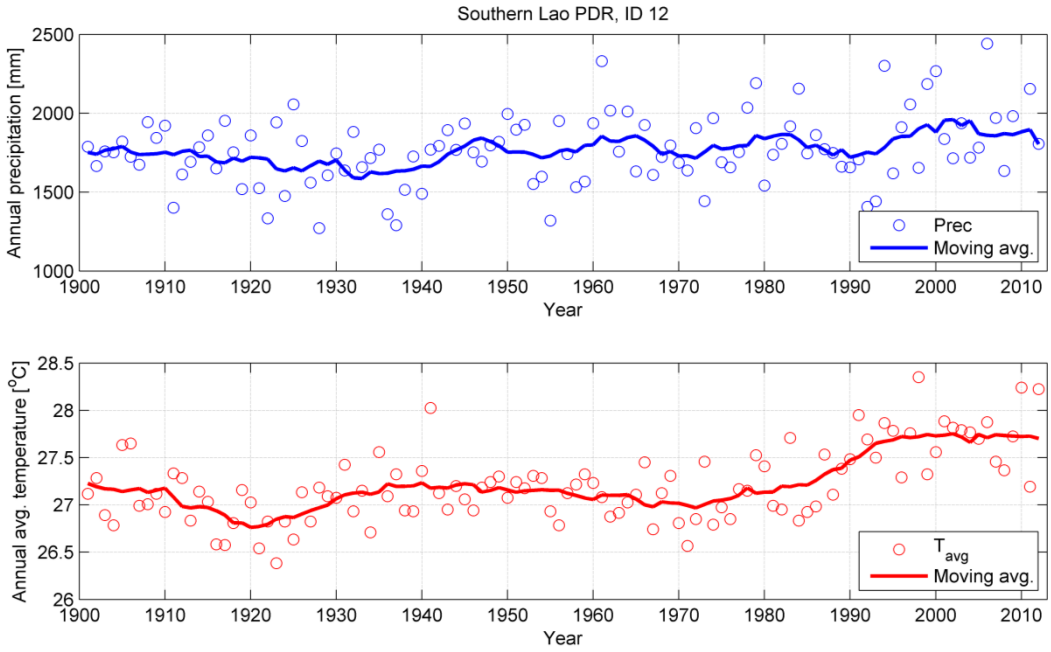



**Figure 15: Southern Lao PDR (ID 12) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

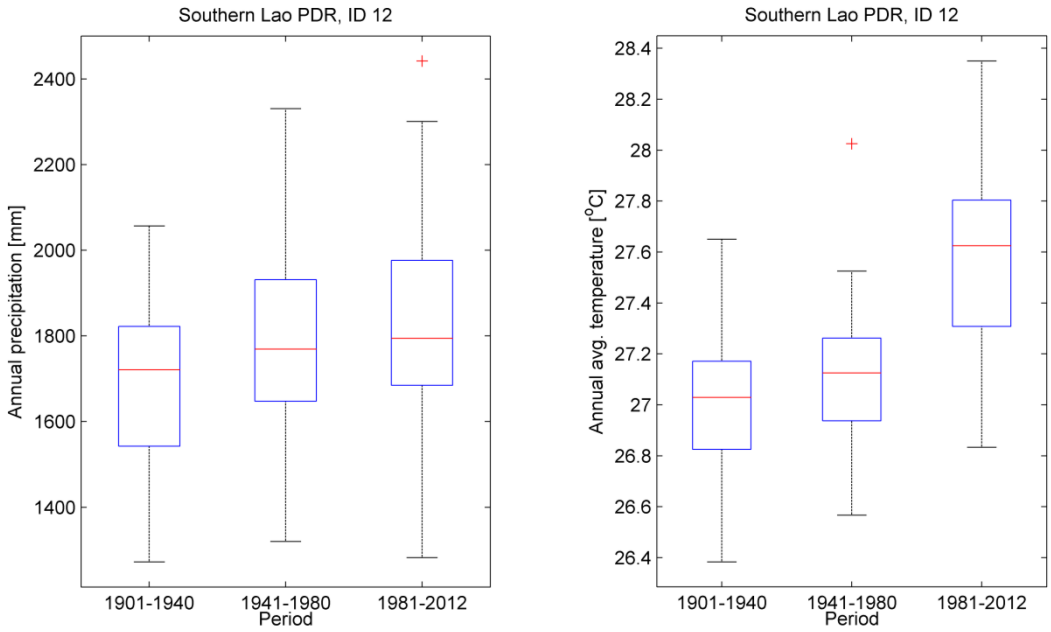



**Figure 16: Southern Lao PDR (ID 12) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 6: Summary of Southern Lao PDR (ID 12) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Southern Lao PDR ID 12 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 27.2 | 27.0 | 27.1 | 27.6 |
| Trend [°C/10 year] | 0.06 | -0.01 | -0.04 | 0.24 |
| Monthly Average [°C] | | | | |
| Jan | 24.9 | 24.5 | 24.8 | 24.8 |
| Feb | 27.1 | 26.7 | 27.0 | 27.0 |
| Mar | 29.3 | 29.1 | 29.4 | 29.4 |
| Apr | 30.0 | 30.0 | 29.8 | 29.8 |
| May | 28.8 | 28.8 | 28.8 | 28.8 |
| Jun | 27.9 | 27.9 | 27.9 | 27.9 |
| Jul | 27.2 | 27.0 | 27.2 | 27.2 |
| Aug | 27.3 | 27.1 | 27.2 | 27.2 |
| Sep | 27.0 | 26.8 | 26.8 | 26.8 |
| Oct | 26.6 | 26.4 | 26.6 | 26.6 |
| Nov | 25.9 | 25.7 | 25.8 | 25.8 |
| Dec | 24.5 | 24.2 | 24.4 | 24.4 |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1766 | 1684 | 1789 | 1840 |
| Trend [mm/10 year] | 16.6 | -56.2 | -1.9 | 32.4 |
| Monthly Average [mm] | | | | |
| Jan | 1 | 1 | 1 | 1 |
| Feb | 10 | 11 | 10 | 10 |
| Mar | 30 | 29 | 35 | 35 |
| Apr | 73 | 67 | 76 | 76 |
| May | 188 | 173 | 190 | 190 |
| Jun | 253 | 244 | 266 | 266 |
| Jul | 325 | 309 | 336 | 336 |
| Aug | 317 | 301 | 330 | 330 |
| Sep | 324 | 320 | 316 | 316 |
| Oct | 191 | 180 | 178 | 178 |
| Nov | 49 | 44 | 45 | 45 |
| Dec | 5 | 5 | 6 | 6 |

# Appendix 10: Mun / Chi River Basin (ID 13) climate figures – long-term

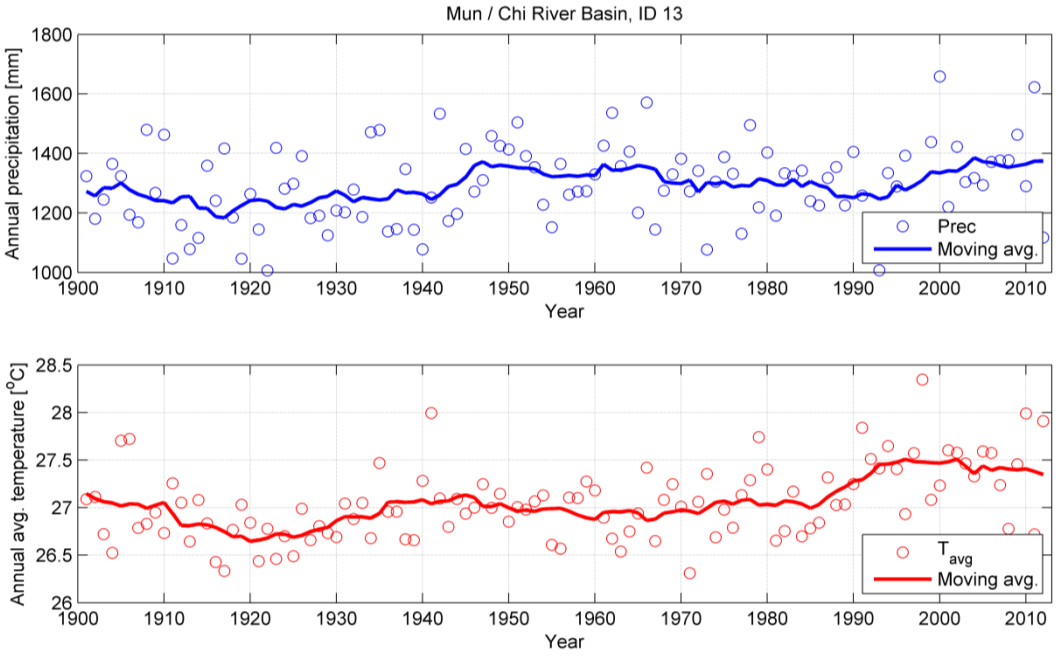



**Figure 17: Mun / Chi River Basin (ID 13) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

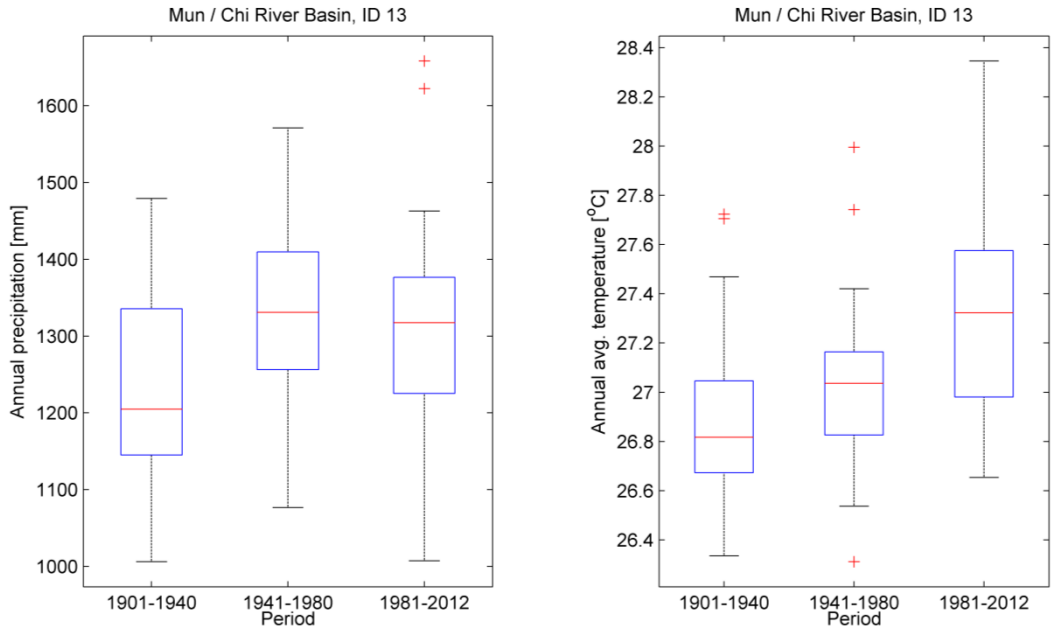



**Figure 18: Mun / Chi River Basin (ID 13) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 7: Summary of Mun / Chi River Basin (ID 13) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Mun / Chi River Basin ID 13 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 27.1 | 26.9 | 27.0 | 27.3 |
| Trend [°C/10 year] | 0.05 | -0.03 | 0.00 | 0.19 |
| Monthly Average [°C] | | | | |
| Jan | 23.6 | 23.2 | 23.5 | 23.5 |
| Feb | 26.1 | 25.8 | 26.1 | 26.1 |
| Mar | 28.6 | 28.5 | 28.7 | 28.7 |
| Apr | 30.0 | 29.9 | 29.9 | 29.9 |
| May | 29.3 | 29.3 | 29.4 | 29.4 |
| Jun | 28.6 | 28.6 | 28.7 | 28.7 |
| Jul | 28.1 | 27.9 | 28.1 | 28.1 |
| Aug | 27.8 | 27.7 | 27.8 | 27.8 |
| Sep | 27.5 | 27.4 | 27.4 | 27.4 |
| Oct | 26.7 | 26.5 | 26.7 | 26.7 |
| Nov | 25.0 | 24.7 | 24.9 | 24.9 |
| Dec | 23.2 | 22.8 | 23.2 | 23.2 |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1292 | 1241 | 1329 | 1311 |
| Trend [mm/10 year] | 8.9 | -9.9 | -9.9 | 40.2 |
| Monthly Average [mm] | | | | |
| Jan | 3 | 2 | 3 | 3 |
| Feb | 16 | 16 | 15 | 15 |
| Mar | 39 | 37 | 42 | 42 |
| Apr | 81 | 74 | 87 | 87 |
| May | 172 | 163 | 179 | 179 |
| Jun | 182 | 178 | 183 | 183 |
| Jul | 184 | 183 | 186 | 186 |
| Aug | 219 | 201 | 227 | 227 |
| Sep | 258 | 258 | 273 | 273 |
| Oct | 118 | 108 | 116 | 116 |
| Nov | 18 | 19 | 17 | 17 |
| Dec | 1 | 1 | 1 | 1 |

# Appendix 11: Mekong delta (Vietnam, ID 14) climate figures – long-term

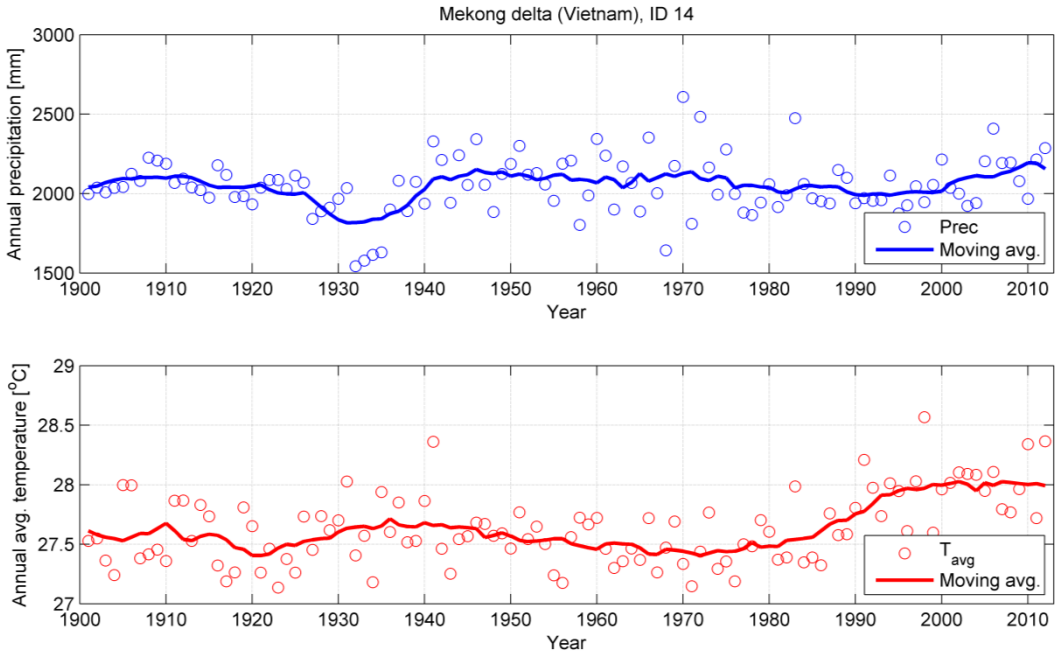



**Figure 19: Mekong delta (Vietnam, ID 14) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

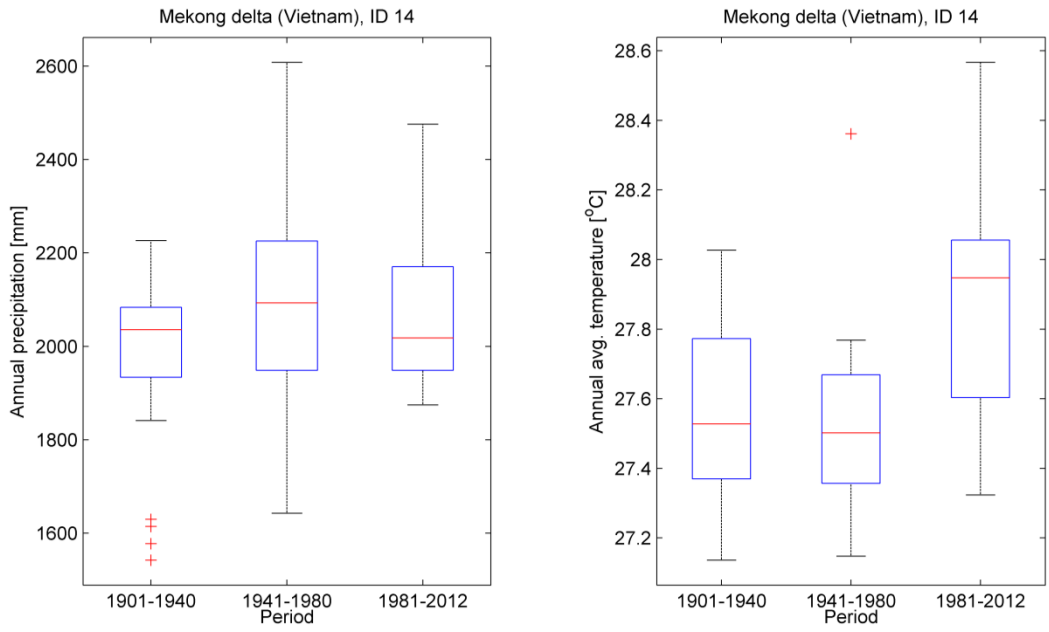



**Figure 20: Mekong delta (Vietnam, ID 14) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 8: Summary of Mekong delta (Vietnam, ID 14) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Mekong delta (Vietnam) ID 14 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 27.6 | 27.6 | 27.5 | 27.9 |
| Trend [°C/10 year] | 0.03 | 0.02 | -0.06 | 0.20 |
| Monthly Average [°C] | | | | |
| Jan | 26.2 | 26.0 | 26.1 | 26.1 |
| Feb | 26.9 | 26.8 | 26.8 | 26.8 |
| Mar | 28.1 | 28.1 | 28.0 | 28.0 |
| Apr | 29.3 | 29.4 | 29.1 | 29.1 |
| May | 29.0 | 29.0 | 28.9 | 28.9 |
| Jun | 28.2 | 28.2 | 28.1 | 28.1 |
| Jul | 27.8 | 27.7 | 27.7 | 27.7 |
| Aug | 27.7 | 27.7 | 27.6 | 27.6 |
| Sep | 27.7 | 27.6 | 27.5 | 27.5 |
| Oct | 27.5 | 27.4 | 27.4 | 27.4 |
| Nov | 27.0 | 26.9 | 26.8 | 26.8 |
| Dec | 26.2 | 26.1 | 26.1 | 26.1 |

| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
|---|---|---|---|---|
| Annual Total [mm] | 2050 | 1991 | 2100 | 2062 |
| Trend [mm/10 year] | 5.6 | -73.8 | -30.1 | 46.1 |
| Monthly Average [mm] | | | | |
| Jan | 50 | 55 | 47 | 47 |
| Feb | 22 | 26 | 23 | 23 |
| Mar | 37 | 40 | 41 | 41 |
| Apr | 57 | 53 | 59 | 59 |
| May | 192 | 187 | 195 | 195 |
| Jun | 273 | 269 | 276 | 276 |
| Jul | 268 | 249 | 276 | 276 |
| Aug | 252 | 243 | 256 | 256 |
| Sep | 288 | 274 | 302 | 302 |
| Oct | 273 | 260 | 276 | 276 |
| Nov | 212 | 205 | 220 | 220 |
| Dec | 126 | 131 | 129 | 129 |

# Appendix 12: Southern Lao PDR (Cambodia, ID 18) climate figures – long-term

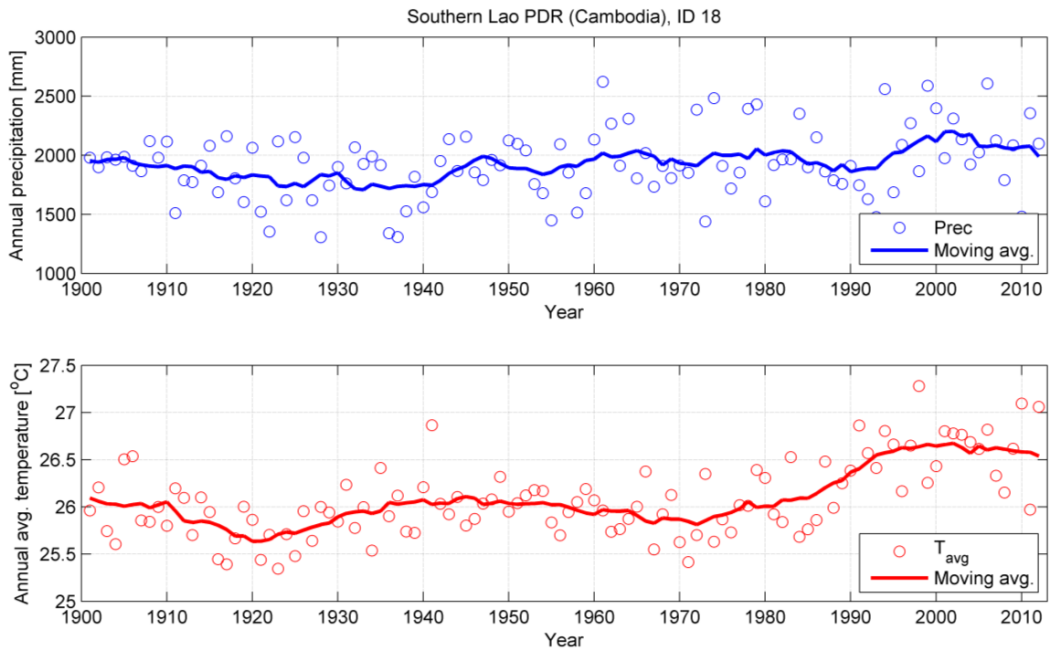



**Figure 21: Southern Lao PDR (Cambodia, ID 18) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

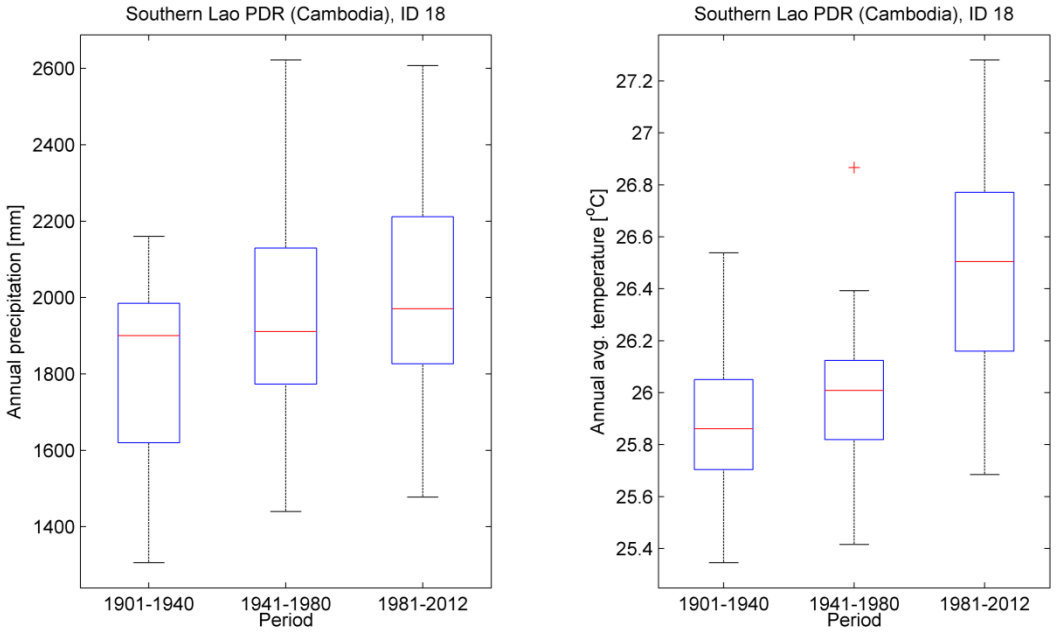



**Figure 22: Southern Lao PDR (Cambodia, ID 18) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 9: Summary of Southern Lao PDR (Cambodia, ID 18) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Southern Lao PDR (Cambodia) ID 18 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 26.1 | 25.9 ↓ | 26.0 → | 26.5 ↑ |
| Trend [°C/10 year] | 0.07 | -0.02 | -0.05 | 0.23 |
| Monthly Average [°C] | | | | |
| Jan | 22.8 | 22.5 ↓ | 22.7 → | 22.7 → |
| Feb | 25.4 | 25.1 ↓ | 25.3 → | 25.3 → |
| Mar | 27.6 | 27.4 ↓ | 27.7 → | 27.7 → |
| Apr | 28.6 | 28.6 → | 28.4 ↓ | 28.4 ↓ |
| May | 28.0 | 28.0 → | 27.9 → | 27.9 → |
| Jun | 27.1 | 27.0 → | 27.0 → | 27.0 → |
| Jul | 26.6 | 26.4 ↓ | 26.6 → | 26.6 → |
| Aug | 26.6 | 26.4 ↓ | 26.5 → | 26.5 → |
| Sep | 26.2 | 26.0 ↓ | 26.1 → | 26.1 → |
| Oct | 25.7 | 25.5 ↓ | 25.6 → | 25.6 → |
| Nov | 24.8 | 24.6 ↓ | 24.7 → | 24.7 → |
| Dec | 23.4 | 23.1 ↓ | 23.3 → | 23.3 → |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1925 | 1818 ↓ | 1953 ↑ | 2025 ↑ |
| Trend [mm/10 year] | 23.4 | -82.8 | 26.8 | 62.8 |
| Monthly Average [mm] | | | | |
| Jan | 14 | 11 → | 12 → | 12 → |
| Feb | 15 | 15 → | 14 → | 14 → |
| Mar | 31 | 30 → | 36 → | 36 → |
| Apr | 72 | 65 → | 75 → | 75 → |
| May | 189 | 170 ↓ | 191 → | 191 → |
| Jun | 285 | 276 → | 304 ↑ | 304 ↑ |
| Jul | 313 | 300 ↓ | 326 ↑ | 326 ↑ |
| Aug | 387 | 363 ↓ | 410 ↑ | 410 ↑ |
| Sep | 321 | 319 → | 312 → | 312 → |
| Oct | 190 | 176 ↓ | 172 ↓ | 172 ↓ |
| Nov | 84 | 70 ↓ | 72 ↓ | 72 ↓ |
| Dec | 24 | 24 → | 29 → | 29 → |

# Appendix 13: Se San / Sre Pok / Se Kong river basins (ID 19) climate figures – long-term

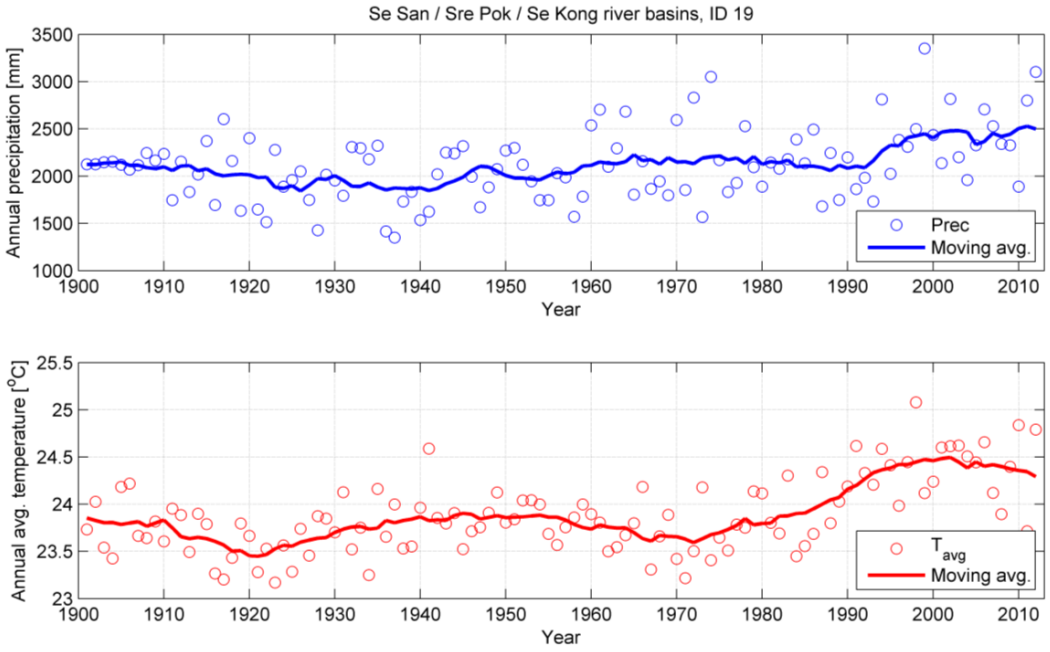



**Figure 23: Se San / Sre Pok / Se Kong river basins (ID 19) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

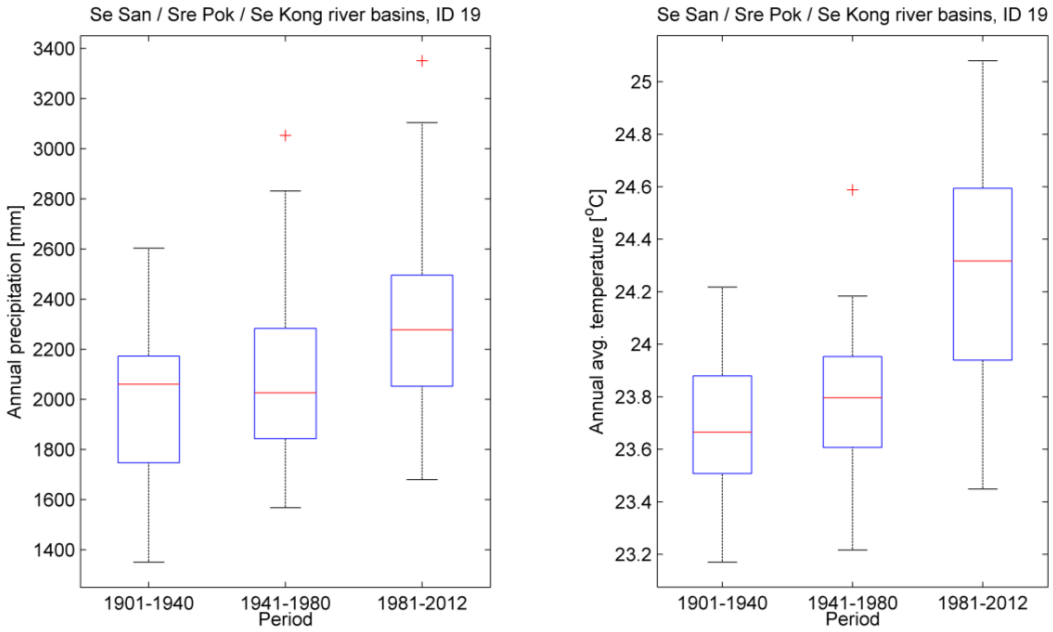



**Figure 24: Se San / Sre Pok / Se Kong river basins (ID 19) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 10: Summary of Se San / Sre Pok / Se Kong river basins (ID 19) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Se San / Sre Pok / Se Kong river basins ID 19 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 23.9 | 23.7 | 23.8 | 24.3 |
| Trend [°C/10 year] | 0.07 | -0.02 | -0.06 | 0.22 |
| Monthly Average [°C] | | | | |
| Jan | 20.4 | 20.1 | 20.3 | 20.3 |
| Feb | 22.1 | 21.8 | 22.1 | 22.1 |
| Mar | 23.2 | 23.0 | 23.3 | 23.3 |
| Apr | 25.5 | 25.5 | 25.3 | 25.3 |
| May | 26.0 | 25.9 | 25.9 | 25.9 |
| Jun | 25.8 | 25.8 | 25.7 | 25.7 |
| Jul | 25.6 | 25.3 | 25.6 | 25.6 |
| Aug | 25.5 | 25.4 | 25.4 | 25.4 |
| Sep | 24.7 | 24.5 | 24.5 | 24.5 |
| Oct | 23.8 | 23.5 | 23.7 | 23.7 |
| Nov | 22.6 | 22.4 | 22.5 | 22.5 |
| Dec | 21.2 | 20.9 | 21.1 | 21.1 |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 2116 | 1984 | 2095 | 2307 |
| Trend [mm/10 year] | 38.5 | -100.3 | 51.1 | 168.0 |
| Monthly Average [mm] | | | | |
| Jan | 49 | 41 | 46 | 46 |
| Feb | 28 | 29 | 28 | 28 |
| Mar | 44 | 42 | 50 | 50 |
| Apr | 67 | 61 | 67 | 67 |
| May | 159 | 143 | 159 | 159 |
| Jun | 212 | 207 | 222 | 222 |
| Jul | 239 | 228 | 247 | 247 |
| Aug | 287 | 271 | 304 | 304 |
| Sep | 346 | 342 | 338 | 338 |
| Oct | 346 | 322 | 312 | 312 |
| Nov | 254 | 213 | 222 | 222 |
| Dec | 87 | 84 | 100 | 100 |

# Appendix 14: Nong Khai / Songkhram (Lao PDR, ID 21) climate figures – long-term

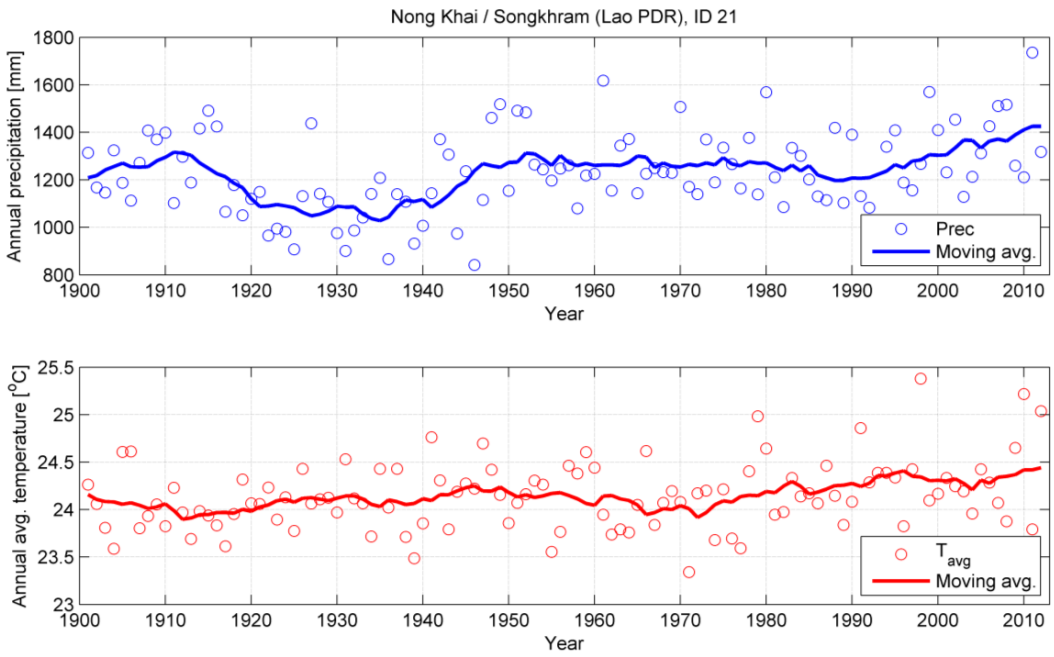



**Figure 25: Nong Khai / Songkhram (Lao PDR, ID 21) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

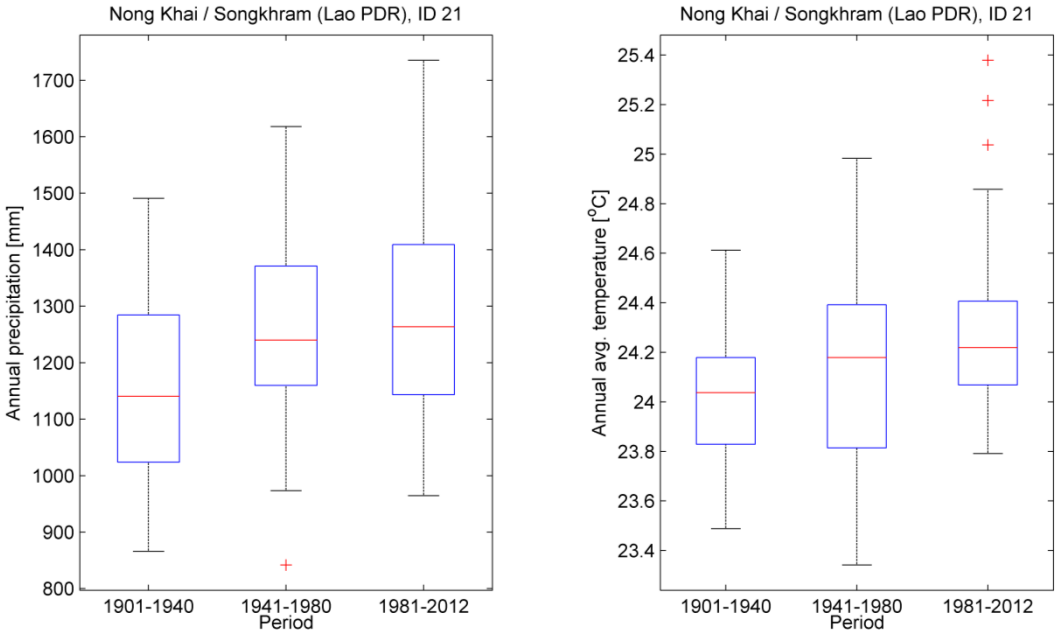



**Figure 26: Nong Khai / Songkhram (Lao PDR, ID 21) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 11: Summary of Nong Khai / Songkhram (Lao PDR, ID 21) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Nong Khai / Songkhram (Lao PDR) ID 21 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 24.1 | 24.0 | 24.1 | 24.3 |
| Trend [°C/10 year] | 0.03 | -0.01 | -0.04 | 0.11 |
| Monthly Average [°C] | | | | |
| Jan | 20.1 | 19.9 | 20.0 | 20.0 |
| Feb | 22.1 | 21.9 | 21.9 | 21.9 |
| Mar | 24.7 | 24.6 | 24.7 | 24.7 |
| Apr | 26.8 | 26.7 | 26.7 | 26.7 |
| May | 26.6 | 26.6 | 26.7 | 26.7 |
| Jun | 26.3 | 26.2 | 26.3 | 26.3 |
| Jul | 25.6 | 25.5 | 25.7 | 25.7 |
| Aug | 25.5 | 25.4 | 25.5 | 25.5 |
| Sep | 25.3 | 25.3 | 25.3 | 25.3 |
| Oct | 24.5 | 24.3 | 24.5 | 24.5 |
| Nov | 22.3 | 22.1 | 22.3 | 22.3 |
| Dec | 20.1 | 19.8 | 20.2 | 20.2 |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1231 | 1154 | 1266 | 1285 |
| Trend [mm/10 year] | 15.1 | -78.6 | 19.4 | 80.9 |
| Monthly Average [mm] | | | | |
| Jan | 5 | 4 | 6 | 6 |
| Feb | 12 | 10 | 13 | 13 |
| Mar | 34 | 25 | 37 | 37 |
| Apr | 88 | 69 | 96 | 96 |
| May | 189 | 181 | 185 | 185 |
| Jun | 158 | 151 | 169 | 169 |
| Jul | 177 | 177 | 171 | 171 |
| Aug | 228 | 211 | 244 | 244 |
| Sep | 227 | 222 | 239 | 239 |
| Oct | 95 | 84 | 92 | 92 |
| Nov | 17 | 18 | 13 | 13 |
| Dec | 1 | 1 | 1 | 1 |

# Appendix 15: Nong Khai / Songkhram (Thailand, ID 22) climate figures – long-term

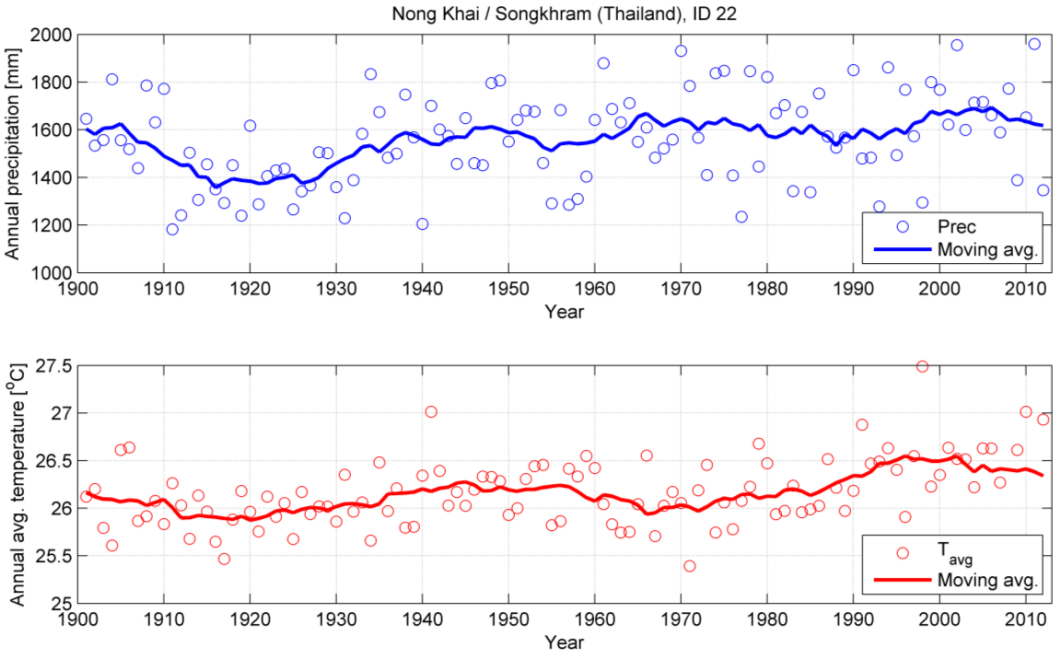



**Figure 27: Nong Khai / Songkhram (Thailand, ID 22) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

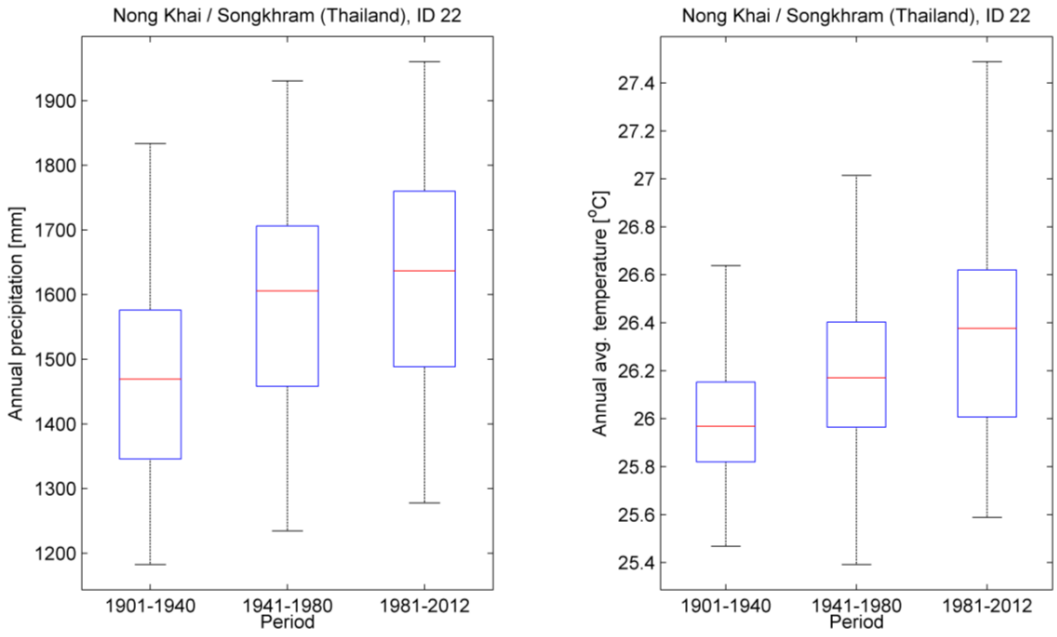



**Figure 28: Nong Khai / Songkhram (Thailand, ID 22) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 12: Summary of Nong Khai / Songkhram (Thailand, ID 22) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Nong Khai / Songkhram (Thailand) ID 22 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 26.2 | 26.0 ↓ | 26.2 → | 26.4 ↑ |
| Trend [°C/10 year] | 0.04 | 0.00 | -0.06 | 0.13 |
| Monthly Average [°C] | | | | |
| Jan | 22.0 | 21.7 ↓ | 21.9 → | 21.9 → |
| Feb | 24.3 | 24.0 ↓ | 24.1 ↓ | 24.1 ↓ |
| Mar | 27.1 | 26.9 ↓ | 27.3 ↑ | 27.3 ↑ |
| Apr | 29.0 | 28.9 → | 28.9 → | 28.9 → |
| May | 28.7 | 28.6 → | 28.7 → | 28.7 → |
| Jun | 28.2 | 28.1 → | 28.3 ↑ | 28.3 ↑ |
| Jul | 27.7 | 27.6 → | 27.8 ↑ | 27.8 ↑ |
| Aug | 27.4 | 27.3 → | 27.4 → | 27.4 → |
| Sep | 27.2 | 27.1 → | 27.2 → | 27.2 → |
| Oct | 26.3 | 26.1 ↓ | 26.3 → | 26.3 → |
| Nov | 24.1 | 23.9 ↓ | 24.0 → | 24.0 → |
| Dec | 21.9 | 21.6 ↓ | 21.9 → | 21.9 → |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1559 | 1475 ↓ | 1597 ↑ | 1618 ↑ |
| Trend [mm/10 year] | 17.8 | -19.7 | 13.6 | 32.7 |
| Monthly Average [mm] | | | | |
| Jan | 5 | 4 → | 6 → | 6 → |
| Feb | 17 | 16 → | 15 → | 15 → |
| Mar | 39 | 34 → | 40 → | 40 → |
| Apr | 85 | 76 → | 95 ↑ | 95 ↑ |
| May | 212 | 205 → | 221 → | 221 → |
| Jun | 262 | 248 ↓ | 270 → | 270 → |
| Jul | 259 | 260 → | 246 ↓ | 246 ↓ |
| Aug | 331 | 298 ↓ | 343 ↑ | 343 ↑ |
| Sep | 252 | 246 → | 274 ↑ | 274 ↑ |
| Oct | 81 | 71 → | 75 → | 75 → |
| Nov | 14 | 14 → | 11 → | 11 → |
| Dec | 3 | 3 → | 3 → | 3 → |

# Appendix 16: Central Lao PDR (ID 23) climate figures – long-term

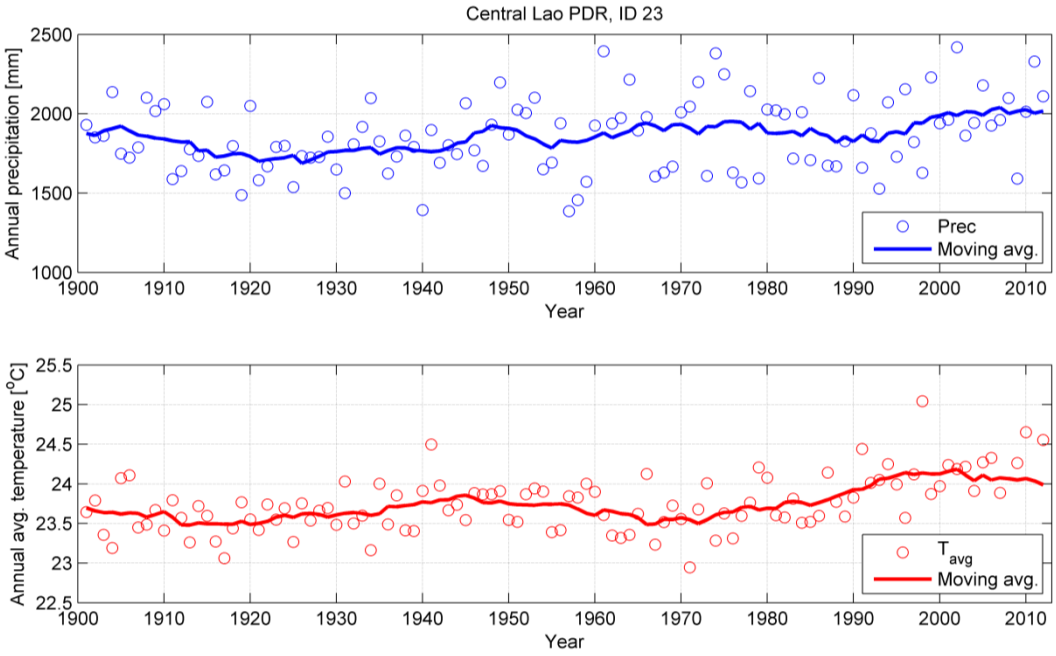



**Figure 29: Central Lao PDR (ID 23) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

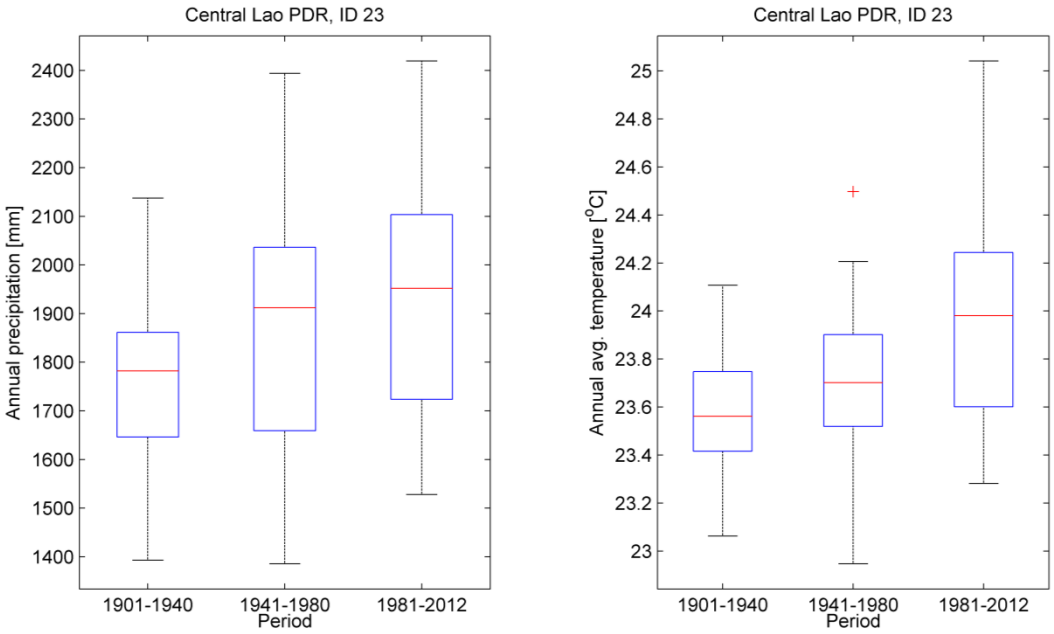



**Figure 30: Central Lao PDR (ID 23) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 13: Summary of Central Lao PDR (ID 23) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Central Lao PDR ID 23 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 23.7 → | 23.6 → | 23.7 ↑ | 24.0 |
| Trend [°C/10 year] | 0.05 | 0.01 | -0.07 | 0.16 |
| Monthly Average [°C] | | | | |
| Jan | 19.4 ↓ | 19.2 → | 19.3 → | 19.3 |
| Feb | 21.1 ↓ | 20.9 → | 21.0 → | 21.0 |
| Mar | 23.7 ↓ | 23.5 ↑ | 23.8 ↑ | 23.8 |
| Apr | 25.9 → | 25.8 → | 25.8 → | 25.8 |
| May | 26.4 → | 26.4 ↑ | 26.5 ↑ | 26.5 |
| Jun | 26.3 → | 26.2 → | 26.3 → | 26.3 |
| Jul | 25.9 ↓ | 25.7 → | 25.9 → | 25.9 |
| Aug | 25.6 → | 25.5 → | 25.6 → | 25.6 |
| Sep | 25.3 → | 25.2 → | 25.2 → | 25.2 |
| Oct | 24.0 ↓ | 23.8 → | 24.0 → | 24.0 |
| Nov | 21.7 ↓ | 21.5 → | 21.6 → | 21.6 |
| Dec | 19.6 ↓ | 19.4 → | 19.6 → | 19.6 |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1860 ↓ | 1781 ↑ | 1879 ↑ | 1937 |
| Trend [mm/10 year] | 18.8 | -46.6 | 20.2 | 68.6 |
| Monthly Average [mm] | | | | |
| Jan | 24 → | 17 → | 21 → | 21 |
| Feb | 21 → | 22 → | 19 → | 19 |
| Mar | 46 → | 42 → | 46 → | 46 |
| Apr | 91 → | 81 ↑ | 102 ↑ | 102 |
| May | 204 → | 196 → | 209 → | 209 |
| Jun | 281 ↓ | 270 → | 288 → | 288 |
| Jul | 299 → | 304 ↓ | 285 ↓ | 285 |
| Aug | 373 ↓ | 346 ↑ | 386 ↑ | 386 |
| Sep | 271 → | 273 ↑ | 286 ↑ | 286 |
| Oct | 141 ↓ | 127 ↓ | 130 ↓ | 130 |
| Nov | 81 → | 76 → | 71 → | 71 |
| Dec | 30 → | 29 → | 36 → | 36 |

# Appendix 17: Chiang Rai northern Thailand (ID 24) climate figures – long-term

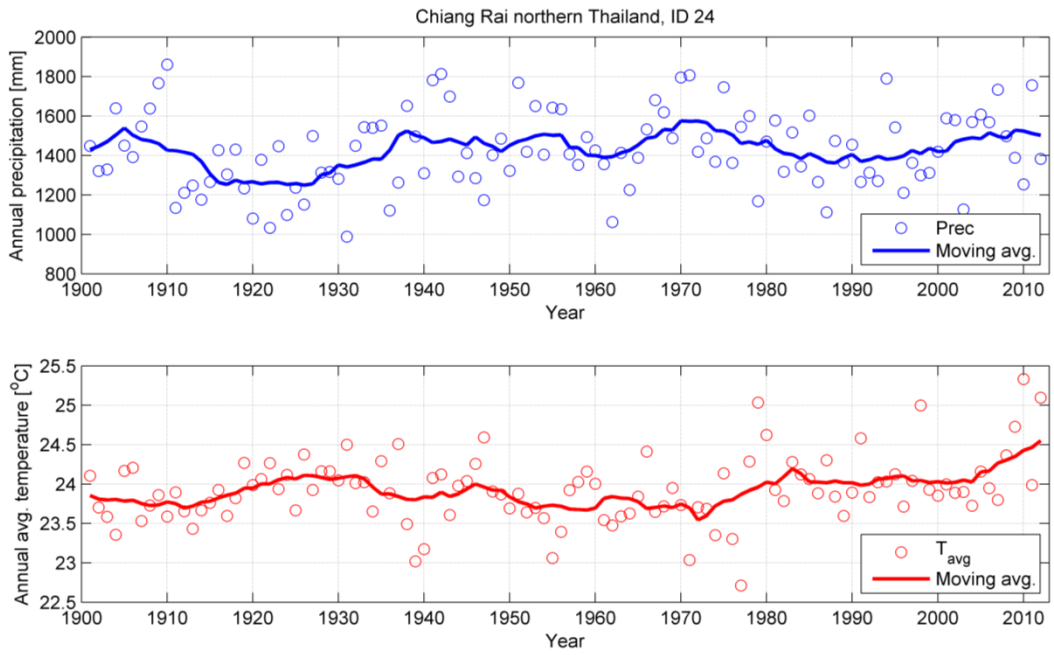



**Figure 31: Chiang Rai northern Thailand (ID 24) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

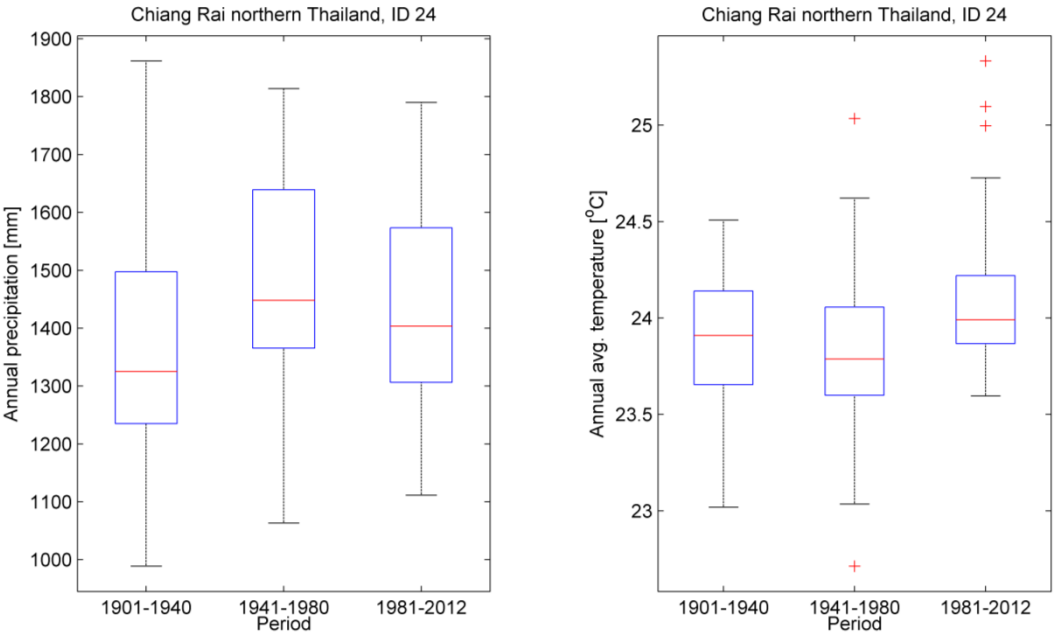



**Figure 32: Chiang Rai northern Thailand (ID 24) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 14: Summary of Chiang Rai northern Thailand (ID 24) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Chiang Rai northern Thailand ID 24 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Temperature | *1901-2012* | | *1901-1940* | | *1941-1980* | | *1981-2012* | |
| Annual Average [°C] | 23.9 | → | 23.9 | → | 23.8 | ↑ | 24.1 | |
| Trend [°C/10 year] | 0.03 | | 0.03 | | -0.03 | | 0.16 | |
| Monthly Average [°C] | | | | | | | | |
| Jan | 19.5 | → | 19.4 | ↓ | 19.1 | ↓ | 19.1 | |
| Feb | 21.3 | → | 21.2 | ↓ | 21.0 | ↓ | 21.0 | |
| Mar | 24.3 | ↓ | 24.1 | ↓ | 24.1 | ↓ | 24.1 | |
| Apr | 26.7 | → | 26.6 | → | 26.6 | → | 26.6 | |
| May | 26.7 | → | 26.7 | → | 26.7 | → | 26.7 | |
| Jun | 26.4 | → | 26.4 | → | 26.3 | → | 26.3 | |
| Jul | 25.8 | → | 25.8 | → | 25.9 | → | 25.9 | |
| Aug | 25.7 | → | 25.7 | → | 25.6 | → | 25.6 | |
| Sep | 25.5 | → | 25.5 | → | 25.4 | → | 25.4 | |
| Oct | 24.3 | → | 24.3 | → | 24.2 | → | 24.2 | |
| Nov | 21.9 | → | 21.9 | → | 21.9 | → | 21.9 | |
| Dec | 19.0 | → | 18.9 | ↑ | 19.1 | ↑ | 19.1 | |
| | | | | | | | | |
| Precipitation | *1901-2012* | | *1901-1940* | | *1941-1980* | | *1981-2012* | |
| Annual Total [mm] | 1427 | ↓ | 1365 | ↑ | 1485 | ↑ | 1434 | |
| Trend [mm/10 year] | 8.7 | | -26.9 | | -3.9 | | 40.1 | |
| Monthly Average [mm] | | | | | | | | |
| Jan | 10 | → | 6 | → | 15 | → | 15 | |
| Feb | 8 | → | 7 | → | 9 | → | 9 | |
| Mar | 19 | → | 12 | → | 22 | → | 22 | |
| Apr | 78 | → | 68 | → | 80 | → | 80 | |
| May | 193 | ↓ | 180 | → | 198 | → | 198 | |
| Jun | 175 | → | 170 | ↑ | 191 | ↑ | 191 | |
| Jul | 242 | → | 239 | → | 240 | → | 240 | |
| Aug | 286 | ↓ | 270 | ↑ | 304 | ↑ | 304 | |
| Sep | 237 | → | 233 | ↑ | 247 | ↑ | 247 | |
| Oct | 121 | → | 119 | → | 124 | → | 124 | |
| Nov | 48 | → | 51 | → | 39 | → | 39 | |
| Dec | 11 | → | 9 | → | 15 | → | 15 | |

# Appendix 18: Northern Lao PDR (ID 27) climate figures – long-term

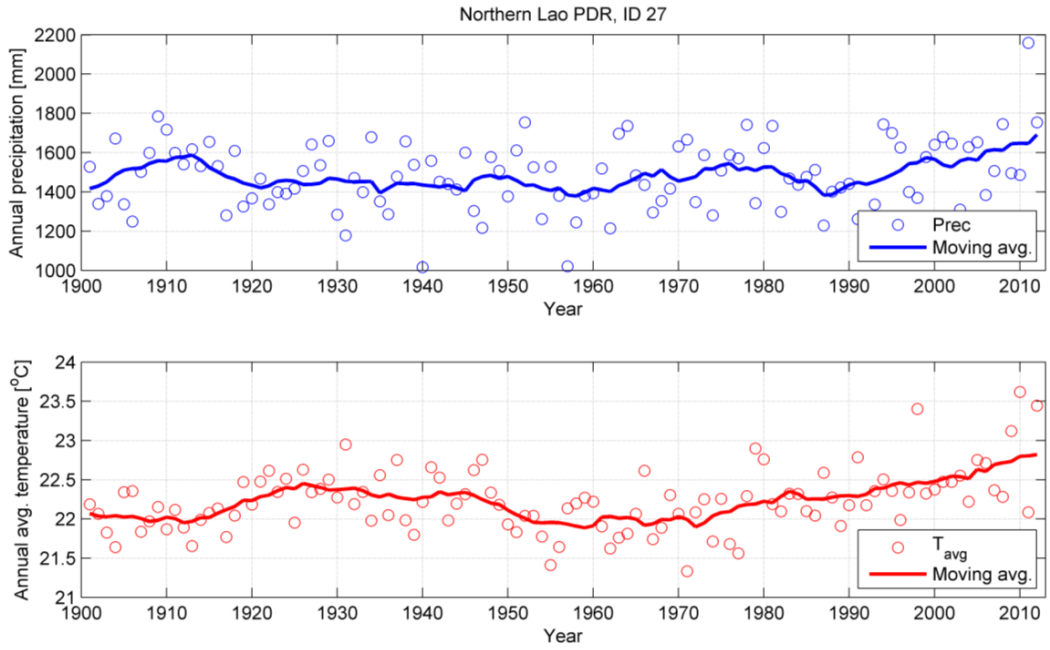



**Figure 33: Northern Lao PDR (ID 27) annual precipitation (top) and average temperature (bottom) for the period 1901-2012. Solid lines represent the 10-year moving average.**

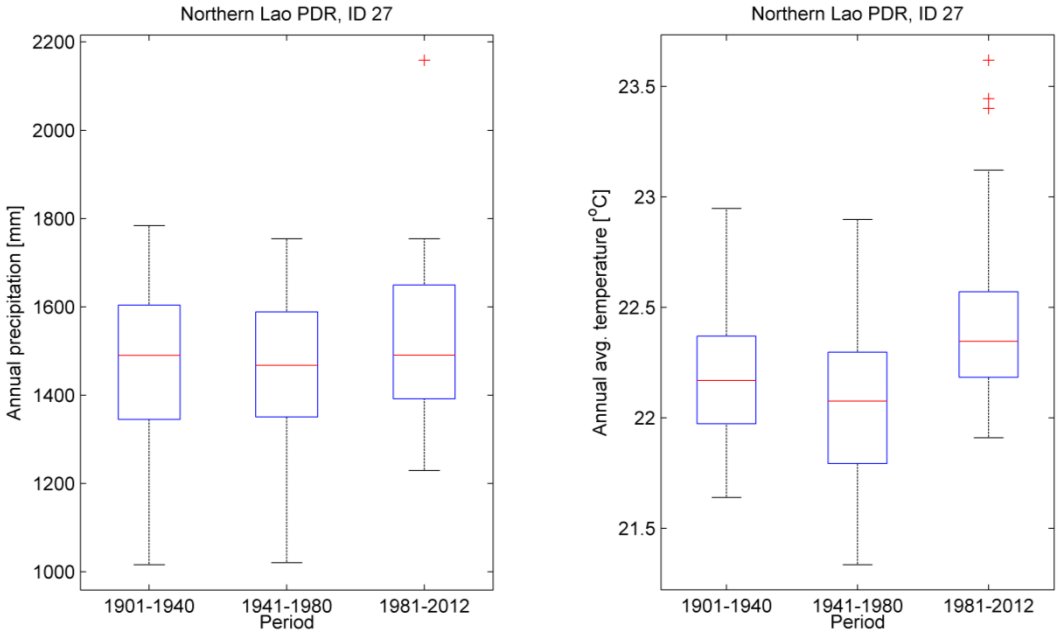



**Figure 34: Northern Lao PDR (ID 27) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 15: Summary of Northern Lao PDR (ID 27) climate statistics. Results are shown for $P_{all}$ (1901-2012), $P_1$ (1901-1940), $P_2$ (1941-1980), and $P_3$ (1981-2012). For temperature arrows indicate 1°C increase (up) or decrease (down). For precipitation arrows indicate 10 mm increase (up) or decrease (down).**

| Northern Lao PDR ID 27 | | | | |
|---|---|---|---|---|
| Temperature | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Average [°C] | 22.2 → | 22.2 → | 22.1 ↑ | 22.5 |
| Trend [°C/10 year] | 0.04 | 0.10 | -0.05 | 0.23 |
| Monthly Average [°C] | | | | |
| Jan | 17.6 → | 17.5 ↓ | 17.3 ↓ | 17.3 |
| Feb | 19.2 ↓ | 19.0 ↓ | 18.8 ↓ | 18.8 |
| Mar | 21.7 ↓ | 21.5 → | 21.6 → | 21.6 |
| Apr | 24.1 → | 24.0 → | 24.0 → | 24.0 |
| May | 25.0 ↑ | 25.1 → | 25.0 → | 25.0 |
| Jun | 25.2 → | 25.2 → | 25.1 → | 25.1 |
| Jul | 24.7 → | 24.7 → | 24.7 → | 24.7 |
| Aug | 24.5 → | 24.5 ↓ | 24.3 ↓ | 24.3 |
| Sep | 24.3 → | 24.4 → | 24.2 → | 24.2 |
| Oct | 22.8 → | 22.8 ↓ | 22.6 ↓ | 22.6 |
| Nov | 20.2 → | 20.2 ↓ | 20.0 ↓ | 20.0 |
| Dec | 17.5 → | 17.5 → | 17.5 → | 17.5 |
| | | | | |
| Precipitation | *1901-2012* | *1901-1940* | *1941-1980* | *1981-2012* |
| Annual Total [mm] | 1484 ↓ | 1471 ↓ | 1465 ↑ | 1525 |
| Trend [mm/10 year] | 7.5 | -31.1 | 22.1 | 91.8 |
| Monthly Average [mm] | | | | |
| Jan | 12 → | 9 → | 15 → | 15 |
| Feb | 16 → | 16 → | 15 → | 15 |
| Mar | 34 → | 28 → | 34 → | 34 |
| Apr | 92 ↓ | 77 → | 100 → | 100 |
| May | 176 → | 176 → | 167 → | 167 |
| Jun | 225 → | 221 → | 228 → | 228 |
| Jul | 261 → | 267 ↓ | 248 ↓ | 248 |
| Aug | 315 → | 320 → | 310 → | 310 |
| Sep | 189 → | 195 → | 190 → | 190 |
| Oct | 105 → | 97 → | 108 → | 108 |
| Nov | 46 → | 53 → | 37 → | 37 |
| Dec | 13 → | 12 → | 13 → | 13 |

# Appendix 19: Short-term monthly LMB averages for precipitation and average temperature

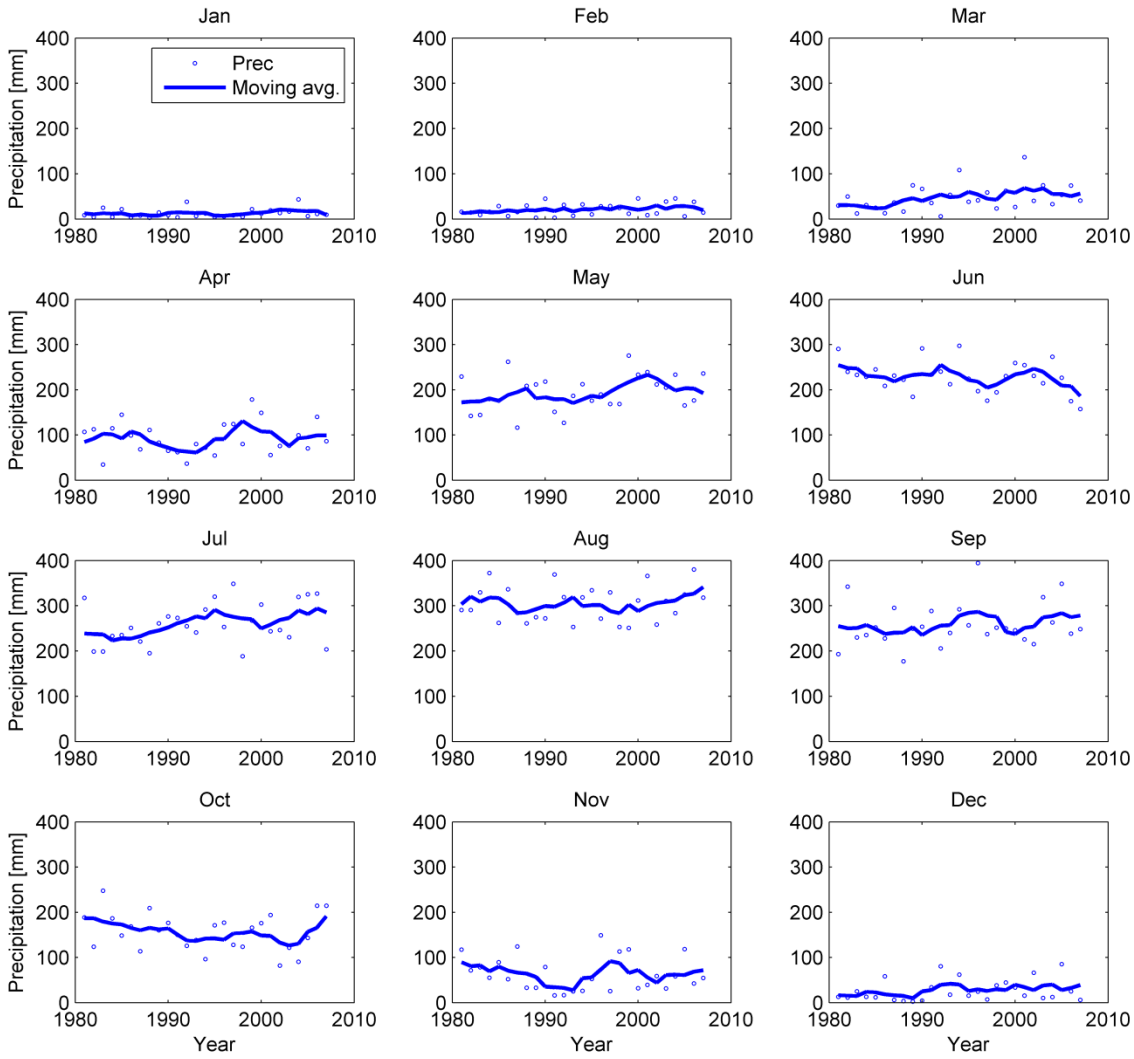



**Figure 35: Monthly basin precipitation for the period 1981-2007 averaged over the 15 sub-basins. Solid lines represent the 5-year moving average.**

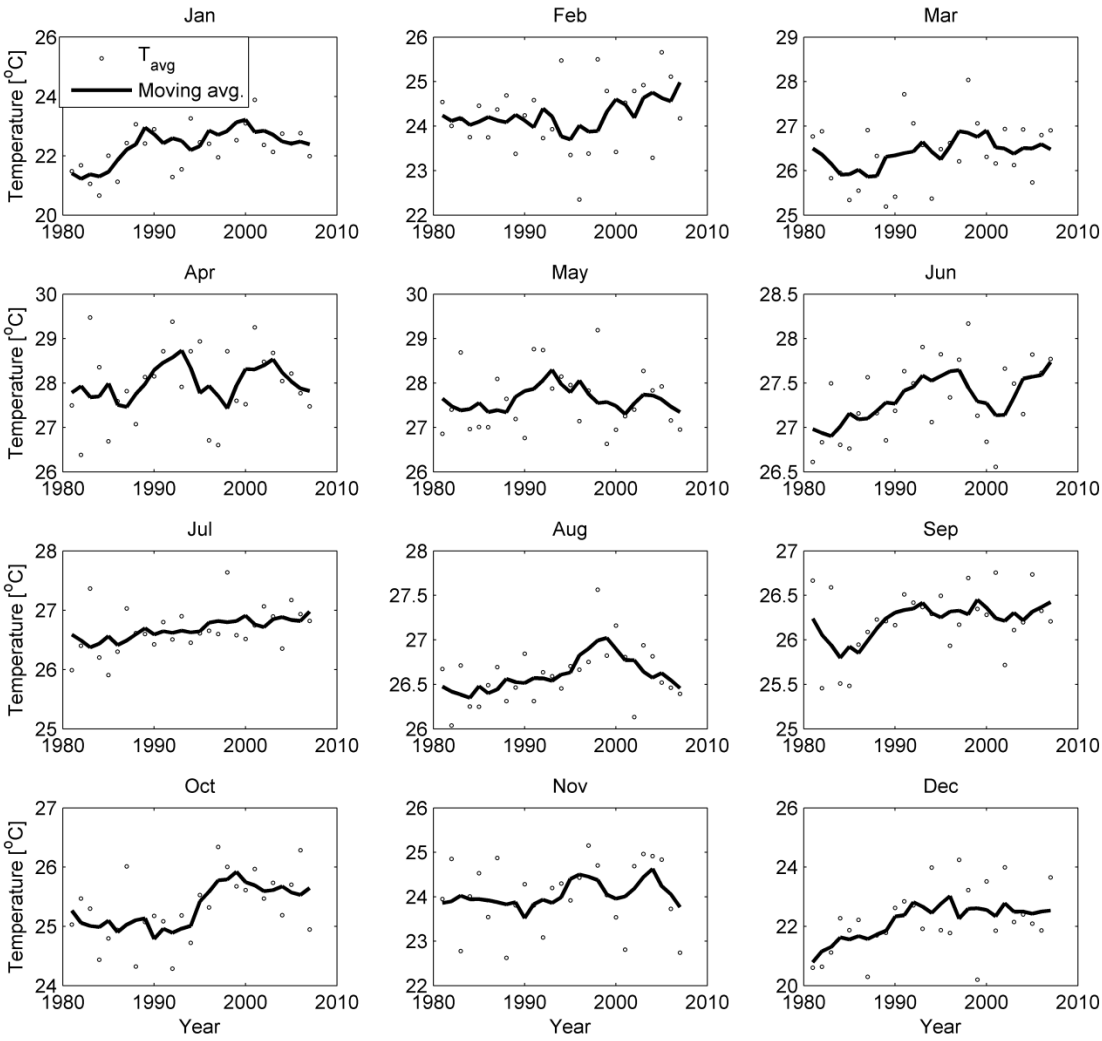



**Figure 36: Monthly basin average temperature for the period 1981-2007, averaged over the 15 sub-basins. Solid lines represent the 5-year moving average.**


**Figure 37: Monthly basin maximum temperature for the period 1981-2007, averaged over the 15 sub-basins. Solid lines represent the 5-year moving average.**

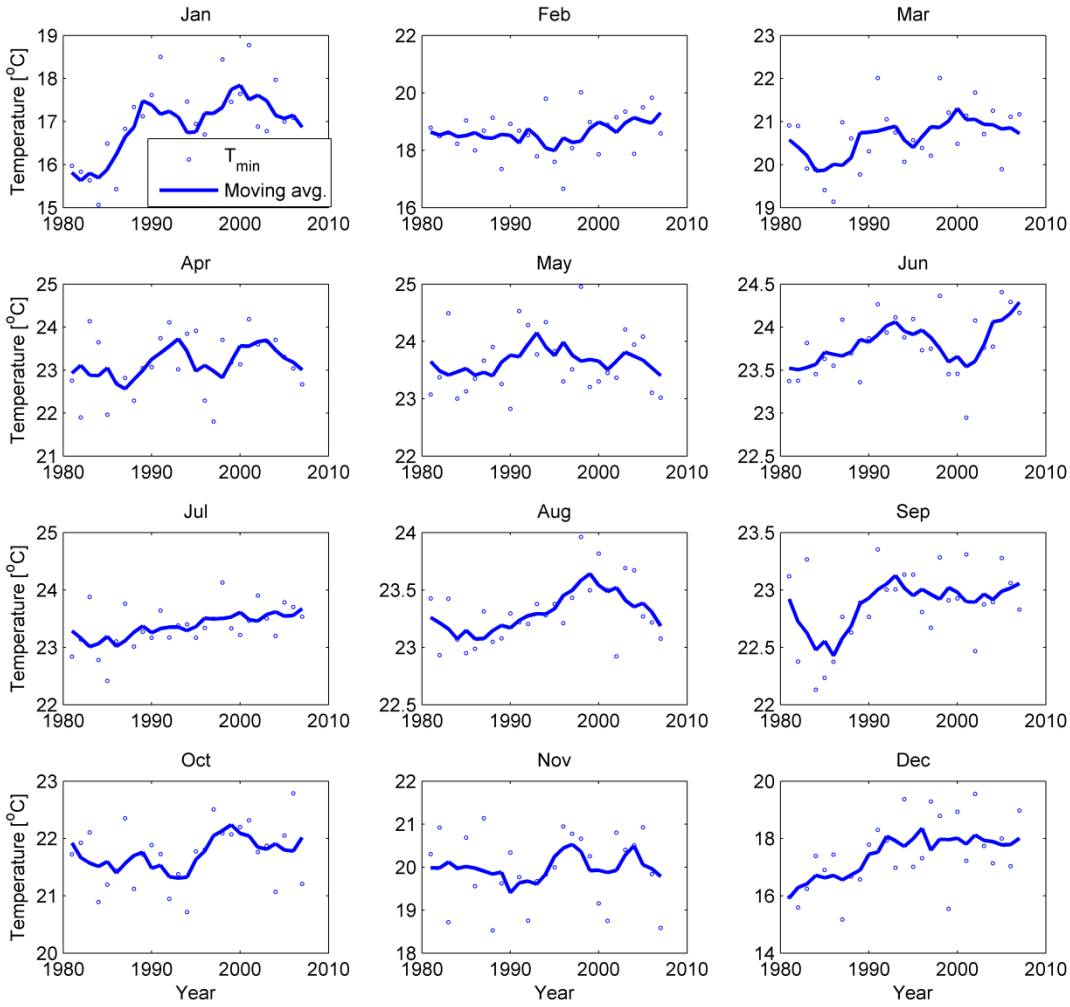



**Figure 38: Monthly basin minimum temperature for the period 1981-2007, averaged over the 15 sub-basins. Solid lines represent the 5-year moving average.**

# Appendix 20: Se San / Sre Pok / Se Kong river basins (ID 1) climate figures – short-term

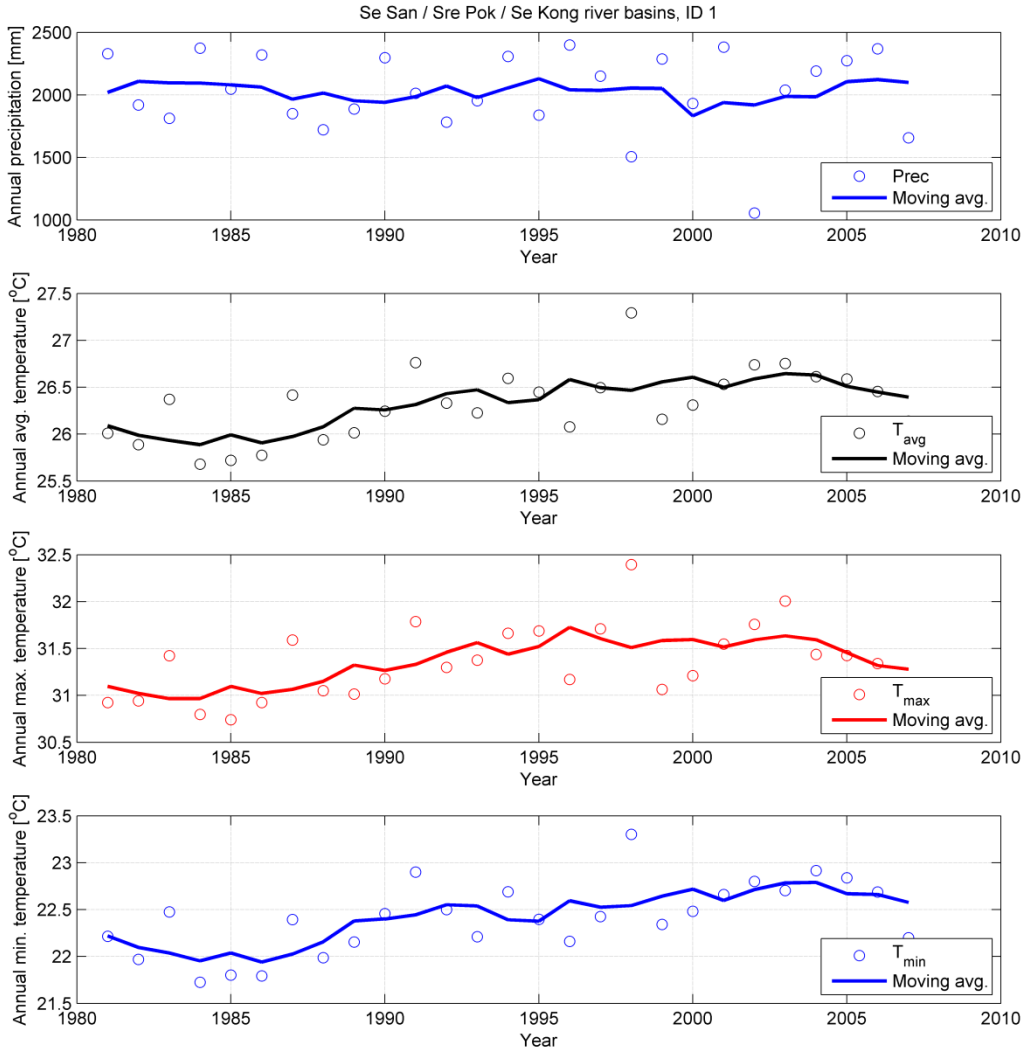



**Figure 39: Se San / Sre Pok, Se Kong river basins (ID 1) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

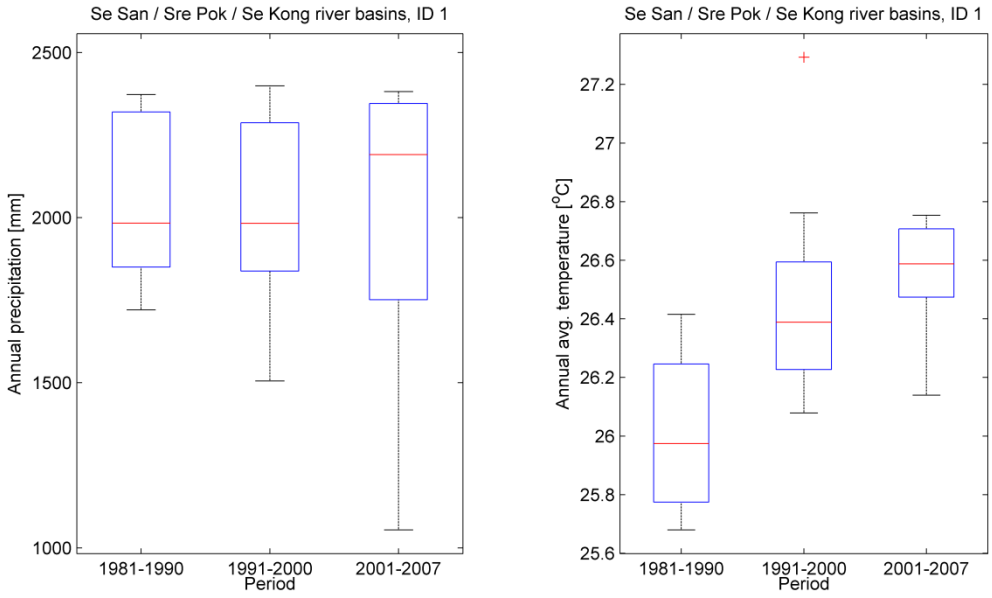



**Figure 40: Se San / Sre Pok, Se Kong river basins (ID 1) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 16: Summary of Se San / Sre Pok, Se Kong river basins (ID 1) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Se San / Sre Pok / Se Kong river basins ID 1 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | -30.2 | -137.3 | 39.8 | 246.2 |
| Temperature [°C/10 year] | 0.27 | 0.19 | -0.04 | -0.68 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 2025 | 2055 | 2017 | 1995 |
| Temperature [°C] | 26.3 | 26 | 26.5 | 26.5 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 5 | 2 | 4 | 4 |
| Feb | 14 | 11 | 19 | 19 |
| Mar | 38 | 30 | 36 | 36 |
| Apr | 95 | 103 | 98 | 98 |
| May | 230 | 220 | 222 | 222 |
| Jun | 302 | 359 | 264 | 264 |
| Jul | 333 | 311 | 355 | 355 |
| Aug | 423 | 430 | 409 | 409 |
| Sep | 333 | 314 | 363 | 363 |
| Oct | 176 | 205 | 164 | 164 |
| Nov | 57 | 62 | 56 | 56 |
| Dec | 21 | 9 | 27 | 27 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 23.5 | 23 | 23.8 | 23.8 |
| Feb | 25.7 | 25.4 | 25.6 | 25.6 |
| Mar | 26.8 | 26.4 | 27.1 | 27.1 |
| Apr | 28.5 | 28.2 | 28.6 | 28.6 |
| May | 28.2 | 27.9 | 28.5 | 28.5 |
| Jun | 27.7 | 27.5 | 27.8 | 27.8 |
| Jul | 26.3 | 26.1 | 26.3 | 26.3 |
| Aug | 27.3 | 27.2 | 27.5 | 27.5 |
| Sep | 26.7 | 26.5 | 26.8 | 26.8 |
| Oct | 25.8 | 25.5 | 25.8 | 25.8 |
| Nov | 25.4 | 25.1 | 25.5 | 25.5 |
| Dec | 23.9 | 23.4 | 24.3 | 24.3 |

# Appendix 21: Se San / Sre Pok / Se Kong river basins (ID 2) climate figures – short-term

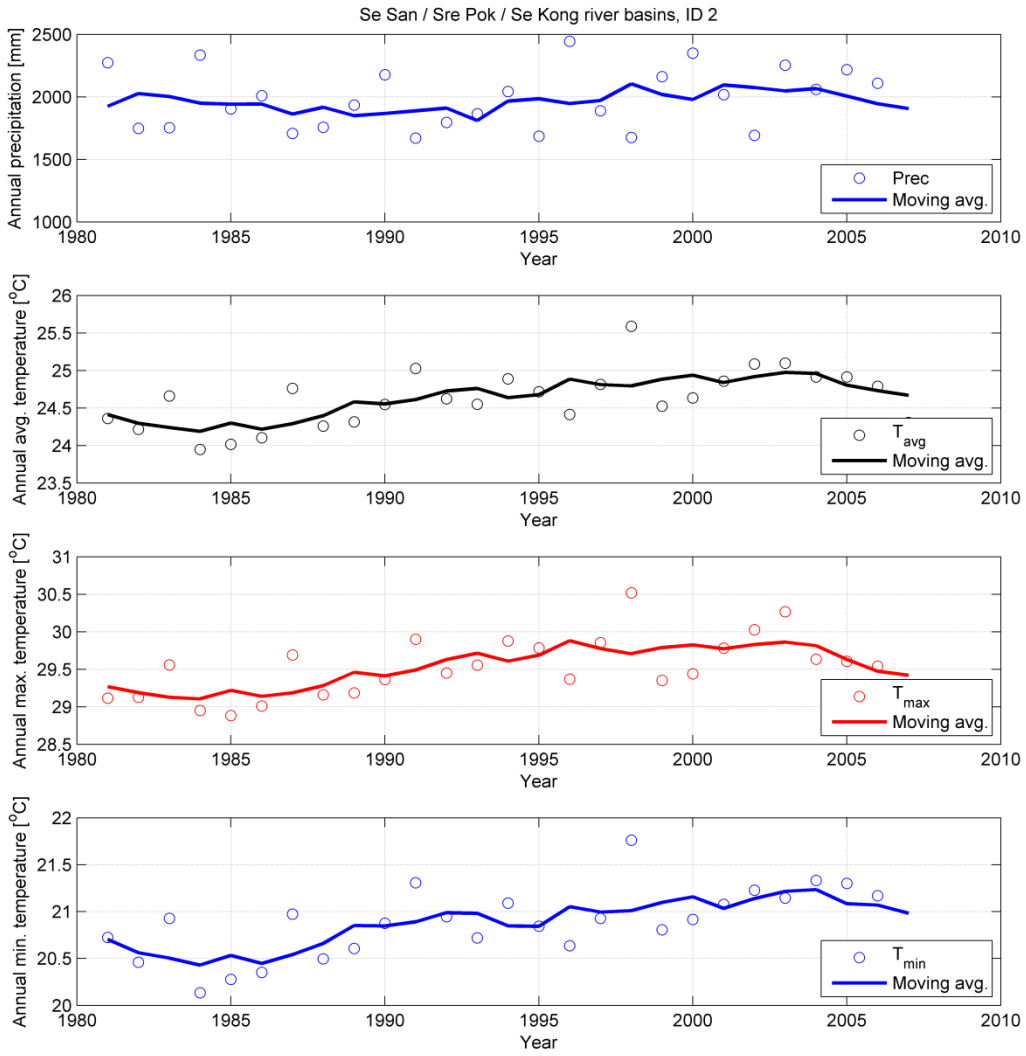



**Figure 41: Se San / Sre Pok, Se Kong river basins (ID 2) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

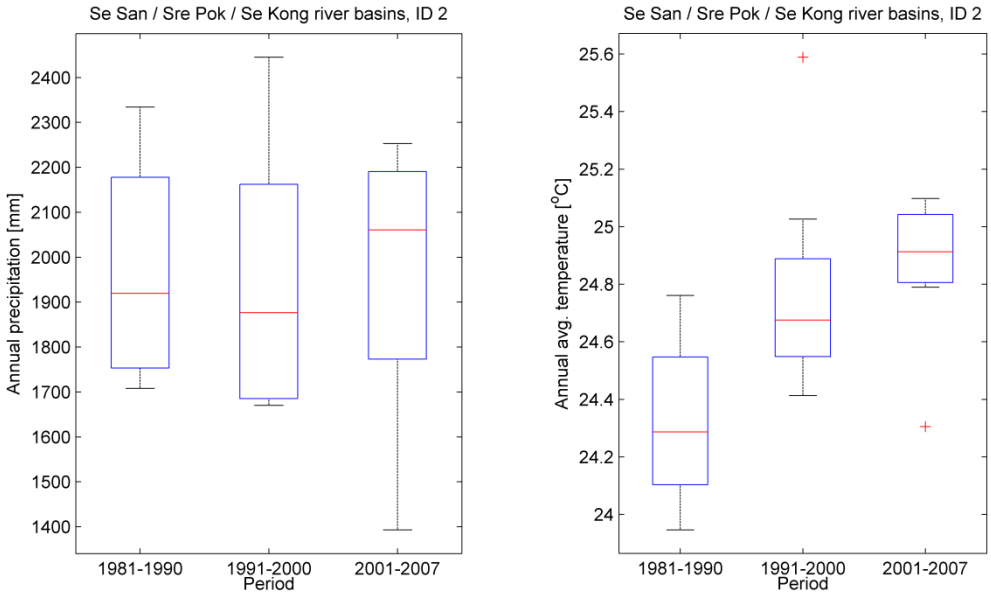



**Figure 42: Se San / Sre Pok, Se Kong river basins (ID 2) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 17: Summary of Se San / Sre Pok, Se Kong river basins (ID 2) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Se San / Sre Pok / Se Kong river basins ID 2 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 15.2 | -79.3 | 486.8 | -384.4 |
| Temperature [°C/10 year] | 0.27 | 0.18 | 0.03 | -0.87 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1960 | 1960 | 1958 | 1963 |
| Temperature [°C] | 24.6 | 24.3 | 24.8 | 24.9 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 7 | 3 | 6 | 6 |
| Feb | 16 | 12 | 21 | 21 |
| Mar | 42 | 30 | 40 | 40 |
| Apr | 105 | 111 | 115 | 115 |
| May | 230 | 224 | 224 | 224 |
| Jun | 263 | 321 | 229 | 229 |
| Jul | 279 | 266 | 293 | 293 |
| Aug | 352 | 352 | 326 | 326 |
| Sep | 310 | 292 | 326 | 326 |
| Oct | 220 | 233 | 225 | 225 |
| Nov | 96 | 94 | 100 | 100 |
| Dec | 40 | 20 | 52 | 52 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 21.7 | 21.2 | 22 | 22 |
| Feb | 23.1 | 22.8 | 23.1 | 23.1 |
| Mar | 23.3 | 22.9 | 23.6 | 23.6 |
| Apr | 25.9 | 25.5 | 26 | 26 |
| May | 26.6 | 26.4 | 26.9 | 26.9 |
| Jun | 26.7 | 26.4 | 26.8 | 26.8 |
| Jul | 25.3 | 25.1 | 25.3 | 25.3 |
| Aug | 26.4 | 26.3 | 26.6 | 26.6 |
| Sep | 25.7 | 25.5 | 25.8 | 25.8 |
| Oct | 24.4 | 24.2 | 24.5 | 24.5 |
| Nov | 23.7 | 23.4 | 23.9 | 23.9 |
| Dec | 22.6 | 22 | 23 | 23 |

# Appendix 22: Mekong delta (Cambodia, ID 7) climate figures – short-term

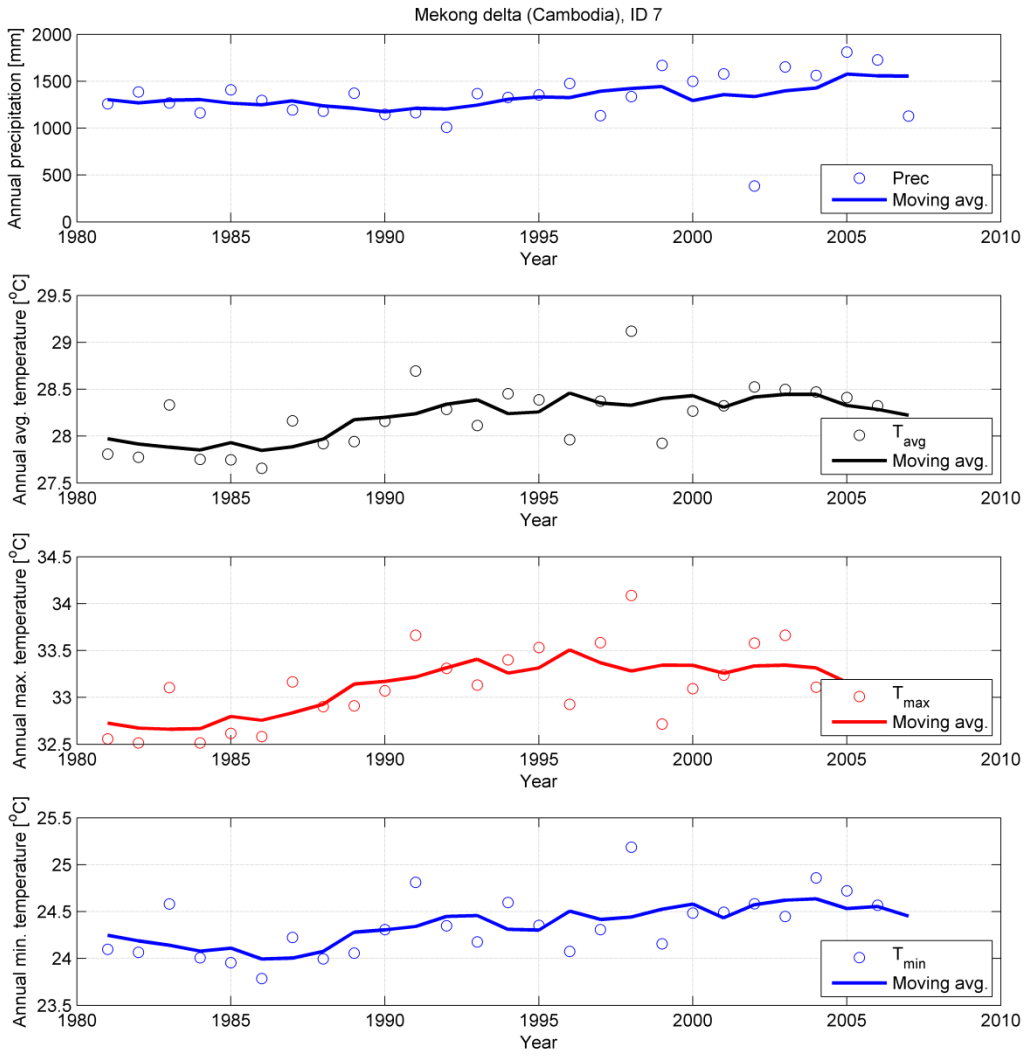



**Figure 43: Mekong delta (Cambodia, ID 7) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

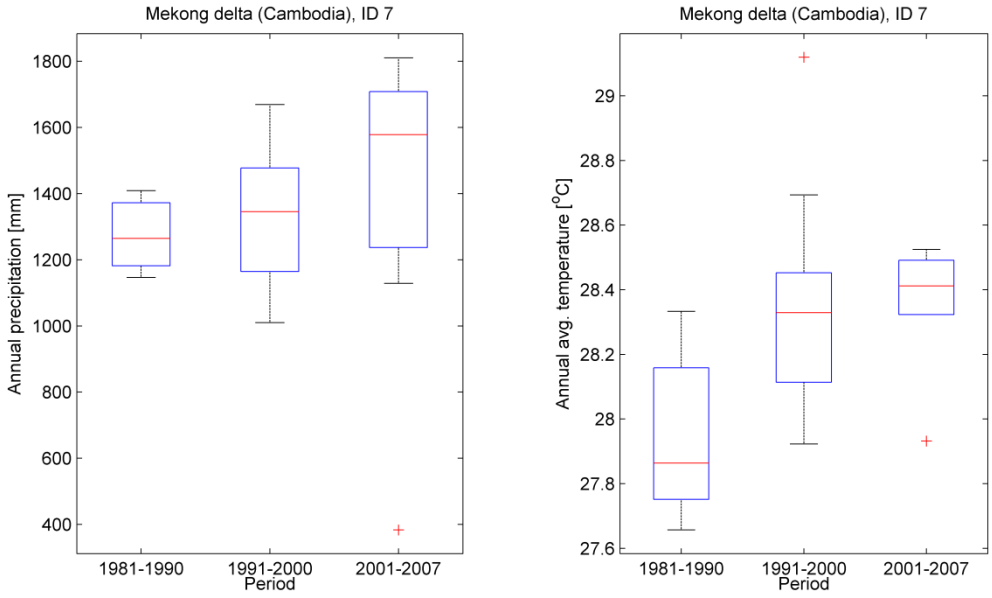



**Figure 44: Mekong delta (Cambodia, ID 7) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 18: Summary of Mekong delta (Cambodia, ID 7) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Mekong delta (Cambodia) ID 7 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 91 | -95.3 | 424.3 | 533.4 |
| Temperature [°C/10 year] | 0.22 | 0.21 | -0.12 | -0.59 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1328 | 1268 | 1334 | 1406 |
| Temperature [°C] | 28.2 | 27.9 | 28.4 | 28.4 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 18 | 7 | 17 | 17 |
| Feb | 10 | 8 | 9 | 9 |
| Mar | 57 | 36 | 59 | 59 |
| Apr | 81 | 80 | 82 | 82 |
| May | 131 | 134 | 113 | 113 |
| Jun | 144 | 130 | 148 | 148 |
| Jul | 151 | 139 | 154 | 154 |
| Aug | 165 | 167 | 166 | 166 |
| Sep | 212 | 222 | 218 | 218 |
| Oct | 221 | 200 | 235 | 235 |
| Nov | 103 | 128 | 89 | 89 |
| Dec | 34 | 15 | 43 | 43 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 27 | 26.6 | 27.3 | 27.3 |
| Feb | 28 | 27.8 | 28 | 28 |
| Mar | 29.4 | 29.2 | 29.6 | 29.6 |
| Apr | 30.1 | 29.8 | 30.2 | 30.2 |
| May | 29.8 | 29.5 | 30 | 30 |
| Jun | 28.6 | 28.4 | 28.7 | 28.7 |
| Jul | 27.9 | 27.7 | 28 | 28 |
| Aug | 28.1 | 27.9 | 28.3 | 28.3 |
| Sep | 27.9 | 27.7 | 28 | 28 |
| Oct | 27.4 | 27.1 | 27.5 | 27.5 |
| Nov | 27.5 | 27.3 | 27.7 | 27.7 |
| Dec | 26.6 | 26.1 | 27 | 27 |

# Appendix 23: Kratie (ID 8) climate figures – short-term

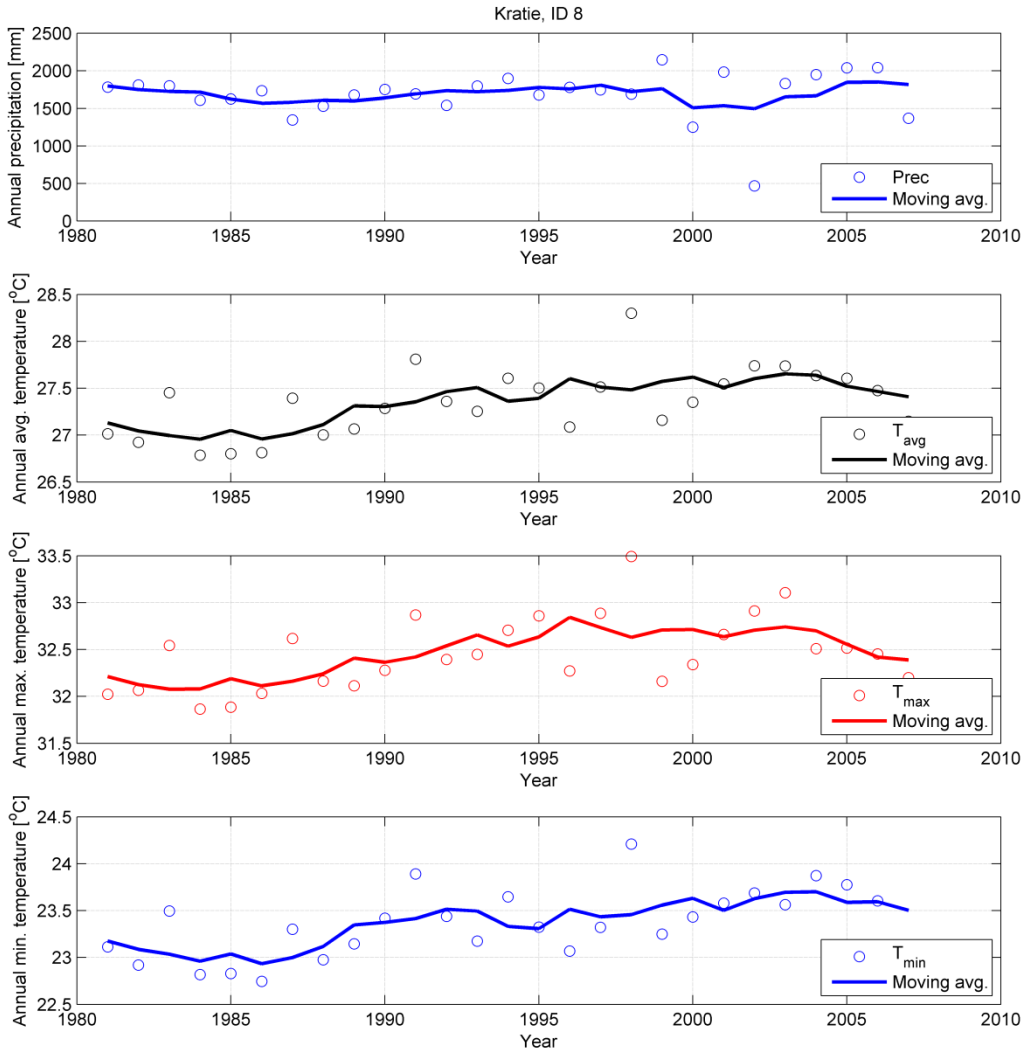



**Figure 45: Kratie (ID 8) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

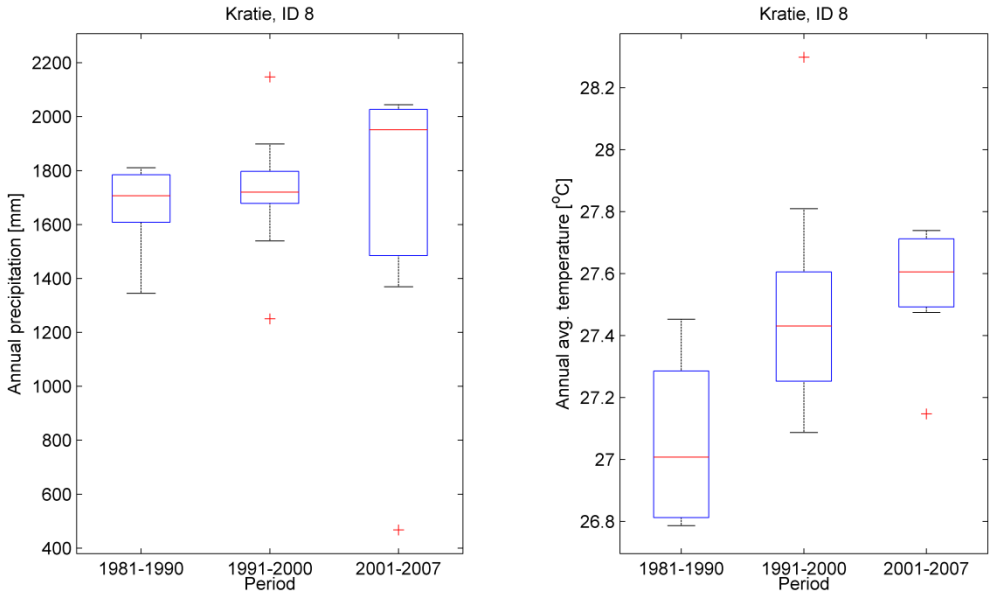



**Figure 46: Kratie (ID 8) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 19: Summary of Kratie (ID 8) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| **Kratie ID 8** | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 3.7 | -197.1 | -38.4 | 542.6 |
| Temperature [°C/10 year] | 0.25 | 0.18 | -0.06 | -0.66 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1688 | 1667 | 1722 | 1670 |
| Temperature [°C] | 27.3 | 27.1 | 27.5 | 27.6 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 6 | 3 | 7 | 7 |
| Feb | 11 | 9 | 15 | 15 |
| Mar | 49 | 39 | 46 | 46 |
| Apr | 90 | 98 | 86 | 86 |
| May | 198 | 188 | 180 | 180 |
| Jun | 231 | 248 | 225 | 225 |
| Jul | 228 | 220 | 235 | 235 |
| Aug | 303 | 298 | 310 | 310 |
| Sep | 283 | 282 | 310 | 310 |
| Oct | 203 | 203 | 214 | 214 |
| Nov | 66 | 72 | 63 | 63 |
| Dec | 22 | 9 | 32 | 32 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 25.4 | 24.9 | 25.6 | 25.6 |
| Feb | 27.1 | 26.9 | 27.1 | 27.1 |
| Mar | 28.8 | 28.5 | 29 | 29 |
| Apr | 29.8 | 29.5 | 29.9 | 29.9 |
| May | 29.1 | 28.8 | 29.3 | 29.3 |
| Jun | 28.2 | 27.9 | 28.3 | 28.3 |
| Jul | 26.9 | 26.7 | 26.9 | 26.9 |
| Aug | 27.6 | 27.4 | 27.8 | 27.8 |
| Sep | 27.3 | 27.1 | 27.4 | 27.4 |
| Oct | 26.5 | 26.2 | 26.6 | 26.6 |
| Nov | 26.3 | 26.1 | 26.5 | 26.5 |
| Dec | 25.2 | 24.6 | 25.6 | 25.6 |

# Appendix 24: Tonle Sap basin (ID 9) climate figures – short-term

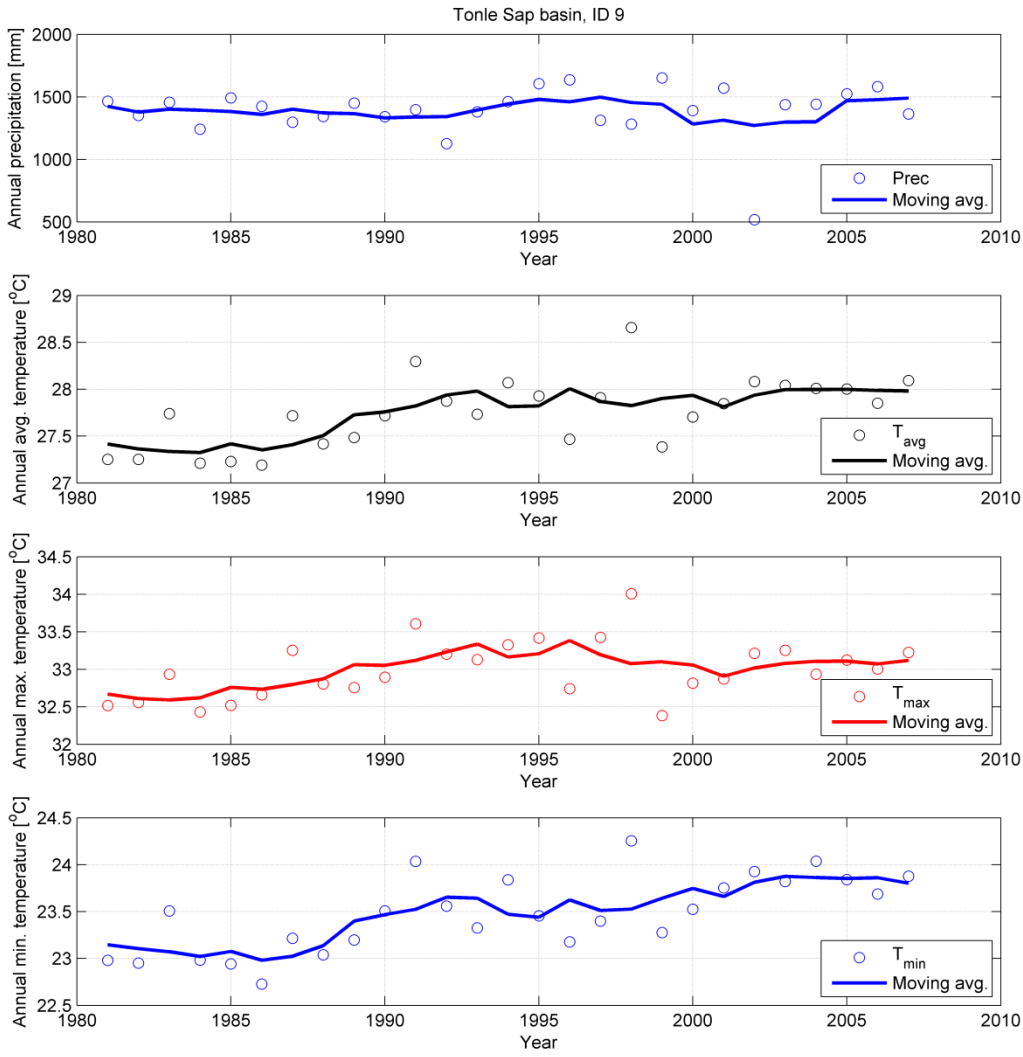



**Figure 47: Tonle Sap basin (ID 9) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

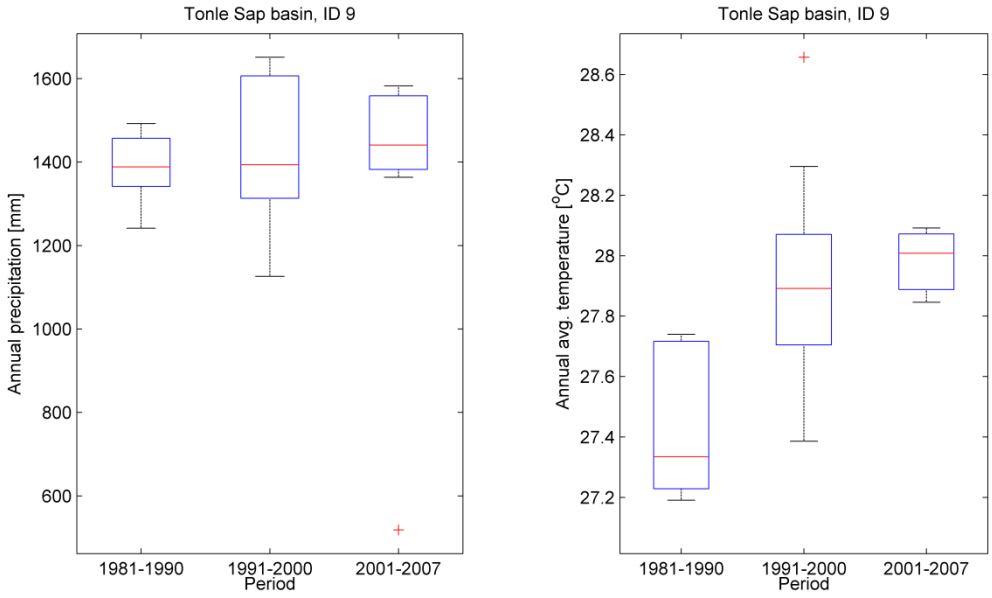



**Figure 48: Tonle Sap basin (ID 9) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 20: Summary of Tonle Sap basin (ID 9) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Tonle Sap basin ID 9 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 2.5 | -53.8 | 163.7 | 569.9 |
| Temperature [°C/10 year] | 0.29 | 0.34 | -0.31 | 0.08 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1391 | 1386 | 1425 | 1348 |
| Temperature [°C] | 27.7 | 27.4 | 27.9 | 28 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 11 | 6 | 11 | 11 |
| Feb | 12 | 10 | 11 | 11 |
| Mar | 49 | 37 | 43 | 43 |
| Apr | 78 | 81 | 74 | 74 |
| May | 146 | 149 | 129 | 129 |
| Jun | 175 | 170 | 178 | 178 |
| Jul | 175 | 159 | 184 | 184 |
| Aug | 209 | 209 | 218 | 218 |
| Sep | 252 | 263 | 267 | 267 |
| Oct | 193 | 199 | 212 | 212 |
| Nov | 74 | 98 | 74 | 74 |
| Dec | 15 | 5 | 24 | 24 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 25.8 | 25.4 | 26.1 | 26.1 |
| Feb | 27.8 | 27.6 | 27.7 | 27.7 |
| Mar | 29.7 | 29.3 | 29.9 | 29.9 |
| Apr | 30.2 | 29.8 | 30.2 | 30.2 |
| May | 29.3 | 29 | 29.7 | 29.7 |
| Jun | 28.4 | 28.1 | 28.5 | 28.5 |
| Jul | 27.6 | 27.4 | 27.7 | 27.7 |
| Aug | 27.7 | 27.5 | 27.8 | 27.8 |
| Sep | 27.4 | 27.1 | 27.5 | 27.5 |
| Oct | 26.8 | 26.5 | 26.9 | 26.9 |
| Nov | 26.7 | 26.5 | 26.9 | 26.9 |
| Dec | 25.5 | 24.9 | 25.9 | 25.9 |

# Appendix 25: Southern Lao PDR (ID 12) climate figures – short-term

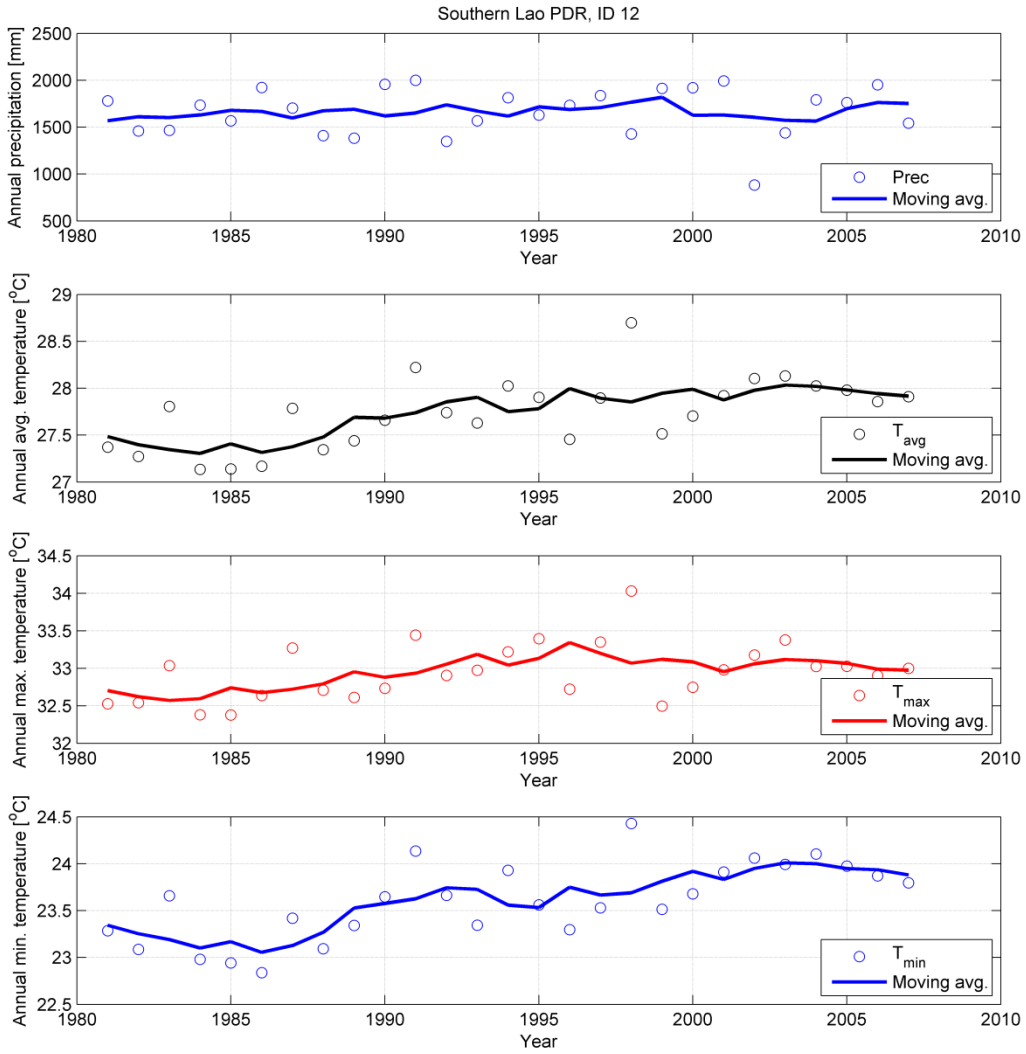



**Figure 49: Southern Lao PDR (ID 12) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

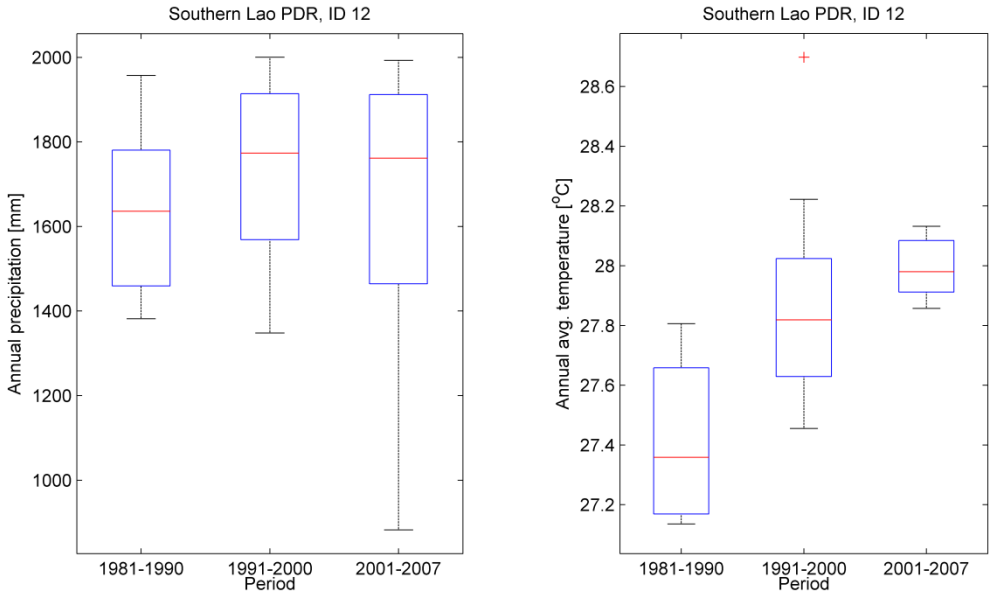



**Figure 50: Southern Lao PDR (ID 12) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 21: Summary of Southern Lao PDR (ID 12) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Southern Lao PDR ID 12 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 19.1 | 62.5 | 164.4 | 398 |
| Temperature [°C/10 year] | 0.29 | 0.21 | -0.11 | -0.24 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1664 | 1638 | 1719 | 1623 |
| Temperature [°C] | 27.7 | 27.4 | 27.9 | 28 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 3 | 1 | 3 | 3 |
| Feb | 7 | 4 | 9 | 9 |
| Mar | 30 | 20 | 31 | 31 |
| Apr | 85 | 82 | 94 | 94 |
| May | 201 | 178 | 212 | 212 |
| Jun | 267 | 309 | 240 | 240 |
| Jul | 256 | 228 | 280 | 280 |
| Aug | 323 | 327 | 313 | 313 |
| Sep | 288 | 272 | 319 | 319 |
| Oct | 157 | 178 | 153 | 153 |
| Nov | 39 | 39 | 48 | 48 |
| Dec | 8 | 2 | 16 | 16 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 25.2 | 24.7 | 25.5 | 25.5 |
| Feb | 27.8 | 27.6 | 27.8 | 27.8 |
| Mar | 30.3 | 29.9 | 30.5 | 30.5 |
| Apr | 30.7 | 30.4 | 30.8 | 30.8 |
| May | 29.4 | 29.2 | 29.7 | 29.7 |
| Jun | 28.4 | 28.1 | 28.5 | 28.5 |
| Jul | 27.2 | 27 | 27.2 | 27.2 |
| Aug | 27.8 | 27.6 | 28 | 28 |
| Sep | 27.5 | 27.2 | 27.5 | 27.5 |
| Oct | 26.8 | 26.5 | 26.9 | 26.9 |
| Nov | 26.7 | 26.4 | 26.8 | 26.8 |
| Dec | 25.1 | 24.4 | 25.4 | 25.4 |

# Appendix 26: Mun / Chi River Basin (ID 13) climate figures – short-term

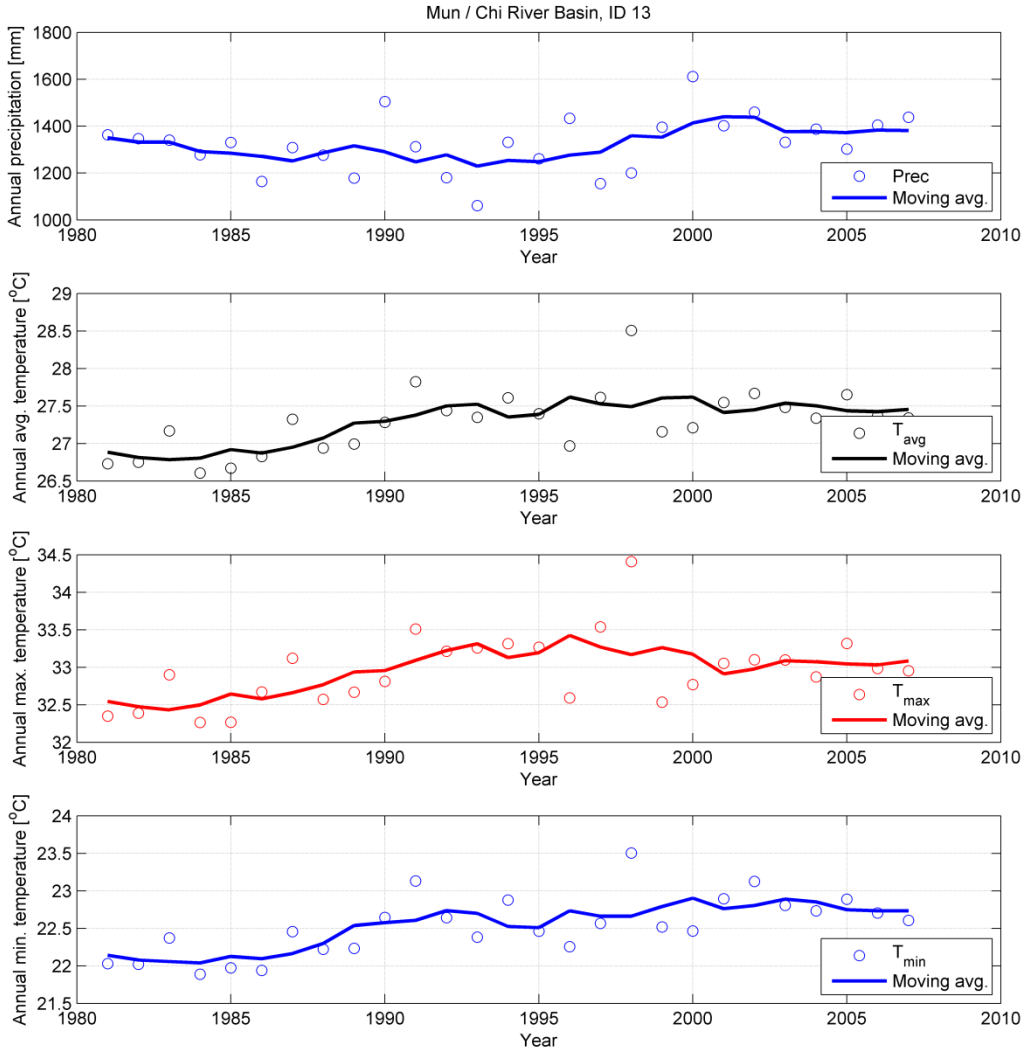



**Figure 51: Mun / Chi River Basin (ID 13) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

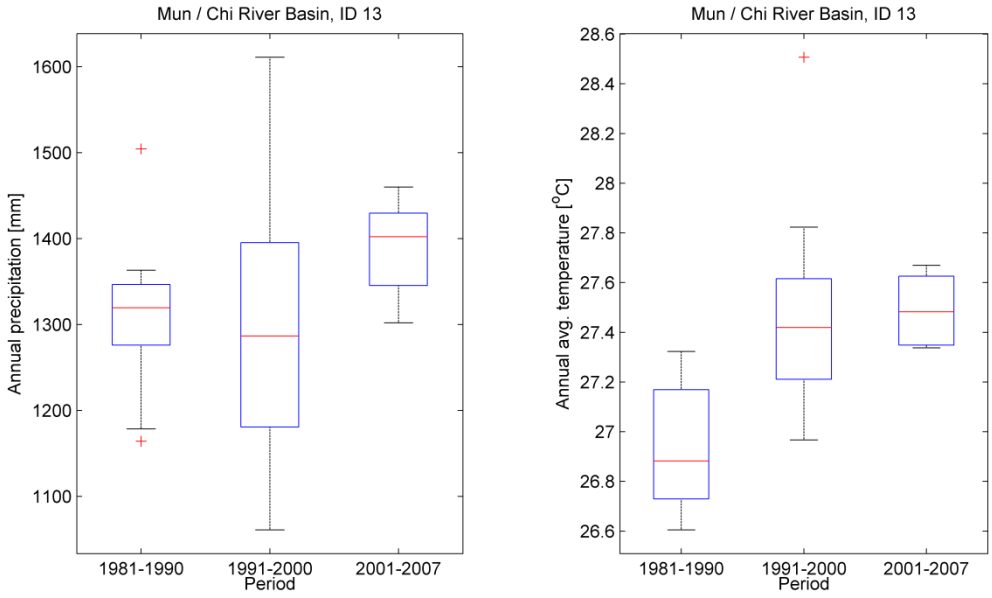



**Figure 52: Mun / Chi River Basin (ID 13) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 22: Summary of Mun / Chi River Basin (ID 13) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Mun / Chi River Basin ID 13 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 45.7 | -18.5 | 274.8 | -11.7 |
| Temperature [°C/10 year] | 0.3 | 0.47 | -0.13 | -0.37 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1324 | 1309 | 1294 | 1389 |
| Temperature [°C] | 27.3 | 26.9 | 27.5 | 27.5 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 10 | 7 | 12 | 12 |
| Feb | 22 | 20 | 21 | 21 |
| Mar | 45 | 38 | 45 | 45 |
| Apr | 83 | 79 | 91 | 91 |
| May | 169 | 165 | 168 | 168 |
| Jun | 176 | 182 | 171 | 171 |
| Jul | 180 | 172 | 177 | 177 |
| Aug | 223 | 213 | 217 | 217 |
| Sep | 245 | 239 | 239 | 239 |
| Oct | 123 | 149 | 100 | 100 |
| Nov | 38 | 40 | 38 | 38 |
| Dec | 9 | 5 | 14 | 14 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 24.1 | 23.5 | 24.5 | 24.5 |
| Feb | 26.7 | 26.6 | 26.4 | 26.4 |
| Mar | 29.3 | 28.8 | 29.7 | 29.7 |
| Apr | 30.4 | 30.1 | 30.5 | 30.5 |
| May | 29.1 | 28.7 | 29.5 | 29.5 |
| Jun | 28.7 | 28.3 | 29 | 29 |
| Jul | 28.2 | 27.9 | 28.3 | 28.3 |
| Aug | 27.8 | 27.6 | 28 | 28 |
| Sep | 27.4 | 27.2 | 27.6 | 27.6 |
| Oct | 26.8 | 26.5 | 26.8 | 26.8 |
| Nov | 25.5 | 25.4 | 25.6 | 25.6 |
| Dec | 23.6 | 22.8 | 24.1 | 24.1 |

# Appendix 27: Mekong delta (Vietnam, ID 14) climate figures – short-term

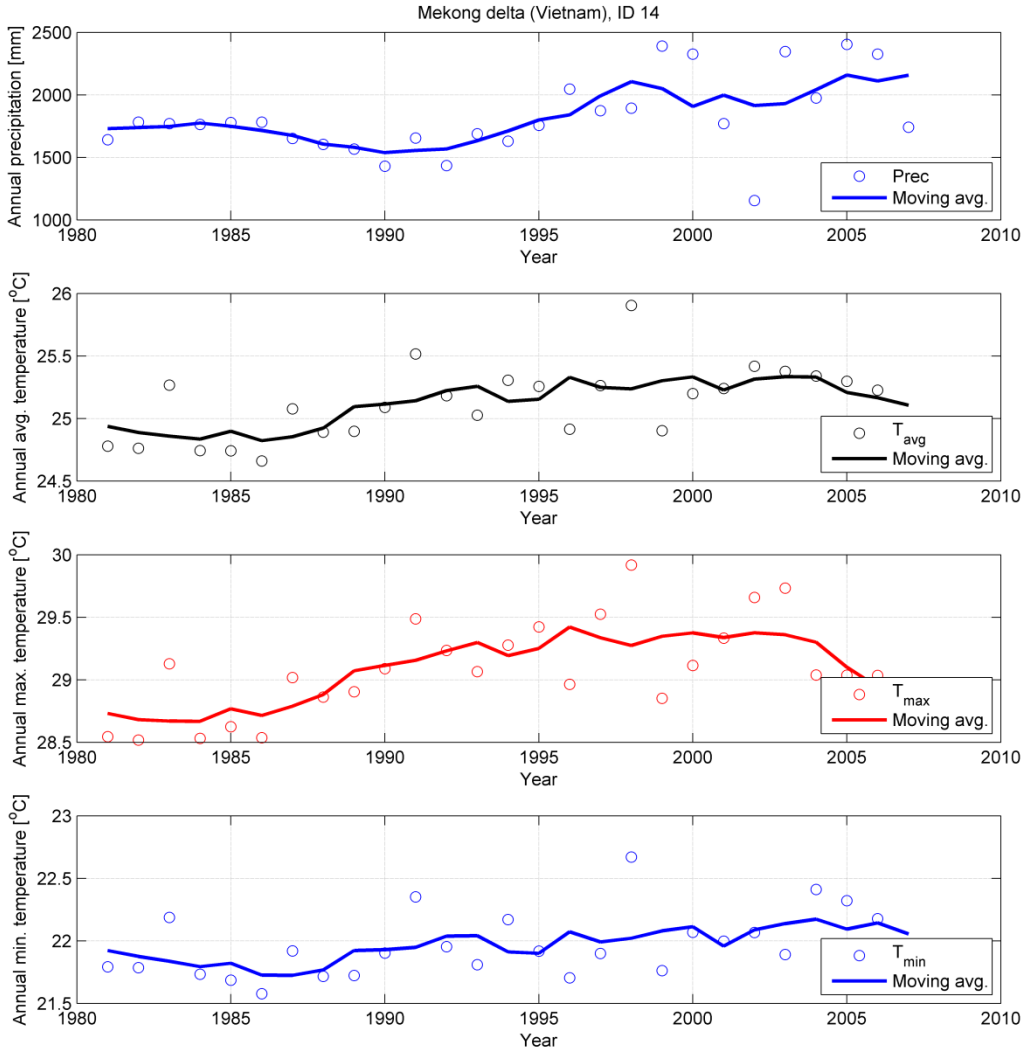



**Figure 53: Mekong delta (Vietnam, ID 14) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

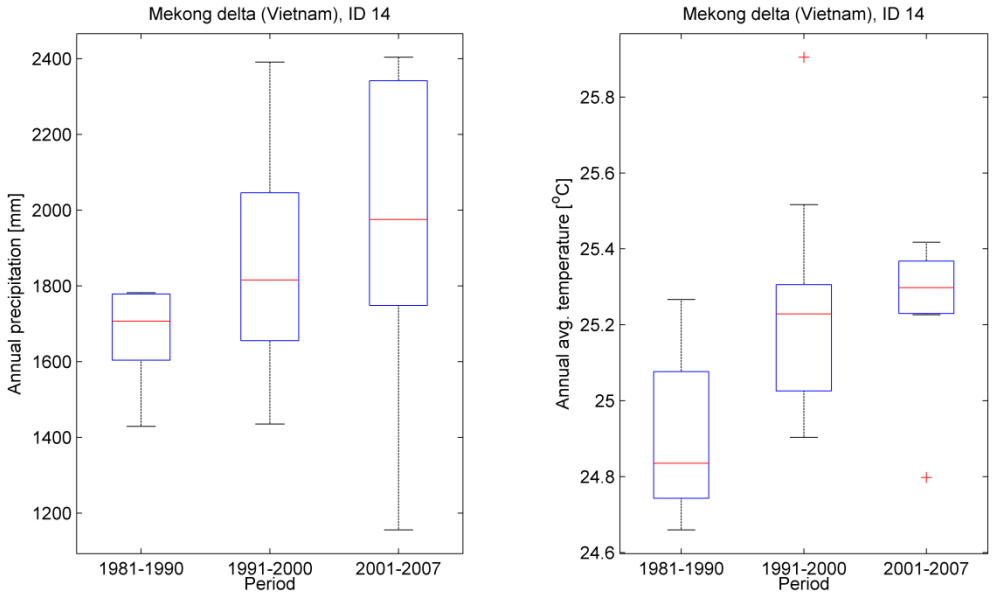



**Figure 54: Mekong delta (Vietnam, ID 14) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 23: Summary of Mekong delta (Vietnam, ID 14) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Mekong delta (Vietnam) ID 14 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 183.9 | -277.4 | 895.6 | 825.7 |
| Temperature [°C/10 year] | 0.18 | 0.17 | -0.05 | -0.64 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1822 | 1677 | 1870 | 1960 |
| Temperature [°C] | 25.1 | 24.9 | 25.2 | 25.2 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 13 | 8 | 14 | 14 |
| Feb | 13 | 9 | 13 | 13 |
| Mar | 34 | 25 | 29 | 29 |
| Apr | 83 | 68 | 95 | 95 |
| May | 183 | 180 | 173 | 173 |
| Jun | 225 | 217 | 227 | 227 |
| Jul | 248 | 200 | 277 | 277 |
| Aug | 245 | 234 | 254 | 254 |
| Sep | 268 | 271 | 261 | 261 |
| Oct | 305 | 278 | 314 | 314 |
| Nov | 149 | 151 | 142 | 142 |
| Dec | 56 | 36 | 70 | 70 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 24.1 | 23.8 | 24.3 | 24.3 |
| Feb | 24.6 | 24.4 | 24.6 | 24.6 |
| Mar | 25.7 | 25.5 | 25.9 | 25.9 |
| Apr | 26.8 | 26.6 | 26.8 | 26.8 |
| May | 26.4 | 26.2 | 26.6 | 26.6 |
| Jun | 25.5 | 25.3 | 25.6 | 25.6 |
| Jul | 25 | 24.8 | 25.1 | 25.1 |
| Aug | 25 | 24.9 | 25.1 | 25.1 |
| Sep | 25 | 24.8 | 25.1 | 25.1 |
| Oct | 24.7 | 24.5 | 24.8 | 24.8 |
| Nov | 24.6 | 24.4 | 24.8 | 24.8 |
| Dec | 23.9 | 23.5 | 24.3 | 24.3 |

# Appendix 28: Southern Lao PDR (Cambodia, ID 18) climate figures – short-term

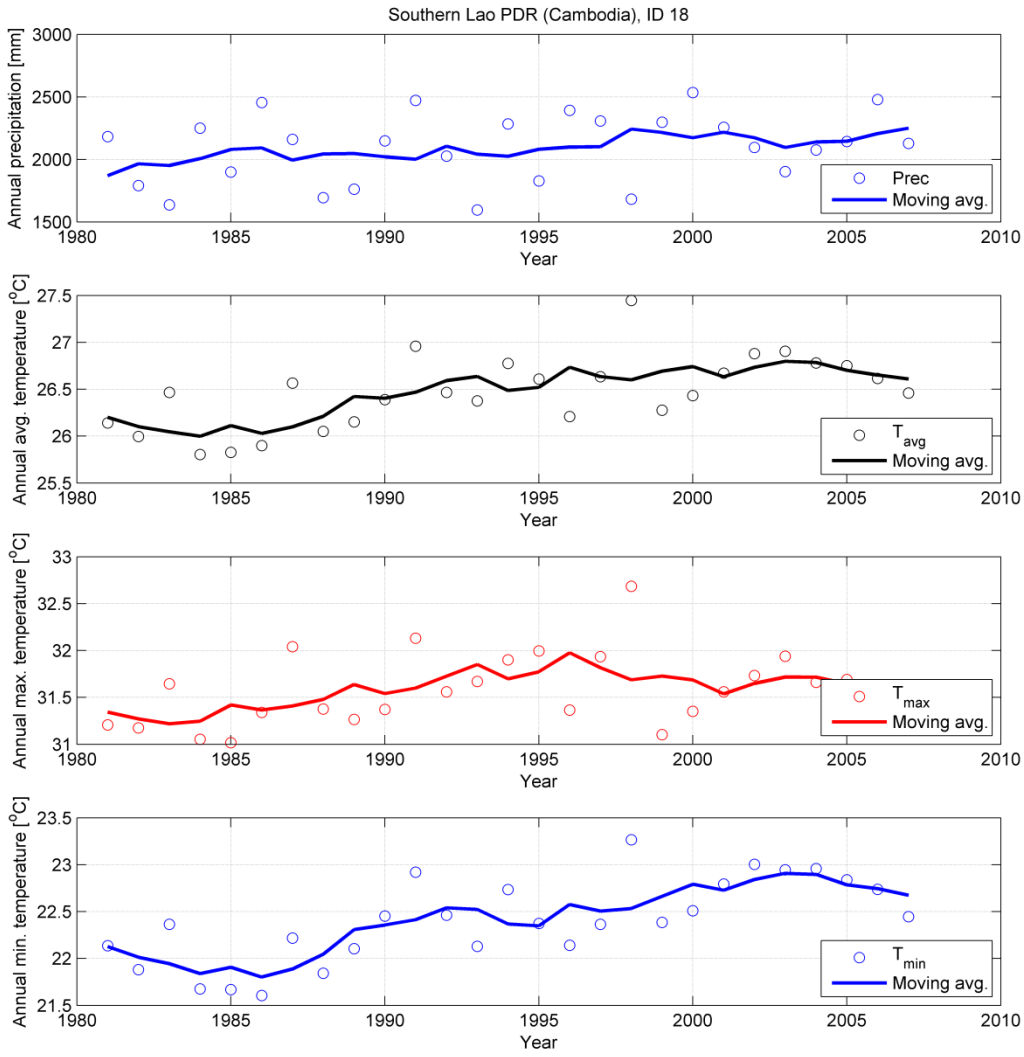



**Figure 55: Southern Lao PDR (Cambodia, ID 18) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

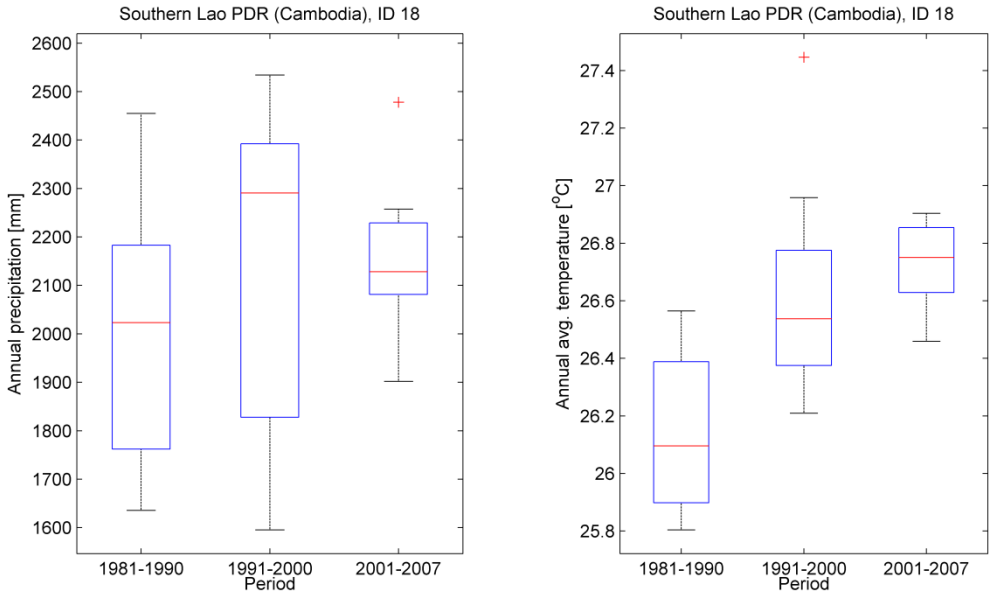



**Figure 56: Southern Lao PDR (Cambodia, ID 18) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 24: Summary of Southern Lao PDR (Cambodia, ID 18) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Southern Lao PDR (Cambodia) ID 18 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 95 | 4.4 | 213.6 | 220.6 |
| Temperature [°C/10 year] | 0.3 | 0.22 | -0.09 | -0.47 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 2092 | 1998 | 2142 | 2154 |
| Temperature [°C] | 26.5 | 26.1 | 26.6 | 26.7 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 6 | 2 | 7 | 7 |
| Feb | 15 | 8 | 21 | 21 |
| Mar | 36 | 24 | 37 | 37 |
| Apr | 98 | 96 | 110 | 110 |
| May | 233 | 211 | 250 | 250 |
| Jun | 310 | 370 | 277 | 277 |
| Jul | 397 | 342 | 436 | 436 |
| Aug | 468 | 463 | 442 | 442 |
| Sep | 328 | 274 | 367 | 367 |
| Oct | 155 | 170 | 141 | 141 |
| Nov | 40 | 36 | 45 | 45 |
| Dec | 8 | 2 | 8 | 8 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 23.1 | 22.6 | 23.3 | 23.3 |
| Feb | 25.8 | 25.5 | 25.7 | 25.7 |
| Mar | 28.3 | 27.9 | 28.6 | 28.6 |
| Apr | 29.1 | 28.7 | 29.2 | 29.2 |
| May | 28.3 | 28 | 28.6 | 28.6 |
| Jun | 27.6 | 27.3 | 27.7 | 27.7 |
| Jul | 26.8 | 26.6 | 26.8 | 26.8 |
| Aug | 27.1 | 27 | 27.3 | 27.3 |
| Sep | 26.6 | 26.4 | 26.7 | 26.7 |
| Oct | 25.9 | 25.5 | 25.9 | 25.9 |
| Nov | 25.3 | 25.1 | 25.6 | 25.6 |
| Dec | 23.7 | 23 | 24.1 | 24.1 |

# Appendix 29: Se San / Sre Pok / Se Kong river basins (ID 19) climate figures – short-term

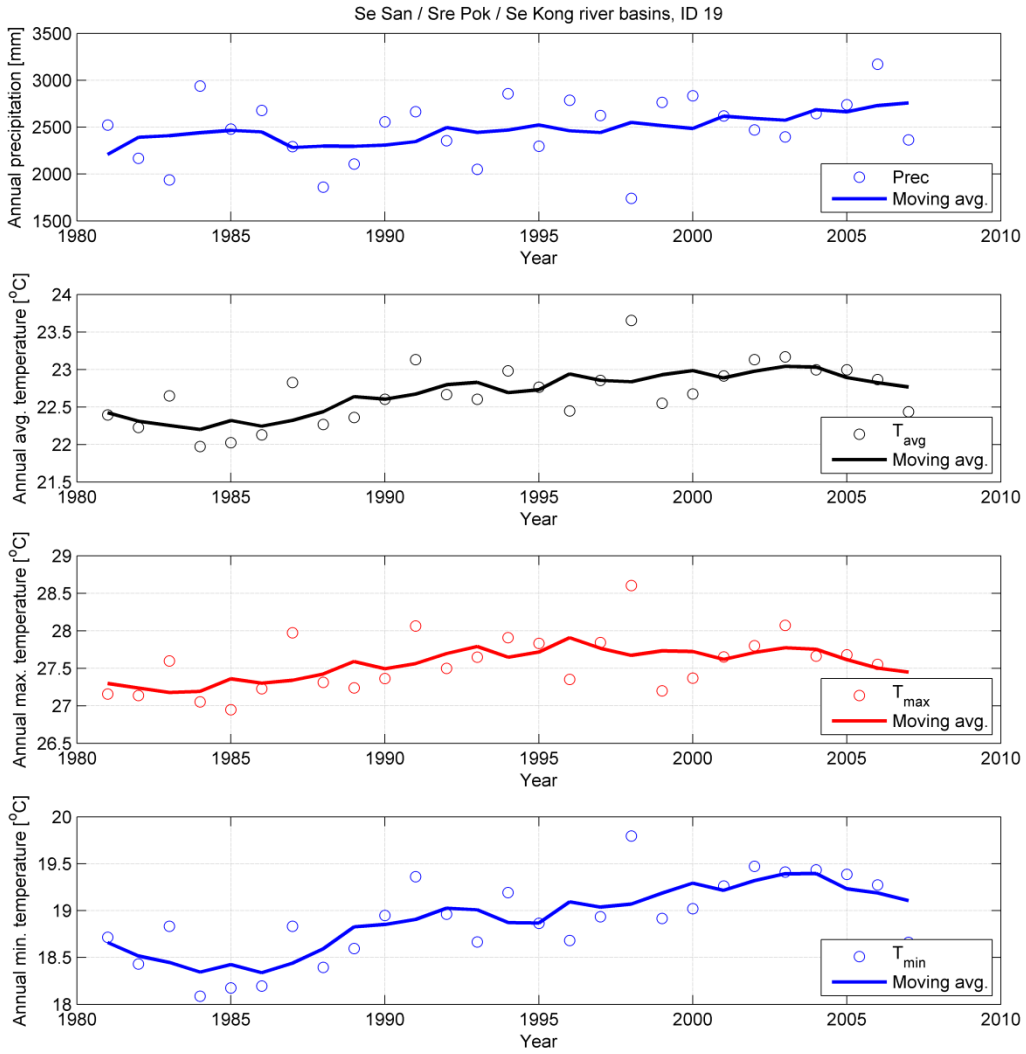



**Figure 57: Se San / Sre Pok / Se Kong river basins (ID 19) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

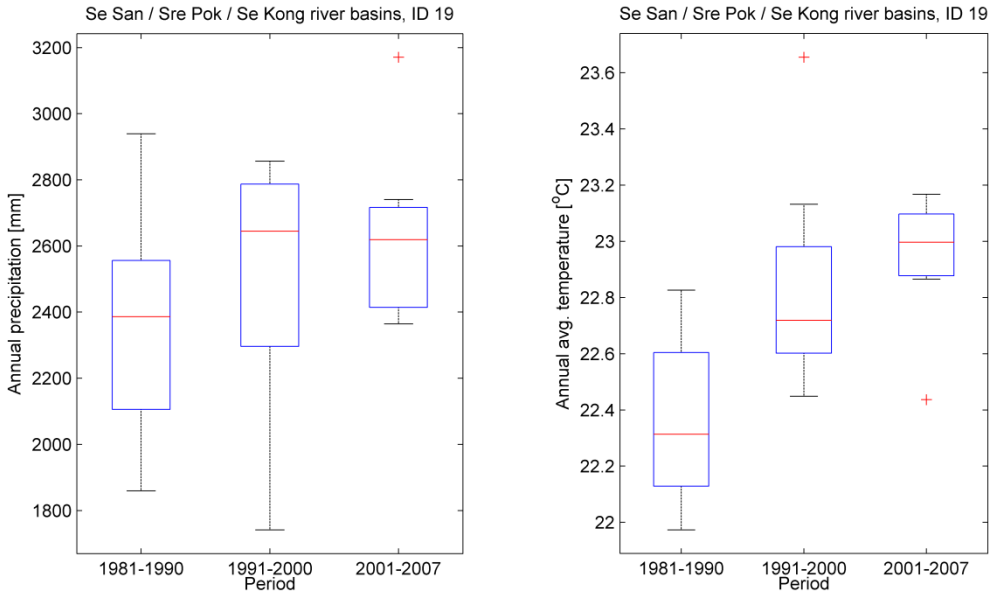



**Figure 58: Se San / Sre Pok / Se Kong river basins (ID 19) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 25: Summary of Se San / Sre Pok / Se Kong river basins (ID 19) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Se San / Sre Pok / Se Kong river basins ID 19 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 138.1 | -137.3 | 161.1 | 350.8 |
| Temperature [°C/10 year] | 0.29 | 0.22 | -0.02 | -0.76 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 2478 | 2354 | 2497 | 2629 |
| Temperature [°C] | 22.7 | 22.3 | 22.8 | 22.9 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 16 | 11 | 12 | 12 |
| Feb | 28 | 20 | 37 | 37 |
| Mar | 54 | 38 | 58 | 58 |
| Apr | 120 | 114 | 136 | 136 |
| May | 254 | 233 | 272 | 272 |
| Jun | 339 | 395 | 306 | 306 |
| Jul | 474 | 403 | 526 | 526 |
| Aug | 525 | 497 | 496 | 496 |
| Sep | 373 | 319 | 403 | 403 |
| Oct | 193 | 217 | 163 | 163 |
| Nov | 76 | 87 | 64 | 64 |
| Dec | 27 | 19 | 23 | 23 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 19 | 18.5 | 19.3 | 19.3 |
| Feb | 21 | 20.7 | 20.9 | 20.9 |
| Mar | 22.7 | 22.2 | 22.9 | 22.9 |
| Apr | 24.5 | 24.1 | 24.6 | 24.6 |
| May | 24.7 | 24.4 | 25 | 25 |
| Jun | 24.8 | 24.5 | 24.8 | 24.8 |
| Jul | 23.9 | 23.7 | 23.9 | 23.9 |
| Aug | 24.5 | 24.3 | 24.6 | 24.6 |
| Sep | 23.5 | 23.3 | 23.6 | 23.6 |
| Oct | 22.3 | 22 | 22.4 | 22.4 |
| Nov | 21.5 | 21.2 | 21.7 | 21.7 |
| Dec | 19.9 | 19.2 | 20.3 | 20.3 |

# Appendix 30: Nong Khai / Songkhram (Lao PDR, ID 21) climate figures – short-term

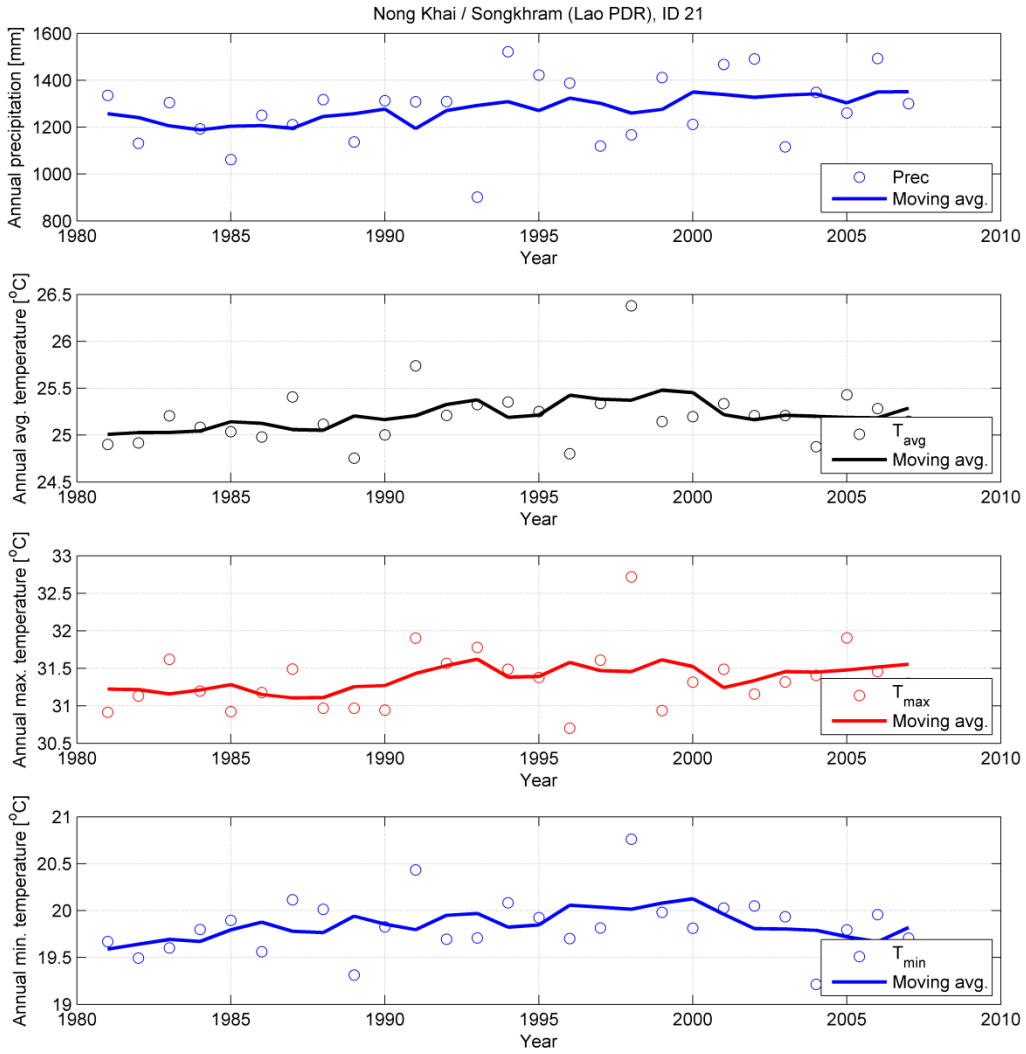



**Figure 59: Nong Khai / Songkhram (Lao PDR, ID 21) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

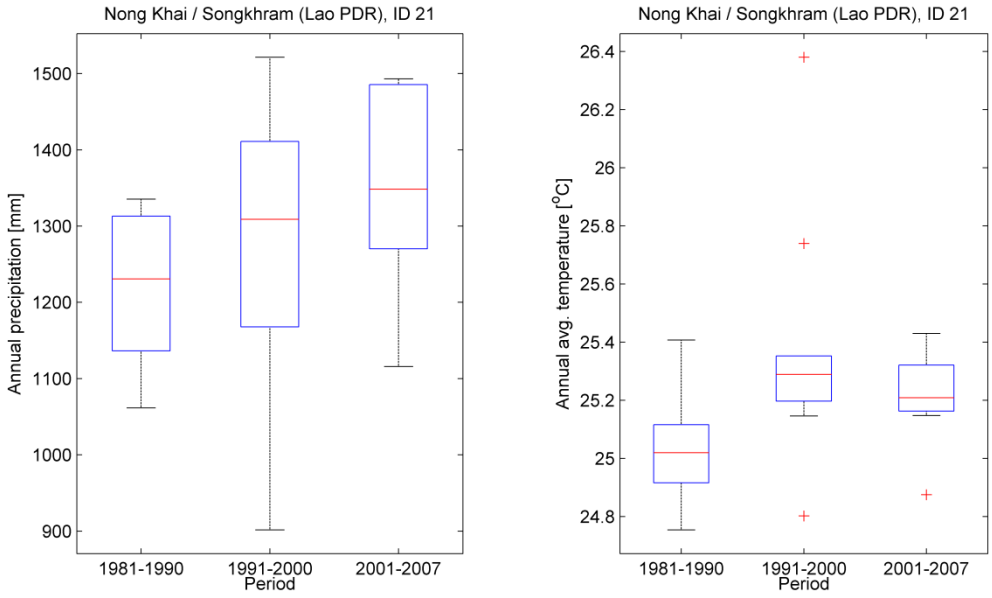



**Figure 60: Nong Khai / Songkhram (Lao PDR, ID 21) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 26: Summary of Nong Khai / Songkhram (Lao PDR, ID 21) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Nong Khai / Songkhram (Lao PDR) ID 21 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 57.6 | 8.6 | -3.8 | -127.1 |
| Temperature [°C/10 year] | 0.1 | 0.02 | -0.03 | -0.07 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1278 | 1225 | 1276 | 1354 |
| Temperature [°C] | 25.2 | 25 | 25.4 | 25.2 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 12 | 14 | 11 | 11 |
| Feb | 25 | 18 | 27 | 27 |
| Mar | 53 | 40 | 60 | 60 |
| Apr | 95 | 87 | 108 | 108 |
| May | 190 | 196 | 176 | 176 |
| Jun | 157 | 149 | 156 | 156 |
| Jul | 162 | 165 | 153 | 153 |
| Aug | 219 | 190 | 240 | 240 |
| Sep | 216 | 200 | 205 | 205 |
| Oct | 94 | 117 | 75 | 75 |
| Nov | 28 | 34 | 25 | 25 |
| Dec | 26 | 16 | 40 | 40 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 21.4 | 21 | 21.8 | 21.8 |
| Feb | 23.5 | 23.6 | 23.1 | 23.1 |
| Mar | 26.2 | 25.9 | 26.6 | 26.6 |
| Apr | 28.3 | 28.2 | 28.2 | 28.2 |
| May | 27.3 | 27.2 | 27.8 | 27.8 |
| Jun | 27.3 | 27 | 27.6 | 27.6 |
| Jul | 26.7 | 26.5 | 26.8 | 26.8 |
| Aug | 26.3 | 26.3 | 26.5 | 26.5 |
| Sep | 26.1 | 26.1 | 26.3 | 26.3 |
| Oct | 25.3 | 25.1 | 25.3 | 25.3 |
| Nov | 23.3 | 23.5 | 23.2 | 23.2 |
| Dec | 20.9 | 20.1 | 21.4 | 21.4 |

# Appendix 31: Nong Khai / Songkhram (Thailand, ID 22) climate figures – short-term

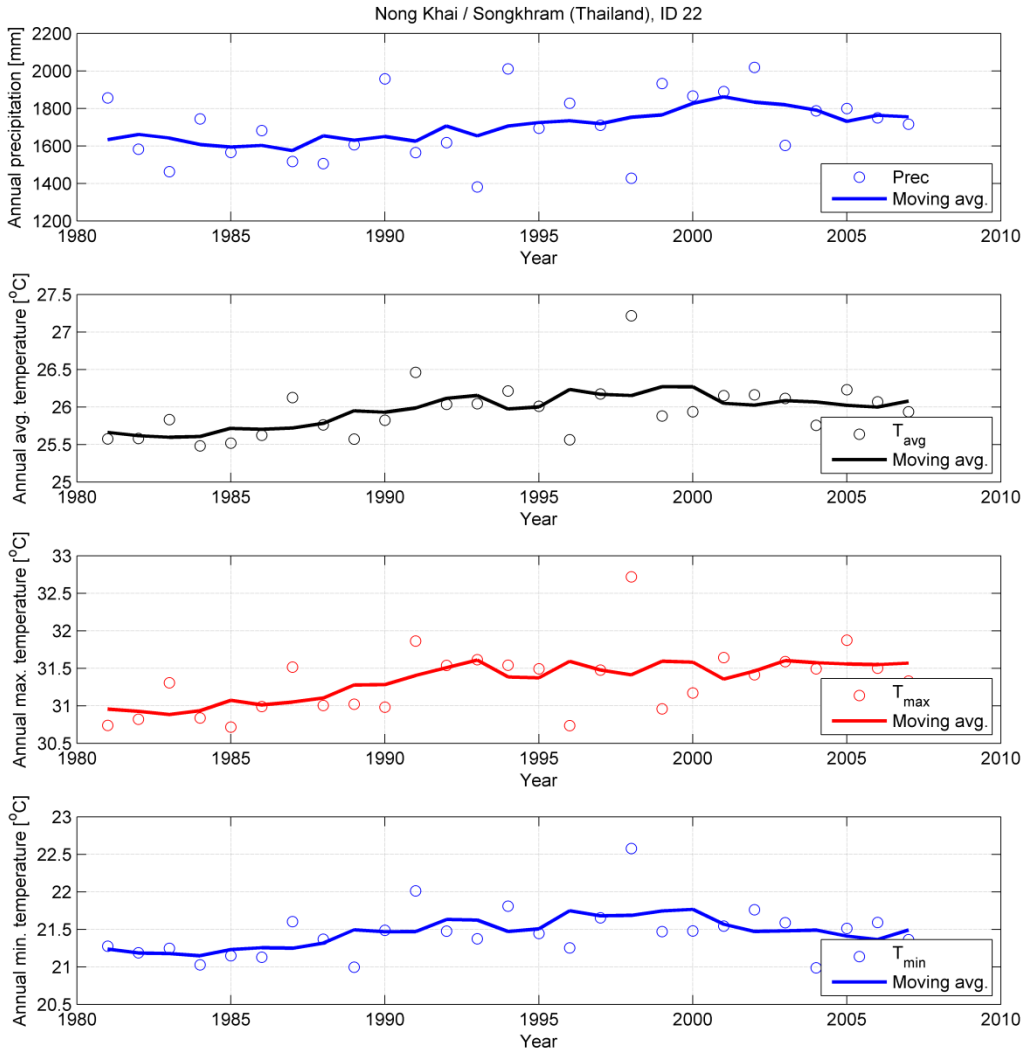



**Figure 61: annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

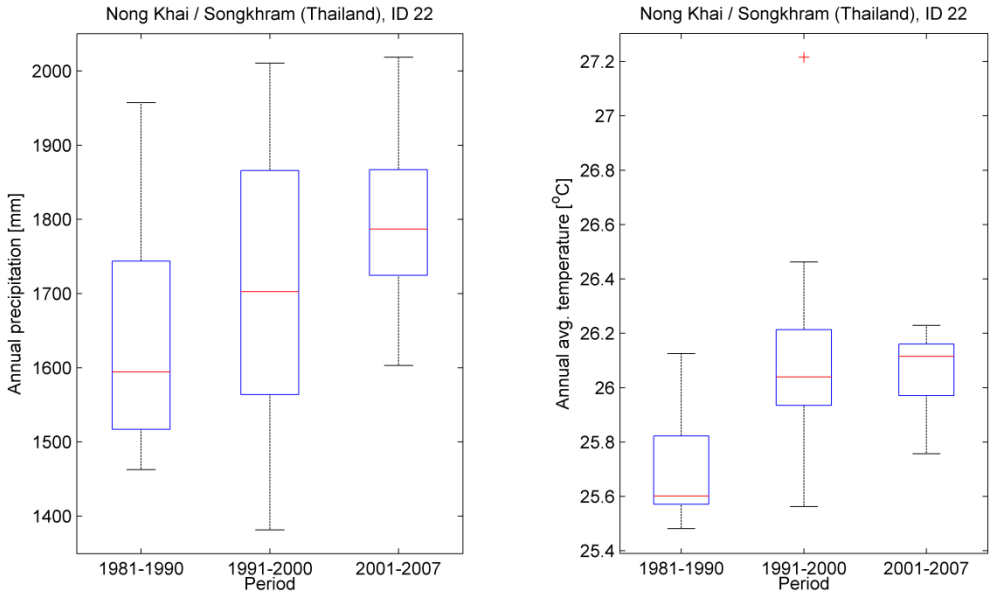



**Figure 62: Nong Khai / Songkhram (Thailand, ID 22) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 27: Summary of Nong Khai / Songkhram (Thailand, ID 22) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Nong Khai / Songkhram (Thailand) ID 22 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 78.2 | 44.2 | 266.2 | -308 |
| Temperature [°C/10 year] | 0.21 | 0.23 | -0.03 | -0.26 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1706 | 1648 | 1703 | 1795 |
| Temperature [°C] | 26 | 25.7 | 26.2 | 26.1 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 12 | 13 | 13 | 13 |
| Feb | 29 | 23 | 30 | 30 |
| Mar | 48 | 38 | 51 | 51 |
| Apr | 95 | 93 | 104 | 104 |
| May | 226 | 218 | 225 | 225 |
| Jun | 275 | 281 | 277 | 277 |
| Jul | 281 | 258 | 296 | 296 |
| Aug | 344 | 337 | 331 | 331 |
| Sep | 261 | 227 | 267 | 267 |
| Oct | 95 | 124 | 66 | 66 |
| Nov | 27 | 29 | 21 | 21 |
| Dec | 14 | 8 | 23 | 23 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 22 | 21.5 | 22.5 | 22.5 |
| Feb | 24.2 | 24.2 | 23.9 | 23.9 |
| Mar | 27.1 | 26.7 | 27.6 | 27.6 |
| Apr | 29 | 28.7 | 29 | 29 |
| May | 28 | 27.7 | 28.4 | 28.4 |
| Jun | 28 | 27.6 | 28.2 | 28.2 |
| Jul | 27.5 | 27.3 | 27.6 | 27.6 |
| Aug | 27.1 | 27 | 27.3 | 27.3 |
| Sep | 26.8 | 26.7 | 27 | 27 |
| Oct | 26 | 25.8 | 26 | 26 |
| Nov | 24.1 | 24.1 | 24 | 24 |
| Dec | 21.8 | 20.9 | 22.2 | 22.2 |

# Appendix 32: Central Lao PDR (ID 23) climate figures – short-term

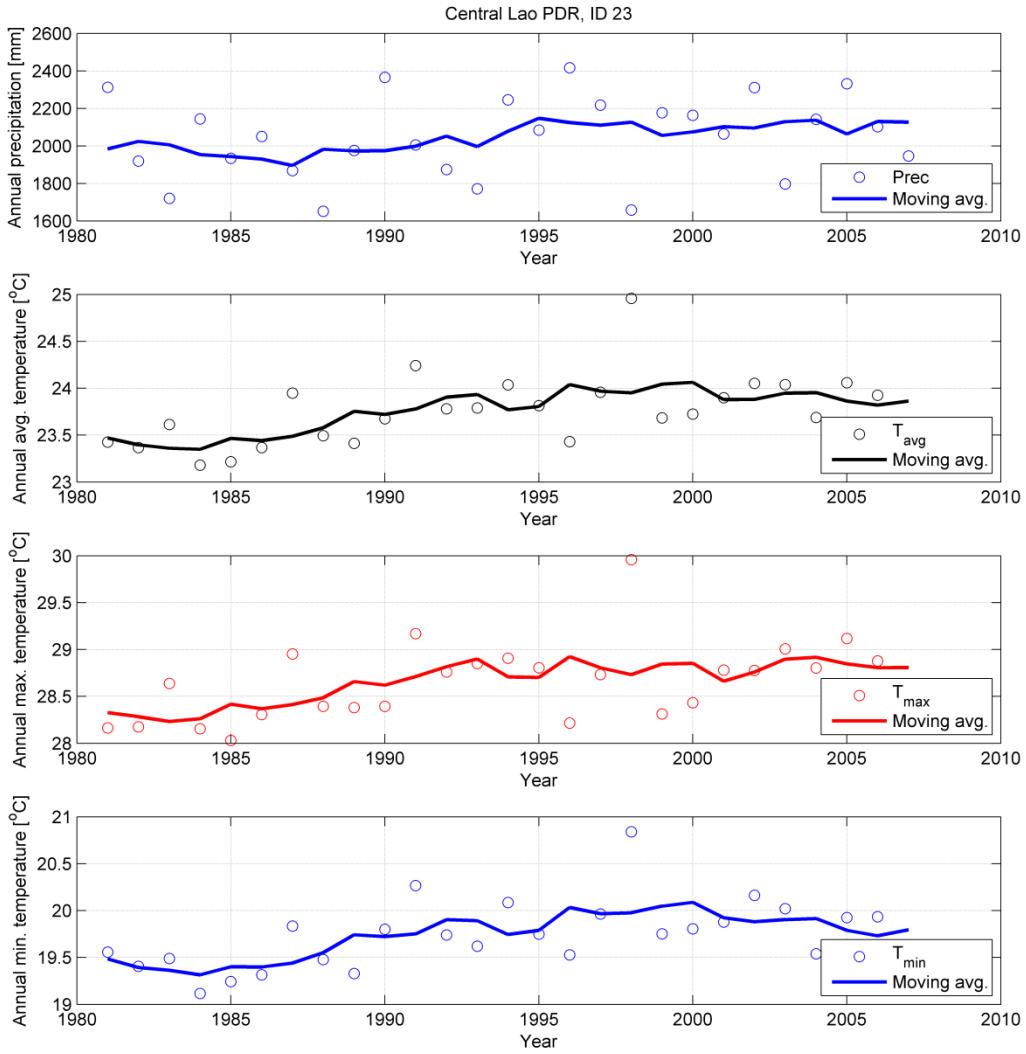



**Figure 63: Central Lao PDR (ID 23) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

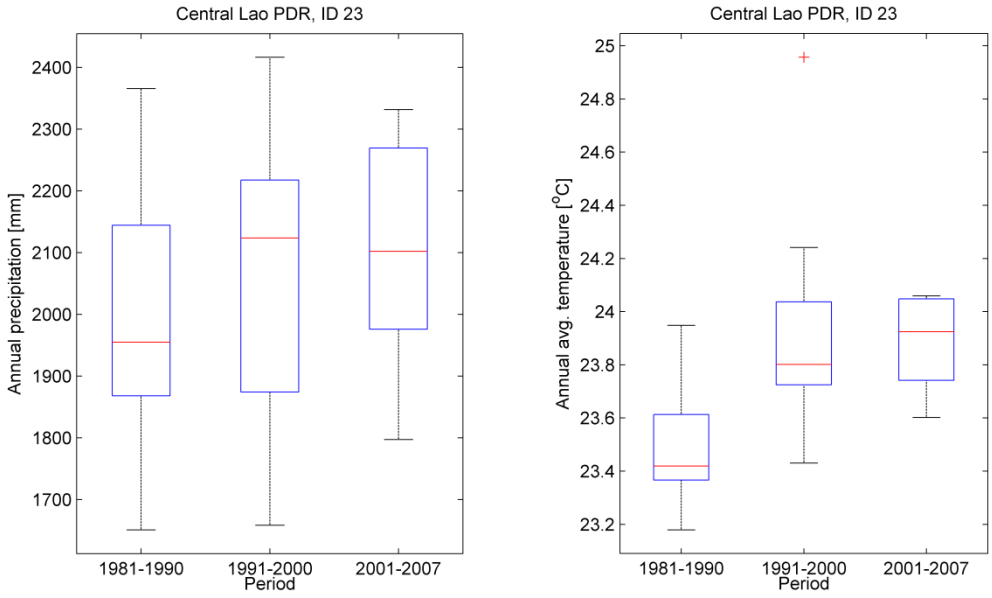



**Figure 64: Central Lao PDR (ID 23) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 28: Summary of Central Lao PDR (ID 23) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Central Lao PDR ID 23 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 58.9 | -11.3 | 195.1 | -84.3 |
| Temperature [°C/10 year] | 0.23 | 0.27 | -0.01 | -0.4 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 2046 | 1994 | 2061 | 2099 |
| Temperature [°C] | 23.8 | 23.5 | 23.9 | 23.9 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 17 | 20 | 13 | 13 |
| Feb | 27 | 26 | 26 | 26 |
| Mar | 46 | 38 | 44 | 44 |
| Apr | 104 | 105 | 112 | 112 |
| May | 238 | 225 | 244 | 244 |
| Jun | 319 | 324 | 334 | 334 |
| Jul | 372 | 332 | 407 | 407 |
| Aug | 435 | 424 | 429 | 429 |
| Sep | 283 | 248 | 299 | 299 |
| Oct | 131 | 176 | 92 | 92 |
| Nov | 52 | 61 | 38 | 38 |
| Dec | 22 | 15 | 21 | 21 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 19.4 | 18.9 | 19.8 | 19.8 |
| Feb | 21 | 20.9 | 20.7 | 20.7 |
| Mar | 23.7 | 23.2 | 24.1 | 24.1 |
| Apr | 26 | 25.7 | 26.2 | 26.2 |
| May | 26.2 | 25.9 | 26.5 | 26.5 |
| Jun | 26.5 | 26.2 | 26.8 | 26.8 |
| Jul | 26.2 | 26 | 26.2 | 26.2 |
| Aug | 25.7 | 25.6 | 25.9 | 25.9 |
| Sep | 25.2 | 25.1 | 25.3 | 25.3 |
| Oct | 23.9 | 23.7 | 24 | 24 |
| Nov | 21.7 | 21.7 | 21.8 | 21.8 |
| Dec | 19.4 | 18.6 | 19.9 | 19.9 |

# Appendix 33: Chiang Rai northern Thailand (ID 24) climate figures – short-term

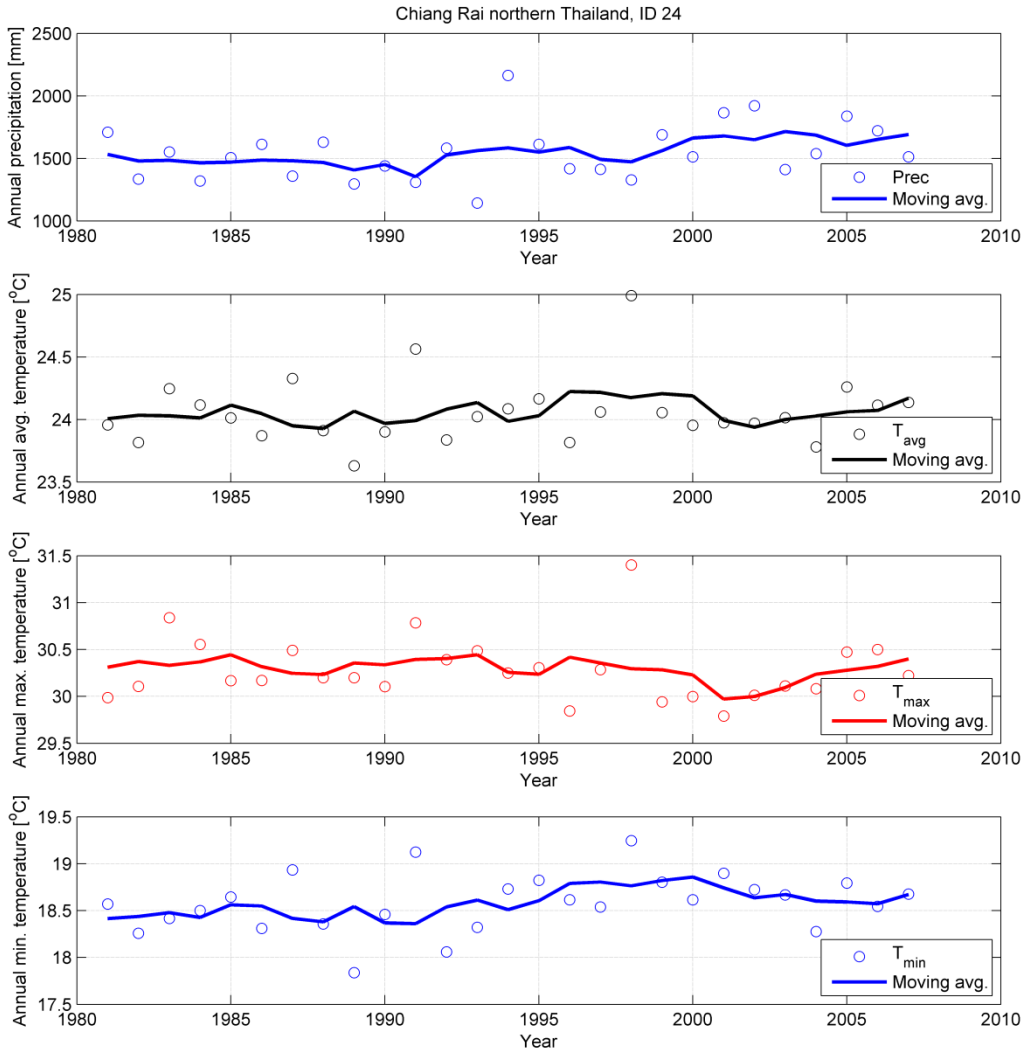



**Figure 65: Chiang Rai northern Thailand (ID 24) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

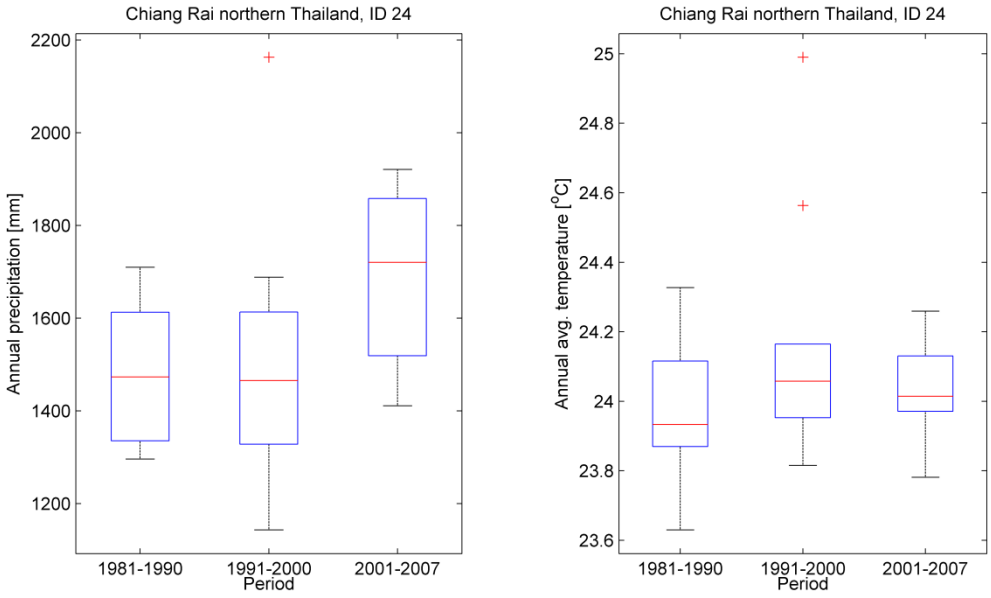



**Figure 66: Chiang Rai northern Thailand (ID 24) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 29: Summary of Chiang Rai northern Thailand (ID 24) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Chiang Rai northern Thailand ID 24 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 84.3 | -126.3 | 64.1 | -367.6 |
| Temperature [°C/10 year] | 0.04 | -0.18 | 0.03 | 0.37 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1546 | 1476 | 1517 | 1687 |
| Temperature [°C] | 24.1 | 24 | 24.2 | 24 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 17 | 14 | 14 | 14 |
| Feb | 41 | 29 | 56 | 56 |
| Mar | 51 | 18 | 57 | 57 |
| Apr | 95 | 104 | 85 | 85 |
| May | 200 | 201 | 174 | 174 |
| Jun | 150 | 155 | 144 | 144 |
| Jul | 234 | 236 | 230 | 230 |
| Aug | 282 | 257 | 305 | 305 |
| Sep | 232 | 211 | 217 | 217 |
| Oct | 109 | 117 | 99 | 99 |
| Nov | 63 | 83 | 46 | 46 |
| Dec | 71 | 51 | 91 | 91 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 19.3 | 19.1 | 19.5 | 19.5 |
| Feb | 21.7 | 21.8 | 21.3 | 21.3 |
| Mar | 25 | 24.9 | 25.1 | 25.1 |
| Apr | 27.3 | 27.2 | 27.2 | 27.2 |
| May | 27 | 27 | 27.3 | 27.3 |
| Jun | 26.6 | 26.5 | 27 | 27 |
| Jul | 26.1 | 26.1 | 26.2 | 26.2 |
| Aug | 25.8 | 25.8 | 25.8 | 25.8 |
| Sep | 25.4 | 25.4 | 25.5 | 25.5 |
| Oct | 24.2 | 24.2 | 24.3 | 24.3 |
| Nov | 21.7 | 21.8 | 21.6 | 21.6 |
| Dec | 18.5 | 17.8 | 18.9 | 18.9 |

# Appendix 34: Northern Lao PDR (ID 27) climate figures – short-term

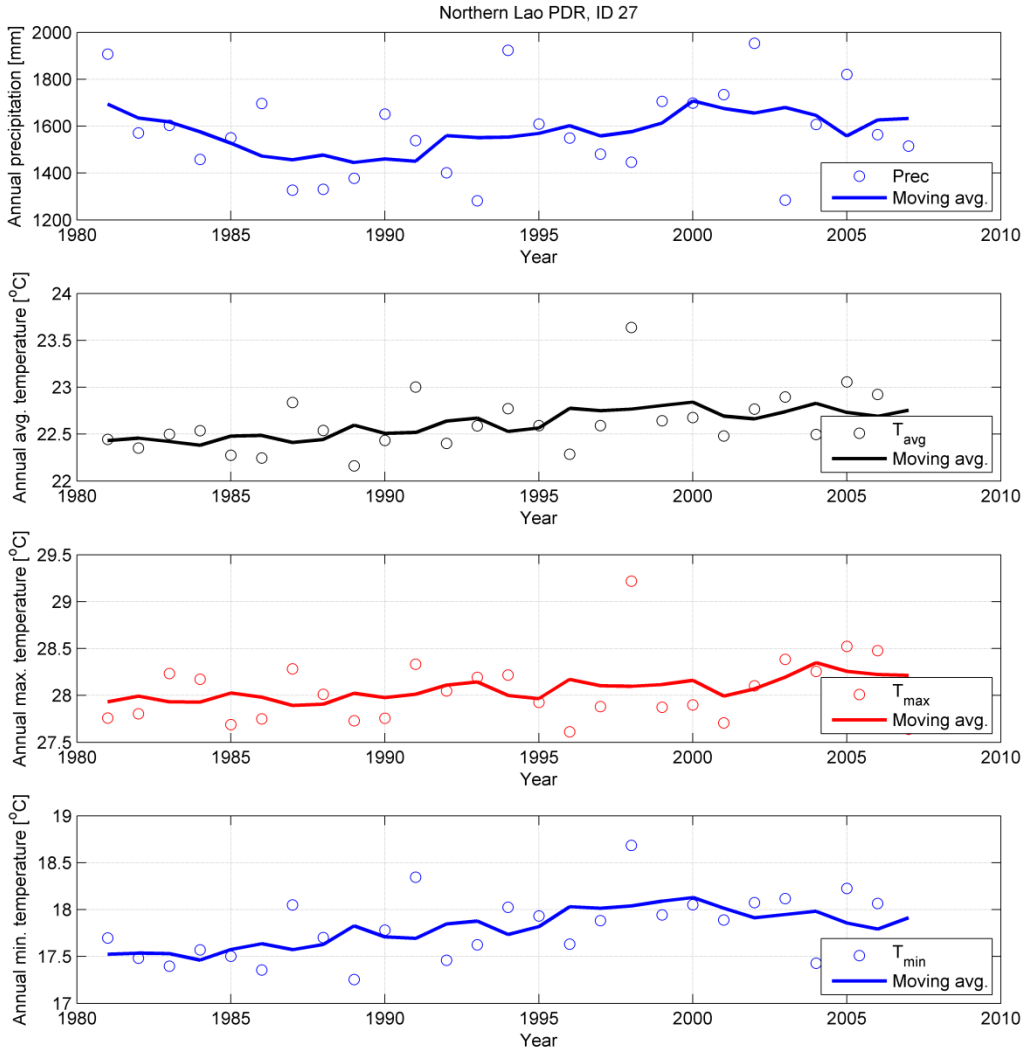



**Figure 67: Northern Lao PDR (ID 27) annual precipitation (top) and average (2nd), maximum (3rd) and minimum temperature (bottom) for the period 1981-2007. Solid lines represent the 5-year moving average.**

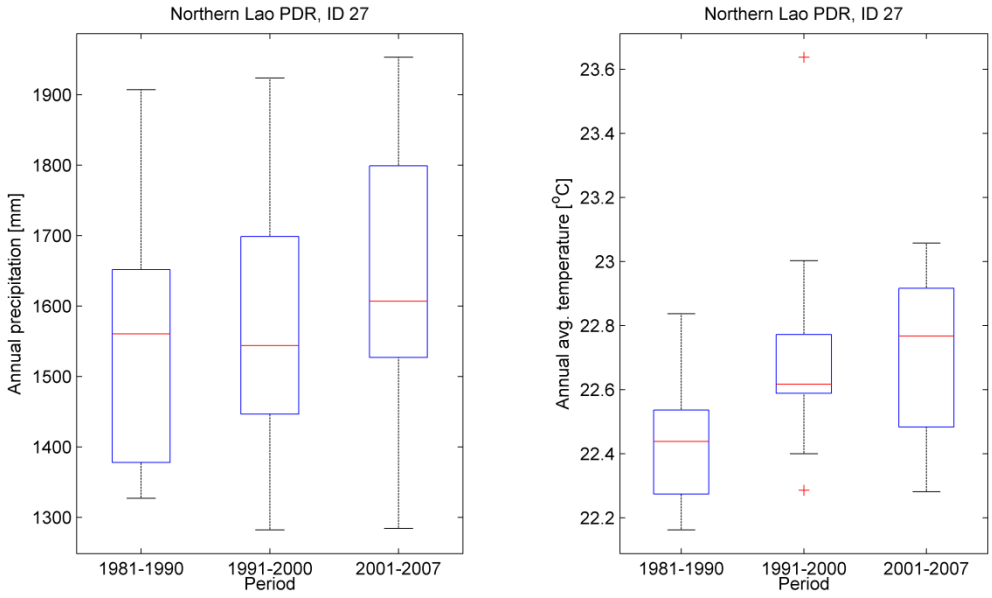



**Figure 68: Northern Lao PDR (ID 27) boxplots of annual precipitation (left) and annual average temperature (right). Each box represents the variation in annual precipitation or average temperature within the specified period. Horizontal red lines represent the median. Outliers are denotes as red crosses.**

**Table 30: Summary of Northern Lao PDR (ID 27) climate statistics. Results are shown for $P_{all}$ (1981-2007), $P_1$ (1981-1990), $P_2$ (1991-2000), and $P_3$ (2001-2007). For precipitation the green dots represent a higher value than the red dots. This is vice versa for temperature. Yellow dots are in between.**

| Northern Lao PDR ID 27 | | | | |
|---|---|---|---|---|
| **Trend per period** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm/10 year] | 28.6 | -318.7 | 182.1 | -323.2 |
| Temperature [°C/10 year] | 0.15 | -0.02 | 0.19 | -0.04 |
| **Annual averages** | | | | |
| *Variable* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Precipitation [mm] | 1577 | 1547 | 1564 | 1640 |
| Temperature [°C] | 22.6 | 22.4 | 22.7 | 22.7 |
| **Monthly averages** | | | | |
| *Precipitation [mm]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 18 | 17 | 14 | 14 |
| Feb | 29 | 29 | 29 | 29 |
| Mar | 52 | 40 | 51 | 51 |
| Apr | 105 | 118 | 93 | 93 |
| May | 193 | 191 | 184 | 184 |
| Jun | 205 | 200 | 218 | 218 |
| Jul | 281 | 274 | 286 | 286 |
| Aug | 302 | 294 | 303 | 303 |
| Sep | 186 | 180 | 183 | 183 |
| Oct | 96 | 103 | 83 | 83 |
| Nov | 57 | 75 | 45 | 45 |
| Dec | 52 | 27 | 77 | 77 |
| *Temperature [°C]* | *1981-2007* | *1981-1990* | *1991-2000* | *2001-2007* |
| Jan | 17.6 | 17.3 | 17.9 | 17.9 |
| Feb | 19.4 | 19.5 | 19 | 19 |
| Mar | 22.1 | 21.7 | 22.6 | 22.6 |
| Apr | 24.8 | 24.6 | 24.9 | 24.9 |
| May | 25.6 | 25.5 | 25.8 | 25.8 |
| Jun | 25.8 | 25.7 | 26.1 | 26.1 |
| Jul | 25.4 | 25.3 | 25.4 | 25.4 |
| Aug | 25 | 25 | 25.1 | 25.1 |
| Sep | 24.7 | 24.5 | 24.8 | 24.8 |
| Oct | 23.1 | 22.9 | 23.2 | 23.2 |
| Nov | 20.2 | 20.4 | 20.2 | 20.2 |
| Dec | 17.3 | 16.6 | 17.7 | 17.7 |