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The numbers we want to see: Reporting bias in community mangrove restoration in Indonesia

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Abstract

Community-based mangrove restoration has expanded rapidly as a response to coastal degradation and climate-related vulnerability. Yet many restoration programmes continue to rely heavily on self-reported indicators such as planting performance and seedling survival, despite limited independent verification. This raises an important question: do reported outcomes accurately reflect what happens in the field? The accuracy of self-reported restoration outcomes, particularly planting rates and survival estimates, remains critically underexamined.

This study examines reporting bias among members of mangrove community groups involved in restoration activities in Indonesia. Using survey data from 600 respondents across several coastal villages, we applied a list experiment to elicit honest responses on sensitive behaviours that may be concealed under direct questioning, particularly failure to plant distributed seedlings and overstatement of survival rates. The analysis is complemented by a measure of social desirability bias and regression models exploring how sociodemographic factors, resource access, and programme participation relate to the tendency to misreport outcomes.

Preliminary findings reveal a substantial gap between direct responses and indirect estimates. For both behaviours examined, prevalence under the list experiment is considerably higher than under conventional survey questions, in some cases approaching twice the directly reported level. This suggests that inaccurate reporting is not simply random measurement error, but may reflect social expectations, accountability pressures, and weak monitoring systems.

The study provides new quantitative evidence of the prevalence of coastal restoration actions, contributing to conservation of social science. Beyond its empirical contribution, the study offers actionable insights for programme policymakers. More broadly, it highlights the need to complement ecological monitoring with survey approaches that better capture sensitive behaviour. Strengthening restoration accountability may therefore require not only improved technical verification, but also closer attention to the incentives that shape how success is reported.

Keywords: Environmental governance, Indonesia, list experiment, mangrove restoration, monitoring accountability, reporting bias

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