

Impact Statement

The Problem:

Countries in emerging economies generally do not have reliable civil/health records, nor periodic, extensive or updated population and housing censuses. This can mean millions of children are left out and forgotten - unable to access the vaccinations they require. We want to help make these invisible children visible.

The Project:

This initial phase of the project involved performing an extensive literature review on population estimates and building footprint identification, as well as analysing the existing databases on estimated population density and building footprints to see if they are sufficient for UNICEF's vaccination programming needs.

The team also carried out an assessment of the performance of existing methods, both from reported performance in the literature and from running available tools on data that is readily accessible.

"The project offered an avenue to create new partnerships within the university and with UNICEF for future projects towards meeting sustainable development goals."

Impacts:

Understanding the data landscape:

A detailed overview of gaps in current datasets and issues with existing models, as well as how missing data can impact UNICEF's work in providing services to children

Working with the customer:

Having a better understanding of the successes and limitations of current models has allowed the team to adapt an approach to suit UNICEF's specific requirements

Children first:

Always thinking back to the use case for the model - improving UNICEF's vaccination programming for children through more accurate population estimates

Next steps:

Phase two of the project will aim to develop machine learning methods to reliably estimate population density in a sustainable manner