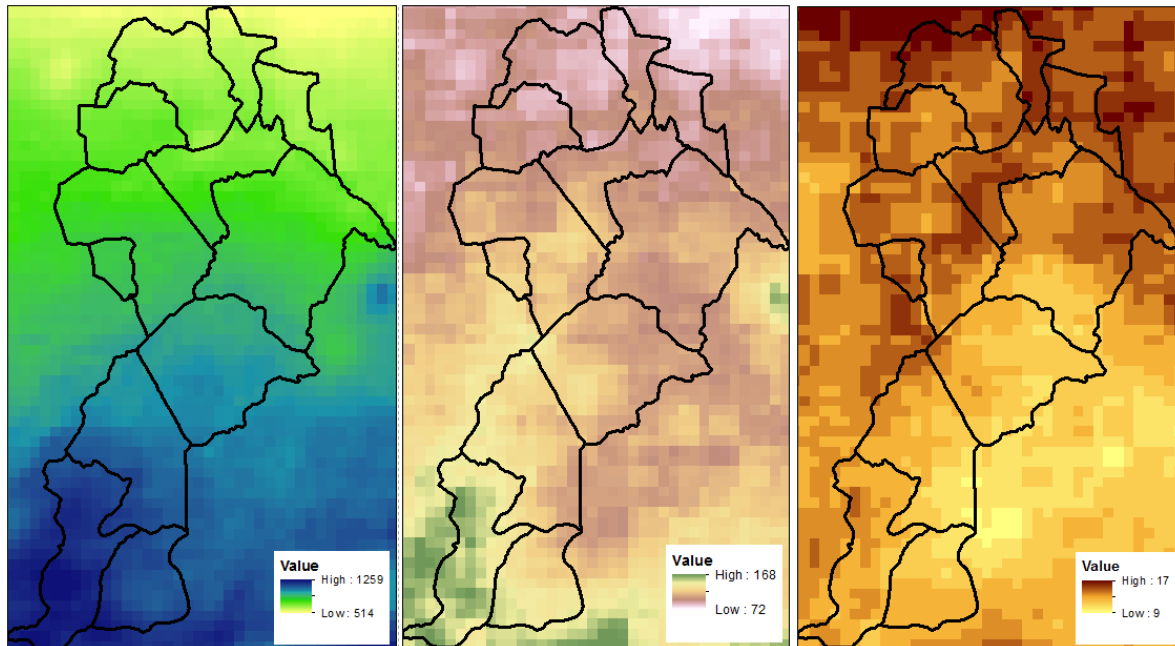
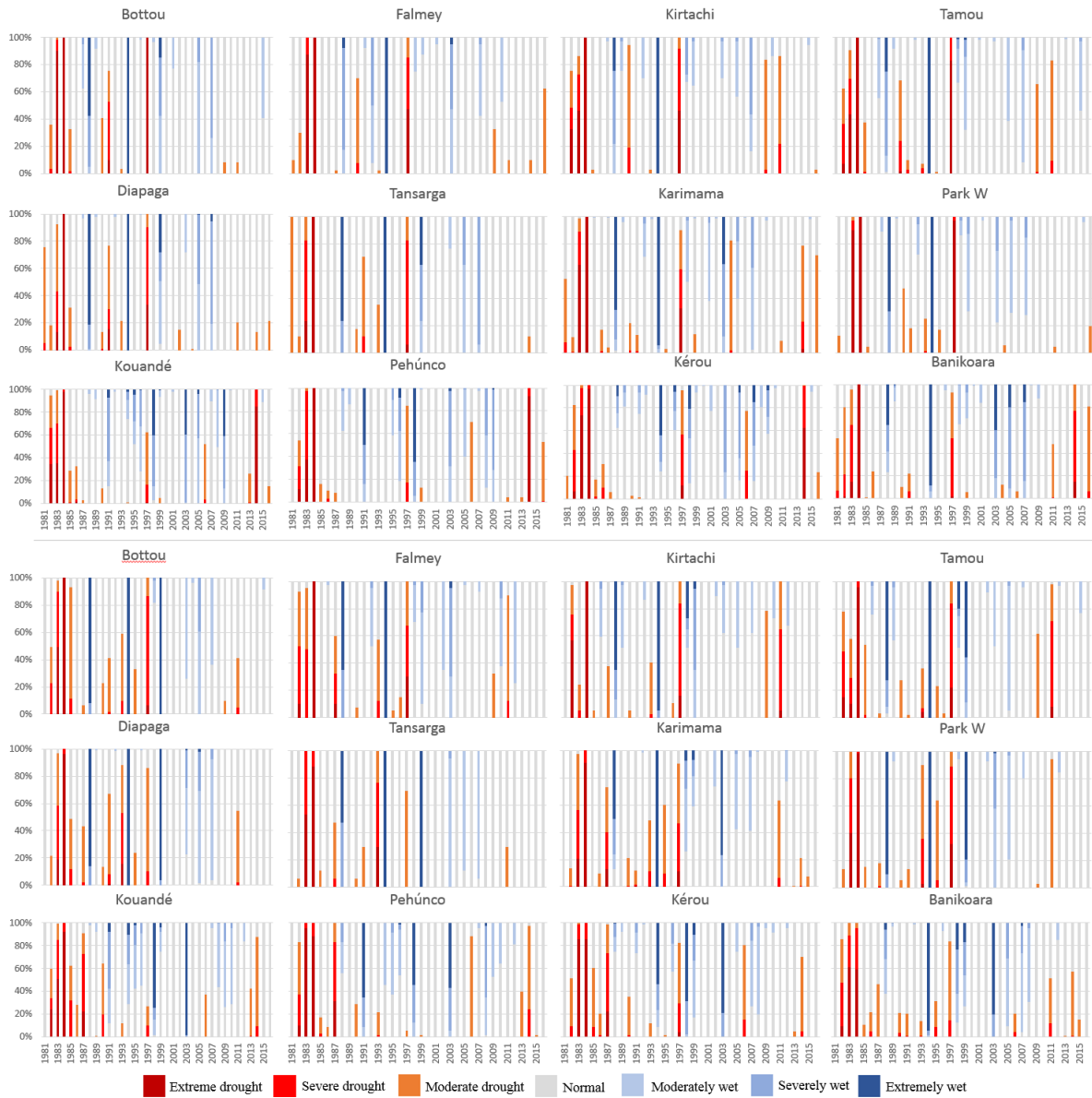
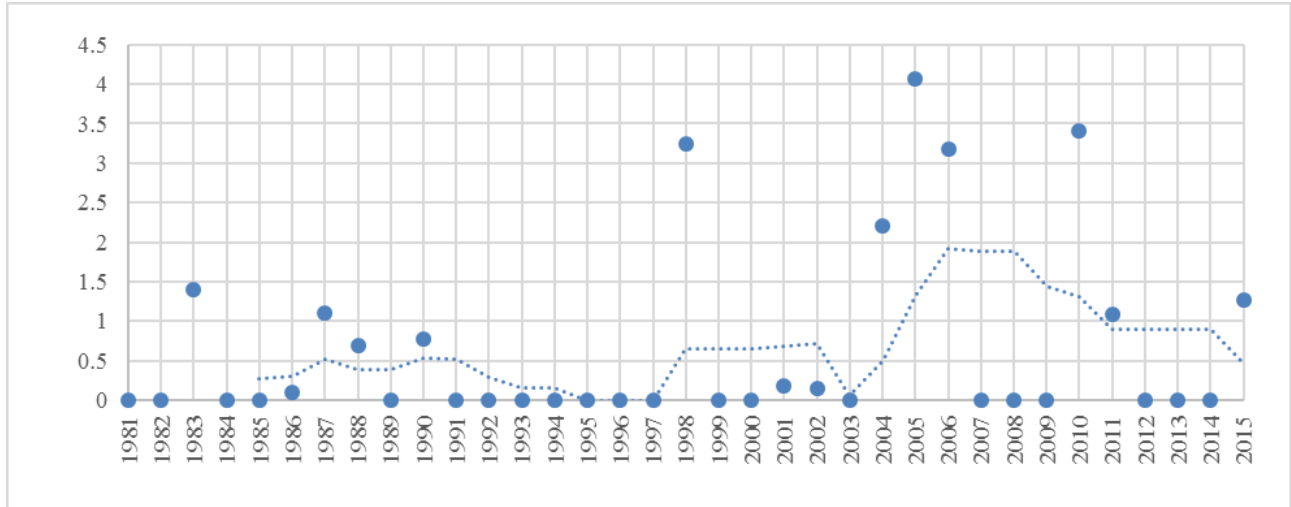
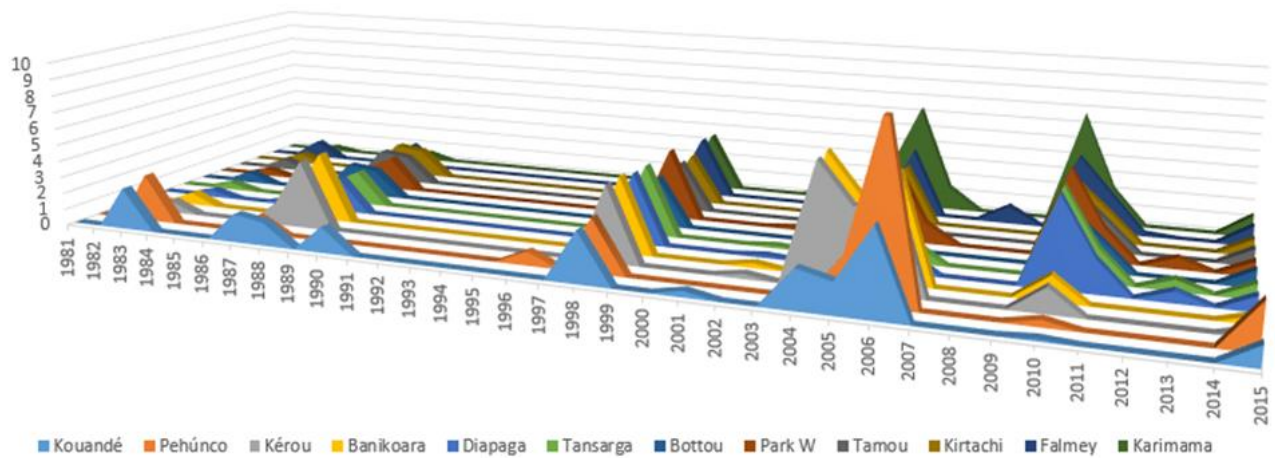
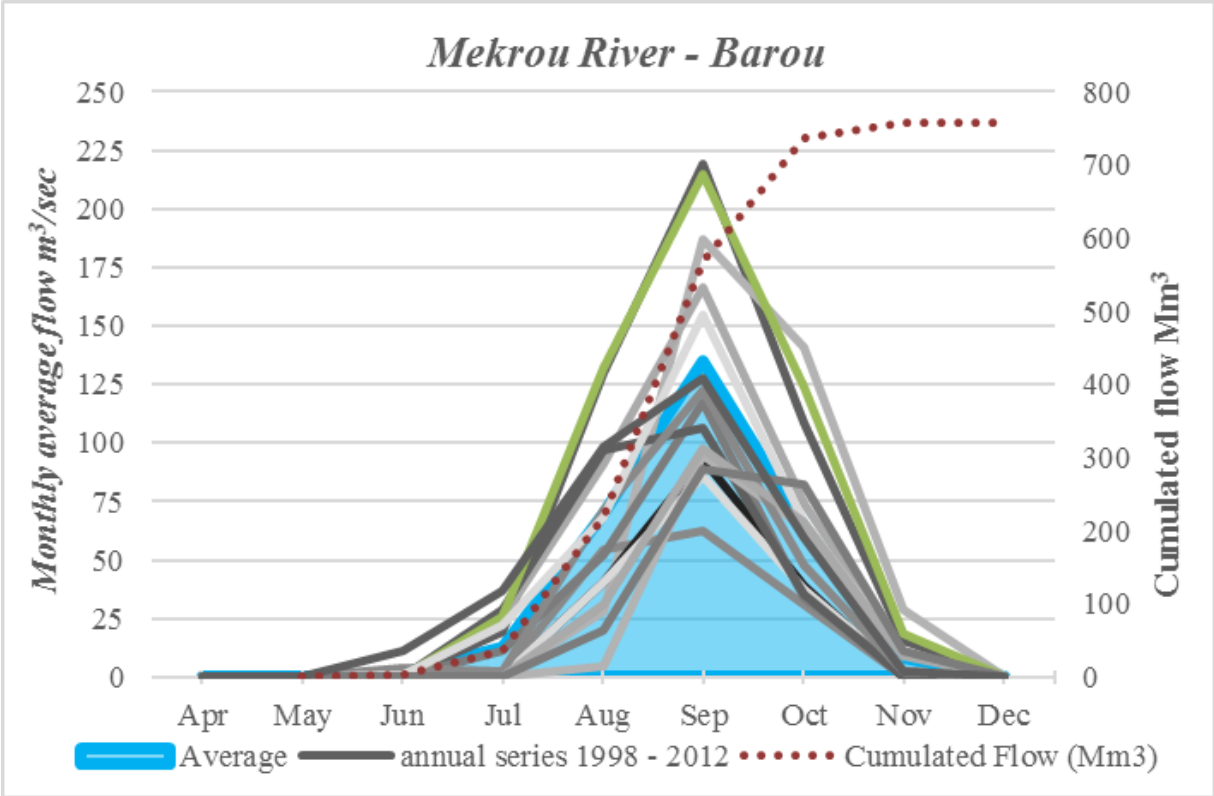
Supplementing Material

S1. Figure 6. Standardized Precipitation Index categorization and associated probability of occurrence (Agnew 2000).

SPI-n	Prob. of occurrence	Class
<1.65	0.05	Extremely wet
1.28 / 1.64	0.1	Severely wet
0.84 / 1.27	0.2	Moderately wet
-0.84 / 0.84	0.5	Normal
-1.28 / -0.83	0.2	Moderate drought
-1.65 / -1.27	0.1	Severe drought
<-1.65	0.05	Extreme drought

S2. Figure 7: Mean Annual Precipitation, Standard Deviation and Coefficient of Variation (%) of the entire time series available (CHIRPS 1981-2016), in the Mékrou river basin.

S3. Figure 8: Number of Wet/Dry events per administrative area and SPI type.

	SPI-3		SPI-6			SPI-3		SPI-6			SPI-3		SPI-6	
	W.e	D.e	W.e	D.e		W.e	D.e	W.e	D.e		W.e	D.e	W.e	D.e
	Benin					Niger					Burkina Faso			
Kouandé	2	1	3	2	Park W	1	0	0	1	Tansarga	1	0	1	0
Pehúnco	2	2	2	2	Tamou	2	2	0	2	Diapaga	1	0	1	1
Kérou	2	1	2	1	Kirtachi	1	2	0	2	Bottou	2	0	0	1
Banikoara	1	3	2	2	Falmey	2	2	2	2					
Karimama	1	2	1	1	Falmey	2	2	2	2					

S4. Figure 9: Temporal profile of SPI-3 (JJA) and SPI-6 (AMJJAS). Area percentage per administrative unit affected by different anomaly categories

S5: Figure 10: Mean Heat Wave Magnitude Index for the entire Area of Influence and 5-year moving average.

S6: Figure 11: Temporal profile of Heat Wave Magnitude Index per Administrative Area

S7. Figure 12: Monthly average discharge at Barou station as modelled in SWAT for the period 1998-2012; in blue the average; dashed red line is cumulated flow in cubic meter.

S8. Figure 13: Annual water flow (Mm3) in several subbasin in the Mekrou.

Legend

Mekrou River Basin
Annual water (Mm3)

- < 30
- 30.1 - 100.0
- 100.1 - 550.0
- 550.1 - 800