

Data A4

Hydrological Data during Recent Major Floods

Table DA4-1 Comparison of Peak Discharges of Major Floods

Bold : Seems to be more reliable values

(Note : These indicate maximum peak discharge of a series of floods. Hence, time differences among stations in the table does not indicate propagation of one peak.)

Flood	C. Area (Nominal)	1929	1929	1931	1936	1940	1947	1948	1952	1959	1969	1973 Mar.*	1988	2000 May		2003 Jan-Feb		2003 Dec - 2004 Jan		2005 Jan-Feb		
		Feb	Mar	Dec	Nov	Jan	Oct	Nov.	Jan.	Mar	Sen-Oct			27 Mar - 1 Apr	25 May - 29May	11 Jan - 7 Feb		Dec 2003-Feb 2004		19 Jan - 28 Feb.		
Source	*7	*1, *10	*1, *10	*6	*1, *10	*6, *10	*6, *10	*6, *10	*6	*6, *10	*6, *9	*1, *10		*4	*4	*2, *4, *11	*2, *4	*4	*4	*4	*4	
Ghardimou	1,490	-	-	-	-	-	-	-	-	660	-	500 or 2370	28/Mar, 01:00	-	737	26/May, 8:45	1,090	11/Jan., 12:30	1,470	1/Jan., 17:45	838	20 Jan., 16:00
Jendouba	2,414	488	-	488	342	1,400	-	-	-	-	-	2420	-	-	327	27/May, 2:00	1,070	12/Jan., 3:00	1,020	13 Dec., 9:00	616	31 Dec., 9:00
Bousalem	16,483	1,300	1,760	2,060	1,420	1,780	1,700	851	424	1,140	1485 or 1670	2900 or 3180	28/Mar, 12:00	-	977	27/May, 11:30	1,020	12/Jan., 13:00	889	14 Dec., 5:00	529	1 Jan., 1:00
Sidi Salem Dam	Sidi Salem Dam (inflow)	18,250	Sidi Salem Dam did not exist										-	1,022	27/May, 23:00	1,065	27/Jan., 3:00	-	-	-	-	
	Sidi Salem Dam (outflow)												-	51.6	29/May	740	29/Jan., 15:00	303.8	5 Jan., 12:00	-	-	
Slouguia	20,990	-	-	-	-	-	-	-	-	-	-	3,200	-	-	44	29/May, 12:30	744	27/Jan., 4:00	407	14 Dec., 1:00	250	10 Feb., 16:00
Mjedz El Bab	21,185	-	-	-	-	-	1280	981 or 891	980	1,490	1440 or 1405	3000 or 3500	28/Mar at 14:00	-	-	-	730	27/Jan., 9:00	350	14 Dec., 2:00	224	20 Feb., 3:00
El Herri		-	-	-	-	-	-	-	-	-	-	-	-	-	58	31/May, 12:14	-	-	263	14 Dec., 14:00	-	-
Laroussia Dam	21,860	-	-	-	-	-	-	-	-	-	-	-	1,925	29/Mar at	-	-	-	-	-	-	-	-
El Battan		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jejeida	22,100	-	-	-	-	-	-	-	-	-	-	-	-	-	157	31/May, 5:00	about 360	about 28/Jan	268	6 Jan., 18:00	197	2 Mar., 3:00
Hir Tobias		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	204	15 Dec., 21:00	-	-

Stations on tributaries on upstream of Sidi Salem Dam

Right Bank Tributaries																							
Sidi Abdelkader	Mellegue	328	-	-	-	-	-	-	-	-	-	-	-	-	-	133	26/May, 3:18	69	11/Jan., 10:25	-	-	-	
Sarrath PR	Mellegue	1,520	-	-	-	-	-	-	-	-	-	-	-	-	-	367	26/May, 6:40	725	11/Jan., 15:10	581	12 Dec., 22:20	-	
Rmel PR	Mellegue	402	-	-	-	-	-	-	-	-	-	-	-	-	-	133	24/May, 21:00	198	11/Jan., 16:30	48	12 Dec., 12:30	-	
Mellegue K13	Mellegue	9,000	-	-	341	520	98.4	-	-	-	-	4480 or 6000	974 or 1280	28/Mar, 05:00	4770	4,480	26/May, 7:00	2,600	11/Jan., 14:00	2,480	12 Dec., 20:00	-	
Mellegue Dam (inflow)*	Mellegue	10,309	Mellegue Dam did not exist										-	3,464	-	-	2,302	11/Jan., 17:00	-	-	-	-	
Mellegue Dam (outflow)*	Mellegue												-	1,211	1,259	29/Mar, 03:00	1,531	26/May, 15:00	324	11/Jan., 13:00	590	23 Dec., 11:00	-
Sidi Medien	Tessa	1,952	-	-	-	-	-	-	-	-	-	-	-	-	-	197	26/May, 14:30	215	11/Jan., 10:25	121	13 Dec., 5:00	-	
Left Bank Tributaries																							
Bou Heurtma Dam outflow*	Bou Heurtma	390	Bou Heurtma Dam did not exist										-	-	-	-	452	-	-	-	-	-	-
PR	Beja	340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	-	-	-	
Zerga confluence	Aval Zerga	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	304	-	-	-	
Stations on tributaries on downstream area of Sidi Salem Dam																							
Jebel Cote 140	Laoudj Siliana	2,066	-	-	-	-	-	-	-	-	-	-	-	-	-	22.7	26/May, 8:55	215 or 360	26/Jan, 14:15	685	13 Dec., 14:55	-	

- : No data

Source : * : Peak discharges of the 1973 flood are estimated values and not reliable (Gauges were washed away due to the flood.)

*1 : DGRE Flood Report of 1973 Flood

*2, *6 : INAT Flood Report

*4 : Result of Flood hydrograph data compilation from various sources (DGRE, EGBGTH)

*5 : DGBGTH and collected data through Result of Flood inundation and damage survey

*7 : DGRE, Stream gauging station data

*8 : DGBGTH, dam operation record

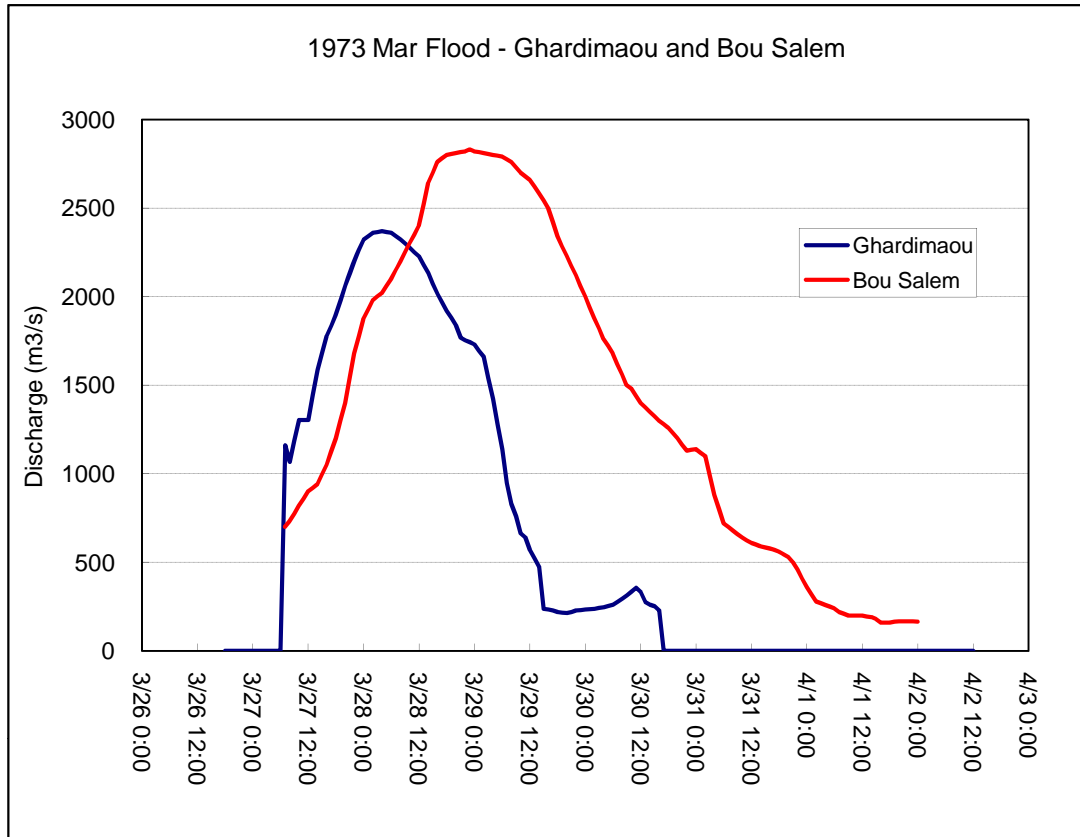
*9 : MARH, Flood Report

*10 : "Monographies Hydrologiques"

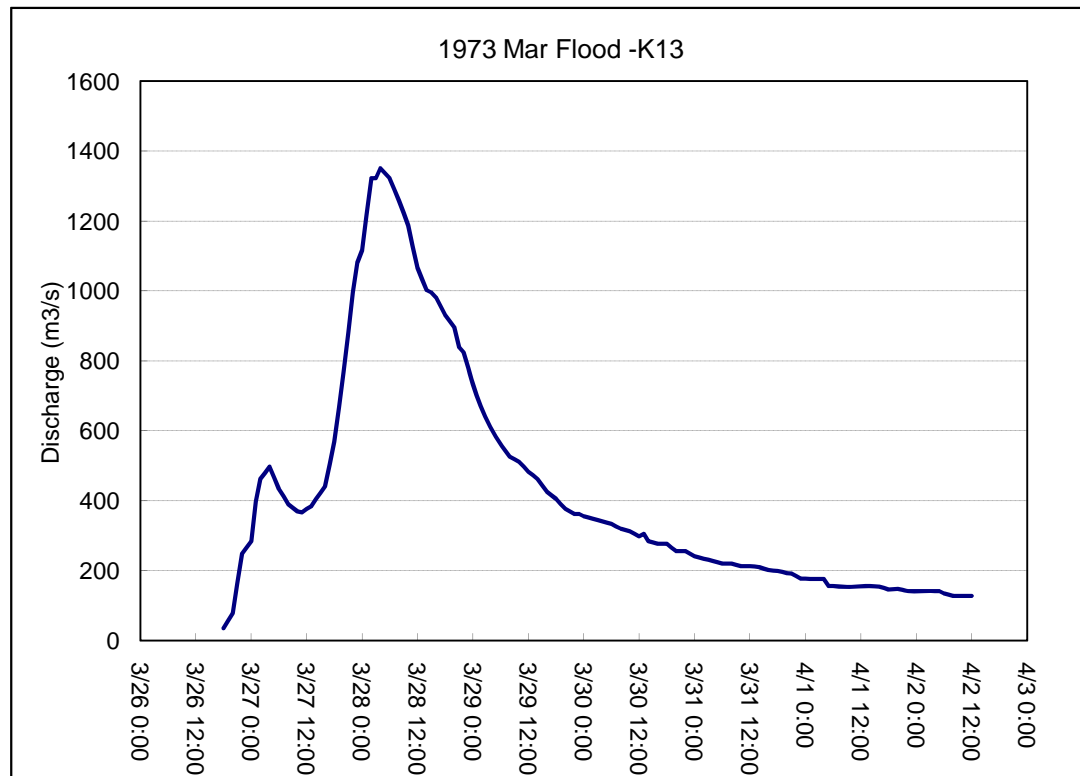
*11 : DGRE, Electrical version of Discharge Annual Report

Hydrographs of Major Floods
1973 March Flood

River : Mejerda

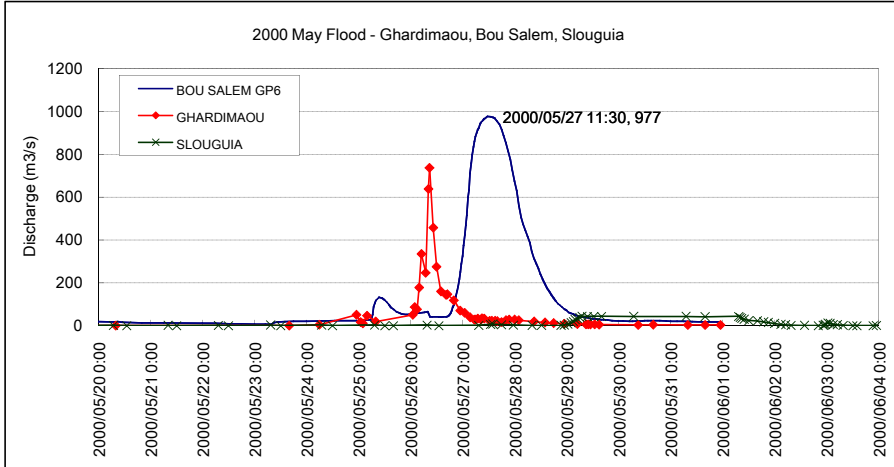


River : Mellegue

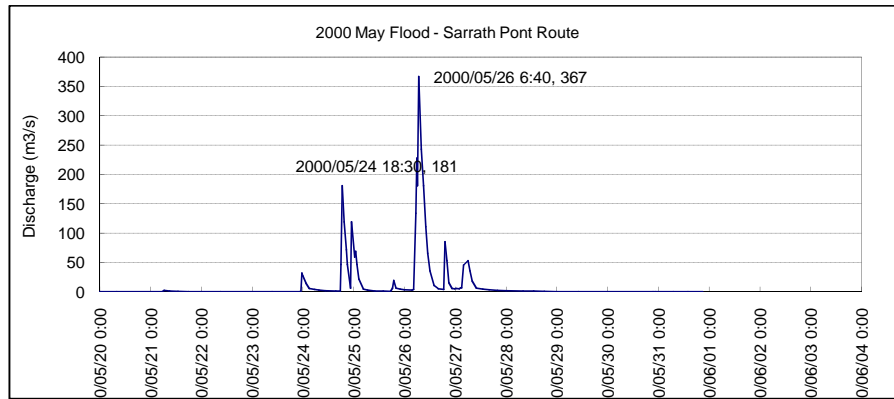
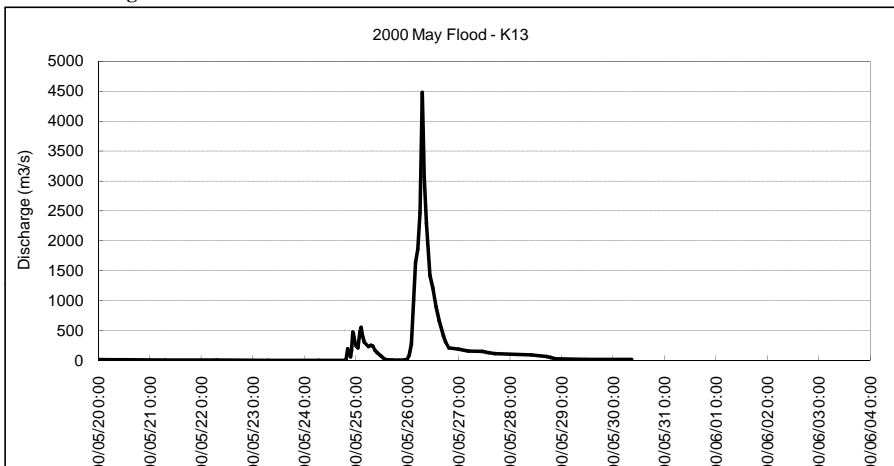


Hydrographs of Major Floods
2000 May Flood

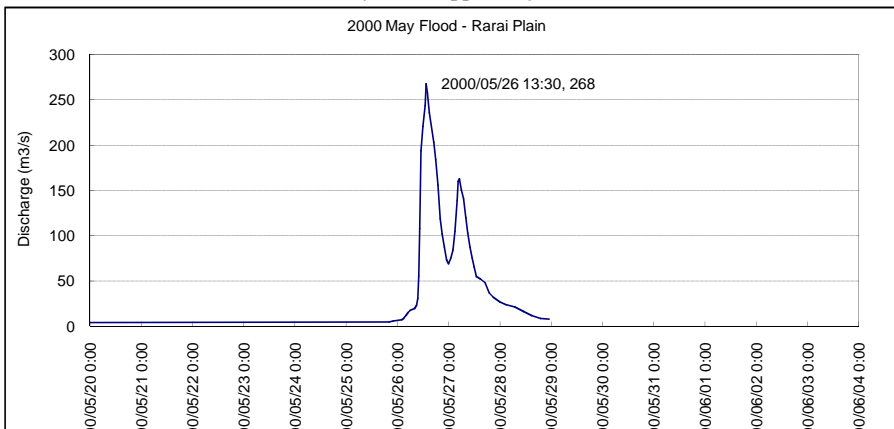
River : Mejerda



River : Mellegue



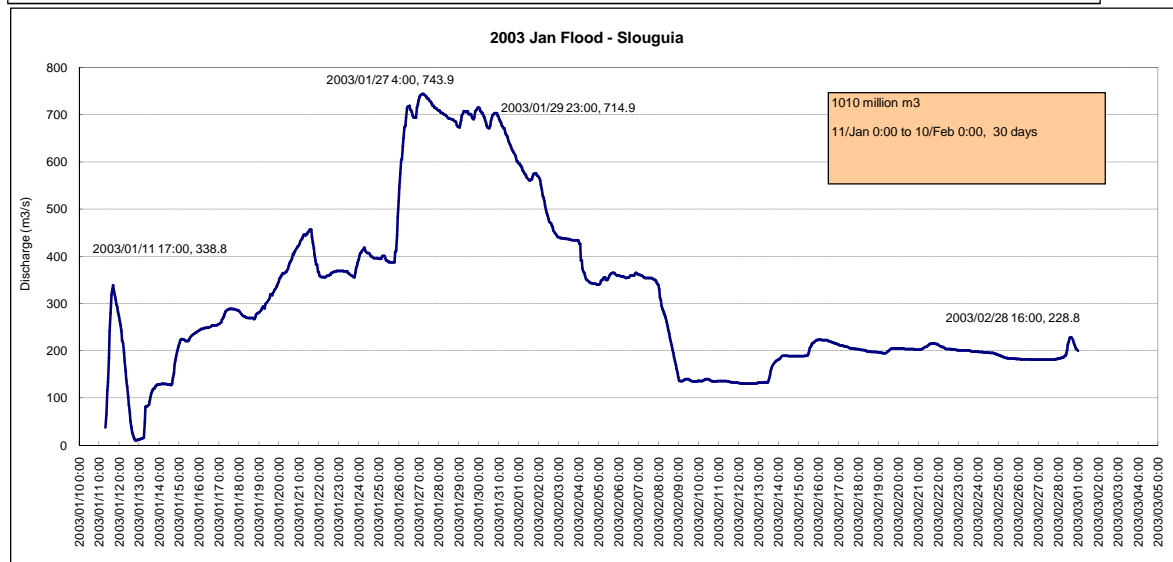
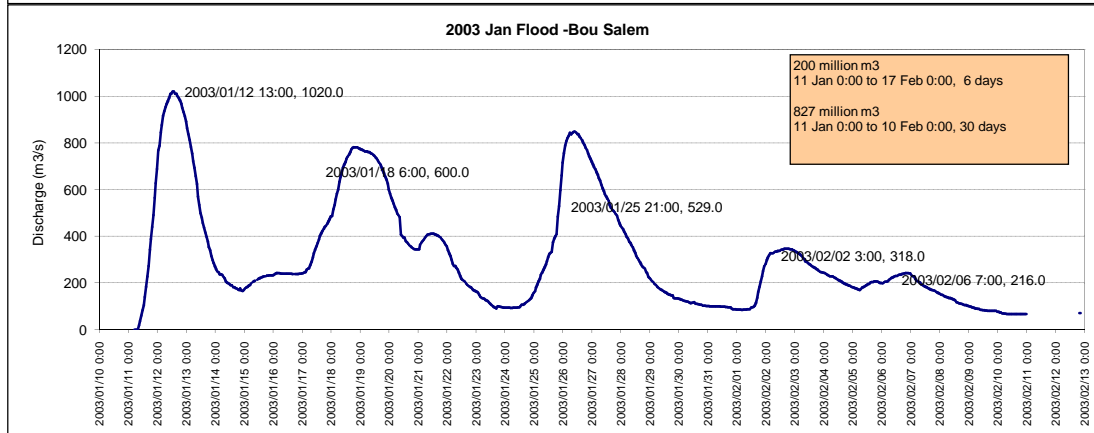
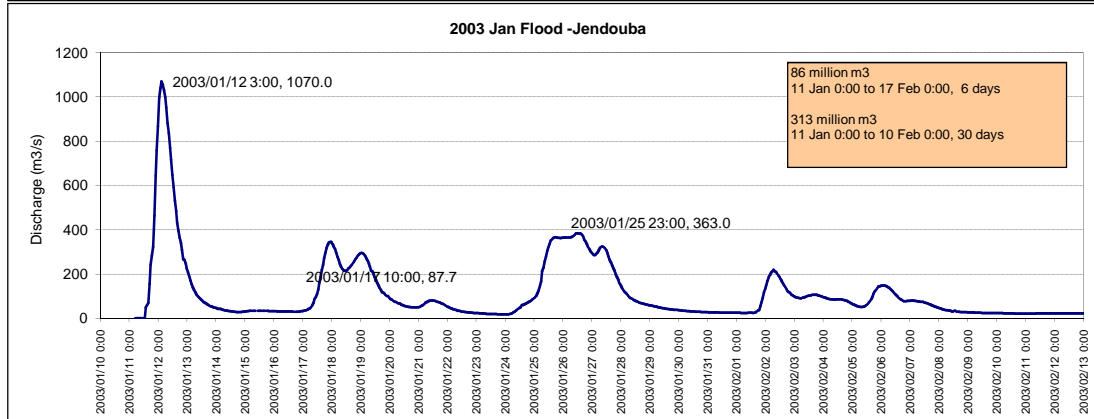
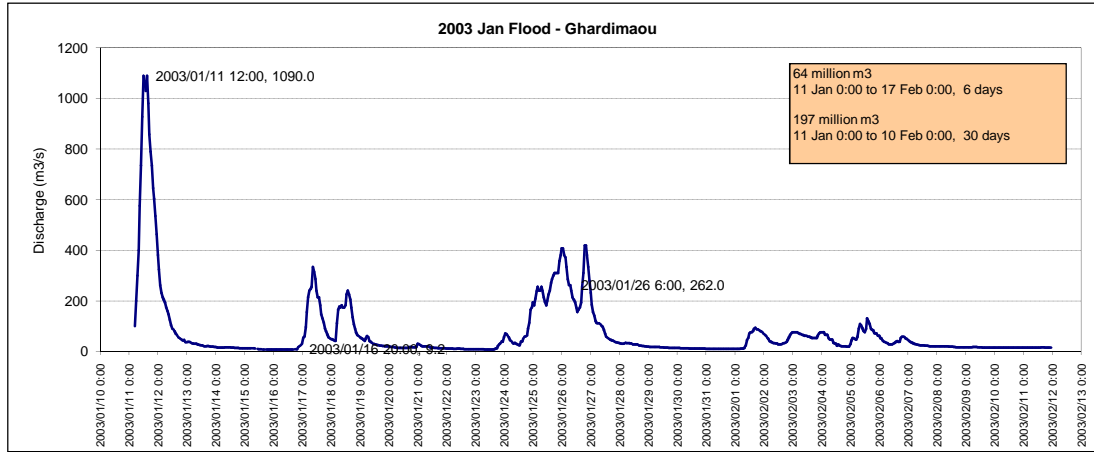
River : Rarai River (Left bank tributary of the Upper Mejerda)

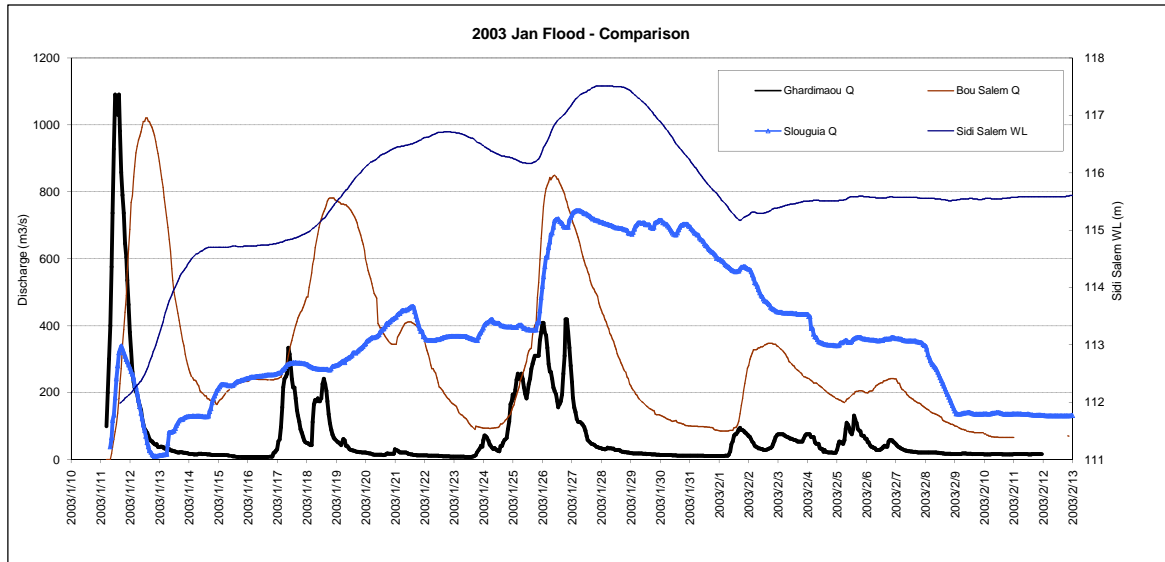


Hydrographs of Major Floods

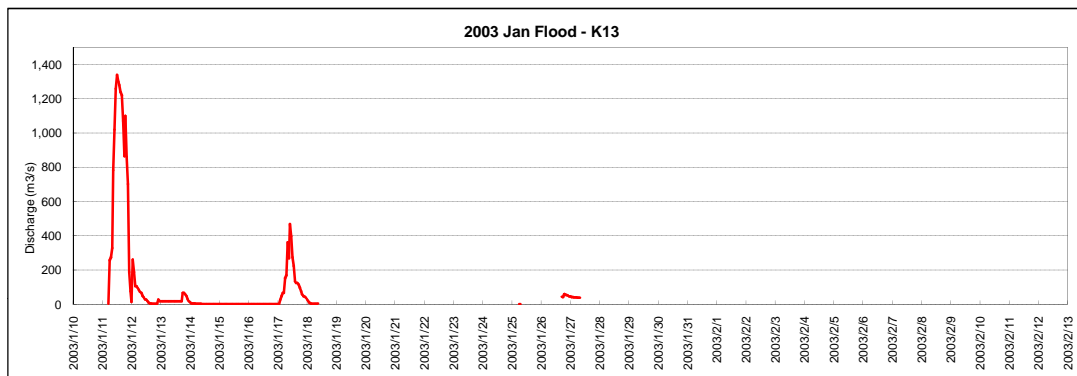
2003 Jan Flood

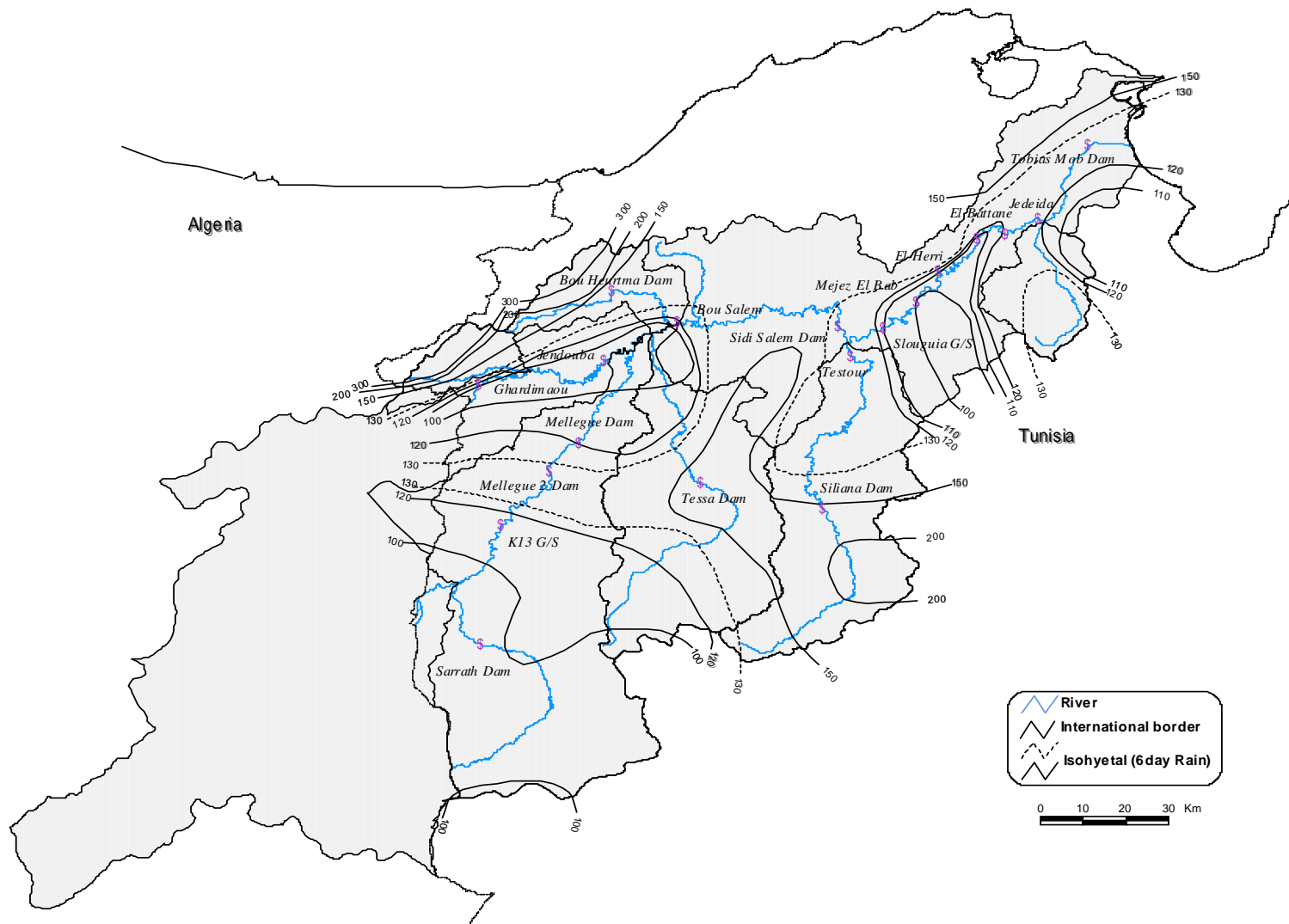
River : Mejerda



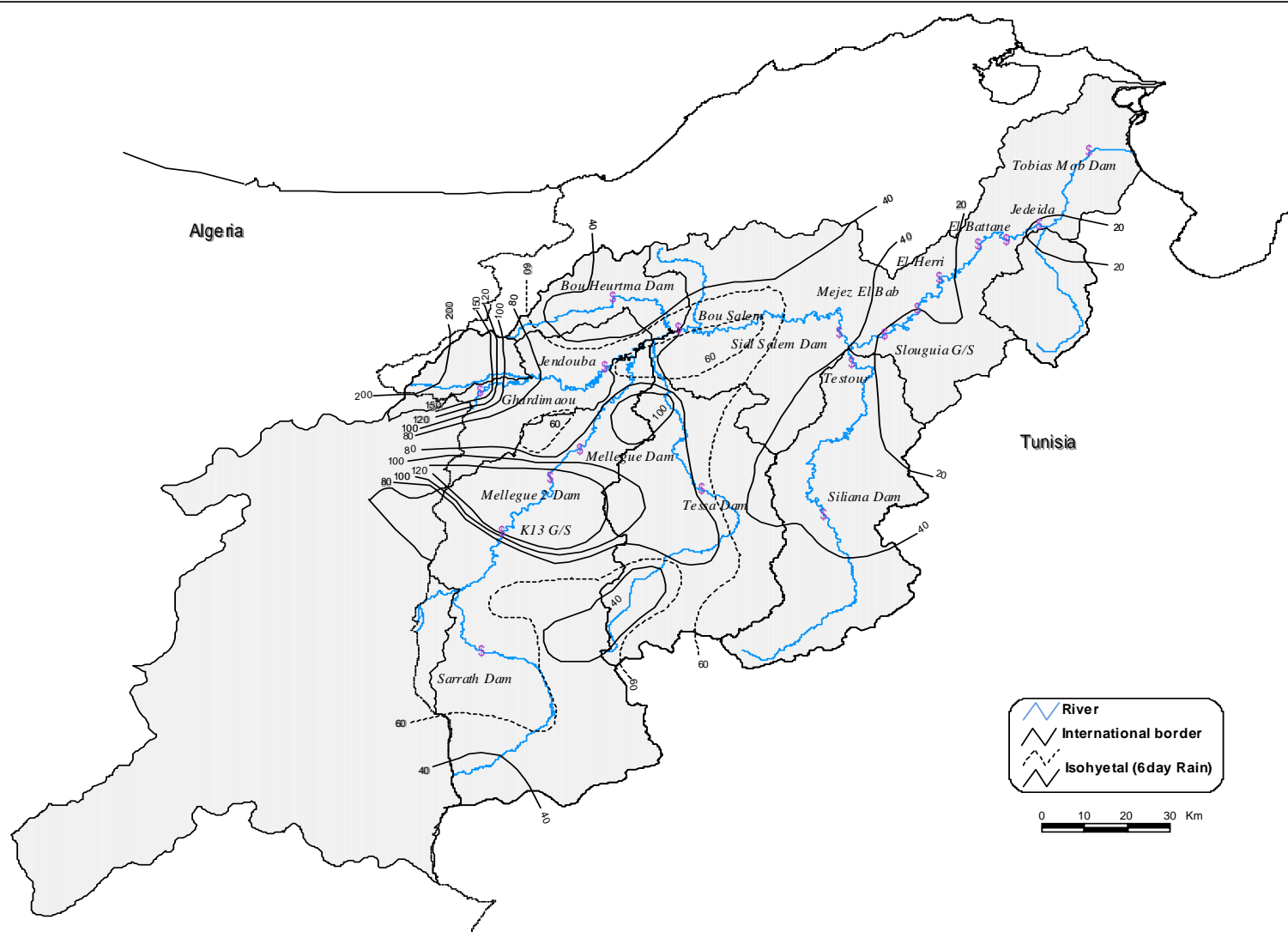


River : Mellegue



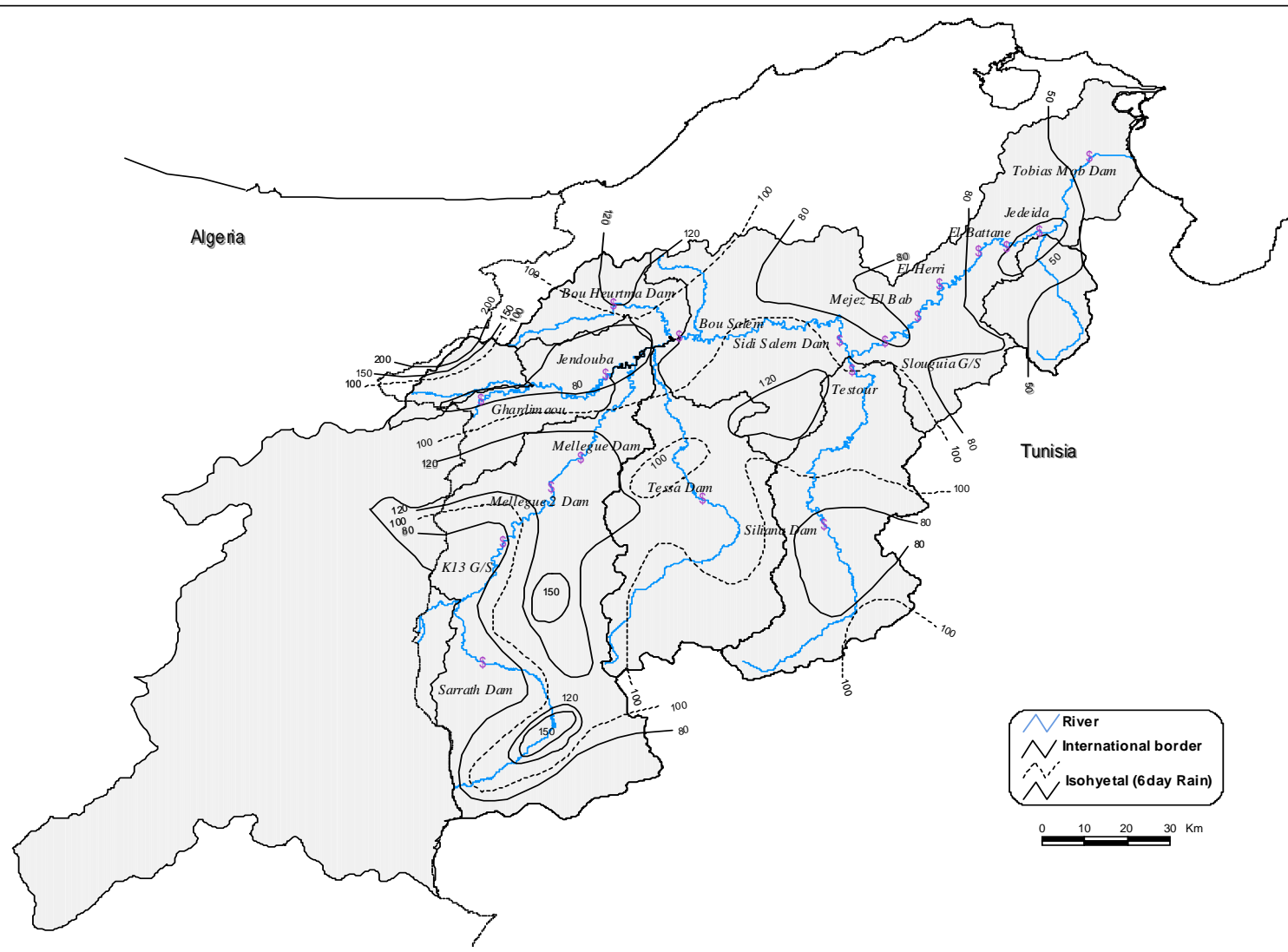


Isohyetal Map (1973 Flood , 6 days from 24 March to 29 March)

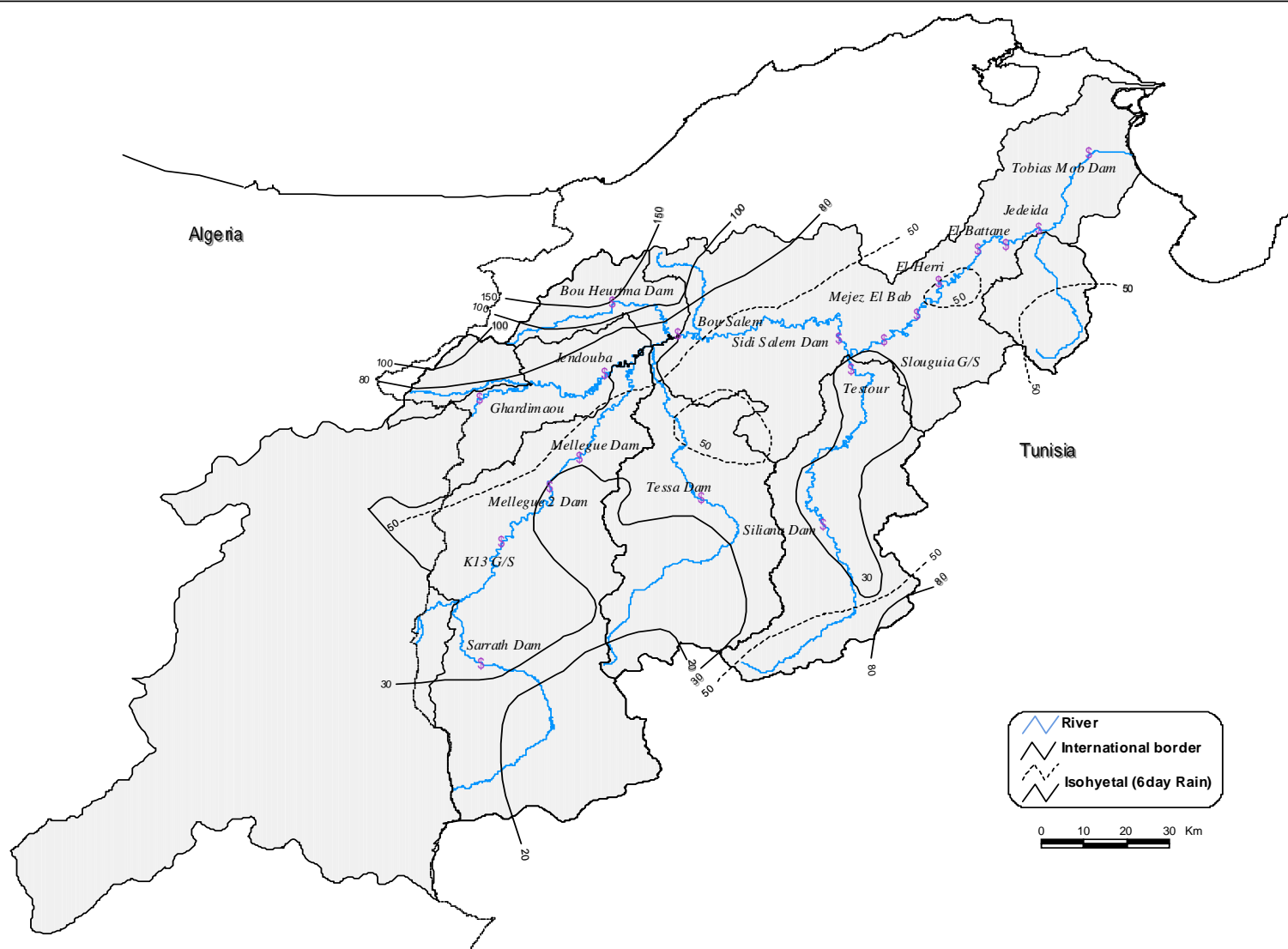


Isohyetal Map (2000Flood , 6 days from 22 May to 27 May)

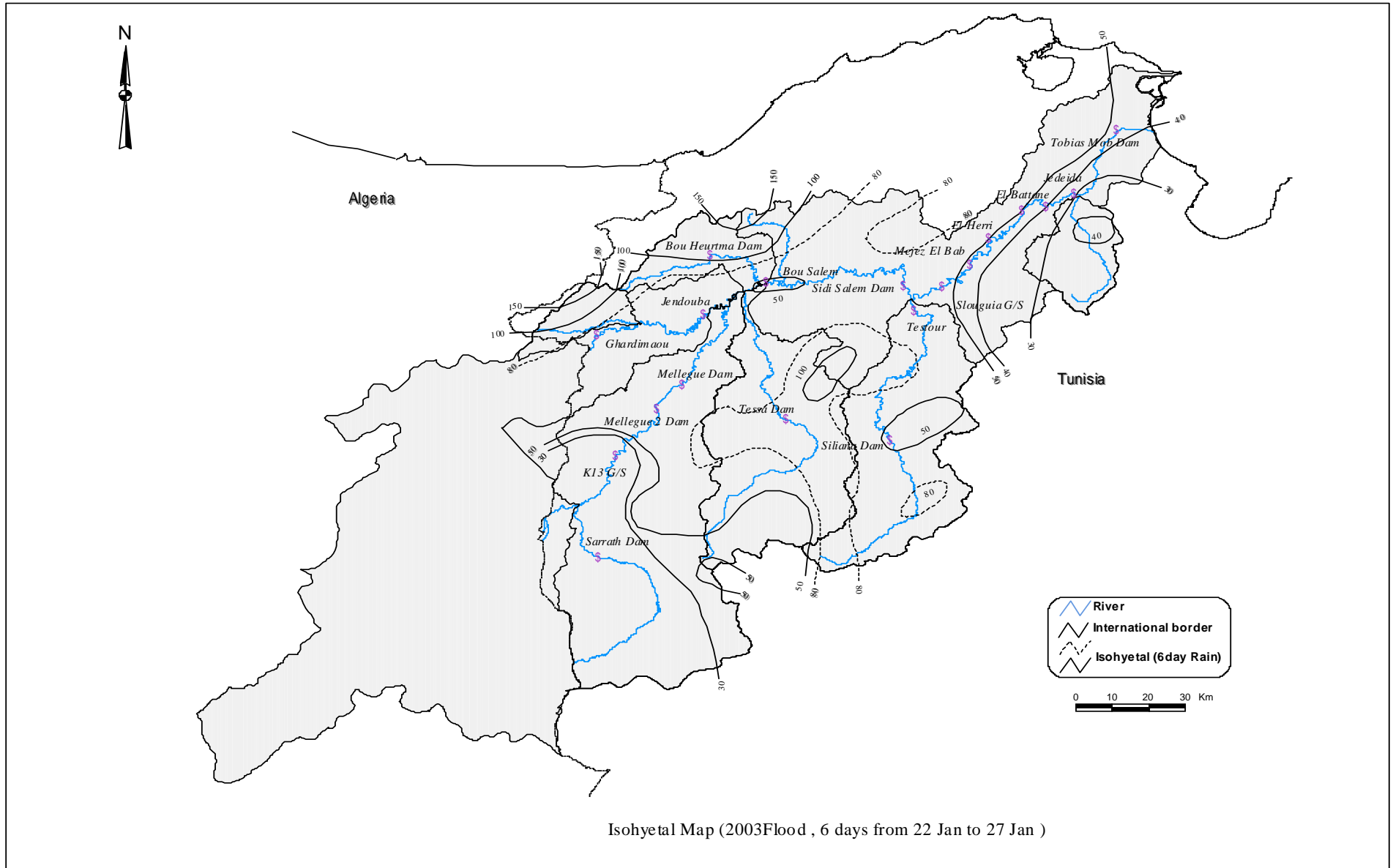
DA4-8



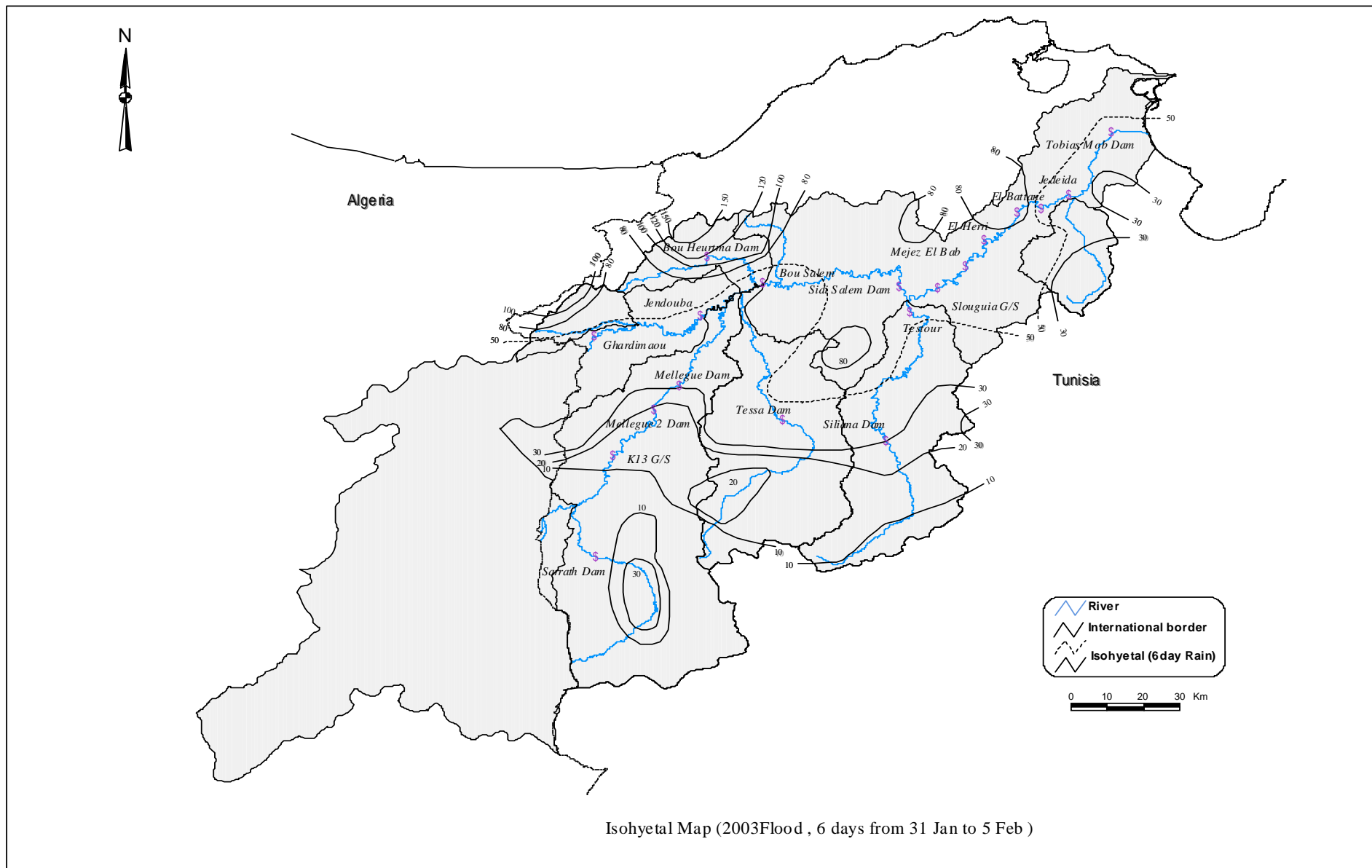
Isohyetal Map (2003Flood , 6 days from 8 Jan to 13 Jan)



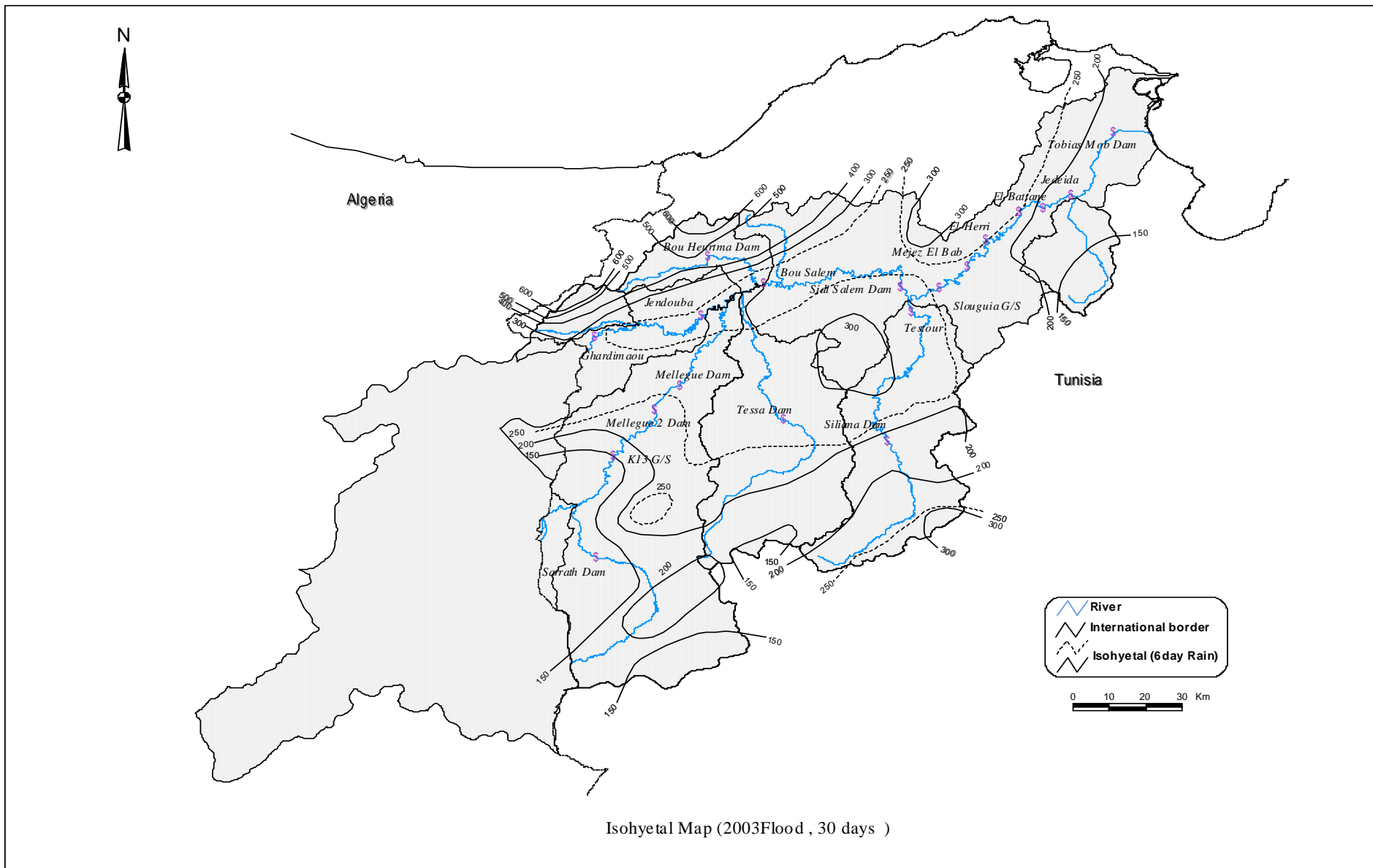
Isohyetal Map (2003Flood , 6 days from 16 Jan to 21 Jan)

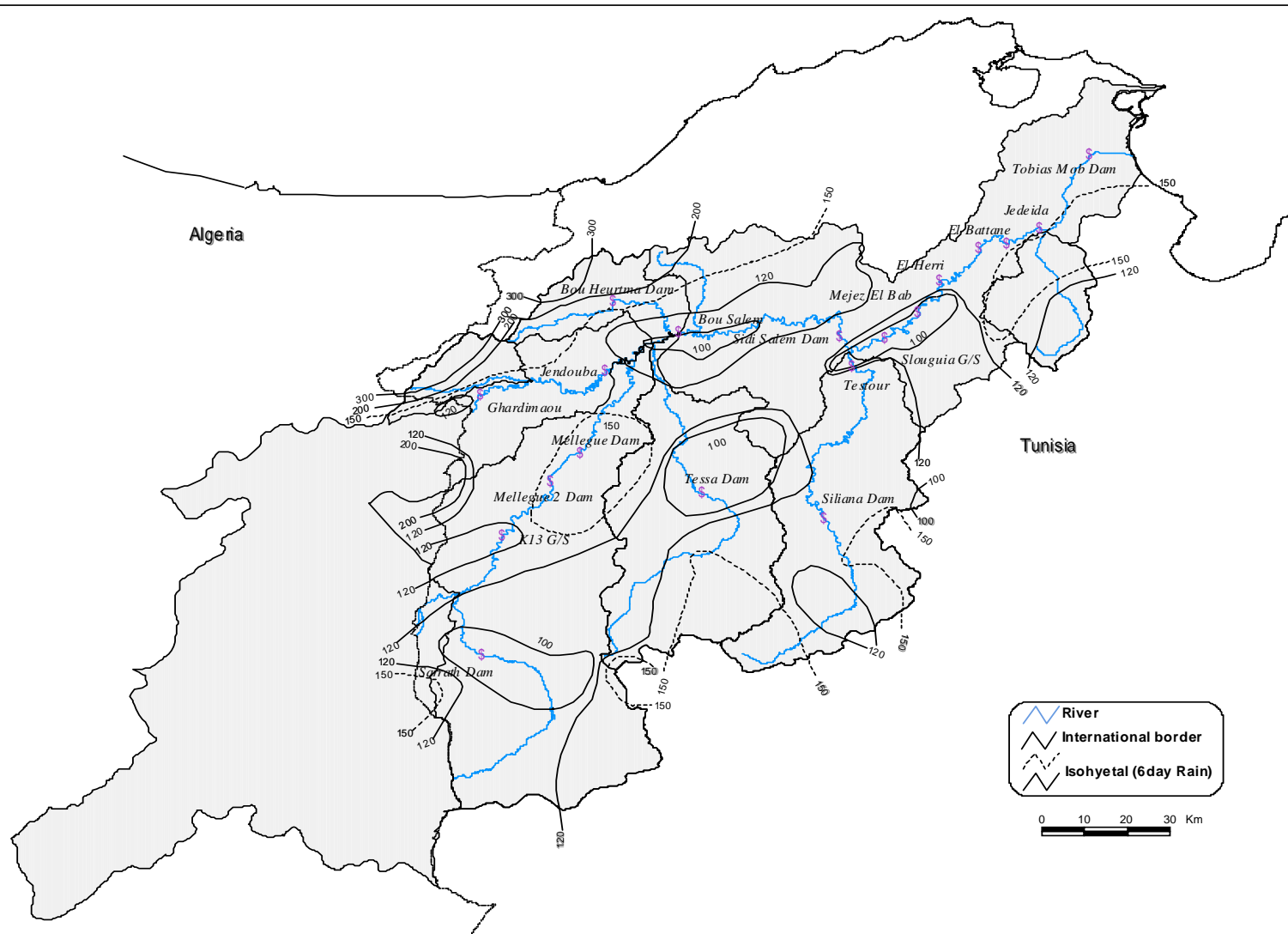


Isohyetal Map (2003Flood , 6 days from 22 Jan to 27 Jan)



Isohyetal Map (2003Flood , 6 days from 31 Jan to 5 Feb)



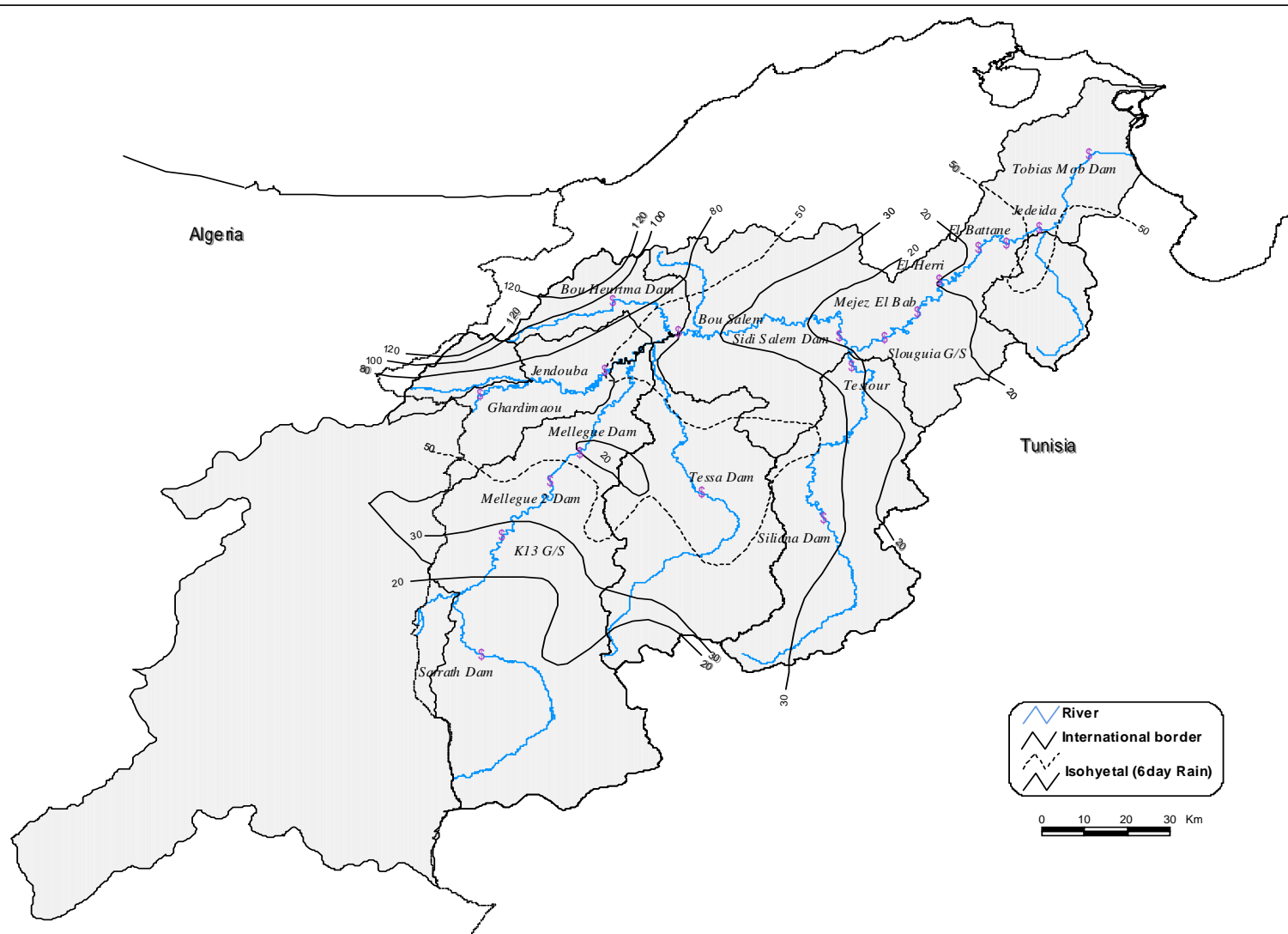


Legend:

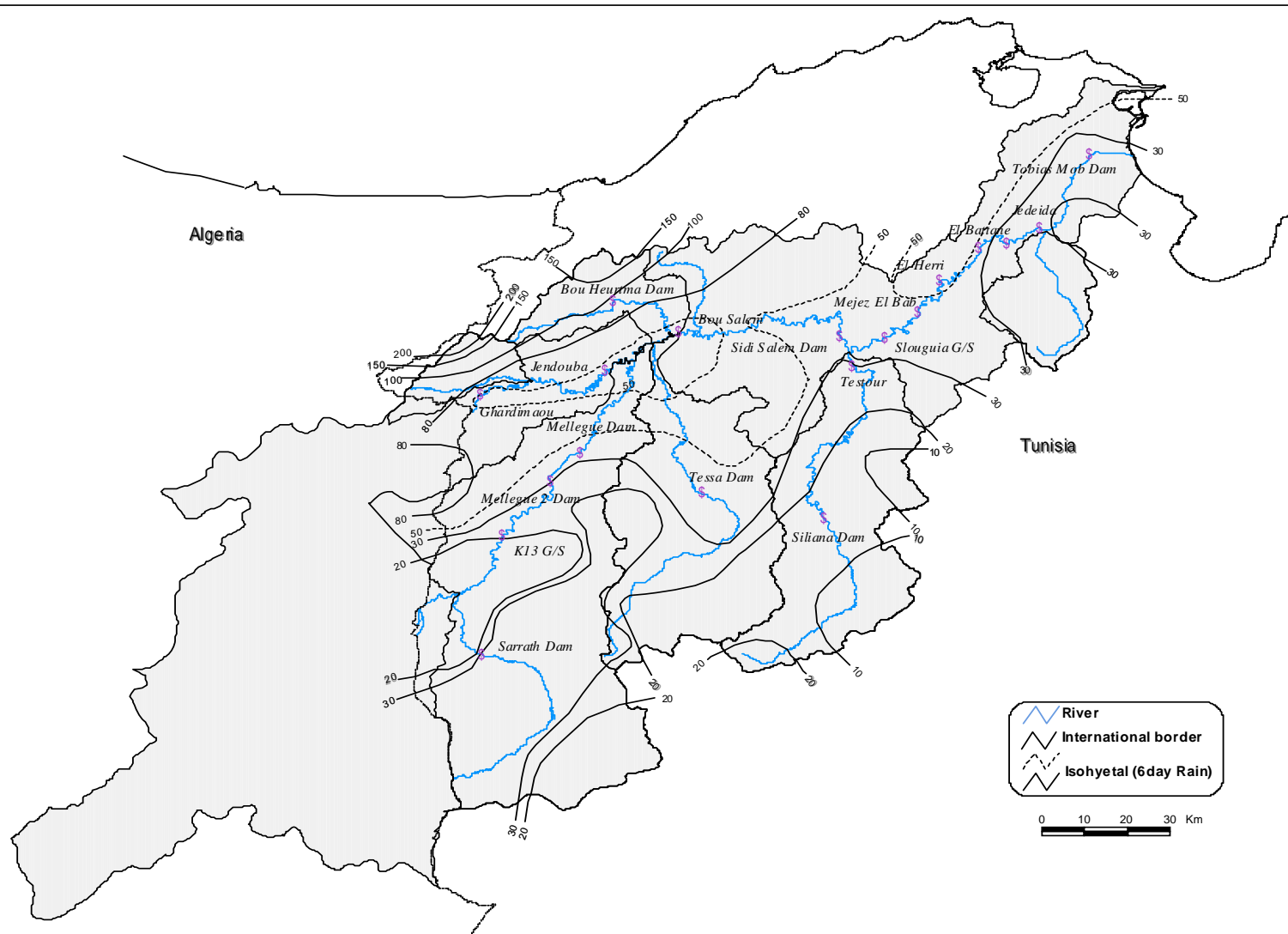
- River
- International border
- Isohyetal (6day Rain)

Scale: 0 10 20 30 Km

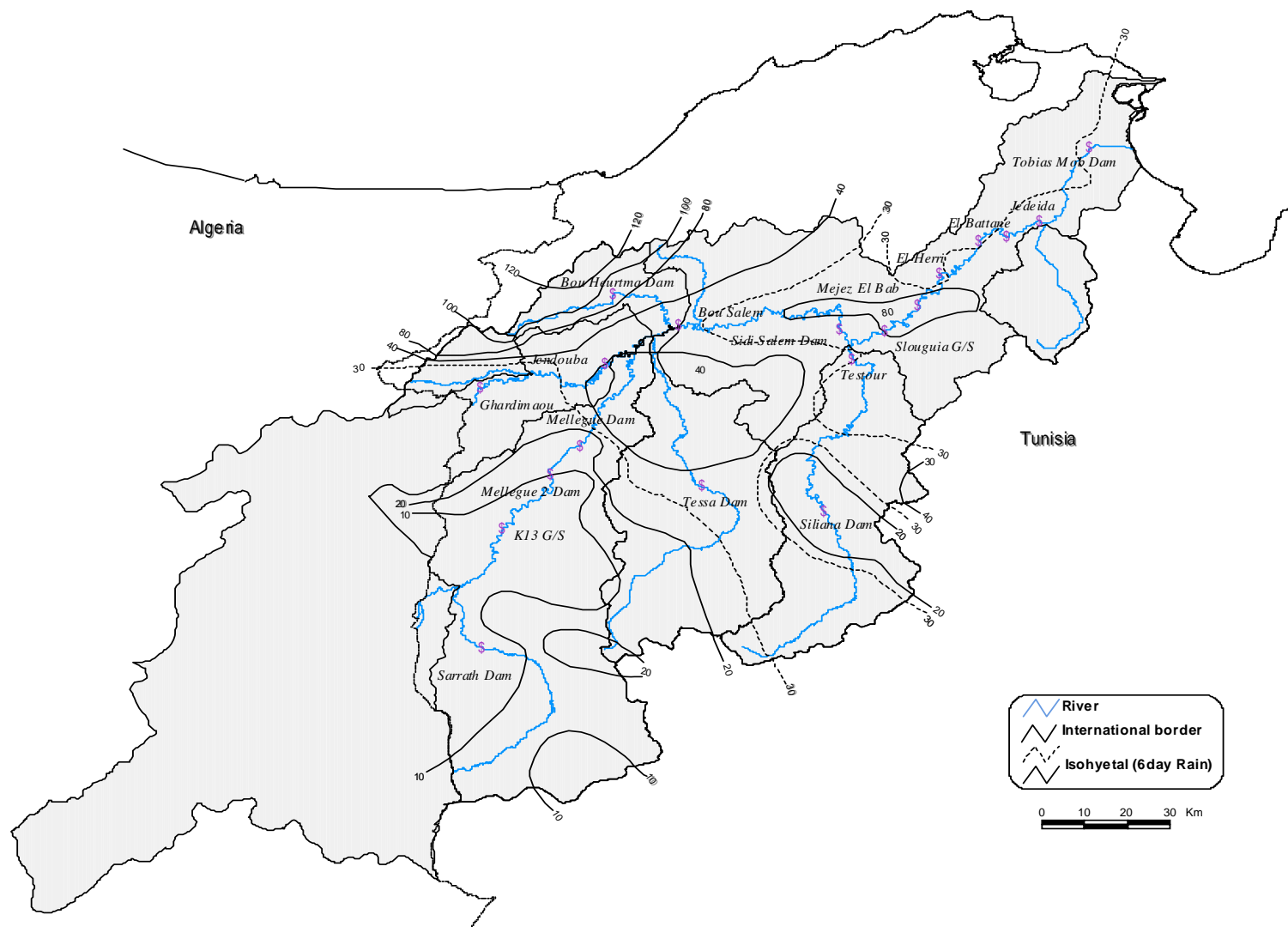
Isohyetal Map (2004Flood , 6 days from 8 Dec to 13 Dec)



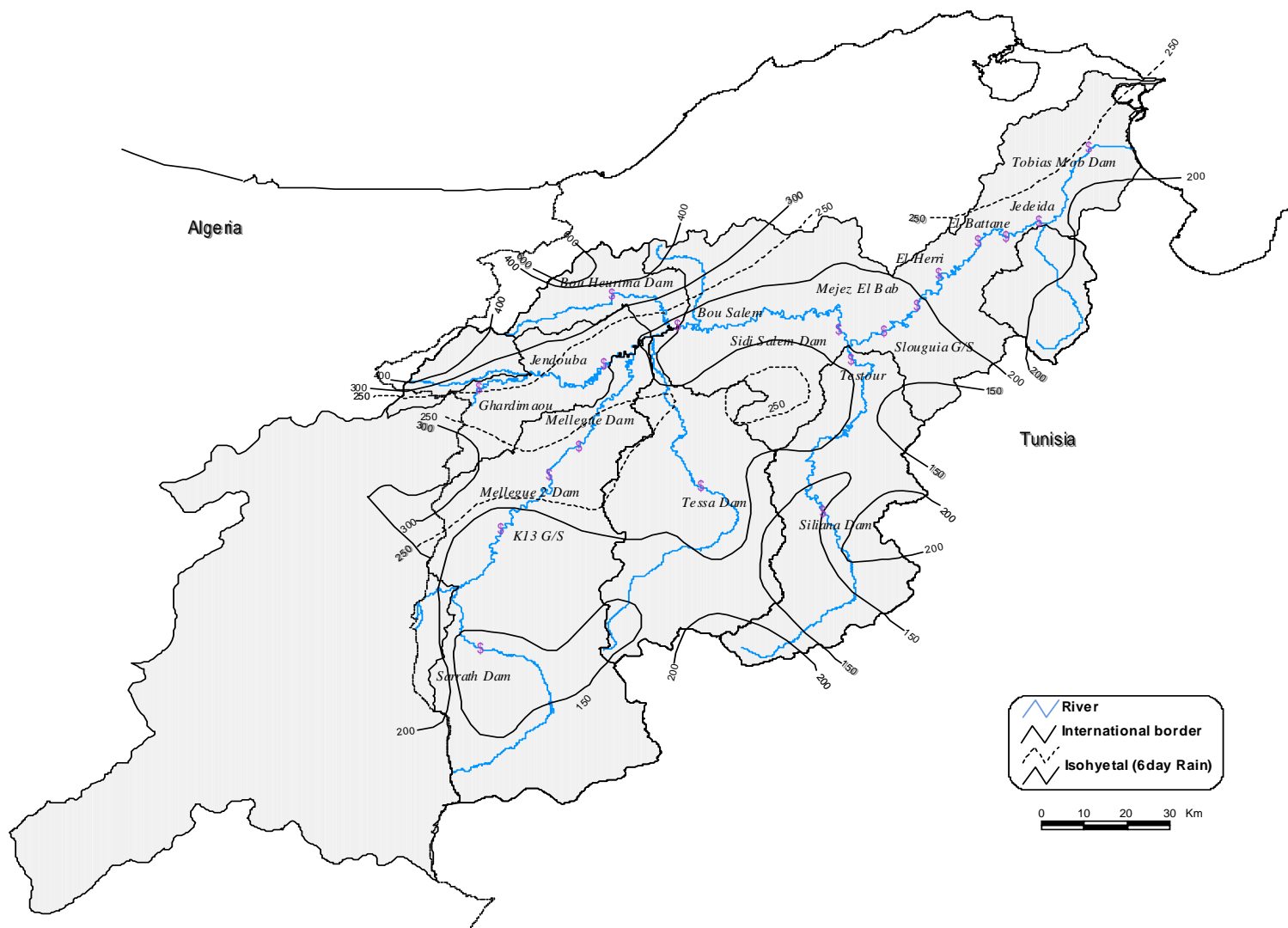
Isohyetal Map (2004Flood , 6 days from 19 Dec to 24 Dec)



Isohyetal Map (2004Flood , 6 days from 29 Dec to 3 Jan)



Isohyetal Map (2004Flood , 6 days from 20 Jan to 25 Jan)



Isohyetal Map (2004Flood , 30 days)

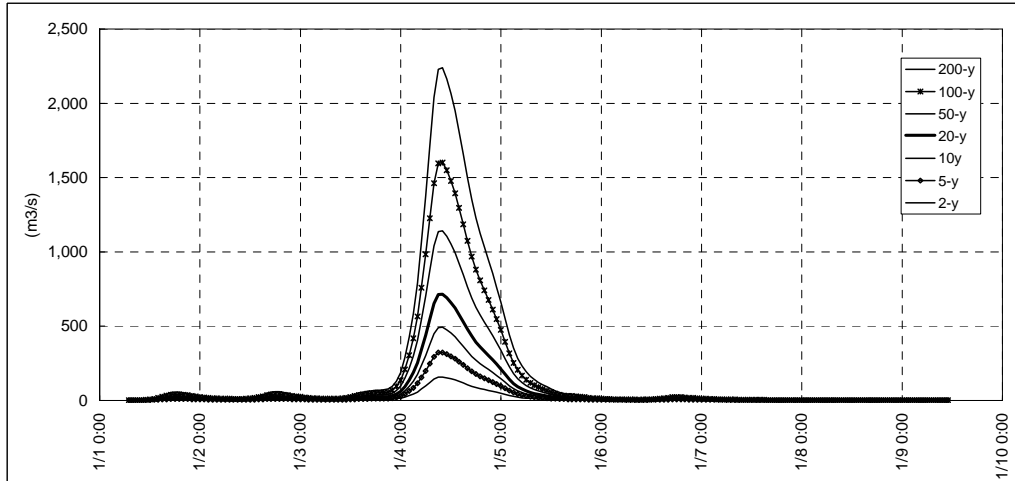
Data A5

Flood Runoff Analysis

Probable Runoff Discharge

Runoff Zone : HY-U2p11 (Mejerdæ River)
 Base point : BP-U1, Mejerda & Mellegue Confluence
 Catchment area : 1154 km²
 Basin Ave. Rain : HY-U2
 Base flow : 3 m³/s

Return Period :	2 year	5 year	10 year	20 year	50 year	100 year	200 year
Proble 6day Rain :	60 mm	84 mm	100 mm	118 mm	143 mm	163 mm	184 mm
Total Rain (vol) :	69 M m ³	97 M m ³	115 M m ³	136 M m ³	165 M m ³	188 M m ³	212 M m ³
Peak Discharge :	158 m ³ /s	323 m ³ /s	492 m ³ /s	715 m ³ /s	1143 m ³ /s	1602 m ³ /s	2239 m ³ /s
Total Runoff :	12 M m ³	22 M m ³	32 M m ³	45 M m ³	71 M m ³	99 M m ³	138 M m ³



Probable Runoff Discharge

Runoff Zone : HY-D2p12 (Siliana conf.-Larrousia Dam)
 Base point : BP-D1 (Larrousia Dam)
 Catchment area : 1092 km²
 Basin Ave. Rain : same as HY-U2
 Base flow : 3 m³/s

Return Period :	2 year	5 year	10 year	20 year	50 year	100 year	200 year
Proble 6day Rain :	60 mm	84 mm	100 mm	118 mm	143 mm	163 mm	184 mm
Total Rain (vol) :	66 M m ³	92 M m ³	109 M m ³	129 M m ³	156 M m ³	178 M m ³	201 M m ³
Peak Discharge :	134 m ³ /s	273 m ³ /s	415 m ³ /s	604 m ³ /s	966 m ³ /s	1353 m ³ /s	1891 m ³ /s
Total Runoff :	11 M m ³	21 M m ³	30 M m ³	43 M m ³	68 M m ³	94 M m ³	131 M m ³

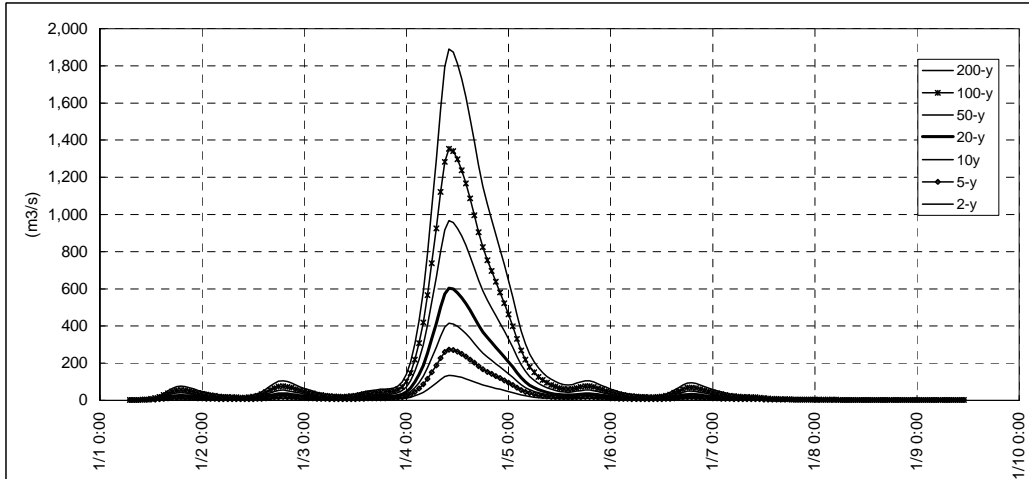
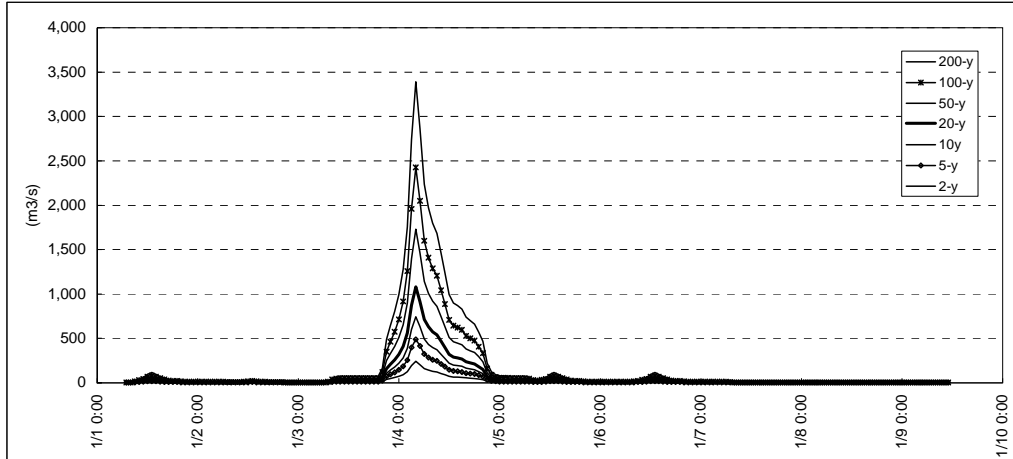


Figure DA5-1 Examples of Runoff Hydrographs (1/2)

Probable Runoff Discharge

Runoff Zone : HYd-Bh (Bou Heurta Dam CA)
 Base point : BPd-Bh (Bou Heurta dam site)
 Catchment area : 390 km²
 Basin Ave. Rain : Dam catchment area
 Base flow : 3 m³/s

Return Period :	2 year	5 year	10 year	20 year	50 year	100 year	200 year
Probable 6day Rain :	143 mm	185 mm	215 mm	246 mm	289 mm	324 mm	361 mm
Total Rain (vol) :	56 M m ³	72 M m ³	84 M m ³	96 M m ³	113 M m ³	126 M m ³	141 M m ³
Peak Discharge :	240 m ³ /s	490 m ³ /s	745 m ³ /s	1083 m ³ /s	1731 m ³ /s	2426 m ³ /s	3390 m ³ /s
Total Runoff :	11 M m ³	21 M m ³	31 M m ³	44 M m ³	69 M m ³	96 M m ³	134 M m ³



Probable Runoff Discharge

Runoff Zone : HYd-Ts (Tessa Dam CA)
 Base point : Tessa dam site
 Catchment area : 1420 km²
 Basin Ave. Rain : same as HY-U2 (D1, D2)
 Base flow : 3 m³/s

Return Period :	2 year	5 year	10 year	20 year	50 year	100 year	200 year
Probable 6day Rain :	60 mm	84 mm	100 mm	118 mm	143 mm	163 mm	184 mm
Total Rain (vol) :	85 M m ³	119 M m ³	142 M m ³	168 M m ³	203 M m ³	231 M m ³	261 M m ³
Peak Discharge :	213 m ³ /s	434 m ³ /s	660 m ³ /s	960 m ³ /s	1535 m ³ /s	2150 m ³ /s	3006 m ³ /s
Total Runoff :	14 M m ³	26 M m ³	39 M m ³	55 M m ³	87 M m ³	121 M m ³	168 M m ³

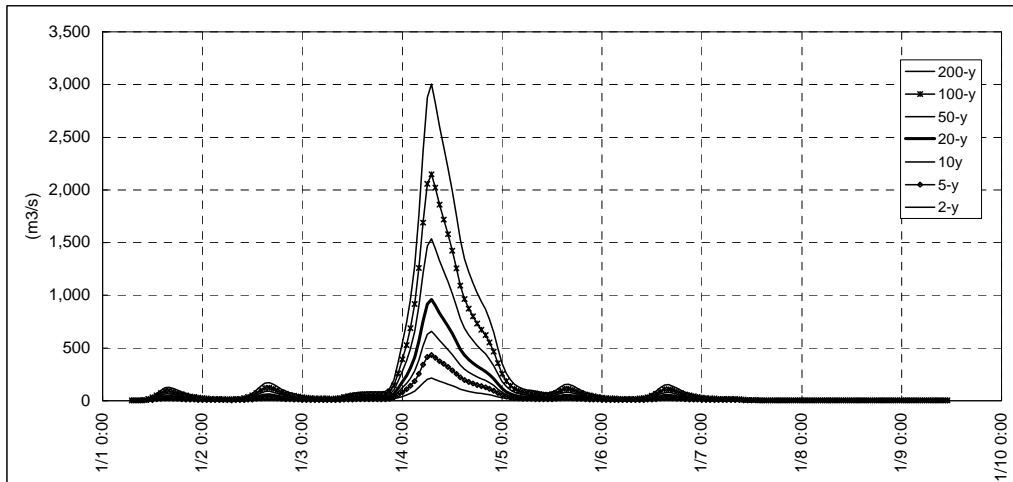


Figure DA5-1 Examples of Runoff Hydrographs (2/2)