

*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*

HY3 Pluie et Debit de riviere pour 4 Barrages

Pluie et Débit de Rivière pour 4 Barrages

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PRECIPITATION MENSUELLE

(Daily rainfall data are available in DGH database for the period monthly data are available.)

Station: FEDDANE TABA (unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1977	--	14.1	15.7	1.7	4.6	2.7	0.4	NM	NM	42.2	52.8	41.3	175.5
1978	88.3	77.1	10.8	57.1	0.2	0.3	NM	0.2	NM	22.0	14.2	156.2	426.4
1979	155.1	97.1	130.5	21.4	3.8	0.2	NM	NM	NM	126.6	13.2	20.0	567.9
1980	75.5	13.6	89.7	23.9	11.1	NM	NM	0.8	2.8	28.4	41.1	7.1	294.0
1981	14.3	4.3	21.1	21.1	--	6.4	NM	NM	0.2	0.8	0.2	53.9	122.3
1982	34.8	5.8	34.9	63.5	1.6	NM	NM	NM	NM	14.7	43.6	47.3	246.2
1983	0.3	88.5	54.4	27.6	2.3	NM	NM	NM	2.8	1.5	58.0	63.4	298.8
1984	--	7.0	98.4	43.8	105.8	NM	NM	NM	NM	2.5	81.3	26.7	365.5
1985	84.5	31.6	--	17.7	18.2	NM	NM	NM	0.3	--	61.2	54.4	267.9
1986	55.4	156.0	30.2	36.8	--	16.8	NM	NM	0.8	4.9	59.9	17.6	378.4
1987	86.4	81.0	12.5	13.6	6.4	0.5	1.4	0.1	3.3	31.9	83.3	110.0	430.4
1988	81.9	78.7	7.6	20.3	15.3	7.4	NM	NM	0.2	20.5	79.2	8.9	320.0
1989	27.7	30.1	55.4	76.4	1.6	NM	NM	NM	NM	8.0	80.3	138.8	418.3
1990	67.9	--	47.5	59.0	2.9	0.9	NM	NM	0.9	34.3	42.0	78.6	334.0
1991	45.9	125.8	93.0	19.7	0.4	NM	NM	NM	55.0	111.9	7.2	21.9	480.8
1992	--	33.4	31.2	89.5	3.6	24.3	NM	NM	1.1	23.6	9.7	14.0	230.4
1993	14.8	21.3	45.4	34.8	--	NM	NM	NM	4.5	25.9	109.6	14.6	270.9
1994	36.8	44.1	--	--	1.0	NM	NM	NM	1.0	7.2	17.4	--	107.5
1995	6.4	30.5	--	22.7	--	NM	NM	NM	1.0	5.1	45.7	59.7	171.1
1996	172.5	34.6	63.3	20.0	39.1	NM	NM	NM	5.1	18.0	29.0	253.9	635.5
1997	64.5	0.4	2.4	36.9	--	0.3	6.0	NM	6.2	21.1	60.6	32.8	231.2
1998	20.5	32.8	6.8	8.8	1.2	6.1	NM	NM	4.2	3.8	0.0	77.5	161.7
1999	67.6	61.4	7.7	8.0	14.0	NM	NM	NM	NM	--	39.7	11.3	209.7
2000	20.2	0.0	0.0	--	--	NM	NM	NM	62.3	--	--	--	82.5

(NOTE) MN: Lack of whole month record during June through September is assumed to be NM (no-measurement) due to dry season.

Station: CHEIKHREGUIG (unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1977	--	90.0	11.5	1.1	7.4	3.9	NM	NM	0.9	14.1	64.8	42.3	236.0
1978	108.5	93.2	27.4	93.6	58.9	0.8	NM	NM	NM	27.4	23.7	165.6	599.1
1979	103.4	152.1	59.3	40.8	0.3	1.7	NM	NM	0.1	209.6	23.5	45.8	636.6
1980	77.5	5.9	137.0	23.8	20.1	0.2	NM	NM	2.6	33.9	120.8	9.7	431.5
1981	15.8	16.6	25.4	44.6	13.3	3.5	NM	NM	0.1	1.6	0.3	82.4	203.6
1982	98.0	71.6	32.8	66.0	0.6	NM	0.3	NM	3.3	34.9	57.4	44.8	409.7
1983	1.6	130.6	50.7	23.5	4.0	NM	NM	NM	1.7	4.9	55.4	90.8	363.2
1984	17.7	15.8	82.0	31.6	155.4	1.7	NM	NM	NM	5.4	136.3	28.3	474.2
1985	104.5	27.2	3.3	33.2	9.4	1.3	NM	NM	2.3	--	62.4	64.6	308.2
1986	65.2	138.3	42.9	86.3	1.6	47.8	NM	NM	1.2	2.7	97.3	23.3	506.6
1987	103.2	62.5	9.4	17.6	4.3	2.0	NM	8.1	2.8	68.6	113.5	129.4	521.4
1988	86.8	65.9	20.6	21.2	24.0	0.7	NM	NM	0.1	26.2	69.9	9.4	324.8
1989	47.4	36.5	88.1	82.9	0.4	1.0	NM	2.1	--	--	--	--	258.4
1990	--	--	--	--	--	0.1	NM	0.9	39.2	86.1	110.2	236.5	
1991	14.6	117.5	139.8	5.0	0.8	0.8	0.3	NM	59.8	72.5	3.7	29.4	444.2
1992	--	36.4	68.1	108.4	4.7	12.5	NM	0.3	6.5	40.0	19.5	19.5	315.9
1993	14.2	22.8	44.3	68.2	18.4	NM	NM	NM	5.7	22.0	--	22.8	357.7
1994	52.2	111.6	11.5	4.8	17.8	NM	NM	NM	0.3	7.2	33.0	0.3	238.7
1995	2.9	33.3	16.2	18.0	0.2	13.2	NM	0.6	3.9	6.1	80.6	140.3	315.3
1996	330.8	70.8	98.4	16.6	84.3	0.2	NM	0.2	10.9	26.5	34.0	395.9	1068.6
1997	102.1	1.3	2.9	88.1	--	18.3	6.8	NM	6.4	17.2	133.6	96.0	472.7
1998	15.1	52.5	10.8	23.6	10.6	11.8	NM	1.1	10.6	17.1	0.4	84.0	237.6
1999	75.4	63.8	24.6	5.8	8.7	NM	NM	NM	NM	69.0	82.8	30.1	360.2
2000	46.7	2.4	99.3	--	--	--	--	--	--	--	--	--	148.4

(NOTE) MN: Lack of whole month record during June through September is assumed to be NM (no-measurement) due to dry season.

PRECIPITATION MENSUELLE

(Daily rainfall data are available in DGH database for the period monthly data are available.)

Station: SKHIRAT

(unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1942	--	--	--	39.9	3.3	2.4	NM	NM	3.0	104.3	105.2	125.0	383.1
1943	16.2	--	37.4	26.6	52.8	NM	NM	NM	2.2	52.6	23.9	130.6	342.3
1944	10.6	108.8	18.1	13.2	17.4	23.2	NM	9.5	27.9	19.3	19.9	73.0	340.9
1945	99.2	--	2.7	--	2.4	NM	NM	NM	0.0	53.4	58.7	120.2	336.6
1946	84.1	17.6	106.6	53.6	41.3	10.7	NM	NM	3.5	11.6	68.1	70.9	468.0
1947	96.7	122.0	60.8	1.5	50.6	NM	NM	NM	6.9	29.3	98.4	30.3	496.5
1948	114.0	64.1	7.9	110.7	33.0	NM	NM	NM	NM	8.1	--	94.5	432.3
1949	178.5	20.6	14.7	149.3	9.6	NM	NM	NM	7.4	1.4	82.1	136.2	599.8
1950	54.1	14.6	18.8	14.9	21.3	NM	NM	NM	2.2	25.7	15.0	182.9	349.5
1951	97.7	168.6	51.8	20.8	46.0	2.1	NM	NM	10.1	24.0	141.0	56.7	618.8
1952	102.9	7.0	59.8	81.9	23.1	1.3	NM	NM	16.0	28.9	70.4	138.2	529.5
1953	107.7	39.8	29.9	22.9	--	22.2	NM	NM	83.5	57.4	5.0	80.8	449.2
1954	105.1	53.2	152.7	40.1	--	--	--	--	--	--	--	--	351.1
1955	--	--	--	--	--	--	--	--	--	--	--	--	--
1956	--	--	--	--	--	--	--	--	--	--	--	--	--
1957	--	--	--	--	--	--	--	--	--	--	--	--	--
1958	35.0	30.0	22.0	14.0	18.0	NM	NM	NM	0.0	2.5	46.5	187.0	355.0
1959	28.0	56.0	55.5	19.0	22.0	NM	NM	NM	NM	13.0	49.0	83.5	326.0
1960	132.5	51.0	91.5	0.5	--	11.0	NM	NM	NM	8.0	46.0	34.5	537.0
1961	39.0	10.0	--	8.0	22.5	NM	NM	NM	NM	7.0	172.0	52.5	311.0
1962	50.5	17.0	271.5	36.5	14.0	4.0	NM	NM	4.7	45.5	250.3	70.0	764.0
1963	243.3	255.5	--	34.0	79.0	11.0	NM	NM	NM	--	15.5	174.4	812.7
1964	10.6	--	94.1	185.0	17.0	--	--	--	--	--	--	--	306.7
1965	53.5	103.3	34.8	76.4	--	8.7	NM	NM	46.7	140.4	88.5	86.3	638.6
1966	17.0	88.5	4.1	17.0	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	137.0
1967	--	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	58.9	8.0	41.3	NM	NM	NM	NM	19.2	99.9	63.9	291.2
1969	40.2	99.6	25.3	44.3	11.8	12.2	NM	NM	22.3	23.4	91.0	102.2	472.3
1970	137.2	--	52.0	10.0	32.2	4.1	NM	NM	NM	36.1	35.7	106.1	413.4
1971	113.9	53.4	111.3	116.7	74.1	NM	NM	NM	NM	--	123.2	61.6	654.2
1972	75.1	78.4	87.6	11.5	26.5	NM	NM	NM	10.0	72.2	10.9	112.7	484.9
1973	14.7	22.8	69.1	--	--	NM	NM	7.1	NM	--	33.0	211.0	357.7
1974	15.8	50.2	68.2	160.5	--	NM	NM	NM	2.0	9.3	11.1	0.0	317.1
1975	64.0	50.5	71.1	28.2	22.5	NM	NM	NM	3.6	--	32.5	147.9	420.3
1976	27.2	16.2	57.5	139.1	68.0	NM	NM	NM	18.3	17.3	110.2	8.2	583.0
1977	71.2	76.1	--	--	4.2	NM	NM	NM	NM	33.7	88.2	57.0	330.4
1978	102.5	49.5	25.9	48.1	32.2	1.8	NM	NM	NM	25.5	10.8	126.4	422.7
1979	83.7	107.6	64.7	34.0	--	3.2	NM	NM	NM	166.9	13.6	25.8	499.5
1980	68.4	4.5	150.2	34.5	18.0	NM	NM	NM	3.0	27.5	124.3	8.8	439.2
1981	--	--	--	--	--	--	--	--	--	--	--	--	--
1982	0.0	56.6	22.9	--	1.9	NM	NM	NM	NM	32.8	61.0	50.5	225.7
1983	--	125.5	--	43.0	2.4	NM	NM	NM	3.3	3.0	56.1	104.2	337.5
1984	10.0	14.0	70.5	45.0	137.5	1.2	--	--	--	--	--	--	278.2

[NOTE] MN: Lack of whole month record during June through September is assumed to be NM (no-measurement) due to dry season.

PRECIPITATION MENSUELLE

(Daily rainfall data are available in DGH database for the period monthly data are available.)

Station: SIDI BOUATHMANE (unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1989	--	--	--	--	--	--	--	--	--	37.2	24.2	30.2	91.6
1990	35.6	0.0	31.3	20.9	12.7	7.4	34.4	0.3	1.2	2.5	4.8	53.3	204.4
1991	8.9	140.3	120.7	6.2	6.2	5.1	4.0	6.1	44.7	23.1	13.0	27.6	405.9
1992	0.0	47.9	79.9	59.7	7.4	49.8	3.5	1.4	0.2	61.2	14.2	8.6	333.8
1993	35.3	29.2	18.7	24.9	7.2	0.0	0.0	0.0	0.1	27.4	103.5	44.4	290.7
1994	67.1	80.1	36.8	8.1	0.0	0.0	0.0	18.8	0.0	91.5	0.0	0.1	302.5
1995	0.0	77.2	58.2	187.5	0.0	0.2	0.6	0.0	8.0	40.8	12.6	77.1	462.2
1996	92.4	105.4	125.4	7.6	26.4	63.4	0.0	0.0	6.2	0.9	58.7	84.6	571.0
1997	62.5	0.0	42.9	97.2	32.1	3.6	0.0	0.2	79.7	40.6	33.7	91.6	484.1
1998	25.8	34.8	18.9	52.0	20.7	0.1	0.0	0.0	13.2	46.1	0.1	38.1	249.8
1999	77.9	88.7	96.7	4.6	9.0	14.3	0.2	4.0	4.3	154.8	45.2	70.6	570.3
2000	5.5	0.5	0.3	--	--	--	--	--	--	--	--	--	6.3

Station: SIDI HSSAIN (unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1998	29.8	16.6	36.5	62	21	--	0	0	14	75	3.7	48.6	307.2
1999	83.7	52.2	96	2.2	16.7	2	0	5	11	124	75	84	551.8
2000	14	0	0	--	--	--	--	--	--	--	--	--	14

PRECIPITATION MENSUELLE

(Daily rainfall data are available in DGH database for the period monthly data are available.)

Station: IFFRE

(unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1965	36.1	147.0	0.0	--	0.0	8.7	--	--	--	87.4	64.0	--	394.1
1966	--	--	34.0	--	23.0	--	--	--	13.2	--	41.7	--	111.9
1967	7.4	--	5.2	--	99.6	1.5	0.0	1.5	39.5	25.7	182.4	2.5	399.6
1968	0.0	24.2	17.2	17.0	--	4.2	5.2	0.0	12.0	1.8	15.2	23.8	120.6
1969	38.3	68.5	--	4.6	2.0	--	0.0	16.1	9.4	7.2	49.9	3.7	199.7
1970	45.7	1.3	19.2	--	--	4.0	--	2.4	10.0	78.6	44.5	32.0	237.7
1971	0.8	3.0	10.8	12.5	--	2.3	0.4	0.0	36.3	38.9	20.1	1.5	126.6
1972	11.8	13.2	13.0	44.0	2.7	--	--	0.0	2.5	23.2	73.3	7.2	190.9
1973	4.0	0.0	16.3	0.0	--	--	--	9.2	--	0.0	58.6	7.3	95.4
1974	--	0.0	21.2	13.2	3.2	1.0	6.0	2.3	5.6	--	27.3	8.6	88.4
1975	--	--	--	63.6	33.9	5.0	4.3	3.0	3.0	4.6	1.3	20.7	139.4
1976	0.0	19.6	25.3	10.8	38.3	6.2	--	3.0	88.0	5.0	--	8.2	204.4
1977	26.0	2.0	--	17.9	7.8	--	--	6.2	21.0	26.4	--	98.0	205.3
1978	91.2	--	--	--	3.0	--	--	19.8	4.0	19.0	6.8	--	143.8
1979	113.3	21.4	0.1	5.3	7.2	--	0.0	--	5.7	119.2	16.1	--	288.3
1980	19.4	39.3	40.1	4.8	--	--	--	--	9.9	--	25.2	14.8	153.5
1981	1.6	37.7	--	--	3.0	0.0	2.1	--	--	1.8	11.5	--	57.7
1982	5.0	2.7	4.2	13.2	52.7	2.8	--	14.6	1.6	0.0	14.2	--	111.0
1983	--	--	14.0	14.0	21.6	--	--	3.0	--	6.0	12.3	--	70.9
1984	--	--	--	--	--	9.2	--	1.0	10.2	--	65.1	7.0	92.5
1985	26.2	15.0	1.0	51.5	18.8	--	--	--	8.1	10.5	38.8	11.3	181.2
1986	--	2.4	--	--	5.0	0.8	0.0	0.9	11.0	40.9	--	--	61.0
1987	10.3	7.3	11.2	--	27.5	6.0	--	4.5	35.0	33.4	19.2	51.3	205.7
1988	33.6	103.4	38.1	--	--	--	--	--	--	36.0	128.4	--	339.5
1989	12.9	49.1	16.6	19.0	--	34.3	19.9	18.3	16.5	86.2	47.2	161.0	481.0
1990	6.4	--	79.3	5.2	12.0	--	3.2	7.8	33.8	--	--	22.5	170.2
1991	--	19.2	32.3	7.2	--	16.2	9.6	14.4	6.2	4.0	4.0	61.2	174.3
1992	--	61.4	9.3	--	12.0	--	--	15.8	--	7.6	3.8	18.1	128.0
1993	17.2	24.9	10.8	--	--	--	--	--	--	29.2	81.4	3.0	166.5
1994	11.0	--	--	--	--	--	--	--	--	71.5	--	--	82.5
1995	--	--	55.5	21.2	--	--	--	--	--	48.2	7.2	23.4	155.5
1996	59.2	28.2	58.4	--	4.0	51.6	16.0	--	--	--	--	55.0	272.4
1997	8.0	15.0	11.5	10.6	--	--	--	24.5	18.6	3.8	--	--	92.0
1998	32.3	97.1	53.0	--	--	9.6	--	10.0	--	--	--	2.8	204.8
1999	21.0	--	5.4	--	2.0	--	0.0	9.6	2.2	128.6	--	13.3	182.1
2000	0.0	0.0	0.0	5.2	8.2	--	--	--	--	--	--	--	13.4

PRECIPITATION MENSUELLE

(Daily rainfall data are available in DGH database for the period monthly data are available.)

Station: TADIGHOUST

(unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1962	0.5	0.0	1.7	0.0	0.5	9.1	0.0	8.4	24.5	11.6	30.1	19.0	105.4
1963	25.5	9.6	3.0	20.4	78.4	9.7	2.2	4.8	8.0	0.0	0.0	3.8	165.4
1964	30.4	6.0	0.0	0.8	3.4	0.8	2.4	2.5	27.5	0.0	0.4	11.5	85.7
1965	46.1	125.2	4.4	39.0	3.1	1.2	0.0	12.6	20.2	130.1	76.7	0.5	459.1
1966	0.0	0.0	29.0	0.0	15.1	4.1	0.0	0.5	16.8	0.0	28.1	0.0	93.6
1967	3.2	34.2	0.0	11.9	39.2	0.9	0.0	0.0	28.4	68.3	98.6	0.4	285.1
1968	3.5	4.0	7.8	29.8	11.8	8.4	0.4	0.2	9.2	0.4	5.2	21.6	102.3
1969	15.4	22.1	0.0	7.5	4.1	0.0	1.6	29.2	9.3	7.3	32.6	5.4	134.5
1970	20.9	0.0	13.2	0.0	8.3	0.0	0.0	4.6	3.2	26.3	19.2	8.1	103.8
1971	0.0	7.3	4.0	24.8	9.3	0.2	1.1	8.1	15.8	37.8	16.5	17.0	141.9
1972	2.2	25.7	6.6	66.7	0.0	3.8	0.0	0.0	9.0	9.9	112.3	10.8	247.0
1973	1.6	1.4	5.7	5.9	0.0	14.5	0.5	3.9	0.4	0.0	65.9	18.4	118.2
1974	0.0	0.0	14.0	20.8	3.7	4.7	0.2	1.4	28.8	0.0	16.2	5.0	94.8
1975	0.0	0.0	0.0	82.8	51.3	3.6	0.0	0.3	0.0	1.8	0.2	29.1	169.1
1976	26.0	12.7	25.5	32.2	31.8	12.9	1.0	3.3	41.6	0.5	0.0	6.0	193.5
1977	39.1	4.0	0.2	17.9	5.1	0.0	0.0	0.8	18.3	8.6	0.0	19.4	113.4
1978	29.2	0.0	0.0	8.3	2.8	0.0	0.0	18.1	0.0	24.2	1.2	0.0	83.8
1979	59.8	4.1	0.0	0.0	1.2	5.0	0.0	0.0	25.3	106.8	1.5	0.0	203.7
1980	17.4	11.0	48.1	24.9	0.6	0.5	0.0	3.3	2.7	2.4	11.8	28.7	151.4
1981	1.0	24.2	2.0	0.8	0.0	3.0	0.0	1.2	1.0	0.0	0.0	0.0	33.2
1982	17.3	5.4	0.9	37.4	35.2	15.0	0.0	3.0	0.7	0.7	1.0	0.2	116.8
1983	0.0	0.0	0.6	7.0	23.9	0.8	0.0	61.1	9.2	6.3	1.5	0.0	110.4
1984	0.2	0.3	0.7	0.1	16.0	0.3	0.0	0.0	2.3	0.2	21.1	6.5	47.7
1985	13.9	24.0	0.3	3.0	37.2	0.0	3.3	0.0	16.0	9.3	41.1	31.5	179.6
1986	0.1	4.7	1.9	1.0	4.1	7.8	0.0	1.5	3.7	46.3	1.8	0.0	72.9
1987	1.4	0.8	24.2	0.0	4.9	5.9	0.0	2.0	25.4	6.8	20.1	37.7	129.2
1988	7.8	38.2	7.8	0.2	16.1	0.8	0.0	0.0	1.2	19.6	31.4	0.0	123.1
1989	0.8	46.8	1.8	2.2	0.9	22.1	0.6	14.9	12.8	21.4	67.6	93.8	285.7
1990	15.4	0.0	32.6	8.2	39.9	0.5	0.8	6.7	18.3	0.0	1.8	30.4	154.6
1991	0.0	14.4	8.2	15.4	0.2	17.1	2.6	5.3	15.9	7.2	0.0	61.9	148.2
1992	0.0	29.3	6.9	0.0	13.4	5.9	0.0	4.9	0.2	0.0	15.1	26.3	102.0
1993	8.7	4.9	4.5	0.4	1.5	0.0	0.0	0.8	0.4	19.0	105.0	5.7	150.9
1994	7.9	0.0	5.9	13.5	0.0	28.3	1.4	0.0	1.4	61.6	3.0	0.0	123.0
1995	0.0	0.0	14.3	41.3	3.2	0.0	0.0	12.4	12.4	52.9	0.0	8.9	145.4
1996	24.9	27.4	36.4	0.0	1.9	27.8	17.6	0.3	0.0	1.4	0.0	12.0	149.7
1997	17.8	3.1	27.3	12.4	1.3	0.0	0.0	20.3	26.1	0.8	0.0	0.1	109.2
1998	18.2	72.6	21.6	0.9	1.7	4.1	0.0	6.5	0.3	0.0	0.0	1.1	127.0
1999	14.2	0.4	3.8	0.0	0.0	1.1	0.0	8.5	6.0	41.6	1.9	1.3	78.8

PRECIPITATION MENSUELLE

(Daily rainfall data are available in DGH database for the period monthly data are available.)

Station: AIT BOUIJANE (unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1970	--	--	--	--	--	--	--	--	0.8	46.9	17.0	9.7	74.4
1971	0.0	5.4	4.4	--	6.9	--	0.0	--	--	--	8.2	14.8	89.2
1972	7.4	14.8	5.3	41.0	--	0.2	0.0	0.0	1.3	--	76.9	9.9	174.2
1973	8.7	3.2	5.5	8.7	0.3	4.7	0.0	0.8	0.0	0.4	52.3	20.3	104.9
1974	--	0.0	--	31.4	--	3.0	--	1.1	14.7	--	24.2	7.0	100.3
1975	--	0.0	0.0	74.4	--	4.4	4.2	--	5.5	0.0	2.2	10.2	122.2
1976	7.7	12.9	19.7	17.1	59.5	0.0	2.5	0.0	30.9	6.5	--	3.8	160.6
1977	24.0	0.7	--	--	13.4	--	--	--	23.1	4.8	--	44.5	133.8
1978	47.3	0.0	--	--	0.3	--	--	16.0	0.0	15.7	0.5	--	79.8
1979	74.8	3.6	0.0	0.3	0.0	0.8	--	10.2	--	145.1	5.3	--	246.7
1980	23.8	31.5	34.9	7.2	0.2	0.4	0.0	0.0	--	0.0	19.9	26.2	152.3
1981	2.8	32.4	--	0.9	8.2	5.4	0.0	--	3.5	0.0	0.0	--	54.7
1982	3.7	0.6	1.2	48.2	--	5.1	0.6	--	0.2	0.0	1.6	--	122.7
1983	0.0	0.0	1.8	6.8	25.3	0.7	0.5	2.0	8.9	--	9.2	3.3	63.5
1984	1.3	0.2	0.7	1.3	19.7	0.3	--	4.4	16.9	--	25.9	6.0	76.7
1985	16.2	17.3	0.8	33.3	19.2	--	0.0	0.5	4.7	3.1	15.6	13.6	124.3
1986	0.9	2.1	0.0	0.7	8.0	6.0	0.7	7.5	1.5	48.4	3.6	--	79.4
1987	2.8	5.9	24.8	1.0	9.4	5.1	0.1	3.1	25.8	4.9	12.3	19.0	114.2
1988	23.0	54.4	11.7	1.9	4.2	--	--	1.6	3.4	29.4	63.9	--	193.5
1989	--	66.8	--	--	1.0	47.3	--	30.0	7.9	34.2	50.7	100.0	337.9
1990	12.7	0.0	22.9	2.0	9.8	--	--	--	--	--	2.7	30.6	92.2
1991	1.5	8.0	16.5	14.4	5.1	8.5	7.2	21.4	10.4	11.1	--	34.8	138.9
1992	--	42.2	19.9	0.3	--	7.4	--	11.2	2.2	4.7	3.5	23.0	126.0
1993	3.8	17.6	8.2	0.0	4.9	--	1.5	1.4	2.3	10.1	59.3	3.3	112.4
1994	22.3	1.5	3.6	8.3	0.0	--	9.8	3.2	4.7	53.3	--	--	106.7
1995	--	--	49.2	42.9	0.4	4.0	1.5	2.0	10.7	81.4	0.0	9.0	201.1
1996	16.0	32.2	38.9	3.0	0.5	77.0	22.0	1.2	1.5	1.4	0.0	9.0	202.7
1997	13.4	1.5	12.0	24.1	4.0	--	0.2	20.3	13.4	6.0	1.0	0.0	95.9
1998	17.1	67.9	29.3	8.1	0.0	6.7	0.0	3.8	4.2	0.0	--	--	137.1
1999	20.6	0.1	16.3	--	2.0	--	0.0	40.0	0.9	51.9	0.1	3.4	135.3
2000	0.4	0.0	0.1	2.3	11.1	--	--	--	--	--	--	--	--

Station: MERUTCHA (unit:mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1978	34.3	0.0	--	3.2	2.0	--	--	23.6	0.3	7.0	--	0.5	70.9
1979	62.4	--	2.4	--	0.1	4.7	--	--	25.3	78.9	2.9	--	176.7
1980	15.7	28.5	33.0	22.1	0.8	--	--	1.7	15.3	3.2	14.7	22.9	157.9
1981	--	9.7	--	--	2.3	14.4	0.3	1.7	--	0.0	0.0	--	30.6
1982	28.9	1.9	0.0	58.0	42.5	0.8	--	--	0.9	0.7	5.3	--	139.0
1983	1.9	0.0	0.0	4.0	23.1	0.0	--	0.3	0.0	1.9	0.0	--	31.2
1984	0.0	0.0	1.8	0.0	11.5	1.5	0.0	--	3.3	0.0	12.6	0.0	30.7
1985	15.8	15.7	0.9	12.0	9.7	--	--	2.0	14.1	15.5	8.9	45.8	140.4
1986	4.3	3.7	1.3	0.0	3.3	0.4	--	0.0	3.7	52.2	0.0	--	68.9
1987	0.3	0.0	21.7	--	10.4	10.9	--	0.0	--	7.7	13.1	10.1	92.9
1988	4.0	34.1	8.4	1.1	2.5	0.0	--	0.0	0.3	15.3	45.4	--	111.1
1989	0.0	21.2	3.2	4.5	0.0	6.8	2.8	--	--	70.5	41.7	52.3	224.8
1990	1.6	--	8.5	10.6	24.0	0.0	0.4	0.3	--	--	0.0	29.8	80.0
1991	0.0	12.0	11.2	16.0	3.0	10.7	0.2	8.4	8.3	4.0	--	9.5	83.3
1992	--	17.4	3.9	7.5	10.9	1.4	0.0	0.0	0.0	1.0	5.8	37.7	85.6
1993	5.9	11.5	5.2	--	0.0	--	--	2.8	0.0	8.2	49.0	3.1	85.7
1994	69.0	--	--	10.0	--	0.0	0.0	2.2	0.0	48.2	--	--	129.4
1995	--	--	29.7	28.5	0.0	12.2	--	8.3	4.0	49.8	0.0	3.2	135.7
1996	16.6	45.3	12.2	1.4	0.0	43.9	17.9	--	4.3	13.3	--	8.8	163.7
1997	8.2	--	12.0	29.7	--	--	0.0	9.5	21.2	--	--	0.0	80.6
1998	10.6	43.3	6.7	0.0	0.0	0.0	--	0.0	2.2	0.0	0.0	7.4	70.2
1999	18.4	2.4	9.7	--	1.8	0.0	--	7.4	7.5	50.2	0.0	0.0	97.4

PRECIPITATION MENSUELLE

(Daily rainfall data are available in DGH database for the period monthly data are available.)

Station: AZZABA (unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1957	--	--	--	--	--	--	--	--	--	55.9	120.7	126.8	303.4
1958	20.1	21.1	39.4	85.4	12.8	25.2	--	1.4	21.2	28.9	38.7	102.3	396.5
1959	17.9	29.6	51.4	18.9	96.8	3.3	22.4	0.5	14.0	22.5	33.0	115.7	426.0
1960	97.9	19.8	99.5	17.5	45.7	63.5	13.7	--	--	49.7	18.6	82.9	508.8
1961	65.4	4.8	62.3	26.9	5.2	27.8	--	1.1	32.2	5.2	65.8	18.5	315.2
1962	16.1	23.0	104.3	54.0	15.5	25.6	--	6.2	16.9	87.9	104.5	38.6	492.6
1963	99.3	95.6	3.3	42.2	170.0	19.1	34.6	14.8	3.5	4.4	12.8	96.7	596.3
1964	8.7	53.8	91.7	42.3	--	8.6	2.6	--	3.9	2.2	68.2	63.8	348.7
1965	48.7	49.4	56.7	102.3	2.6	31.5	1.3	1.2	14.6	66.1	56.8	12.6	443.8
1966	5.6	39.9	15.7	10.8	9.6	5.4	1.1	--	6.8	81.9	33.7	1.7	212.2
1967	18.5	39.9	17.3	39.1	32.0	20.3	--	--	1.7	73.0	51.0	63.3	360.0
1968	7.4	110.2	137.0	51.5	28.5	26.9	--	--	--	--	45.6	44.8	483.4
1969	60.4	98.4	64.3	63.2	17.3	38.1	19.2	--	9.4	33.1	77.8	52.4	533.6
1970	100.7	0.9	84.8	32.1	33.7	17.5	--	9.4	--	19.5	17.6	3.8	320.0
1971	76.4	9.6	111.7	114.4	81.2	54.4	--	--	2.5	0.7	142.9	73.9	667.7
1972	73.0	74.8	51.6	28.7	23.7	1.8	16.0	17.1	36.8	46.4	46.9	39.4	456.2
1973	43.5	66.9	71.3	92.0	7.6	2.6	1.1	28.7	--	25.7	47.1	50.1	436.6
1974	5.6	59.1	68.0	71.8	3.3	31.3	4.3	--	0.2	37.2	7.8	--	288.6
1975	11.4	49.9	101.3	102.0	46.1	58.0	2.1	3.5	--	--	--	--	374.3
1976	--	--	--	--	--	--	--	--	--	--	--	--	--
1977	--	--	--	--	--	--	--	--	23.9	66.3	30.9	56.2	177.3
1978	23.6	63.3	19.5	55.6	16.7	14.2	--	9.4	--	2.8	9.8	22.5	237.4
1979	24.8	139.7	41.6	23.5	22.2	7.3	0.5	--	22.5	119.1	22.9	13.2	437.3
1980	15.6	32.4	66.4	46.5	18.0	0.2	0.0	--	27.5	50.7	38.8	12.5	308.6
1981	11.5	35.5	24.7	51.4	21.9	11.8	7.1	0.4	2.3	6.1	--	17.6	190.3
1982	50.8	34.4	17.1	104.6	43.4	0.4	6.7	8.8	0.9	71.0	31.5	51.5	421.1
1983	--	43.6	41.0	7.1	18.2	--	--	--	--	2.0	70.5	14.0	196.4
1984	52.1	12.1	41.6	22.0	111.8	13.2	1.9	--	7.8	1.5	43.9	3.5	311.4
1985	61.2	19.2	26.9	29.1	43.0	--	--	--	2.6	0.2	39.6	29.3	251.1
1986	62.8	46.1	68.3	26.1	--	17.6	--	0.2	14.2	25.5	17.6	23.5	301.9
1987	56.5	78.4	--	8.7	12.3	6.1	27.8	--	32.0	17.8	63.8	--	303.4
1988	31.3	75.1	18.3	19.0	72.1	4.0	0.7	--	2.4	38.0	40.0	6.9	307.8
1989	8.4	37.6	26.4	59.4	16.5	15.7	0.0	12.3	3.6	37.5	65.2	73.6	356.2
1990	27.7	--	45.7	64.9	9.8	0.4	17.2	--	31.1	9.5	46.3	85.8	338.4
1991	12.5	84.3	55.6	33.9	6.2	6.4	3.0	4.6	33.2	25.0	14.9	27.6	307.2
1992	0.0	32.7	71.7	31.2	64.5	74.7	5.8	6.9	--	28.6	21.9	11.6	349.6
1993	15.7	37.7	65.4	25.5	39.9	1.8	0.3	0.0	4.5	33.0	85.8	9.6	319.2
1994	36.5	86.4	24.0	11.9	22.5	2.1	4.0	9.0	59.1	14.0	19.3	0.5	289.3
1995	1.7	40.1	45.4	28.5	2.7	29.5	1.4	7.2	13.8	4.5	27.6	67.3	269.7
1996	90.8	42.8	58.7	69.1	57.8	24.0	0.2	13.5	32.7	12.5	19.4	80.6	502.1
1997	64.3	0.2	3.0	59.9	36.5	10.7	--	4.1	60.4	20.9	53.6	69.4	383.0
1998	26.4	26.4	19.9	14.7	45.6	7.4	--	2.2	15.4	7.6	0.1	28.3	194.0
1999	62.4	24.5	50.8	5.0	23.9	7.0	--	3.2	9.2	29.0	53.3	28.9	297.2
2000	14.0	0.0	0.0	34.7	--	--	--	--	--	--	--	--	48.7

Station: PONT DU M'DEZ (unit: mm/month)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Rann
1981	2	23.6	16.2	--	--	12.1	0	6.3	6.5	--	--	--	66.7
1982	--	--	--	--	--	5.2	--	--	8.5	49.6	18.2	19.1	100.6
1983	1.7	12.8	34.1	7.2	17.4	--	--	--	--	--	--	--	73.2
1984	--	--	--	--	--	--	--	--	2	1.1	39.3	6.3	48.7
1985	48	12.9	16.5	26.1	56.2	0.7	2	1.3	2.6	21.5	19.3	30.9	238
1986	34.6	29.5	20.5	34.4	4	24.1	2.4	7	6.3	25.9	13.3	12.5	214.5
1987	33.1	46.8	0.8	2.8	12.8	2.5	20.9	1.5	12.3	28	44.7	22.8	229
1988	20.1	51.7	30.1	12.1	32.5	2.5	0.9	--	0.6	25.8	36.3	5.4	218
1989	3.7	27.5	22.6	26.5	25.1	21.5	0.4	16.5	--	--	--	--	143.8

PRECIPITATION MENSUELLE COLLECTEE PAR ORMVA TAFILALET

MONTHLY RAINFALL

Station: C.M.V 720 d'AGHBALOU

(unit: mm/month)

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Rann
7980	--	91.0	--	--	35.0	87.0	131.0	37.0	--	--	--	--	381.0
8081	--	--	--	30.0	--	68.0	--	--	--	--	--	--	98.0
8182	--	--	--	--	16.5	--	--	55.0	98.0	--	4.0	--	173.5
8283	--	--	--	--	--	--	6.0	29.0	31.0	--	--	--	66.0
8384	4.0	17.0	5.0	--	7.0	--	--	--	--	--	--	--	33.0
8485	--	--	15.0	--	--	--	--	--	--	--	--	--	15.0
8586	26.2	18.1	27.0	10.0	1.5	3.0	--	7.0	6.0	15.5	--	--	114.3
8687	21.9	51.3	8.5	--	5.0	13.5	9.0	--	9.0	--	--	--	118.2
8788	25.7	25.2	15.5	35.2	--	--	--	--	--	--	--	--	101.6
8889	7.0	68.5	100.5	--	5.5	62.1	1.5	2.5	5.8	79.5	4.0	50.5	387.4
8990	37.5	45.0	104.5	104.5	18.0	--	31.7	21.0	46.0	--	--	--	408.2
9091	26.3	--	3.0	36.5	--	--	2.5	11.5	10.5	18.5	3.5	2.5	114.8
9192	14.0	4.0	--	31.0	--	68.0	14.5	--	17.0	10.0	6.0	4.0	168.5
9293	6.0	5.0	--	28.5	17.0	8.5	--	--	--	--	--	--	65.0
9394	12.0	27.0	106.0	11.5	--	--	--	--	--	--	--	--	156.5
9495	7.0	80.3	0.5	--	--	--	49.2	60.5	--	8.0	--	4.0	209.5
9596	17.0	103.0	--	13.0	22.0	24.5	72.4	18.0	8.0	134.1	43.0	6.0	461.0
9697	15.0	3.0	--	23.5	12.5	--	49.5	18.0	9.5	--	1.0	17.0	149.0
9798	58.0	7.0	--	--	20.0	98.5	40.0	1.0	--	--	--	--	224.5
9899	3.5	--	--	2.0	17.0	--	--	--	2.0	--	2.0	3.6	30.1
9900	2.0	100.0	--	2.0	--	--	--	--	26.5	5.0	--	25.0	160.5
Mean	17.7	43.0	38.6	27.3	14.8	48.1	37.0	23.7	22.4	38.7	9.1	14.1	173.1
Max.	58.0	103.0	106.0	104.5	35.0	98.5	131.0	60.5	98.0	134.1	43.0	50.5	461.0

MONTHLY RAINFALL

Station: C.M.V 714 d'ASSOUL

(unit: mm/month)

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Rann
7980	--	--	--	--	17.0	30.0	72.0	25.0	--	--	--	--	144.0
8081	--	--	--	--	5.0	18.5	--	--	--	--	--	--	23.5
8182	--	--	--	--	1.5	--	--	--	89.0	4.0	5.5	--	100.0
8283	--	--	--	--	--	--	11.5	14.5	19.0	--	--	--	45.0
8384	2.5	24.5	9.5	3.5	6.5	--	3.0	--	2.0	3.3	--	--	54.8
8485	34.0	--	16.0	10.0	10.0	16.0	8.0	23.0	22.5	--	18.0	10.0	167.5
8586	24.1	20.0	39.0	4.7	--	3.0	--	--	2.0	66.0	--	10.0	168.8
8687	21.9	51.3	5.5	--	5.0	13.3	9.0	--	9.0	6.2	1.5	--	122.7
8788	44.0	113.0	38.0	30.0	28.0	36.0	9.0	13.7	45.0	--	--	--	356.7
8889	15.0	157.5	62.0	--	--	13.8	6.0	--	15.0	44.0	--	98.0	411.3
8990	8.5	70.0	224.0	39.0	12.5	--	80.0	60.5	55.5	1.0	10.0	5.0	566.0
9091	119.5	--	7.5	32.0	--	--	16.5	40.1	26.9	44.5	22.5	14.2	323.7
9192	24.5	--	--	6.0	--	5.0	45.0	--	28.0	--	--	--	108.5
9293	--	--	4.0	21.0	--	11.0	6.5	--	--	--	--	--	42.5
9394	4.0	8.0	201.5	--	--	--	5.5	6.5	--	--	--	--	225.5
9495	8.0	90.0	--	--	--	--	36.0	134.5	--	--	--	24.0	292.5
9596	12.0	65.0	--	5.0	4.0	30.0	61.0	3.0	2.0	146.5	11.0	--	339.5
9697	5.5	10.0	--	16.5	9.0	8.0	32.5	34.5	13.0	--	--	--	129.0
9798	81.8	23.0	--	--	7.0	37.0	28.0	6.5	5.0	9.5	--	--	197.8
9899	5.5	--	1.0	--	30.5	1.0	6.0	--	--	--	--	12.0	56.0
9900	11.0	81.5	--	1.0	2.0	--	9.0	3.0	6.0	--	--	16.5	130.0
Mean	26.4	59.5	55.3	15.3	10.6	17.1	24.7	30.4	22.7	36.1	11.4	23.7	190.7
Max.	119.5	157.5	224.0	39.0	30.5	37.0	80.0	134.5	89.0	146.5	22.5	98.0	566.0

PRECIPITATION MENSUELLE COLLECTEE PAR ORMVA TAFILALET

MONTHLY RAINFALL

Station: C.M.V 712 de TINEJDAD

(unit: mm/month)

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Rann
7980	--	110.0	--	--	29.0	24.5	30.0	21.0	--	--	--	--	214.5
8081	--	--	--	20.0	--	10.0	1.0	--	--	--	--	--	31.0
8182	--	--	--	--	10.0	--	--	83.5	20.0	--	--	--	113.5
8283	--	--	--	--	1.0	--	--	--	29.5	--	--	--	30.5
8384	--	3.5	--	--	--	--	--	--	--	1.0	--	--	4.5
8485	--	--	13.0	--	--	--	--	--	37.0	--	--	--	50.0
8586	16.0	12.5	17.3	28.0	25.0	--	--	--	1.0	3.0	--	--	102.8
8687	5.0	38.0	--	--	--	--	24.5	--	8.0	8.5	0.5	--	84.5
8788	37.5	7.5	10.5	13.0	11.0	29.5	6.5	1.5	2.0	--	--	--	119.0
8889	1.5	33.0	41.7	--	--	33.4	1.7	5.5	--	32.0	1.5	13.3	163.6
8990	14.8	52.5	62.0	17.0	1.5	--	15.9	7.7	12.5	2.0	6.5	--	192.4
9091	25.1	--	1.5	27.3	--	13.9	20.0	13.9	4.5	5.0	0.5	12.0	123.7
9192	10.5	7.0	--	13.5	--	37.5	--	--	10.5	2.0	--	14.0	95.0
9293	--	5.0	0.5	28.5	4.8	20.5	5.0	--	--	--	--	--	64.3
9394	--	7.0	74.7	4.0	94.4	--	8.5	5.0	--	--	--	1.0	194.6
9495	3.0	57.7	--	--	--	--	23.9	46.9	5.0	3.0	--	4.0	143.5
9596	5.9	88.5	--	3.2	18.5	51.0	9.0	--	--	76.5	18.5	--	271.1
9697	5.0	17.8	--	8.0	21.0	--	9.5	30.5	1.6	--	--	9.2	102.6
9798	15.0	--	--	--	16.1	58.9	13.0	1.2	--	4.5	--	3.3	112.0
9899	8.0	--	--	--	22.3	11.0	12.0	--	1.0	--	--	31.0	85.3
9900	9.5	69.5	--	3.0	--	--	--	--	43.5	3.5	--	--	129.0
Mean	12.1	36.4	27.7	15.0	21.2	29.0	12.9	21.7	13.5	12.8	5.5	11.0	115.6
Max.	37.5	110.0	74.7	28.5	94.4	58.9	30.0	83.5	43.5	76.5	18.5	31.0	271.1

MONTHLY RAINFALL

Station: C.M.V 704 de GOULMIMA

(unit: mm/month)

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Rann
7980	12.0	98.5	--	--	35.5	47.0	70.0	30.0	--	--	--	--	293.0
8081	25.0	12.0	8.0	29.5	--	12.0	1.0	--	--	40.0	--	--	127.5
8182	--	--	--	12.0	12.5	--	--	51.5	34.5	3.5	--	--	114.0
8283	--	--	--	--	4.0	--	--	1.1	34.1	--	--	--	39.2
8384	5.2	3.5	--	--	1.0	--	--	--	1.0	--	--	--	10.7
8485	--	--	18.0	--	1.0	--	--	--	--	--	--	--	19.0
8586	8.3	6.5	14.8	24.0	--	0.7	2.0	--	7.6	--	--	--	63.9
8687	11.0	67.5	--	--	--	--	5.8	--	2.5	8.5	--	--	95.3
8788	15.5	13.5	16.7	22.9	8.7	41.7	10.6	2.0	6.0	--	--	--	137.6
8889	2.0	28.0	37.9	--	0.8	37.7	2.5	10.5	--	17.4	--	12.0	148.8
8990	9.4	58.8	54.0	71.8	4.8	15.4	6.0	23.1	--	2.0	--	3.9	249.2
9091	8.2	--	15.0	30.4	--	12.5	8.8	14.5	2.0	9.1	2.2	2.6	105.3
9192	8.7	7.0	--	26.8	--	28.7	7.8	3.0	13.3	3.0	--	1.0	99.3
9293	--	1.0	3.5	19.9	21.1	9.2	3.0	--	--	--	--	--	57.7
9394	2.4	7.4	72.3	8.0	13.2	13.3	11.0	--	--	--	--	--	127.6
9495	--	60.2	--	--	--	--	19.0	40.8	5.0	--	--	6.3	131.3
9596	2.5	67.8	--	2.7	15.7	41.7	34.3	3.0	1.4	38.5	22.5	--	230.1
9697	--	9.0	6.1	17.0	--	5.2	11.4	7.0	--	--	--	--	55.7
9798	26.6	1.0	--	--	14.9	47.4	9.5	--	5.0	3.6	--	--	108.0
9899	5.3	--	--	5.3	15.3	4.0	4.0	--	--	--	--	--	33.9
9900	--	--	--	--	--	--	--	--	--	--	--	--	0.0
Mean	10.2	29.4	24.6	22.5	11.4	22.6	12.9	17.0	10.2	14.0	12.4	5.2	107.0
Max.	26.6	98.5	72.3	71.8	35.5	47.4	70.0	51.5	34.5	40.0	22.5	12.0	293.0

PRECIPITATION MENSUELLE COLLECTEE PAR ORMVA TAFILALET

MONTHLY RAINFALL

Station: C.M.V 722 de MELLAAB

(unit: mm/month)

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Rann
7980	--	--	--	--	--	--	--	--	--	--	--	--	0.0
8081	--	--	--	--	--	--	--	--	--	--	--	--	0.0
8182	--	--	--	--	--	--	--	29.5	--	--	--	--	29.5
8283	--	--	--	--	--	--	--	--	--	--	--	--	0.0
8384	--	--	--	--	--	--	--	--	--	--	--	--	0.0
8485	--	--	4.0	--	--	--	--	--	--	--	--	--	4.0
8586	--	--	--	--	--	--	--	--	--	--	--	--	0.0
8687	--	--	--	--	--	--	--	--	--	--	--	--	0.0
8788	13.0	4.0	9.0	8.0	6.0	25.0	10.0	--	--	--	--	--	75.0
8889	--	8.0	26.0	--	--	20.0	5.0	5.0	--	11.0	17.0	6.0	98.0
8990	4.0	65.0	40.0	50.0	1.0	--	8.0	3.0	26.0	--	--	5.0	202.0
9091	8.0	--	--	31.0	--	12.0	13.0	14.0	4.0	7.5	1.5	--	91.0
9192	3.0	7.0	--	10.0	--	13.0	3.5	--	11.0	--	--	--	47.5
9293	--	3.5	--	23.0	7.0	15.0	5.0	--	--	--	--	--	53.5
9394	6.0	8.5	44.0	64.0	--	9.0	--	--	--	--	--	--	131.5
9495	--	73.0	--	--	--	--	43.5	36.3	--	7.6	--	13.0	173.4
9596	4.0	61.0	--	3.5	21.0	46.1	14.5	5.0	--	43.5	21.5	--	220.1
9697	5.0	8.5	--	11.0	9.0	--	15.0	39.5	--	--	--	33.0	121.0
9798	25.0	--	--	--	13.0	49.0	8.0	0.5	--	--	--	--	95.5
9899	2.5	--	--	7.5	17.5	1.5	10.0	--	10.0	--	--	7.0	56.0
9900	0.5	41.0	5.0	--	--	--	--	--	45.0	--	3.0	7.2	101.7
Mean	7.1	28.0	21.3	23.1	10.6	21.2	12.3	16.6	19.2	17.4	10.8	11.9	71.4
Max.	25.0	73.0	44.0	64.0	21.0	49.0	43.5	39.5	45.0	43.5	21.5	33.0	220.1

DEBIT MENSUEL

(Daily discharge data are available in DGH database for the period monthly data are available.)

Station: AIT BOUIJANE												(unit: m ³ /s)	
Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Mean
1975	0.345	0.274	0.437	0.517	0.419	0.522	0.428	0.250	0.513	0.239	0.312	0.271	0.377
1976	0.686	0.569	0.497	0.441	0.501	0.480	0.421	0.374	0.400	0.312	0.356	0.405	0.453
1977	0.934	0.314	0.358	0.748	1.359	0.834	0.693	0.478	0.549	0.437	0.408	0.401	0.625
1978	0.351	0.608	0.572	0.365	0.509	0.397	0.651	0.396	0.426	0.317	0.342	0.392	0.445
1979	0.572	3.938	1.139	1.091	1.022	1.153	1.777	2.388	2.484	1.898	1.055	0.838	1.617
1980	0.826	0.411	0.911	1.175	1.061	0.954	0.930	0.703	0.593	0.554	0.517	0.427	0.754
1981	0.422	0.436	0.404	0.453	0.452	0.444	0.438	0.425	0.385	0.206	0.210	0.165	0.369
1982	0.237	0.271	0.487	0.512	0.729	0.918	0.521	0.518	0.423	0.182	0.237	0.346	0.446
1983	0.240	0.180	0.429	0.237	0.340	0.149	0.210	0.232	0.318	0.233	0.131	0.064	0.230
1984	0.145	0.103	0.425	0.379	0.387	0.279	0.302	0.478	1.235	0.724	1.011	0.937	0.537
1985	0.886	0.332	0.503	0.223	0.128	0.104	0.174	0.199	0.223	0.400	0.217	0.181	0.297
1986	0.122	2.157	0.280	0.216	0.146	0.113	0.274	0.184	0.174	0.230	0.111	0.047	0.341
1987	0.512	0.243	0.513	0.148	0.193	0.196	0.669	0.409	0.429	0.357	0.213	0.218	0.341
1988	0.200	0.456	1.500	0.733	0.713	1.165	1.499	1.469	1.553	3.735	0.525	3.604	1.428
1989	1.484	1.386	3.887	3.445	2.391	2.125	1.863	1.795	1.780	1.725	1.733	1.832	2.119
1990	2.045	1.136	1.155	1.194	1.252	1.211	1.113	1.018	0.972	1.022	1.090	1.183	1.198
1991	0.979	1.044	1.059	0.843	0.572	0.420	0.777	0.795	0.962	1.236	0.638	0.496	0.818
1992	0.389	0.477	0.680	0.401	0.506	0.442	0.544	0.495	0.569	0.382	0.513	0.538	0.495
1993	0.837	0.234	2.764	1.071	1.019	1.049	1.481	1.570	1.358	1.341	1.228	1.261	1.266
1994	1.214	4.757	0.826	0.852	1.035	0.922	1.546	1.814	1.119	0.824	0.815	1.165	1.414
1995	0.764	1.119	1.014	0.423	0.497	0.908	0.899	0.614	0.704	0.795	1.266	1.764	0.898
1996	1.997	2.097	2.458	2.335	--	--	--	--	--	--	--	--	--
Ave.	0.736	1.025	1.014	0.809	0.725	0.704	0.820	0.791	0.817	0.817	0.616	0.787	
Max.	2.045	4.757	3.887	3.445	2.391	2.125	1.863	2.388	2.484	3.735	1.733	3.604	
Min.	0.122	0.103	0.280	0.148	0.128	0.104	0.174	0.184	0.174	0.182	0.111	0.047	

DEBIT MENSUEL

(Daily discharge data are available in DGH database for the period monthly data are available.)

Station: AZZABA												(unit: m ³ /s)	
Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Mean
1957	6.02	12.17	22.35	23.46	42.10	43.14	23.32	27.75	21.61	13.22	8.32	6.09	20.651
1958	5.70	5.80	7.81	32.26	34.03	24.56	40.09	28.26	24.84	17.69	10.75	7.52	19.960
1959	6.90	7.07	8.50	58.74	94.51	71.67	61.98	42.24	28.61	31.54	14.17	9.64	36.257
1960	7.75	9.06	10.20	41.15	50.62	44.03	34.09	35.22	18.69	15.44	8.67	6.43	23.346
1961	6.32	7.32	14.52	12.23	11.84	10.62	49.43	44.57	22.36	16.16	8.54	6.64	17.570
1962	5.83	8.88	28.35	24.96	66.43	88.73	46.90	29.79	69.11	48.65	20.75	16.58	37.603
1963	11.96	11.28	10.69	34.95	19.65	19.71	26.55	56.21	25.71	17.99	13.20	10.18	21.487
1964	8.86	8.09	10.88	10.91	31.79	34.06	45.07	45.34	25.93	19.61	13.79	10.04	21.942
1965	10.51	10.33	11.05	9.53	11.27	10.22	10.64	11.91	8.87	6.12	3.96	3.71	8.990
1966	4.91	33.95	12.25	7.80	6.22	7.06	8.05	13.98	14.07	10.71	4.91	3.72	10.666
1967	4.24	6.79	7.57	11.89	16.75	35.47	69.97	50.49	40.23	21.69	13.75	9.80	24.024
1968	7.27	6.21	17.15	38.35	54.36	72.16	59.09	55.55	37.67	25.96	15.54	11.12	33.125
1969	10.14	10.68	14.19	18.70	80.22	31.08	30.78	30.02	18.56	13.83	9.36	7.48	22.918
1970	7.22	7.15	6.15	7.00	23.40	26.42	34.34	70.62	70.43	39.08	20.49	14.54	27.204
1971	12.12	11.35	18.50	18.58	25.92	47.04	75.83	60.17	46.66	28.75	16.59	11.10	30.976
1972	10.84	16.38	11.99	13.60	18.33	33.96	50.36	47.40	29.26	17.28	10.91	9.18	22.369
1973	6.10	6.66	6.78	8.39	10.04	15.17	36.61	58.82	48.10	24.60	14.76	9.86	20.494
1974	9.25	8.25	6.99	6.29	6.04	14.42	32.79	55.37	40.17	24.26	17.53	7.34	19.043
1975	6.89	6.09	6.26	8.52	7.20	23.03	27.81	47.76	65.52	27.38	17.16	11.53	21.244
1976	11.19	14.34	15.26	28.13	58.83	66.04	39.44	30.64	19.17	15.00	9.57	7.18	25.996
1977	8.23	10.02	8.19	12.54	13.92	32.57	30.97	37.03	26.11	14.00	8.68	7.13	17.331
1978	5.32	5.19	5.01	6.65	10.72	50.63	58.29	40.83	23.84	16.25	9.82	6.27	19.683
1979	18.12	16.73	24.27	15.82	13.35	13.99	27.55	19.02	23.00	11.76	7.62	5.79	16.411
1980	6.49	8.83	13.46	10.11	11.01	14.05	17.50	28.42	20.89	10.56	6.48	5.36	12.730
1981	3.73	4.51	3.93	5.48	8.08	15.16	19.53	33.53	25.40	10.35	6.69	4.76	11.723
1982	3.73	18.41	16.41	19.93	18.36	18.71	19.89	17.99	7.25	5.27	3.76	2.84	12.683
1983	2.58	2.88	5.20	6.10	5.49	4.27	8.19	15.14	25.33	15.68	6.49	5.04	8.542
1984	3.99	3.44	11.19	12.81	14.84	17.93	16.46	15.11	25.11	12.38	6.06	4.13	11.918
1985	3.41	3.30	4.02	5.94	17.91	50.47	55.14	41.65	25.94	21.78	10.68	7.46	20.429
1986	5.18	6.73	5.60	5.46	8.93	50.37	31.22	16.07	11.39	12.00	9.69	4.51	13.677
1987	10.91	11.06	10.14	10.79	16.58	26.47	30.81	12.97	13.35	8.49	5.69	4.07	13.404
1988	3.50	4.77	5.67	6.21	4.21	5.82	14.11	37.06	19.00	15.27	9.63	8.39	11.133
1989	8.79	12.63	13.17	15.90	17.59	15.67	9.41	11.39	19.06	5.36	4.91	4.61	11.527
1990	8.97	3.89	4.98	19.95	13.33	18.13	55.34	47.70	25.77	16.30	11.43	8.80	19.561
1991	7.44	7.33	4.93	6.78	4.46	4.51	7.99	44.02	23.55	21.65	9.08	7.39	12.394
1992	4.21	4.04	3.84	3.40	3.74	3.43	18.85	15.00	17.16	7.59	4.92	3.47	7.502
1993	3.48	3.37	14.69	15.39	9.95	32.69	35.54	18.22	9.77	5.66	3.92	2.65	12.809
1994	6.18	5.75	4.32	2.86	2.62	2.44	18.45	15.30	9.00	6.02	4.03	2.68	6.657
1995	3.94	5.60	3.42	16.97	37.77	57.81	68.73	38.44	30.66	15.85	9.14	6.36	24.476
1996	8.66	6.47	4.87	20.39	31.79	19.84	10.58	16.76	16.01	19.16	5.20	5.08	13.698
Ave.	7.171	8.819	10.368	15.874	23.355	29.338	33.942	34.094	26.829	17.159	9.916	7.162	
Max.	18.122	33.954	28.350	58.742	94.506	88.729	75.832	70.620	70.429	48.650	20.752	16.584	
Min.	2.577	2.878	3.421	2.863	2.617	2.438	7.991	11.386	7.252	5.269	3.761	2.654	

DEBIT MENSUEL

(Daily discharge data are available in DGH database for the period monthly data are available.)

Station: PON DE M'DEZ													(unit: m ³ /s)
Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Mean
1956	2.932	5.213	3.648	3.535	5.296	3.328	7.060	11.608	9.784	2.275	1.600	1.160	4.795
1957	1.226	4.488	--	5.113	14.099	19.789	7.633	7.503	3.981	2.529	1.158	0.782	--
1958	2.194	1.802	2.929	8.610	11.173	6.125	14.909	6.959	4.561	2.052	1.103	0.461	5.251
1959	2.730	1.815	2.075	19.294	27.777	30.824	22.326	12.704	6.176	9.291	2.819	1.285	11.542
1960	1.193	2.451	3.230	13.178	14.397	21.039	14.623	14.093	5.058	4.445	1.671	0.972	7.947
1961	1.778	2.729	5.151	4.525	4.176	3.720	21.862	18.953	5.687	4.070	1.293	0.648	6.223
1962	1.088	3.148	8.836	7.863	27.071	42.332	19.365	9.373	32.635	20.466	5.866	5.993	15.174
1963	4.348	4.905	4.907	15.743	7.146	6.680	8.281	25.003	6.243	4.297	2.908	2.915	7.767
1964	3.414	3.247	4.360	4.258	12.286	15.477	18.029	16.792	7.856	7.920	3.746	4.807	8.463
1965	3.892	4.301	4.205	3.294	3.419	2.343	3.072	2.756	3.544	2.431	0.836	1.147	2.937
1966	2.866	18.210	4.189	2.953	1.983	2.120	2.214	3.888	3.347	2.624	1.136	0.905	3.889
1967	3.486	3.772	3.087	4.006	5.109	12.306	28.884	20.940	11.998	4.207	1.944	1.632	8.432
1968	1.468	1.492	3.667	8.253	13.411	28.279	22.942	19.353	8.335	5.746	3.748	1.400	9.715
1969	1.405	3.924	5.416	5.835	43.098	11.655	9.579	7.927	4.007	3.461	2.960	1.391	8.403
1970	2.305	2.739	2.378	2.802	7.107	7.718	14.774	41.083	39.297	20.235	6.455	3.402	12.521
1971	3.556	4.342	8.298	8.116	9.499	22.066	32.632	27.877	17.355	7.093	2.972	1.638	12.070
1972	3.018	7.150	4.030	5.441	7.165	12.371	24.755	22.027	8.693	4.354	--	2.623	--
1973	1.399	2.713	3.132	3.667	3.441	4.248	15.310	23.800	18.031	3.620	2.100	1.074	6.887
1974	1.516	2.642	2.497	2.038	1.907	4.411	11.835	27.197	19.445	8.602	2.729	2.085	7.236
1975	2.064	2.446	2.912	3.263	2.769	7.757	11.858	25.690	31.294	8.671	6.931	2.953	9.049
1976	2.973	4.889	4.751	8.047	22.326	29.986	18.065	11.974	3.887	2.476	1.270	0.982	9.173
1977	3.217	4.010	3.396	3.943	4.518	14.440	7.798	7.812	3.867	2.425	1.178	1.257	4.749
1978	1.038	1.681	2.006	2.353	3.263	18.268	29.039	14.418	4.436	3.830	1.503	0.594	6.792
1979	15.007	8.569	9.490	5.308	4.203	5.741	11.979	7.638	8.122	1.341	0.825	0.706	6.562
1980	2.446	3.535	4.276	2.874	3.408	4.614	4.526	8.062	6.990	4.175	3.043	1.845	4.139
1981	1.328	1.930	0.205	0.585	1.109	2.582	5.424	13.276	9.958	3.303	1.059	0.829	3.461
1982	1.353	7.629	2.995	4.241	4.131	3.929	4.072	2.698	1.268	0.736	0.404	0.261	2.810
1983	0.365	1.087	1.930	1.646	1.113	0.763	1.310	1.816	4.555	1.136	0.434	0.283	1.374
1984	0.470	0.548	0.958	1.745	2.162	4.171	2.913	1.981	6.807	1.658	1.267	0.065	2.054
1985	0.766	1.500	0.963	1.389	3.977	14.228	19.723	12.230	4.968	6.283	1.489	1.608	5.698
1986	0.993	3.165	1.383	1.336	2.056	19.058	11.805	3.081	1.449	2.718	2.196	0.062	4.008
1987	4.691	7.323	1.626	2.778	3.705	9.250	9.765	2.098	2.281	0.796	0.360	0.111	3.718
1988	0.148	1.369	1.640	1.677	0.978	1.310	3.448	10.254	6.311	3.815	1.154	2.719	2.903
1989	2.128	5.115	4.157	4.147	5.281	5.744	2.072	2.072	10.633	0.847	11.841	3.625	4.825
1990	6.528	0.836	1.533	8.729	8.197	8.563	21.261	19.151	4.280	2.523	1.651	1.383	7.037
1991	2.326	1.769	0.998	1.577	1.011	0.854	1.405	17.811	5.001	5.506	0.723	2.266	3.416
1992	0.508	0.807	0.929	0.837	0.996	0.710	7.300	3.906	3.425	0.611	0.206	0.606	1.748
1993	0.248	0.610	7.053	2.063	2.335	9.478	15.700	3.822	1.327	0.698	0.448	0.577	3.657
1994	4.903	2.369	1.378	0.532	0.423	0.467	8.524	7.844	1.867	1.566	0.312	1.422	2.638
1995	2.722	4.001	1.675	5.490	12.016	23.303	34.713	18.883	13.659	3.074	1.412	0.827	10.115
1996	2.688	1.799	1.420	7.956	15.149	7.135	2.100	9.396	6.259	0.446	0.242	1.940	4.704
1997	8.520	3.364	3.163	6.485	5.305	14.716	2.830	1.992	3.565	2.230	0.969	1.567	4.482
Ave.	2.696	3.606	3.338	4.941	7.857	11.045	12.803	12.565	8.625	4.300	2.145	1.543	
Max.	15.007	18.210	9.490	19.294	43.098	42.332	34.713	41.083	39.297	20.466	11.841	5.993	
Min.	0.148	0.548	0.205	0.532	0.423	0.467	1.310	1.816	1.268	0.446	0.206	0.062	

*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*

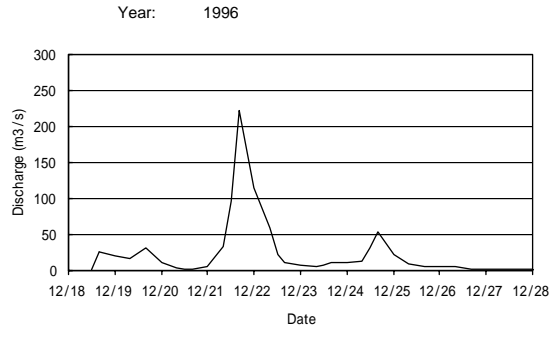
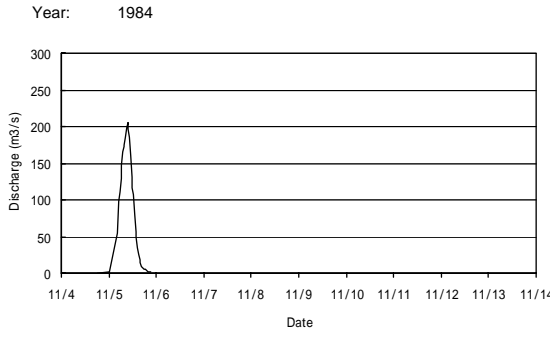
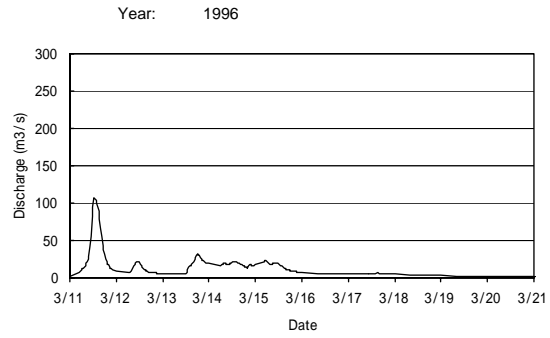
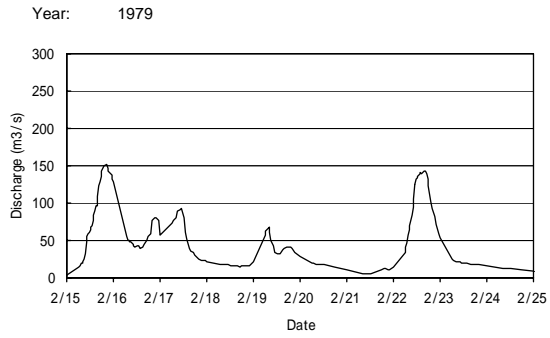
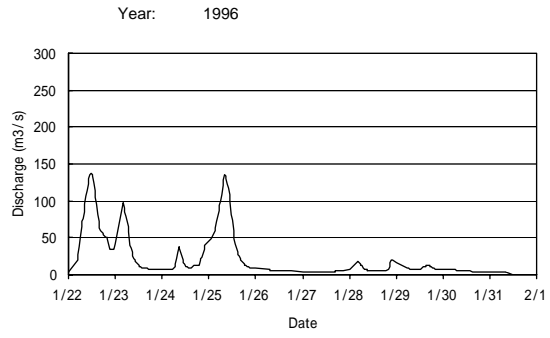
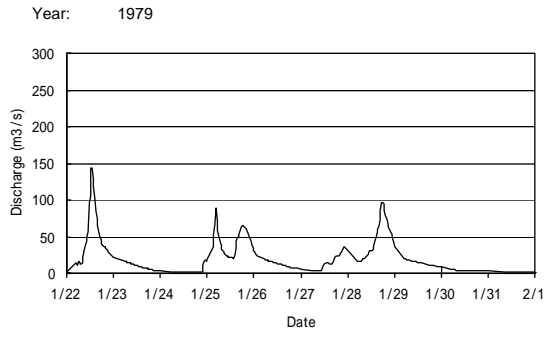
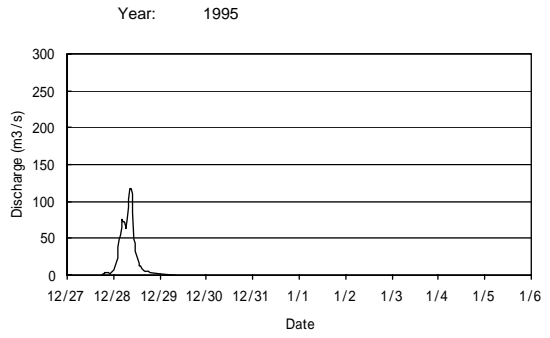
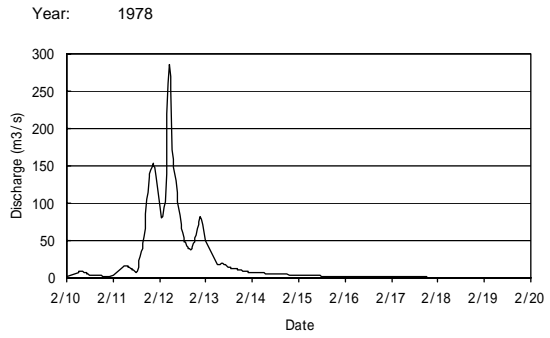
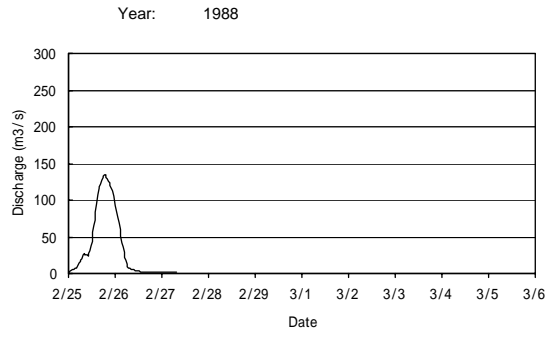
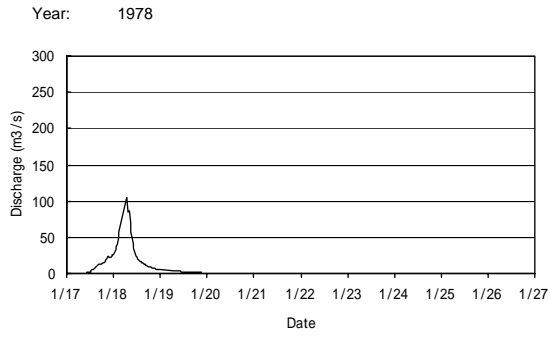
HY4 Hydrogramme des Principales Crues

Hydrogramme des Principales Crues

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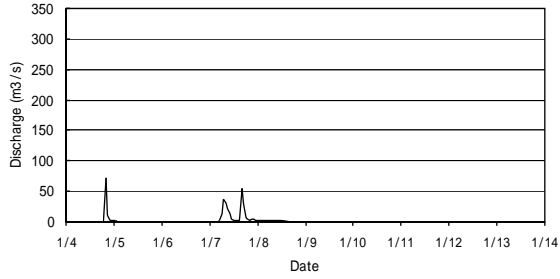
1. Hydrogramme de Débit des Principales Crues
2. WateHydrogramme du Niveau d'eau des Principales Crues

**HYDROGRAMME DE DEBIT DES PRINCIPALES CRUES
FEDDANE TABA STATION (Qpeak > 100 m3/s)**

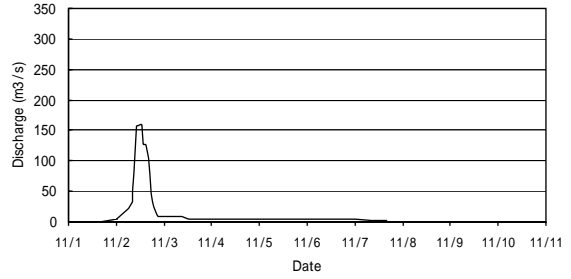


**HYDROGRAMME DE DEBIT DES PRINCIPALES CRUES
SIDI BOUATHMANE STATION (Qpeak > 70 m3/s)**

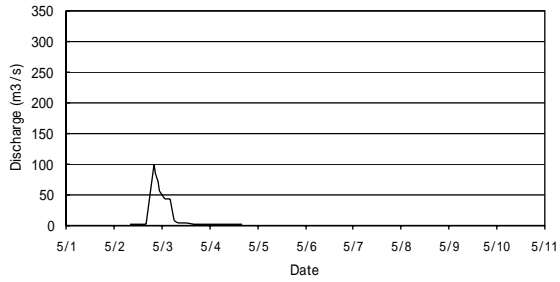
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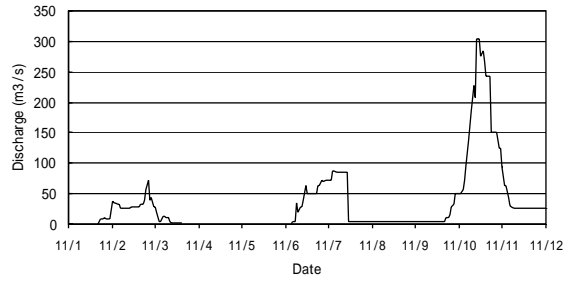
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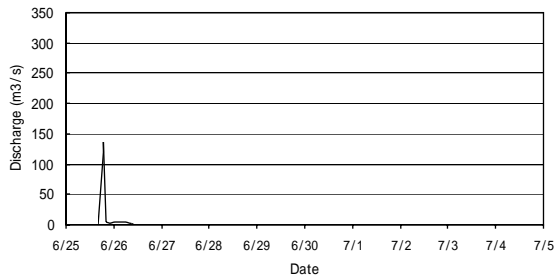
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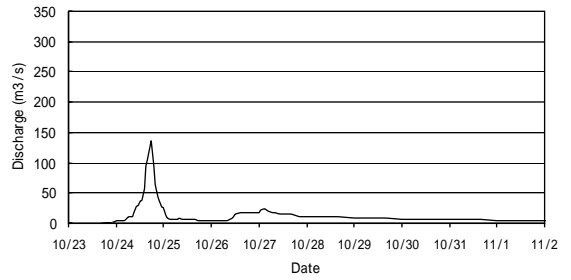
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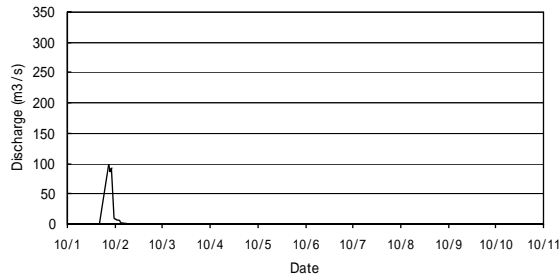
Year: 1987



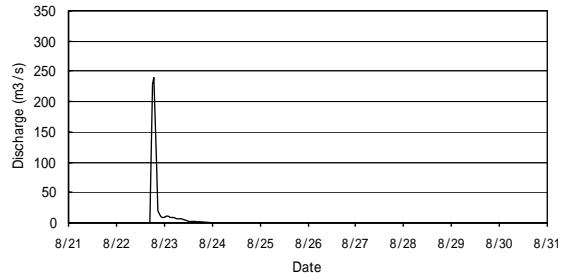
Year: 1989



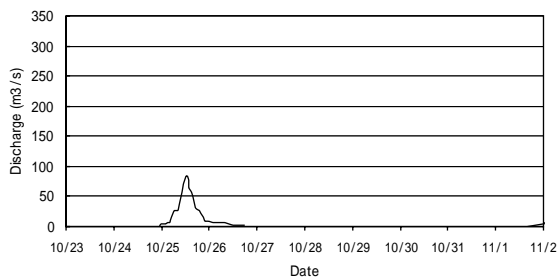
Year: 1987



Year: 1991

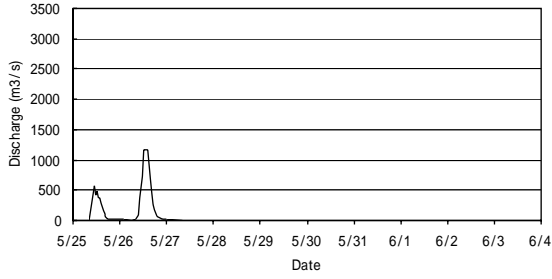


Year: 1987

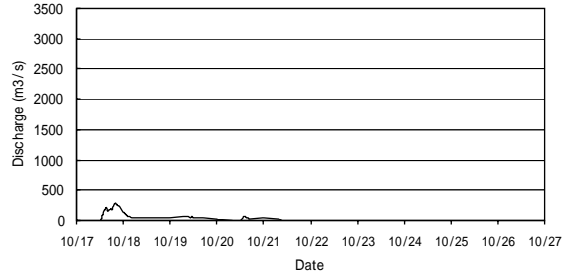


**HYDROGRAMME DE DEBIT DES PRINCIPALES CRUES
TADIGHOUST STATION (Qpeak > 250 m³/s)**

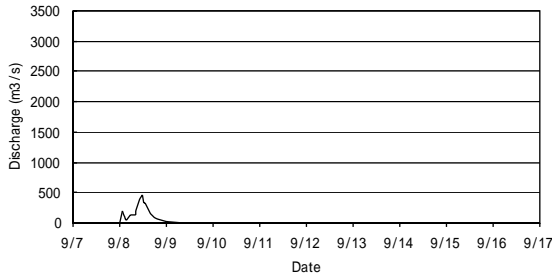
Year: 1963



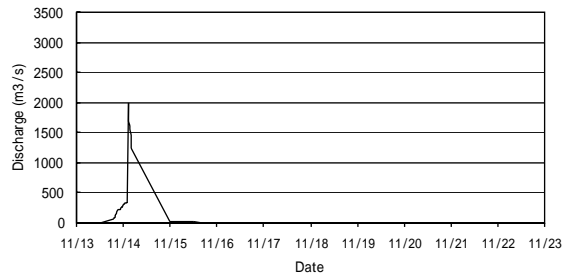
Year: 1979



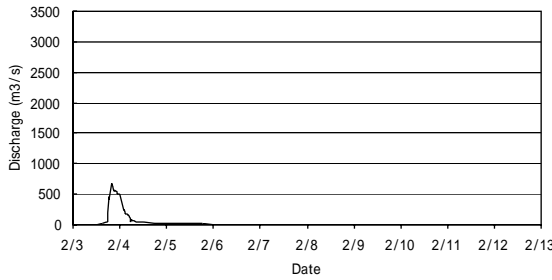
Year: 1964



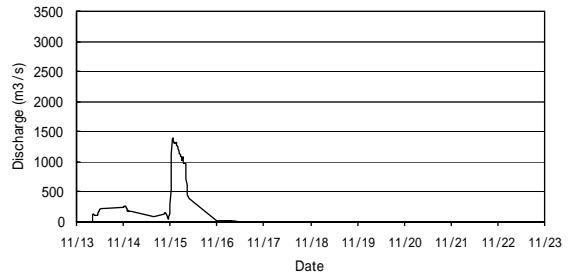
Year: 1989



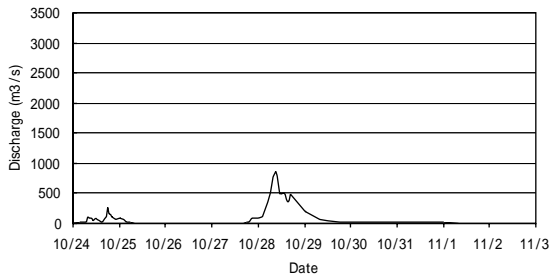
Year: 1965



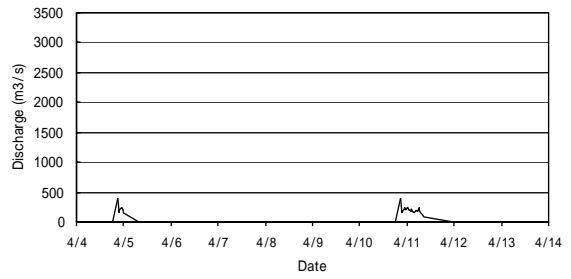
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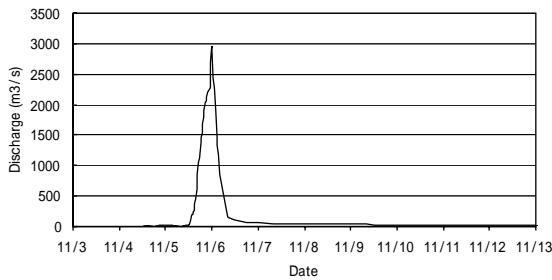
Year: 1965



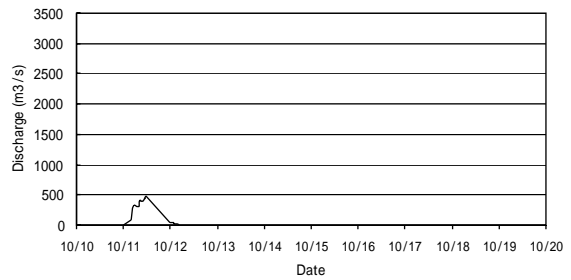
Year: 1995



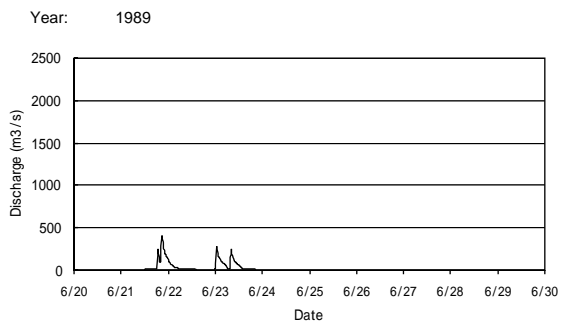
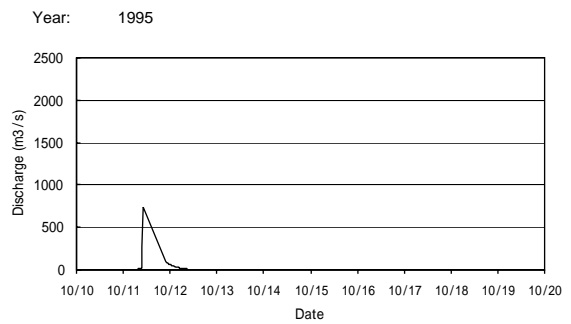
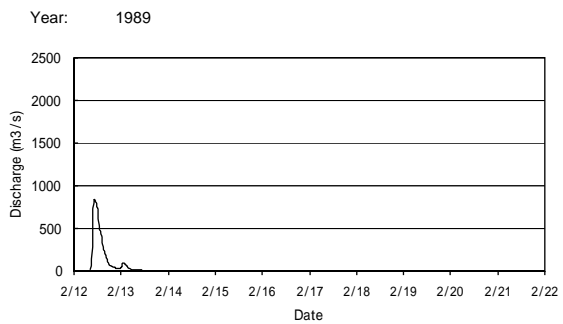
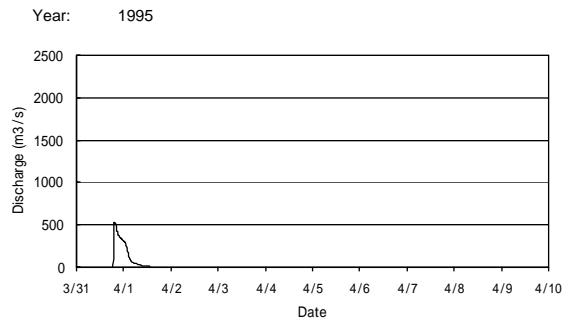
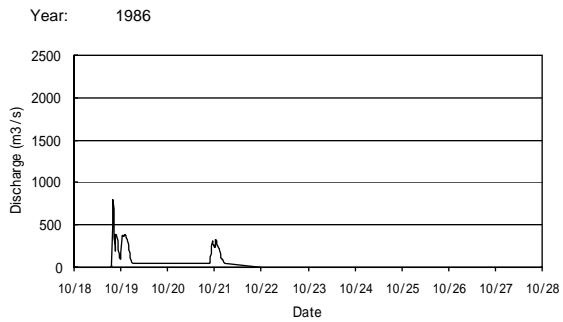
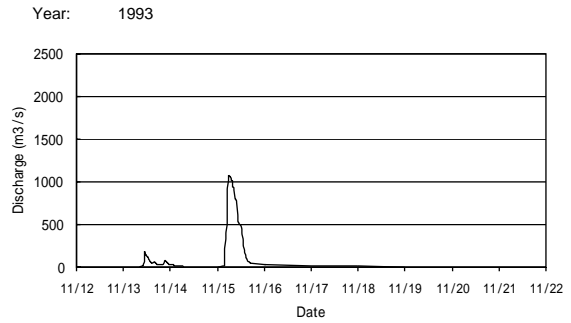
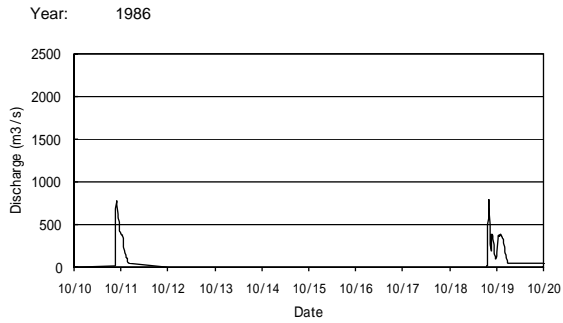
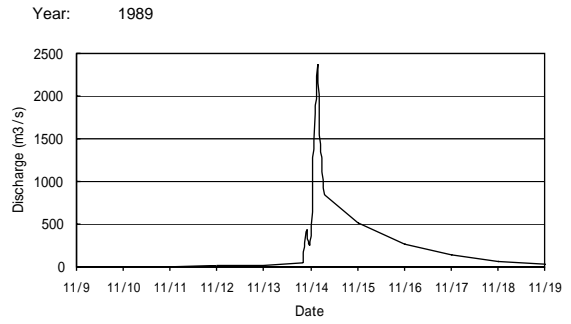
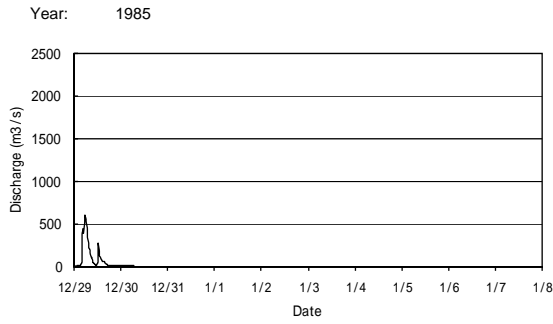
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Year: 1995

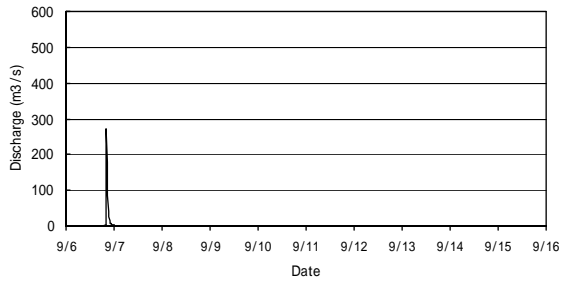


**HYDROGRAMME DE DEBIT DES PRINCIPALES CRUES
MERROUTCHA STATION (Qpeak > 250 m3/s)**

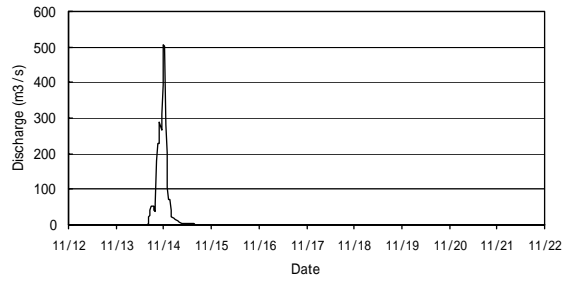


**HYDROGRAMME DE DEBIT DES PRINCIPALES CRUES
AIT BOUIJANE STATION (Qpeak > 250 m3/s)**

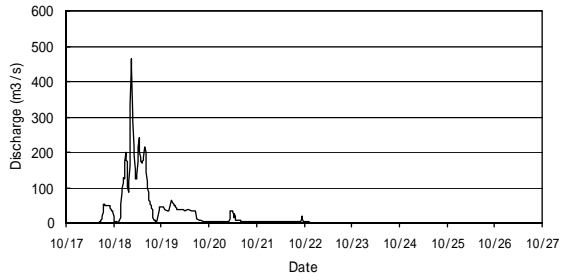
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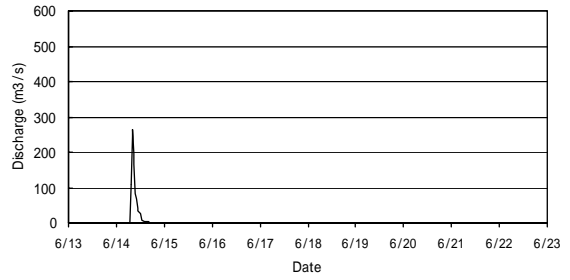
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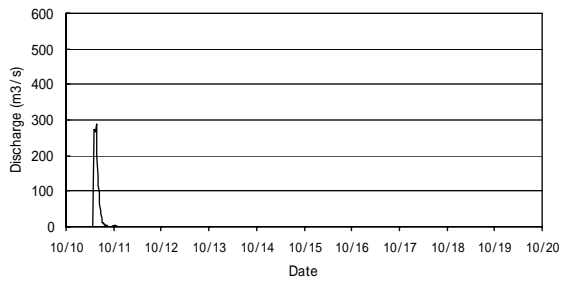
Year: 1979



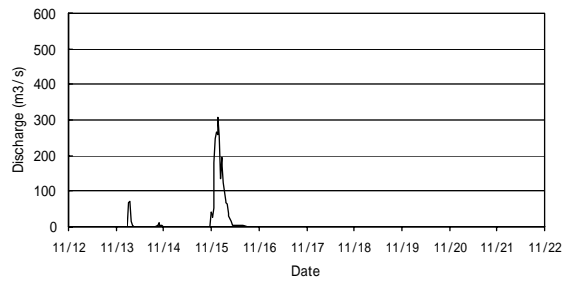
Year: 1992



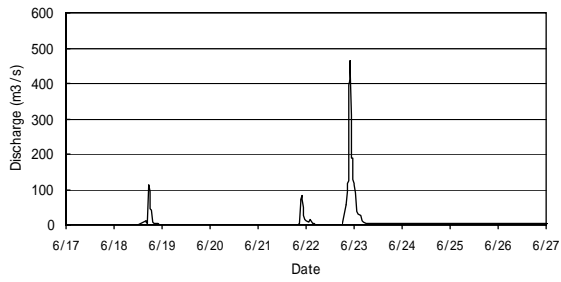
Year: 1986



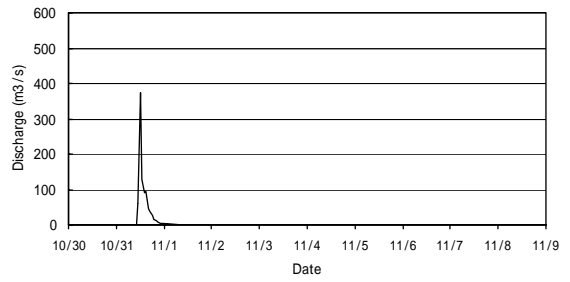
Year: 1993



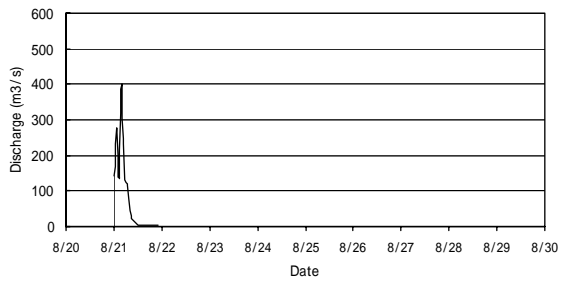
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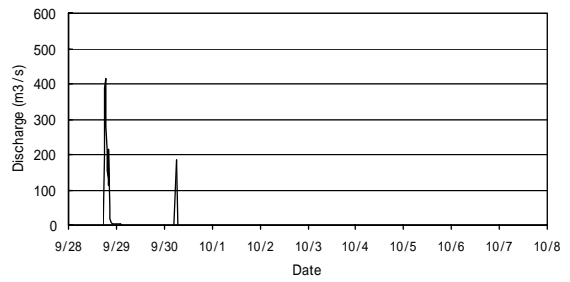
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Year: 1989

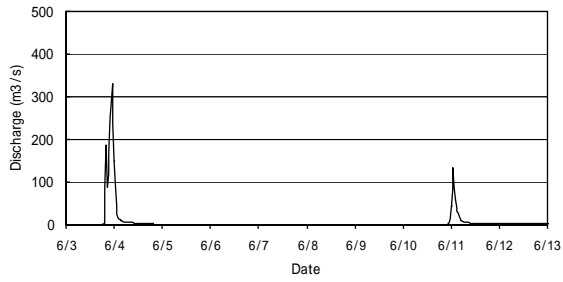


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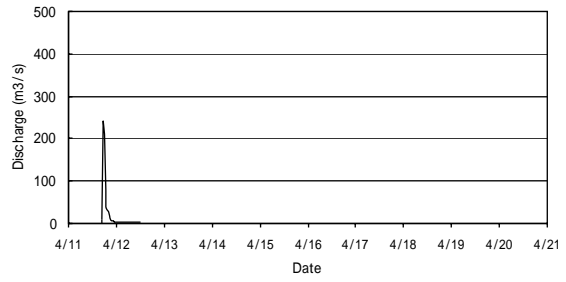


**HYDROGRAMME DE DEBIT DES PRINCIPALES CRUES
DAR HAMRA STATION (Qpeak > 200 m3/s)**

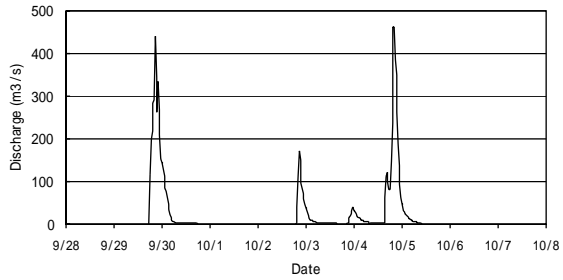
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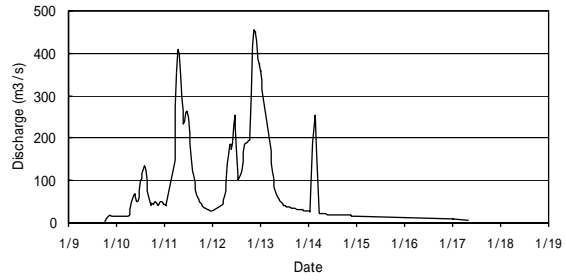
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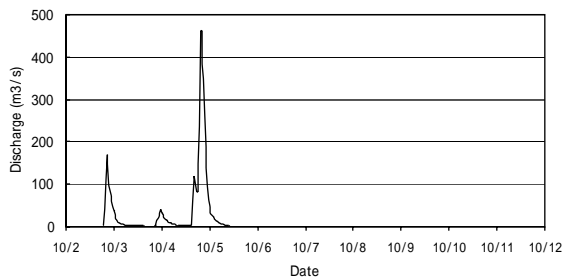
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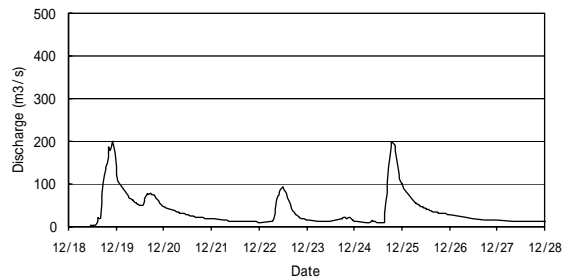
Year: 1996



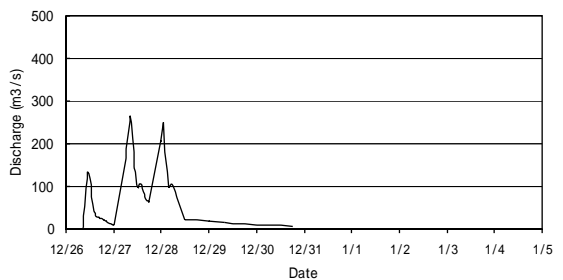
Year: 1987



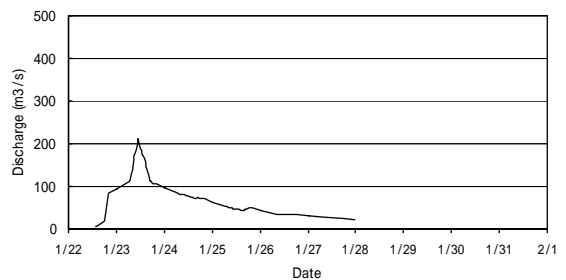
Year: 1996



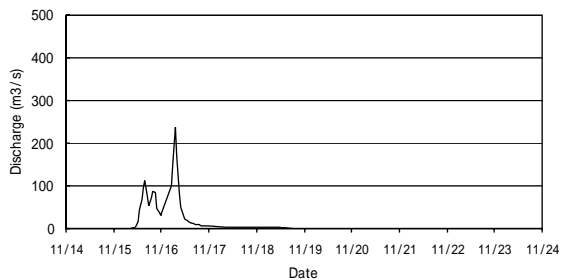
Year: 1989



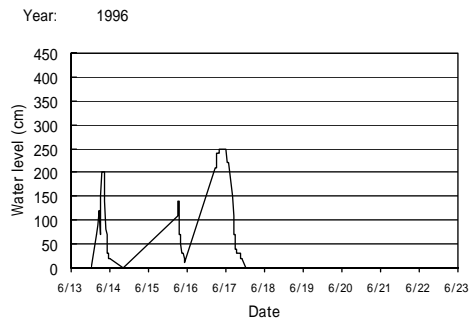
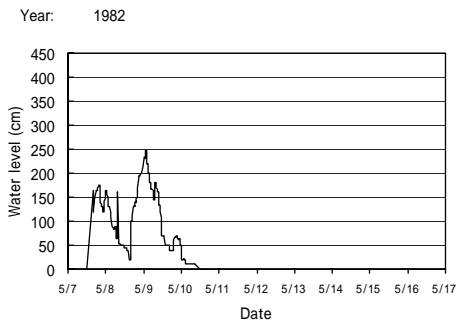
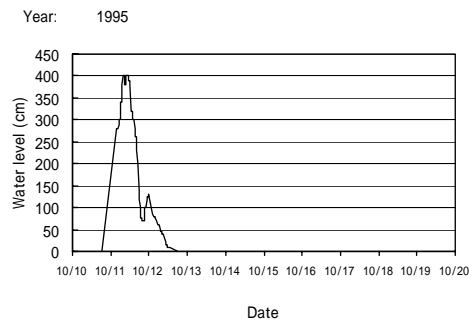
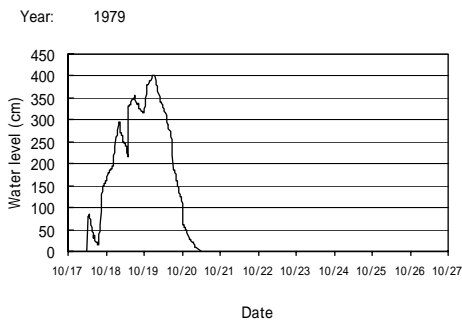
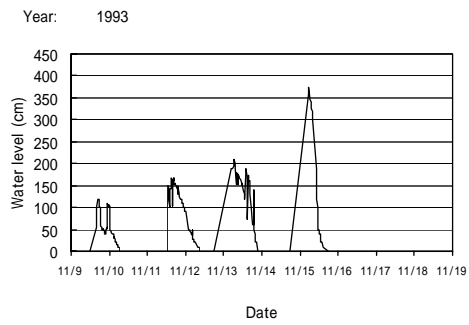
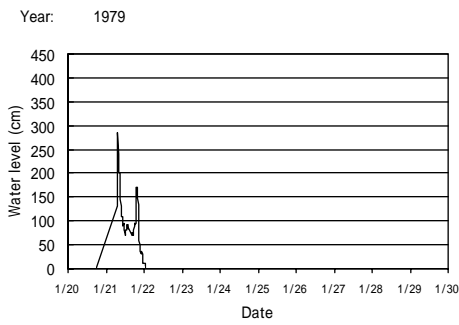
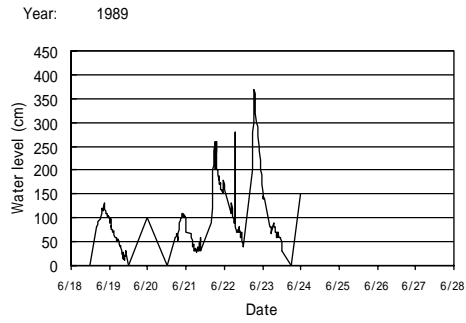
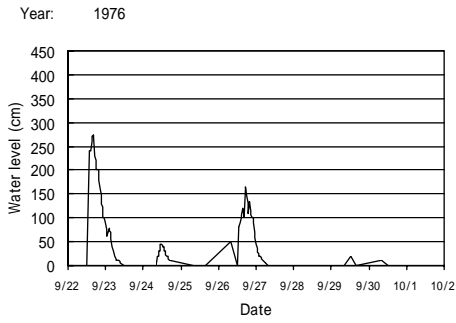
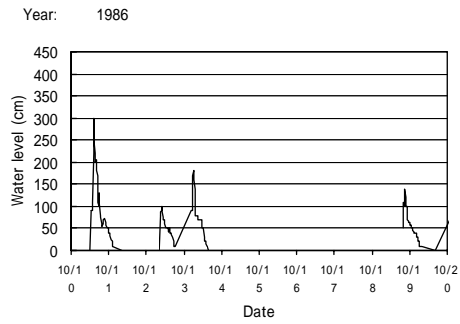
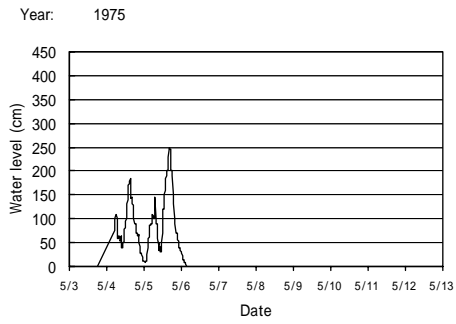
Year: 1997



Year: 1993

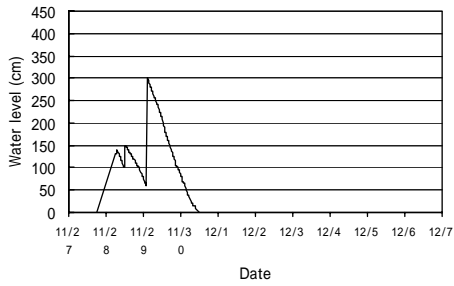


**HYDROGRAMME DU NIVEAU D'EAU DES PRINCIPALES CRUE
IFFER STATION (Hpeak > 250cm)**

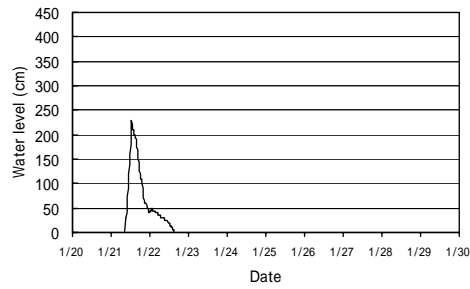


**HYDROGRAMME DU NIVEAU D'EAU DES PRINCIPALES CRUES
FELKLA STATION (H_{peak} > 150cm)**

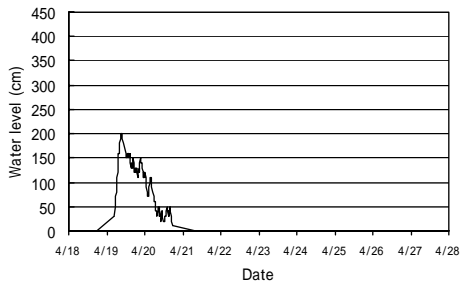
Year: 1972



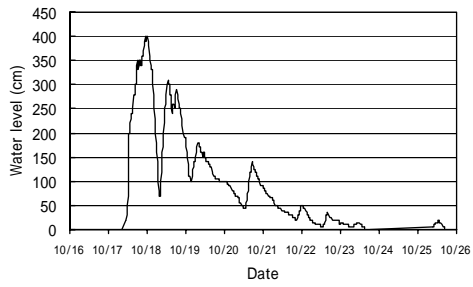
Year: 1979



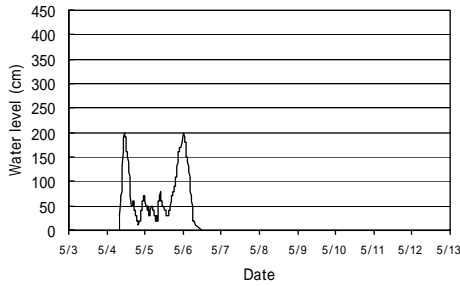
Year: 1975



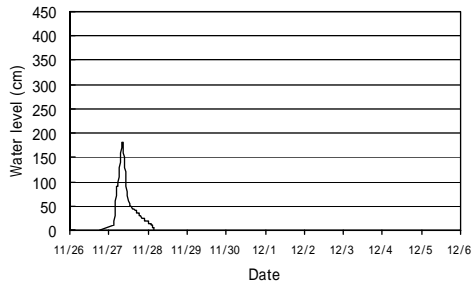
Year: 1979



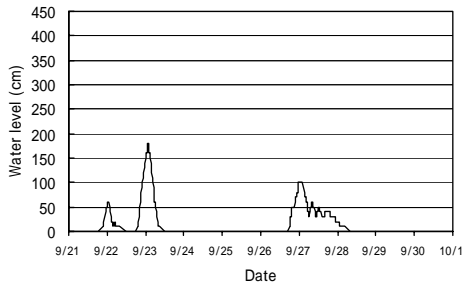
Year: 1975



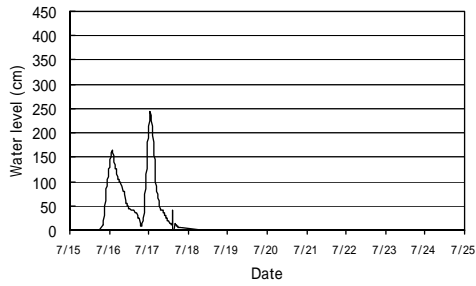
Year: 1984



Year: 1976



Year: 1996



Year: 1978

