

*L'étude de Faisabilité Pour Le Développement des Ressources En Eau
Par Les Barrages Moyens Dans Le Milieu Rurale Au
Royaume Maroc
Rapport Final
Volume VII Livre de Donnees*

Livre de Donnees HY Hydrologie

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Hydrologie*

HY1 Climat

Climat de Fes, Marrakech, Ouarzagate et Rachidia

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TEMPERATURE MOYENNE MENSUELLE

Station: **FES-SAIS** Period: 1980-1999
 Latitude: 33°58'N Longitude: 004°59'W Altitude: 571.3 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	9.9	11.7	12.2	15.2	16.4	21.9	25.9	27.1	24.9	17.5	12.7	8.3	17.0	1.11
1981	7.8	9.3	14.1	12.8	16.0	22.5	25.1	23.7	22.0	19.5	15.8	11.5	16.7	1.04
1982	9.9	10.0	12.4	13.4	17.1	21.6	23.3	24.8	22.0	15.5	12.6	7.7	15.9	1.08
1983	9.0	9.5	14.2	14.0	15.8	22.8	21.7	22.4	24.6	20.4	15.2	10.8	16.7	0.93
1984	7.9	9.3	10.7	15.8	13.2	20.0	27.6	24.3	22.0	16.4	13.7	10.5	16.0	1.24
1985	8.5	12.9	10.6	15.2	15.4	21.0	26.3	26.5	24.4	19.7	14.5	10.1	17.1	1.05
1986	9.2	10.7	11.1	11.1	20.0	20.5	26.5	25.1	23.1	18.0	12.6	9.4	16.4	1.05
1987	9.9	10.5	13.1	16.7	17.7	21.9	24.2	24.7	25.3	17.5	12.9	11.4	17.2	0.90
1988	9.5	10.2	12.3	14.6	16.3	19.6	26.7	27.0	24.3	18.5	14.9	8.6	16.9	1.09
1989	7.8	10.8	13.0	12.2	17.9	22.0	27.3	27.2	23.2	20.0	14.5	12.4	17.4	1.12
1990	7.7	11.7	13.7	12.7	18.2	21.1	27.0	26.7	24.5	17.7	13.8	10.3	17.1	1.13
1991	8.2	8.4	11.2	13.0	16.3	22.7	26.3	27.2	22.9	15.9	12.5	10.7	16.3	1.17
1992	7.8	10.7	11.7	14.6	18.7	17.4	25.4	26.3	23.6	16.4	13.2	10.3	16.3	1.13
1993	7.8	9.6	12.5	13.4	16.5	21.4	27.1	25.1	19.6	16.1	11.7	10.3	15.9	1.21
1994	8.9	10.1	13.0	13.4	17.9	23.5	28.5	26.2	20.6	18.7	14.7	10.7	17.2	1.14
1995	9.6	11.9	13.7	15.2	21.0	21.2	26.3	25.8	20.5	20.1	16.0	12.3	17.8	0.94
1996	11.5	9.1	11.8	14.5	17.3	23.6	25.6	22.9	20.1	17.5	13.8	11.6	16.6	0.99
1997	10.7	12.4	14.8	16.4	17.5	20.1	22.9	24.2	23.8	19.7	14.8	11.1	17.4	0.78
1998	9.5	12.6	14.1	13.6	16.2	23.1	26.1	26.8	22.6	17.4	14.4	9.4	17.2	1.01
1999	9.1	8.6	12.5	15.7	-	22.9	25.6	25.7	21.7	19.5	12.4	9.8	16.7	1.03
MEAN	9.0	10.5	12.6	14.2	17.1	21.5	25.8	25.5	22.8	18.1	13.8	10.4	16.8	
Cv	0.42	0.43	0.33	0.40	0.46	0.29	0.26	0.19	0.25	0.27	0.31	0.45		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MOYENNE MENSUELLE

Station: **MARRAKECH** Period: 1980-1999
 Latitude: 31°37'N Longitude: 004°02'W Altitude: 463.5 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	12.3	14.5	15.7	19.2	20.5	25.4	29.9	29.9	26.3	21.9	16.0	11.4	20.3	0.91
1981	12.1	13.6	18.2	16.6	20.6	25.8	27.8	26.8	25.8	22.4	19.8	13.4	20.2	0.78
1982	12.6	14.0	16.8	16.7	20.3	24.7	26.8	27.7	23.8	20.0	15.6	10.6	19.1	0.89
1983	13.2	13.8	19.9	18.8	19.4	26.1	25.8	25.6	27.0	24.3	18.1	13.9	20.5	0.67
1984	10.9	13.5	14.8	20.5	17.5	24.1	31.8	27.4	25.3	21.8	15.3	13.6	19.7	1.06
1985	10.9	15.3	15.2	17.8	18.9	24.2	29.1	29.8	26.5	22.8	17.2	13.0	20.1	0.94
1986	11.8	13.1	15.2	15.8	23.3	22.4	29.0	28.7	26.2	20.5	15.8	12.8	19.6	0.88
1987	13.7	13.9	17.8	21.3	22.0	25.1	26.7	27.0	28.5	20.2	16.9	13.6	20.6	0.72
1988	11.5	12.9	16.5	18.0	20.0	22.1	29.7	30.4	27.6	21.0	17.0	11.9	19.9	0.95
1989	10.9	13.8	17.0	15.7	21.8	24.4	29.5	29.2	25.7	22.9	17.1	15.7	20.3	0.92
1990	10.9	17.1	18.0	17.1	21.6	23.9	29.3	30.7	26.4	20.6	17.0	13.1	20.5	0.97
1991	12.0	11.8	14.6	17.1	20.2	25.5	28.7	29.6	25.6	19.0	16.4	14.8	19.6	0.91
1992	12.0	14.7	15.8	19.1	22.7	21.4	27.8	28.5	26.1	18.9	16.5	13.2	19.7	0.84
1993	11.4	13.7	16.8	18.4	19.7	24.0	29.1	27.4	22.8	18.5	13.7	12.5	19.0	0.93
1994	11.5	13.8	15.6	18.3	20.8	25.8	30.8	29.0	24.7	20.6	17.6	14.0	20.2	0.96
1995	12.3	14.8	16.4	17.4	23.8	23.8	28.9	28.7	23.8	23.4	18.7	14.0	20.5	0.81
1996	13.8	12.0	14.6	18.3	21.9	26.0	29.0	26.3	24.0	21.8	16.8	13.3	19.8	0.86
1997	13.3	16.3	18.2	18.6	20.6	23.6	25.9	26.9	25.3	22.5	17.0	13.6	20.2	0.67
1998	13.0	16.4	18.9	18.2	19.7	26.3	29.3	29.4	25.6	22.0	18.1	12.2	20.8	0.83
1999	12.1	11.3	14.9	19.9	23.1	25.5	28.4	28.4	24.6	20.9	15.2	12.7	19.8	0.87
MEAN	12.1	14.0	16.5	18.1	20.9	24.5	28.7	28.4	25.6	21.3	16.8	13.2	20.0	
Cv	0.24	0.41	0.32	0.31	0.30	0.20	0.21	0.18	0.22	0.27	0.36	0.39		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MOYENNE MENSUELLE

Station: **OUARZAZATE** Period: 1980-1999
 Latitude: 30°56'N Longitude: 006°54'W Altitude: 1,136 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	8.8	12.1	14.0	19.0	22.2	27.2	30.5	29.6	24.4	19.6	13.4	8.8	19.1	1.13
1981	9.0	10.2	17.2	17.1	22.3	26.7	30.0	27.5	25.2	20.7	14.2	11.6	19.3	1.09
1982	9.7	11.4	15.5	16.2	21.2	27.8	29.0	28.4	24.9	19.7	14.1	8.1	18.8	1.11
1983	7.8	11.5	17.2	18.3	21.5	27.4	29.2	29.5	26.0	20.4	15.8	10.9	19.6	1.11
1984	9.0	12.7	13.3	20.7	18.6	27.2	29.9	28.9	25.1	20.1	13.4	10.0	19.1	1.10
1985	8.7	13.2	15.3	17.6	20.3	27.2	29.6	30.2	25.6	20.2	15.0	10.1	19.4	1.11
1986	10.5	12.1	14.9	16.7	24.0	25.5	30.3	29.1	25.5	18.7	14.0	9.7	19.3	1.07
1987	10.8	13.4	16.7	21.4	23.0	27.4	28.7	29.2	26.0	19.8	14.2	11.1	20.1	0.91
1988	10.2	12.2	15.2	19.2	21.7	24.5	30.9	30.5	25.4	19.4	13.7	8.3	19.3	1.17
1989	6.5	10.2	14.7	16.7	22.3	25.9	29.3	28.7	24.9	19.8	13.8	11.2	18.7	1.22
1990	8.1	13.7	16.1	16.3	23.0	26.6	29.9	28.9	24.4	20.4	15.2	9.5	19.3	1.13
1991	9.1	10.2	13.9	18.1	21.4	26.3	29.4	29.4	25.5	17.9	14.3	9.5	18.8	1.08
1992	7.3	9.9	13.1	17.5	21.6	24.0	29.2	28.4	25.2	19.0	13.6	10.0	18.2	1.20
1993	7.1	9.2	13.9	17.8	20.9	27.2	30.2	29.1	24.7	18.8	11.7	10.6	18.4	1.25
1994	9.4	11.9	14.8	18.8	23.2	28.7	30.7	30.2	25.5	19.7	14.8	10.9	19.9	1.07
1995	9.9	12.8	14.2	16.1	25.8	26.4	30.1	29.4	25.1	20.1	15.9	11.5	19.8	1.02
1996	11.5	11.5	14.1	19.3	21.3	25.6	30.1	29.5	24.8	20.9	14.5	10.6	19.5	1.00
1997	10.4	13.7	15.3	18.0	22.8	26.7	29.4	27.9	25.0	21.0	16.1	11.5	19.8	0.96
1998	-	-	-	-	-	-	-	-	-	-	-	-		
1999	-	-	-	-	-	-	-	-	-	-	-	-		
MEAN	9.1	11.8	15.0	18.0	22.1	26.6	29.8	29.1	25.2	19.8	14.3	10.2	19.2	
Cv	0.55	0.38	0.27	0.29	0.33	0.18	0.07	0.10	0.06	0.16	0.31	0.34		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MOYENNE MENSUELLE

Station: **RACHIDIA** Period: 1980-1999
 Latitude: 31°56'N Longitude: 004°24'W Altitude: 1037.2 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	7.9	11.8	13.6	18.1	21.3	28.0	30.9	31.0	25.7	19.2	12.7	7.5	19.0	1.24
1981	8.6	9.1	17.2	17.8	22.9	27.8	31.0	28.2	25.6	21.0	13.6	10.6	19.5	1.15
1982	8.5	10.8	14.9	15.8	21.1	28.2	30.5	29.7	25.6	18.8	12.5	7.3	18.6	1.24
1983	7.1	10.9	16.8	17.8	22.0	27.8	30.5	30.6	26.1	20.2	15.8	9.8	19.6	1.20
1984	7.7	10.5	12.5	20.6	19.0	28.2	30.2	29.9	26.5	18.3	13.1	8.4	18.7	1.20
1985	7.2	12.8	13.8	18.2	20.2	28.8	31.5	31.2	25.4	19.3	14.4	8.8	19.3	1.26
1986	9.1	12.1	13.5	16.5	24.4	26.2	31.3	30.7	26.2	18.3	12.7	8.1	19.1	1.22
1987	9.5	11.8	16.2	21.0	23.2	28.0	29.8	31.0	26.6	19.7	12.6	10.6	20.0	1.08
1988	9.6	11.5	15.3	19.8	22.3	26.1	31.5	31.2	25.5	18.9	13.4	7.0	19.3	1.27
1989	5.9	9.7	14.7	17.5	22.8	26.6	31.7	29.9	26.3	20.0	13.9	11.0	19.2	1.35
1990	7.7	12.7	15.4	16.7	22.5	28.8	31.6	30.3	26.3	20.6	14.5	9.2	19.7	1.21
1991	8.0	9.4	13.7	17.2	20.7	27.1	30.9	30.6	26.1	17.3	12.9	9.4	18.6	1.23
1992	6.6	10.5	13.0	18.1	21.8	24.4	29.9	30.2	25.6	19.1	13.2	9.3	18.5	1.28
1993	6.7	9.4	13.5	17.8	22.2	28.8	32.4	30.7	25.1	18.8	12.2	10.0	19.0	1.36
1994	8.8	11.1	14.9	17.9	24.5	29.9	32.3	31.9	26.2	19.1	14.1	10.3	20.1	1.17
1995	9.0	12.5	13.9	16.5	26.0	26.9	31.2	31.0	24.9	19.3	15.1	10.5	19.7	1.13
1996	10.6	10.6	14.4	19.4	22.6	26.3	30.8	31.1	25.0	19.7	13.6	9.9	19.5	1.09
1997	9.7	13.2	15.2	18.1	23.4	27.6	31.6	29.0	25.7	20.7	15.2	10.8	20.0	1.09
1998	9.8	11.4	15.2	20.2	21.6	28.1	33.2	31.6	27.1	19.4	15.0	8.3	20.1	1.24
1999	8.6	9.4	14.4	-	25.1	29.9	33.1	32.4	27.1	20.9	12.7	9.7	20.3	1.21
MEAN	8.3	11.1	14.6	18.2	22.5	27.7	31.3	30.6	25.9	19.4	13.7	9.3	19.4	
Cv	0.56	0.37	0.32	0.29	0.31	0.20	0.11	0.14	0.08	0.19	0.26	0.43		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MAXIMALE ABSOLUE MENSUELLE

Station: **FES-SAIS** Period: 1980-1999
 Latitude: 33ø58'N Longitude: 004ø59'W Altitude: 571.3 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	22.8	23.6	30.6	30.6	29.0	37.8	42.4	40.2	37.3	32.4	25.9	19.5	31.0	0.74
1981	21.2	25.8	30.2	26.0	30.7	40.6	42.5	38.7	40.6	33.6	28.4	20.6	31.6	0.69
1982	22.8	21.8	24.6	27.9	34.0	42.6	42.3	43.2	35.6	29.6	24.3	16.8	30.5	0.87
1983	23.0	23.0	27.4	30.1	31.0	39.5	36.4	37.6	38.3	33.4	26.5	22.4	30.7	0.56
1984	20.6	18.9	27.4	30.7	23.0	36.6	41.8	39.5	35.7	31.0	25.5	23.0	29.5	0.78
1985	21.7	26.7	24.0	31.8	30.5	36.0	43.5	44.4	38.9	33.5	31.2	22.5	32.1	0.71
1986	20.0	23.2	22.4	29.0	38.5	34.4	42.4	40.5	38.0	28.7	24.5	19.9	30.1	0.75
1987	20.2	26.2	28.3	37.0	32.2	37.2	39.4	40.6	39.5	28.4	24.5	23.6	31.4	0.65
1988	19.6	20.7	26.4	31.2	31.6	36.0	44.0	43.6	41.4	32.2	27.3	19.3	31.1	0.79
1989	18.5	23.8	26.3	22.0	32.6	38.5	41.5	41.0	36.4	33.7	27.4	25.0	30.6	0.75
1990	17.0	22.9	26.4	24.0	34.0	35.4	40.5	40.7	38.2	31.4	26.6	19.8	29.7	0.80
1991	19.5	20.6	24.1	27.8	32.4	38.5	41.5	42.6	36.6	29.2	26.6	21.0	30.0	0.77
1992	22.9	25.2	25.2	29.8	32.4	30.4	40.4	42.2	38.7	31.6	23.2	20.0	30.2	0.74
1993	19.0	23.4	27.4	29.8	29.4	36.3	41.4	41.7	33.8	27.5	20.8	20.6	29.3	0.78
1994	22.4	24.8	27.5	29.8	34.5	42.5	42.6	41.4	35.0	30.0	25.0	22.2	31.5	0.65
1995	21.1	27.8	27.5	30.8	35.3	37.0	44.6	40.0	36.6	32.4	30.0	22.5	32.1	0.73
1996	22.0	19.3	25.4	25.6	34.0	38.7	42.3	34.7	36.2	30.6	28.5	21.7	29.9	0.77
1997	21.6	24.6	26.6	31.9	30.6	32.1	37.0	39.2	38.5	31.2	30.5	21.4	30.4	0.58
1998	20.2	23.2	28.6	31.6	32.2	39.5	41.3	42.5	36.2	30.2	28.4	22.0	31.3	0.71
1999	23.0	20.1	26.2	29.7	-	42.0	43.3	41.4	36.1	32.7	30.4	22.1	31.5	0.74
MEAN	21.0	23.3	26.6	29.4	32.0	37.6	41.6	40.8	37.4	31.2	26.8	21.3	30.7	
Cv	0.29	0.38	0.31	0.51	0.48	0.32	0.20	0.24	0.20	0.20	0.39	0.39		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MAXIMALE ABSOLUE MENSUELLE

Station: **MARRAKECH** Period: 1980-1999
 Latitude: 31ø37'N Longitude: 004ø02'W Altitude: 463.5 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	25.2	26.4	35.8	36.9	34.9	41.4	46.2	45.1	41.6	35.2	30.6	23.7	35.3	0.64
1981	26.0	29.4	34.5	32.5	34.4	42.8	44.1	42.9	42.5	35.6	30.8	22.9	34.9	0.61
1982	25.4	25.8	28.5	31.7	35.5	44.6	44.4	44.2	37.0	34.4	28.9	21.7	33.5	0.68
1983	25.4	28.3	32.1	36.5	31.2	42.8	42.4	37.7	42.6	36.0	30.9	25.2	34.3	0.51
1984	23.4	25.8	27.4	35.4	29.2	43.0	44.8	44.5	41.2	33.9	27.3	26.0	33.5	0.64
1985	21.6	30.6	28.0	33.8	33.0	37.0	43.0	42.6	41.4	37.8	33.5	28.4	34.2	0.63
1986	23.6	28.9	30.6	29.6	40.2	38.0	43.6	43.8	40.6	30.9	28.9	23.3	33.5	0.61
1987	29.3	30.0	32.8	37.3	36.0	36.9	44.5	44.2	43.3	31.9	28.1	24.3	34.9	0.58
1988	22.6	25.0	30.3	35.6	34.2	34.8	45.2	45.0	42.9	33.8	30.3	22.7	33.5	0.67
1989	21.5	26.3	31.8	29.8	37.6	40.5	43.5	42.3	39.0	35.1	29.4	29.0	33.8	0.65
1990	22.2	29.4	30.6	30.4	38.8	38.4	43.2	44.8	41.6	32.5	30.4	27.6	34.2	0.66
1991	23.1	25.2	29.8	36.0	38.6	41.4	43.7	43.6	41.1	31.3	29.5	24.6	34.0	0.61
1992	25.5	28.3	27.5	34.5	37.3	34.2	42.5	43.2	41.0	30.6	28.0	23.6	33.0	0.59
1993	21.8	26.3	32.6	32.7	31.4	36.5	44.7	43.6	33.5	30.6	22.7	23.2	31.6	0.72
1994	23.4	30.8	31.0	35.4	36.8	43.0	45.8	43.3	40.6	32.7	28.0	24.6	34.6	0.65
1995	24.5	28.6	29.7	33.6	39.6	38.8	46.6	43.4	35.8	35.9	31.4	23.0	34.2	0.69
1996	27.2	24.5	28.0	31.6	38.7	39.0	43.7	39.0	39.2	34.5	31.6	24.0	33.4	0.59
1997	24.2	27.8	29.8	35.8	36.2	33.7	40.3	39.7	40.2	33.9	32.0	24.3	33.2	0.49
1998	24.8	26.0	33.6	34.5	32.5	42.6	44.0	44.8	42.4	33.3	32.3	24.5	34.6	0.59
1999	25.3	23.0	27.1	34.0	40.8	43.6	45.5	41.0	36.7	36.3	31.5	25.7	34.2	0.66
MEAN	24.3	27.3	30.6	33.9	35.8	39.7	44.1	42.9	40.2	33.8	29.8	24.6	33.9	
Cv	0.32	0.29	0.28	0.23	0.32	0.27	0.14	0.17	0.24	0.21	0.36	0.30		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MAXIMALE ABSOLUE MENSUELLE

Station: **OUARZAZATE** Period: 1980-1999
 Latitude: 30°56'N Longitude: 006°54'W Altitude: 1,136 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	19.8	24.4	31.6	30.6	33.7	39.2	40.3	39.9	36.2	30.8	25.8	23.3	31.3	0.65
1981	21.8	24.3	30.2	30.0	35.9	37.3	39.8	38.1	37.0	33.1	24.8	22.9	31.3	0.58
1982	23.3	25.7	26.9	27.9	34.3	38.5	38.7	39.8	36.6	32.3	26.3	21.3	31.0	0.60
1983	22.8	26.2	26.8	31.0	32.8	38.2	40.6	40.1	38.3	31.6	27.0	23.7	31.6	0.56
1984	23.5	26.5	29.1	31.7	32.0	38.5	38.7	39.8	37.0	32.9	24.4	21.8	31.3	0.57
1985	20.4	26.9	27.8	30.3	33.1	39.1	39.4	39.6	36.0	31.4	29.4	22.5	31.3	0.61
1986	21.5	26.1	26.5	28.1	35.2	37.4	39.8	38.2	37.1	28.4	25.9	23.4	30.6	0.60
1987	22.7	27.7	29.4	33.0	35.2	37.3	40.0	40.4	37.8	29.4	24.8	20.7	31.5	0.62
1988	24.7	22.9	29.0	32.7	34.9	35.8	40.2	39.4	37.3	29.3	23.6	19.9	30.8	0.66
1989	16.0	24.3	26.4	29.6	32.4	38.0	38.4	37.5	36.4	33.1	25.6	21.8	30.0	0.75
1990	19.8	26.1	27.2	28.4	35.4	39.2	40.0	38.6	37.0	32.2	27.5	21.3	31.1	0.65
1991	20.0	23.1	26.6	30.6	33.7	37.4	40.0	40.0	37.0	29.5	28.2	18.4	30.4	0.71
1992	16.9	22.5	23.7	29.2	33.6	38.3	38.6	38.0	37.3	31.6	26.3	24.3	30.0	0.72
1993	18.4	19.4	27.6	31.7	34.4	39.2	40.0	38.6	36.6	31.8	24.2	22.0	30.3	0.71
1994	21.5	24.0	26.5	31.0	37.5	39.6	41.0	39.2	37.0	30.2	26.8	21.5	31.3	0.62
1995	23.6	25.3	26.5	28.5	36.5	37.0	39.9	39.3	36.4	30.6	28.3	25.0	31.4	0.52
1996	25.7	25.0	28.7	31.0	34.6	39.0	41.1	39.4	35.3	32.6	26.6	22.3	31.8	0.59
1997	22.3	24.2	25.0	30.5	34.0	37.4	40.7	39.5	36.8	32.6	28.0	23.6	31.2	0.59
1998	-	-	-	-	-	-	-	-	-	-	-	-		
1999	-	-	-	-	-	-	-	-	-	-	-	-		
MEAN	21.4	24.7	27.5	30.3	34.4	38.1	39.8	39.2	36.8	31.3	26.3	22.2	31.0	
Cv	0.45	0.34	0.29	0.17	0.16	0.10	0.07	0.07	0.08	0.15	0.22	0.30		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MAXIMALE ABSOLUE MENSUELLE

Station: **RACHIDIA** Period: 1980-1999
 Latitude: 31°56'N Longitude: 004°24'W Altitude: 1037.2 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	19.8	22.5	31.1	30.6	32.9	40.3	40.5	40.0	35.8	31.5	25.2	19.8	30.8	0.67
1981	22.6	23.8	30.2	31.3	35.6	38.0	40.5	37.8	37.7	34.7	26.0	26.4	32.1	0.56
1982	22.1	24.2	25.4	27.8	33.2	39.0	39.4	40.0	35.9	32.3	23.4	22.6	30.4	0.59
1983	23.1	24.7	27.4	30.0	33.2	37.7	41.0	40.6	37.5	31.0	28.6	22.8	31.5	0.58
1984	25.7	24.8	29.2	32.0	31.7	40.3	39.7	40.0	37.5	33.2	24.3	19.1	31.5	0.67
1985	18.6	26.3	27.1	31.7	33.5	39.0	40.3	40.2	35.6	31.1	28.9	20.6	31.1	0.70
1986	20.6	24.5	24.9	27.3	36.4	38.3	40.7	38.9	36.8	29.0	23.8	21.4	30.2	0.67
1987	21.0	26.8	30.2	34.9	36.0	39.9	41.7	40.0	37.5	29.9	23.5	21.7	31.9	0.65
1988	22.9	22.5	28.4	34.0	35.1	37.0	41.3	40.8	37.2	29.9	24.8	20.8	31.2	0.66
1989	15.0	25.2	25.7	30.2	32.8	38.8	40.3	38.3	37.9	31.8	23.9	20.9	30.1	0.84
1990	19.5	24.7	27.2	29.2	34.9	39.9	40.3	39.0	37.8	33.8	26.5	21.4	31.2	0.67
1991	18.2	20.2	24.5	28.3	34.2	36.7	40.4	40.3	36.4	29.5	26.6	20.3	29.6	0.75
1992	15.7	22.2	24.5	30.5	32.6	37.4	39.7	38.4	37.0	33.6	23.1	23.0	29.8	0.81
1993	17.6	21.2	26.8	31.3	34.7	41.0	40.8	40.0	37.5	31.6	22.1	20.9	30.5	0.77
1994	22.4	23.3	27.2	29.9	39.5	40.6	41.2	39.7	38.3	30.1	24.8	22.6	31.6	0.59
1995	22.1	25.3	25.8	28.9	37.3	37.5	41.3	40.6	37.3	30.6	27.1	20.8	31.2	0.66
1996	22.9	25.0	29.2	29.8	34.2	40.6	41.2	40.4	36.0	32.4	25.6	22.6	31.7	0.59
1997	20.7	24.3	25.2	30.5	32.6	38.4	41.5	41.0	38.5	31.5	28.2	22.0	31.2	0.67
1998	23.3	22.4	27.7	31.3	33.5	39.5	42.9	41.3	39.6	32.4	28.4	21.0	31.9	0.69
1999	21.2	21.8	25.8	-	37.8	41.9	42.0	42.2	37.6	32.5	29.2	25.1	32.5	0.65
MEAN	20.8	23.8	27.2	30.5	34.6	39.1	40.8	40.0	37.3	31.6	25.7	21.8	31.1	
Cv	0.52	0.28	0.24	0.25	0.23	0.13	0.09	0.11	0.11	0.18	0.28	0.34		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MINIMALE ABSOLUE MENSUELLE

Station: **FES-SAIS** Period: 1980-1999
Latitude: 33°58'N Longitude: 004°59'W Altitude: 571.3 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	-0.6	1.5	1.5	1.2	4.7	11.0	9.9	13.3	13.2	4.7	-0.8	-4.6	4.6	3.91
1981	-5.0	-6.2	0.5	2.4	2.9	6.1	10.9	10.8	7.8	4.8	1.8	0.2	3.1	5.55
1982	-2.2	-2.2	-0.8	1.6	5.2	7.7	8.5	11.0	9.4	4.0	2.4	-2.3	3.5	3.77
1983	-2.9	-1.2	0.6	1.0	3.0	8.9	10.2	10.7	9.9	7.8	4.3	-1.2	4.3	3.19
1984	-1.5	-4.6	-0.5	4.8	3.5	5.2	12.2	10.4	7.9	2.8	3.1	-4.1	3.3	5.14
1985	-2.5	0.6	-2.4	2.5	2.4	9.3	12.4	12.6	12.4	5.5	1.0	-0.4	4.5	3.39
1986	-1.4	1.9	0.8	1.5	2.3	9.5	13.0	12.8	8.4	7.1	1.9	-1.7	4.7	3.14
1987	-2.8	-0.8	-2.1	1.3	5.5	7.0	10.9	12.4	14.5	5.7	-0.2	0.1	4.3	4.03
1988	-1.3	0.3	-0.5	2.1	5.8	8.6	10.8	14.6	10.6	7.7	2.5	-4.7	4.7	4.10
1989	-3.8	-1.8	2.3	2.3	7.0	7.5	13.6	15.2	10.4	9.9	4.3	2.8	5.8	3.27
1990	-1.7	0.0	3.2	1.7	5.6	9.4	12.5	14.4	12.1	7.1	1.8	1.5	5.6	2.86
1991	-1.9	-1.2	1.7	3.2	1.5	9.3	8.8	14.2	9.8	4.7	0.7	-1.6	4.1	3.93
1992	-4.6	-1.9	1.3	3.2	5.5	5.6	13.5	10.3	8.5	5.1	2.4	-0.5	4.0	4.49
1993	-2.9	-0.9	-2.4	0.4	5.5	8.5	10.2	9.4	5.9	4.1	2.2	0.4	3.4	3.89
1994	-2.1	-0.2	2.5	1.8	3.7	7.8	14.8	11.2	6.3	8.9	3.4	-3.0	4.6	3.88
1995	-4.4	0.6	4.1	1.0	5.4	8.4	13.2	14.2	7.4	8.8	1.5	2.5	5.2	3.56
1996	2.4	-3.5	1.5	5.4	4.2	8.4	11.3	10.5	6.9	5.5	1.5	2.0	4.7	3.17
1997	1.4	1.4	0.4	6.6	6.1	8.1	9.8	12.8	11.6	5.9	2.3	1.1	5.6	2.20
1998	-0.5	-0.6	-1.0	1.8	0.9	10.5	11.6	13.3	11.5	1.9	1.0	-2.2	4.0	3.86
1999	-1.0	-3.6	1.4	1.1	-	9.6	12.5	11.2	9.0	10.1	-0.4	-1.2	4.4	3.64
MEAN	-2.0	-1.1	0.6	2.3	4.2	8.3	11.5	12.3	9.7	6.1	1.8	-0.8	4.4	
Cv	-3.77	-7.23	10.74	2.64	1.44	0.70	0.55	0.47	0.89	1.34	2.78	-8.88		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MINIMALE ABSOLUE MENSUELLE

Station: **MARRAKECH** Period: 1980-1999
Latitude: 31°37'N Longitude: 004°02'W Altitude: 463.5 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	2.0	5.2	5.9	8.2	10.3	13.5	15.6	16.7	15.5	10.6	4.2	0.4	9.0	1.81
1981	-1.6	2.5	6.6	7.1	8.0	14.1	15.0	15.8	13.0	11.2	4.1	2.3	8.2	2.13
1982	2.6	4.0	7.0	7.4	9.3	13.1	13.0	15.8	15.2	9.6	5.1	1.2	8.6	1.70
1983	1.3	3.1	6.9	4.6	9.7	13.8	15.0	14.8	15.4	11.6	9.2	3.5	9.1	1.55
1984	1.3	1.1	5.0	10.8	9.1	12.9	17.0	15.8	15.3	11.5	6.2	1.5	9.0	1.77
1985	0.2	5.5	4.5	8.2	8.5	14.2	16.2	17.0	16.5	11.0	7.0	3.6	9.4	1.79
1986	3.5	3.0	5.4	4.2	9.4	13.9	15.7	16.0	14.9	11.7	5.0	-0.3	8.5	1.91
1987	1.4	3.5	7.1	7.7	13.0	14.6	16.7	15.8	15.6	10.0	6.7	3.8	9.7	1.58
1988	3.2	2.6	4.5	7.6	10.4	12.0	14.1	16.5	14.5	12.0	6.3	2.2	8.8	1.62
1989	0.6	4.1	5.0	4.0	11.4	12.8	17.1	18.0	14.8	12.0	6.8	5.6	9.4	1.86
1990	0.5	5.8	8.5	7.3	11.8	13.8	17.7	17.7	16.6	10.8	4.8	2.4	9.8	1.75
1991	0.8	1.1	5.8	8.0	8.0	12.4	15.6	17.1	13.3	9.6	2.3	3.8	8.2	2.00
1992	1.4	5.3	4.2	6.2	8.6	11.7	14.7	16.5	14.3	8.5	6.3	3.8	8.5	1.79
1993	2.0	4.0	5.2	8.4	8.3	14.1	15.6	15.4	12.0	9.3	5.6	2.5	8.5	1.59
1994	2.2	4.3	6.0	6.9	7.8	14.0	16.0	17.1	11.8	12.0	8.3	2.3	9.1	1.64
1995	-0.1	1.7	3.5	7.4	13.1	13.0	16.0	17.0	13.6	13.4	6.1	4.3	9.1	1.88
1996	4.6	3.3	3.5	8.0	10.0	14.6	17.3	15.2	14.2	10.3	6.3	4.3	9.3	1.51
1997	4.7	6.1	8.3	8.4	11.3	14.0	14.0	16.5	13.8	11.0	6.0	3.5	9.8	1.33
1998	2.2	7.8	4.8	8.5	8.5	14.7	15.2	16.5	16.1	10.8	5.0	2.5	9.4	1.52
1999	2.9	2.6	5.4	8.4	9.8	14.0	16.5	17.2	15.6	12.5	3.1	0.5	9.0	1.85
MEAN	1.8	3.8	5.7	7.4	9.8	13.6	15.7	16.4	14.6	11.0	5.7	2.7	9.0	
Cv	3.53	1.75	0.88	0.92	0.54	0.22	0.30	0.19	0.33	0.45	1.21	2.20		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MINIMALE ABSOLUE MENSUELLE

Station: **OUARZAZATE** Period: 1980-1999
 Latitude: 30°56'N Longitude: 006°54'W Altitude: 1,136 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	-2.8	2.8	2.4	8.4	5.3	13.4	17.9	18.0	10.7	7.6	1.5	-2.2	6.9	3.01
1981	-3.4	-1.2	3.4	5.4	5.4	15.9	16.4	14.0	12.4	8.8	1.4	0.0	6.5	3.03
1982	-2.4	-1.8	4.8	3.3	6.6	15.6	14.9	14.0	13.2	6.5	1.5	-4.4	6.0	3.34
1983	-4.6	-2.4	3.4	3.8	9.0	14.9	17.3	16.5	14.1	9.0	5.4	-1.5	7.1	3.10
1984	-2.0	-0.6	0.3	8.1	6.5	12.4	19.5	16.1	12.5	9.7	2.4	-1.6	6.9	3.10
1985	-3.0	2.1	4.6	6.5	9.4	15.3	17.8	19.1	13.9	8.9	4.0	-0.7	8.2	2.71
1986	-2.0	-0.6	3.6	2.6	10.7	13.7	18.5	16.5	15.5	9.0	2.9	-2.5	7.3	2.87
1987	-3.0	1.1	5.5	8.0	11.6	13.9	18.0	15.6	13.2	9.0	2.7	0.5	8.0	2.62
1988	0.7	0.1	3.3	5.8	9.4	12.4	16.5	20.1	12.9	8.3	2.1	-2.0	7.5	2.96
1989	-3.5	0.6	3.3	3.7	12.0	12.5	19.0	18.8	13.3	9.4	3.6	3.2	8.0	2.82
1990	-1.9	2.8	5.5	3.9	10.6	14.1	19.2	16.4	14.6	9.3	2.6	-2.1	7.9	2.69
1991	-2.0	-3.4	2.4	4.7	9.4	11.4	17.4	18.8	11.7	6.6	-0.4	-0.3	6.4	3.49
1992	-2.1	0.2	0.3	5.3	9.0	12.1	17.3	17.2	14.0	6.8	0.6	0.2	6.7	2.88
1993	-3.7	-1.6	0.6	4.6	6.4	17.0	18.0	15.6	11.7	7.0	2.7	-0.3	6.5	3.34
1994	-2.3	0.6	5.4	6.5	10.0	16.0	20.0	19.7	11.6	10.4	5.0	0.5	8.6	2.59
1995	-2.4	0.0	1.6	5.9	14.9	15.3	18.3	18.7	14.0	9.3	3.8	-0.2	8.3	2.55
1996	1.5	1.0	3.3	7.4	9.0	15.7	18.6	18.1	12.3	9.3	2.5	-1.6	8.1	2.50
1997	-1.2	2.7	5.4	7.5	11.6	14.3	17.4	15.0	11.2	9.2	4.5	-1.1	8.0	2.31
1998	-	-	-	-	-	-	-	-	-	-	-	-		
1999	-	-	-	-	-	-	-	-	-	-	-	-		
MEAN	-2.2	0.1	3.3	5.6	9.3	14.2	17.9	17.1	12.9	8.6	2.7	-0.9	7.4	
Cv	-2.74	46.50	1.58	1.03	1.04	0.39	0.29	0.36	0.37	0.46	2.14	-8.50		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TEMPERATURE MINIMALE ABSOLUE MENSUELLE

Station: **RACHIDIA** Period: 1980-1999
 Latitude: 31°56'N Longitude: 004°24'W Altitude: 1037.2 m

(unit: °C)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	-2.8	2.3	2.5	8.0	8.2	16.0	19.5	19.5	14.1	6.8	0.0	-3.8	7.5	3.10
1981	-4.2	-2.7	4.0	3.8	8.9	14.5	16.9	12.8	12.0	7.2	1.5	-0.1	6.2	3.39
1982	-2.1	-1.0	3.8	5.3	8.9	13.6	16.4	16.0	14.2	6.4	1.3	-3.7	6.6	3.05
1983	-5.0	-3.1	4.0	3.8	8.6	16.7	16.3	18.6	14.5	9.2	4.0	-2.0	7.1	3.31
1984	-4.6	-1.7	0.9	8.0	6.0	14.3	18.3	18.8	15.2	6.8	2.0	-4.3	6.6	3.52
1985	-4.8	1.5	2.1	6.8	8.0	18.0	19.6	18.2	14.0	8.8	3.1	-1.5	7.8	3.12
1986	-1.3	-0.6	2.4	5.0	8.5	13.5	20.6	19.9	12.4	8.9	2.8	-5.1	7.3	3.54
1987	-3.0	0.5	4.7	6.3	12.4	14.8	17.4	14.9	12.5	8.5	1.6	-1.7	7.4	2.75
1988	-0.4	2.8	4.5	7.0	8.6	15.0	17.6	21.0	15.3	6.7	0.7	-3.0	8.0	3.01
1989	-3.3	-0.6	3.4	4.3	12.0	11.2	20.4	19.0	15.0	7.6	3.8	0.6	7.8	3.04
1990	-0.3	2.5	5.5	6.8	10.0	17.3	20.5	18.8	16.4	9.5	1.7	-0.7	9.0	2.36
1991	-1.5	-1.3	3.2	6.8	7.7	12.2	19.0	19.2	13.9	6.7	-0.6	-0.3	7.1	2.92
1992	-2.9	1.0	3.6	4.8	8.0	12.8	18.8	18.5	13.5	7.3	1.1	0.5	7.3	2.99
1993	-4.1	-0.5	1.2	6.7	8.0	17.5	19.4	19.3	12.5	8.3	3.8	0.3	7.7	3.05
1994	-1.2	0.4	5.2	7.0	10.9	18.6	21.3	22.0	12.2	10.4	3.5	-1.2	9.1	2.55
1995	-3.4	1.5	1.9	5.9	15.1	14.7	19.5	21.8	12.5	10.0	3.5	0.8	8.7	2.91
1996	2.0	0.6	3.3	8.0	10.6	15.8	16.5	18.8	13.2	9.0	1.6	-1.4	8.2	2.47
1997	-0.3	2.4	4.8	7.0	13.0	14.8	20.7	16.3	14.0	9.0	4.0	0.5	8.9	2.37
1998	-0.8	3.5	2.5	9.3	10.0	17.3	21.8	20.4	14.8	8.0	1.8	-1.5	8.9	2.61
1999	-1.2	-3.0	2.7	-	1.2	19.8	21.5	21.3	15.6	12.5	-0.5	-1.5	8.0	3.05
MEAN	-2.3	0.2	3.3	6.3	9.2	15.4	19.1	18.8	13.9	8.4	2.0	-1.5	7.7	
Cv	-3.10	29.33	1.39	0.87	1.51	0.56	0.29	0.49	0.32	0.73	2.26	-4.05		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 6:00

 Station: **FES-SAIS**

Period: 1980-1999

Latitude: 33°58'N

Longitude: 004°59'W

Altitude: 571.3 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	81.0	87.0	87.0	88.0	90.0	82.0	67.0	65.0	70.0	77.0	81.0	80.0	79.6	0.31
1981	74.0	75.0	77.0	88.0	84.0	76.0	66.0	71.0	69.0	63.0	55.0	79.0	73.1	0.45
1982	74.0	80.0	83.0	87.0	88.0	82.0	67.0	70.0	76.0	78.0	76.0	87.0	79.0	0.27
1983	75.0	85.0	77.0	80.0	87.0	69.0	79.0	79.0	57.0	55.0	82.0	76.0	75.1	0.43
1984	85.0	80.0	83.0	86.0	88.0	87.0	61.0	67.0	71.0	67.0	77.0	76.0	77.3	0.35
1985	78.0	76.0	82.0	78.0	90.0	81.0	66.0	54.0	64.0	63.0	77.0	84.0	74.4	0.48
1986	84.0	85.0	89.0	88.0	80.0	86.0	67.0	63.0	74.0	81.0	76.0	83.0	79.7	0.33
1987	77.0	89.0	79.0	83.0	83.0	72.0	75.0	73.0	67.0	86.0	84.0	88.0	79.7	0.28
1988	87.0	88.0	84.0	91.0	91.0	82.0	64.0	59.0	58.0	78.0	79.0	80.0	78.4	0.42
1989	83.0	89.0	87.0	95.0	89.0	79.0	63.0	63.0	67.0	82.0	80.0	83.0	80.0	0.40
1990	88.0	88.0	90.0	89.0	88.0	88.0	68.0	64.0	75.0	87.0	82.0	91.0	83.2	0.32
1991	88.0	92.0	89.0	95.0	88.0	83.0	69.0	75.0	72.0	89.0	81.0	85.0	83.8	0.31
1992	76.0	77.0	82.0	84.0	82.0	93.0	74.0	62.0	65.0	82.0	78.0	80.0	77.9	0.40
1993	73.0	79.0	86.0	82.0	85.0	76.0	60.0	62.0	79.0	80.0	86.0	81.0	77.4	0.34
1994	85.0	79.0	87.0	77.0	85.0	71.0	53.0	66.0	71.0	87.0	74.0	70.0	75.4	0.45
1995	71.0	73.0	79.0	74.0	71.0	79.0	64.0	65.0	73.0	65.0	69.0	85.0	72.3	0.29
1996	84.0	89.0	90.0	92.0	89.0	81.0	74.0	79.0	83.0	76.0	78.0	79.0	82.8	0.22
1997	87.0	82.0	68.0	86.0	91.0	90.0	73.0	77.0	73.0	87.0	84.0	85.0	81.9	0.28
1998	88.0	87.0	80.0	89.0	90.0	81.0	73.0	70.0	82.0	70.0	72.0	76.0	79.8	0.25
1999	83.3	82.7	88.7	83.7	-	73.8	74.9	71.2	83.6	83.7	79.7	85.1	80.9	0.22
MEAN	81.1	83.1	83.4	85.8	86.3	80.6	67.9	67.8	71.5	76.8	77.5	81.7	78.6	
Cv	0.21	0.23	0.26	0.24	0.23	0.30	0.38	0.37	0.37	0.44	0.40	0.26		

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 6:00

 Station: **MARRAKECH**

Period: 1980-1999

Latitude: 31°37'N

Longitude: 004°02'W

Altitude: 463.5 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	73.0	76.0	87.0	83.0	86.0	73.0	56.0	61.0	72.0	75.0	86.0	78.0	75.5	0.41
1981	71.0	75.0	71.0	77.0	74.0	73.0	71.0	69.0	68.0	71.0	57.0	75.0	71.0	0.28
1982	81.0	78.0	81.0	86.0	86.0	79.0	70.0	71.0	81.0	74.0	71.0	79.0	78.1	0.20
1983	66.0	83.0	58.0	66.0	75.0	70.0	77.0	80.0	62.0	53.0	78.0	71.0	69.9	0.43
1984	78.0	68.0	77.0	70.0	77.0	74.0	54.0	69.0	68.0	56.0	76.0	66.0	69.4	0.35
1985	83.0	82.0	81.0	77.0	83.0	75.0	66.0	56.0	67.0	71.0	77.0	73.0	74.3	0.36
1986	86.0	90.0	87.0	81.0	69.0	77.0	70.0	62.0	64.0	79.0	79.0	73.0	76.4	0.37
1987	75.0	88.0	74.0	72.0	75.0	71.0	79.0	75.0	58.0	81.0	84.0	91.0	76.9	0.43
1988	89.0	89.0	83.0	81.0	78.0	80.0	63.0	58.0	62.0	76.0	87.0	85.0	77.6	0.40
1989	80.0	87.0	84.0	94.0	87.0	84.0	77.0	79.0	78.0	79.0	81.0	78.0	82.3	0.21
1990	84.0	72.0	82.0	84.0	82.0	84.0	69.0	65.0	75.0	61.0	77.0	89.0	77.0	0.36
1991	80.0	89.0	87.0	66.0	75.0	78.0	64.0	67.0	72.0	83.0	72.0	77.0	75.8	0.33
1992	63.0	77.0	76.0	77.0	74.0	84.0	73.0	73.0	66.0	88.0	72.0	81.0	75.3	0.33
1993	71.0	81.0	77.0	78.0	84.0	84.0	75.0	73.0	79.0	83.0	92.0	86.0	80.3	0.26
1994	88.0	86.0	90.0	83.0	82.0	79.0	60.0	67.0	73.0	86.0	80.0	76.0	79.2	0.38
1995	73.0	74.0	82.0	87.0	75.0	79.0	71.0	67.0	76.0	72.0	72.0	87.0	76.3	0.26
1996	84.0	90.0	91.0	88.0	78.0	81.0	76.0	81.0	77.0	73.0	78.0	90.0	82.3	0.22
1997	92.4	81.5	67.1	87.1	82.4	83.1	80.5	78.0	80.5	83.3	86.8	83.5	82.2	0.31
1998	85.0	87.8	63.8	78.8	80.7	69.5	69.8	68.2	78.8	66.1	63.9	74.4	73.9	0.32
1999	87.9	84.9	99.4	75.9	74.9	77.2	73.0	74.0	79.2	85.6	84.4	85.9	81.9	0.32
MEAN	79.5	82.0	79.9	79.6	78.9	77.7	69.7	69.7	71.8	74.8	77.7	79.9	76.8	
Cv	0.37	0.27	0.52	0.35	0.23	0.19	0.38	0.36	0.32	0.47	0.45	0.31		

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 6:00

Station: **OUARZAZATE** Period: 1980-1999
 Latitude: 30°56'N Longitude: 006°54'W Altitude: 1,136 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	65.0	68.0	74.0	54.0	44.0	35.0	31.0	37.0	57.0	55.0	66.0	65.0	54.3	0.79
1981	57.0	75.0	54.0	52.0	47.0	45.0	32.0	37.0	43.0	45.0	67.0	58.0	51.0	0.84
1982	52.0	54.0	57.0	59.0	58.0	38.0	29.0	37.0	45.0	50.0	52.0	54.0	48.8	0.62
1983	53.0	56.0	48.0	45.0	45.0	35.0	29.0	34.0	40.0	55.0	68.0	56.0	47.0	0.83
1984	50.0	43.0	45.0	38.0	47.0	30.0	25.0	27.0	44.0	40.0	60.0	63.0	42.7	0.89
1985	65.0	54.0	45.0	42.0	50.0	38.0	31.0	32.0	46.0	58.0	67.0	63.0	49.3	0.73
1986	50.0	50.0	50.0	44.0	38.0	39.0	27.0	34.0	48.0	64.0	59.0	55.0	46.5	0.80
1987	49.0	56.0	47.0	35.0	44.0	36.0	33.0	33.0	45.0	64.0	71.0	28.0	45.1	0.95
1988	68.0	68.0	64.0	52.0	45.0	44.0	31.0	31.0	46.0	64.0	88.0	81.0	56.8	1.00
1989	79.0	76.0	55.0	55.0	45.0	43.0	39.0	43.0	46.0	59.0	71.0	84.0	57.9	0.78
1990	72.0	56.0	54.0	64.0	49.0	34.0	39.0	41.0	62.0	55.0	54.0	70.0	54.2	0.70
1991	52.0	58.0	55.0	52.0	35.0	44.0	39.0	33.0	42.0	57.0	51.0	87.0	50.4	1.07
1992	71.0	74.0	61.0	41.0	51.0	43.0	30.0	43.0	40.0	51.0	52.0	65.0	51.8	0.85
1993	67.8	74.4	52.1	39.5	44.5	33.2	29.7	33.5	42.1	50.6	80.2	64.6	51.0	0.99
1994	69.5	56.4	58.1	36.9	38.7	31.1	26.6	34.2	40.1	64.8	66.7	64.5	49.0	0.88
1995	50.0	47.0	52.0	67.0	36.0	33.0	35.0	39.0	44.0	58.0	56.0	73.0	49.2	0.81
1996	73.0	68.0	68.0	44.0	47.0	58.0	39.0	39.0	42.0	45.0	51.0	72.0	53.8	0.63
1997	75.0	56.3	46.5	63.3	52.1	44.3	31.6	47.9	58.7	60.3	50.0	51.9	53.2	0.82
1998	62.4	74.4	52.7	43.6	46.9	41.5	29.3	33.9	-	-	-	-		
1999	-	-	-	-	-	-	-	-	-	-	-	-		
MEAN	62.1	61.3	54.7	48.8	45.4	39.2	31.9	36.3	46.2	55.3	62.8	64.2	50.7	
Cv	0.48	0.54	0.53	0.66	0.51	0.71	0.44	0.58	0.48	0.45	0.61	0.92		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 6:00

Station: **RACHIDIA** Period: 1980-1999
 Latitude: 31°56'N Longitude: 004°24'W Altitude: 1037.2 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	73.0	61.0	70.0	58.0	45.0	35.0	25.0	26.0	47.0	49.0	77.0	74.0	53.3	0.98
1981	62.0	71.0	48.0	49.0	40.0	37.0	27.0	34.0	45.0	36.0	59.0	57.0	47.1	0.93
1982	68.0	66.0	51.0	60.0	57.0	36.0	26.0	29.0	39.0	50.0	62.0	63.0	50.6	0.83
1983	66.0	64.0	41.0	46.0	44.0	38.0	31.0	36.0	41.0	54.0	60.0	64.0	48.8	0.72
1984	64.0	58.0	51.0	43.0	59.0	34.0	36.0	34.0	44.0	52.0	66.0	75.0	51.3	0.80
1985	78.0	58.0	64.0	48.0	63.0	35.0	30.0	35.0	43.0	61.0	65.0	74.0	54.5	0.88
1986	77.0	65.0	58.0	50.0	42.0	43.0	31.0	29.0	45.0	74.0	64.0	71.0	54.1	0.89
1987	61.0	60.0	55.0	38.0	47.0	39.0	37.0	28.0	48.0	62.0	80.0	90.0	53.8	1.15
1988	73.0	71.0	62.0	52.0	54.0	43.0	30.0	32.0	43.0	71.0	83.0	86.0	58.3	0.96
1989	79.0	80.0	56.0	50.0	49.0	47.0	34.0	42.0	47.0	66.0	83.0	92.0	60.4	0.96
1990	81.0	76.0	65.0	61.0	58.0	36.0	32.0	35.0	50.0	53.0	57.0	79.0	56.9	0.86
1991	72.0	66.0	57.0	57.0	47.0	46.0	33.0	36.0	48.0	61.0	60.0	84.0	55.6	0.92
1992	78.0	67.0	57.0	47.0	54.0	47.0	35.0	35.0	42.0	48.0	68.0	76.0	54.5	0.79
1993	80.5	76.6	65.8	47.1	43.2	39.4	28.4	33.6	43.5	52.4	84.2	80.0	56.2	0.99
1994	78.5	65.5	60.8	56.0	43.1	34.9	32.5	37.5	52.9	81.6	83.4	83.0	59.1	0.86
1995	70.5	65.3	67.4	71.7	41.1	42.7	39.4	40.2	58.7	80.9	68.0	88.1	61.2	0.80
1996	78.8	81.0	75.0	57.0	47.0	61.0	42.0	41.0	54.0	64.0	71.0	85.0	63.1	0.70
1997	88.3	74.4	58.2	69.7	54.2	43.6	37.5	50.3	58.9	68.4	71.4	75.0	62.5	0.81
1998	76.0	87.5	66.8	57.4	54.9	41.4	27.1	38.1	52.9	62.8	71.0	76.5	59.4	1.02
1999	80.9	73.8	63.2	-	39.1	40.7	41.7	46.9	59.5	74.2	73.4	78.3	61.1	0.68
MEAN	74.3	69.4	59.6	53.6	49.1	41.0	32.8	35.9	48.1	61.1	70.3	77.5	56.1	
Cv	0.37	0.43	0.57	0.63	0.49	0.66	0.52	0.68	0.43	0.75	0.39	0.45		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 12:00

Station: **FES-SAIS** Period: 1980-1999
 Latitude: 33°58'N Longitude: 004°59'W Altitude: 571.3 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	61.0	65.0	68.0	64.0	60.0	50.0	36.0	38.0	44.0	50.0	57.0	55.0	54.0	0.59
1981	48.0	52.0	49.0	63.0	50.0	39.0	35.0	43.0	42.0	37.0	35.0	58.0	45.9	0.61
1982	57.0	62.0	55.0	65.0	61.0	50.0	41.0	44.0	49.0	54.0	55.0	67.0	55.0	0.47
1983	47.0	65.0	55.0	54.0	55.0	42.0	50.0	55.0	33.0	34.0	58.0	57.0	50.4	0.63
1984	64.0	55.0	58.0	58.0	66.0	55.0	33.0	41.0	40.0	41.0	54.0	51.0	51.3	0.64
1985	60.0	54.0	55.0	42.0	58.0	48.0	36.0	29.0	40.0	39.0	58.0	60.0	48.3	0.64
1986	66.0	69.0	65.0	66.0	45.0	56.0	33.0	41.0	43.0	55.0	53.0	54.0	53.8	0.67
1987	57.0	70.0	55.0	52.0	51.0	39.0	45.0	46.0	41.0	60.0	62.0	66.0	53.7	0.58
1988	70.0	71.0	57.0	59.0	60.0	49.0	47.0	37.0	37.0	55.0	59.0	58.0	54.9	0.62
1989	66.0	76.0	63.0	81.0	60.0	48.0	38.0	42.0	44.0	53.0	60.0	68.0	58.3	0.74
1990	60.0	62.0	63.0	58.0	55.0	55.0	40.0	42.0	48.0	60.0	59.0	76.0	56.5	0.64
1991	65.0	75.0	80.0	67.0	52.0	49.0	47.0	51.0	47.0	60.0	54.0	61.0	59.0	0.56
1992	49.0	52.0	56.0	54.0	46.0	58.0	39.0	38.0	42.0	55.0	47.0	54.0	49.2	0.41
1993	45.0	45.0	60.0	51.0	50.0	45.0	33.0	37.0	49.0	53.0	69.0	58.0	49.6	0.73
1994	63.0	62.0	64.0	45.0	50.0	37.0	30.0	40.0	42.0	55.0	42.0	47.0	48.1	0.71
1995	51.0	51.0	53.0	40.0	40.0	52.0	38.0	38.0	46.0	40.0	49.0	66.0	47.0	0.60
1996	72.1	69.1	71.3	61.2	52.7	39.3	37.8	44.8	55.9	43.4	50.7	63.0	55.1	0.62
1997	65.0	53.0	37.0	56.0	59.0	55.0	45.0	44.0	48.0	55.0	64.0	64.0	53.8	0.52
1998	70.0	65.0	47.0	58.0	57.0	44.0	38.0	39.0	50.0	40.0	48.0	48.0	50.3	0.64
1999	58.2	55.4	59.3	41.5	-	40.1	39.8	44.5	52.4	62.0	55.0	60.1	51.7	0.43
MEAN	59.7	61.4	58.5	56.8	54.1	47.5	39.1	41.7	44.7	50.1	54.4	59.6	52.3	
Cv	0.45	0.50	0.73	0.72	0.48	0.44	0.51	0.62	0.51	0.56	0.62	0.49		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 12:00

Station: **MARRAKECH** Period: 1980-1999
 Latitude: 31°37'N Longitude: 004°02'W Altitude: 463.5 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	49.0	53.0	58.0	51.0	55.0	40.0	27.0	33.0	48.0	47.0	59.0	51.0	47.6	0.67
1981	42.0	49.0	43.0	50.0	42.0	42.0	38.0	41.0	38.0	45.0	37.0	52.0	43.3	0.35
1982	57.0	54.0	53.0	54.0	58.0	51.0	48.0	43.0	56.0	49.0	43.0	51.0	51.4	0.29
1983	43.0	65.0	37.0	39.0	50.0	43.0	50.0	53.0	39.0	34.0	52.0	48.0	46.1	0.67
1984	53.0	43.0	53.0	41.0	45.0	43.0	29.0	41.0	43.0	33.0	53.0	46.0	43.6	0.55
1985	62.0	57.0	48.0	44.0	55.0	43.0	36.0	31.0	41.0	44.0	54.0	51.0	47.2	0.66
1986	58.0	62.0	86.0	50.0	37.0	51.0	40.0	34.0	39.0	52.0	51.0	47.0	50.6	1.03
1987	52.0	61.0	44.0	40.0	43.0	40.0	50.0	48.0	32.0	56.0	59.0	67.0	49.3	0.71
1988	67.0	65.0	44.0	46.0	49.0	48.0	35.0	32.0	34.0	50.0	61.0	55.0	48.8	0.72
1989	53.0	59.0	51.0	67.0	56.0	54.0	45.0	54.0	53.0	54.0	55.0	55.0	54.7	0.40
1990	59.0	41.0	52.0	52.0	54.0	52.0	43.0	40.0	51.0	58.0	55.0	61.0	51.5	0.41
1991	54.0	66.0	63.0	57.0	46.0	43.0	35.0	39.0	31.0	52.0	43.0	53.0	48.5	0.72
1992	39.0	53.0	48.0	47.0	40.0	53.0	43.0	48.0	42.0	60.0	40.0	59.0	47.7	0.44
1993	48.0	55.0	52.0	50.0	55.0	55.0	46.0	45.0	52.0	55.0	64.0	55.0	52.7	0.36
1994	64.0	58.0	63.0	49.0	51.0	48.0	34.0	40.0	44.0	59.0	53.0	51.0	51.2	0.59
1995	46.0	47.0	53.0	57.0	47.0	51.0	46.0	39.0	49.0	43.0	48.0	62.0	49.0	0.47
1996	65.0	66.0	70.0	54.0	39.0	48.0	40.0	49.0	48.0	40.0	50.0	66.0	52.9	0.59
1997	66.3	46.6	37.9	58.3	50.7	51.5	46.2	46.6	53.7	50.7	57.8	54.6	51.7	0.55
1998	59.0	58.4	31.9	50.3	50.7	38.8	39.0	39.0	51.8	36.4	35.6	46.3	44.8	0.61
1999	58.0	57.7	63.2	42.1	42.2	44.1	41.5	46.2	52.4	62.4	53.6	54.5	51.5	0.42
MEAN	54.7	55.8	52.6	49.9	48.3	47.0	40.6	42.1	44.9	49.0	51.2	54.3	49.2	
Cv	0.51	0.45	1.03	0.56	0.43	0.34	0.57	0.55	0.56	0.60	0.55	0.39		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 12:00

Station: **OUARZAZATE** Period: 1980-1999
 Latitude: 30°56'N Longitude: 006°54'W Altitude: 1,136 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	46.0	45.0	46.0	30.0	25.0	15.5	15.9	19.5	32.9	32.3	47.1	49.7	33.7	1.01
1981	39.0	54.0	30.0	30.0	29.0	24.0	18.0	18.0	24.0	28.0	46.0	42.0	31.8	1.13
1982	38.0	35.0	37.0	36.0	32.0	17.0	14.0	19.0	24.0	31.0	36.0	37.0	29.7	0.81
1983	42.0	38.0	29.0	25.0	27.0	20.0	13.0	17.0	22.0	35.0	44.0	36.0	29.0	1.07
1984	34.0	28.0	27.0	20.0	25.0	16.0	11.0	12.0	26.0	22.0	36.0	44.0	25.1	1.32
1985	46.0	35.0	24.0	20.0	23.0	14.0	14.0	17.0	25.0	36.0	44.0	40.0	28.2	1.14
1986	31.0	28.0	30.0	22.0	20.0	19.0	15.0	18.0	28.0	41.0	40.0	39.0	27.6	0.94
1987	36.0	31.0	28.0	18.0	23.0	18.0	15.0	17.0	29.0	39.0	41.0	55.0	29.2	1.37
1988	46.0	48.0	38.0	29.0	27.0	24.0	20.0	19.0	32.0	41.0	63.0	55.0	36.8	1.19
1989	54.0	56.0	33.0	31.0	24.0	25.0	19.0	24.0	23.0	39.0	47.0	61.0	36.3	1.16
1990	50.0	35.0	37.0	40.0	24.0	15.0	20.0	21.0	32.0	29.0	37.0	48.0	32.3	1.08
1991	36.0	38.0	33.0	29.0	18.0	23.0	19.0	20.0	24.0	38.0	36.0	66.0	31.7	1.52
1992	48.0	51.0	37.0	26.0	24.0	20.0	17.0	21.0	24.0	30.0	31.0	50.0	31.6	1.08
1993	44.2	48.5	30.0	20.1	21.5	15.5	14.7	17.0	23.8	32.8	55.3	42.8	30.5	1.33
1994	45.9	34.1	34.4	20.0	19.8	16.4	14.5	19.5	25.8	42.4	42.8	43.7	29.9	1.05
1995	36.0	35.0	32.0	37.0	20.0	19.0	19.0	24.0	26.0	30.0	38.0	53.0	30.8	1.11
1996	48.0	45.0	42.0	25.0	24.0	33.0	20.0	22.0	22.0	30.0	32.0	50.0	32.8	0.92
1997	53.0	37.1	28.3	35.6	28.1	20.2	13.3	27.1	33.8	38.8	31.1	33.5	31.7	1.25
1998	43.2	50.0	30.8	22.6	23.9	20.9	14.8	20.1	-	-	-	-		
1999	-	-	-	-	-	-	-	-	-	-	-	-		
MEAN	43.0	40.6	33.0	27.2	24.1	19.8	16.2	19.6	26.5	34.2	41.5	47.0	31.0	
Cv	0.54	0.69	0.67	0.81	0.58	0.96	0.56	0.77	0.45	0.60	0.77	0.69		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 12:00

Station: **RACHIDIA** Period: 1980-1999
 Latitude: 31°56'N Longitude: 004°24'W Altitude: 1037.2 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	39.0	32.0	37.0	32.0	24.0	21.0	12.0	13.0	25.0	26.0	51.0	47.0	29.9	1.30
1981	34.0	42.0	26.0	29.0	22.0	21.0	15.0	19.0	24.0	23.0	34.0	31.0	26.7	1.01
1982	41.0	37.0	33.0	37.0	31.0	20.0	14.0	15.0	23.0	33.0	36.0	38.0	29.8	0.91
1983	44.0	50.0	27.0	30.0	27.0	24.0	19.0	23.0	22.0	36.0	37.0	38.0	31.4	0.99
1984	42.0	36.0	32.0	30.0	39.0	19.0	27.0	23.0	29.0	33.0	38.0	50.0	33.2	0.93
1985	49.0	37.0	37.0	33.0	43.0	20.0	16.0	22.0	26.0	35.0	41.0	48.0	33.9	0.97
1986	46.0	42.0	40.0	32.0	42.0	25.0	18.0	18.0	27.0	50.0	42.0	45.0	35.6	0.90
1987	43.0	43.0	34.0	24.0	29.0	20.0	21.0	18.0	34.0	41.0	52.0	61.0	35.0	1.23
1988	47.0	57.0	39.0	35.0	37.0	31.0	17.0	21.0	31.0	44.0	60.0	50.0	39.1	1.10
1989	57.0	56.0	33.0	29.0	33.0	30.0	22.0	25.0	25.0	42.0	53.0	69.0	39.5	1.19
1990	57.0	41.0	39.0	39.0	34.0	20.0	17.0	17.0	28.0	30.0	34.0	50.0	33.8	1.18
1991	41.0	38.0	33.0	32.0	30.0	31.0	36.0	35.0	30.0	22.0	37.0	58.0	35.3	1.02
1992	46.0	43.0	37.0	27.0	31.0	30.0	21.0	20.0	30.0	31.0	37.0	50.0	33.6	0.89
1993	47.5	49.4	39.3	23.9	25.2	24.8	17.1	19.0	26.4	35.6	63.3	46.3	34.8	1.33
1994	51.6	34.3	39.3	36.4	26.9	21.2	19.1	24.5	33.6	62.4	50.3	52.9	37.7	1.15
1995	45.7	37.3	43.3	46.7	25.1	25.6	24.4	23.7	41.3	53.9	36.9	59.3	38.6	0.92
1996	53.0	49.0	47.0	37.0	29.0	36.0	27.0	27.0	35.0	40.0	43.0	54.0	39.8	0.68
1997	60.2	43.9	36.5	46.6	37.5	26.0	25.4	28.9	34.1	43.8	48.9	48.1	40.0	0.87
1998	51.1	60.1	40.8	39.6	39.5	24.5	18.2	26.2	35.1	40.6	46.9	49.1	39.3	1.07
1999	52.6	46.8	38.8	-	23.6	26.0	29.0	31.3	40.5	51.7	43.5	48.0	39.3	0.74
MEAN	47.4	43.7	36.6	33.6	31.4	24.8	20.8	22.5	30.0	38.7	44.2	49.6	35.3	
Cv	0.55	0.64	0.57	0.68	0.67	0.69	1.16	0.98	0.64	1.04	0.66	0.77		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 18:00

Station: **FES-SAIS** Period: 1980-1999
Latitude: 33ø58'N Longitude: 004ø59'W Altitude: 571.3 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	72.0	72.0	72.0	59.0	56.0	43.0	31.0	34.0	43.0	54.0	68.0	65.0	55.8	0.74
1981	57.0	60.0	50.0	63.0	41.0	36.0	28.0	35.0	35.0	45.0	40.0	74.0	47.0	0.98
1982	70.0	65.0	55.0	68.0	56.0	42.0	35.0	35.0	43.0	57.0	66.0	79.0	55.9	0.79
1983	56.0	73.0	60.0	55.0	49.0	32.0	38.0	43.0	29.0	33.0	72.0	66.0	50.5	0.87
1984	73.0	58.0	59.0	56.0	67.0	46.0	28.0	31.0	37.0	41.0	71.0	63.0	52.5	0.86
1985	69.0	63.0	54.0	44.0	52.0	40.0	29.0	23.0	36.0	37.0	68.0	73.0	49.0	1.02
1986	74.0	77.0	67.0	69.0	45.0	52.0	29.0	35.0	41.0	54.0	61.0	64.0	55.7	0.86
1987	64.0	73.0	54.0	55.0	46.0	35.0	36.0	41.0	38.0	63.0	74.0	79.0	54.8	0.80
1988	81.0	75.0	58.0	57.0	54.0	44.0	31.0	32.0	30.0	55.0	67.0	63.0	53.9	0.95
1989	71.0	79.0	66.0	82.0	53.0	38.0	35.0	40.0	39.0	69.0	71.0	83.0	60.5	0.79
1990	77.0	67.0	62.0	61.0	49.0	48.0	36.0	37.0	48.0	62.0	67.0	84.0	58.2	0.83
1991	74.0	81.0	84.0	70.0	49.0	43.0	43.0	47.0	41.0	62.0	65.0	68.0	60.6	0.71
1992	55.0	54.0	50.0	52.0	47.0	52.0	30.0	33.0	35.0	60.0	56.0	64.0	49.0	0.69
1993	51.0	47.0	60.0	46.0	49.0	35.0	26.0	32.0	42.0	56.0	82.0	73.0	49.9	1.12
1994	73.0	75.0	64.0	42.0	48.0	31.0	23.0	31.0	37.0	59.0	59.0	58.0	50.0	1.04
1995	56.0	51.0	48.0	43.0	32.0	43.0	30.0	29.0	40.0	39.0	56.0	80.0	45.6	1.12
1996	81.0	76.1	75.3	67.3	55.6	42.9	30.4	35.1	50.6	44.3	62.2	79.1	58.3	0.87
1997	73.0	56.0	36.0	55.0	57.0	46.0	37.0	37.0	44.0	59.0	80.0	82.0	55.2	0.83
1998	79.0	69.0	51.0	56.0	54.0	37.0	31.0	32.0	47.0	43.0	56.0	57.0	51.0	0.94
1999	69.0	59.3	61.7	37.3	-	32.4	33.3	36.3	44.2	63.3	63.0	71.4	51.9	0.75
MEAN	68.8	66.5	59.4	56.9	50.5	40.9	32.0	34.9	40.0	52.8	65.2	71.3	53.3	
Cv	0.44	0.51	0.81	0.79	0.69	0.51	0.63	0.69	0.54	0.68	0.64	0.38		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 18:00

Station: **MARRAKECH** Period: 1980-1999
Latitude: 31ø37'N Longitude: 004ø02'W Altitude: 463.5 m

(unit: %)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	41.0	46.0	52.0	37.0	40.0	27.0	16.0	21.0	37.0	36.0	59.0	45.0	38.1	1.13
1981	38.0	38.0	31.0	40.0	29.0	29.0	20.0	25.0	25.0	33.0	33.0	54.0	32.9	1.03
1982	51.0	40.0	37.0	51.0	44.0	34.0	35.0	28.0	37.0	38.0	39.0	46.0	40.0	0.58
1983	39.0	57.0	31.0	32.0	34.0	32.0	34.0	32.0	26.0	29.0	52.0	46.0	37.0	0.84
1984	39.0	28.0	39.0	32.0	36.0	26.0	21.0	24.0	26.0	24.0	52.0	40.0	32.3	0.96
1985	59.0	50.0	34.0	39.0	43.0	26.0	21.0	19.0	26.0	32.0	49.0	49.0	37.3	1.07
1986	50.0	53.0	43.0	39.0	26.0	35.0	25.0	22.0	25.0	36.0	44.0	43.0	36.8	0.84
1987	50.0	50.0	33.0	29.0	29.0	26.0	31.0	32.0	26.0	47.0	52.0	67.0	39.3	1.04
1988	61.0	59.0	37.0	29.0	31.0	34.0	21.0	19.0	25.0	46.0	60.0	53.0	39.6	1.06
1989	50.0	54.0	46.0	57.0	43.0	38.0	32.0	44.0	42.0	49.0	59.0	55.0	47.4	0.57
1990	49.0	26.0	40.0	39.0	38.0	36.0	30.0	28.0	41.0	47.0	48.0	44.0	38.8	0.59
1991	45.0	56.0	57.0	44.0	30.0	27.0	25.0	27.0	31.0	42.0	35.0	45.0	38.7	0.83
1992	31.0	42.0	35.0	35.0	34.0	39.0	25.0	35.0	31.0	51.0	38.0	53.0	37.4	0.75
1993	43.0	43.0	43.0	39.0	42.0	39.0	31.0	31.0	36.0	47.0	64.0	52.0	42.5	0.78
1994	57.0	49.0	51.0	35.0	37.0	33.0	22.0	26.0	31.0	53.0	47.0	48.0	40.8	0.86
1995	40.0	37.0	45.0	53.0	32.0	35.0	35.0	26.0	37.0	38.0	42.0	64.0	40.3	0.94
1996	68.0	59.0	61.0	42.0	32.0	37.0	24.0	30.0	33.0	29.0	48.0	73.0	44.7	1.10
1997	62.7	37.8	33.3	49.2	40.2	36.2	28.5	29.5	39.1	42.3	56.6	58.5	42.8	0.80
1998	56.3	55.6	25.6	39.0	36.7	27.3	22.3	22.5	32.2	27.5	28.6	46.8	35.0	0.97
1999	55.3	45.8	53.0	29.3	29.3	27.6	24.1	31.2	38.1	58.4	48.5	53.3	41.2	0.83
MEAN	55.3	46.3	41.3	39.5	35.3	32.2	26.1	27.6	32.2	40.3	47.7	51.8	39.6	
Cv	0.67	0.71	0.86	0.71	0.51	0.40	0.73	0.91	0.53	0.85	0.74	0.64		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 18:00

Station: **OUARZAZATE** Period: 1980-1999
 Latitude: 30°56'N Longitude: 006°54'W Altitude: 1,136 m

#REF!

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	38.0	34.0	40.0	25.0	22.0	12.0	13.0	17.0	32.0	28.0	36.0	42.0	28.3	1.06
1981	34.0	43.0	23.0	27.0	24.0	22.0	25.0	15.0	19.0	29.0	39.0	35.0	27.9	1.00
1982	27.0	25.0	30.0	32.0	29.0	14.0	12.0	18.0	18.0	28.0	31.0	31.0	24.6	0.81
1983	35.0	31.0	25.0	19.0	20.0	17.0	10.0	14.0	17.0	30.0	34.0	32.0	23.7	1.06
1984	26.0	20.0	21.0	16.0	24.0	12.0	9.0	9.0	24.0	17.0	33.0	35.0	20.5	1.27
1985	38.0	26.0	18.0	21.0	17.0	10.0	13.0	16.0	24.0	29.0	38.0	35.0	23.8	1.18
1986	23.0	23.0	24.0	19.0	15.0	15.0	12.0	14.0	22.0	30.0	34.0	32.0	21.9	1.00
1987	33.0	23.0	21.0	14.0	19.0	14.0	10.0	13.0	27.0	31.0	36.0	49.0	24.2	1.61
1988	36.0	40.0	28.0	25.0	25.0	20.0	15.0	16.0	30.0	37.0	61.0	46.0	31.6	1.46
1989	45.0	48.0	25.0	28.0	17.0	19.0	13.0	19.0	20.0	32.0	36.0	51.0	29.4	1.29
1990	35.0	20.0	27.0	27.0	17.0	11.0	16.0	18.0	30.0	19.0	27.0	40.0	23.9	1.21
1991	21.0	24.0	26.0	15.0	13.0	18.0	16.0	16.0	18.0	28.0	27.0	55.0	23.1	1.82
1992	34.0	38.0	32.0	19.0	21.0	14.0	11.0	16.0	17.0	20.0	24.0	43.0	24.1	1.33
1993	28.5	38.9	22.4	15.4	15.0	9.3	10.1	11.9	17.4	27.0	48.3	30.5	22.9	1.70
1994	31.4	21.7	22.6	14.6	11.8	10.0	10.6	15.5	18.8	33.9	32.2	32.9	21.3	1.12
1995	22.0	21.0	25.0	30.0	13.0	11.0	12.0	17.0	17.0	30.0	33.0	41.0	22.7	1.32
1996	38.0	33.0	32.0	19.0	19.0	29.0	13.0	15.0	17.0	23.0	26.0	41.0	25.4	1.10
1997	41.0	26.1	20.5	28.5	22.7	12.6	7.5	20.5	28.8	31.1	26.6	29.5	24.6	1.36
1998	31.1	38.1	20.5	15.1	17.0	15.6	10.5	15.6	-	-	-	-		
1999	-	-	-	-	-	-	-	-	-	-	-	-		
MEAN	32.5	30.2	25.4	21.6	19.0	15.0	12.6	15.6	22.1	27.9	34.6	38.9	24.6	
Cv	0.74	0.93	0.87	0.83	0.90	1.31	1.39	0.74	0.68	0.72	1.07	0.65		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

HUMIDITE RELATIVE MENSUELLE A 18:00

Station: **RACHIDIA** Period: 1980-1999
 Latitude: 31°56'N Longitude: 004°24'W Altitude: 1037.2 m

#REF!

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	Cv
1980	36.0	28.0	33.0	27.0	20.0	15.0	9.0	10.0	24.0	24.0	51.0	49.0	27.2	1.55
1981	31.0	36.0	22.0	25.0	17.0	19.0	12.0	16.0	24.0	20.0	31.0	27.0	23.3	1.03
1982	36.0	32.0	27.0	35.0	28.0	17.0	12.0	12.0	20.0	30.0	35.0	37.0	26.8	0.93
1983	41.0	45.0	25.0	26.0	22.0	21.0	15.0	20.0	19.0	38.0	37.0	37.0	28.8	1.04
1984	43.0	33.0	30.0	26.0	38.0	16.0	14.0	19.0	26.0	32.0	35.0	47.0	29.9	1.10
1985	48.0	31.0	34.0	31.0	38.0	14.0	12.0	22.0	24.0	35.0	39.0	43.0	30.9	1.16
1986	39.0	37.0	34.0	27.0	21.0	21.0	16.0	15.0	22.0	45.0	40.0	44.0	30.1	1.00
1987	37.0	37.0	31.0	20.0	25.0	19.0	15.0	14.0	33.0	35.0	49.0	56.0	30.9	1.36
1988	44.0	51.0	31.0	28.0	30.0	22.0	13.0	19.0	29.0	37.0	58.0	48.0	34.2	1.32
1989	52.0	51.0	29.0	24.0	29.0	28.0	20.0	23.0	22.0	40.0	54.0	63.0	36.3	1.19
1990	50.0	38.0	31.0	35.0	30.0	18.0	15.0	17.0	26.0	24.0	33.0	47.0	30.3	1.15
1991	36.0	31.0	26.0	27.0	25.0	27.0	16.0	18.0	26.0	31.0	33.0	54.0	29.2	1.30
1992	40.0	36.0	31.0	24.0	30.0	24.0	17.0	17.0	21.0	28.0	36.0	49.0	29.4	1.09
1993	44.3	44.8	34.2	21.9	20.5	19.8	14.1	15.7	23.3	32.0	64.6	41.9	31.4	1.61
1994	46.9	27.8	36.8	32.4	22.8	19.0	17.3	22.7	30.8	51.2	49.3	55.8	34.4	1.12
1995	44.5	35.5	41.8	46.6	21.9	21.5	19.9	23.5	36.2	54.7	37.2	62.1	37.1	1.14
1996	49.0	47.0	41.0	32.0	25.0	34.0	23.0	23.0	28.0	37.0	44.0	51.0	36.2	0.77
1997	53.5	39.8	32.6	42.7	32.0	19.1	19.6	28.3	32.1	39.4	48.3	47.1	36.2	0.95
1998	47.8	56.2	38.5	36.1	34.7	21.4	14.7	22.2	31.7	37.0	46.6	47.2	36.2	1.15
1999	46.5	43.7	33.7	-	20.4	21.4	26.0	30.3	34.3	44.6	44.0	44.6	35.4	0.74
MEAN	43.3	39.0	32.1	29.8	26.5	20.9	16.0	19.4	26.6	35.7	43.3	47.5	31.7	
Cv	0.52	0.73	0.62	0.89	0.79	0.96	1.06	1.05	0.65	0.97	0.78	0.76		

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TOTAL PRECIPITATION MENSUELLES

Station: **FES-SAIS**

Period: 1980-1999

Latitude: 33°58'N

Longitude: 004°59'W

Altitude: 571.3 m

(unit: mm/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	40.4	24.8	100.4	46.8	37.7	12.5	0.0	7.3	23.4	46.6	58.1	12.3	410.3	34.2
1981	22.4	47.3	48.7	86.9	4.6	16.0	0.5	4.4	11.3	14.2	0.0	63.5	319.8	26.7
1982	41.9	68.6	25.4	169.1	63.2	0.0	2.4	17.6	0.1	111.1	69.5	71.9	640.8	53.4
1983	0.2	76.2	35.5	20.4	20.4	0.7	0.0	1.2	0.0	2.7	72.9	49.7	279.9	23.3
1984	26.1	14.5	87.6	47.9	115.1	16.4	0.0	0.0	7.9	5.7	81.4	3.0	405.6	33.8
1985	81.1	34.6	25.7	45.2	59.7	2.5	0.0	8.4	1.9	1.2	92.5	64.6	417.4	34.8
1986	112.8	79.9	85.0	69.8	0.1	26.2	4.0	0.0	8.6	47.3	38.1	24.3	496.1	41.3
1987	100.4	129.6	3.3	16.1	8.7	4.4	0.3	0.0	39.7	37.7	97.3	56.2	493.7	41.1
1988	69.4	63.2	26.7	37.0	55.0	0.5	0.0	0.0	0.1	57.5	43.3	13.9	366.6	30.6
1989	24.2	62.1	66.6	114.1	25.3	4.3	1.0	1.1	1.8	118.6	98.9	149.8	667.8	55.7
1990	47.0	1.4	70.0	72.5	29.4	0.3	0.2	0.2	41.1	24.7	66.5	127.2	480.5	40.0
1991	8.8	109.9	153.3	37.5	8.5	1.5	2.5	6.7	63.7	49.2	24.6	18.5	484.7	40.4
1992	0.3	38.1	102.5	63.5	48.9	78.0	0.6	23.5	1.4	59.2	29.2	16.3	461.5	38.5
1993	12.9	36.4	60.7	59.8	21.7	0.7	0.1	0.5	3.6	36.3	91.7	15.5	339.9	28.3
1994	52.7	121.7	23.1	9.2	19.9	0.4	1.2	3.7	25.3	28.0	23.2	1.0	309.4	25.8
1995	1.6	32.8	36.2	23.5	10.0	39.3	0.0	7.1	10.3	2.7	31.8	97.0	292.3	24.4
1996	164.4	49.8	98.8	44.9	86.5	7.0	2.8	0.6	34.8	20.6	10.8	202.2	723.2	60.3
1997	78.5	2.6	17.9	96.0	46.1	12.4	0.2	2.3	47.1	20.1	92.5	101.3	517.0	43.1
1998	47.2	41.8	30.5	15.8	77.7	11.3	0.0	0.1	24.0	12.4	0.3	37.8	298.9	24.9
1999	75.9	21.4	34.5	1.1	34.5	1.3	0.2	2.1	12.9	67.0	36.6	29.4	316.9	26.4
MEAN	50.4	52.8	56.6	53.9	38.7	11.8	0.8	4.3	18.0	38.1	53.0	57.8	436.1	36.3
Cv	3.3	2.4	2.6	3.1	3.0	6.6	5.0	5.4	3.5	3.1	1.9	3.5	1.0	

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

TOTAL PRECIPITATION MENSUELLES

Station: **MARRAKECH**

Period: 1980-1999

Latitude: 31°37'N

Longitude: 004°02'W

Altitude: 463.5 m

(unit: mm/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	21.8	62.7	92.6	10.4	9.7	0.8	0.0	16.0	2.7	16.5	37.0	0.0	270.2	22.5
1981	4.2	11.5	21.0	9.0	6.0	0.0	0.0	0.0	1.3	9.4	0.0	18.5	80.9	6.7
1982	56.2	25.0	33.1	93.2	61.1	0.2	7.6	1.2	1.9	1.6	18.3	15.0	314.4	26.2
1983	0.2	36.1	5.4	9.2	13.2	0.0	0.0	0.1	0.5	1.0	59.1	11.7	136.5	11.4
1984	3.3	0.0	84.5	11.9	14.2	0.0	10.6	0.6	1.2	0.9	59.1	0.0	186.3	15.5
1985	99.7	18.2	20.1	28.3	5.4	0.0	0.0	0.2	0.0	3.3	33.3	29.4	237.9	19.8
1986	24.1	30.4	14.4	5.4	31.2	45.1	0.0	0.0	2.4	5.4	40.4	0.0	198.8	16.6
1987	22.5	36.3	38.2	0.0	0.0	0.0	0.0	4.6	8.5	38.9	18.6	48.1	215.7	18.0
1988	62.9	51.5	31.2	6.6	0.7	0.2	0.1	0.1	1.0	14.4	113.9	0.0	282.6	23.6
1989	21.8	24.5	43.0	42.6	0.1	1.6	0.5	13.1	0.0	27.9	9.0	20.9	205.0	17.1
1990	21.9	0.0	43.9	27.2	24.6	0.4	0.3	0.0	3.0	0.5	4.1	26.1	152.0	12.7
1991	1.8	109.4	147.5	2.2	0.0	0.8	3.1	12.1	28.7	20.4	19.5	10.8	356.3	29.7
1992	0.4	24.4	9.1	50.2	7.5	3.4	0.0	3.2	0.0	10.5	8.5	1.7	118.9	9.9
1993	39.6	6.8	24.4	3.1	5.1	0.0	0.0	0.2	0.2	27.7	47.7	10.2	165.0	13.8
1994	27.0	53.0	58.2	0.0	0.0	0.0	0.6	0.2	0.0	36.3	5.0	1.2	181.5	15.1
1995	0.0	43.6	44.6	123.3	0.0	4.2	0.4	0.5	10.5	6.8	9.1	48.7	291.7	24.3
1996	114.6	45.1	87.7	4.5	9.0	28.2	0.0	0.0	2.2	6.2	47.8	69.0	414.3	34.5
1997	31.9	1.2	41.2	92.5	24.1	0.2	0.0	0.0	82.3	27.0	20.8	48.2	369.4	30.8
1998	22.1	33.9	26.0	5.4	1.0	0.2	0.0	0.0	0.8	0.0	0.0	39.8	129.2	10.8
1999	58.9	39.4	72.1	0.0	6.0	0.3	0.0	0.0	0.5	67.7	22.8	34.3	302.0	25.2
MEAN	31.7	32.7	46.9	26.3	10.9	4.3	1.2	2.6	7.4	16.1	28.7	21.7	230.4	19.2
Cv	3.6	3.4	3.0	4.7	5.6	10.5	9.1	6.1	11.1	4.2	4.0	3.2	1.4	

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

TOTAL PRECIPITATION MENSUELLES

Station: **OUARZAZATE** Period: 1980-1999
 Latitude: 30°56'N Longitude: 006°54'W Altitude: 1,136 m

(unit: mm/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	28.7	18.2	34.2	0.0	0.0	0.0	0.0	5.3	13.9	0.8	10.0	14.8	125.9	10.5
1981	3.4	38.0	6.0	0.0	0.0	7.2	1.2	5.5	8.1	6.9	14.0	0.0	90.3	7.5
1982	2.9	5.2	5.3	7.4	54.0	7.2	0.1	9.5	5.1	0.3	1.0	0.0	98.0	8.2
1983	0.5	1.0	3.8	1.5	9.9	0.0	0.3	1.9	0.8	6.3	9.1	6.1	41.2	3.4
1984	0.0	0.0	0.0	0.0	0.0	0.7	0.0	2.4	3.6	1.0	22.3	0.3	30.3	2.5
1985	17.6	24.6	0.9	28.7	9.4	0.0	1.3	5.8	6.5	7.3	40.5	3.4	146.0	12.2
1986	0.0	1.9	0.1	0.0	0.8	1.6	0.2	3.2	26.0	16.5	0.0	0.4	50.7	4.2
1987	11.8	1.3	0.4	0.8	10.8	2.1	0.0	2.0	30.3	44.5	17.9	16.1	138.0	11.5
1988	36.9	66.7	29.4	0.5	0.3	0.0	0.6	4.4	4.6	15.9	80.8	0.0	240.1	20.0
1989	38.5	54.5	9.1	0.7	0.0	6.9	3.5	17.7	30.6	14.4	25.0	83.5	284.4	23.7
1990	1.3	0.1	47.3	0.0	4.4	0.8	6.1	23.6	25.2	0.0	0.0	7.6	116.4	9.7
1991	0.0	15.0	13.7	1.9	0.0	6.5	19.8	18.9	4.3	1.8	9.8	45.1	136.8	11.4
1992	0.1	76.3	30.4	1.1	12.8	3.1	0.6	15.3	0.0	1.9	0.2	32.7	174.5	14.5
1993	7.4	29.4	1.9	0.0	2.3	0.0	7.3	3.5	3.4	21.5	31.5	5.9	114.1	9.5
1994	11.7	1.4	14.5	0.0	0.0	0.0	1.3	2.3	1.5	51.3	0.0	0.4	84.4	7.0
1995	0.0	0.0	34.3	65.7	0.4	0.0	0.5	7.4	11.9	23.6	0.1	14.7	158.6	13.2
1996	19.1	34.1	32.3	0.0	0.5	51.4	3.3	0.1	0.4	0.0	0.1	21.3	162.6	13.6
1997	7.0	0.4	24.0	14.1	3.5	0.0	0.0	29.6	26.4	1.2	0.2	0.3	106.7	8.9
1998	16.2	32.1	12.7	0.0	0.0	2.8	0.0	2.0	-	-	-	-		
1999	-	-	-	-	-	-	1.0	28.5	4.1	82.8	0.0	10.8		
MEAN	10.7	21.1	15.8	6.4	5.7	4.8	2.4	9.4	10.9	15.7	13.8	13.9	130.5	10.9
Cv	3.6	3.6	3.0	10.2	9.4	10.8	8.4	3.1	2.8	5.3	5.8	6.0	1.9	

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TOTAL PRECIPITATION MENSUELLES

Station: **RACHIDIA** Period: 1980-1999
 Latitude: 31°56'N Longitude: 004°24'W Altitude: 1037.2 m

(unit: mm/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	10.2	29.1	28.3	30.6	1.4	0.0	0.0	6.2	3.8	0.8	19.9	28.5	158.8	13.2
1981	2.3	11.0	0.0	3.8	0.0	4.6	0.9	2.9	9.3	0.0	6.5	0.0	41.3	3.4
1982	32.3	6.5	1.8	34.4	23.8	13.3	0.0	1.3	0.0	1.1	2.0	0.0	116.5	9.7
1983	0.2	0.2	0.2	4.3	28.0	0.0	0.0	3.6	3.9	2.9	0.1	0.0	43.4	3.6
1984	0.0	1.6	0.7	0.0	17.9	1.0	0.0	1.1	7.8	0.3	17.1	0.6	48.1	4.0
1985	13.7	25.1	0.2	5.5	9.8	0.0	0.0	0.0	10.7	3.6	16.7	31.2	116.5	9.7
1986	3.0	3.3	1.4	0.0	8.3	3.0	0.0	1.2	6.1	31.4	0.6	0.0	58.3	4.9
1987	1.5	0.0	17.1	0.0	8.7	22.3	1.3	0.3	6.5	0.4	36.0	19.3	113.4	9.5
1988	9.6	34.0	4.9	0.4	11.6	1.5	0.0	0.0	8.8	24.2	37.5	0.0	132.5	11.0
1989	3.7	30.7	3.0	8.1	0.9	17.9	2.8	7.9	8.6	50.8	30.7	47.5	212.6	17.7
1990	4.9	0.1	27.1	14.6	28.3	1.2	0.4	5.7	10.8	0.7	1.3	28.3	123.4	10.3
1991	1.5	23.8	13.5	18.5	0.8	12.2	2.0	1.3	9.2	10.9	0.0	36.3	130.0	10.8
1992	0.0	15.6	2.3	0.8	19.9	1.8	3.5	1.4	0.7	0.0	20.1	18.5	84.6	7.1
1993	6.6	28.1	7.9	0.8	0.4	0.0	0.3	1.6	0.4	14.1	89.2	6.2	155.6	13.0
1994	31.4	1.5	1.0	12.8	0.2	0.0	0.7	1.8	2.7	71.0	6.5	0.2	129.8	10.8
1995	0.0	0.0	21.3	26.2	1.8	0.2	4.3	1.5	2.8	71.2	0.1	6.0	135.4	11.3
1996	19.2	56.8	37.1	4.1	2.0	42.2	30.7	0.4	1.4	2.8	0.0	26.5	223.2	18.6
1997	29.6	0.0	6.0	27.1	1.1	0.0	1.0	7.3	34.6	5.6	0.0	0.2	112.5	9.4
1998	13.0	48.9	2.7	1.0	1.6	16.3	0.0	5.2	5.9	1.0	2.3	2.3	100.2	8.4
1999	16.4	4.6	4.7	-	0.5	0.7	0.0	6.4	3.4	58.6	4.4	0.4	100.1	9.1
MEAN	10.0	16.0	9.1	10.2	8.4	6.9	2.4	2.9	6.9	17.6	14.6	12.6	117.3	9.8
Cv	3.2	3.5	4.1	3.4	3.4	6.1	12.8	2.8	5.0	4.1	6.1	3.8	1.6	

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

PAN EVAPORATION MENSUELLE

Station: **FES-SAIS**

Period: 1980-1999

Latitude: 33°58'N

Longitude: 004°59'W

Altitude: 571.3 m

(unit: mm/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	85.4	67.6	87.1	118.6	149.8	194.3	313.9	249.8	188.4	141.0	83.1	70.9	1750	145.8
1981	-	80.6	149.1	120.1	214.2	287.2	368.4	283.8	220.0	187.6	134.5	84.1	2130	193.6
1982	77.7	75.2	134.5	129.7	165.3	243.9	280.7	293.2	215.9	150.7	105.8	54.6	1927	160.6
1983	84.6	72.0	139.7	145.4	185.7	316.8	279.6	243.9	276.0	220.0	86.1	93.1	2143	178.6
1984	49.3	81.1	122.3	149.3	128.0	205.5	386.7	340.5	244.8	194.2	103.6	78.1	2083	173.6
1985	93.3	93.3	124.2	190.9	183.1	251.2	374.9	385.8	275.3	227.4	126.1	73.1	2399	199.9
1986	69.3	86.3	110.2	111.2	245.7	237.5	363.7	322.5	243.4	144.7	84.9	54.6	2074	172.8
1987	93.9	76.2	131.1	179.8	220.5	329.1	345.1	295.6	251.6	116.9	85.3	64.2	2189	182.4
1988	66.2	76.4	129.1	159.0	164.6	218.4	352.6	353.5	278.9	140.7	104.3	80.0	2124	177.0
1989	79.4	104.2	134.6	119.3	186.0	249.2	375.9	316.0	227.0	135.2	99.4	78.7	2105	175.4
1990	68.7	78.9	129.9	128.3	191.4	248.6	405.7	389.9	225.9	141.0	103.0	75.7	2187	182.3
1991	64.6	80.0	103.8	132.7	202.1	301.5	413.8	335.9	219.7	117.1	79.8	63.6	2115	176.2
1992	54.5	105.6	161.8	192.5	216.6	188.7	401.1	358.9	237.1	125.5	107.2	76.4	2226	185.5
1993	52.2	103.1	119.3	168.0	193.5	275.3	415.2	324.4	202.0	242.9	71.4	65.1	2232	186.0
1994	54.3	82.7	113.7	190.8	190.7	298.9	377.8	283.8	310.5	127.8	101.6	84.6	2217	184.8
1995	77.9	113.1	151.8	189.6	282.3	239.3	365.4	308.5	204.8	175.0	-	69.0	2177	197.9
1996	76.5	58.4	87.7	116.9	171.2	267.4	392.5	301.1	155.0	152.5	108.1	83.7	1971	164.3
1997	71.7	91.2	192.3	154.7	156.8	221.4	256.8	252.2	203.1	122.3	83.3	68.2	1874	156.2
1998	52.7	83.5	120.4	140.5	140.8	262.9	303.5	331.4	185.8	167.6	109.4	89.9	1988	165.7
1999	74.9	69.9	-	-	-	-	-	-	-	-	-	-		
MEAN	70.9	84.0	128.6	149.3	188.9	254.6	356.5	314.2	229.7	159.5	98.7	74.1	2101	176.8
Cv	0.6	0.7	0.8	0.5	0.8	0.6	0.4	0.5	0.7	0.8	0.6	0.5	0.3	

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

PAN EVAPORATION MENSUELLE

Station: **MARRAKECH**

Period: 1980-1999

Latitude: 31°37'N

Longitude: 004°02'W

Altitude: 463.5 m

(unit: mm/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	140.4	129.7	145.9	178.9	233.1	289.3	453.4	428.7	257.2	224.7	117.8	131.9	2731	227.6
1981	169.1	143.4	243.8	204.0	273.6	372.9	418.3	342.7	304.1	225.8	249.0	150.1	3097	258.1
1982	132.4	151.7	209.7	154.5	201.5	285.3	339.5	309.2	237.4	214.8	159.8	122.7	2519	209.9
1983	193.1	125.9	301.3	222.3	238.4	403.0	356.3	288.2	318.9	326.9	155.8	177.1	3107	258.9
1984	140.5	169.4	158.2	245.9	181.9	302.7	451.1	414.9	345.8	303.9	140.5	171.1	3026	252.2
1985	108.2	137.1	175.2	193.6	197.1	266.6	406.6	430.5	338.1	250.3	154.3	174.7	2832	236.0
1986	136.3	142.1	182.1	211.1	330.3	260.9	385.3	354.2	341.9	263.9	240.3	208.2	2915	265.0
1987	142.7	114.3	212.7	314.5	310.6	368.7	400.0	356.7	378.9	246.1	213.0	123.8	3182	265.2
1988	85.2	104.7	174.7	190.1	219.1	247.7	399.4	566.6	431.0	243.6	136.2	106.2	2905	242.0
1989	117.3	141.8	190.1	134.5	234.4	256.8	389.4	366.6	275.0	272.1	172.8	163.6	2714	226.2
1990	110.0	185.6	215.8	205.3	221.5	273.5	385.3	352.6	327.3	255.9	182.7	134.5	2850	237.5
1991	152.6	106.7	144.1	184.3	238.7	297.3	415.9	472.9	328.6	195.9	176.0	149.3	2862	238.5
1992	163.1	148.7	201.2	247.9	303.7	239.4	378.8	420.1	371.6	199.0	186.5	149.0	3009	250.8
1993	-	152.9	194.6	211.0	224.5	263.4	343.8	314.6	247.3	216.2	148.7	142.3	2459	223.6
1994	103.5	120.6	132.6	212.3	310.3	365.3	580.5	519.8	362.3	237.1	172.4	134.9	3252	271.0
1995	134.9	153.6	185.9	165.7	313.9	322.2	380.8	395.9	279.8	270.6	224.7	128.7	2957	246.4
1996	110.3	110.6	135.3	188.9	271.4	265.0	-	302.1	241.7	228.9	160.5	107.7	2122	192.9
1997	116.9	155.7	239.2	178.7	206.1	266.0	326.5	345.8	267.9	257.4	121.3	103.2	2585	215.4
1998	89.0	127.9	201.9	169.2	202.6	295.4	350.4	345.7	226.8	232.8	201.0	112.2	2555	212.9
1999	82.2	77.6	110.9	189.3	246.0	282.7	381.0	386.9	319.9	269.0	194.7	126.1	2666	222.2
MEAN	127.8	134.6	187.8	200.1	247.9	296.2	397.0	385.7	310.1	246.7	175.4	140.9	2817	237.6
Cv	0.9	0.8	1.0	0.9	0.6	0.6	0.6	0.7	0.7	0.5	0.7	0.7	0.4	

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

PAN EVAPORATION MENSUELLE

Station: **OUARZAZATE**

Period: 1980-1999

Latitude: 30°56'N

Longitude: 006°54'W

Altitude: 1,136 m

(unit: mm/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN	
1980	106.7	128.2	162.8	306.5	375.2	447.1	513.8	385.4	267.1	224.2	143.6	113.8	3174	264.5	
1981	128.5	107.3	233.7	297.1	371.0	391.4	428.7	414.1	336.7	279.4	124.6	158.1	3271	272.6	
1982	158.4	181.5	234.2	213.9	266.4	349.4	427.2	303.1	288.6	229.8	139.5	-	2792	253.8	
1983	-	126.5	202.0	260.8	324.6	377.3	447.4	393.1	363.9	187.8	140.0	136.6	2960	269.1	
1984	118.9	181.5	222.7	291.2	288.8	338.2	397.1	428.9	289.0	251.2	160.5	120.9	3089	257.4	
1985	105.6	176.8	217.6	271.3	327.0	423.4	443.8	465.5	322.8	216.6	134.3	130.2	3235	269.6	
1986	133.9	179.2	224.0	296.8	328.0	381.5	452.1	376.8	283.6	195.1	156.7	107.8	3116	259.6	
1987	166.7	179.8	228.1	268.3	309.0	346.8	408.1	397.7	255.5	188.4	141.3	96.1	2986	248.8	
1988	108.3	138.8	188.6	263.9	304.9	402.1	398.1	397.3	226.9	191.0	90.2	78.8	2789	232.4	
1989	79.5	124.8	225.5	261.3	333.5	374.6	452.2	354.9	279.6	196.5	143.5	90.3	2916	243.0	
1990	92.1	142.4	216.2	278.0	356.7	435.8	394.9	367.3	253.2	229.9	143.9	101.8	3012	251.0	
1991	135.6	166.6	227.2	243.7	357.9	322.1	382.6	351.0	345.2	200.3	145.1	58.3	2936	244.6	
1992	113.1	116.8	219.6	267.0	319.8	384.9	459.1	377.7	279.0	223.9	130.0	92.6	2984	248.6	
1993	75.8	114.2	212.5	285.4	325.3	407.6	421.6	377.4	247.1	215.9	105.7	114.9	2903	242.0	
1994	109.8	168.2	207.7	275.0	377.3	436.7	424.7	427.1	295.1	189.7	125.2	108.2	3145	262.1	
1995	148.6	149.5	199.4	204.1	361.7	357.2	456.4	411.4	268.5	187.4	147.2	-	2891	262.9	
1996	129.8	141.2	151.9	265.5	295.1	293.0	410.3	413.4	287.5	239.6	130.0	110.6	2868	239.0	
1997	106.1	145.8	220.7	235.4	359.7	384.6	482.9	337.6	256.7	221.4	212.0	148.2	3111	259.3	
1998	119.9	110.8	209.6	327.1	355.9	382.1	480.0	443.4	-	-	-	-			
1999	-	-	-	-	-	-	-	-	-	-	-	-			
MEAN	118.7	146.3	210.7	269.1	333.6	380.8	435.8	390.7	285.9	214.9	139.6	110.5	3010	254.5	
Cv	0.8	0.5	0.4	0.5	0.3	0.4	0.3	0.4	0.5	0.4	0.9	0.9	0.2		

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

PAN EVAPORATION MENSUELLE

Station: **RACHIDIA**

Period: 1980-1999

Latitude: 31°56'N

Longitude: 004°24'W

Altitude: 1037.2 m

(unit: mm/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN	
1980	97.3	162.8	172.0	296.8	265.6	380.5	433.4	343.7	307.1	268.2	186.4	125.2	3039	253.3	
1981	138.6	103.1	222.4	205.8	363.8	325.7	513.8	353.2	238.9	191.0	139.5	109.3	2905	242.1	
1982	88.5	92.9	174.8	179.9	253.7	311.6	444.8	326.5	301.8	245.4	145.2	-	2565	233.2	
1983	-	88.0	204.5	245.8	296.9	384.3	436.9	396.2	243.5	156.6	108.4	65.2	2626	238.8	
1984	-	97.5	165.8	316.1	312.1	496.5	558.2	539.2	339.4	223.4	137.5	102.2	3288	298.9	
1985	67.2	168.4	242.9	318.6	318.5	593.3	564.7	491.2	392.1	316.2	196.6	103.5	3773	314.4	
1986	99.2	192.7	238.1	313.7	355.7	457.6	621.6	517.2	355.2	218.8	177.8	-	3548	322.5	
1987	159.8	183.7	246.2	358.0	408.6	470.1	577.9	543.0	344.9	285.1	114.2	93.4	3785	315.4	
1988	141.4	136.5	237.3	311.6	364.3	431.1	580.6	565.6	361.6	217.9	117.4	-	3465	315.0	
1989	-	106.9	270.9	300.4	435.8	406.0	515.6	502.1	398.5	248.3	134.9	92.6	3412	310.2	
1990	-	173.4	252.4	321.0	421.5	570.8	702.7	694.3	632.6	432.2	213.3	83.1	4497	408.8	
1991	-	125.2	333.8	352.6	357.2	507.2	711.2	675.5	437.3	243.6	133.5	-			
1992	-	92.5	204.2	316.6	391.2	480.5	516.3	453.5	376.1	279.1	156.3	111.5	3378	307.1	
1993	-	98.8	189.6	299.0	417.6	373.5	-	583.8	434.7	260.6	143.8	125.2			
1994	102.6	174.0	278.6	311.6	444.1	469.1	558.2	550.7	414.9	208.7	136.0	-	3649	331.7	
1995	-	168.4	182.0	253.5	399.3	516.6	543.8	498.1	364.3	157.6	155.7	109.2	3349	304.4	
1996	134.4	125.2	185.6	352.4	347.9	349.0	454.2	490.1	330.6	267.2	196.2	99.0	3332	277.7	
1997	101.5	165.0	259.9	230.7	364.8	462.0	534.2	417.0	293.7	240.7	179.0	118.3	3367	280.6	
1998	125.4	112.6	219.8	256.3	326.5	438.6	539.6	502.5	350.0	233.4	191.5	88.6	3385	282.1	
1999	-	-	-	-	-	-	-	-	-	-	-	-			
MEAN	114.2	135.1	225.3	291.6	360.3	443.4	544.9	497.0	364.1	247.1	156.0	101.9	3374	296.2	
Cv	0.8	0.8	0.7	0.6	0.5	0.6	0.5	0.7	1.1	1.1	0.7	0.6	0.6		

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

TOTAL DE L'ENSOLEILLEMENT MENSUEL

Station: **FES-SAIS** Period: 1980-1999
 Latitude: 33°58'N Longitude: 004°59'W Altitude: 571.3 m
 (unit: hours/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	199.1	197.9	193.5	269.5	262.7	311.5	398.4	340.3	243.2	230.7	208.7	224.7	3080	256.7
1981	254.6	183.3	235.2	173.1	318.7	311.9	358.2	311.3	286.2	248.8	238.4	194.1	3114	259.5
1982	212.1	166.9	279.5	203.9	237.2	313.2	282.4	304.6	271.9	244.4	194.6	206.6	2917	243.1
1983	245.5	165	235.8	200	265.2	291.6	343.8	299.5	284.4	256.7	188.5	223.8	3000	250.0
1984	210.4	225.3	231.8	219.3	181	287.7	332	324.8	294.1	298.1	190.9	230	3025	252.1
1985	170.1	185.8	243.5	262.3	254.1	312.9	321.4	336.6	249.3	284.4	186.1	200.1	3007	250.6
1986	186.9	143.8	245	190.5	295.5	289.2	340.1	317.7	288.1	266	228.3	206.5	2998	249.8
1987	181.3	175.9	266.1	261.1	296.1	355.7	340.3	299.9	248.4	208.3	161.3	205.5	3000	250.0
1988	161.3	187.9	268.2	254.5	249.7	275.9	347	351	277.6	202.9	185.6	259.2	3021	251.7
1989	246.3	165.1	258.6	214.8	285.6	310.2	307.9	277.2	251.7	226.2	173.8	160.8	2878	239.9
1990	230.6	256.3	239	228	286.1	299.8	323.7	347.9	202.5	251.1	213.4	176.6	3055	254.6
1991	254.7	168.9	169.2	259.7	284.8	315.7	323.7	314.8	264.1	-	216	194.1	2766	251.4
1992	219.5	197	223.6	262.6	277.2	255.2	355.9	303	259.6	211.9	264	210.3	3040	253.3
1993	245.5	226	209.8	238.7	296.3	341.1	362	312.3	276.5	211.5	147.6	224.5	3092	257.7
1994	207.8	207.8	264	300.4	259.9	343.2	305.2	320.7	311.2	243.5	243	257.5	3264	272.0
1995	250.2	228.2	246.4	248.1	318.7	287.9	321.3	338.2	279.5	252.9	210.5	163.4	3145	262.1
1996	130.2	174.4	192.6	254	278.1	319.6	354	343.8	216.5	296.7	241.3	148.2	2949	245.8
1997	186.5	264.7	317.2	250.2	257	314.5	333.9	305.2	262.6	265.1	185.1	192.3	3134	261.2
1998	176.7	209.7	272.4	246.9	235.2	318.1	340.3	300.9	262	273.5	262.1	225.5	3123	260.3
1999	219.3	212.4	220.6	298.6	-	331.7	355.8	313.1	259.2	208.8	231.7	213.1	2864	260.4
MEAN	209.4	197.1	240.6	241.8	270.5	309.3	337.4	318.1	264.4	246.4	208.5	205.8	3024	254.1
Cv	0.59	0.61	0.62	0.53	0.51	0.32	0.34	0.23	0.41	0.39	0.56	0.54	0.16	

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TOTAL DE L'ENSOLEILLEMENT MENSUEL

Station: **MARRAKECH** Period: 1980-1999
 Latitude: 31°37'N Longitude: 004°02'W Altitude: 463.5 m
 (unit: hours/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	221.6	220.3	220.9	257.9	343.4	323.7	346.8	280.2	205.4	265.8	214.5	257.6	3158	263.2
1981	238.0	181.2	268.2	226.5	341.2	315.3	347.1	309.4	270.4	218.8	212.0	249.6	3178	264.8
1982	235.5	202.3	275.7	218.3	234.8	326.0	298.5	318.7	267.2	269.1	217.2	258.6	3122	260.2
1983	224.4	190.2	192.4	254.0	281.2	317.4	355.9	303.7	269.8	210.6	207.2	248.1	3055	254.6
1984	262.5	265.1	261.1	289.0	294.4	328.6	312.3	329.5	257.2	290.5	217.5	236.1	3344	278.7
1985	183.5	199.0	264.1	251.8	287.2	336.4	320.6	292.0	263.9	271.8	223.5	232.8	3127	260.6
1986	252.8	212.5	265.6	286.4	281.5	260.3	314.6	317.5	272.7	256.2	265.7	239.1	3225	268.7
1987	198.3	231.1	272.4	258.1	299.9	343.0	328.6	312.0	232.1	226.6	212.3	214.9	3129	260.8
1988	194.7	184.9	273.8	287.8	310.4	290.0	337.3	319.2	262.3	230.6	212.9	273.0	3177	264.7
1989	244.6	163.9	248.7	265.3	321.8	321.1	313.7	263.4	258.6	214.7	210.0	210.4	3036	253.0
1990	233.9	268.4	225.2	294.9	284.5	328.7	310.4	303.9	217.5	254.5	242.5	218.1	3183	265.2
1991	260.9	189.8	230.0	272.2	301.4	338.6	310.3	328.6	264.7	258.2	251.1	207.9	3214	267.8
1992	251.2	199.7	260.1	268.1	286.2	304.8	341.8	290.8	278.1	222.6	278.0	215.8	3197	266.4
1993	236.6	230.4	210.4	285.5	317.9	353.8	333.8	324.1	273.9	246.1	194.0	260.0	3267	272.2
1994	206.2	223.9	234.9	292.1	277.9	318.3	299.7	321.0	296.7	259.4	267.7	251.7	3250	270.8
1995	296.5	246.5	253.6	221.7	305.0	307.8	318.8	316.4	283.5	248.0	221.7	200.2	3220	268.3
1996	187.7	199.3	212.1	293.6	325.5	294.2	364.7	344.9	263.6	298.6	243.7	217.7	3246	270.5
1997	220.6	255.4	284.4	242.8	304.6	344.0	351.4	317.3	238.0	280.2	235.8	218.2	3293	274.4
1998	204.0	186.5	251.8	273.3	293.4	327.8	352.1	325.2	263.2	291.2	254.2	227.7	3250	270.9
1999	248.8	232.4	244.0	311.9	312.6	334.9	344.0	300.6	267.7	203.1	241.6	239.6	3281	273.4
MEAN	230.1	214.1	247.5	267.6	300.2	320.7	330.1	310.9	260.3	250.8	231.2	233.9	3197	266.5
Cv	0.49	0.49	0.37	0.35	0.36	0.29	0.20	0.26	0.35	0.38	0.36	0.31	0.10	

(Remarks) -: N.A. (Data not available) Cv: (Max-Min)/Mean

TOTAL DE L'ENSOLEILLEMENT MENSUEL

Station: **OUARZAZATE**

Period: 1980-1999

Latitude: 30°56'N

Longitude: 006°54'W

Altitude: 1136

1,136 m (unit: hours/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	271.4	271.9	283.1	327.1	382.9	352.8	347.7	282.8	239.9	305.4	259.4	266.6	3591	299.3
1981	275.5	218.7	313.1	317.9	377	331.1	339.6	327.5	299.8	227.2	223.4	288.7	3540	295.0
1982	283.6	253.1	281.9	310	291.7	348.3	258	284.3	292.8	298.7	261.7	279.9	3444	287.0
1983	221.8	242.2	237	306.5	313.6	271.8	349.6	306	271.9	235.3	235.1	287.3	3278	273.2
1984	287.7	283.9	307.5	323.4	385.4	300.3	299.7	333.1	245	312.8	252	251.6	3582	298.5
1985	256.5	225.8	303.8	298.1	370.5	358.7	304.5	268.5	234.7	265.1	249.8	253.8	3390	282.5
1986	293.8	283.1	317.9	338.9	274.8	338.6	303.3	267.8	272.4	295.8	294	256.5	3537	294.7
1987	247.8	279.1	313.6	266.2	283.5	320.1	359.3	288.1	238.1	289.9	227.1	247.7	3361	280.0
1988	254	221.9	312.3	323.4	347.4	371.3	336.4	290.1	240.4	266.3	217.6	294.1	3475	289.6
1989	260.1	197.7	310.6	334.8	367.9	340.4	312.3	260.5	266	220.5	233.4	204.7	3309	275.7
1990	231.6	291.6	263.6	329	349.9	337.7	273.3	269.2	218.1	263.6	281.1	248.8	3358	279.8
1991	284.3	270.7	295.2	331.9	340.6	305.7	305.1	275.9	276.2	287.2	268.7	179.4	3421	285.1
1992	246.6	199.4	287	297.4	306.6	375.4	338.5	283.5	271.4	279.2	291.4	205.2	3382	281.8
1993	237.6	223.2	253.9	319.5	357.3	354.3	323	308.3	297.7	278.3	244	279.1	3476	289.7
1994	251.1	268.3	259.3	335.3	337.1	331.5	301.4	284.7	293.5	279.7	291.8	277.2	3511	292.6
1995	307	284.7	288.5	269	351	376.5	358.6	307.4	292.9	257.4	263.1	247.7	3604	300.3
1996	240.6	267.8	278.5	334.8	343.8	292.7	354.9	348.4	299.4	322.8	278.8	271.9	3634	302.9
1997	256.7	266.8	288.9	297.1	361.1	391.1	381.4	308.7	252.1	303.7	279.5	271.2	3658	304.9
1998	237.7	211.3	285.2	346.1	380.6	354	321.5	274.4	-	-	-	-		
1999	-	-	-	-	-	-	323.2	307.1	299.1	239.6	285.5	261.2		
MEAN	260.3	250.6	288.5	316.1	343.3	339.6	324.6	293.8	268.5	275.2	259.9	256.5	3475	289.6
Cv	0.33	0.37	0.28	0.25	0.32	0.35	0.38	0.30	0.30	0.37	0.29	0.45	0.11	

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

TOTAL DE L'ENSOLEILLEMENT MENSUEL

Station: **RACHIDIA**

Period: 1980-1999

Latitude: 31°56'N

Longitude: 004°24'W

Altitude: 1037.2 m

(unit: hours/mon)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	TOTAL	MEAN
1980	252.2	236.3	266.6	279.1	345.3	334.2	275.3	282.1	232.5	283.2	220.6	229.6	3237	269.8
1981	266.7	209.2	283.9	271.4	340.6	296.7	309.1	292.2	271	253.3	243.5	266.3	3304	275.3
1982	257.8	238.5	255.2	259.9	253.1	300.8	226.7	239.5	266.9	261.9	249.3	248.8	3058	254.9
1983	-	-	-	-	-	-	-	-	-	-	-	-		
1984	249.1	258.2	233.8	280.8	318.7	238.7	317.8	300.6	218.3	300.7	245.9	224.1	3187	265.6
1985	226.2	200.9	284.3	265	340.6	325.8	278.5	283.5	244.5	276	254	245.7	3225	268.8
1986	289.9	265	299.9	327.2	292.6	335.4	328.1	276.6	280	276.5	274	237.1	3482	290.2
1987	238	266.6	297	245	276.6	307.7	342.4	263.1	247	261.1	235.7	239.4	3220	268.3
1988	247.5	204.7	306.8	326.6	328.7	330.7	332.7	296.8	256.3	232.4	180.4	289.8	3333	277.8
1989	232.6	165.9	300.9	315.6	330	282.9	299.2	266.6	262.4	221.2	225.6	202.8	3106	258.8
1990	220.1	288.8	240.6	297.7	316.3	306.7	287	280.2	182.4	267.7	265.5	221	3174	264.5
1991	285.2	251.6	277.9	300.5	288.1	303.5	268.5	269.8	252.5	269.9	267.9	181.6	3217	268.1
1992	234.1	209.2	263.2	295.2	298.2	330.4	314.3	294.7	281.7	285	280.8	209.4	3296	274.7
1993	218.2	233.5	254.2	306.8	334.1	346.1	338.9	319.2	287.1	254.5	200.4	276	3369	280.8
1994	231.8	262	264.2	330	330.5	292.9	316.9	306.3	283.9	244.3	272.1	281.1	3416	284.7
1995	295.9	263.6	271.4	265.4	331.7	350.7	360.6	289.1	293.8	235.5	272.6	223.6	3454	287.8
1996	206	257.7	275.5	313.4	308.5	244.4	329	335.1	314.8	311.7	284.9	255.5	3437	286.4
1997	234.9	272	295.7	260	329.9	360	294.8	278.9	259.7	305.8	279.5	252.7	3424	285.3
1998	236.7	199.4	279.9	327.4	326.8	326.6	324.8	280.2	293.5	318.5	280.2	260.2	3454	287.9
1999	267.6	267.6	279.2	-	321.03	313.3	320.9	271.5	288.4	239.1	277.5	265.3	3111	282.9
MEAN	246.9	239.5	275.3	292.6	316.4	312.0	308.7	285.6	264.0	268.3	253.2	242.6	3290	275.4
Cv	0.36	0.51	0.27	0.29	0.29	0.39	0.43	0.33	0.50	0.36	0.41	0.45	0.13	

(Remarks)

-: N.A. (Data not available)

Cv: (Max-Min)/Mean

VITESSE MAXIMALE MENSUELLE DU VENT

Station: **FES-SAIS**

Period: 1980-1999

Latitude: 33°58'N

Longitude: 004°59'W

Altitude: 571.3 m

(unit: m/sec)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	MAX
1980	24	11	17	16	15	16	16	23	26	23	22	17	19	26
1981	23	16	21	19	22	22	24	16	16	21	11	29	20	29
1982	26	26	27	19	29	19	17	35	13	19	24	21	23	35
1983	13	28	14	16	12	12	10	21	22	18	18	35	18	35
1984	12	16	16	24	18	13	31	16	26	17	22	16	19	31
1985	31	19	19	25	19	14	19	19	23	15	27	21	21	31
1986	27	20	24	22	21	22	30	19	23	22	17	18	22	30
1987	29	28	11	26	15	20	21	22	19	19	19	20	21	29
1988	18	16	18	16	14	17	20	13	18	21	18	21	18	21
1989	23	26	17	22	13	28	34	22	19	25	24	30	24	34
1990	21	10	24	22	23	13	24	20	31	16	25	21	21	31
1991	12	25	28	22	19	15	23	27	22	19	17	10	20	28
1992	15	20	23	21	24	17	17	31	29	20	14	20	21	31
1993	15	21	22	20	17	14	20	22	16	20	35	20	20	35
1994	32	25	25	19	22	20	24	23	16	19	16	16	21	32
1995	16	-	20	21	17	29	24	14	22	21	19	20	20	29
1996	36	19	18	17	18	17	23	16	16	19	26	23	21	36
1997	20	14	18	20	21	15	13	19	17	14	26	25	19	26
1998	22	22	16	19	18	17	16	27	15	14	20	31	20	31
1999	22	16	16	18	-	13	19	23	23	29	27	23	21	29
MEAN	22	20	20	20	19	18	21	21	21	20	21	22	20	22
MAX	36	28	28	26	29	29	34	35	31	29	35	35	36	

(Remarks) -: N.A. (Data not available)

VITESSE MAXIMALE MENSUELLE DU VENT

Station: **MARRAKECH**

Period: 1980-1999

Latitude: 31°37'N

Longitude: 004°02'W

Altitude: 463.5 m

(unit: m/sec)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	MAX
1980	15	18	17	10	13	17	10	12	20	26	15	10	15	26
1981	13	12	16	23	23	22	25	17	26	25	15	28	20	28
1982	16	20	27	20	25	37	25	28	14	15	21	14	22	37
1983	13	14	14	17	13	15	12	12	17	13	13	10	14	17
1984	9	10	12	11	17	19	33	19	15	12	22	19	17	33
1985	27	20	13	19	14	13	18	18	13	18	18	20	18	27
1986	14	17	18	30	21	16	19	23	15	13	20	11	18	30
1987	27	22	17	20	18	15	16	18	19	15	20	16	19	27
1988	15	14	17	14	19	32	24	22	20	17	23	8	19	32
1989	13	15	17	22	14	16	26	25	19	22	21	25	20	26
1990	16	12	18	22	20	15	20	25	21	13	14	16	18	25
1991	10	18	23	13	18	18	26	25	18	20	18	29	20	29
1992	8	16	19	23	22	15	22	23	16	22	14	20	18	23
1993	15	15	19	17	19	15	15	17	13	21	21	12	17	21
1994	27	22	22	13	18	23	25	17	13	18	15	18	19	27
1995	9	17	17	16	28	17	20	16	15	18	15	16	17	28
1996	20	12	13	14	18	18	13	13	13	13	19	19	15	20
1997	22	10	15	19	14	15	14	16	23	14	27	13	17	27
1998	17	19	21	14	17	20	12	18	14	14	12	15	16	21
1999	14	15	15	14	14	13	22	23	11	20	8	10	15	23
MEAN	16	16	18	18	18	19	20	19	17	17	18	16	18	20
MAX	27	22	27	30	28	37	33	28	26	26	27	29	37	

(Remarks) -: N.A. (Data not available)

VITESSE MAXIMALE MENSUELLE DU VENT

Station: **OUARZAZATE**

Period: 1980-1999

Latitude: 30°56'N

Longitude: 006°54'W

Altitude: 1,136 m

(unit: m/sec)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	MAX
1980	19	15	17	21	19	25	16	16	15	14	13	24	18	25
1981	19	12	23	31	35	23	26	32	21	23	15	27	24	35
1982	25	29	24	26	41	35	33	36	23	30	25	29	30	41
1983	12	25	31	28	32	33	22	28	31	28	20	34	27	34
1984	20	35	31	45	52	38	38	27	30	15	27	16	31	52
1985	26	32	29	34	29	41	26	22	15	17	16	26	26	41
1986	34	29	22	19	20	18	22	17	21	16	23	19	22	34
1987	27	27	18	21	21	23	22	21	27	19	25	27	23	27
1988	26	27	19	21	25	25	23	22	17	16	15	14	21	27
1989	16	24	24	24	27	22	31	30	35	23	19	24	25	35
1990	17	12	21	27	19	27	26	25	29	26	20	26	23	29
1991	18	25	31	25	24	26	28	32	52	20	23	11	26	52
1992	13	22	30	29	27	26	27	30	25	22	23	21	25	30
1993	18	30	31	27	28	25	29	28	22	22	27	18	25	31
1994	27	33	29	26	30	32	33	26	23	18	13	17	26	33
1995	20	26	23	24	21	23	28	28	21	20	18	21	23	28
1996	25	21	22	29	27	22	21	23	23	21	20	21	23	29
1997	19	15	22	27	22	19	26	26	22	16	25	27	22	27
1998	21	17	21	22	23	24	23	27	-	-	-	-		
1999	-	-	-	-	-	-	-	-	-	-	-	-		
MEAN	21	24	25	27	27	27	26	26	25	20	20	22	24	27
MAX	34	35	31	45	52	41	38	36	52	30	27	34	52	

(Remarks) -: N.A. (Data not available)

VITESSE MAXIMALE MENSUELLE DU VENT

Station: **RACHIDIA**

Period: 1980-1999

Latitude: 31°56'N

Longitude: 004°24'W

Altitude: 1037.2 m

(unit: m/sec)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	MEAN	MAX
1980	13	16	16	16	20	19	20	23	19	16	15	18	18	23
1981	15	11	23	18	31	27	25	23	20	20	11	12	20	31
1982	11	15	24	25	27	28	22	23	19	17	16	17	20	28
1983	7	15	18	26	24	24	22	31	25	22	14	16	20	31
1984	15	20	16	24	26	24	17	22	27	18	21	6	20	27
1985	17	21	36	28	28	37	26	29	30	23	21	21	26	37
1986	27	50	28	29	32	38	38	30	25	23	24	17	30	50
1987	24	28	24	32	24	41	47	38	27	25	20	19	29	47
1988	23	25	16	23	29	24	23	29	20	22	15	8	21	29
1989	13	20	28	22	28	28	27	27	27	22	21	22	24	28
1990	17	10	15	23	19	29	29	29	31	25	13	18	22	31
1991	15	19	24	20	23	28	26	35	24	19	21	8	22	35
1992	10	15	21	26	35	27	23	35	29	19	19	9	22	35
1993	14	23	22	22	21	24	24	23	19	17	22	16	21	24
1994	19	26	27	23	25	22	24	23	29	20	14	8	22	29
1995	18	21	-	16	24	22	23	24	18	14	15	13	19	24
1996	24	14	20	23	26	21	23	-	19	20	-	7		
1997	9	5	17	18	24	17	25	25	20	14	18	28	18	28
1998	11	9	16	20	20	20	19	26	18	14	13	13	17	26
1999	16	17	22	-	28	20	31	27	28	15	-	-		
MEAN	16	19	22	23	26	26	26	27	24	19	17	15	22	27
MAX	27	50	36	32	35	41	47	38	31	25	24	28	50	

(Remarks) -: N.A. (Data not available)

DIRECTION DOMINANT DE VENT

Station: **FES-SAIS**

Period: 1980-1999

Latitude: 33°58'N

Longitude: 004°59'W

Altitude: 571.3 m

(unit: 36-wind rose)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC		
1980	20	2	18	24	22	20	36	6	22	28	28	24		
1981	24	24	24	28	28	16	4	16	20	20	8	24		
1982	24	28	28	28	24	24	22	24	4	28	28	28		
1983	6	28	6	28	28	2	32	32	6	28	28	24		
1984	4	28	28	28	28	32	28	22	22	32	30	28		
1985	18	32	28	18	30	36	18	14	14	12	24	28		
1986	28	28	28	28	22	22	22	28	22	18	30	28		
1987	28	28	32	28	6	24	16	22	24	22	28	20		
1988	24	28	24	22	24	20	22	30	6	12	24	20		
1989	20	18	28	28	8	22	12	22	24	24	8	24		
1990	28	28	18	28	28	34	18	20	24	24	24	24		
1991	8	22	22	36	16	8	18	22	14	28	16	8		
1992	22	24	20	22	20	32	22	30	36	34	2	30		
1993	24	30	22	16	28	8	22	14	28	32	28	30		
1994	20	26	12	26	24	20	32	20	6	16	26	8		
1995	28	-	8	20	24	16	20	12	30	16	24	14		
1996	32	28	28	30	30	24	20	8	28	24	24	24		
1997	26	10	10	28	22	32	10	22	22	32	28	24		
1998	24	24	32	28	28	22	20	20	30	6	18	36		
1999	26	24	28	28	-	32	20	22	28	28	28	28		

(Remarks) -: N.A. (Data not available)

DIRECTION DOMINANT DE VENT

Station: **MARRAKECH**

Period: 1980-1999

Latitude: 31°37'N

Longitude: 004°02'W

Altitude: 463.5 m

(unit: 36-wind rose)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC		
1980	28	22	32	2	30	32	30	14	20	22	24	8		
1981	8	28	24	24	24	12	16	24	36	16	14	24		
1982	28	28	24	18	2	30	24	18	28	4	28	8		
1983	28	32	28	20	16	20	2	2	18	22	28	24		
1984	4	12	28	28	28	30	28	22	30	2	32	8		
1985	24	20	28	24	24	32	14	14	34	16	22	18		
1986	28	28	28	28	24	6	30	36	28	2	34	8		
1987	22	28	36	28	28	4	24	30	30	32	24	24		
1988	28	30	28	28	28	8	20	18	2	36	30	16		
1989	30	12	24	30	30	20	28	8	36	18	30	30		
1990	32	8	36	30	28	34	18	2	22	32	32	28		
1991	32	30	36	8	24	22	14	8	24	36	16	24		
1992	12	36	2	32	32	6	22	22	28	24	12	28		
1993	34	36	34	36	28	6	28	14	36	18	28	36		
1994	28	28	16	12	22	22	36	18	-	28	28	22		
1995	28	30	20	30	6	28	-	24	32	22	32	28		
1996	30	32	30	30	28	18	2	4	32	36	28	32		
1997	28	20	30	12	24	32	2	18	18	20	30	32		
1998	22	24	16	2	28	30	34	28	36	32	22	30		
1999	36	32	6	30	24	4	34	14	32	32	10	10		

(Remarks) -: N.A. (Data not available)

DIRECTION DOMINANT DE VENT

Station: **OUARZAZATE**

Period: 1980-1999

Latitude: 30°56'N

Longitude: 006°54'W

Altitude: 1,136 m

(unit: 36-wind rose)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC		
1980	26	34	32	34	34	34	2	18	14	30	30	26		
1981	28	6	30	34	2	4	32	32	30	30	-	32		
1982	34	26	30	34	36	34	34	26	26	26	26	26		
1983	34	26	26	20	26	24	22	24	26	26	30	30		
1984	32	32	30	28	32	34	30	28	28	30	28	34		
1985	34	34	34	2	2	18	22	26	26	20	22	22		
1986	20	18	24	24	-	-	-	-	-	-	-	30		
1987	26	30	22	20	24	24	26	4	24	26	32	32		
1988	30	34	32	36	36	24	12	36	8	8	24	32		
1989	2	8	34	36	20	12	22	14	26	30	30	36		
1990	34	36	22	26	4	18	26	36	34	26	34	36		
1991	34	2	30	26	30	24	20	-	-	-	-	-		
1992	2	12	4	30	28	32	14	2	22	6	34	34		
1993	36	24	32	34	34	18	16	26	22	32	32	36		
1994	30	26	36	34	22	26	26	30	26	18	32	32		
1995	34	32	36	30	18	26	12	26	26	36	34	30		
1996	26	32	34	34	24	14	22	32	26	34	24	34		
1997	34	32	8	36	22	36	28	20	28	34	34	32		
1998	36	24	32	36	-	36	28	18	-	-	-	-		
1999	-	-	-	-	-	-	-	-	-	-	-	-		

(Remarks) -: N.A. (Data not available)

DIRECTION DOMINANT DE VENT

Station: **RACHIDIA**

Period: 1980-1999

Latitude: 31°56'N

Longitude: 004°24'W

Altitude: 1037.2 m

(unit: 36-wind rose)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC		
1980	16	20	28	36	36	36	28	22	24	20	28	36		
1981	34	28	28	24	22	2	34	36	36	34	36	32		
1982	34	28	20	34	28	22	24	22	34	34	28	30		
1983	6	28	28	34	20	22	32	20	30	32	28	32		
1984	12	22	24	22	32	28	20	28	32	32	28	14		
1985	14	28	6	6	8	32	28	34	32	22	16	36		
1986	36	16	32	36	8	4	2	36	30	8	32	34		
1987	28	16	36	20	34	36	24	18	30	20	28	24		
1988	36	32	32	36	2	24	20	22	32	8	24	24		
1989	2	8	28	22	20	28	32	22	22	28	30	28		
1990	32	6	22	36	2	24	28	30	28	28	2	28		
1991	2	32	36	20	2	36	36	28	22	20	34	8		
1992	24	12	36	2	36	32	36	30	8	4	36	36		
1993	2	34	30	2	20	28	8	34	24	2	8	36		
1994	36	32	36	36	24	24	32	28	28	22	4	24		
1995	2	36	-	30	8	34	36	30	18	2	22	34		
1996	32	30	26	2	24	36	20	-	30	36	-	30		
1997	14	-	-	20	2	24	36	22	28	2	32	32		
1998	22	32	6	6	4	2	24	28	18	28	22	-		
1999	26	2	24	-	24	28	24	22	28	28	-	-		

(Remarks) -: N.A. (Data not available)