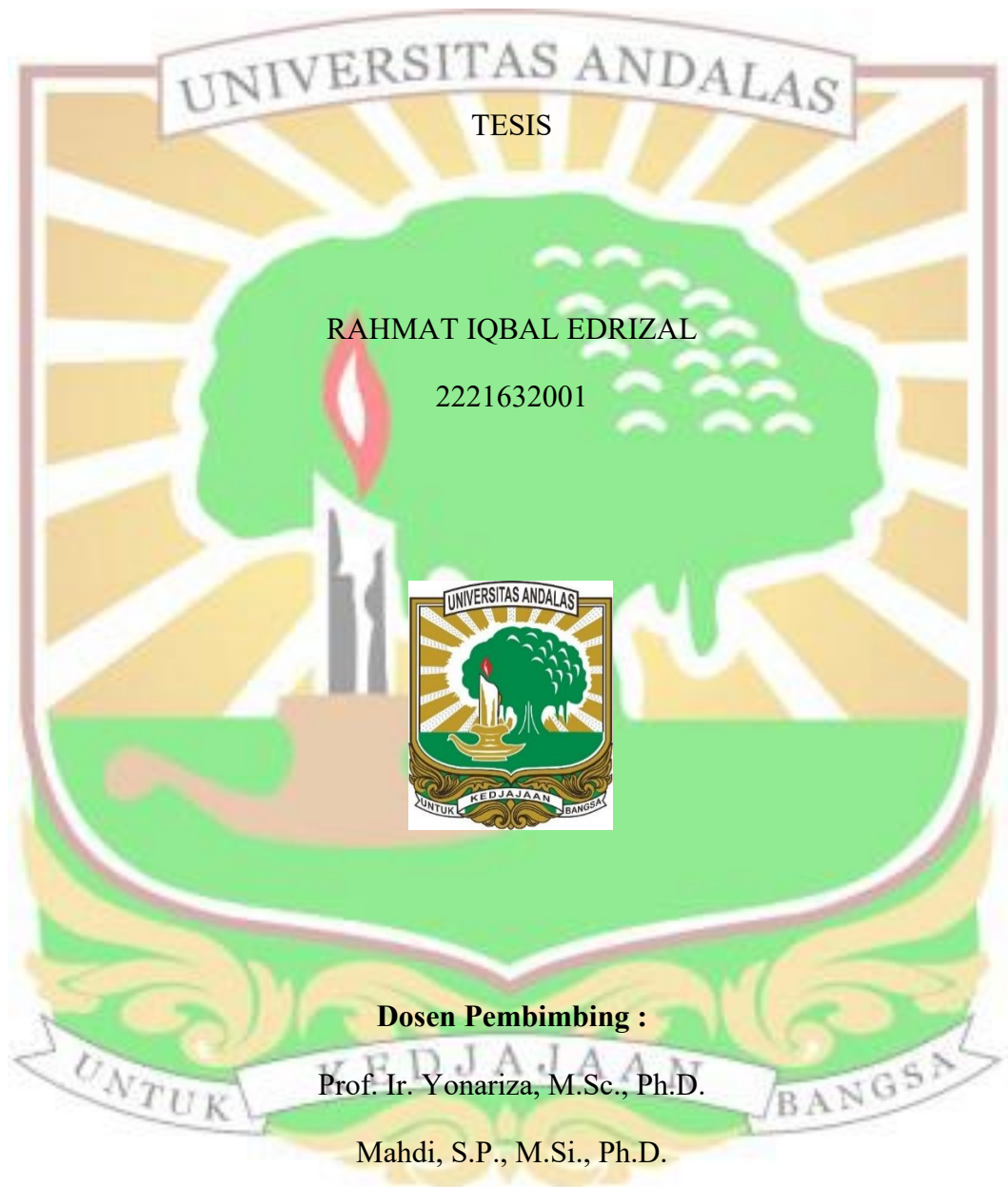


ANALISIS DINAMIKA TUTUPAN HUTAN
PADA PERHUTANAN SOSIAL DI KOTA PADANG
(Studi Kasus HKm Sikayan Balumuik Kecamatan Pauh)



SEKOLAH PASCASARJANA

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ANALISIS DINAMIKA TUTUPAN HUTAN PADA PERHUTANAN SOSIAL DI KOTA PADANG (STUDI KASUS HKM SIKAYAN BALUMUIK, KECAMATAN PAUH)

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ABSTRAK

Program perhutanan sosial melalui skema Hutan Kemasyarakatan (HKm) memberikan hak kelola resmi kepada masyarakat atas kawasan hutan negara untuk mendorong pengelolaan yang lebih lestari. Namun, dampaknya terhadap dinamika tutupan hutan di tingkat kelompok maupun petani masih jarang dikaji secara multitemporal, khususnya pada hutan yang menghadapi tekanan ekspansi wilayah perkotaan dan pasar. Penelitian ini dilakukan di kawasan HKm Sikayan Balumuik (± 300 ha), Kelurahan Limau Manis Selatan, Kecamatan Pauh, Kota Padang, yang memperoleh izin (IUPHKm) sejak 12 Juli 2017. Penelitian bertujuan untuk (1) menganalisis dinamika tutupan hutan secara multitemporal pada rentang 0, 3, 6, dan 9 tahun pasca-izin (2017, 2020, 2023, dan 2026), dan (2) menganalisis pola pemanfaatan dan pengelolaan hutan lestari pada tingkat petani serta perannya dalam menjelaskan dinamika tersebut. Penelitian menggunakan desain *mixed methods sequential explanatory*, diawali analisis kuantitatif spasial dan dilanjutkan analisis kualitatif untuk memperdalam temuan spasial tersebut. Tahap kuantitatif dilakukan melalui klasifikasi citra Sentinel-2 pada empat periode menggunakan algoritma Random Forest, dilengkapi uji akurasi, indeks vegetasi (NDVI), serta pengamatan keanekaragaman dan indeks nilai penting (INP) vegetasi pada petak contoh bersarang (*nested plot*). Tahap kualitatif dilakukan melalui wawancara mendalam, observasi lapangan, dan studi dokumentasi terhadap dua belas lahan garapan petani yang mewakili tiga strata perubahan tutupan, yaitu reforestasi, deforestasi, dan stabil. Kedua tahap dipadukan melalui *joint display* untuk melihat keterkaitan pola spasial dengan pola pengelolaan tingkat petani. Hasil penelitian menunjukkan bahwa luas tutupan hutan di kawasan HKm menurun dari 214,40 hektare (2017) menjadi 189,03 hektare (2020) dan 179,54 hektare (2023), sebelum membaik menjadi 193,41 hektare (2026), dengan laju perubahan tahunan berturut-turut sebesar -4,20%, -1,72%, dan +2,48%, atau laju keseluruhan sebesar -1,14% per tahun (berkurang neto 20,99 hektare) selama sembilan tahun. Peta yang dihasilkan teruji akurat, dengan tingkat kesesuaian 86-96% pada setiap periode. Keanekaragaman vegetasi tergolong sedang, mencerminkan karakter agroforestri yang didominasi tanaman buah tahunan dan kopi. Pola perubahan tutupan hutan sangat ditentukan oleh rasionalitas ekonomi dan praktik pengelolaan lahan petani, dalam tiga tipologi: Petani Restoratif pada lahan reforestasi, tutupan hutan pulih rata-rata 11,39% per tahun; Petani Ekspansif-Komersial pada lahan deforestasi, tutupan hutan berkurang tajam rata-rata 23,67% per tahun; dan Petani Konservatif-Menetap pada lahan stabil, tutupan hutan berkurang rata-rata 11,36% per tahun.

Kata kunci: Tutupan Hutan, Penginderaan Jauh Multitemporal, Pemanfaatan Lahan Petani, Agroforestri, Mixed Methods

ANALYSIS OF FOREST COVER DYNAMICS IN SOCIAL FORESTRY IN PADANG CITY (CASE STUDY OF HKM SIKAYAN BALUMUIK, PAUH DISTRICT)

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ABSTRACT

The social forestry program through the Community Forest (Hutan Kemasyarakatan/HKm) scheme grants local communities formal management rights over state forest areas to encourage more sustainable management. However, its impact on forest cover dynamics at the group and farmer levels has rarely been examined multitemporally, particularly in forests facing pressure from urban and market expansion. This study was conducted in the HKm Sikayan Balumuik area (± 300 ha), Limau Manis Selatan Village, Pauh District, Padang City, which obtained its permit (IUPHKm) on 12 July 2017. The study aims to (1) analyze the multitemporal dynamics of forest cover over 0, 3, 6, and 9 years post-permit (2017, 2020, 2023, and 2026), and (2) analyze the patterns of sustainable forest utilization and management at the farmer level and their role in explaining these dynamics. The study employed a *mixed methods sequential explanatory* design, beginning with a quantitative spatial analysis followed by a qualitative analysis to deepen the spatial findings. The quantitative stage was carried out through classification of Sentinel-2 imagery across four periods using the Random Forest algorithm, complemented by accuracy testing, the vegetation index (NDVI), and observations of vegetation diversity and importance value index (IVI) on *nested plots*. The qualitative stage was carried out through in-depth interviews, field observations, and documentation studies of twelve farmer-cultivated plots representing three strata of cover change, namely reforestation, deforestation, and stable. Both stages were integrated through a *joint display* to examine the relationship between spatial patterns and farmer-level management patterns. The results show that forest cover in the HKm area declined from 214.40 hectares (2017) to 189.03 hectares (2020) and 179.54 hectares (2023), before improving to 193.41 hectares (2026), with successive annual rates of change of -4.20%, -1.72%, and +2.48%, or an overall rate of -1.14% per year (a net decrease of 20.99 hectares) over nine years. The resulting maps proved accurate, with agreement levels of 86-96% for each period. Vegetation diversity was classified as moderate, reflecting an agroforestry character dominated by perennial fruit crops and coffee. The pattern of forest cover change was strongly determined by economic rationality and farmers' land management practices, falling into three typologies: Restorative Farmers on reforested land, forest cover recovered by an average of 11.39% per year; Expansive-Commercial Farmers on deforested land, forest cover sharply declined by an average of 23.67% per year; and Conservative-Settled Farmers on stable land, forest cover declined by an average of 11.36% per year.

Keywords: Forest Cover, Multitemporal Remote Sensing, Farmer Land Use, Agroforestry, Mixed Methods