The Power of Openness: Reforming Spatial and Legal Data Integration for a Disaster-Resilient Indonesia

Syahrastania Qibti Ertono and Alief Wiraguna Aseran (Indonesia)

Key words: Cadastre; Risk management; Security of tenure; Young surveyor; Evidence-based policy; resilience; interoperability

SUMMARY

Climate change, disaster risk, and land degradation pose a growing threat to the livelihood and land security of vulnerable communities in Indonesia. Multiple initiatives have been taken to improve resilience from the non-profit organization movement to government regulation, including the Complete Systematic Land Registration (PTSL), which aims to establish a complete cadastre, but its nationwide scope has made progress uneven. Furthermore, the government has taken the One Map Policy (OMP) initiative to provide a single, integrated national reference map standard to resolve overlapping spatial data, prevent land conflicts, and support efficient and accountable governance and development planning. However, cadastral data remains exclusive to the National Land Agency. This lack of interoperability constrains evidence-based policymaking and undermines the country's efforts to mitigate land degradation and strengthen climate resilience. Our purpose is to review how integrating spatial and legal data can enhance resilience and improve public understanding of the Rights, Restrictions, and Responsibilities (RRR), strengthen the role of government in disaster resilience, and promote clearer land tenure security. The findings indicate that spatial data openness not only increases transparency and public participation but also forms the basis for evidence-based policy, such as the implementation of no-build zones in high-risk areas and the application of specific technical guidelines for buildings in disaster-prone areas. In alignment with the Sustainable Development Goals (SDG) 11.b and 13.2, this study recommends strengthening open spatial data policies and the provision of open and accessible cadastral data to enable the creation of context-specific, ownership-aware thematic maps and support smarter, more adaptive urban planning.