Rendering the Risks: A Political Ecology of Tourism Development Impact Assessment in Karst of Gunung Sewu, Indonesia

Hilary Reinhart[a] (hilary.reinhart@vuw.ac.nz)
[a]*Ph.D. Student, School of Geography, Environment and Earth Sciences, Te Herenga Waka-Victoria University of Wellington*

Karst of Gunung Sewu is a complex landscape with inherent risks and vulnerabilities, such as thin soil layers, easily erodible slopes, and fragile cave ecosystems, which pose challenges for economic growth. In response to this and coincided with the tourism boom of the 2010s, the government views tourism as a key solution for balancing ecological preservation and economic development. However, the concerns of massive infrastructure, water exploitation, and socio-cultural disruptions have led the government to rely on Environmental Impact Assessments (EIA) to address these issues.

From a post-structuralist political ecology perspective, EIA and risks are discursive processes and sites of knowledge contestation (Neumann, 2005; Siddique, 2024; Spiegel, 2017). EIs are integral to the "rendering technical" process, which transforms natural complexities into technicalities, as seen in EIA reports, regulations, and the discourse of the "risk society" (Beck, 1992; Li, 2011). This process seeks to establish a regime of truth that privileges Western scientific knowledge while reflecting power dynamics among experts (Cooper & Bulmer, 2013; Escobar, 2007). Based on those illustrations and conceptual framework, this study asks: (1) how are risks and impacts technically constructed for tourism development in karst areas, and (2) what roles do experts play in the construction of risks and impacts. To answer those questions, this study adopts a constructionist paradigm to explore how EIAs are shaped by the political process of "rendering technical." Data is drawn from online news articles and regulations, analyzed through content and thematic analysis (Kodir, 2019).

The Indonesian government has enacted a new risk-based approach as the foundation for EIA. The recent Omnibus Law mandates that an EIA is required for high-risk activities. This policy creates a new interface between landscape-level risks and site-level impacts. In the context of the Karst of Gunung Sewu, experts from academia and NGOs have expressed concerns about the impacts of tourism development, particularly considering the intrinsic characteristics of the karst area. These characteristics include the presence of hollow and void lithology and epikarstic hydrological properties. The construction of infrastructure may be threatened by these voids, which, in turn, can impact karst groundwater resources.

The translation of these characteristics into risks is aggregated into the designation of the Karst Landscape Area, which recognizes the karst landscape as a protected area. This designation raises concerns for the local government, as all activities in the Karst of Gunung Sewu must be accompanied by an EIA. The local government worries that this requirement will hinder local economic growth and requests dispensations for EIAs in Karst of Gunung Sewu. However, the local community asserts that the protection of ecosystems and natural resources is more important for long-term sustainability.

This narrative addresses the questions posed in this study. First, the "rendering technical" process embeds political economy within the realms of economic growth and tourism, with the EIA functioning as a non-neutral regulatory tool for business permits. These dynamic reveals underlying power relations and renders environmental governance a contested space of competing interests and knowledge. Regarding the role of expertise, experts shape a political framework for geological knowledge by transforming karst characteristics into unmanageable risks, scaling uncertainties from site-level to landscape implications, while also bureaucratizing environmental governance.

This discussion opens further considerations for the future of impact assessments. A political ecology perspective suggests that future EIAs must address the challenges posed by a late-capitalist economy, which is influenced by the "wicked trinity" of the green state: environmental degradation, economic growth, and population dynamics (Alami et al., 2024). A multi-scalar and systemic interconnections in the landscape level might be required.

References

Alami, I., Copley, J., & Moraitis, A. (2024). The ‘wicked trinity’ of late capitalism: Governing in an era of stagnation, surplus humanity, and environmental breakdown. *Geoforum*, *153*, 103691. https://doi.org/10.1016/j.geoforum.2023.103691

Beck, U. (1992). *Risk society: Towards a new modernity*. Sage Publications.

Cooper, T., & Bulmer, S. (2013). Refuse and the “Risk Society”: The Political Ecology of Risk in Inter-war Britain. *Social History of Medicine*, *26*(2), 246–266. https://doi.org/10.1093/shm/hks112

Escobar, A. (2007). ‘Post-development’ as concept and social practice. In A. Ziai (Ed.), *Exploring Post-Development: Theory and Practice, Problems and Perspectives* (pp. 18–33). Routledge. https://doi.org/10.4324/9780203962091

Kodir, A. (2019). Political Ecology of a Spring: People’s Resistance to the Construction of a Hotel. *Journal of Asian Sociology*, *48*(2).

Li, T. M. (2011). Rendering Society Technical: Government Through Community and the Ethnographic Turn at the World Bank in Indonesia. In D. Mosse (Ed.), *Adventures in Aidland: The Anthropology of Professionals in International Development.* (pp. 57–80). Berghahn.

Neumann, R. P. (2005). *Making Political Ecology* (1st ed.). Routledge.

Siddique, S. M. M. (2024). The Political Ecology of Risk: Problematising the Risk Distribution of Solid Waste Treatment Plants. In R. El Khoury (Ed.), *Anticipating Future Business Trends: Navigating Artificial Intelligence Innovations* (Vol. 536, pp. 25–37). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-63402-4_3

Spiegel, S. J. (2017). EIAs, power and political ecology: Situating resource struggles and the techno-politics of small-scale mining. *Geoforum*, *87*, 95–107. https://doi.org/10.1016/j.geoforum.2017.10.010