

KAJIAN HUJAN EKSTRIM DI PULAU SERAM
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INTISARI

Pulau Seram merupakan bagian dari provinsi Maluku yang terletak di Utara dari gugusan Kepulauan Maluku. Kejadian bencana alam yang sering terjadi di Provinsi Maluku adalah banjir dan tanah longsor yang disebabkan oleh hujan. Bencana alam tersebut sering terjadi terutama di Seram Bagian Barat. Keterbatasan fasilitas infrastruktur dan area yang sulit dijangkau, Seram Bagian barat terutama di wilayah Huamual menjadi lokasi studi kebencanaan yang disebabkan oleh hujan. frekuensi tinggi kejadian bencana yang parah di sini terkait dengan peristiwa cuaca ekstrem seperti banjir bandang dan tanah longsor. Kejadian hujan ekstrim dipilih berdasarkan kejadian hujan yang terjadi di atas 100 mm per hari. Probabilitas hujan terbesar di Pulau Seram dianalisis menggunakan analisis frekuensi. Skenario perubahan iklim menggunakan model iklim HadCM3 skenario A2 dan B2. Prediksi hujan masa depan menggunakan *Automated Statistical Downscaling* dengan parameter statistik meliputi RMSE, simpangan baku, dan koefisien regresi untuk menguji akurasi model. Kejadian banjir bandang di Kecamatan Huamual Belakang disebabkan oleh hujan yang mempunyai kala ulang 2 tahun. Skenario Iklim A2 lebih sesuai daripada skenario B2 yang digunakan untuk memprediksi data hujan di Pulau Seram. Prediksi curah hujan masa depan skenario A2 mengalami kenaikan rata-rata sebesar 22% sedangkan skenario B2 mengalami kenaikan sebesar 11%. Perbandingan frekuensi kejadian hujan ekstrim historis dan prediksi skenario A2 mengalami penurunan 4,1% sedangkan skenario B2 mengalami penurunan sebesar 7,5% terhadap frekuensi kejadian hujan historis per tahun.

Kata kunci: Pulau Seram, Hujan Ekstrim, Analisis Frekuensi, *Automated Statistical Downloading*.



THE STUDY OF EXTREME RAIN IN SERAM ISLAND DUE TO CLIMATE CHANGE

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ABSTRACT

Seram Island is a part of Maluku province which is lays on the north of Maluku archipelago. Disasters which often occurs in Maluku province is flood and landslide due to rain. Those disasters occur mainly on the west side of Seram. West side of Seram mainly on Huamual area with infrastructure facilities limitation and isolated area, is the disaster location of the study due to rain. The high Frequency of bad disasters here is related to extreme weather occasion such as flash flood and landslide.

Extreme rain event is chosen based on rain event which occurs above 100 mm a day. The biggest probability of rain in Seram island is analized by using frequency analysis. Climate change scenarios utilizes HadCM3 Climate model of A2 and B2 scenarios. The precipitation forecast utilizes Automated Statistical Downscaling with statistical parameter including RMSE, standard deviation, regression coefficient for examining model accuracy.

Flashflood case on Humamual Belakang sub-district is led by two years return period rain. A2 climate scenario was more appropriate than B2 scenario which was utilized to predict rain data in Seram Island. The precipitation forecast with A2 scenario increased approximately 22%, while B2 scenario increased 11%. The comparison between the frequency of historical extreme rain event and the prediction of A2 scenario decreased 4,1% whereas B2 scenario decreased 7,5% on the annual historical rain event frequency.

Keywords : Seram Island, Extreme Rain, Frequency Analysis, Automated Statistical Downloading.