Efektivitas Proklim Dalam Pengendalian Longsor Secara Vegetatif Di Kampung Iklim Desa Sambak, Kecamatan Kajoran, Kabupaten Magelang

Oleh :
Erny Wibawanti
20/467759/PMU/10365

ABSTRAK

Partisipasi masyarakat Desa Sambak dalam adaptasi dan mitigasi perubahan iklim telah diapresiasi dalam bentuk penghargaan ProKlim. Desa Sambak terletak pada zona transisi Gunung Api Sumbing dan Pegunungan Menorah sehingga rawan terhadap bencana erosi, longsor dan kekeringan. Penelitian ini berfokus untuk mengevaluasi efektivitas kegiatan ProKlim dalam pengendalian longsor secara vegetatif. Beberapa tahapan dilakukan untuk mencapai tujuan tersebut, yaitu: 1) identifikasi longsor; 2) identifikasi kegiatan pengendalian longsor secara vegetatif; 3) analisis pola spasial distribusi longsor dan kegiatan pengendalian longsor secara vegetatif; 4) evaluasi efektivitas kegiatan ProKlim. Bahan yang digunakan dalam penelitian ialah foto udara yang diambil dengan menggunakan *Unmanned Aerial Vehicle* (UAV). Foto udara digunakan untuk menghasilkan orthophoto dan DEM pada skala detail (desa). Orthophoto dijadikan dasar dalam identifikasi sebaran longsor dan sebaran kegiatan penanaman vegetasi untuk mitigasi longsor. Data faktor pengendali longsor meliputi kelerengan, profil kurvatur, dan aspek dihasilkan dari DEM, sedangkan data faktor sungai, jalan, dan tutupan lahan diperoleh dari digitasi orthophoto untuk menghasilkan skala yang sama. Identifikasi sebaran longsor dilakukan dengan metode interpretasi visual foto udara. Identifikasi lokasi pengendalian longsor dilakukan dengan partisipasi masyarakat dengan metode *snowball* dan dilanjutkan delineasi tutupan lahan vegetasi secara visual. Hasil intepretasi dilanjutkan dengan validasi yang diperoleh dari survei lapangan. Pola spasial distribusi longsor ditentukan dengan metode analisis tetangga terdekat. Kerawanan longsor ditentukan menggunakan metode frekuensi rasio. Analisis efektivitas ProKlim ditekankan pada identifikasi letak pengendalian longsor melalui kegiatan penanaman pada wilayah rawan longsor dengan frekuensi rasio penanaman pada tiap kelas kerawanan longsor dan nilai AUC. Hasil penelitian menunjukkan bahwa kegiatan penanaman belum ditempatkan pada zona rawan longsor sehingga dapat dikatakan kurang efektif. Kesimpulan didasarkan dari 42 kejadian longsor dengan dominasi pada kelerengan 15-25^0 dan 8-15^0; tutupan lahan pertanian lahan kering, semak, dan tanah terbuka; arah hadap lereng tenggara dan timur; profil kurvatur (+) dan (-); jarak dengan jalan 100-200 m dan 200-300 m; dan jarak dengan sungai < 150 m. Sebaran penanaman dalam konteks pengendalian longsor secara vegetatif terdapat pada tutupan lahan kebun campur dan hutan kering sekunder. Pola

spasial longsor dan pengendalian longsor secara vegetatif memiliki pola random. Dengan nilai frekuensi rasio kegiatan penanaman pada rawan rendah sebesar 1,43, kelas rawan sedang sebesar 1,17 dan kelas rawan tinggi sebesar 0,25, serta nilai AUC antara kelas kerawanan dan kegiatan penanaman sebesar 0,44.

Kata kunci: Tanah longsor, ProKlim, foto udara dan vegetatif

The Effectiveness of Proklim in Vegetative Landslide Control in the Sambak Village, Kajoran, Magelang

Oleh :
Erny Wibawanti
20/467759/PMU/10365

ABSTRACT

Participation of Sambak village in climate change adaptation and mitigation has been appreciated by government throught ProKlim award. Sambak is located in the transition zone of the Sumbing Volcano and the Menorah Mountains, making it prone to erosion, landslides and drought. This study focuses on evaluating the effectiveness of ProKlim activities in the context of vegetative landslide control. Several analyzes were carried out to achieve these objectives, namely: 1) identification of landslide; 2) identification of vegetative landslide control activities; 3) analysis of the spatial pattern of landslide distribution and the spatial pattern of vegetative landslide control activities; 4) evaluation of the effectiveness of ProKlim activities. The material used in the study is aerial photography taken using an Unmanned Aerial Vehicle (UAV). Aerial photography was intended to produce orthophoto and DEM at a detailed (village) scale. Orthophoto was used as the basis for identifying the distribution of landslides and the distribution of vegetation planting activities for landslide mitigation. Landslide control factors i.e., slope, curvature profile, and aspects were derived from DEM, while data on river, road, and land cover factors were obtained from orthophoto digitization to produce the same scale. The identification of landslide distribution was conducted by using aerial photography visual interpretation method. Identification of landslide control locations was carried out with community participation using the snowball method and continued with visual delineation of vegetation land cover. The interpretation's results was validated from the field survey data. The spatial pattern of landslide distribution was determined by the nearest neighbor analysis method. Landslide susceptibility was determined using the frequency ratio method. The effectiveness analysis was emphasized on identifying the location of landslide control through planting activities in landslide-prone areas with frequency ratio of planting in each class of landslide susceptibility and AUC values. The study proved that planting activities have not been placed in the landslide-prone zone. There were 42 landslides on the slopes of 15-25^0 and 8-15^0; cover of dry land, shrubs, and open land; the direction towards the southeast and east slopes; curvature profile (+) and (-); distance by road 100-200 and 200-300 m; and the distance to the river < 150 m. The distribution of planting in the context of vegetative landslide control was found in mixed garden land cover and secondary dry forest. On the distribution of landslides and the distribution of plantings has a random spatial pattern. With the frequency ratio value of planting

activities in the low class is 1.43, moderate was 1.17, and high was 0.25 and the AUC value between the susceptibility classes and planting activities was 0.44.
Keywords: Landslide, ProKlim, aerial photography, and vegetative