Demography and the Data Revolution

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Background document

In July 2012, United Nations Secretary-General Ban Ki-moon established a High-Level Panel to provide advice on the global development agenda beyond 2015, the target date for the Millennium Development Goals (MDGs). In May 2013, the panel submitted their report and, among their recommendations, they called for a *Data Revolution*, a "new international initiative to improve the quality of statistics and information available to citizens". This appeal has drawn the attention of many in the development community and, over the past 18 months, numerous institutions have held meetings on the topic and developed work plans to move the agenda forward.[5] In mid-October, the International Union for the Scientific Study of Population (IUSSP) convened a meeting of prominent demographers and population scientists to discuss the possible contributions of demographers, and of demographic skills, to the Data Revolution (Paris, 9-10 October 2014).[6]

We start with a description and overview of the Data Revolution and then present the concise position paper we wrote shortly after the IUSSP seminar. The position paper was submitted to the UN Independent Expert Advisory Group,[7] whose mandate was to define more precisely what the Data Revolution entails: their draft report was presented to the Secretary General in early November 2014.[8] In addition, the paper was distributed to several other important institutions and groups working in this area, and is posted on the IUSSP website along with a blog that aims to facilitate feedback from and further exchanges within the population community on the topic. A longer report on the IUSSP expert group meeting, that more fully reflects the scope of the discussions, will also be posted on the IUSSP website once it is completed.

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[5] "Launch of a New Blog Series: What Kind of Data Revolution Do We Need for Post-2015?," Post2015.org, 5 November 2013, http://post2015.org/2013/11/05/launch-of-a-new-blog-series-what-kind-of-data-revolution-do-we-need-for-post-2015/.

[6] The IUSSP gratefully acknowledges the funding received from the Hewlett Foundation that financed this meeting.

[7] http://www.undatarevolution.org/2014/10/03/ieag-data-revolution-mtg-1/

[8] Hyperlink to final report when available; a draft for comments is available at: http://www.undatarevolution.org/report/

The Data Revolution: Overview

Under the auspices of the United Nations, the Millennium Development Goals (MDGs) – eight goals and close to 60 related indicators – were unanimously approved in 2000, and defined the core of the United Nations development agenda over the 2000-2015 period. The task of monitoring progress towards those goals and investigating their determinants spurred data collection efforts on key variables of interest, and many countries acted to strengthen their overall capacities for data collection, quality control and analysis aimed at those specific areas. There remain, however, enormous differences in the capacity of national data systems across the world, with many of the least developed countries remaining unable to provide even rudimentary information on their populations.

These structural weaknesses manifest themselves in many ways. In 2011, a World Bank official pointed to the 'statistical tragedy' affecting many African countries, pointing to, among other examples, the rebasing of Ghana's GDP that made it go up by 60 percent 'overnight', and the fact that only 11 countries in the region had comparable income poverty estimates for 2005.[9] As of 2013, 21 African countries had not conducted a poverty survey in the preceding seven years.[10] This partly reflects inadequate investment in national statistical systems. The completeness of vital registration systems across the developing world is still woefully inadequate, and progress in this regard has stagnated in recent decades.[11] Just one quarter of countries in South Asia, less than half of countries in Latin America and the Caribbean and less than 6% of those in sub-Saharan Africa have civil registration systems that might be regarded as even remotely complete.[12] This has severe implications for the tracking of some MDGs: "actual data from civil registration systems on maternal mortality is only available for 16 percent of all the world's births".[13] This situation leads to adverse consequences for the individuals concerned, whose "non-existence" in official registers hinders their ability thereafter to participate in society, as well as for researchers, policy experts and administrators.

More generally, the past two decades have witnessed rapid developments in data production across the world, including massive improvements in the technologies used for collecting, managing and analyzing data of different types. The arrival of Big Data – largely unstructured data collected by mobile phone companies, web-based networking sites, internet search engines, etc. – is only one important component of that development. In many countries, the national statistical systems are no longer the sole sources of data, as other data providers have created a more competitive marketplace. In addition, growing demands for data, including

[9] http://blogs.worldbank.org/africacan/africa-s-statistical-tragedy.

[10] Chandy (2013) cited in http://www.worldpoliticsreview.com/articles/13523/data-revolution-developments-next-frontier.

[11] http://bit.ly/1qS7Wh1, cited in http://www.oecd.org/dac/POST-2015%20P21.pdf; see also http://www.unicef.org/mena/MENA-Birth_Registration_report_low_res-01.pdf.

[12] http://go.worldbank.org/QVSQM1R6V0, cited in http://www.oecd.org/dac/POST-2015%20P21.pdf.

[13] http://www.worldpoliticsreview.com/articles/13523/data-revolution-developments-next-frontier.

increasingly from civil society, are placing new pressures on those collecting, managing and making available statistical information in large parts of the globe. This rapidly evolving data landscape contributes greatly to the potential for improvements in data availability in the next decades. From the perspective of the community of population scientists and demographers, however, the concern is that improvements in data quantity are no guarantee of improvements in data quality. This concern frames much of the contribution made by the participants in the IUSSP meeting.

The international development community is presently working to define the United Nations post-2015 development agenda. To date, participatory negotiations (namely the Open Working Group) have proposed to replace the MDGs with a broader set of 17 sustainable development goals (SDGs).[14] Other experts have proposed 100 measurable related indicators,[15] focusing on inclusive economic development, social progress, environmental sustainability, and peace and security. In their brief description of the Data Revolution, the UN High-Level Panel argued that major improvements in the quality and accessibility of data will be essential to track progress towards the SDGs, to allow national governments and other actors to make better-informed decisions, and to enable citizens to hold their governments to account. They emphasized that data should be disaggregated by gender, geography, income, and disability, as a way to ensure that "no one is left behind."[16]

Not only do the SDGs offer a framework for development planning, but since the monitoring the goals places a particular responsibility on national governments to collect and analyse data, the building of the capacity to accomplish this at a national level should have a positive developmental effect, and should be regarded as a significant goal in and of itself.[17]

As a marker of how seriously the connection between a Data Revolution and global development is taken, the UN Secretary General established the Independent Expert Advisory Group (IEAG) on "Data Revolution for development" in August 2014 to provide a strategic framework and recommendations. This group's recommendations are expected to inform the Secretary General's November report which will synthesize the inputs on the post-2015 agenda and provide a starting point for intergovernmental negotiations.[18] Clearly there is a high level of political commitment today to engage in a concerted effort to greatly improve the availability of quality data across the world, and to harness these data in the service of global development.

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[14] Proposal of the UN General Assembly's Open Working Group on Sustainable Development Goals, see http://sustainabledevelopment.un.org/focussdgs.html.

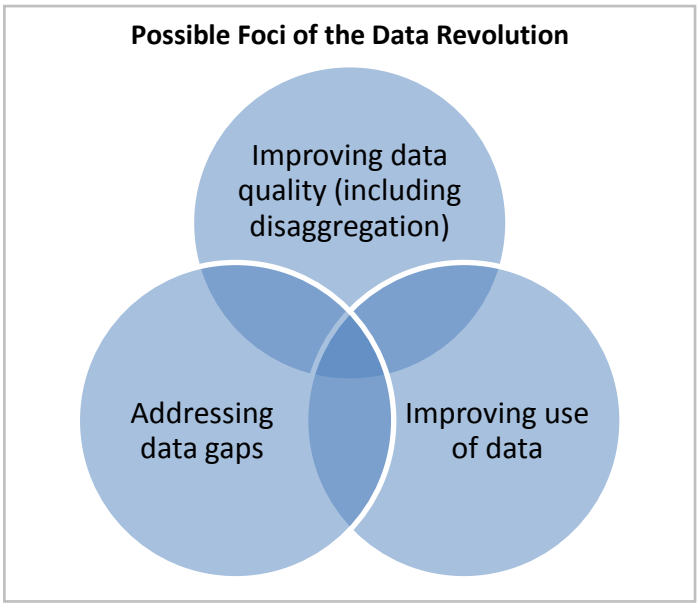
[15] Proposal of the Sustainable Development Solutions Network (SDSN), see http://unsdsn.org/wp-content/uploads/2014/07/140724-Indicator-working-draft.pdf.

[16] *The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda*, report (New York: United Nations Publications, 2013), pg. 23, http://www.post2015hlp.org/the-report/.

[17] Haishan Fu, World Bank/IMF Spring 2014 Meetings on "Talking About Data Revolution": http://live.worldbank.org/talking-about-a-data-revolution (minute 32).

[18] http://www.undatarevolution.org/2014/09/24/warm-welcome/

Current discussions and interpretations



While the purpose, content and structure of the Data Revolution are still being widely discussed within the development community, the UN Secretary General's office aims to define more exactly what it will entail, at least within the framework of the post-2015 agenda, by late 2014. In this currently diffuse debate, three main themes of emergent priorities and proposed activities can be identified: **(1) addressing data gaps; (2) improving data quality;** and **(3) improving data use.** While these themes are unlikely to become formal elements of the Data Revolution and other taxonomies have been proposed,[19] this classification provides a useful structure for discussion and for framing the potential contribution of demographers to the Data Revolution. We briefly outline the current thinking in these three areas.

(1) Addressing data gaps

Many of the discussions around the Data Revolution center on collecting more data (increased *quantity* of data) targeted for specific purposes.[20] In some instances, the focus on increasing the quantity of data implies the use of non-traditional data collection methods such as mobile technologies; in other cases, the focus is household surveys and the development of administrative systems.

Data for post-2015 monitoring

The direct link between the post-2015 agenda and the Data Revolution is the development or scaling up of large-scale data collection processes. One proposed method of post-2015 data monitoring would be the development of a national, harmonised survey to monitor countries' progress against the SDGs.[21] Such a survey would provide comparable, nationally representative

[19] Only a few other taxonomies have been proposed. One useful example is from David Roodman's blog post, "Interpreting the Data Revolution: Proceed with Caution (Part 1)" http://post2015.org/2014/04/03/interpreting-the-data-revolution-proceed-with-caution-part-1/

[20] For an exploratory assessment of data gaps in regard to the SDGs, see http://unsdsn.org/wp-content/uploads/2014/07/Assessing-Gaps-in-Indicator-Availability-and-Coverage.pdf. For data gaps concerning gender, see: *Data2X: Mapping Gender Data Gaps*, United Nations Foundation (March 2014): https://app.box.com/s/amtbqh6a99ywzyjxub9c; see also the UN Global Gender Statistics Programme: http://unstats.un.org/unsd/gender/default.html .

[21] See http://post2015.org/2013/11/21/a-new-household-survey-to-catalyse-the-data-revolution/; also, http://unsdsn.org/wp-content/uploads/2014/09/Mobilising-the-household-data-required-to-progress-toward-the-SDGs-WEB.pdf.

data and yet contain sufficient resolution to permit disaggregation by gender, geography, etc. Ideally and crucially, the first round of such a survey might provide the baseline from which national and global institutions could measure progress. Nonetheless, there is some disagreement on the level of geographic specificity that is needed. Some are advocating for hyper-local data to catalyse an 'accountability revolution',[22] while others have argued for data that can be easily compared among countries.

Utilizing new technology to collect more data at lower cost

New technologies and data sources have the potential to transform data collection processes. Call data records, for example, have been used to track migration, poverty and health outcomes, while data from mobile telephony, banking and smart cards could supplement data collected through conventional methods such as censuses, Demographic and Health Surveys, or the World Bank Living Standards Measurement Study surveys.[23]

(2) Improving data quality

Recognizing chronic shortcomings in data systems in low-resource settings, attention has also focused on improving the *quality* of data that is collected, both in terms of content and processes. Some have argued that we need to "collect less data, but collect it better": ensure that high quality data exists for at least a minimum set of key variables, collected in a scientifically rigorous manner.[24]

Increasing capacity of national statistics offices

One potential mechanism for improving the way in which data is collected and its quality is to strengthen the "domestic institutions that collect most statistics on human development"[25] – the National Statistical Offices (NSOs). Calls for increased funding for NSOs are widespread.[26] Within this, a number of actors, including the UN System Task Team on the Post-2015 UN Development Agenda, have called for renewed efforts to improve the quality, timeliness and completeness of civil registration and vital statistics data, arguing that "civil registration systems are a basic component of good governance and are essential for the production of vital statistics."[27] Strengthening NSOs also guards against the Data Revolution becoming simply an

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[22] Brad Parks, "Do We Need a Data Revolution or an Accountability Revolution?," *Aid Data Beta* March 4, 2014, http://aiddata.org/blog/do-we-need-a-data-revolution-or-an-accountability-revolution-4.

[23] David Roodman, "Interpreting the Data Revolution: Proceed with Caution (Part 1)," *Post2015.org,* April 3, 2014, http://post2015.org/2014/04/03/interpreting-the-data-revolution-proceed-with-caution-part-1/.

[24] Nick Dyer, World Bank/IMF Spring 2014 Meetings: http://live.worldbank.org/talking-about-a-data-revolution (minute 27).

[25] David Roodman *, Ibid*

[26] "Data for African Development," Center For Global Development, accessed April 21, 2014, http://www.cgdev.org/page/data-african-development; Jan Eliasson, World Bank/IMF Spring 2014 Meetings: http://live.worldbank.org/talking-about-a-data-revolution (minute 10); *Statistics for Transparency, Accountability, and Results: A Busan Action Plan for Statistics*, p. 4, November 2011, http://www.paris21.org/busan-action-plan.

[27] *Statistics and Indicators for the Post-2015 Development Agenda,* report, Page iv, http://www.un.org/en/development/desa/policy/untaskteam_undf/them_tp2.shtml.

external agenda: a guiding principle is that countries must be capacitated to collect their own data, in a form that enhances national and local development strategies and accountability.[28]

Improving administrative systems

In many parts of the world, administrative systems remain patchy and incomplete, with data poorly integrated and difficult to access. Improving administrative data would not only be an important contribution to statistical systems in many countries but would have the additional spill-over of institutional strengthening and the management of service delivery.[29]

Data disaggregation to 'leave no one behind'

There is significant interest in ensuring that the data used in tracking progress towards the SDGs are better disaggregated by gender, geography, income, and disability, amongst other characteristics – a point that was emphasized in the High-Level Panel report.[30]

(3) Improving and Expanding Use of Data

Using Data for Accountability

Discussions on the data revolution focus not only on the supply of data but also on the ability of people to access and use them. Within the post-2015 agenda discussions, some advocacy groups have argued that enhancing the capacity to formulate evidence-informed policy and to hold governments accountable is only truly possible if there is ready and simple access to data, and transparency about the construction and content of the data.[31] Such discussions focus on governments' provision of financial and revenue data to its citizens to help curb corruption and/or increase the responsiveness of governments to citizens' needs. Along similar lines, proponents of open data argue for its role in heightening the ability of citizens and civil society to demand accountability in achieving post-2015 goals and targets. Some discussions have focused on the G8 Open Data Charter,[32] under which government data are considered as a public good that should be available for use by all to hold governments to account.

Increasing Access to Data

Improved access to data also requires that data must also be made available within a short period after data collection. Timely access to data is essential for governments to function

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[28] "Post-2015: What Has Statistics Got to Do with It? (PARIS21 spring 2013 Newsletter)," Partnership in Statistics for Development in the 21st Century, http://www.paris21.org/node/1558.

[29] http://unsdsn.org/wp-content/uploads/2014/09/Mobilising-the-household-data-required-to-progress-toward-the-SDGs-WEB.pdf.

[30] http://www.post2015hlp.org/wp-content/uploads/2013/05/UN-Report.pdf, p. 23.

[31] http://post2015.org/2014/08/21/we-must-continue-to-make-the-case-for-transparency-in-the-post-2015-agenda/

[32] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207772/Open_Data_Charter.pdf

effectively,[33] to heighten accountability, and to monitor interventions. To react to natural disasters, epidemics or other urgent public health emergencies, data must be available at near real time to be useful.[34] Accessibility also requires that data be well integrated – interoperable – so as to allow users to easily combine information provided by different data sources. Finally, for non-statisticians and researchers, accessibility means developing and sharing user-friendly interfaces and data visualisation software, as well as investments in "data literacy" so that people can understand and use data to bring about change.

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[33] E.g., http://unsdsn.org/wp-content/uploads/2014/07/140724-Indicator-working-draft1.pdf, and http://unsdsn.org/wp-content/uploads/2014/09/Towards-Frequent-and-Accurate-Poverty-Data-WEB.pdf.

[34] E.g., see the work by Flowminder and Healthmap on the Ebola crisis: http://www.flowminder.org/ and http://healthmap.org.

Resources and Further Reading

Position papers/response reports

High Level Panel report:
http://www.post2015hlp.org/the-report/

Summary on the Data Revolution from the HLP:
http://www.post2015hlp.org/wp-content/uploads/2013/08/What-is-the-Data-Revolution.pdf

Mexico Communiqué: The third draft of the Mexico Communiqué now has reference to the Data Revolution (paragraph 37):
http://effectivecooperation.org/wordpress/wp-content/uploads/2014/04/ThirdDraftoftheMexicoHLMcommunique.pdf

HLP Response by UN Global Pulse:
http://unglobalpulse.org/HLP-data-revolution

Managing the Data Revolution, report by the UN Statistical Commission:
http://unstats.un.org/unsd/trade/events/2014/unsc/data-revolution.asp

MOU between the UN, World Bank, IMF, African Development Bank, Asian Development Bank, and the Inter-American Development Bank on the post-2015 agenda and DR:
https://blogs.worldbank.org/opendata/multilaterals-join-forces-data-post-2015-agenda

"Now for the Long Term," proposal for global coordination of statistics by the Oxford Martin School:
http://www.oxfordmartin.ox.ac.uk/downloads/commission/Oxford_Martin_Now_for_the_Long_Term.pdf

PARIS21 Discussion Papers: http://paris21.org/library/discussion-papers

Delivering on the Data Revolution in Sub-Saharan Africa, Report of the Data for African Development Working Group: http://www.cgdev.org/page/data-african-development

Blog posts

Blog series on "What kind of Data Revolution do we need for post-2015?" with a broad variety of positions:
http://post2015.org/2013/11/05/launch-of-a-new-blog-series-what-kind-of-data-revolution-do-we-need-for-post-2015/

"Donors and a Data Revolution" by Amanda Glassman, CGD, focusing on funding for statistics in developing countries:
http://www.cgdev.org/blog/donors-and-data-revolution

"A Data Revolution" of the People, by the People, and for the People – Not Just for Advocates" by Mead Over, CGD:
http://www.cgdev.org/blog/data-revolution-people-people-and-people-not-just-advocates

"An open Data Revolution, but what's next?" by Roy Trivedy UN Resident Coordinator/Representative at Papua New Guinea at UNDP, Mike Battcock Civil Society Department, DFID, posted by Oxfam: http://policy-practice.oxfam.org.uk/blog/2013/12/open-data-revolution

"A Data Revolution to end poverty?" by Kenneth Okwaroh, Development Initiatives: http://devinit.org/data-revolution-end-poverty/

"A Data Revolution for the post-2015 Agenda?" by Homi Kharas, Brookings Institution: http://blogs.worldbank.org/futuredevelopment/data-revolution-post-2015-agenda

"Engineering the Data Revolution," PARIS21: http://www.paris21.org/newsletter/fall2013/engineering-data-revolution

Recent Meetings of Note

UN Statistical Commission on "Managing the Data Revolution": http://unstats.un.org/unsd/trade/events/2014/unsc/data-revolution.asp

PARIS21 Event ""Engineering the Data Revolution": http://eudevdays.eu/topics/engineering-data-revolution,

World Bank/IMF Spring Meetings on "Talking About Data Revolution": http://live.worldbank.org/talking-about-a-data-revolution

CGD "The Why, What, and How of a Development Data Revolution": http://www.cgdev.org/event/why-what-and-how-development-data-revolution

UNDP, "Dialogue: Data and Accountability for the Post-2015 Development" http://www.worldwewant2015.org/Data-Accountability2015

World Bank, "The Data Revolution is Here - How is Open Data Changing the Private Sector?" http://live.worldbank.org/open-data-revolution

Development Initiatives and the Office of the Mexican President, dinner at the First High-Level Meeting of Global Partnership for Effective Development Cooperation in Mexico.

IATI, OECD and the Office of the President of Mexico, *"Delivering development results through good governance, transparency and effective institutions: Open Government, civic engagement and open data as enablers of development goals"* http://effectivecooperation.org/wordpress/wp-content/uploads/2014/04/Focus-Session-18-Delivering-through-good-governance-transparency.pdf

PARIS21 Informing the Data Revolution Asia-Pacific Regional Workshop: http://www.paris21.org/event/IDR-Asia-Pacific-Workshop

Towards a Strategy for the Data Revolution: Outcomes from the July 11-12 Experts' Workshop: http://post2015.files.wordpress.com/2014/07/data-revolution-expert-workshop-outcome-document1.pdf