

Appendix 1

Table A1.1. Trends in Monthly Cumulative Precipitation (mm) over the Period of 1988 to 2017 for the Different Districts

District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cabanaconde	16.0	56.4*	-9.5	12.4	0.0	0.0	0.0	0.0	0.0	1.6	-3.8	-0.8
Madrigal	7.4	76.8	12.1	12.6	0.0	0.0	0.0	0.0	0.0	3.6	-5.0	8.4
Lari	9.1	75.9	10.2	19.3	0.0	0.0	0.0	0.0	0.4	4.6	-6.3	8.3
Yanque	21.3	85.6*	20.7	25.8*	0.0	0.0	0.0	0.0	1.0	1.2	-8.3	10.9

OBS: Values represent the total change for the period 1988 – 2017 based on Sen's slope trend analysis; * indicates that a statistically significant trend was found using Mann-Kendell analysis with a significance level of 0.05

Table A1.2. Trends in Monthly Potential Evapotranspiration (mm) over the Period of 1988 to 2017 for the Different Districts

District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cabanaconde	4.4*	4.7*	4.1*	4.6*	2.7*	11.1*	8.5*	7.5*	10.8*	5.1*	6.4*	6.9*
Madrigal	5.3*	5.2*	4.4*	5.1*	2.7	12.8*	9.8*	8.0*	11.5*	5.0*	7.2*	7.9*
Lari	5.1*	5.1*	4.6*	5.2*	2.9	13.3*	9.9*	8.2*	11.8*	5.2*	7.4*	8.1*
Yanque	6.0*	5.2	5.3*	5.3*	2.9	15.3*	10.0*	8.9*	12.4*	6.0*	7.0*	8.5*

OBS: Values represent the total change for the period 1988 – 2017 based on Sen's slope trend analysis; * indicates that a statistically significant trend was found using Mann-Kendell analysis with a significance level of 0.05

Table A1.3. Trends in Monthly Average Maximum Daily Air Temperature (°C) over the Period of 1988 to 2017 for the Different Districts

District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cabanaconde	1.1	0.6	0.8	1.0*	0.6*	2.4*	2.1*	1.9*	1.6*	0.9*	1.7*	1.4*
Madrigal	1.5*	0.9	1.0	1.1*	0.5	2.8*	2.3*	1.9*	1.9*	1.0*	2.1*	1.8*
Lari	1.6*	0.9	1.0	1.2*	0.5	2.8*	2.3*	1.9*	1.8*	1.0*	2.1*	2.0*
Yanque	1.9*	1.0	1.2	1.3	0.3	3.0*	2.5*	2.0*	1.9*	1.2*	2.3*	2.5*

OBS: Values represent the total change for the period 1988 – 2017 based on Sen's slope trend analysis; * indicates that a statistically significant trend was found using Mann-Kendell analysis with a significance level of 0.05

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Table A1.4. Trends in Monthly Average Minimum Daily Air Temperature (°C) over the Period of 1988 to 2017 for the Different Districts

District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cabanaconde	1.4*	1.7*	1.6*	1.7*	2.0*	2.8*	2.3*	1.8*	2.7*	1.5*	1.1*	1.8*
Madrigal	1.6*	1.8*	1.9*	2.2*	2.4*	3.5*	2.7*	2.2*	3.0*	1.7*	1.3*	2.0*
Lari	1.7*	1.8*	2.0*	2.3*	2.6*	3.7*	2.9*	2.5*	3.2*	1.9*	1.4*	2.1*
Yanque	2.2*	2.4*	2.4*	2.9*	3.0*	4.4*	3.2*	3.0*	3.7*	2.1*	1.6*	2.3*

OBS: Values represent the total change for the period 1988 – 2017 based on Sen's slope trend analysis; * indicates that a statistically significant trend was found using Mann-Kendell analysis with a significance level of 0.05

Table A1.5. Trends in the Number of Days under 0 °C per Month over the Period of 1988 to 2017 for the Different Districts

District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cabanaconde	0	0	0	0	-3*	-15*	-20*	-1.5	-2.1*	0	0	0
Madrigal	0	0	0	0*	-10*	-20*	-19.6*	-10*	-6.5*	0	0	0
Lari	0	0	0*	0*	-12.3*	-20*	-16*	-15*	-9.5*	0	0	0
Yanque	0*	0*	0*	0	-18*	-16.7*	-10*	-22.5*	-15*	-3.6*	0	0*

Obs: Values represent the total change for the period 1988 – 2017 based on Sen's slope trend analysis; * indicates that a statistically significant trend was found using Mann-Kendell analysis with a significance level of 0.05; a 0 followed by * means: Man-Kendal found a significant trend but Sen's slope could not measure the magnitude of the trend, all trends in this table are negative.

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Fig. A1.1. Monthly average Temperature and Number of Days with Temperature Below 0°C for the Periods of 1988 to 1997 and 2008 to 2017 in the Cabanaconde District

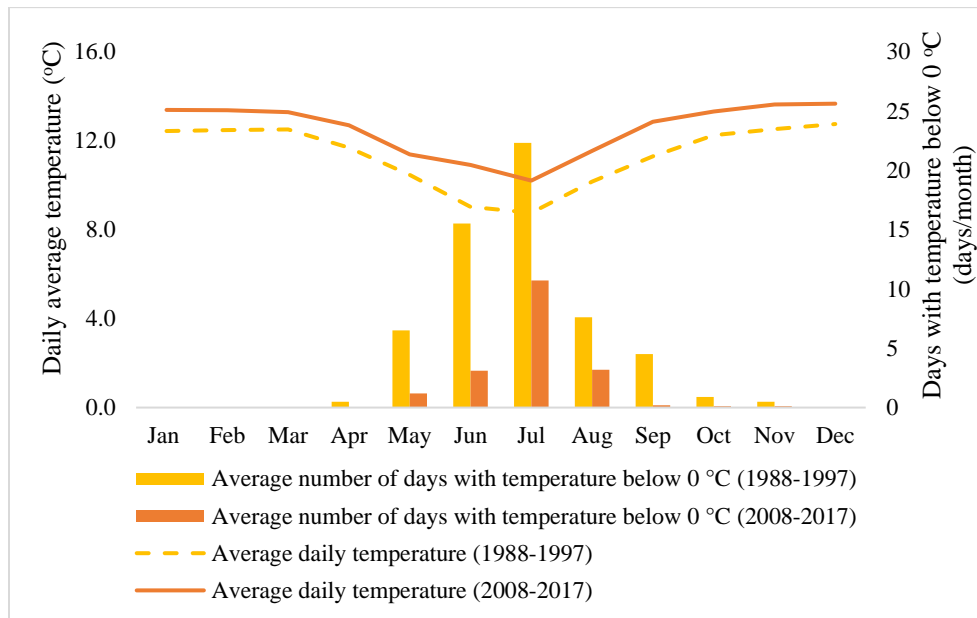
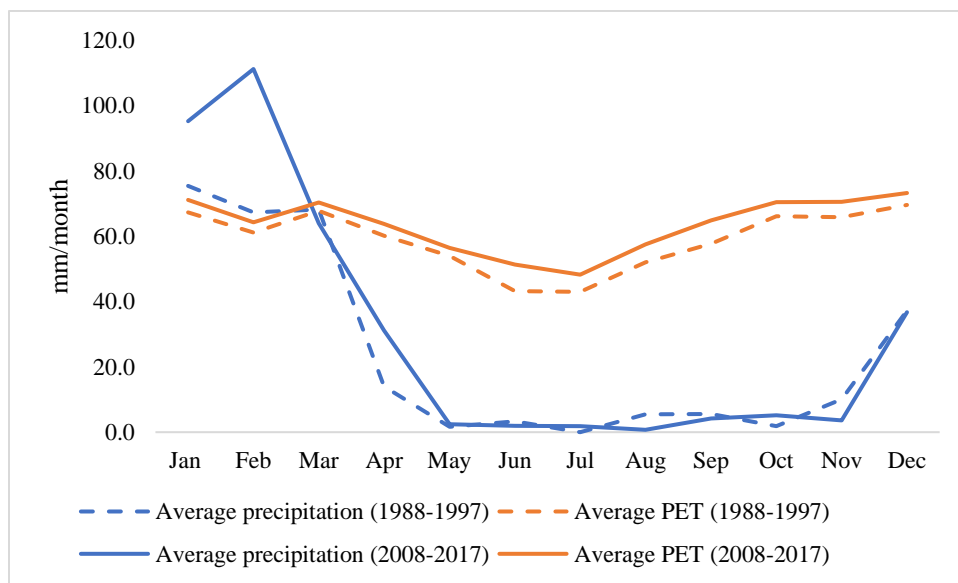


Fig. A1.2. Monthly Average Precipitation and Potential Evapotranspiration (PET) for the Periods of 1988 to 1997 and 2008 to 2017 in the Cabanaconde District



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Fig. A1.3. Monthly Average Temperature and Number of Days with Temperature below 0°C for the Periods of 1988 to 1997 and 2008 to 2017 in the Madrigal District

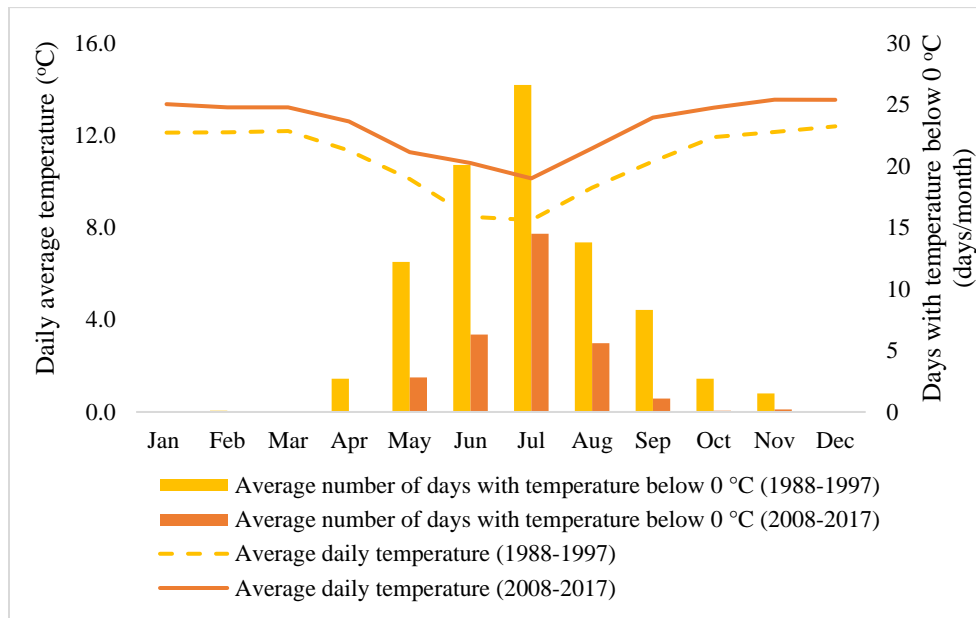
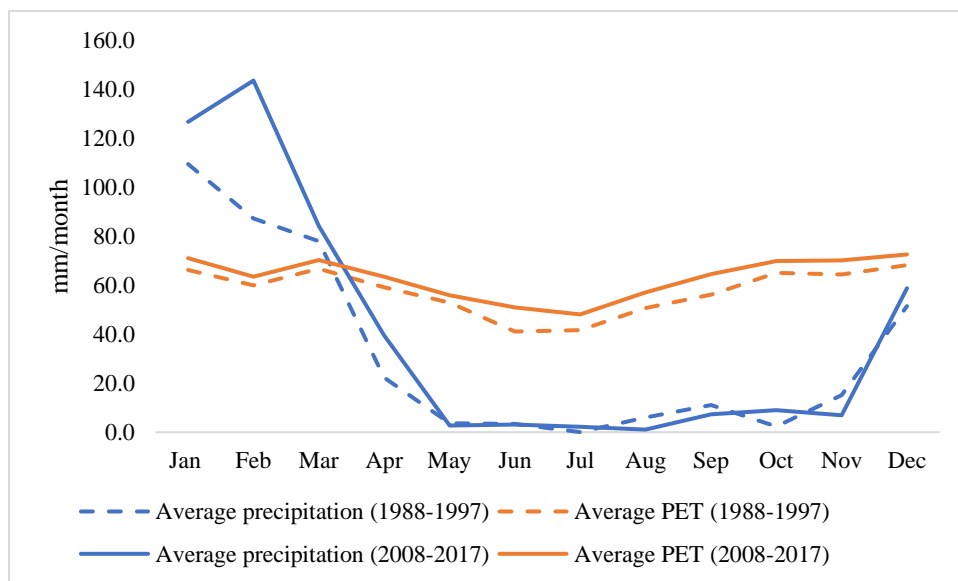


Fig. A1.4. Monthly Average Precipitation and Potential Evapotranspiration (PET) for the periods of 1988 to 1997 and 2008 to 2017 in the Madrigal District



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Fig. A1.5. Monthly Average Temperature and Number of Days with Temperature Below 0°C for the Periods of 1988 to 1997 and 2008 to 2017 in the Yanque District

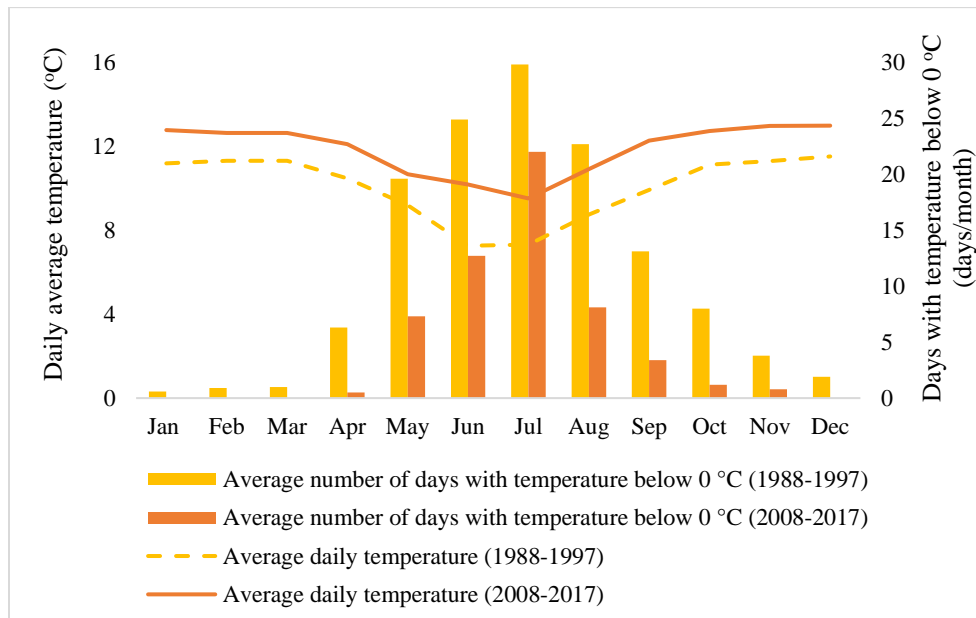


Fig. A1.6. Monthly Average Precipitation and Potential Evapotranspiration (PET) for the Periods of 1988 to 1997 and 2008 to 2017 in the Yanque District

