

NAVIGATING MEGATRENDS: The ICPD Programme of Action for a Sustainable Future



The Future of Population Data

“Valid, reliable, timely, culturally relevant and internationally comparable data form the basis for policy and programme development, implementation, monitoring and evaluation” (Chapter XII of the ICPD-PoA)

In mid-2024, UNFPA issued five think pieces to mark the thirtieth anniversary of the landmark 1994 International Conference on Population and Development (ICPD). Under the framing of *Navigating Megatrends: The ICPD Programme of Action for a Sustainable Future*, the five think pieces are titled:

- ▶ Demographic Change and Sustainability
- ▶ The Future of Sexual and Reproductive Health and Rights
- ▶ **The Future of Population Data**
- ▶ ICPD and Climate Action
- ▶ A Safe Digital Future

The think pieces explore ways to sustain, refresh and accelerate ICPD commitments in a world of radical transformation. Designed for development actors and policymakers, they reflect on progress and highlight likely future scenarios. They offer starting points for discussion on what’s next for population, development and sexual and reproductive health and rights (SRHR).

Population data systems can increase value for development through better data integration by capitalizing on new geospatial and non-traditional data sources

This short summary highlights key findings and recommended actions on the future of population data. It suggests that population data systems can increase value for development through more and better data integration, grounded in stronger registry-based solutions, and capitalizing on new geospatial and non-traditional data sources. The growth of new digital technologies calls for urgent attention to data governance, and expanded national, regional and global investments to prepare the next generation of population data scientists to meet the information and data protection needs of the future.

Introduction

In 1994, the ICPD agreed on a Programme of Action (PoA) that recognized the fundamental importance of population and development data for government planning and monitoring. It put a special emphasis on the need for more accurate data to define women’s social and economic status, and stressed data disaggregation to understand and address the needs of people pushed furthest behind.

Since then, recurring calls for improving data systems and capacities have echoed these recommendations. The United Nations Secretary-General recently called for a “data revolution”

to equip all national governments with data systems to track and achieve the global Sustainable Development Goals (SDGs) and related international commitments.

In 2024, the thirtieth anniversary of the ICPD provides a moment to reflect on progress and gaps in population data, and to outline key pathways to achieve future-ready data systems for the post-2030 global development agenda.

Key insights

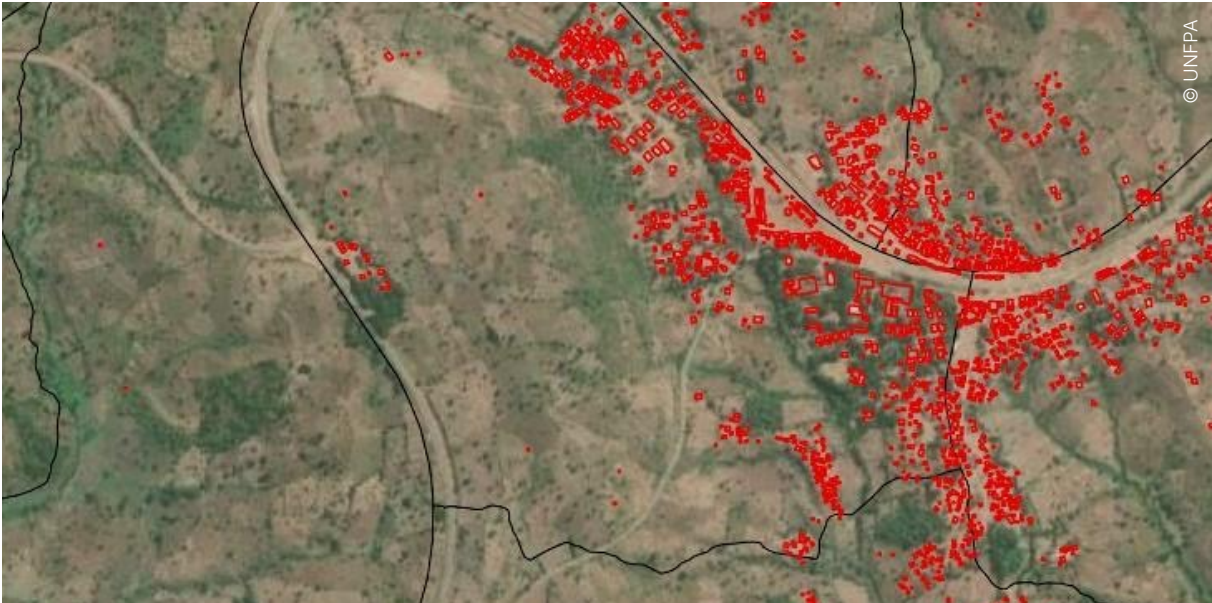
Population and housing censuses are the cornerstones of demographic data in most low and middle-income countries, generating population denominators for more than 100 indicators to track the SDGs. Censuses are the primary (and often only) source of disaggregated data on small areas and marginalized subpopulations. SDG monitoring also relies heavily on comparable data generated by global household survey programmes, which have grown in popularity and scope in recent decades.

The advent of multiple technological innovations has modernized data collection, production and use. In particular, the adoption of geospatial solutions across the census cycle has propelled data capture and analysis at highly granular levels and allowed data dissemination through maps that visualize inequalities. In hard-to-reach places, geospatial statistical models relying on satellite imagery (see Figure 1) and machine-learning algorithms can now estimate population numbers and distributions at a fine spatial scale.

More than 40 countries in Europe and parts of Asia have begun using population registers linked with other administrative records (such as on education, employment, taxation, social security

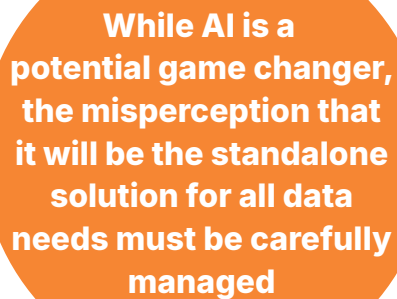
▶ FIGURE 1

An example of buildings detected from satellite images



and health) to produce census-like data. Some countries have conducted a fully register-based census while others are combining administrative data with partial or full census enumeration. More countries are taking steps to undertake this transition.

However, progress in using civil registration and vital statistics and identity management information systems for real-time monitoring of population dynamics and vital events remains sparse. Field-based population censuses will continue to serve as pillars of population data systems in lower-income countries for the 2030 census round, while household surveys will remain important globally in providing development metrics, including on the SDGs, and will continue to add value in understanding changing gender and social norms and in responding to sensitive issues such as gender-based violence.



While AI is a potential game changer, the misperception that it will be the standalone solution for all data needs must be carefully managed

The digitization of health sector data has generated promising applications, including the use of artificial intelligence (AI) (e.g., to identify disease outbreaks). Yet this area remains fraught with problems of fragmentation, limited coverage and quality, and misalignments or a lack of interoperability across sectors. All these factors limit the potential and power of data-sharing and integration. Digitized biometric ID management systems also offer unprecedented opportunities for population data generation but can lead to new forms of harm, such as exclusion from services, and are associated with rising concerns around surveillance capitalism.

The potential for AI to automate data processing and analysis, identify patterns and correlations in large data sets, and provide predictive analytics is on the horizon. Yet challenges must be addressed, such as the need for high-quality ground data for model calibration, and the risk of algorithmic biases leading to inaccurate outputs that infringe on people's fundamental rights, including gender and racial discrimination. While AI is a potential game changer, the misperception that it will soon be the standalone solution for all data needs must be carefully managed.

Multiple applications have demonstrated the potential of digital trace data¹ to complement official statistics, particularly in tracking population mobility. These data also allow measurement when traditional forms of data collection are not feasible, such as during crises, and can reveal trends and patterns before they appear in official data. The proprietary nature of digital trace data, however, seriously limits access for statistical purposes. Bias in representativeness, lack of consent for the reuse of personal data and risks to privacy are unresolved. Another innovation has been citizen-generated data, offering more inclusive approaches across the data life cycle, from generation to use.

Despite significant progress, gaps persist in data availability, quality, accessibility and use. Only half or fewer countries have data to monitor SDG indicators on poverty, nutrition,



Digital trace data can complement official statistics on population mobility but access for statistical purposes remains severely limited

education and gender (see Figure 2). This is particularly the case for data on key populations and some of the hardest to reach groups, such as migrants and refugees, people with non-binary gender identities, persons with disabilities, Afrodescendent people and indigenous groups.

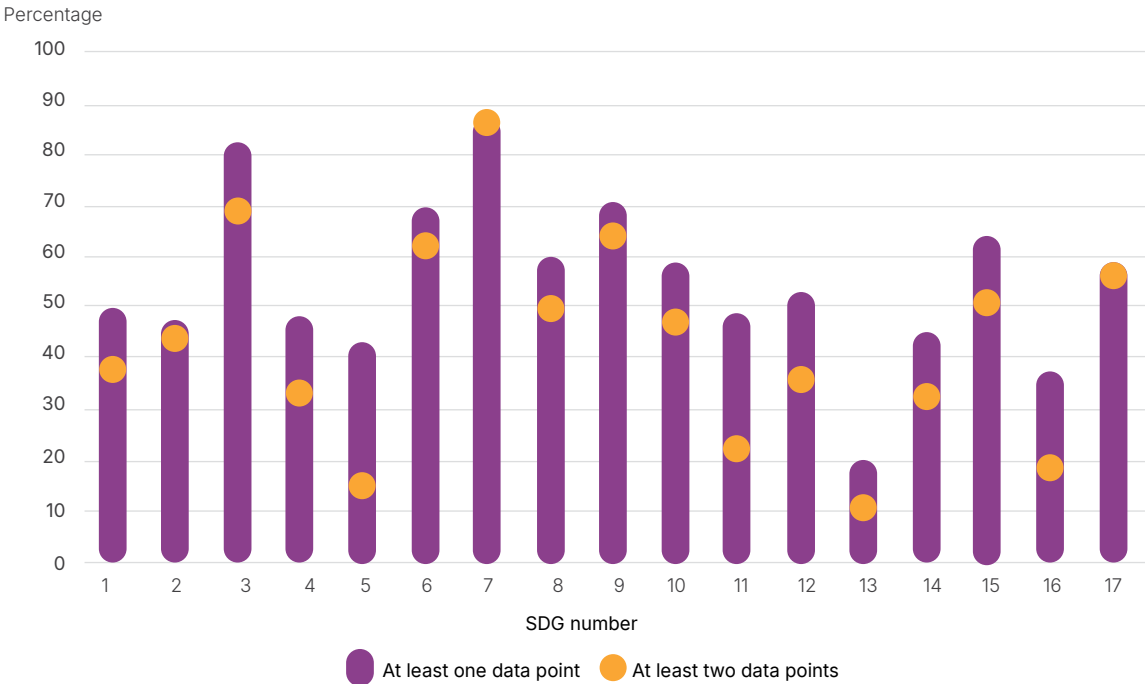
Data gaps result from persistent investment shortfalls and structural deficiencies in national data ecosystems. To fully realize the potential benefits of data, the United Nations recommends increasing domestic funding for data and statistics by 50 per cent by 2030, along with urging donors to raise the share of official development assistance for data to at least 0.7 per cent by 2030.² Yet, no low-income country to date has a fully funded national statistical plan. This leaves these countries highly dependent on external donor support, which currently covers only about half the amount required to implement the Cape Town Global Action Plan for Sustainable Development Data.

Other roadblocks include persistent limitations in data accessibility and openness; inadequate technical capacity in both “old” statistical and “new” data science skills; a disconnect between humanitarian and development data; and the lack of effective data governance frameworks facilitating data sharing for the public interest while addressing risks of rights infringements and data misuse.

Intersecting and mutually reinforcing global megatrends are creating new data needs, for example, on the impact of the climate crisis on livelihoods, reproductive health and the most marginalized populations; on the demand for assisted reproductive technologies; and on the determinants of healthy ageing over the life course. In a world of frequent and protracted humanitarian crises, more timely and representative data on forced displacement are imperative to guide not only short-term humanitarian responses but also long-term, equitable solutions.

▶ FIGURE 2

Percentage of countries with SDG indicator data since 2015



Source: Adapted from United Nations, Global SDG Indicator Database, accessed February 2024.

Recommended actions

Accelerate the transition to integrated population data systems

Governments are encouraged to promote data integration across censuses, surveys, administrative sources and other types of data as a powerful means to improve the quality and cost-effectiveness of data generation, bridge the humanitarian and development data divide, and respond to population and health needs during crises.

Integrated population data systems enable governments to locate and address inequalities for achieving the goal of “leaving no one behind”. With the inclusion of gender statistics, they provide governments with important means to monitor and address gender equality, emerging needs in health and issues related to discrimination, including technology-facilitated gender-based violence. Governments are encouraged to address the following in their transition to integrated population data systems:



Data integration is a powerful means to improve the quality and cost-effectiveness of data generation

- ▶ A stepwise transition to a *register-based population data system*, adapted to national specificities, with gender-sensitive and human-centred civil registration and vital statistics systems at the core.
- ▶ Adoption and integration of *geospatial data* within population data systems, enabling the location of populations that are burdened by multiple concurring forms of disadvantage, and to anticipate the population impact of climate events and other humanitarian crises.
- ▶ Scaling up the use of *non-traditional data sources*, such as mobile phone records and social media, particularly for capturing timely and granular information on migration and different patterns of mobility.

Develop a rights-based data governance architecture

Rights-based data governance and management systems need urgent attention to establish requisite standards that balance open access, data confidentiality and ownership. Where population and health data are being integrated, further elaboration of data governance and protection mechanisms must guard against “function creep”, ensure informed consent for data reuse and mitigate risks of misuse amplified by AI-powered algorithms. This is important to reconcile the widening gap between official statistics and the infinitely larger universe of data produced by the public and private sectors, and to redefine the role and accountability of national statistical offices as reference custodians and stewards of the quality of the data used by society.

Expand financing for data and statistics

Governments will see long-term development benefits from increasing domestic financing strategies that embed data capacity strengthening and resource allocations within sectoral budgets, with the potential to strengthen data generation across health, well-being and demographic domains. While investments in registry data systems should be prioritized, sustained resource allocations for population censuses and household surveys in lower-income countries – in combination with

cost-optimization approaches for data collection enabled by new technologies – remain important to avoid a widening of the data divide between the Global North and South.

Address inequalities in statistical capacity and data use

Through strategic data investments, governments can bolster local and national capacities to use and transform data into meaningful knowledge for development. This will require addressing both institutional and skill capacity gaps across the data value chain. Countries can build data competencies at the intersection of population, development and environmental issues, including through enhanced training for young data professionals, and investment in centres of excellence at the forefront of data innovation in the Global South. This will help to assure that the data revolution and advanced modelling are based on local knowledge and priorities. Governments can also integrate data literacy into education curricula at various levels to enhance a culture of data-driven decision-making across society, in policymaking, programme implementation and advocacy.

Conclusion

Shaped by global megatrends, resource and capacity constraints, and rapidly evolving technologies, population data systems are undergoing major transformations. This brief has shown that future-ready population data systems, rather than converging towards a common architecture, are better characterized by the aspirational outcomes set out in the ICPD PoA, namely, the generation of frequent, granular, inclusive and accessible population data that meet user needs and protect the rights of data providers. While countries with different data histories and information systems may take diverse paths in their journeys, developing a rights-based global data governance architecture, transitioning towards more integrated population data systems, expanding financing for data and statistics, and addressing inequalities in capacity will be essential for optimizing the future of data for a better world.



ENDNOTES

1 Digital trace data are generated by digital technologies such as social media platforms, mobile apps and web search engines, and by off-line information that is digitally captured (e.g., smart electricity meters).
2 United Nations, 2023. *The Sustainable Development Goals Report 2023: Towards a Rescue Plan for People and Planet*. Website: <https://unstats.un.org/sdgs>.

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Author(s): Alessio Cangiano (UNFPA)

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Coordination, Editorial, Design and Production

Senior Editors and Overall Technical Coordination: Priscilla Idele (UNFPA), Rachel Snow (Consultant)

Strategic Oversight: Julia Bunting, Julitta Onabanjo (UNFPA)

Editorial: Gretchen Luchsinger (Words for the World)

Communications, Advocacy and Web: Ana Maria Currea, Jacqueline Daldin, Etienne Leue, Angélique Reid (UNFPA)

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United Nations Population Fund
605 Third Avenue
New York, NY 10158
Tel. +1 212-297-5000
www.unfpa.org
X@UNFPA

