Evaluation of the Use of Data Reanalysis for Climate Regionalization

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ABSTRACT

Climate regionalization has an important role in providing information of profile and climate potential of the region, but its requires long timeseries data with equally spatial distribution. Climate data in Indonesia is still a constraint related to the limitations of spatial and temporal data availability. Therefore, the use of good quality of reanalysis data can be an alternative to obtain information on climate potential of the region. This paper evaluate the use of daily rainfall reanalysis data based on WordClim and CHIRPS with spatial resolution of 1 km^2 and 5.5 km^2 respectively in the study area of Subang Regency, West Java. The climate regionalization of the region was done by Oldeman climate classification and statistical approach (PCA) using cluster analysis based on 7 linkage method. The results of the analysis show the similar pattern of seasonal and yearly spatial distribution of rainfall in both reanalysis climate data with annual rainfall range between 1330-3700 mm and 1200-3300 mm for WorldClim and CHIRPS data respectively. Climate regionalization produced 7 cluster outputs in both reanalysis data with monsoonal rainfall pattern, characterised by one peak of rainfall at the beginning of the year. The result also indicates the similarity of monthly rainfall pattern from north to south region following altitude distribution in both reanalysis climate data. Despite of some different patterns noticeably for monthly temporal distribution, these findings suggest that both climate reanalysis data is proper to be use as alternative to obtain information on climate potential of the region.

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