

Table S1: List of rainfall stations used for comparison, along with their location information and statistics (NSE and PBIAS) against monthly NOAA observed rainfall during 1981-2007

Stations	Country	Lat	Long	Elevation	NSE		PBIAS	
					APHRODITE	CFSR	APHRODITE	CFSR
AGARTALA	India	23.88	91.25	16.00	0.85	-1.73	-10.50	55.5
AHMADABAD	India	23.07	72.63	55.00	0.87	0.84	-31.8	-0.90
ALYANGULA POLICE	Australia	-13.85	136.42	20.00	0.75	0.90	-32.1	11.20
AMBON PATTIMURA	Indonesia	-3.70	128.08	12.00	0.57	0.59	-8.00	-15.2
AMRITSAR	India	31.71	74.80	230.40	0.50	0.51	-45.30	-46.4
ANQING	China	30.53	117.05	20.00	0.96	0.90	-6.2	0.70
ANYANG	China	36.05	114.40	64.00	0.96	0.91	-9.10	-11.8
ARANYAPRATHET	Thailand	13.70	102.58	49.00	0.88	0.76	-19.9	11.30
BAISE	China	23.90	106.60	177.00	1.00	0.61	0.70	40.1
BANG NA AGROMET	Thailand	13.67	100.62	6.00	-0.89	-0.16	-56.6	-36.90
BAR KHAN	Pakistan	29.88	69.72	1098.00	0.45	-0.52	-16.80	-49.7
BATAM HANG NADIM	Indonesia	1.12	104.12	24.00	-2.11	-1.35	-64.6	-50.30
BAU BAU BETO AMBIRI	Indonesia	-5.47	122.62	2.00	-28.00	-276.93	83.40	309.9
BINTULU	Malaysia	3.20	113.03	5.00	-1.28	-6.16	-27.20	-47
BRUNEI INTERNATIONAL	Brunei	4.94	114.93	22.30	0.51	-2.41	-8.00	-39.3
CA MAU	Vietnam	9.18	105.15	2.00	0.17	-1.70	52.90	103.4
DANANG INTERNATIONAL	Vietnam	16.04	108.20	10.10	0.38	-0.38	60.40	106.8
DANIEL Z ROMUALDEZ	Philippines	11.23	125.03	3.00	0.47	-2.34	18.80	31
DONGFANG	China	19.10	108.62	8.00	0.95	0.69	11.30	38.6
H AS HANANDJOEDDIN	Indonesia	-2.75	107.76	51.00	0.48	0.47	-15.3	3.60
HAMBANTOTA	Sri Lanka	6.12	81.13	20.00	0.88	0.63	-6.10	-21.1
K. PARAMATHY	India	10.95	78.08	181.00	0.00	0.47	-66.4	-34.70
KIUNGA W.O.	Papua New Guinea	-6.08	141.18	35.00	-7.61	-2.48	-58.5	-33.40
KUANTAN	Malaysia	3.62	103.22	16.00	-0.11	0.57	-44	-9.50
M.O. RANCHI	India	23.32	85.32	652.00	0.90	0.74	-24.7	-4.80
MADANG W.O.	Papua New Guinea	-5.22	145.80	4.00	-2.76	-1.28	-53.3	-35.40
MALACCA	Malaysia	2.26	102.25	10.70	-0.40	-1.70	-21.5	15.30
NABIRE	Indonesia	-3.37	135.50	6.10	-78.54	-136.19	-70.40	-93.2
PADANG TABING	Indonesia	-0.88	100.35	3.00	-0.27	-1.93	-20.90	38.1
PENANG INTERNATIONAL	Malaysia	5.30	100.28	3.40	0.01	-7.83	-31.10	96.4
PHNOM PENH INTERNATIONAL	Cambodia	11.55	104.84	12.20	-9.85	-42.30	127.80	324
PHU QUOC	Vietnam	10.22	103.97	4.00	0.60	-0.49	31.30	63.2
PORT MORESBY W.O.	Papua New Guinea	-9.38	147.22	48.00	0.84	-0.07	-20.40	-56.1
SAVANNAKHET	Laos	16.55	104.77	155.10	-6.87	-137.00	66.40	416.2
SINGAPORE CHANGI INTERNATIONAL	Singapore	1.35	103.99	6.70	0.59	-0.48	-8.80	20.6
SURIGAO	Philippines	9.80	125.50	55.00	0.33	0.79	28.5	2.30

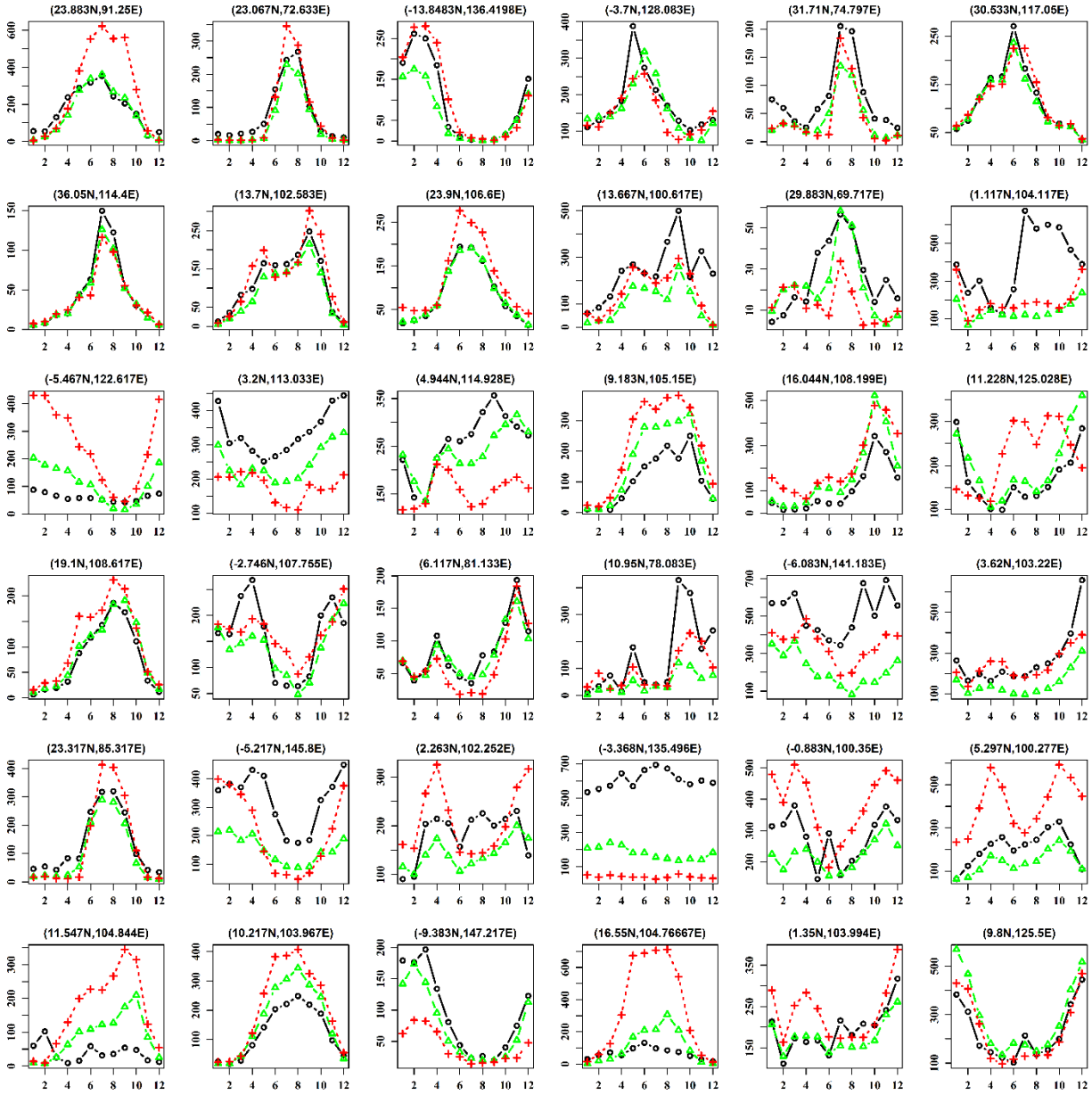


Fig. S2: Plots of cumulative monthly OBS (black with circle), APHRODITE (green with triangle) and CFSR (red with cross) average rainfall (mm) during 1981-2007 for rainfall stations indicated by their latitude and longitude information in their respective titles

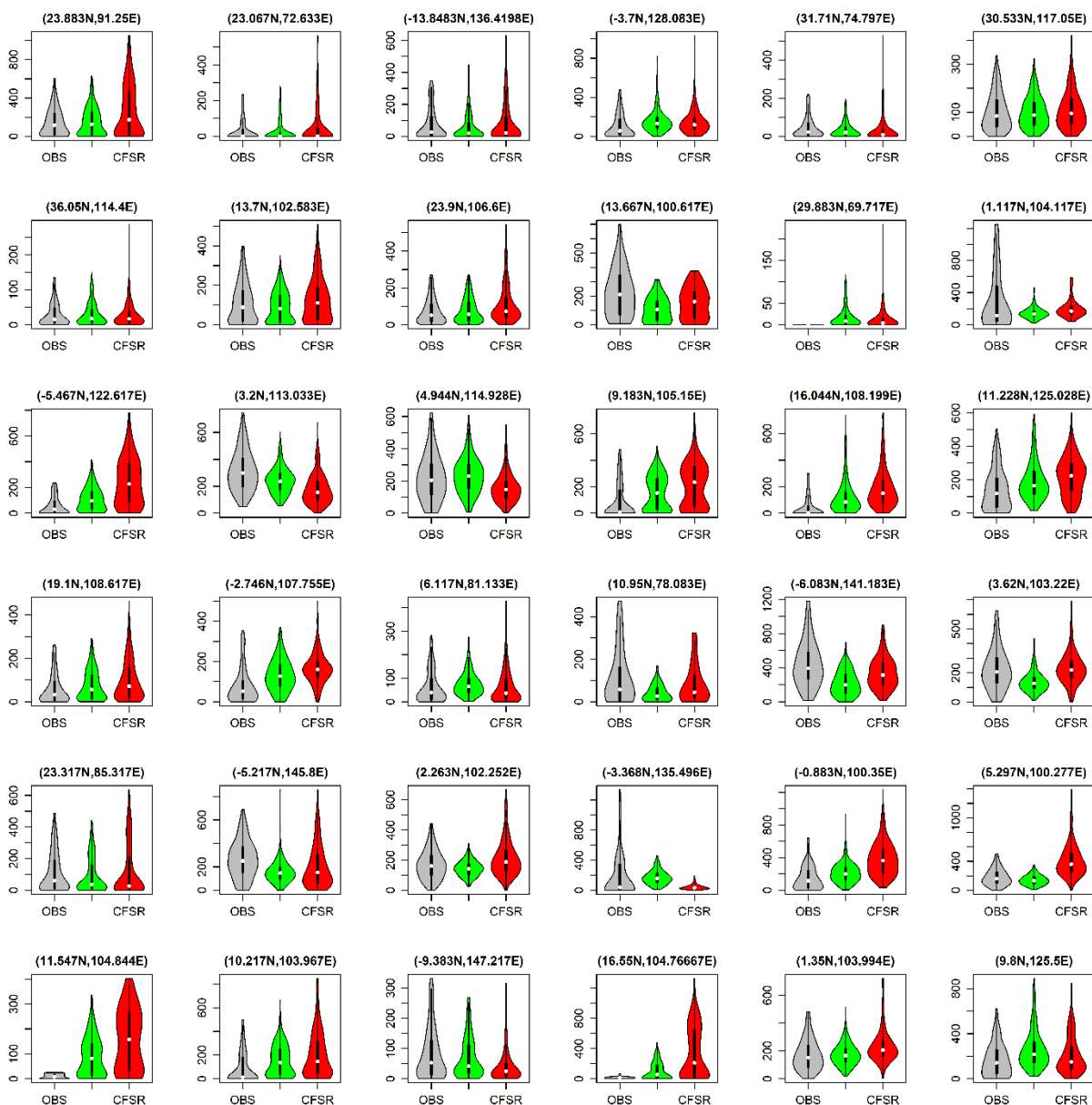


Fig. S3: Density distribution plots of cumulative monthly OBS (black), APHRODITE (green) and CFSR (red) rainfall during 1981-2007 for rainfall stations indicated by their latitude and longitude information in their respective titles



Fig. S4: APWS points across Asia Pacific

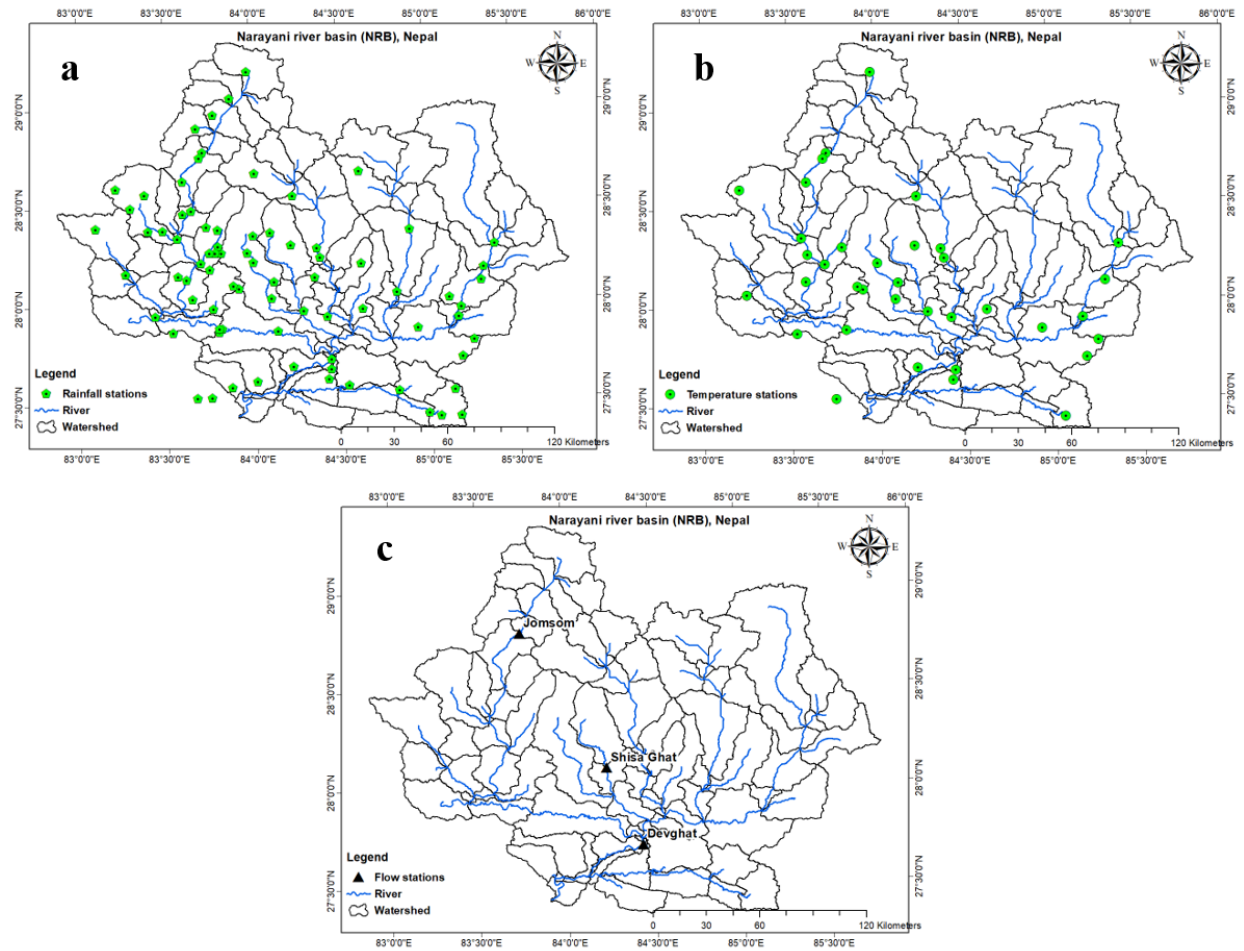


Fig. S5: Rainfall (a), temperature (b) and flow (c) stations located in Narayani river basin, Nepal

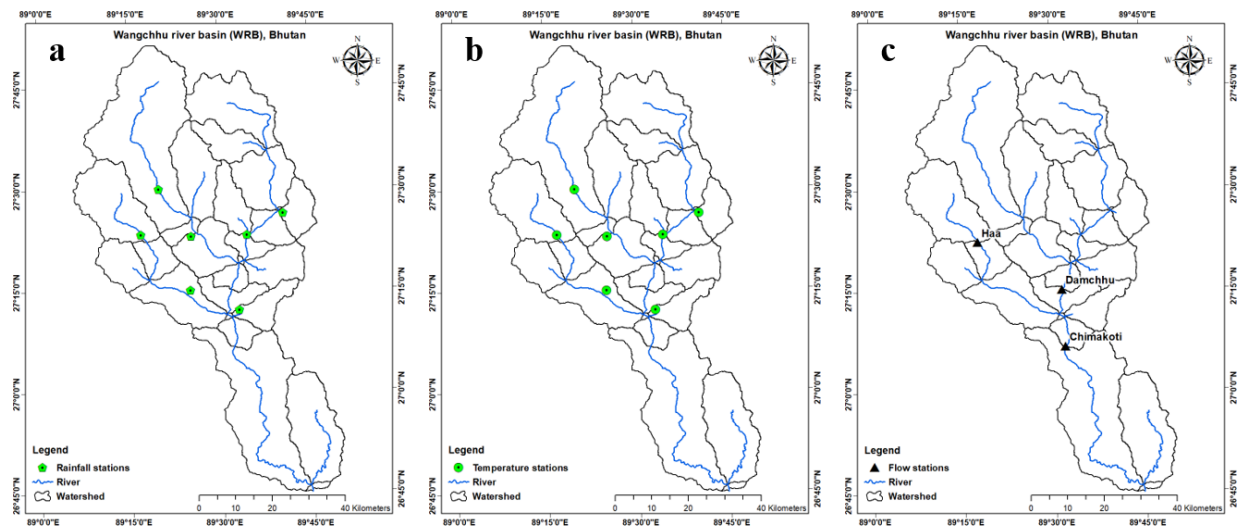


Fig. S6: Rainfall (a), temperature (b) and flow (c) stations located in Wangchhu river basin, Bhutan

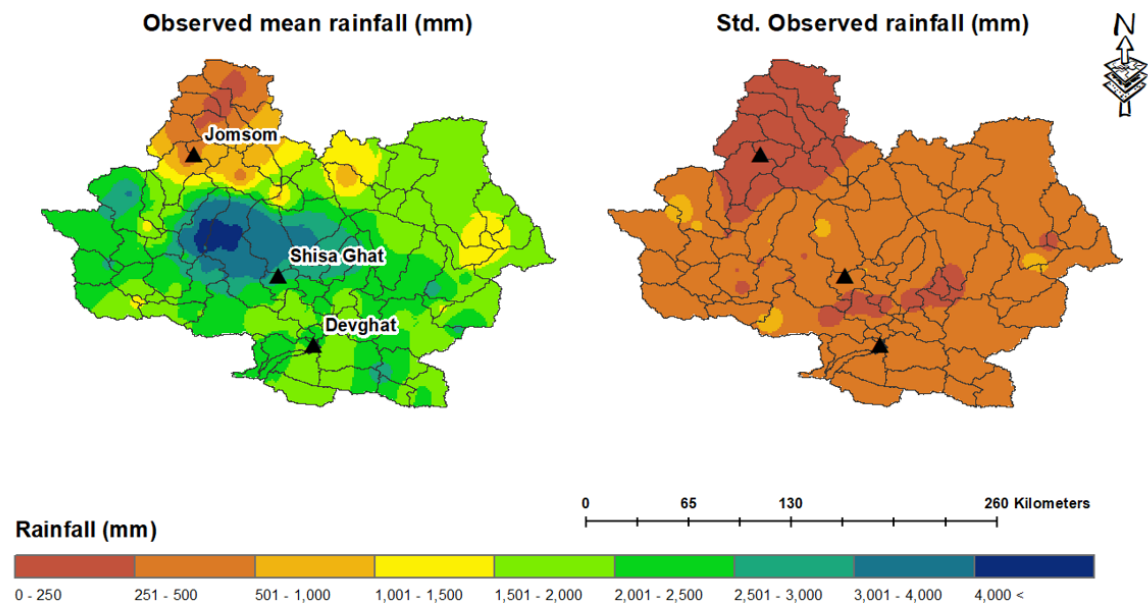


Fig. S7: Mean and standard deviation of observed rainfall in Narayani river basin

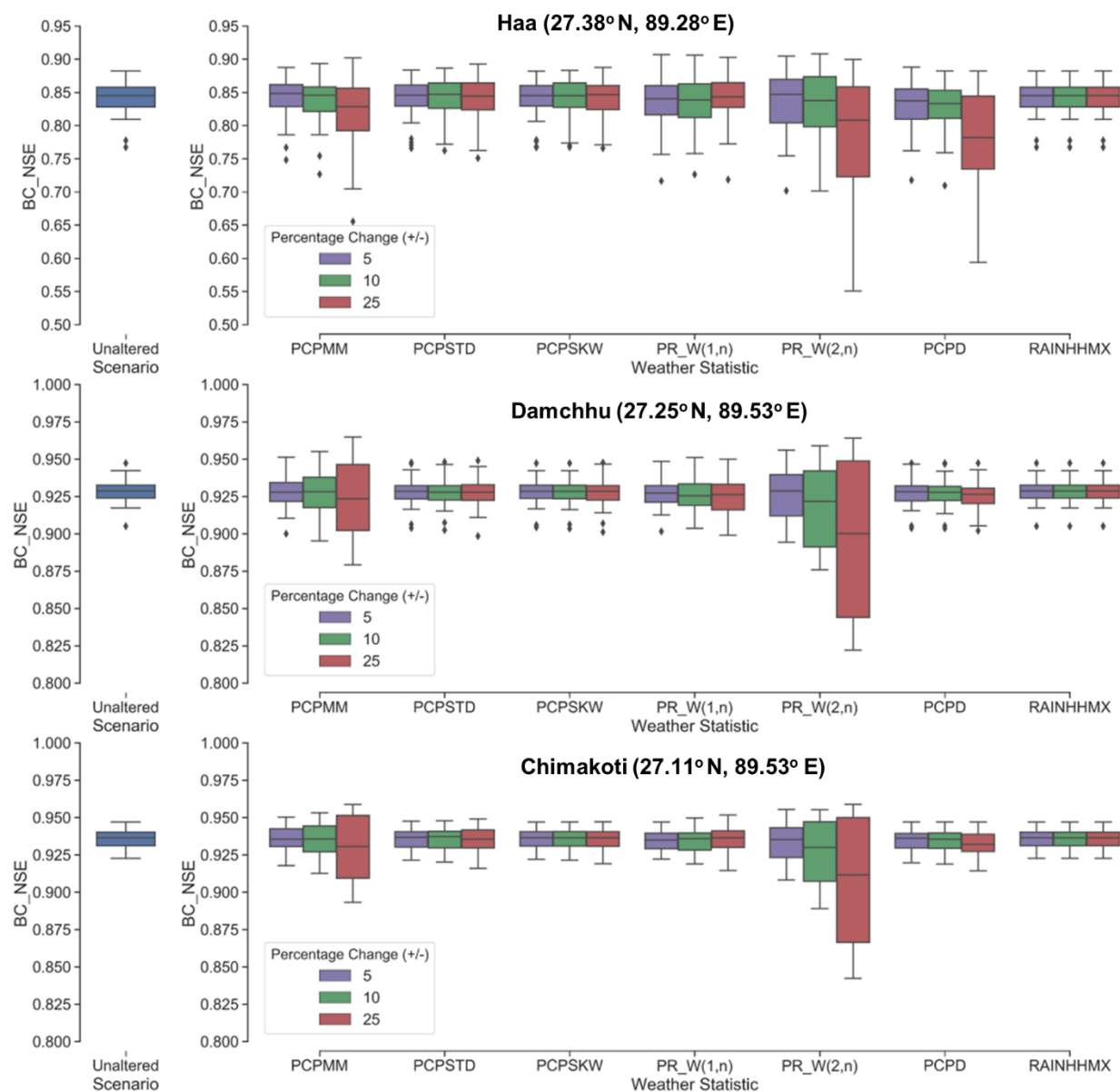


Fig. S8: Sensitivity analysis of weather statistics in terms of NSE in Wangchhu river basin, Bhutan