LEAVING NO ONE OFF THE MAP

A GUIDE FOR GRIDDED POPULATION DATA FOR SUSTAINABLE DEVELOPMENT

EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

During a recent Polio vaccination campaign in Northern Nigeria, a large foundation had to answer a crucial question: how many vaccines should they provide? If they purchased too many, critical supplies would go to waste, and if they purchased too few, individuals would remain at risk and the effectiveness of the campaign would be undermined. The success of the campaign fundamentally depended on having reliable population estimates to quickly and efficiently deploy the vaccines. As a result, the foundation turned to gridded population data to guide their plans, but conflicting data sources gave estimates that suggested the target population could range between eight to ten million people. Similarly, during the recent Ebola outbreak in West Africa, health responders grappled with locating remote communities and calculating accurate infection rates because they were relying on outdated population data.

Having reliable and timely population data can make a life or death difference for individuals facing crises or living in conflict-ridden regions. These data are essential for addressing the above challenges and for critical decision-making and planning.

We need to know where people are located, what conditions they are facing, what infrastructure is available, and what basic services they can access. When it comes to counting people in hard-to-reach and often hostile environments, there are no silver bullets. However, gridded population data offer a promising option for delivering actionable data in difficult circumstances.

When 193 world leaders agreed upon the 17 Sustainable Development Goals (SDGs) in 2015, they promised to "leave no one behind." But without reliable and timely population data linked to location, we cannot ensure that everyone is counted and that no one will be left behind. While, most governments and policymakers depend on traditional data sources, such as household surveys and population censuses, in order to develop the necessary policies and programs to eradicate poverty and improve access to health, education, and other basic services, these traditional data sources present a range of geographic, temporal, and logistical challenges. Fortunately, with recent advancements in geospatial data sources and methods, it is now possible to obtain more frequent and higher quality population estimates through the use of gridded population datasets.

Gridded (or raster) population maps represent the distribution of population in rows and columns of grid cells, typically defined by their latitude-longitude coordinates. An increasing number of data providers are combining information from censuses with satellite-derived geospatial features to redistribute populations and produce gridded population datasets. Despite this progress, there remains confusion or simply lack of awareness about gridded population data. The large number of different datasets now available can be overwhelming to users, particularly to those who lack the time and technical expertise to understand differences among the products and assess their strengths and weaknesses for potential applications.

The POPGRID Data Collaborative was established in 2018 to address many of these challenges by connecting the diverse data users, providers, and stakeholders from the public and private sectors working with georeferenced data on population, human settlements, and infrastructure.

In the forthcoming report, *Leaving No One off the Map*, TReNDS aims to narrow this knowledge gap by helping to improve the accessibility and understanding of gridded population datasets for policymakers and other users. The report was written with two overarching questions in mind:

- How can gridded population data supplement current population data sources and support users from the sustainable development community to make timely, informed decisions?

- Which gridded population dataset is the most suitable for a user's intended use?

Drawing from an extensive literature review and interviews with key data providers and users in the POPGRID Data Collaborative, the report presents an overview, analysis, and recommendations for the use of gridded population datasets in a wide range of application areas, such as in disaster response, health interventions, and survey planning. Specifically, the report compares seven gridded population datasets from the POPGRID Data Collaborative, including an analysis of the underlying data, methods and basic assumptions, and the corresponding strengths and limitations of each dataset in simple terms. The report also presents an intercomparison assessment of the use of different datasets and their varying outputs, addresses many of the misconceptions around gridded population data, and concludes with nine guiding criteria to aid users in their selection process.

KEY MESSAGES FROM THE REPORT INCLUDE:

GRIDDED POPULATION DATA ARE A COMPLEMENT, NOT A SUBSTITUTE FOR CENSUS DATA.

They rely on data derived from national censuses to produce estimates with higher frequency and granularity.

WHEN SELECTING THE APPROPRIATE GRIDDED POPULATION DATASET, THERE ARE MANY FACTORS DATA USERS SHOULD BEAR IN MIND.

These include: the need for demographic characteristics; regional and environmental differences; the spatial resolution required; the time periods of interest; data costs and rights to reuse data; and more.

GRIDDED POPULATION DATA ARE VALUABLE SUPPLEMENTS TO TRADITIONAL DATA SOURCES, BUT THEY ARE NOT ERROR-FREE.

Although they address some of the limitations of traditional sources, they do add their own sources of uncertainty.

MORE VALIDATION WORK IS NEEDED TO COMPARE GRIDDED POPULATION DATA ESTIMATES AGAINST AUTHORITATIVE DATA ON POPULATION LOCATION.

There is a critical need for a more systematic analysis and objective validation of these products to further refine methods and improve their accuracy and utility; this work is underway through the POPGRID Data Collaborative.

With only ten years remaining to achieve the SDGs, we are at a crossroads. Gridded population data are already available to help fulfill these ambitious goals by improving the availability, consistency, and spatial disaggregation of SDG indicators, by helping national and international initiatives to better target their efforts to achieve the SDGs, and by identifying and locating those who might otherwise be left behind. However, these data are only as good as policymakers' understanding of their limitations, applications, and fitness for use. Furthermore, their full potential cannot be realized if they are not thoroughly validated against authoritative, real-world data. We must accelerate this important research and advancement of the application of gridded population data around the world to make sure that the SDGs are achieved and no one is left off the map.


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