



INTISARI

Tujuan penelitian ini adalah menentukan potensi air klimatologis pada setiap zone fisiografi Jawa Barat (Zone I- Vulkan Kwarter, Zone II- Dataran Aluvial Jakarta, Zone III- Antiklinorium Bogor, Zone IV- Dome dan Pegunungan, Zone V- Jalur Depresi Bandung dan Zone VI- Pegunungan Selatan). Selain itu juga mengetahui pengaruh fisiografi terhadap potensi air di 6 zone tersebut (37 DAS - 207 stasiun meteorologi), dengan periode pengamatan antara tahun 1960-1990.

Potensi air secara klimatologis pada setiap zone fisiografi dan pengaruh fisiografi terhadap potensi air tersebut dianalisa dengan cara spasial (seperti dengan isohyet, isowater potential dan korelasi peta). Digunakan pula statistik untuk menentukan adanya perbedaan setiap variabel pada setiap zone fisiografi dalam DAS. Kaitan antara hasil uji korelasi peta dengan uji statistik dibahas secara deskriptif.

Hasil penelitian membuktikan bahwa tidak ada korelasi antara jumlah zone fisiografi yang terlengkap dalam DAS (dalam satu DAS mencakup keenam zone fisiografi) dan ukuran DAS yang luas dengan potensi air yang terbesar. Selain itu terbukti pula perbedaan zone fisiografi berpengaruh nyata terhadap perbedaan variabel potensi air, luas wilayah ketinggian 0-1500 m, luas wilayah lereng 0-25% dan di atas 40%, serta luas beberapa macam penggunaan tanah (hutan, perkebunan, kebun campuran, tegalan, sawah, perkampungan/ permukiman).

Potensi air di daerah penelitian umumnya tergolong tinggi (rata-rata di atas 2500 mm/tahun). Potensi air pada setiap zone fisiografi berbeda-beda, disebabkan karena faktor-faktor yang berbeda pula. Zone I; potensi air umumnya sangat kecil dipengaruhi faktor luas wilayah lereng 8-15% dan luas wilayah ketinggian 701-1000 m. Pada wilayah lereng 8-15% terutama yang berada pada arah hadapan lereng selatan sering terjadi hujan orografik dalam jumlah tinggi (di atas 3500 mm/tahun). Zone II; potensi air sangat kecil dipengaruhi faktor luas wilayah lereng 0-8%, dan angin sejajar pantai (kecuali di utara Kerawang). Zone III; potensi air umumnya sangat kecil hingga kecil dipengaruhi faktor luas wilayah lereng 0-8%. Potensi air meningkat ke arah pedalaman akibat hujan konvektif. Zone IV; potensi air sedang hingga besar dipengaruhi faktor luas perkampungan/ permukiman. Zone V; potensi air umumnya sangat kecil hingga kecil dipengaruhi faktor luas wilayah ketinggian 501-700 m dan arah hadapan lereng utara. Terjadi hujan orografik dalam jumlah tinggi (di atas 3500 mm/tahun). Zone VI; potensi air umumnya sedang hingga sangat besar karena pengaruh luas wilayah lereng > 40%, luas wilayah lereng 25-40%, luas wilayah lereng 15-25% dan luas wilayah lereng 0-8%. Zone ini miring ke selatan dan menghadap arah datangnya angin, sehingga sering terjadi hujan orografik. Perbedaan tekanan udara pada zone VI (berbatasan dengan zone I atau V di utara), sehingga sering terjadi hujan frontal.

Kata Kunci : Fisiografi, Potensi air, Daerah aliran sungai.



ABSTRACT

Climatologically, this research aims to determining the water potential in each zone of physiographies and to identify the influence of the physiography on water potential of the catchment areas in West Java. The research was conducted in 6-zones of physiography (Zone I- Volcanic Quarter, Zone II- Jakarta Alluvial Plain, Zone III- Bogor Anticlinorium, Zone IV- Ridges and Domes, Zone V- Bandung Depression dan Zone VI- South Plateous), 37-catchment areas and 207 meteorological stations with 30 years observation periods (1960-1990).

Climatologically, water potential in each zone of physiographies and the influence of the physiography on the water potential are analyzed in spatial way (i.e. by applying isohyet, isowater potential and mapping correlation). Besides, various statistical method analysis are used to examine the significant difference among variables in each zone. These results then are presented and discussed in a descriptive analysis.

Results of the research show that, it is not proved at all that the catchment area with the sixth zones and the widest physiographic zones means those having the largest water potential (the catchment area has six physiography zones). It is also proved that the significant difference of physiographic zones in the catchment areas are influenced by the width of height of 0 - 1500 m, the width of slope 0 - 25% and above 40%, and the width of several types of land use (i.e. forest, plantation, mix farm, rice field and settlement area).

In general, annual average of water potential is high (above 2500 mm/years). Meanwhile, factors influencing the water potential prediction vary from zone to zone. Most of the Zone I have a very small water potential influenced by two factors; the width of slope of 8-15% and the width of height of 701-1000 m. In the windward side area of slope of 8-15% especially at the south, the high orographic storms have often changed becoming above 2500 mm/years. Zone II have a very small water potential influenced by the width of slope of 0-8% and windward side of the north coast (except in the north Kerawang). Zone III have a very small to small water potential influenced by the width of slope of 0-8%. The convectional storms in hinterland becoming the water potential have increased. Meanwhile, the water potentials of Zone IV are medium to big influenced by the width of settlement area. Most of Zone V have very small to small potential influenced by the width of height of 501-700 m and windward side of north slope. The orographic storms have happened here in high amount (above 3500 mm/years). Zone VI generally have medium to very big water potential influenced by several factors (the width of slope of above 40%, the width of slope of 25-40%, the width of slope of 15-25% and the width of slope of 0-8%). The orographic storms happen in this zone that extends at an angle to the south and at the windward side. The difference of air pressure at the north border of zone VI with zone I or zone V becomes the frontal/cyclonic storms.

Key Words: *Physiography, Water potential, Catchment Area.*