

**Figure S1.** Frequency of meteorological droughts according to their duration using the 3-month SPI. Results for baseline and futures scenarios defined by five selected GCM are shown for six sub-basins controlled at the following stations: a) Ramis (1), b) Unocolla (2), c) Ilave (3), in Peru, and d) Chuquiña (7), e) Calacoto Maure (6), f) Calacoto Desaguadero (5), in Bolivia. Numbers in parentheses indicate the location of control points in Figure 1b.



**Figure S2.** Frequency of agricultural droughts according to their duration using the 3month SSMI. Results for baseline and futures scenarios defined by five selected GCM are shown for six sub-basins controlled at the following stations: a) Ramis (1), b) Unocolla (2), c) Ilave (3), in Peru, and d) Chuquiña (7), e) Calacoto Maure (6), f) Calacoto Desaguadero (5), in Bolivia. Numbers in parentheses indicate the location of control points in Figure 1b.



**Figure S3.** Frequency of hydrological droughts according to their duration using the 3month SRI. Results for baseline and futures scenarios defined by five selected GCM are shown for six sub-basins controlled at the following stations: a) Ramis (1), b) Unocolla (2), c) Ilave (3), in Peru, and d) Chuquiña (7), e) Calacoto Maure (6), f) Calacoto Desaguadero (5), in Bolivia. Numbers in parentheses indicate the location of control points in Figure 1b.