Participatory and Technology-Driven Mapping in Namibia's Informal Settlements

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SUMMARY

The growth of informal settlements highlights the urgent need for affordable housing amidst challenges faced by local authorities in providing land at scale. Innovative approaches to mapping and upgrading informal settlements in a participatory manner have the potential to scale up these efforts and meet the needs of informal settlement communities for secure tenure and improved access to basic services. Upgrading informal settlements is a major activity for many developing countries, with a focus on improving basic service access and securing land tenure for low-income and urban poor communities. Various techniques, innovations, and developments within the land sector warrant closer investigation.

Globally, academia, civil society, and local authorities have collaborated with national governments to map and upgrade settlements through participatory methods, often with international development partner support. These solutions have led to improvements and policy-based practices. For instance, Namibia's revised national housing policy of 2024 integrates participatory informal settlement upgrading based on stakeholder collaboration. This policy aims to scale up and improve basic service access, living conditions, improved housing, and secure tenure for informal settlements. However, adoption has been slow.

Through a series of case studies on tools, techniques, and approaches, we demonstrate what has proven effective in the Namibian context, identify areas for improvement, and outline strategies for scaling up these solutions. Drawing from experience in non-governmental organisations, community-based organisations, and academia, we focus on mapping technology, identifying the most efficient and cost-effective methods for mapping informal settlements. We explore techniques that incorporate community participation and determine the best approach to involve stakeholders in achieving tangible results. We analyse the progress of Namibian local policies and international

guidelines in addressing housing needs for low-income communities, as well as the achievements of saving groups in improving basic service access and securing tenure through participatory mapping.

In this study, we compare various methods for aerial data capture, postprocessing, and participatory mapping platforms to support informal settlement mapping. A comparison of mapping approaches reveals that photogrammetry and lidar surveys offer distinct benefits, and the choice of approach depends on available budgets, skills, and capacity of local and national governments. This research indicates that scaling up informal settlement upgrading faces governance issues and limited institutionalisation of lessons learned from collaborative projects. However, advancements in aerial image capturing offer affordable and cost-effective methods that, with the right capacity, can support scaling upgrading at a lower cost and faster pace.