

Permasalahan sampah wisata di kawasan konservasi menjadi isu krusial yang berdampak terhadap kelestarian ekosistem dan kualitas destinasi wisata. Jalur pendakian Selo di Taman Nasional Gunung Merbabu merupakan salah satu jalur yang mengalami peningkatan jumlah pendaki setiap tahun, sehingga berimplikasi pada meningkatnya volume sampah. Penelitian ini bertujuan untuk mendeskripsikan inovasi akar rumput dalam Program *Zero Waste* di Jalur Pendakian Selo serta mengidentifikasi variabel-variabel yang memengaruhi keberhasilannya. Pendekatan yang digunakan adalah kualitatif deskriptif dengan pengumpulan data melalui wawancara mendalam, observasi lapangan, dan dokumentasi terhadap komunitas Ranger Merbabu, pihak Balai Taman Nasional, masyarakat sekitar, dan para pendaki.

Hasil penelitian menunjukkan bahwa Program *Zero Waste* yang diinisiasi oleh komunitas Ranger Merbabu bersama Balai Taman Nasional Gunung Merbabu merupakan bentuk inovasi akar rumput berbasis partisipasi masyarakat. Inovasi ini berorientasi pada prinsip 3R (*Reduce, Reuse, Recycle*) melalui berbagai kegiatan seperti sistem pendataan barang bawaan pendaki, denda atas sampah tertinggal, aksi bersih jalur, dan penerapan sistem *pack-in pack-out*. Tiga dimensi utama dalam inovasi ini yaitu *scaling up*, *sustainability*, dan *success* menunjukkan bahwa Program *Zero Waste* tidak hanya meningkatkan kesadaran lingkungan para pendaki, tetapi juga menciptakan dampak sosial-ekonomi positif bagi masyarakat lokal. Variabel-variabel yang memengaruhi keberhasilan inovasi mencakup aspek teknologi, sosial, ekonomi, dukungan pemangku kepentingan, kondisi geografis, serta partisipasi komunitas yang kuat.

Kesimpulan penelitian menegaskan bahwa inovasi akar rumput melalui Program *Zero Waste* di Jalur Pendakian Selo menjadi model pengelolaan sampah berbasis komunitas yang efektif dan berkelanjutan di kawasan konservasi. Program ini berpotensi direplikasi di kawasan wisata alam lain dengan dukungan kelembagaan dan penguatan kolaborasi lintas aktor.

**Kata kunci:** *Inovasi Akar Rumput, Zero Waste, Jalur Pendakian Selo*

The issue of waste management in conservation tourism areas has become a critical environmental concern affecting both ecosystem sustainability and destination quality. The Selo hiking trail in Mount Merbabu National Park is among the most popular routes, experiencing a continuous increase in visitors and consequently a surge in waste generation. This study aims to describe grassroots innovation in the Zero Waste Program implemented along the Selo hiking trail and to identify the variables influencing its success. A descriptive qualitative approach was employed, with data collected through in-depth interviews, field observations, and document analysis involving the Ranger Merbabu community, the National Park Authority, local residents, and hikers.

The findings reveal that the Zero Waste Program, initiated by the Ranger Merbabu community in collaboration with the Mount Merbabu National Park Authority, represents a grassroots innovation driven by community participation. Rooted in the principles of the 3Rs (Reduce, Reuse, Recycle), the program encompasses several initiatives such as the registration of hikers' equipment, penalties for leaving waste behind, regular clean-up activities, and the pack-in pack-out system. The three dimensions of grassroots innovation scaling up, sustainability, and success demonstrate that the program not only raises environmental awareness among hikers but also creates positive socio-economic impacts on the surrounding community. The key variables influencing innovation include technological, social, and economic aspects, stakeholder support, geographical conditions, and strong community participation.

In conclusion, the grassroots innovation of the Zero Waste Program on the Selo hiking trail serves as an effective and sustainable community-based waste management model within conservation areas. This initiative offers a replicable framework for other nature-based tourism sites, provided that institutional support and multi-stakeholder collaboration are strengthened.

**Keywords:** *grassroots innovation, Zero Waste, Selo Hiking Trail*