

SUPPLEMENTARY INFORMATION

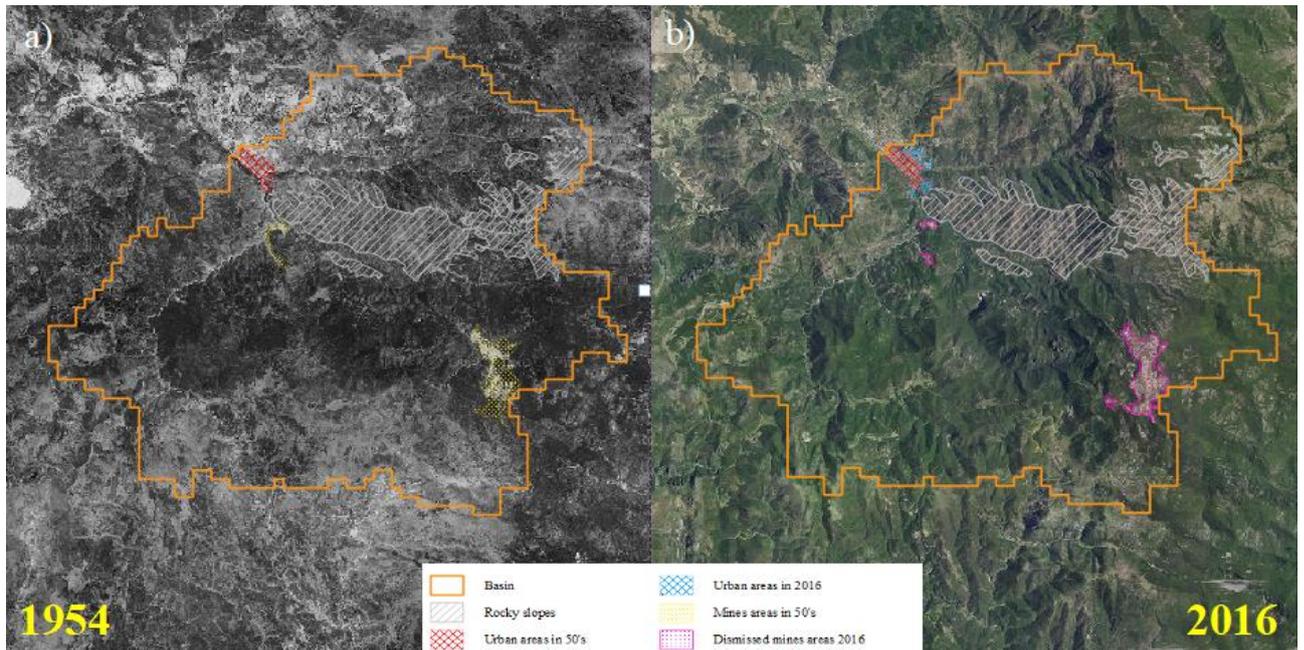


Figure S1. Historical comparison of the land uses (urban area, rocks, and mines area are highlighted) in the Fluminimaggiore basin: (a) aerial photography of 1954, and (b) aerial photography of 2016.

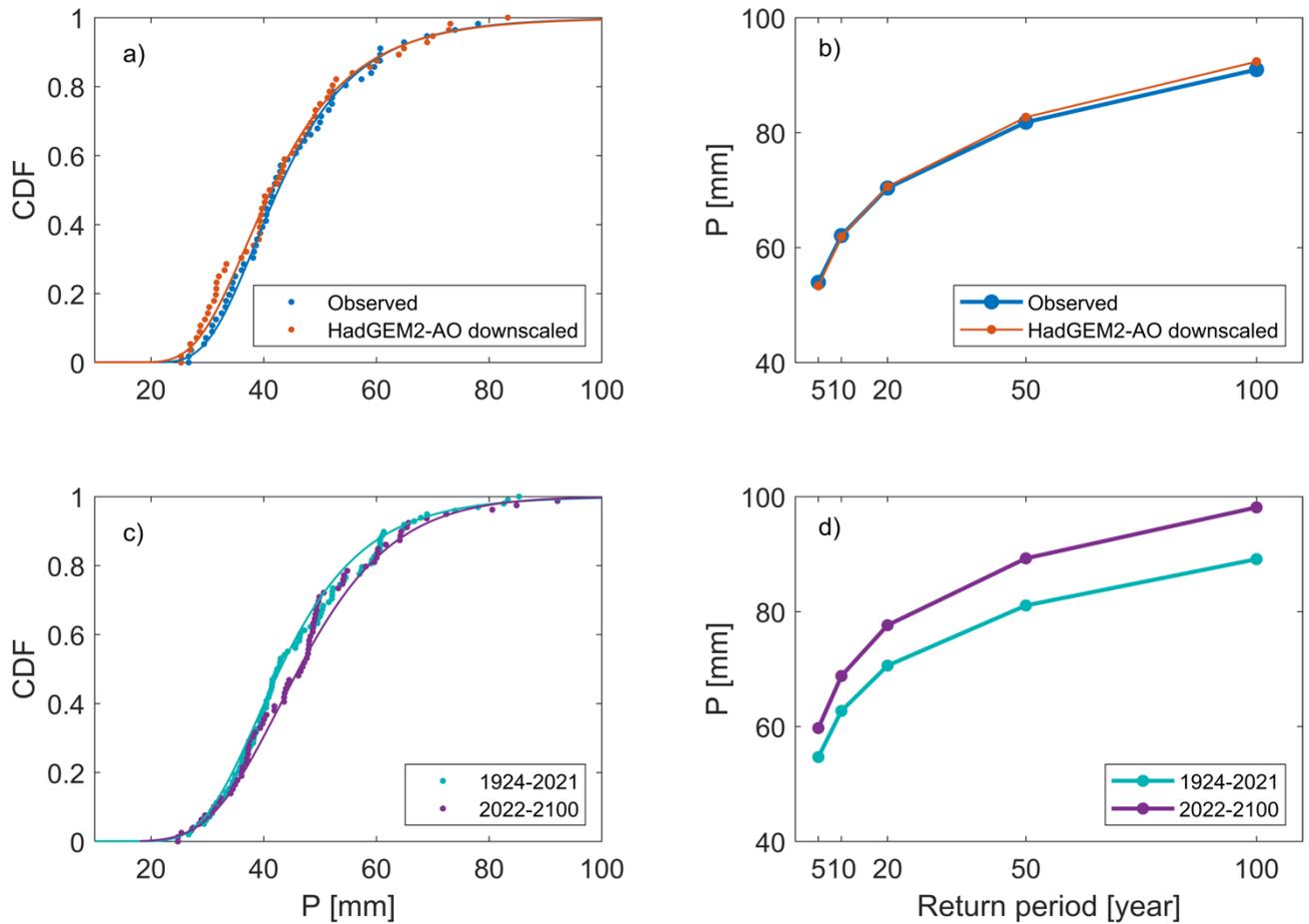


Figure S2. In the Rio Fluminimaggiore basin, daily precipitation extremes under climate change: (a) cumulative distribution fitting estimated using the Generalized Extreme Event (GEV) in the downscaling references period (1950-2005) (continuous lines are the fitted GEV) for land-observed data and downscaled HadGEM2-AO data; (b) precipitation values corresponding to different return periods in the reference period estimated using the GEV distribution for land-observed data and downscaled HadGEM2-AO data; (c) cumulative distribution fitting estimated using the GEV distribution fits to historical observed data (1924–2021), and future climate scenario predictions (2022–2100, using HAdGEM2-AO predictions under RCP 85 concentration pathway) (continuous lines are the fitted GEV); (d) precipitation values corresponding to different return periods for the historical observed data (1924–2021) and the RCP 85 future scenario (2022–2100).