Annex

A1. Regression parameters and measures of goodness of fit obtained for the full set of adjustments (69 cells):

Cell	x_{ref}	Polynomial coefficients				Measures of Goodness of Fit		
		P1 (1)	P2 (1)	P1 (2)	P2(2)	Adjusted R^2	MAE (mm)	RMSE (mm)
1	1.48	0.39771	0.62014	1.56480	-0.35262	0.995	0.019	0.085
2	1.48	0.40263	0.60954	1.53957	-0.31796	0.995	0.019	0.086
3	1.48	0.32097	0.72184	1.41133	-0.09947	0.994	0.022	0.089
4	1.48	0.36187	0.65926	1.47952	-0.23653	0.994	0.020	0.087
5	1.48	0.47483	0.45772	1.74279	-0.77301	0.995	0.017	0.089
6	2.53	0.16168	0.24523	0.78252	-0.06455	0.992	0.017	0.088
7	2.53	0.15797	0.27355	0.77618	0.02449	0.992	0.017	0.091
8	2.53	0.15405	0.29449	0.77231	0.09200	0.992	0.018	0.091
9	2.53	0.16856	0.13633	0.82196	-0.41572	0.993	0.015	0.085
10	2.53	0.16858	0.19729	0.78775	-0.16643	0.993	0.016	0.086
11	2.53	0.16325	0.25918	0.77348	0.03802	0.992	0.017	0.090
12	2.53	0.16245	0.27441	0.77477	0.10758	0.993	0.017	0.084
13	2.53	0.19276	0.05384	0.87505	-0.62194	0.993	0.015	0.085
14	2.53	0.17738	0.18314	0.80774	-0.21343	0.993	0.016	0.083
15	2.53	0.16886	0.25464	0.78737	0.04248	0.994	0.017	0.080
16	2.53	0.20210	0.16694	0.85133	-0.11995	0.986	0.018	0.128
17	2.53	0.17746	0.22887	0.90692	-0.34982	0.997	0.014	0.056
18	2.53	0.18759	0.18660	0.88561	-0.36360	0.996	0.014	0.068
19	2.53	0.19917	0.14919	0.92184	-0.48292	0.996	0.014	0.070
20	2.53	0.20259	0.19259	0.94757	-0.44092	0.997	0.014	0.063
21	2.53	0.17829	0.25879	0.84184	-0.05866	0.996	0.016	0.068
22	2.53	0.21894	0.11660	0.89894	-0.26017	0.980	0.019	0.158
23	2.53	0.24120	0.03524	1.23023	-1.38180	0.994	0.015	0.105

24	2.53	0.17935	0.22402	0.89977	-0.35209	0.998	0.013	0.054
25	2.53	0.21287	0.14529	0.97625	-0.57683	0.998	0.012	0.048
26	2.53	0.32118	-0.03189	1.47162	-1.73235	0.998	0.012	0.066
27	2.53	0.19030	0.26399	0.90405	-0.14058	0.996	0.018	0.072
28	2.53	0.17702	0.30515	0.82487	0.11046	0.992	0.021	0.100
29	2.38	0.15334	0.37009	0.77278	0.22021	0.993	0.018	0.085
30	2.38	0.15205	0.38098	0.77178	0.23805	0.993	0.019	0.087
31	2.38	0.15118	0.39007	0.77176	0.24564	0.993	0.019	0.088
32	2.38	0.15026	0.39732	0.77214	0.24727	0.993	0.019	0.089
33	2.38	0.15021	0.40138	0.77272	0.24475	0.993	0.019	0.088
34	2.38	0.15633	0.36325	0.76837	0.25053	0.993	0.019	0.087
35	2.38	0.15411	0.37834	0.76791	0.26706	0.993	0.019	0.090
36	2.38	0.15276	0.39029	0.76897	0.26916	0.992	0.019	0.090
37	2.38	0.15217	0.39796	0.77035	0.26400	0.993	0.019	0.090
38	2.38	0.15169	0.40211	0.77137	0.25717	0.993	0.019	0.089
39	2.38	0.16489	0.34492	0.76911	0.27124	0.993	0.018	0.084
40	2.38	0.15795	0.37360	0.76420	0.30288	0.992	0.020	0.093
41	2.38	0.15541	0.39078	0.76686	0.29563	0.992	0.020	0.093
42	2.38	0.15489	0.39866	0.76962	0.28014	0.992	0.019	0.091
43	2.38	0.15339	0.40233	0.77069	0.26851	0.993	0.019	0.089
44	2.38	0.18791	0.29059	0.79471	0.20777	0.992	0.019	0.094
45	2.38	0.16402	0.36808	0.76269	0.33752	0.992	0.020	0.096
46	2.38	0.16007	0.39112	0.76808	0.31813	0.992	0.020	0.095
47	2.38	0.15841	0.39902	0.77129	0.29250	0.992	0.019	0.092
48	2.38	0.15455	0.40042	0.77140	0.27654	0.993	0.019	0.090
49	2.38	0.18594	0.30425	0.78746	0.26221	0.992	0.019	0.097
50	2.38	0.17486	0.36236	0.76976	0.35917	0.991	0.021	0.102
51	2.38	0.16756	0.38902	0.77959	0.32356	0.992	0.020	0.096

52	2.38	0.18941	0.33798	0.79867	0.29101	0.991	0.022	0.103
53	2.38	0.21211	0.27055	0.88320	0.04836	0.994	0.018	0.089
54	1.93	0.22174	0.45700	1.11267	-0.26637	0.996	0.015	0.068
55	1.93	0.27603	0.33048	1.28537	-0.72347	0.998	0.012	0.052
56	1.93	0.19936	0.49777	1.05707	-0.14823	0.996	0.016	0.069
57	1.93	0.21438	0.46553	1.08844	-0.24524	0.996	0.015	0.066
58	1.93	0.18296	0.52909	1.01395	-0.06022	0.995	0.017	0.074
59	1.93	0.18388	0.52232	1.01121	-0.07629	0.995	0.017	0.073
60	2.08	0.23960	0.30874	1.23412	-0.83688	0.995	0.015	0.085
61	2.08	0.16032	0.48913	0.97007	-0.14969	0.995	0.016	0.074
62	2.08	0.17338	0.45393	0.96635	-0.16950	0.995	0.017	0.079
63	2.08	0.18192	0.45004	0.97325	-0.15551	0.994	0.018	0.084
64	2.08	0.18016	0.53411	1.01145	0.09516	0.990	0.026	0.118
65	2.08	0.20615	0.51156	1.08041	0.01470	0.991	0.024	0.121
66	2.08	0.15022	0.50992	0.96653	-0.15320	0.995	0.017	0.079
67	2.08	0.13141	0.53181	0.90264	-0.05085	0.994	0.017	0.082
68	2.08	0.13187	0.48019	0.87978	-0.17516	0.995	0.016	0.071
69	2.08	0.12247	0.56123	0.89846	-0.00665	0.993	0.018	0.086
					Mean	**0.018**	**0.993**	**0.086**
					Minimum	**0.012**	**0.980**	**0.048**
					Maximum	**0.026**	**0.998**	**0.158**

A2. Errors obtained in chronological comparison of the observed data with: i) ERA-Interim data (ERA) and ii) adjusted data (ADJ), for the all of 69 cells:

Cell	MTE (mm)		MAE (mm)			RMSE (mm)		
	x_{ERA}	x_{ADJ}	x_{ERA}	x_{ADJ}	≠	x_{ERA}	x_{ADJ}	≠
1	0.06	0	0.25	0.27	-0.03	0.86	0.95	-0.09
2	0.06	0	0.24	0.27	-0.03	0.85	0.93	-0.09
3	0.05	0	0.24	0.26	-0.02	0.80	0.87	-0.08
4	0.05	0	0.24	0.26	-0.02	0.82	0.90	-0.08
5	0.05	0	0.25	0.28	-0.03	0.94	1.05	-0.11
6	-0.16	0	0.30	0.23	0.07	0.95	0.78	0.17
7	-0.15	0	0.30	0.23	0.06	0.94	0.78	0.16
8	-0.14	0	0.29	0.23	0.06	0.94	0.78	0.16
9	-0.18	0	0.32	0.23	0.10	1.01	0.82	0.19
10	-0.17	0	0.31	0.23	0.08	0.97	0.79	0.18
11	-0.15	0	0.30	0.23	0.07	0.95	0.78	0.16
12	-0.14	0	0.30	0.24	0.06	0.95	0.80	0.15
13	-0.19	0	0.34	0.24	0.10	1.05	0.88	0.16
14	-0.17	0	0.31	0.23	0.08	0.97	0.81	0.17
15	-0.15	0	0.30	0.24	0.06	0.96	0.81	0.15
16	-0.15	0	0.32	0.26	0.06	1.04	0.93	0.11
17	-0.14	0	0.31	0.25	0.06	0.98	0.89	0.09
18	-0.15	0	0.31	0.25	0.06	0.99	0.87	0.11
19	-0.15	0	0.32	0.26	0.07	1.02	0.92	0.10
20	-0.13	0	0.32	0.27	0.05	1.04	0.97	0.07
21	-0.14	0	0.31	0.25	0.05	0.98	0.87	0.11
22	-0.15	0	0.33	0.27	0.06	1.09	1.00	0.09
23	-0.13	0	0.37	0.32	0.05	1.23	1.28	-0.05

24	-0.14	0	0.31	0.25	0.06	1.00	0.90	0.10
25	-0.14	0	0.33	0.27	0.06	1.07	1.01	0.06
26	-0.08	0	0.41	0.39	0.02	1.42	1.59	-0.17
27	-0.12	0	0.31	0.27	0.04	1.00	0.93	0.07
28	-0.12	0	0.30	0.25	0.05	0.96	0.85	0.11
29	-0.12	0	0.29	0.25	0.04	0.98	0.84	0.14
30	-0.11	0	0.29	0.25	0.04	0.97	0.84	0.14
31	-0.11	0	0.29	0.25	0.04	0.97	0.83	0.14
32	-0.11	0	0.29	0.25	0.04	0.96	0.83	0.13
33	-0.11	0	0.29	0.25	0.04	0.96	0.82	0.13
34	-0.12	0	0.29	0.25	0.04	0.98	0.84	0.14
35	-0.11	0	0.29	0.25	0.04	0.97	0.84	0.14
36	-0.11	0	0.29	0.25	0.04	0.97	0.83	0.13
37	-0.11	0	0.29	0.25	0.04	0.96	0.83	0.13
38	-0.11	0	0.29	0.25	0.04	0.95	0.82	0.13
39	-0.12	0	0.30	0.25	0.04	0.99	0.86	0.14
40	-0.11	0	0.29	0.25	0.04	0.98	0.84	0.14
41	-0.11	0	0.29	0.25	0.04	0.96	0.83	0.13
42	-0.11	0	0.29	0.25	0.04	0.96	0.82	0.13
43	-0.11	0	0.29	0.25	0.04	0.95	0.82	0.13
44	-0.12	0	0.31	0.26	0.05	1.03	0.91	0.12
45	-0.11	0	0.30	0.25	0.04	0.98	0.85	0.13
46	-0.11	0	0.29	0.25	0.04	0.96	0.83	0.13
47	-0.11	0	0.29	0.25	0.04	0.95	0.82	0.13
48	-0.11	0	0.29	0.25	0.04	0.94	0.81	0.13
49	-0.12	0	0.31	0.26	0.04	1.03	0.90	0.12
50	-0.11	0	0.30	0.26	0.04	0.97	0.85	0.12
51	-0.10	0	0.29	0.26	0.04	0.96	0.84	0.12

52	-0.10	0	0.30	0.26	0.04	0.98	0.88	0.11
53	-0.10	0	0.31	0.28	0.04	1.03	0.96	0.07
54	-0.03	0	0.27	0.27	0.00	0.91	0.95	-0.04
55	-0.03	0	0.29	0.29	0.00	1.02	1.11	-0.09
56	-0.03	0	0.27	0.26	0.01	0.88	0.90	-0.02
57	-0.03	0	0.27	0.26	0.01	0.90	0.93	-0.03
58	-0.03	0	0.26	0.25	0.01	0.86	0.86	-0.01
59	-0.04	0	0.26	0.25	0.01	0.86	0.86	0.00
60	-0.05	0	0.33	0.32	0.01	1.16	1.24	-0.08
61	-0.05	0	0.29	0.27	0.02	0.98	0.96	0.02
62	-0.06	0	0.29	0.27	0.02	0.99	0.96	0.03
63	-0.06	0	0.29	0.27	0.02	0.99	0.97	0.02
64	-0.03	0	0.30	0.29	0.00	0.99	1.01	-0.02
65	-0.02	0	0.31	0.31	0.00	1.03	1.08	-0.04
66	-0.05	0	0.29	0.27	0.02	0.97	0.95	0.02
67	-0.06	0	0.28	0.26	0.02	0.94	0.88	0.06
68	-0.08	0	0.27	0.24	0.03	0.93	0.85	0.08
69	-0.06	0	0.28	0.26	0.02	0.93	0.87	0.05
Mean	-0.09	0	**0.30**	**0.26**	0.04	**0.98**	**0.90**	0.08
Minimum	-0.19	0	**0.24**	**0.23**	0.01	**0.80**	**0.78**	-0.17
Maximum	0.06	0	**0.41**	**0.39**	0.02	**1.42**	**1.59**	0.19

A3. Difference, in percentage, between the total volume of precipitation of the observed data and: i) ERA-Interim data (ERA) and ii) adjusted data (ADJ), for the all of 69 cells in the whole study period (1/10/2002 - 30/09/2007).

Cell	a) using the entire dataset of each cell		b) using only the values over 99th percentile of the dataset of each cell	
	x_{ERA}	x_{ERA}	x_{ERA}	x_{ADJ}
1	19%	0%	66%	11%
2	18%	0%	65%	11%
3	17%	0%	61%	13%
4	18%	0%	64%	14%
5	18%	0%	70%	10%
6	-56%	0%	-56%	10%
7	-52%	0%	-55%	10%
8	-49%	0%	-54%	9%
9	-73%	0%	-59%	11%
10	-62%	0%	-64%	9%
11	-53%	0%	-57%	9%
12	-49%	0%	-54%	9%
13	-78%	0%	-52%	8%
14	-61%	0%	-59%	9%
15	-51%	0%	-54%	8%
16	-51%	0%	-41%	6%
17	-47%	0%	-30%	7%
18	-52%	0%	-39%	7%
19	-53%	0%	-32%	6%
20	-44%	0%	-25%	4%
21	-45%	0%	-39%	8%

22	-51%	0%	-31%	6%
23	-43%	0%	9%	-1%
24	-48%	0%	-36%	4%
25	-46%	0%	-24%	3%
26	-23%	0%	40%	-1%
27	-38%	0%	-18%	8%
28	-39%	0%	-24%	15%
29	-39%	0%	-46%	14%
30	-38%	0%	-47%	13%
31	-37%	0%	-47%	13%
32	-37%	0%	-46%	13%
33	-36%	0%	-45%	13%
34	-39%	0%	-45%	14%
35	-38%	0%	-47%	13%
36	-37%	0%	-47%	12%
37	-36%	0%	-46%	13%
38	-36%	0%	-46%	13%
39	-39%	0%	-46%	13%
40	-37%	0%	-47%	12%
41	-36%	0%	-45%	13%
42	-36%	0%	-46%	12%
43	-36%	0%	-46%	13%
44	-40%	0%	-41%	12%
45	-37%	0%	-43%	14%
46	-35%	0%	-42%	14%
47	-35%	0%	-46%	12%
48	-36%	0%	-43%	14%
49	-39%	0%	-43%	11%

50	-35%	0%	-38%	15%
51	-33%	0%	-38%	13%
52	-34%	0%	-28%	18%
53	-33%	0%	-13%	15%
54	-9%	0%	24%	11%
55	-9%	0%	36%	10%
56	-10%	0%	17%	11%
57	-11%	0%	20%	11%
58	-11%	0%	12%	11%
59	-12%	0%	12%	11%
60	-15%	0%	26%	3%
61	-19%	0%	-6%	8%
62	-20%	0%	-11%	5%
63	-19%	0%	-1%	13%
64	-8%	0%	23%	17%
65	-5%	0%	30%	14%
66	-19%	0%	-5%	11%
67	-22%	0%	-20%	8%
68	-30%	0%	-33%	11%
69	-20%	0%	-20%	11%
Mean	-32%	0%	-22%	10%
Minimum	-78%	0%	-64%	-1%
Maximum	19%	0%	70%	18%

A4. Difference, in percentage, between the total volume of precipitation of the observed data and: i) ERA-Interim data (ERA) and ii) adjusted data (ADJ), for the all of 69 cells, in each of the flood periods analyzed:

Cell	In the period between: 10/30/2003 - 11/02/2003		In the period between: 10/22/2006 - 10/27/2006	
	x_{ERA}	x_{ADJ}	x_{ERA}	x_{ADJ}
1	31%	2%	31%	3%
2	30%	2%	29%	1%
3	29%	5%	29%	4%
4	28%	2%	28%	1%
5	24%	-12%	25%	-9%
6	-28%	4%	-23%	9%
7	-29%	3%	-20%	10%
8	-30%	1%	-17%	11%
9	-29%	5%	-39%	2%
10	-27%	6%	-30%	6%
11	-27%	4%	-22%	9%
12	-29%	2%	-19%	9%
13	-29%	2%	-46%	-4%
14	-25%	6%	-30%	5%
15	-24%	5%	-21%	8%
16	-25%	-1%	-25%	1%
17	-30%	-8%	-18%	5%
18	-25%	-1%	-25%	3%
19	-20%	1%	-27%	-1%
20	-13%	3%	-18%	2%
21	-19%	4%	-15%	8%
22	-24%	-3%	-27%	-2%

23	-45%	-46%	-21%	-11%
24	-27%	-5%	-20%	4%
25	-14%	1%	-22%	-1%
26	10%	-8%	-6%	-15%
27	-15%	1%	-4%	13%
28	-29%	-5%	0%	19%
29	-32%	-4%	-20%	7%
30	-35%	-6%	-18%	8%
31	-37%	-7%	-16%	8%
32	-39%	-9%	-15%	9%
33	-41%	-11%	-14%	10%
34	-32%	-3%	-20%	6%
35	-35%	-6%	-18%	7%
36	-38%	-9%	-16%	8%
37	-41%	-11%	-15%	10%
38	-43%	-12%	-14%	10%
39	-31%	-3%	-22%	4%
40	-37%	-7%	-18%	7%
41	-41%	-11%	-16%	9%
42	-44%	-13%	-14%	10%
43	-46%	-15%	-13%	11%
44	-30%	-4%	-25%	0%
45	-40%	-10%	-18%	7%
46	-46%	-15%	-15%	9%
47	-48%	-17%	-13%	11%
48	-51%	-19%	-11%	12%
49	-35%	-8%	-23%	2%
50	-54%	-23%	-16%	7%

51	-56%	-25%	-13%	9%
52	-68%	-37%	-13%	8%
53	-139%	-107%	-15%	2%
54	-2%	-6%	-1%	-4%
55	-6%	-18%	-4%	-13%
56	-2%	-2%	-1%	-1%
57	-3%	-4%	-2%	-3%
58	-2%	0%	0%	2%
59	-3%	0%	0%	2%
60	-17%	-26%	-10%	-13%
61	-7%	0%	-9%	0%
62	-1%	7%	-10%	0%
63	1%	8%	-7%	1%
64	-1%	-1%	17%	16%
65	-3%	-9%	22%	17%
66	-12%	-4%	-7%	2%
67	-11%	2%	-7%	6%
68	-16%	3%	-9%	9%
69	-12%	1%	-5%	7%
Minimum	-139%	-107%	-46%	-15%
Mean	-24%	-7%	-12%	5%
Maximum	31%	8%	31%	19%