

# Reaching Rural - Earth Observation in Support of Financial Inclusion

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## SUMMARY

Financial inclusion is a central theme for reaching several of the 2030 Sustainable Development Goals (SDGs). It is included in the targets of eight of the seventeen goals and prominently featured in the first goal; End Poverty. Goal one explicitly strives to ensure equal rights to economic resources and access to financial services. Previous research shows that access to and sustained use of financial services is, among others, a function of social and physical distance to branches and agents of Financial Services Providers (FSPs). For financial inclusion to contribute to the achievements of the SDGs, financial access has to be explicitly brought into rural, remote areas to reach the majority of the previously under-served poor. Reaching the under-served can only be delivered where FSPs find sustainable business models to do so. Studies show that this works, where providers invest in the adoption of new technologies, innovation and data-driven business models such as geolocation data to support route to market models and agency banking. This paper presents a new methodology for measuring financial inclusion through proximity and inference to aid the current way of measuring financial inclusion, which relies on large-scale representative household surveys to quantify progress and proxy quality of inclusion.

The collection of official statistics data often has a spatial and temporal resolution that makes the data unsuitable for day-to-day decision-making tools for FSPs. The problem with poor resolution is especially pronounced in the global south, where there is less national open data. Furthermore, temporal resolution is vital as urbanisation, and demographic changes are rapidly altering land-use patterns. By using earth observation data and public open data, it is possible to lessen the impact of the data shortfall on financial inclusion measurements that can prevent policymakers, regulators and FSPs from addressing rural financial inclusion with useful strategies.

A classification separating rural, urban and organised/self-organised areas has been developed with

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accompanying tools to assist decision-makers in creating user-developed applications to track progress towards reaching underserved communities. The classification allows measuring financial inclusion in nuance to further understanding the challenges. Combined with income and population density data presented in a familiar spreadsheet interface; the classification becomes a market segmentation tool that allows FSPs to tailor offers, and deliver services where and when there is demand. The tools also supply easy access to supplementary datasets, such as the WorldPop datasets to further aid decision-makers.

The tools were presented at a workshop in Tanzania for FSPs. The tools were well received with the evaluations expressing high approval of the usability of the tools and the use of earth observation data. The participants presented learnings to their CEO's of major financial institutions with several highlighting the importance of data-driven decision making.