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Strengthening the demographic evidence base for the post-2015 development agenda

www.unpopulation.org #CPD49 #UNPopulation



Briefing for Member States on substantive reports of the Secretary-General and note by the Secretariat Trusteeship Council Chamber, New York, 20 March 2016

Report of the Secretary-General on strengthening the demographic evidence base for the post-2015 development agenda (E/CN.9/2016/3)

Available at: www.unpopulation.org

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I. Introduction

- Demographic data are essential for planning, monitoring and implementing actions to achieve the goals and targets of the Programme of Action of the International Conference on Population and Development (ICPD) and the 2030 Agenda for Sustainable Development;
- Reliable and timely data are needed on the size, growth and distribution of the population, as well as on births, deaths and migration

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A call for a Data Revolution

- Improving the reliability, timeliness and accessibility of demographic data is a key priority of efforts to strengthen statistical systems for monitoring the SDGs
- This report reviews the current status of demographic data and suggests strategies to improve the core instruments used to generate them
- It focuses mainly on data for the estimation of population dynamics —population counts, births, deaths and migrants— and on data about some of the proximate determinants of fertility



Secretary-General's Independent Advisory Group on a Data Revolution for Sustainable Development (2014). A World That Counts: Mobilizing the Data Revolution for Sustainable Development, http://www.undatarevolution.org/report

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Two expert groups meetings:

United Nations Population Division (2015) Report of the United Nations Expert Group Meeting on "The post-2015 era: Implications for the global research agenda on population and development". New York, 10 April 2015



United Nations Population Division (2015) *Report* of the United Nations Expert Group Meeting on "Strengthening the demographic evidence base for the post-2015 development agenda". New York, 5-6 October 2015.



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II. Core sources of demographic data

- A. Population censuses
- **B.** Population Registers
- C. Civil registration and vital statistics
- **D. Household surveys**
- E. Health and Demographic Surveillance Systems

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II.A Population censuses

- Essential source of overall population numbers by age and sex, marital status, educational attainment, occupation, ethnicity, migrant status, household composition, housing characteristics and other relevant socio-demographic characteristics
- Enumerate all people in a country at a particular time
- Yield data for small groups and small areas
- Essential to assess whether any group is being "left behind" in the development process
- 2020 round of census

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II.A Population censuses

- 214 countries or areas conducted a census in 2005-2014 covering 93 per cent of the world's population.
- Only 20 did not: 8 in Africa, 8 in Asia, 2 in Europe and 2 in Latin America and the Caribbean.
- Increasing use of multimodal approaches: continuous or ad-hoc surveys to supplement census and registers



Fig. 3: Projection of the enumerated population over the course of the 2010 Census Round.

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II.A Population censuses

- Increasing use of ICT innovations to improve all stages of census operations: cartographic updates (GPS, GIS), logistics monitoring, questionnaire design, and data collection, coding, storage, analysis and dissemination
- Interactive desktop or online platforms to disseminate national and subnational summary indicators (e.g., CensusInfo, PC-AXIS)
- Interactive online tabulators based on microdata: REDATAM, IPUMS-International "Analyze Data Online" system
- 2015 revision of UN *Principles and Recommendations for Population and Housing Censuses* for 2020 round of censuses

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II.B Population Registers

- Continuous recording of selected information about each resident of a country
- They are an excellent source of up-to-date statistics on the size, characteristics and location of the population and of its components of change – births, deaths and changes of residence
- Well-maintained, centralized population registers are one of the best sources of data on population movements: when they record all changes of residence, including those of individuals who leave the country, population registers and other administrative records of the entry, residence and employment of the foreign-born population, are uniquely valuable sources of information on international migration
- But few countries maintain population registers and use them for statistical purposes, mostly in Europe

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II.C Civil registration and vital statistics (CRVS)

- A well-functioning civil registration system with information on births and deaths is a key source of data for vital statistics on fertility and mortality
- Registration also helps to ensure that every person has a legal identity, facilitating access to the benefits and protections of the state
- The SDGs call for universal birth registration. In 2015, 230 million children under five still lack a birth certificate, including 85 million in Africa and 135 million in Asia and Oceania



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II.C Civil registration and vital statistics (CRVS)

- Civil registration and vital statistics (CRVS) systems in many countries need improvements in data quality and expansion of population coverage.
- Among 234 countries or areas, only 60 per cent register at least 90 per cent of births and just 56 per cent register at least 90 per cent of deaths. Furthermore, only 39 per cent have reasonably complete data on causes of death and 41 per cent lack data on most causes.



Data available, based on incomplete coverage of civil registration

Data available, based on censuses and sample surveys

Data not available

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World Bank I WHO

Global and regional commitments to CRVS

- The sustainable improvement and expansion of CRVS in developing countries will require increased political will and commitment from the countries themselves, as well as enhanced support from donors and the international community.
- World Bank and WHO, Global Civil Registration and Vital Statistics: Scaling-up Investment Plan 2014-2025
- Government of Canada funding for CRVS within its US\$3.5 billion phase I Muskoka commitment
- Bloomberg Philanthropies / AUSAID: Data for Health project in 20 countries
- Global Financing Facility for Reproductive, Maternal, Newborn, Child, and Adolescent Health (GFF)
- Regional ministerial conferences and plans of actions



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(WORLD BANK GROUP

Global and regional commitments to CRVS

QUALITY OF CAUSE-OF-DEATH STATISTICS, 2012



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II.D Household surveys

- Surveys will remain essential to monitor SDGs, complementing other sources of data, especially in countries lacking CRVS
- Primary source of information on reproductive health, children, adult and maternal mortality, KAP, and their social determinants
- Role and contribution of national and international survey programmes (CPS, WFS, DHS, MICS, PAPCHILD/PAPFAM, WHS, LSMS, etc.)
- Longitudinal surveys critical to document changes over time and their causes (SHARE, GGP, SAGE, etc.)
- Uneven geographic distribution of some sub-population groups relevant for the 2030 Agenda, including migrants and ethnic groups, require special sampling techniques

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Since 1984: 320+ DHS surveys in 90 countries



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Since 1995: 296 MICS surveys in 108 countries



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II.E Health and Demographic Surveillance Systems

- Useful to monitor demographic events and health in a population living in a well-defined geographic area thru periodic visits (one to four annually)
- Can be used to test interventions aimed at changing demographic behaviour or improving health
- Valuable to generate high quality demographic data, particularly on the age pattern of mortality and on causes of death via verbal autopsies in countries lacking a functional CRVS system

Two major networks of HDSS sites:

- INDEPTH Network: 52 HDSS sites in 20 countries in Africa, Asia and Oceania and is run by 45 research centres
- ALPHA Network: 10 sites in Eastern and Southern Africa devoted to the study of HIV/AIDS, including sero-surveillance



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III. Compilation, harmonization and dissemination

United Nations Statistics Division

- Aggregate demographic statistics from censuses and CRVS for 230 countries or areas via the yearly Demographic Yearbook since 1948
- Online Census and CRVS Knowledge Databases
- UN-ECLAC CELADE repository of full census micro-data in Latin America since 1970s and REDATAM for analysis of census micro-data
- IPUMS International: Integrated Public Use Microdata Series International provides access to 277 census samples dating from 1960 to 2014 and covering 82 countries
- PARIS21 (1999-): to promote and facilitate statistical capacity development and a better use of statistics in developing countries
 - Accelerated Data Program since 2006
 - International Household Survey Network (IHSN) since 2008: technical and methodological guidelines for all stages of survey-taking, including standards, tools, and guidelines to document, disseminate, and preserve micro-data; IHSN survey catalog and National Data Archives (NADA)

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IPUMS International: 277 census samples (1960-2014)



Over 100 Collaborating National Statistical Agencies

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IV. Consistent and reliable estimates

- Demographic evidence encompasses data generated by statistical systems and estimates derived from those data
- Global estimates are necessary to fill data gaps, to reconcile differences between data sources, and to facilitate international comparability
- Ensuring consistency and reliability of the datasets produced requires an evaluation of the basic data, adjustments for deficiencies detected, and the use of estimation methods appropriate for each situation

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IV. Consistent and reliable estimates

Institutions that produce sets of consistent and reliable estimates of demographic indicators:

- UN Population Division: population and urbanisation estimates and projections for all countries and areas of the world; estimates of migrant stocks and flows, adolescent fertility, contraceptive prevalence and unmet need for family planning (for MDG monitoring), infant and child mortality with UNICEF, WHO and WB as part of the UN Inter-agency Group for Child Mortality Estimation, and maternal mortality with WHO, UNICEF, UNFPA and the World Bank
- Human Mortality Database (HMD) by the University of California at Berkeley and the Max Planck Institute for Demographic Research
- Human Fertility Database (HFD) by the Max Planck Institute for Demographic Research and the Vienna Institute of Demography
- UN-ECLAC CELADE: MIALC (Internal Migration in Latin America), IMILA (International Migration in Latin America) and DEPUALC (Spatial Population Distribution and Urbanization in Latin America) databases
- Internal Migration around the Globe (IMAGE) project coordinated by the University of Queensland, Australia

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V. Integrating geo-referenced datasets

- The production and dissemination of data with geographic references facilitate disaggregation by location with complete flexibility in the specification of the geographic units/levels of analysis
- Integration has proved essential in assessing the impacts of climate change, planning at the national and local levels, studying inequalities within countries and locating population groups vulnerable to natural disasters, famine and other risks
- Major producers of open-access global products:
 - Center for International Earth Science Information Network (CIESIN) of Columbia University: Gridded Population of the World (GPW) and Global Rural-Urban Mapping Project (GRUMP)
 - WorldPop project of the Geo-Data Institute of the University of Southampton: high resolution gridded population distribution for Latin America, Africa and Asia
 - TerraPop by IPUMS International integrating population micro-data from IPUMS; summary indicators for geographic areas, and global raster data derived from satellite imagery and climate models

Gridded Population of the World version 4 (GPWv4), 2010 population density



Grid resolution: 30 arc-second (1 km at equator) - Total Pop., Sex, Age, Urban/Rural status for 2000-2020

TerraPop: Three Source Data Formats



Microdata:

Characteristics of individuals and households

Small-area data: Characteristics of places defined by administrative boundaries





Raster data: Values tied to spatial coordinates

Location-Based Integration



Individuals and households with their environmental and social context





Area-level data

Rasters

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VI. Big data as a complement to demographic data

- Large volume, high velocity and wide variety of digital information generated continuously by GPS devices, mobile phones, automated teller machines, scanning devices, sensors, satellites, search engines, social media and crowdsourcing
- Many potential uses and applications, but lack of representativity and access, and technical challenges to use this new type of information
- Most commonly used for population-related issues: satellite imagery and Call Detail Records (CDR) generated by mobile phones for human mobility, population distribution and human behaviour
- Governments should develop policies for the use of big data, including safeguards to ensure privacy and confidentiality, and guidelines to facilitate access to data controlled by private firms

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VII. The challenge of disaggregation

Review of progress of the 2030 Agenda will require disaggregated information for relevant population groups, to be produced and made available on a regular basis, including for groups defined by income, gender, age, migratory status, geographic location and other characteristics relevant in national contexts.

- Censuses, population registers and CRVS cover the whole population
- Provide access to micro-data for the full population, or produce tabulations disaggregated by characteristics based (ideally) on full counts
- Link/integrate population registers and administrative data
- Use surveys to complement other data sources
- Geo-reference all data at the smallest administrative level or higher spatial resolutions to facilitate data integration between data sources
- Use statistical modelling to combine multiple data sources, including at different scale of disaggregation and spatial resolution, to produce intercensal estimates

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- Support the Global Financing Facility for Reproductive, Maternal, Newborn, Child, and Adolescent Health (GFF) or other financing mechanisms to strengthen CRVS and health information systems
- Support the complete enumeration of the population and its basic characteristics as part of the 2020 round of censuses
- Leverage ICT to improve the efficiency of data collection, processing and dissemination
- Contribute micro-data from the 2010 round of censuses and surveys to national, regional and international repositories essential for providing a consistent baseline for global SDG monitoring

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- Geo-referencing and the generation and dissemination of datasets with digital spatial information should become the standard practice with all data collection efforts
- Data producers should support the integration and harmonization of demographic and other types of data by means of geo-referencing, and by facilitating access to satellite images
- Data producers should adopt open-data policies allowing the dissemination of public-use, geo-referenced and anonymized micro-data from all major sources, including censuses, surveys and civil registration, while ensuring adequate safeguards for the privacy of individuals and the confidentiality of information.

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- Governments should strengthen national household survey programmes and the capacity of national statistical offices to conduct household surveys while adhering to international guidelines for data collection, documentation and dissemination
- Governments should encourage greater cooperation between national research institutions and NSOs, including South-South cooperation
- All stakeholders should continue supporting work on international and national data harmonization and integration between multiple data sources