Supplement of

Quantifying human impacts on hydrological drought using a combined modelling approach in a tropical river basin in Central Vietnam

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Flow of the Vu Gia (m³ s-1)		Diversion
Before Quang Hue	After Quang Hue	Rate (%)
100.0	65.4	34.6
90.0	58.3	35.2
80.0	51.0	36.2
70.0	44.4	36.6
60.0	37.4	37.7
50.0	30.8	38.4
40.0	24.3	39.2
30.0	17.9	40.3
20.0	11.4	43.0

Table S1. The water diversion rules at the Quang Hue river from Vu Gia to Thu Bon. Before Quang Hue represent the actual flow of Vu Gia before the diversion. After Quang Hue, represent the remaining water that is continue to flow to the Vu Gia through the Ai Nghia station. The Diversion Rate (%) represents the amount which actually diverted from the Vu Gia to Thu Bon river and flows over Giao Thuy Station.

(a) A Vuong (MOIT, 2011a)

Month	Flood Control	Upper Zone	Normal Zone	Lower Zone	Dead Level
Jan	380	380	380	376	340
Feb	380	380	375	376	340
Mar	380	378	372	374.1	340
Apr	380	374.2	370	371	340
May	380	369.5	361	366	340
Jun	380	365.7	352	361.1	340
Jul	380	362.3	349	354.7	340
Aug	380	357.2	342	347.4	340
Sep	380	352.2	342	340	340
Oct	380	353	349	350	340
Nov	380	369	369	364	340
Dec	380	378	373	364	340

5   ### (b) Dak Mi 4 (MOIT, 2011b)

Month	Flood Control	Upper Zone	Normal Zone	Dead Level
Jan	258	258	255	240
Feb	258	258	256	240
Mar	258	258	255	240
Apr	258	256	253	240
May	258	252.7	249	240
Jun	258	251	248	240
Jul	258	249.7	246	240
Aug	258	244	241	240
Sep	258	240.3	240	240
Oct	258	240	240	240
Nov	258	244.5	240.2	240
Dec	258	253	247	240

(c) Song Bung 4 (MOIT, 2013)

Month	Flood Control	Upper Zone	Normal Zone	Dead Level
Jan	222.6	222.5	216.9	205
Feb	222.6	222.5	215.3	205
Mar	222.6	222.5	212.4	205

Apr	222.6	222.5	208.7	205
May	222.6	222.5	206.9	205
Jun	222.6	222.5	205.7	205
Jul	222.6	219.4	205.3	205
Aug	222.6	215.5	205	205
Sep	222.6	218	205	205
Oct	222.6	220	205	205
Nov	222.6	222.5	213.8	205
Dec	222.6	222.5	216.8	205

(d) Song Bung 5 (MOIT, 2012b)

Month	Flood Control	Normal Zone	Dead Level
Jan	60	60	58.5
Feb	60	60	58.5
Mar	60	60	58.5
Apr	60	60	58.5
May	60	60	58.5
Jun	60	60	58.5
Jul	60	60	58.5
Aug	60	60	58.5
Sep	60	60	58.5
Oct	60	60	58.5
Nov	60	60	58.5
Dec	60	60	58.5

(e) Song Bung 6 (MOIT, 2012a)

Month	Flood Control	Normal Zone	Dead Level
Jan	34	34	31.8
Feb	34	34	31.8
Mar	34	34	31.8
Apr	34	34	31.8
May	34	34	31.8
Jun	34	34	31.8
Jul	34	34	31.8
Aug	34	34	31.8
Sep	34	34	31.8
Oct	34	34	31.8

Nov	34	34	31.8
Dec	34	34	31.8

(f) Song Tranh 2 (MOIT, 2012c)

Month	Flood Control	Normal Zone	Dead Level
Jan	175	174.24	138
Feb	175	173.85	138
Mar	175	168.48	138
Apr	175	155.31	138
May	175	153.33	138
Jun	175	140.82	138
Jul	175	139.51	138
Aug	175	142.44	138
Sep	175	150.44	138
Oct	175	165.92	138
Nov	175	174.31	138
Dec	175	174.73	138

(g) Song Con (MOIT, 2008)

Month	Flood Control	Upper Zone	Normal Zone	Dead Level
Jan	340	340	334.52	319
Feb	340	340	331.76	319
Mar	340	337.45	328.45	319
Apr	340	335.42	322.86	319
May	340	334.74	321.36	319
Jun	340	330	320.37	319
Jul	340	325.77	319.00	319
Aug	340	319	319.00	319
Sep	340	340	319.00	319
Oct	340	340	319.40	319
Nov	340	340	334.02	319
Dec	340	340	336.17	319

Table S2- Operation Rules of the hydropower operation of the VGTB; (a) A Vuong, (b) Dak Mi 4, (c) Song Bung 4, (d) Song Bung 5, (e) Song Bung 6, (f) Song Tranh 2, (g) Song Con
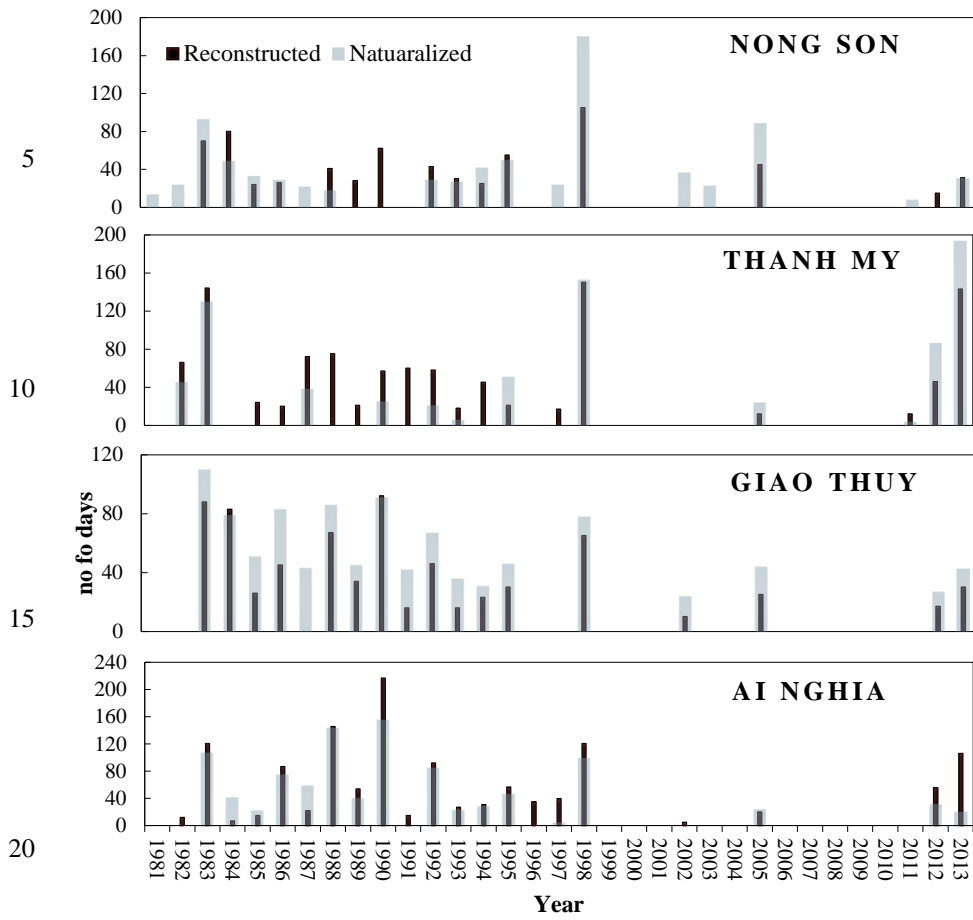
Figure S3. Number of hydrological drought days at four stations for both naturalized and reconstructed condition.

References

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