Ensuring the sustainable eradication of poverty (SDG 1) demands reliable metrics for targeting and evaluating poverty reduction programs. Multidimensional deprivation indices (MDIs) provide high spatial and temporal resolution measurements of household well-being that are widely comparable across national contexts. However, MDIs are often based on representative household survey samples that overlook local outcomes in favor of state, province, or national averages. Using a novel panel dataset of development and land-cover in Indonesia (2000-2014), we examine the relationship between MDI scale and forest-cover change across villages, districts, and provinces. We find that aggregating household versus village-level MDIs can lead to different conclusions about the relationships between development and environmental sustainability, as measured by forest-cover change. Our findings support ongoing research that examines sustainable development through a social-ecological systems approach, and they demonstrate the importance of studying sustainable development as an inter-scalar phenomenon.