Impact of hydropower dam operation and management on downstream hydrogeomorphology in semi-arid environments (Tekeze, northern Ethiopia)

Online supplementary figures

	Data provided by	Data analyzed by	Options generated by	Decision selection by	Decision implemented by	Approach to decision making
1	Decision maker					Completely unsupported
2	Database/GIS	Decision maker				Information Supported
3	Database/GIS	DSSs	Decision maker			Systematic analysis
4	Database/GIS	DSSs		Decision maker		Systematic analysis of alternatives
5	Database/GIS	DSSs			Decision maker	System with override
6	Database/GIS	DSSs				Completely automated

Figure 1 The Tekeze dam operation and management is based on an information supported decision support system (DSS): reservoir water levels are monitored but the dam operator makes all decisions (McCartney & King, 2011)

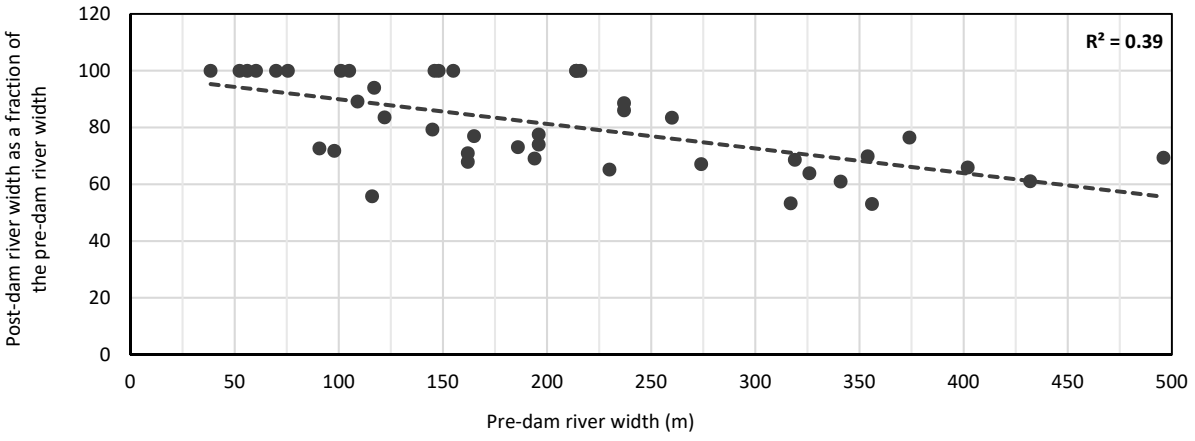

Figure 2 The post-dam river narrowing has mainly occurred in the areas with a large pre-dam river width (unconfined areas) than in those with a smaller pre-dam river width (confined areas)

Figure 3 Banana plants damaged by the 2018 emergency dam release: the yellow-colored plants will die and need to be replaced. The water levels remained high for up to fifteen days and thick layers of sand have been deposited.