

World Conference on

Climate Change

October 24-26, 2016 Valencia, Spain

AR5-based climate change impact analysis on water resources in Asia monsoon region

Jeong-Bae Kim, Moon-Hwan Lee and Deg-Hyo Bae
Sejong University, Korea

Asia has a large variation in water resources and causes frequent occurrence of natural disasters such as flood and drought. Of course, there are various reasons for these disasters, but the current climate change increases the variability of temporal and spatial patterns for the disasters and causes the difficulties in water resources management over the region. The aim of this study is to analyze climate change impact on water resources in the Asia monsoon region based on AR5 scenario. The future changes in temperature, precipitation and runoff according to climate change are evaluated and the corresponding variability characteristics are analyzed in the study region. GCMs are used for simulating future climate change scenarios and bilinear method is applied to interpolate the scenarios at 0.5 degree horizontal grid scale. Delta method is used for bias correction. To assess the performance of GCMs output that reflect well the Asian monsoon region, Taylor diagram approach is adopted in this study. The observed precipitation and temperature data were obtained from APHRODITE, which is used for input of hydrologic VIC model. As results, annual average temperature was increased in general, while the precipitation and runoff were different patterns in specific sites. In the past periods, annual average temperature, precipitation and runoff were about 10.5 °C, 672mm and 355mm, respectively. Future projections based on climate change scenario represent gradual rise in temperature in all regions, but demonstrate higher increase in temperature change with increasing latitudes. The spatial and temporal changes in precipitation and runoff are provided in this study. The flood and drought prone areas in Asia monsoon region due to climate change are analyzed and compared with the results from AR4.

Biography

Jeong-Bae Kim has completed his M.S degree at the age of 25 years from Sejong University, Seoul, Korea. She is doctoral course student in Department of Civil and Environmental Engineering, Sejong University. She has published 1 paper in academic journal in South Korea and delivered several oral presentations in academic symposium.

morningdewjb@naver.com

Notes: