

INTISARI

ANALISIS HIDROGRAF SATUAN SINTETIK BEBERAPA DAERAH ALIRAN SUNGAI DI KABUPATEN BANGKALAN

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Pemahaman tentang karakteristik morfometri daerah aliran sungai (DAS) dan perilaku hidrologinya diperlukan untuk melakukan pengelolaan DAS secara maksimal. Karakteristik morfometri DAS dapat dikuantifikasi berdasarkan 3 aspek yaitu, linier, areal, dan relief. Sedangkan perilaku hidrologi DAS dapat dicerminkan oleh komponen hidrograf satuan DAS. Hidrograf satuan DAS dapat dibuat secara sintetik menggunakan morfometri DAS untuk DAS yang memiliki keterbatasan data aliran dan curah hujan. Pembuatan hidrograf satuan sintetik (HSS) masih belum memiliki standar penggunaan data yang jelas. Kabupaten Bangkalan memiliki potensi hidrologi yang dapat dimanfaatkan. Oleh karena itu dibutuhkan pemahaman karakteristik morfometri DAS dan perilaku hidrologinya. Berdasarkan alasan tersebut penelitian ini dibuat dengan tujuan yaitu, 1) mengkaji karakteristik morfometri DAS, 2) mengkaji karakteristik hidrograf satuan sintetik pada beberapa DAS di kabupaten Bangkalan, 3) membandingkan hasil HSS berdasarkan metode yang berbeda.

Pengkajian karakteristik morfometri DAS dan HSS beberapa DAS di Kabupaten Bangkalan dilakukan dengan mengkuantifikasi aspek-aspek morfometri dan komponen HSS. Komponen HSS DAS dibuat menggunakan formula Gama I dan dilakukan dengan 3 metode yang dikontrol oleh sumber data berbeda yaitu, RBI, Google Maps, dan DEMNAS. Hasil kuantifikasi aspek-aspek morfometri DAS dan komponen HSS Gama I dianalisis secara deskriptif dan deskriptif komparatif pada hasil HSS Gama I pada 3 metode.

Karakteristik morfometri beberapa DAS di Kabupaten Bangkalan dicerminkan oleh hasil kuantifikasi ketiga aspek yaitu aspek linier, areal, dan relief. HSS beberapa DAS menunjukkan DAS Sumber Pocong memiliki waktu TR tercepat sebesar 1,43 jam, DAS Kali Tambangan memiliki waktu TB terlama yaitu 27,03 jam, dan DAS Kali Pandean memiliki Q_p tertinggi. 10.42 m³/s. Tiga metode HSS Gama I menghasilkan TR yang hampir sama pada semua DAS, TB bervariasi, dan Q_p identik antara HSS Gama I hasil RBI dan Google Maps.

Kata kunci : Kabupaten Bangkalan, Morfometri DAS, HSS Gama I

ABSTRACT

ANALYSIS OF SYNTHETIC UNIT HYDROGRAPH SEVERAL WATERSHED IN BANGKALAN REGENCY

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An understanding of the morphometric characteristics of the watershed (DAS) and its hydrological behavior is needed to perform watershed management optimally. The morphometric characteristics of the watershed can be quantified based on 3 aspects, linear, areal, and relief. Meanwhile, the hydrological behavior of the watershed can be reflected by the unit hydrograph component of the watershed. Watershed unit hydrographs can be made synthetically using watershed morphometry for watersheds that have limited flow and rainfall data. The manufacture of synthetic unit hydrograph (HSS) still does not have clear data usage standards. Bangkalan Regency has hydrological potential that can be exploited. Therefore, it is necessary to understand the morphometric characteristics of the watershed and its hydrological behavior. Based on these reasons, this research was made with the aim of 1) studying the morphometric characteristics of the watershed, 2) Studying the characteristics of hydrograph synthetic units in several watersheds in Bangkalan Regency, 3) comparing the results of HSS based on different methods.

The study of watershed and HSS morphometric characteristics of several watersheds in Bangkalan Regency was carried out by confirming the morphometric aspects and components of HSS. The HSS component is made using the Gama I formula and is carried out using 3 methods controlled by different data sources (RBI, Google Maps, and DEMNAS). The results of the quantification of watershed morphometric aspects and components of the Gama I HSS were analyzed descriptively and comparatively descriptively on the results of the Gama I HSS in 3 methods

The morphometric characteristics of several watersheds in Bangkalan Regency are reflected by the results of the quantification of the three aspects namely linear, areal, and relief aspects. The HSS of several watersheds shows that the Sumber Pocong watershed has the fastest TR time of 1.43 hours, the Kali Tambangan watershed has the longest TB time of 27.03 hours, and the Kali Pandean watershed has the highest Q_p 10.42 m³/s. The three HSS Gama I methods produced nearly the same TR in all watersheds, varied TB, and identical Q_p between HSS Gama I results from RBI and Google Maps.

Keywords : Bangkalan Regency, Watershed Morphometry, HSS Gama I