

Global water scarcity assessment under RCP-SSP scenarios

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Climate change impact projections that contributed to the fourth Assessment Report of IPCC were based on Special Report on Emission Scenarios (SRES). Processes toward the fifth Assessment Report are under way, and post-SRES scenarios, called Representative Concentration Pathways (RCP) and Shared Socio-economic Pathways (SSP) are being prepared. In this study, a comprehensive global water scarcity assessment was conducted, using a state of the art global water resources model H08 (Hanasaki et al., 2008a, 2008b, 2010). We used climate change projections based on RCP and prototype of SSP developed by National Institute for Environmental Studies, Japan. Two sets of socio economic scenarios and two sets of climate scenarios were prepared to run H08 for the period 2001-2100. Socio-economic scenarios include SSP1 (depict sustainable world) and SSP3 (fragmented world). Climate scenarios include Reference (no policy) and Mitigation (stabilizes green house gas concentration at 450ppm). We analyzed the simulation results of four combinations, particularly focusing on the sensitivity of socio-economic scenarios to major water resources indices.