

INDIKASI KEBERHASILAN REVEGETASI PADA KAWASAN TAMAN NASIONAL GUNUNG MERAPI

Oleh:

Annisa Sekar Salsabilla¹, Emma Soraya²

INTISARI

Pasca erupsi Gunung Merapi 2010, revegetasi di kawasan Taman Nasional Gunung Merapi (TNGM) terjadi melalui suksesi alam dan revegetasi buatan berupa rehabilitasi dan restorasi. Perubahan tutupan lahan pada kawasan TNGM dapat digunakan untuk monitoring keberhasilan revegetasi yang terjadi. Penelitian ini ditujukan untuk mengetahui pola perubahan tutupan lahan di TNGM pada tahun 2009 – 2022 dan indikasi keberhasilan revegetasi yang terjadi.

Penelitian ini menggunakan data spektral citra Landsat multi temporal pada algoritma LandTrendr di Google Earth Engine untuk mendeteksi pola perubahan tutupan lahan. Pengambilan sampel menggunakan metode *systematic sampling* dengan jarak 500m² dan didapat 250 sampel yang mewakili seluruh kawasan di TNGM yang meliputi tujuh resort dengan luas total 6.607,71 Ha. Pemulihan dan gangguan pada masing-masing resort dideteksi menggunakan indeks vegetasi *Normal Burn Ratio* (NBR). Kenaikan nilai NBR merupakan indikasi pemulihan/keberhasilan revegetasi, dan sebaliknya penurunan nilai NBR mengindikasikan gangguan, yang direkomendasikan sebagai prioritas revegetasi buatan.

Hasil penelitian menunjukkan bahwa terdapat 8 pola perubahan tutupan lahan di TNGM. Pola stabil dengan NBR rendah sebanyak 6,92% di kawasan TNGM menunjukkan area yang tidak pernah bervegetasi dan area dengan NBR tinggi yang selalu bervegetasi sebanyak 19% di seluruh kawasan TNGM. Pola perubahan *gradual – recovery*, *disturbance – recovery*, *disturbance – recovery – disturbance – recovery*, dan *recovery – disturbance – recovery* menunjukkan indikasi keberhasilan revegetasi. Pola-pola tersebut ditemukan sebanyak 55% dari seluruh kawasan TNGM dan mendominasi di Resort Dukun. Pola perubahan *gradual disturbance*, *recovery – disturbance*, dan *disturbance – recovery – disturbance* mengindikasikan revegetasi yang belum berhasil. Pola-pola tersebut sebanyak 19% di seluruh kawasan TNGM dan ditemukan mendominasi di Resort Srumbung.

Kata kunci: *Trajectory, Pemulihan, Gangguan, Revegetasi*

¹Mahasiswa Manajemen Hutan, Program Studi S1 Fakultas Kehutanan, UGM

²Dosen Pengajar Departemen Manajemen Hutan, Program Studi S1 Fakultas Kehutanan, UGM

INDICATIONS OF SUCCESSFUL REVEGETATION IN THE GUNUNG MERAPI NATIONAL PARK AREA

Author:

Annisa Sekar Salsabilla¹, Emma Soraya²

ABSTRACT

After the 2010 eruption of Mount Merapi, revegetation in the GMNP (Gunung Merapi National Park) area occurred through natural succession, rehabilitation, and restoration. Land cover changes in the TNGM area can provide information for the monitoring of successful revegetation. This study aims to determine the pattern of land cover changes from 2009 to 2021 and indications of successful revegetation at GMNP

This study uses multi-temporal Landsat image spectral data on the LandTrendr algorithm on Google Earth Engine to detect land cover change patterns. Sampling used a systematic sampling method with a distance of 500m² and obtained 250 samples representing the entire area in GMNP which includes seven resorts with a total area of 6,607.71 Ha. Recovery and disturbance at each resort were detected using the Normal Burn Ratio (NBR) vegetation index. An increase in the NBR value is an indication of revegetation recovery/success, and a decrease in the NBR value indicates a disturbance, which is recommended as a priority for revegetation through rehabilitation.

The results showed that there were 8 patterns of land cover change in GMNP. The stable pattern with a low NBR of 6.92% in the GMNP area shows areas that never vegetated and areas with high NBR that always vegetate are 19% throughout the GMNP area. The pattern of change gradual recovery, disturbance – recovery, disturbance – recovery – disturbance – recovery, and recovery – disturbance – recovery shows an indication of the success of revegetation. These patterns are found in 55% of the entire GMNP area and dominate in the Dukun Resort. The gradual change pattern of disturbance, recovery – disturbance, and disturbance – recovery – disturbance indicates that revegetation has not been successful. These patterns are 19% throughout the GMNP area and are found to dominate at Resort Srumbung

Keywords: Trajectory, Recovery, Disturbance, Revegetation

¹Student of Forest Management, Bachelor Program of Faculty of Forestry, UGM

²Lecturer of Forest Management, Bachelor Program of Faculty of Forestry, UGM