

**DINAMIKA EROSI TANAH  
PADA AREA LONGSORLAHAN AKTIF  
DI DAS BOMPON, KABUPATEN MAGELANG, JAWA TENGAH  
(Kasus Longsor Besar di Bagian Hilir DAS Bompon)**

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**INTISARI**

Longsorlahan dapat menjadi salah satu sumber penyumbang sedimen yang jarang diperhatikan dalam kegiatan monitoring Daerah Aliran Sungai. Berbagai proses erosi dapat muncul dalam intensitas yang tinggi karena adanya perubahan morfologi lereng dan stabilitas agregat tanah pada area longsorlahan aktif. Penelitian ini bertujuan untuk *i)* mengidentifikasi tipe erosi yang berkembang pada sebuah longsorlahan aktif, *ii)* menganalisis persebaran dan perkembangan erosi berdasarkan morfologi longsorlahan aktif, dan *iii)* mengukur intensitas laju erosi pada area longsorlahan aktif. Longsorlahan aktif terletak di DAS Bompon, tepatnya di Dusun Kalisari. Analisis dinamika erosi (persebaran dan perkembangan) dilakukan dengan dua pendekatan yaitu melalui pengamatan foto udara dan survei pengukuran langsung pada awal musim hujan (Desember 2017) dan akhir musim hujan (Maret 2018). Peta persebaran erosi pada area longsorlahan aktif diperoleh dari hasil interpretasi tipe erosi pada foto udara. Pendekatan melalui foto udara juga dilakukan untuk pengukuran intensitas laju erosi, yaitu dengan melihat perubahan dimensi erosi. Hasil pengukuran melalui foto udara dibandingkan dengan hasil pengukuran erosi di lapangan.

Hasil penelitian menunjukkan bahwa tipe erosi meliputi erosi percik, erosi lembar, erosi alur, dan erosi parit berkembang secara dinamis pada area longsorlahan aktif. Kejadian erosi tersebar pada tiap bagian longsorlahan terutama pada bagian kepala longsor dan kaki longsor. Berdasarkan analisis foto udara secara temporal terdapat perkembangan terhadap kenampakan erosi berupa variasi erosi, panjang erosi, kerapatan erosi, ukuran, pola, arah erosi, dan intensitas erosi. Perkembangan yang nampak jelas yaitu pada erosi alur di kepala longsor dan erosi parit di kaki longsor. Hasil pengukuran menunjukkan nilai kehilangan tanah yang berbeda pada tiap morfologi longsor. Bagian kaki longsor memiliki intensitas paling besar yang dipengaruhi oleh proses erosi dan longsor. Hasil pengukuran dengan pin erosi pun menunjukkan dominasi proses erosi dibandingkan sedimentasi pada bagian kaki longsor.

***Kata kunci:*** erosi tanah, dinamika erosi, longsorlahan, besar kehilangan tanah.

## ***SOIL EROSION DYNAMICS ON THE ACTIVE LANDSLIDE***

### ***IN BOMPON WATERSHED, MAGELANG, CENTRAL JAVA***

***(A Case Study on Active Landslide at Downstream of Bompon Watershed)***

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#### ***Abstract***

*Landslide can be one of the sediment contributor that rarely paid attention in watershed monitoring. The various process of erosion could arise in high intensity due to the change in morphology and soil aggregate stability in the active landslide area. These research aims to i) identify the types of erosion that develops in active landslide area, ii) analyze the distribution and development of erosion based on morphology of active landslide, iii) measuring the intensity of erosion rates on active landslide area. Erosion dynamics (distribution and development) in active landslide area were analyzed by two approach, that is multitemporal orthophoto observation and direct measurement in the beginning of rainy season (December 2017) and the end of rainy season (March 2018). Types of erosion and landslide morphology was interpreted from orthophoto to obtain multitemporal erosion mapping. Multitemporal erosion mapping from orthophoto was used to characterise erosion history includes variation of erosion, length of erosion, erosion density, and spatial pattern of erosion. Multitemporal orthophotograph also used to estimate intensity of erosion rates from changes in the dimension of erosion. It compared with the result from ground measurement.*

*The results show there are some types of erosion that develop intensively in active landslide area such rainsplash erosion, sheet erosion, rill erosion, and gully erosion. Erosion has spread in every part of landslide especially on the head and foot of landslide. There are significant changes could be identified by the comparison of multitemporal erosion mapping such as variation of erosion, length of erosion, erosion density, dimension of erosion, and spatial pattern of erosion. Rill erosion at head of landslide and gully erosion at foot of landslide obviously show their development. Measurement result show the difference of soil loss at every landslide morphology. The highest soil loss was located in the foot of landslide that affected by detachment and mass movement process. Similarly, the result of pin measurement that show the domination of erosion process than sedimentation in foot of landslide.*

**Keyword:** *soil erosion, erosion dynamics, mass movement, soil loss.*