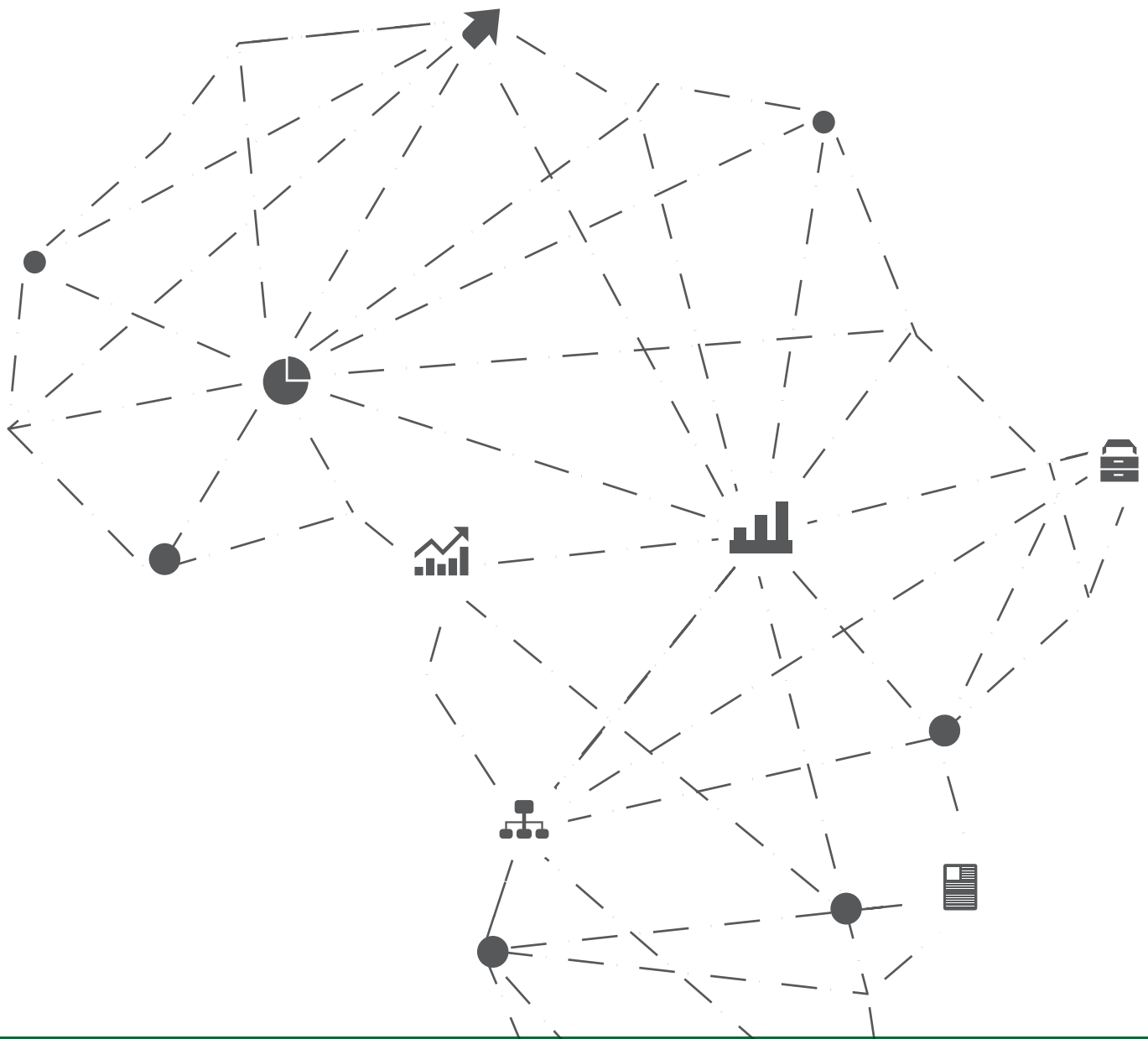# Delivering on the Data Revolution in Sub-Saharan Africa

FINAL REPORT OF THE DATA FOR AFRICAN DEVELOPMENT WORKING GROUP

CENTER FOR GLOBAL DEVELOPMENT

&

THE AFRICAN POPULATION AND HEALTH RESEARCH CENTER

Delivering on the Data Revolution in Sub-Saharan Africa

Final Report of the Data for African Development Working Group

Center for Global Development
&
The African Population and Health Research Center

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Preface

Today governments around the world play a major role in providing the public goods and services central to social stability and shared economic prosperity—security, health care, traffic management, pension systems, and more. But the state cannot play this role efficiently and fairly without basic information on where, why, and how their efforts are functioning.

Indeed, basic data like births and deaths, the size of the labor force, and the number of children in school are fundamental to governments' ability to serve their countries to the fullest. And *good* data that are reliable and publicly available are a catalyst for democratic accountability.

Data allow citizens to hold governments to their commitments. They allow governments and donors to allocate their resources in a way that maximizes the impact on people's lives. And they allow us all to see the results.

Investments in improved data in Africa will help realize these benefits, and are vital to the future success of development efforts in the region.

This report explains the four fundamental constraints that have inhibited the collection and use of data in Africa: limited independence and unstable budgets, misaligned incentives, donor priorities dominating national priorities, and limited access to and use of data. It identifies three actionable recommendations for governments and donors to drive change: fund more and fund differently; build institutions that can produce accurate, unbiased data; and prioritize the core attributes of data building blocks.

If these data challenges are addressed and these actions taken, African countries will move one step closer to experiencing a true data revolution that will help governments improve the quality of life for millions of people.

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Acknowledgments

Abbreviations

ADP	Accelerated Data Program
AfDB	African Development Bank
APHRC	African Population and Health Research Center
AUC	African Union Commission
CGD	Center for Global Development
CPI	consumer price index
DTP3	diphtheria, tetanus, and pertussis
EMIS	Education Monitoring and Information System
GAVI	Global Alliance on Vaccines and Immunizations
GDP	gross domestic product
HMIS	health management information systems
IHSN	International Household Survey Network
M&E	monitoring and evaluation
MDG	Millennium Development Goal
NSO	national statistics office
PARIS21	Partnership for Statistics in Development in the 21st Century
PRESS	Partner Report on Support to Statistics
UN	United Nations
UNECA	United Nations Economic Commission for Africa
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization

Executive Summary

Why data, why now?

Governments, international institutions, and donors need good data on basic development metrics like inflation, vaccination coverage, and school enrollment to accurately plan, budget, and evaluate their activities. Governments, citizens, and civil society at large use data as a "currency" for accountability. When statistical systems function properly, good-quality data are exchanged freely among all stakeholders to ensure that funding and development efforts are producing the desired results.

Nowhere is the need for better data more urgent than in most African countries, where data improvements have been sluggish.

To be sure, there have been gains in the frequency and quality of censuses and household surveys.[i] But the "building blocks" of national statistical systems in Sub-Saharan Africa remain weak. These building blocks—or data that are intrinsically important to the calculation of almost any major economic or social welfare indicator—include data on births and deaths; growth and poverty; taxes and trade; sickness, schooling, and safety; and land and the environment. To be valuable to policymakers, citizens, and donors and enable the cycle of accountability to work, these building blocks must be accurate, timely, disaggregated, and widely available.

The weaknesses of the data building blocks are expressed in the instability of headline economic statistics like growth and poverty. Nigeria's recent switch to a new base year after a 20-year delay led to a rebased gross domestic product (GDP) estimate in 2013 that is about 89 percent higher than the earlier estimate for the same year, which *The Economist* described as "dodgy."[1] According to the

World Bank's chief economist for Africa, "estimates of poverty represent robust statistics for only 39 countries for which we have internationally comparable estimates [in 2005]. And they are not even comparable over the same year. Only 11 African countries have comparable data for the same year. For the others, we need to extrapolate to 2005, sometimes (as in the case of Botswana) from as far back as 1993."[2]

The nascent post-2015 United Nations development agenda is generating momentum for a worldwide "data revolution," and shining a much-needed light on the need for better development data in Africa and elsewhere. But early efforts are focused on collecting more—not necessarily better—data. This may divert attention from the underlying problems surrounding the production, analysis, and use of basic data that have inhibited progress to date.

Often these problems are not merely technical but rather the result of implicit and explicit incentives and systemic challenges, including a lack of stable funding for national statistical systems, minimal checks and balances to ensure that the data are accurate and timely, and the dominance of donor data priorities over national priorities. Both donors and countries need to do something truly revolutionary to address these core problems underlying bad data in the region.

Toward that end, the Center for Global Development (CGD) and the African Population and Health Research Center (APHRC) co-chaired a working group to bring these issues to the fore. This report reflects the unique perspectives and expertise of each institution—CGD's focus on donor policies and practices, APHRC's experience with country-level challenges in Africa—as well as the working group members who contributed.

The report explores the root causes and challenges surrounding slow progress in Sub-Saharan Africa and identifies three strategies to address them. These recommendations will help build the foundation for big data and open data initiatives—and for a true Africa-led and sustainable data revolution.

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i. More than 80 percent of African countries conducted a census between 2005 and 2014, according to https://unstats.un.org/unsd/demographic/sources/census/censusdates.htm#top. For an evaluation of the International Household Survey Network and Accelerated Data Program, see Thomson, Eele, and Schmieding (2013).

The challenges of data collection and use in Africa

The working group identified four main obstacles to greater progress on data in Africa:

- **Challenge 1: National statistics offices have limited autonomy and unstable budgets.** National statistics offices (NSOs) are the backbone of data production and management in most African countries; they produce official statistics and support data activities at other national agencies to create accurate and timely data for decision-making. NSOs must be able to produce reliable, accurate, and unbiased statistics that are protected from outside influence. But most NSOs in Africa are constrained by budget instability and a lack of autonomy that leave them vulnerable to political and interest group pressures. Indeed, budget limitations and constraints on capacity are two of the most frequently cited reasons for lack of progress on statistical capacity in Sub-Saharan countries.

  Of the 54 member countries of the African Union, only 12 are considered to have an autonomous NSO according to Regional Strategic Framework for Statistical Capacity Building in Africa (2010).[ii] In the remaining 42 countries, statistics fall under the jurisdiction of another government ministry. NSOs that lack autonomy often do not manage their own budgets and receive little government funding. They must therefore rely on donors to fulfill even their most basic functions. In many countries, nearly all core data collection activities are funded primarily by external sources.[3] Without functional autonomy and predictable national funding of NSOs, other efforts to address data systems challenges in Africa are not likely to succeed.

- **Challenge 2: Misaligned incentives contribute to inaccurate data.** Discrepancies between administrative data and household survey–based estimates in education, agriculture, health, and poverty indicate that many internationally published data are inaccurate. In many low-income countries, for example, local units have an incentive to exaggerate school enrollment when central government and outside funders connect data to financing (of teachers in this example); it is hard to insulate data from politics. The development of intrinsic

and extrinsic checks can systematically avoid the resulting data inaccuracies.

These and other challenges related to incentives and funding are often rooted in conflicting objectives between donors and countries. International donors use data to inform allocation decisions across countries; governments use data to make budgetary decisions at more micro levels. Similar tensions also exist within countries, between the national and local levels of government. This difference affects the demand for and use of data. In some African countries, it contributes to inaccuracies in the data published by national and international agencies.

- **Challenge 3: Donor priorities dominate national priorities.** Donors routinely spend millions for micro-oriented survey fieldwork and one-off impact evaluations. These ad hoc donor-funded projects generate significant revenue for statistics offices and individual NSO staff. Increasing take-home pay by chasing donor-funded per diems via workshop attendance, training, and survey fieldwork is the order of the day. As a result, NSOs lack incentives to improve national statistical capacity or prioritize national data building blocks, leaving core statistical products like censuses and vital statistics uncollected for years.

- **Challenge 4: Access to and usability of data are limited.** Even the best, most accurate data are useless if they are not accessible to governments, policymakers, civil society, and other users in a usable format. Many NSOs and other government departments are hesitant to publish their data, lack the capacity to publish and manage data according to international best practices, or do not understand what data users want and how to get that information to them.[4] These problems are critical, because more open data are essential to improve or inform policies and to hold governments and donors accountable.

The way forward: Actions for governments, donors, and civil society

Action around a data revolution in Africa should begin by addressing the underlying problems surrounding the building blocks of national statistical systems, including their production, analysis, and use. These changes must be initiated and led inside governments. Donors and local civil society groups also have a role to play; the data revolution must help modify the relationship among donors,

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ii. Angola, Burkina Faso, Cape Verde, Chad, Egypt, Ethiopia, Liberia, Mauritius, Mozambique, Rwanda, Tanzania, and Uganda.

governments, and the producers of statistics and work in harmony with national statistical priorities.

This report identifies recommendations for action that are addressed primarily to national governments while taking into account the need for cooperation and support from international technical agencies and donors, civil society, and research organizations. Each recommendation directly addresses one or more of the problems outlined here. Taken together, they can help build a solid foundation for a true data revolution that can be led and sustained in the region.

Fund more and fund differently

Current funding for statistical systems and NSOs is not only insufficient, but it is also structured in ways that do not help produce and disclose accurate, timely, and relevant data, particularly on the building blocks. The working group identified three strategies for donors and governments to fund more and differently that will better support national statistical systems:

- *Reduce donor dependency and fund NSOs more from national budgets.* African governments must allocate more domestic funding to their statistical systems. Ideally, governments would allocate a minimum agreed annual proportion of their revenues barring unusual fiscal or other demands in a particular year. Where more creative mechanisms are needed, governments might consider routine allocation of a share of sectoral spending to be tied to national strategies for the development of statistics activities—1 percent for data, for example, or a "data surcharge" added to any donor project to fund the public good of data building blocks.
- *Mobilize more donor funding through government–donor compacts, and experiment with pay-for-performance agreements.* Governments should press for more donor funding of national statistical systems, using a funding modality—or data compact—that creates incentives for greater progress and investment in "good data." A pay-for-performance agreement could link funding directly to progress on improving the coverage and accuracy of core statistical products.
- *Demonstrate the value of building block statistics by generating high-level agreement by national governments and donors to prioritize national statistical systems and the principles for their support.* Efforts may also include greater support to civil society to elevate

the importance of national statistics and hold policymakers accountable for progress.

Build institutions that can produce accurate, unbiased data

Many of the political economy problems identified in this report hinge on vulnerability to political and interest group influence, as well as rigidities in civil service and government administration that limit government ability to attract and retain qualified staff. However, greater autonomy cannot be afforded without greater accountability for more and better data. With these issues in mind, the working group recommends the following actions:

- *Enhance functional autonomy, such that NSOs function independently of government sectoral ministries and are given greater independence from political influence.* Many countries are already moving in this direction. These efforts, as well as efforts to operationalize legislation already in existence, should be increasingly supported through existing programs and initiatives to support statistical capacity.
- *Experiment with new institutional models, such as public-private partnerships or crowdsourcing, to collect hard-to-obtain data or outsource data collection activities.* Such models would support increased functional and financial autonomy while retaining, if not increasing, NSO accountability to stakeholders. Developed countries, such as the United Kingdom, have established public-private partnerships to generate demand and increase access to open data.[5]
- *Formalize relationships between NSOs and central banks and other ministries and government agencies by contracting for the provision of data.*

Prioritize the core attributes of data building blocks: Accuracy, timeliness, relevance, and availability

More than 80 percent of African countries conducted a census in the past decade. Still, too little is invested in the building blocks of data, and in some cases political economy challenges distort the data. Future efforts should prioritize funding and technical assistance to strengthen the core attributes of data building blocks.

- *Build quality control mechanisms into data collection to improve accuracy.* Most of the challenges from perverse incentives can be

mitigated by having NSOs provide oversight and quality control over data collection and analysis from other government agencies. The sectoral assessment framework of Statistics South Africa, for example, provides improvement plans for government agencies and departments that produce data and evaluates data quality on a number of indicators.[6] Better use of technology may also help address this issue.

- *Encourage open data.* National governments and donors should release all nonconfidential, publishable data, including metadata, free of charge in an online format that can be analyzed and is machine readable. The African Development Bank and World Bank should expand their lending to support statistical capacity building and leverage open data policies.

- *Monitor progress and generate accountability.* Civil society organizations, including think tanks, and nongovernmental organizations should monitor the progress of both donors and governments in improving data quality and evaluating for discrepancies—and hold both accountable for results.

Notes

1. *The Economist* (2014).
2. Devarajan (2011).
3. Jerven (2013).
4. Woolfrey (2013).
5. Open Data Now (2013).
6. Lehohla (2010).

Delivering on the Data Revolution in Sub-Saharan Africa

Final Report of the Data for African Development Working Group

Chapter 1

Why Data, Why Now?

Good-quality data are essential for country governments, international institutions, and donors to accurately plan, budget, and evaluate development activities.[1] Without basic development metrics, it is not possible to get an accurate picture of a country's development status or improve social services, achieve the Millennium Development Goals (MDGs) or post-2015 goals, make economic improvements, and improve global prosperity for all.

Data also serve as a "currency" for accountability among and within governments, citizens, and civil society at large, and they can be used to hold development agencies accountable. When statistical systems function properly, good-quality data are exchanged freely among all stakeholders to ensure that funding and development efforts are producing the desired results. For instance, data help national governments understand the needs of policymakers and citizens at subnational levels and provide funding and services in the most effective and efficient way possible. In turn, citizens use data to hold their governments accountable for the use of resources in their communities. Donors and governments use data to understand how aid money is spent and hold one another accountable for results. When produced properly and exchanged openly, data thus bind a cycle of accountability.

Of course, statistics systems rarely function flawlessly. When the quality or availability of data is compromised, so is the ability of governments, citizens, and donors to hold one another accountable, and trust in official data declines.[i] Still, research has mapped the connection between statistical capacity and government effectiveness, finding that countries with higher statistical capacity enjoy not only improved effectiveness on development outcomes but also higher-quality government institutions.[2]

Data are also a global public good and thus should be available for use by the public free of charge under most circumstances (notable exceptions include when release would compromise national security or individual privacy). Once made available, data can be used by any number of people at very low additional cost. This attribute justifies public and donor investment in the collection and supply of many types of data.[3]

The need for better data in Africa

Nowhere in the world is the need for better data more urgent than in Africa, where data quality is low and improvements are sluggish, despite investments from country, regional, and international institutions to improve statistical systems and build capacity.[4] The World Bank's Bulletin Board on Statistical Capacity shows that overall statistical capacity in Africa is lower than in other developing region (figure 1.1) and that there has been little change in performance over time, despite more than five years of rapid economic growth in most countries.[5]

Although there have been gains in the frequency and quality of household surveys and censuses, the building blocks of national statistical systems in Africa remain weak.[ii] We define building blocks as data that are intrinsically important to the calculation of almost any major economic or social welfare indicator, are tightly linked to the United Nations' (UN) Classification of the Functions of Government,[6] and are not likely to be privately financed, because of market failures. These data include statistics on births and deaths; growth and poverty; taxes and trade; sickness, schooling, and safety; and land and the environment.

To be valuable to policymakers, citizens, and donors and enable the cycle of accountability to work, data building blocks must be accurate, timely, disaggregated, and widely available. Although far

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i. Data have most value when action can be taken in response to them (Laxminarayan and Macauley 2012).

ii. For an evaluation of the International Household Survey Network and Accelerated Data Program, see Thomson, Eele, and Schmieding (2013). More than 80 percent of African countries conducted a census between 2005 and 2014, according to https://unstats.un.org/unsd/demographic/sources/census/censusdates.htm#top.

Figure 1.1 Statistical capacity scores in selected regions, 2013

Range: 0 ▮▮▮▮ 100
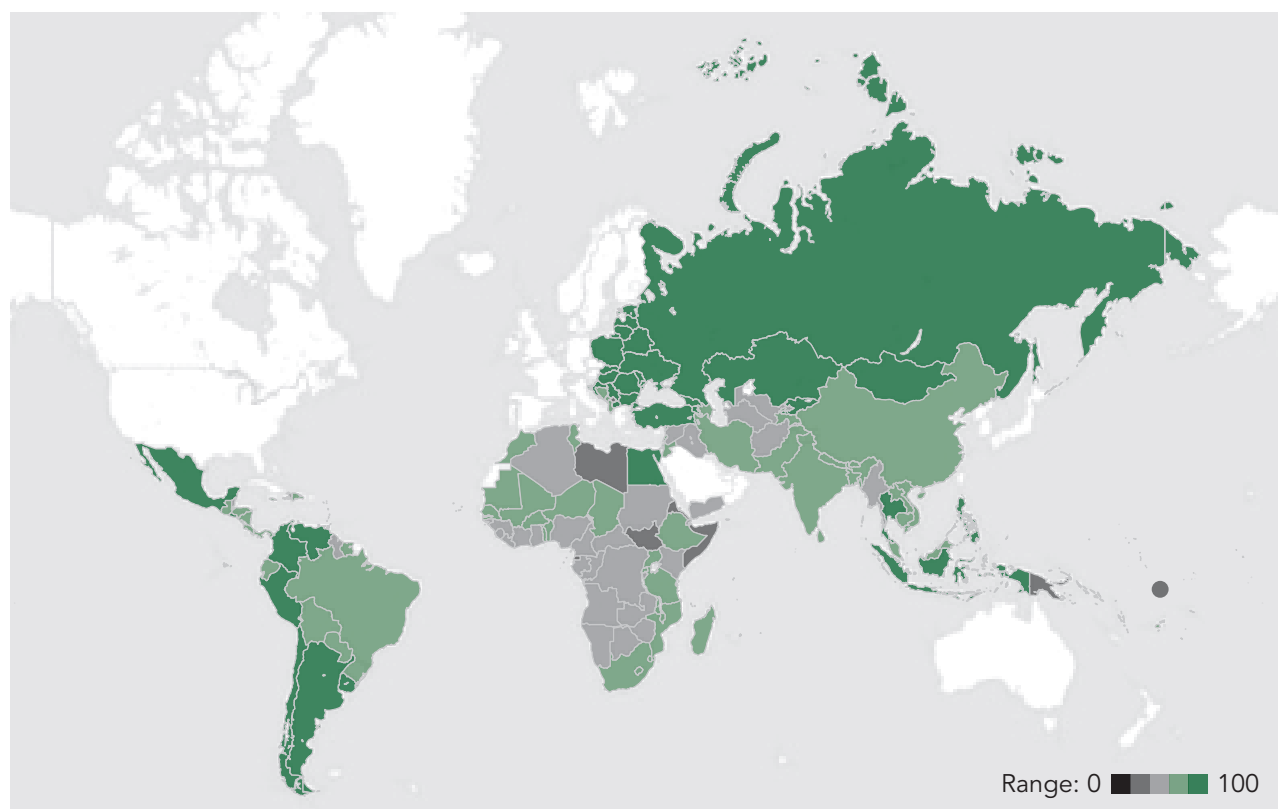
from a comprehensive assessment, table 1.1 illustrates how countries in Africa are faring on data building blocks.

The weaknesses of the data building blocks are expressed in the instability of even headline economic statistics like growth and poverty. Nigeria's recent switch to a new base year after a 20-year delay led to a rebased estimate of gross domestic product (GDP) in 2013 that is about 89 percent higher than the earlier estimate for the same year, a figure *The Economist* (2014) described as "dodgy." According to the World Bank's chief economist for Africa, "estimates of poverty [in Africa] represent robust statistics for only 39 countries for which we have internationally comparable estimates [in 2005]. And they are not even comparable over the same year. Only 11 African countries have comparable data for the same year. For the others, we need to extrapolate to 2005, sometimes (as in the case of Botswana) from as far back as 1993."[7]

Lack of accuracy and missing data are significant obstacles to making and measuring progress on development. Between 1990 and 2009, only one Sub-Saharan country had data on all 12 MDG indicators.[8] When data are available, they are sometimes based on models rather than survey results or empirical observation,[9] and their accuracy and consistency are often compromised by different methodologies, making it difficult to track trends over time. For example, estimates of international poverty figures can vary depending on the sources of data that underlie the estimation: household surveys, consumer price indexes, censuses, national accounts, and the International Comparison Program. An adjustment to the methods or data sources by any of these five sources can change poverty figures by hundreds of millions people.[10]

Despite these problems, such estimates are often the primary basis of international monitoring exercises. The MDG database operated by the UN Statistics Division suggests that 79 percent of

Table 1.1 Status of "building block" data in Sub-Saharan Africa

BUILDING BLOCK	INSTRUMENTS	STATUS IN SUB-SAHARAN AFRICA	SOURCE
Births and deaths	Vital statistics, censuses, household surveys	5.3 percent of countries have more than 90 percent coverage of death registration from data sources newer than 2005	http://unstats.un.org/unsd/demographic
		7.1 percent of countries have more than 90 percent coverage of live birth registration from data sources newer than 2005	http://unstats.un.org/unsd/demographic/CRVS/CR_coverage.htm
Growth and poverty	National accounts populated by firm surveys; household surveys; censuses; administrative data	68 percent of countries conducted a household survey between 2005 and 2014	http://iresearch.worldbank.org/PovcalNet/index.htm?0,0
		82 percent of countries conducted a census between 2005 and 2014	https://unstats.un.org/unsd/demographic/sources/census/censusdates.htm#top
Taxes and trade	Administrative data	Only 35 percent of Africa's population lives in a country that uses the 1993 UN System of National Accounts	Devarajan (2011)
		Since 2005, only 10 countries in Africa have completed or updated a report on the Observance of Standards and Codes as part of the IMF Data Quality Assessment Framework	http://dsbb.imf.org/pages/dqrs/ROSCDataModule.aspx
Sickness, schooling, and safety	Administrative data	Between 2005 and 2014, 32 countries recorded data in the database of the United Nations Office on Drugs and Crime Homicide Statistics	http://data.un.org/Data.aspx?d=UNODC&f=tableCode%3A1
		Between 2005 and 2015, 80 percent of countries will have published a household survey that included a health component	http://catalog.ihsn.org/index.php/catalog
		Between 2005 and 2015, 29 percent of countries will have published a household survey that included an education component	http://catalog.ihsn.org/index.php/catalog
Land and the environment	Cadastral registries; administrative data; new testing (water) and remote sensing technologies (air quality, forest)	In 2010, 57 percent of tropical African countries were rated "limited" or "low" with respect to forest area change monitoring capacity	Romijn and others (2012)
		In 2010, 22 percent of tropical African countries were rated "limited" or "low" with respect to carbon pool reporting capacity	Romijn and others (2012)
		Only seven African countries have data related to the total number of landholders and women landholders, and none of them reports data before 2004	www.fao.org/gender/landrights/home/topic-selection/en/

developing countries had information on maternal mortality. But most of this information comes from estimates from international agencies. Only 11 percent of developing countries have information on this indicator from other sources.[11] This paucity of reliable data means that for all but a few countries, trends for maternal mortality are "basically immeasurable."[12]

Similar issues affect other MDG targets. For example, the World Health Organization reports that most estimates of tuberculosis are accurate only within −20 percent to +40 percent.[13]

Calls for a data revolution

Efforts to develop a post-2015 UN development agenda are generating momentum for a worldwide movement for better and more open data. The *Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda* calls for a "data revolution." It proposes a new international initiative, the Global Partnership on Development Data, which would collaborate with and build the capacity of statistical offices around the globe, "[bringing] together diverse but

> We have learned that setting goals without the underlying data and statistical systems in place is useless at best and counterproductive at worst. Goals must not only be measurable, they must also be meaningful, i.e. they must reflect the realities and priorities of individual countries.
>
> —*Lingnau (2013), p. 4*

interested stakeholders—government statistical offices, international organizations, CSOs [civil society organizations], foundations, and the private sector. This partnership would, as a first step, develop a global strategy to fill critical gaps, expand data accessibility, and galvanize international efforts to ensure a baseline for post-2015 targets is in place by January 2016."[14] Parts of the language included in the high-level report are taken directly from the Busan Action Plan for Statistics.[15]

Efforts to foster a data revolution are coupled with efforts to promote more open data systems. Open data—data that can be freely used, shared, and built on by anyone—have the potential to provide public access to information that can be used to inform global development efforts, donor decisions, and policy. Big data can enhance, though not substitute for, existing information on national, regional, and global trends and ease comparisons on everything from GDP to health indicators and disease burden. New digital technology makes it possible for big data surveys to be conducted more efficiently and more frequently.

Whatever form it takes, the new development agenda should rely on accurate data to assess progress; the measurability of proposed goals will be critical.[16] The UN System Task Team on the Post-2015 UN Development Agenda cites measurability as a key criterion for all new indicators, noting that the "capacity or potential capacity for data collection and analysis to support the indicator must exist at both national and international levels."[17]

Box 1.1 Select international efforts to improve data

Several organizations are working to improve statistical capacity in Sub-Saharan Africa:

African Development Bank (AfDB): The AfDB provides technical support and grants to improve statistical capacity, and facilitates the dissemination of information and statistics across the continent through the Africa Information Highway initiative and the Statistical Data Portal and Open Data for Africa Platform. It made more than $60 million in annual commitments to support statistical development in 2013.

African Union: The African Union Statistical Division supports statistical capacity building by improving harmonization and coordination in Africa. It supports the adoption and implementation of the African Charter on Statistics and the Strategy for the Harmonization of Statistics in Africa (SHaSA). It also produces the annual *African Statistical Yearbook* in partnership with the United Nations Economic Commission for Africa and AfDB. Its new Strategic Plan for the Institute of Statistics of the African Union was approved at the Committee of Director Generals meeting in December 2013.

PARIS21: Established in 1999, PARIS21 has taken a lead role in promoting the production and use of statistics in the developing world. It helps countries develop, implement, and evaluate progress made toward national strategies for the development of statistics. PARIS21 collaborates with the World Bank on the implementation of the International Household Survey Network (IHSN) and the Accelerated Data Program (ADP).

United Nations Economic Commission for Africa (UN-ECA): UNECA provides funding and is leading technical assistance for the improvement of civil registration and vital statistics in Africa. It works closely with the African Union to better harmonize statistical efforts between the African regional institutions in an effort to implement the SHaSA.

World Bank: The World Bank provides funding for statistical capacity building through the Trust Fund for Statistical Capacity Building. It also operates STATCAP, which provides loans to improve statistical capacity, and a trust fund, the Statistics for Results Facility (SRF), initiated in 2009, which provides grants for the same purpose. As of May 2014, the SRF trust fund had financed nine pilot projects, totaling more than $77 million. The World Bank also collaborates with PARIS21 on the IHSN and ADP and tracks progress in statistical capacity through the Bulletin Board on Statistical Capacity. The World Bank promotes open data initiatives to support government's investment and commitment to open data, including a readiness assessment tool, new technologies, and methods to promote demand and engagement.

A growing number of international initiatives and programs have been established in recent years to help build this capacity in low- and middle-income countries. These efforts include the Marrakech Action Plan for Statistics, the Partnership in Statistics for Development in the 21st Century (PARIS21), national strategies for the development of statistics, and the Regional Strategic Framework for Statistical Capacity Building in Africa.[18] Several major organizations have also assumed an explicit mandate to improve statistical capacity in Sub-Saharan Africa (box 1.1). International institutions and donors, including the Bill & Melinda Gates Foundation, the U.S. Agency for International Development, the Rockefeller Foundation, the Hewlett Foundation, various UN agencies, and the World Bank, are poised to invest in activities that will provide unprecedented public access to information to inform both donor and government policies.

Why this report?

Momentum in support of a data revolution is growing. But current efforts to address data limitations in Africa focus largely on increasing capacity and collecting more—not necessarily better or more valuable–data. Moving forward, more attention must be paid to the underlying problems surrounding the production, analysis, and use of data in the region that prevent national statistical systems from being able to support national statistical priorities.

These issues of "political economy" encompass the implicit and explicit incentives and systemic challenges that affect data users and producers at all levels and limit the use of data as a currency with which to enhance accountability and government effectiveness. These issues are driven by a diverse set of stakeholders—government policymakers, international technical agencies, donors, civil society, research organizations—each with its own priorities and approaches to data investment and use as well as its own responsibilities for improving data quality in the region.

The Center for Global Development and the African Population and Health Research Center jointly convened a working group to examine the underlying political economy challenges hindering the timely production of good-quality data in Africa. This report explores the root causes of slow progress on data in the region, identifies specific strategies for addressing these challenges, and outlines specific actions for key stakeholders. Taken together, these steps will help build a solid foundation for promising initiatives like big and open data and provide the underpinnings of a true data revolution that can be led and sustained in the region.

Notes

1. Mahapatra and others (2007).
2. Kodila-Tedika (2012).
3. Laxminarayan and Macauley (2012).
4. PARIS21 (2012).
5. http://data.worldbank.org/data-catalog/bulletin-board-on -statistical-capacity, accessed May 8, 2013.
6. http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4& Lg=1&Top=1.
7. Devarajan (2011).
8. Alvarez, Tran, and Raina (2011).
9. Chen and others (2013).
10. Development Initiatives (2013).
11. Jutting (2013).
12. Attaran (2005).
13. Attaran (2005).
14. UN (2012), p. 24.
15. Jutting (2013).
16. Lingnau (2013).
17. UN (2013), p. vii.
18. Kiregyera (2008).

Chapter 2

Political Economy Challenges That Limit Progress on Data in Africa

Political economy challenges may be preventing ongoing data initiatives from fully achieving their goals. Such challenges often occur as a result of perverse incentives or conflicting objectives that influence the way donors and national governments fund, collect, and use data.

Donors and governments use data in different ways. International donors use data to make allocation decisions across countries, whereas governments use data to make budgetary decisions at more micro levels within their country. The uses of data affect the tradeoffs among the size, scope, and frequency of data collected in a given country. Donors often prefer small-sample, technically sophisticated, possibly multisector, infrequent surveys designed to facilitate sophisticated research and comparisons with other countries. By contrast, governments often prefer large-sample surveys or administrative datasets that provide regional or district-level statistics on fewer key indicators at higher frequency, which allow comparisons across time and space and can be used to inform budget allocations and track performance. This dynamic has implications for the demand and use of data and, in some African countries, contributes to significant inaccuracies in the data published by national and international agencies. Perverse incentives can cause intentional manipulation, suppression, or misreporting of data for political or institutional gain.

The working group identified four central political economy challenges that national statistical systems and donor-funded programs often face:

- National statistics offices (NSOs) in many Sub-Saharan countries lack functional independence and experience shortages and volatility in their annual budgets.
- Misaligned incentives in funding streams can compromise the accuracy of data; data quality checks and balances are often weak.
- Donor priorities dominate national priorities.
- Difficulty in accessing data limits their use and hinders evidence-based policymaking.

These conditions have slowed the production of timely and accurate statistics in Africa. Overcoming them is necessary to build a foundation for a true data revolution in the region.

Challenge 1: National statistics offices have limited autonomy and unstable budgets

NSOs are the backbone of data production and management in most African countries. They provide expertise to produce official statistics and support data activities at other national agencies in an effort to produce accurate and timely data for policy decision-making. To be effective, NSOs must be able to produce reliable, accurate, and unbiased statistics that are protected from the influence of various interest groups. In practice, most NSOs in Africa are constrained by a lack of autonomy and budget instability. They are thus deeply vulnerable to political and interest group pressures.

A growing body of research suggests that many institutions in Africa, among other areas of the world, lack the stability and regular enforcement of policies to optimize performance—in part because of the disconnect between policy design and implementation.[1] For institutions that experience instability over time, patterns of institutional weakness are often reinforced, and the legitimacy of institutions can be systematically undermined.

Functional autonomy and predictable national funding of NSOs are fundamental to addressing data challenges.[i] Without these two conditions in place, other efforts to address data systems challenges will be unlikely to succeed.

Lack of legal and functional independence

The legal status of an NSO determines its mission and establishes how it relates to other government bureaus and institutions. Of the 54 member countries of the African Union, only 12 are considered

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i. Another challenge is present in countries with distributed or federated statistical systems. Even in countries with a central statistical authority, it is very common to have important statistical products left to the responsibility of other departments. For example, central banks often produce national accounts as well as financial statistics.

The National Statistical System has also been largely donor driven, with short-term objectives to meet immediate data needs sometimes distorting national objectives and long-term planning.

—Central Statistical Office, Zambia (2003)

to have autonomous NSOs, according to Regional Strategic Framework for Statistical Capacity Building in Africa (2010).[ii] The remaining 42 fall under the jurisdiction of another government ministry, including the ministry of planning, economic development, finance, information technology and communication, or agriculture.

NSOs that lack independence are often unable to collect and release accurate data in a timely manner because of limited resources, political interference, and complicated vetting processes from other government agencies. Most countries' national statistical strategies do not describe how and when data are published.

NSOs that lack legal and functional independence also lack the capacity and authority to effectively coordinate data management activities among other data-producing ministries. As a result, techniques for data collection and management may vary across ministries, agencies may duplicate or "silo" efforts, and interagency rivalries may proliferate.[2] Legal and functional independence can establish clearer roles and increase coordination among data producers within a country, leading to higher-quality data and to more cost-effective use of scarce resources.

Inadequate budgets

NSOs that lack independence often do not manage their own budgets and receive little government funding, making them reliant on donor resources to fulfill even their most basic functions.[3] These budget limitations are the most commonly cited reason for lack of progress on statistical capacity in Sub-Saharan countries. In a review of national statistical strategies, all but two countries cited insufficient salaries or other limitations on human resource capacity and turnover as major obstacles.[4] Although only limited data are available by country or region, the Marrakech Action Plan for Statistics estimates that an average low-income country of 10–50 million people would require a doubling in public spending on the statistical system to produce a core set of data for development.[5]

Statistical agencies have had difficulty obtaining adequate budget increases and are sometimes unable to carry out their required activities with available funds. Liberia estimated a funding gap of almost $23 million between 2009 and 2013.[6] The budget for Nigeria's Federal Office of Statistics reveals minimal (if any) relationship

between the proposed and actual funding received; one year, it received no budgetary capital beyond salaries. Nigeria's national databank received less than half the requested budget each year between 1999 and 2003, receiving no funding at all for two years during this period. Similarly, although most African countries have no population-level data on cause of death,[7] 6 African countries have no budget support at all for vital statistics registration, and 23 have inadequate budget support.[8]

This lack of funding and predictability in annual budget cycles makes it impossible for NSOs to function properly. As stated in the Statistical Master Plan for the Nigeria National Statistical System, "It is not clear what an institution is expected to do if its activities are inadequately funded. For instance, if the budget for a survey is reduced by 50 percent, should the survey be abandoned because we cannot conduct half a survey; neither can an institution 'cut corners' so that it can conduct the survey."[9]

Many NSOs in Africa turn to donor funding to cover day-to-day operations.[10] Donors provided 54 percent of the NSO budget in Tanzania and 36 percent in Kenya as of their most recent national statistical plan, and both Ethiopia and Malawi planned to fund more than 80 percent of their total budgets from outside donors.[11] In many countries, nearly all core data collection activities are funded primarily by external sources.[12]

In some cases, heavy reliance on donor-funded projects may increase the autonomy of an NSO. But donor dependence also influences the type of data that are collected and analyzed as well as the kinds of expenses that can be covered, with potential additional effects on the accuracy, timeliness, relevance, and availability of data.

Government policymakers prioritize disaggregated, high-frequency data linked to subnational units of administrative accountability. By contrast, donors are more likely to fund sample surveys with national representation. Recent calls for a scale-up of household surveys to serve as national baselines for the post-2015 agenda are an example of this kind of donor emphasis.[13] Governments are more likely to value consistency in key development measures over time, whereas donors are more likely to emphasize consistency across countries. Tanzania's national poverty estimates are an example of these tensions. Some external funders advocated using a standardized questionnaire module used in other countries. Yet doing so would have meant abandoning an almost 20-year series of poverty measures from an existing and technically rigorous approach to

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ii. Angola, Burkina Faso, Cape Verde, Chad, Egypt, Ethiopia, Liberia, Mauritius, Mozambique, Rwanda, Tanzania, and Uganda.

measuring poverty in Tanzania.[14] In the end, a compromise was reached to maintain both series.

Most donors do not cover salaries, but they do finance field-work and pay per diems associated with specific survey products. These restrictions limit the ability to attract and retain qualified staff and create an incentive for inefficiency by extending fieldwork for lengthy periods, potentially leaving core statistical functions unattended.

As a result, NSO staff are incentivized to prioritize donor proj-ects even if they do not directly support national statistical goals.

Lack of autonomy

Other government institutions that require independence to ful-fill their duties, such as central banks or universities, have limited the potential for political interference in decision-making and resource constraints by becoming functionally independent gov-ernment agencies.[15] Increasing the independence of NSOs could improve their effectiveness and efficiency, allow for great control over resources and staff retention, and increase public confidence and credibility of national statistics.

Regional support for formal autonomy of NSOs is promising, but progress varies. Several countries in Western Africa granted their NSOs autonomous corporate status after the Authority of the Economic Community of Western African States supported a policy that encouraged the independence of NSOs, in 1995.[16] Zam-bia's Strategic Plan for 2003–07 called for a new legal framework to improve the effectiveness of its national statistical service, thereby transforming the Central Statistical Office into an autonomous institution rather than a government agency.[17] Kenya's STATCAP project[iii] includes efforts to create new statistics legislation and help operationalize statistics reform that has already been legislated, but these efforts have yet to be operationalized.[18]

In addition to enhancing formal autonomy, several countries are attempting to improve their legal frameworks in other ways. Tanzania's STATCAP loan seeks to change NSO staffing policies by allowing for a reformed payment scale and performance-based salaries, among other reforms.[19] The Liberian national strategy for the development of statistics identifies human resource constraints

iii. STATCAP is a lending program run by the World Bank to support statistical systems.

as a weakness, stating that "poor working conditions make it dif-ficult to attract and retain qualified, experienced professional and technical staff."[20] Zambia's strategic plan notes that highly skilled staff often leave to go to institutions that offer better pay.[21] And Uganda's framework cites the need for "improved career prospects for all statistical personnel" as a strategic goal.[22]

Additional updates and reforms will need to ensure that NSOs and other departments that produce statistics have the capacity and status to produce reliable, high-quality statistics without govern-ment influence. If institutions are to be stable, rule-making frame-works and enforcement mechanisms need to be in place to ensure the implementation of national policies.

Challenge 2: Misaligned incentives contribute to inaccurate data

Discrepancies between administrative data and household survey–based estimates in education, agriculture, health, and poverty sug-gest significant inaccuracies in the data published by national and international agencies in some countries. These discrepancies are often the unintended consequences of misaligned incentives created by connecting data to financial incentives without adequate checks and balances in the system.

The various drivers and forms of misaligned incentives can have repercussions on data quality. One source of misalignment is the relationship between financial allocations and the production of data from line ministries. In some cases, allocation decisions are made based on data generated by offices responsible for receiving and administering such resources. Education enrollments, agricul-tural yields, and health indicators are all areas in which misaligned incentives have been found to influence data production. Even in the absence of any personal gains to individuals, incentives to increase resources can be very strong. In the education sector, for example, it is common for school funding to be allocated based on the number of students enrolled. The local government or school district that is responsible for reporting enrollment figures receives more money if enrollment increases.

Another driver of misaligned incentives occurs when, for politi-cal reasons, there are incentives to suppress or misreport certain national-level data. Examples include inflation and census data, especially where population size is used for budget allocation and allocation of parliamentary seats. In Nigeria, for example, census

results determine national and district-level policy, including the division of oil revenue, political districting, and government hiring. The 2006 census was highly politicized, resulting in violent protests and alleged fraud.[23] In Ethiopia, which also allocates budgets based on population size,[24] following contentious census results in 2008, the government intervened six years later, ordering an intercensus to verify the population sizes of two regions.[25]

A third driver of misaligned incentives is the relationship between donors and country governments. In some cases, international development partners have attached financial rewards to countries that meet certain targets, based on country-generated evidence. In these cases, country systems are incentivized to over-report outcomes in order to maximize financing.

A fourth driver involves incentive systems that reward certain activities more than others. Incentives that do not reflect the relative needs of NSOs can lead to suboptimal allocation of scarce resources. This issue arises in government policies for per diem payments and donors' inclinations to support specific activities, such as field data collection. These incentive systems often draw key personnel away from high-level tasks, attracting them to more immediate (and sometimes substantial) rewards.

The following examples illustrate how perverse incentives create discrepancies between administrative data and survey-based estimates, affecting the accuracy and trust in official statistics and the way progress on development is perceived.[iv] Together, these cases illustrate how political interference, or budget and donor funding incentives, can affect the accuracy of key development data. The absence of institutional checks and balances for data accuracy within national statistical systems is part of the story as well, as it is not that paying on a per capita basis is a bad policy idea but that the measurement and data strategy alongside the budgeting or funding strategy needs to ensure accuracy and timeliness in the data reported.

Example 1: Discrepancies in primary school enrollment

Administrative records on primary school enrollment are drawn primarily from the Education Monitoring and Information System (EMIS) databases sponsored by the United Nations Educational,

Figure 2.1 Primary school enrollment in Kenya, as reported by household survey and administrative data, 1997–2009
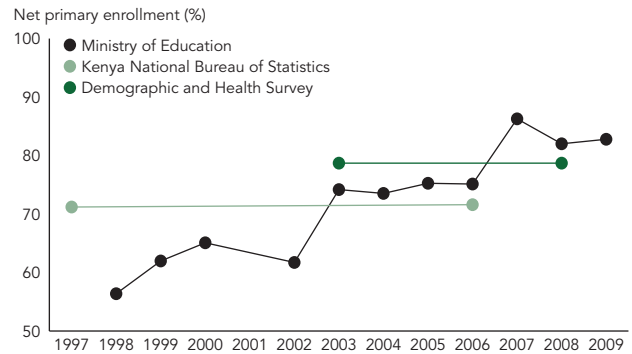
Source: Sandefur and Glassman (2013).

Scientific and Cultural Organization (UNESCO) and maintained by ministries of education throughout the region. EMIS data are typically compiled from reports submitted by school officials.

In 15 of 21 country-year periods examined, administrative data reported higher enrollment figures than did household surveys (figure 2.1). This tendency appears to be particularly pronounced in Sub-Saharan Africa, where the average difference between the two sources was 3.1 percentage points. In contrast, in the 15 non-African countries studied, enrollment reported by administrative data was 0.8 percentage point lower than enrollment reported by household surveys.

These differences are not marginal. In Tanzania, for example, enrollment rates in the EMIS database suggest the country is on the verge of reaching the MDG of universal primary enrollment. Yet household survey estimates show that one in six children between the ages of 7 and 13 is not enrolled in school.[26]

EMIS records may exhibit this kind of systematic biases for various reasons.[v] The first is underreporting by private schools. Household surveys reveal a rapid increase in private schooling in at least some countries.[27] Even where required to report to EMIS,

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iv. This section is based on a background paper prepared for this report by Sandefur and Glassman (2013).

v. Enrollment figures recorded by school registration and attendance figures measured over short periods by surveys differ. Enrollment data often overreport, because registered students may not attend school or may have registered in more than one school. Attendance data reflect absenteeism caused by illness, seasonal work, or other causes.

unregistered schools may have little incentive to do so, particularly in non-African countries, where EMIS may underreport enrollment relative to household surveys.[vi] The second, potentially more damaging bias stems from the disincentives for public school officials to report enrollment accurately. In many countries, the abolition of school fees for primary education has brought a shift to a system of central government grants linked to pupil headcounts. The desire to obtain larger grants is the main explanation behind overreporting in Tanzania. Similar discrepancies have been found in Kenya, where administrative surveys have found substantial growth whereas survey data have found limited, if any, changes in net primary enrollment.

Example 2: Discrepancies in inflation rates

In many low-income countries in Sub-Saharan Africa, very few economic data are made available to the public on a timely and frequent basis. GDP data are typically produced annually. Unemployment figures are reported only every few years and released with considerable delay. An important exception is inflation: the consumer price index (CPI) is reported monthly and is usually in the public domain. As a result, the CPI frequently becomes a highly politicized focal point for debate about the state of the economy.

The political salience of consumer prices is perhaps best underscored by the large body of literature on the role of food price rises in social unrest.[vii] Typical concerns are twofold. First, and most obviously, governments may suppress the reporting of high inflation when this indicator becomes politically sensitive. Second, computation of a CPI is a relatively complex task. African NSOs with low technical capacity must perform this complex task under tight time pressure. They receive little technical assistance relative to the large international presence in household surveys.[28]

In Cameroon, the official CPI series began in 1996, at a base of 81.2. It rose to 94.5 in 2001, representing a trend annual inflation rate of 3.1 percent. The deflators based on household survey data used to estimate national poverty lines began at 72.3 in 1996 and rose to 90.6 in 2001, yielding an annual inflation rate of 4.6 percent

over the same period. This discrepancy in reported inflation rates has direct implications for measured poverty reduction. Official dollar-a-day poverty for Cameroon as reported by the World Bank's PovcalNet database was 24.9 percent in 1996; it fell to 10.8 percent by 2001. Applying the survey deflators to recalculate purchasing power parity values yields different results: absolute poverty began in 1996 at just 19.3 percent and fell somewhat more slowly, to 9.4 percent by 2001. Official deflators yield poverty reduction of 14 percentage points in five years, whereas survey estimates show a decline of just under 10 percentage points.

Explanations for these discrepancies could include innocent calculation mistakes or differences in the methodology underlying the calculation of the CPI and the cost-of-basic-needs poverty lines. Alternatively, there could be more politically motivated reasons for the CPI calculations. Whatever the reason, this example—and others like it—reveals the need for greater autonomy and independence as a measure of protection from political interference within Cameroon's National Institute of Statistics.

Example 3: Discrepancies in vaccination rates

Like EMIS databases, many countries' health management information systems (HMIS) databases rely on self-reported information from clinic and hospital staff, which district and regional health offices aggregate. HMIS databases produce high-frequency administrative data that purport to cover the entire population. But potentially perverse incentives and limited quality controls are built into the system at each level of reporting. Individual clinicians, health officials, district officers, and headquarters seeking to meet benchmarks for renewed funding from global partners can all intentionally misreport data.

Starting in 2000, the Global Alliance on Vaccines and Immunizations (GAVI) offered low-income countries cash incentives for every additional child immunized with the third dose of the vaccine against diphtheria, tetanus, and pertussis (DTP3) based on HMIS reports. Lim and others (2008) compare survey-based DTP3 immunization rates and their growth over time with HMIS or administrative rates reported to the World Health Organization (WHO) and the United Nations Children's Fund. They find that administrative reports reported larger increases in coverage than surveys did.

In the case of both DTP3 and measles, research finds over- and underreporting of vaccination coverage by administrative

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vi.   For instance, in Kenya the EMIS system is intended to capture both public and private schools, but some informal nongovernment schools may nevertheless fail to report.

vii.   For a recent empirical analysis, see Bellemare (2011).

sources, with some countries consistently overreporting vaccination coverage data. However, the ratio of WHO to household survey coverage of DTP3 vaccination (that is, the extent of overreporting) rose after GAVI introduced its immunization services support incentives in the early 2000s. In contrast, overreporting of measles vaccination remained constant over time (figure 2.2). This analysis confirms and updates the findings of Lim and others (2008). It documents that without greater verification of self-reported administrative data, financial incentives from donors may affect the accuracy of data used by the vaccination program. These findings are not a general feature of survey versus administrative data (or a general feature of periods where vaccination rates are increasing rapidly); misreporting was specific to the vaccines incentivized by GAVI over the period.

Overprocuring inexpensive vaccines (such as measles vaccine, which costs just $0.03 a dose) does not imply large additional costs or major tradeoffs with other health system priorities. But newer vaccines donated by GAVI cost about $3.50 per dose and require several doses. Every vaccine purchased that is not used, because of inaccurate numerators or denominators in vaccination coverage, implies significant expense and opportunity cost, in both lives and money.

Not all, or perhaps even most, of the discrepancies in HMIS data are the result of the incentives to misreport provided by the GAVI immunization services support program. Weak state capacity to monitor front-line service providers is likely crucial as well. Numerators in administrative data can be inaccurate because of incomplete reporting, reporting on doses distributed rather than administered, repeat vaccination, or omission of the private sector and nongovernmental organizations. Denominators can be inaccurate because of migration, inaccurate or outdated census estimates or projections, and inaccurate or incomplete vital registration systems, among other reasons. Indeed, Burton and others (2012) note that denominators are frequently estimated by program managers in each country for the WHO's Expanded Program on Immunization based on counts or estimates by local program staff or health workers rather than census data. Finally, in countries where immunization card distribution, retention, and utilization are suboptimal and mothers report vaccination coverage from memory, survey-based coverage estimates can also be biased, particularly for multidose vaccines, which can be underreported.[29]

Figure 2.2 Vaccination rates for DTP3 and measles, as reported by the World Health Organization and household surveys, 1990–2011

DTP3

Ratio of WHO to DHS coverage

Measles

Ratio of WHO to DHS coverage
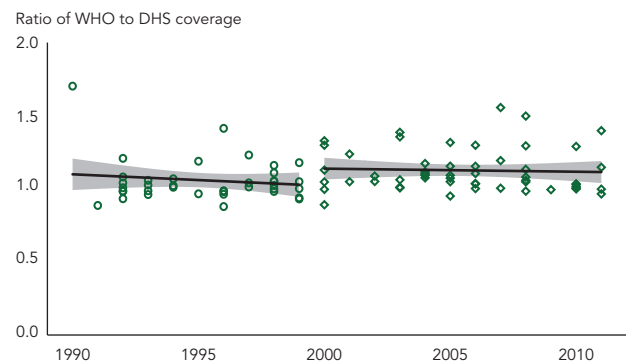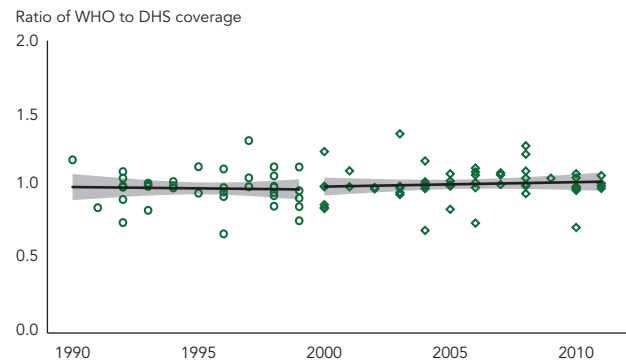
Note: Circles indicate data points before 2000, and diamonds after 2000. The shaded area shows the 95 percent confidence interval.
Source: Sandefur and Glassman (2013).

Challenge 3: Donor priorities dominate national priorities

Donor priorities and restrictions on how money is spent do not always help produce good data. Donors routinely spend millions on micro-oriented survey fieldwork and one-off impact evaluations while core statistical products like censuses and vital statistics are updated only infrequently. According to a UNICEF (2013) report, only 60 countries in the world have complete vital registration, and none of them is in Africa. This means that routine administrative

data that are the basis for day-to-day funding allocation decisions remain inaccurate and unchecked. Another source of distortion is the fact that donors tend not to pay salaries, instead paying for per diems, computers, and fieldwork for specific surveys.

Many ad hoc donor-funded projects generate significant revenue for statistics offices and individual staff. As a result, leaders of national statistical agencies may lack incentives to improve national statistics capacity. Government statisticians earn in a month what external consultants earn in a day.[30] Increasing take-home pay by chasing donor-funded per diems via workshop attendance, training, and survey fieldwork is the order of the day. It is not surprising then that core national statistics products and quality are not a priority. In addition, donor-driven projects—such as projects that monitor the effectiveness of aid—may be given first priority by the host country, regardless of how the project fits into the country's larger goals and progress.[31] These trends are not unique to Africa: in Europe, increasing amounts of NSO financing come from public and private customers rather than NSO parent ministries.[32]

In Nigeria between 2010 and 2012, only about half of all funding for statistics went toward technical assistance, statistics training and information systems, and general support. Of the 26 separate grants for statistics identified in the PARIS21 PRESS (Partner Report on Support to Statistics), 2 supported the MDGs, 2 supported the management of migration, and 10 supported disease- or sector-specific surveys.[33] Over the same period, 12 of 19 grants in Mali and 9 of 21 in Malawi were earmarked for specific sectors or surveys.

Nigeria received significant funding for statistical capacity from donors. But its progress toward increasing capacity was not very different from that of Liberia and Sierra Leone, which received minimal donor funding. The PARIS21 PRESS concludes that "little relationship can be drawn between the volume of support to statistics and the recipient's statistical capacity."[34]

Aside from specific surveys, donor commitments are also often misaligned with national statistics plans. The share of programs aligned with national strategies for the development of statistics was only about 50 percent in 2010 and 52 percent in 2011.[35]

If donors want better data, they should fund national statistical systems differently, prioritizing core statistical products and supporting NSOs in ways that empower them to recruit and retain qualified staff. They need not abandon special surveys and evaluations, but they should make sure that the core statistical products are not forgotten in the process.

Box 2.1 Selected institutions supporting open data

- AfDB
- AUC
- Code4Africa and Code4Kenya
- Civic Stack
- Open Data Foundation
- Open Data Initiative
- Open Data Institute
- Open Data Research Network
- Open Development Technology Alliance
- Open Government Partnership
- Open Knowledge Foundation
- Statistics for Results
- UN
- UNECA
- World Bank's Open Data
- World Wide Web Foundation

Challenge 4: Access to and usability of data are limited

Even the best, most accurate data are useless if they are not accessible to governments, policymakers, civil society, and other users in an easy-to-use format.[36] Indeed, accessibility is essential if data are to be used at all to make, improve, or implement policies or hold governments accountable.

Many African countries are part of the growing global trend toward evidence-based decision-making. They see data as a tool for positive change. But the push for open data has been slower to catch on in Africa than in other regions.[viii] Many NSOs and other government departments are hesitant to publish their data, lack the capacity to publish and manage data according to international best practices, or do not understand what data users want to know and how to get that information to them.[37] Resistance to making data available stems from a range of factors, from fear of political backlash to concerns about capacity and accuracy.[38] The World

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viii. For the purposes of this report, the terms "better data access and use" and "open data" are used interchangeably. "Open data" should not be confused with open data portals, such as the open data portals of the African Development Bank.

Table 2.1 Status of right to information laws and open government in Africa and other regions

REGION	RIGHT TO INFORMATION LAWS	OGD INITIATIVE	DEMAND FROM CIVIL SOCIETY AND TECHNOLOGISTS	GOVERNMENT SUPPORT FOR OGD INNOVATION	CITY OR REGIONAL OGD
Africa	35.71	28.57	28.10	14.81	5.29
Americas	60.77	50.77	42.31	29.06	34.19
Asia Pacific	56.92	50.00	46.15	29.06	23.93
Europe	61.36	55.45	61.82	38.89	47.47
Middle East and Central Asia	22.50	38.75	21.25	8.33	8.33
Total	49.48	44.68	42.47	25.83	25.69

Note: Data are mean averages of normalized (*z*-score) and scaled values. Higher scores are better. OGD is open government data.
Source: ODI (2013).

Bank and regional African institutions such as the African Union Commission (AUC), United Nations Economic Commission for Africa (UNECA), and the African Development Bank (AfDB) have been working with NSOs to overcome some of these challenges (box 2.1), but progress has been slow.

The World Wide Web Foundation and the *Open Data Barometer Report* by the Open Data Institute show that in terms of indicators relating to right to information laws, civil society demand for data, and open government initiatives, Africa is lagging behind Europe and the Americas but outperforming the Middle East and Central Asia (table 2.1).[39] Their indexes do not give much weight to the statistical products of NSOs, however, focusing instead on government budgets and commercially useful information, such as maps and transportation timetables. With encouragement from donors and other partners, NSOs in Africa could and should take the initiative in making their data widely available.

Beyond these aggregate measures, there is the simple reality that many citizen- and donor-funded household surveys remain unavailable—as reports or microdata—to other public ministries or to the public at large, limiting their utility for affecting policymaking or holding government accountability. The catalog of the International Household Survey Network (IHSN) indicates that only 56 percent of the microdata from household surveys conducted between 2000 and 2014 are available to the public.[ix] For

example, in principle, the microdata from the 2005–06 Kenya Integrated Household Budget Survey, the country's most recent multipurpose consumption survey, are available on request from the Kenya National Bureau of Statistics. In practice, the survey data have been made available only to a small circle of researchers under the proviso that they not be shared more widely.[40] As a result, since 2008 there have been only 157 citations in Google Scholar for the survey—and many of them cite published tabulations rather than new analyses. In contrast, there have been nearly 26 times as many citations (4,020) for the 2008/09 Kenya Demographic and Health Survey, for which microdata were made more widely available.[41]

Country concerns about open data

The open data movement has received an overwhelmingly positive response from donors, but some stakeholders in Africa voice concerns about making data more available. Some of these concerns stem from issues related to incentives to keep data hidden.

ix. See the IHSN catalog (http://catalog.ihsn.org, accessed April 8, 2014). Although this estimate is the best available, it is not perfect, for several reasons. First, the IHSN catalog is not exhaustive; surveys are frequently

added. Second, IHSN considers a survey an "accessible online" survey only if it can be obtained online free of charge and without severe restrictions. IHSN does not include surveys that countries share in their catalogs under "licensed access" if there is insufficient information to assess whether or how data are treated. Third, the IHSN catalog includes datasets such as the IPUMS (Integrated Public Use Microdata Series) census datasets (rather than publish their own census microdata, countries allow IPUMS to publish subsets of the microdata).

Sometimes we would get a number of data requests from international agencies, and then we would see on their website and you wonder how they got those figures. The man in charge of national accounts was asking where that data was coming from because he has no idea. There were two sets of data: what we have and then what they have.

—Interview at 2013 African Statistical Yearbook Validation Meeting

A workshop at the 2010 CEBIT Gov 2.0 conference explored why countries have been reluctant to release data online. It identified a number of reasons including:[42]

- Many NSOs face severe budget constraints and competing priorities from donors and other departments, as well as lack of staff capacity.
- Many NSOs worry that open data initiatives, like the AfDB's open data portal and other similar portals, may increase their workload by requiring them to provide and update data to multiple portals. Limited staff resources for preparing and entering metadata and microdata into open data portals can be a major limitation, particularly if NSO staff did not collect or analyze the data, as is often the case on donor-funded projects.
- NSO leadership and staff often underestimate the benefits of open data, partly because they fear portals may expose NSOs to criticism and backlash.

Further, as figure 2.3 illustrates, African countries are far from readiness and implementation of open data, and very distant indeed from the potential for impact on policy and accountability.

Increased use of open data has the potential to challenge the way many countries in the developed and developing world think about the ownership and accessibility of information. Many of the issues facing open data supporters are the same questions that plague all data producers. How do you make available the data that people, policymakers, the media, researchers, businesses, and other audiences need and use? How can the value of data transparency and use be made more evident to governments? The way forward is to systematically address the concerns of national governments, local statistics staff, and policymakers; ensure compliance with a set of minimum quality standards for data being posted online; and improve coordination between the major producers of data and the data portals, as further discussed in chapter 3.

Notes

1. Fukuyama (2004); Acemoglu and others (2008).
2. Government of Nigeria (2010).

Figure 2.3 Rankings of selected African countries on open data readiness, implementation, and impact

COUNTRY	READINESS SUBINDEX	IMPLEMENTATION SUBINDEX	IMPACT SUBINDEX	ODB OVERALL
Africa	25.90	14.73	5.72	14.29
Kenya	49.70	45.88	21.55	43.06
Morocco	36.46	27.84	16.59	27.24
Mauritius	35.71	30.59	0.00	26.08
Rwanda	36.71	27.84	0.00	24.27
Ghana	39.51	23.53	0.00	21.60
Tunisia	63.52	10.98	26.46	21.02
South Africa	35.39	18.43	10.31	19.20
Botswana	12.16	21.57	0.00	16.08
Uganda	23.99	13.33	23.07	16.15
Tanzania	20.43	17.65	0.00	14.51
Malawi	28.24	11.76	16.52	14.47
Ethiopia	15.45	10.59	0.00	8.70
Burkina Faso	17.63	8.24	0.00	7.35
Benin	11.60	9.41	0.00	7.28
Namibia	11.57	9.02	0.00	7.00
Senegal	28.57	4.71	0.00	6.46
Cameroon	7.11	6.67	5.56	5.65
Zimbabwe	15.20	5.88	0.00	5.30
Zambia	11.84	5.10	0.00	4.23
Nigeria	36.90	0.00	0.00	4.35
Mali	6.15	0.39	0.00	0.00

Note: ODB is Open Data Barometer.

Source: ODI (2013).

3. National Bureau of Statistics, Tanzania (2010); Kenya Bureau of Statistics (2008); National Statistical System Secretariat, Malawi (2008); Central Statistical Agency, Ethiopia (2009).

4. National Bureau of Statistics, Tanzania (2010); Kenya Bureau of Statistics (2008); National Statistical System Secretariat, Malawi (2008); Central Statistical Agency, Ethiopia (2009); Liberia Institute of Statistics and Geo-Information Services (2008); Government of Uganda (2008); National Institute of Statistics, Rwanda (2008); Government of Nigeria (2010); Central Statistical Office, Zambia (2003).

5. Memorandum, Joint Marrakech (2004).

6. Liberia Institute of Statistics and Geo-Information Services (2008).

7. Mathers, Boerma, and Ma Fat (2009).

8. UNECA and AfDB (2012).

9. Government of Nigeria (2010).

10. Jerven (2013).

11. Central Statistical Agency, Ethiopia (2009); Kenya Bureau of Statistics (2008); National Statistical System Secretariat, Malawi (2008); National Bureau of Statistics, Tanzania (2010).

12. Jerven (2013).

13. Video, Paris21 side meeting, UN General Assembly, 2013 (www.paris21.org/node/1593).

14. Sandefur and Glassman (2013).

15. Presnak (2005); Acemoglu and others (2008); Kallison and Cohen (2010); Heitor and Horta (2012); Altbach, Reisberg, and Rumbley (2009).

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Chapter 3

The Way Forward: Specific Actions for Governments, Donors, and Civil Society

The call for a data revolution by the High-Level Panel on the Post-2015 Development Agenda catalyzed efforts to strengthen and improve statistical quality and capacity in the coming years. Stakeholders at every level widely accept the importance of these efforts and the need for increased investment in data. But the path forward requires translating this consensus into specific actions that will be reflected in more and better data available to all.

Action around a data revolution in Africa should begin by addressing the underlying problems surrounding the production, analysis, and use of the building blocks of national statistical systems. The data revolution must also help modify the relationship among donors, governments, and the producers of statistics and work in accordance with national statistical priorities. Finally, the data revolution should support countries in their efforts to produce good data rather than focusing only on producing more data more quickly.

Each stakeholder has a unique and important role to play in moving this agenda forward. We identify three actionable recommendations for national governments, international technical agencies and donors, and civil society and research organizations. Each recommendation directly addresses one or more of the problems outlined in chapter 2. If implemented, they will help build a solid foundation for a true data revolution that can be led and sustained in the region.

Fund more and fund differently

Current funding for statistical systems and NSOs is not only insufficient, it is also structured in ways that do not help produce and disclose accurate, timely, and relevant data, particularly building block data. The working group identified three strategies for donors and governments that will better support national statistical systems.

Reduce donor dependency and fund NSOs more from national budgets

As economies in Africa grow, governments must allocate more domestic funding to their own systems. Indeed, countries that have greatly improved their NSOs like South Africa and Rwanda have had strong national leadership characterized by political ownership and domestic funding. The costs of improving the data building blocks is not yet known (and estimating these costs should be a next step in priority countries), but it is likely that financing data building blocks is relatively modest compared with the public spending and policies these statistics seek to track and evaluate. Still, an order of magnitude increase will be needed to make a difference. Forgoing a few specialized or impact evaluation household surveys will not generate enough resources to support a census or a vital registration system.

In the best-case scenario, governments should allocate funding from revenues as most appropriate given their macroeconomic and fiscal situation. Where more creative mechanisms are needed, governments might consider routine allocation of a share of sectoral spending to be tied to activities tied to national strategies for the development of statistics—1 percent for data, for example, or a "data surcharge" added to any donor project to fund the public good of data building blocks. PARIS21 has begun to track public spending on statistics through its CRESS tool;[i] this effort would allow international agencies and external groups to track whether budgetary needs as established in the national strategy for the development of statistics are being met.

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i. The CRESS (Country Report on Support to Statistics) is an initiative led by the country to gather all data relating to the funding of the national statistical system, whether from domestic resources or external aid. The objective is to improve efficiency of the national statistical system through better information sharing and coordination.

A data compact between donors and countries could help create incentives for greater progress and investment in good data

Mobilize more donor money via government-donor compacts, and experiment with pay-for-performance agreements

Governments should press for more donor funding and more flexible donor funding in support of national statistical systems with a funding modality—a data compact—that will create incentives for greater progress and investment in "good data"—defined as data that are accurate, timely, relevant, and available.

Current donors to statistical capacity building efforts could experiment with a pay-for-performance model that links funding directly to progress on agreed measures of good data. Alternatively, donors might link funding to progress in improved accuracy of just one data building block. Payment should be designed in a way that avoids creating perverse incentives and is based on measured accuracy—possibly using the data discrepancy methodology described in the background paper.

Using a pay-for-performance approach, through a national integrated system of data quality assessment and verification, would allow donors to reward better accuracy, timeliness, and availability not only of internationally comparable measurement of the next generation of MDGs but also of data building blocks, which in any case form the basis of any goals or indicators that might emerge from the international process.

The United Kingdom's Department for International Development has rolled out a cash-on-delivery type program for education that could serve as a pilot for this type of donor contract. The Global Fund is mobilizing the cash-on-delivery aid model and could use it to help strengthen national data systems for measuring health outcomes—a priority area for the fund in the coming years. Other donors, particularly those currently funding large portions of statistical capacity building activities, could adopt this form of contract, making a portion of funding contingent on the delivery of desired outcomes of statistical capacity building programs rather than the programs themselves. In some cases, particularly in countries with the weakest statistical systems, current levels of funding should be maintained, with additional funds made available based on the achievement of measurable improvements in data quality and timeliness.

If this recommendation is to be implemented, the compact will need a functioning system of unambiguous criteria, based on international standards and consensus, on which to assess performance.

In some areas, such measures are clearly defined. Measures such as timeliness and availability are also straightforward to track systematically using existing data portals, such as the IHSN catalog. In other areas, however, more work will need to be done to determine how best to implement them.

Demonstrate the "value proposition" of the building block statistics

All stakeholders need to better advocate for the building blocks of statistics. A good first step is to generate high-level agreement among national governments and donors that greater priority needs to be placed on establishing good national statistical systems as well as on the principles for their support. Articulating the value proposition of good data to different constituencies is a sorely needed and underprioritized second step. Finally, at both the global and national levels, donors (including foundations) should support relevant civil society organizations that advocate for and monitor progress on national statistical systems.

Build institutions that can produce accurate, unbiased data

Many of the political economy problems identified in this report hinge on vulnerability to political and interest group influence, as well as rigidities in civil service and government administration that limit governments' ability to attract and retain qualified staff. However, greater autonomy cannot be afforded without greater accountability for more and better data. With these issues in mind, the working group came up with three recommendations.

Enhance functional autonomy

Many countries are moving toward greater legal autonomy, in which NSOs function independently of government ministries and are offered greater independence from political influence. These efforts, as well as efforts to operationalize legislation already in existence, should be increasingly supported through existing programs and initiatives to support statistical capacity. NSOs should be actively supported to improve their governance frameworks by developing or updating legislation. An independent governing board might be one way to ensure checks and balances. In particular, the director

of the NSO could be nominated by a board of directors rather than by the country's executive; as long as the executive has no objection to the nominee, the legislature would be responsible for confirming him or her (Mexico's NSO operates this way). Board membership could go beyond politicians and public sector officials to include academics and private sector representatives. Even donors might serve on the board, as voting or nonvoting members. The director should be appointed for a fixed tenure, in order to increase institutional stability and independence from political changes.

Experiment with new institutional models

New institutional models such as public-private partnerships or crowdsourcing could be further developed to collect hard-to-obtain data or outsource data collection activities. The government or donors and others could provide financing to private organizations to handle specific operations (such as open data programs, data collection, or analysis). Such models could support increased functional and financial autonomy while retaining, if not increasing, NSO accountability to stakeholders. They could also free NSOs to focus on more oversight functions, including setting norms and standards and providing quality control for national statistics. Developed countries, such as the United Kingdom, have established public-private partnerships to generate demand for and increase access to open data.[1] Crowdsourcing and scaling up of big data have a role to play in data production and use, but it will be important to clearly define their potential uses and limitations, in order to avoid the confusion or inaccuracies that could result without clear standards, protocols, and quality control.

Formalize relationships between NSOs and central banks or other ministries and government agencies

NSOs that are hindered by lack of staff capacity, institutional autonomy, and linkages to rigid pay scales could benefit by moving their operations into the framework of the country's central bank. In many cases, both central banks and NSOs already monitor and publish statistics that relate to external sector statistics or monetary policy.[2] Several developed countries, including Australia, Canada, and the Netherlands, have increased cooperation between NSOs and central banks. In Australia, a single entity, the Australian Prudential Regulation Authority, manages and collects data, which are then shared with both the Australian Bureau of Statistics and the Reserve Bank of Australia. In Canada, a shared database on financial data, which is housed in the central bank, is jointly owned by Statistics Canada, the Bank of Canada, and regulatory authorities.[3] Nigeria's central bank and its National Bureau of Statistics formally collaborate on GDP estimates and price indexes.[4] Table 3.1 suggests some other potential relationships that could be established between central banks and NSOs.

Prioritize the core attributes of data building blocks: Accuracy, timeliness, relevance, availability

Much country and donor funding has gone to censuses and surveys over the past decade. This investment has paid off: more than 80 percent of African countries conducted a census in the past decade, and

Table 3.1 Types of contracts between central banks and statistical offices for the provision of data

TYPE OF CONTRACT	MAIN FEATURES OF CONTRACTS FOR PROVISION OF MACROECONOMIC STATISTICS
• Memorandum of understanding	• Guiding principles governing primary and shared responsibilities
• Seconding of staff	• Modalities of cooperation and information exchange
• Annual service contract	• Payment for service
• Shared responsibilities for statistical program	• Specialized data (on core inflation, for example) provided by statistical agency
	• Central bank provides managerial and technical support to the national statistical agency
	• Central bank represented in the national statistical committee that develops the work program for the national statistical agency

Source: Adapted from Dziobek and Tanase (2008).

The NSI's [Rwanda's National Statistical Institute] mandate should extend beyond surveys and censuses to include the exercise of quality control over information collected by line ministries, which are often the weakest link in the data chain.

—IMF (2008)

an average of 22 household and firm surveys were conducted each year over the same period.[5] National-level planning for statistics has also improved: about 60 percent of Sub-Saharan countries now have a national statistics development strategy in place.[6]

Too little has been invested in data building blocks, however, and data are sometimes distorted by political economy challenges. Future efforts should prioritize funding and technical assistance to establishing data building blocks with core data attributes. Doing so implies greater systemic attention to and investment in the broader national statistical system, not just the NSO, and a sharper focus on better-quality administrative data across sectors.

Build quality control mechanisms to improve accuracy

Many of the challenges related to misaligned incentives and inaccurate data can be mitigated by mechanisms for oversight and quality control of data collection and analyses carried out by line ministries. Statistics South Africa's sectoral assessment framework provides mutually agreed upon improvement plans and evaluates data quality on a number of quality indicators.[7] NSOs might also improve support to line ministries by embedding people who report to the statistics agency in line ministries (as is done in Côte d'Ivoire[8]). For organizations with limited staff capacity, such an effort might entail tradeoffs with core work programs.

Improving the relationships between national statistical systems and monitoring and evaluation practices can also improve the quality of statistical data. As many countries' Poverty Reduction Strategy Papers include monitoring and evaluation (M&E) components, increased attention has been given to improving the quality and scope of the national statistical systems that supply data for these purposes.[9] For example, Uganda's Poverty Eradication Action Plan describes the importance of the data collected by the Uganda Bureau of Statistics in supporting the country's poverty M&E strategy. Integrating norms and standards for the quality of data used in M&E activities and by NSOs provides an opportunity to expand quality control practices and improve NSO capacity.

NSOs should also use existing tools to improve the quality of statistical data. The UN Statistics Division provides open access to a significant library of nationally and internationally developed data quality references.[10] It also provides guidelines for national quality assurance frameworks, encouraging countries to formalize

and operationalize their own frameworks or improve those that already exist.[11]

NSOs or higher-level statistical boards should set standards and maintain quality control over most official statistical production throughout all stages of production, processing, and dissemination of statistics, thus reducing misaligned incentives and developing quality control systems. The International Development Association provides support that can enhance quality control and statistical capacity building. It could play a greater role by including a statistical capacity building indicator on its scorecard.

Encourage open data

Open data initiatives provide an opportunity to modernize and improve backroom and client-facing operations. National governments should release all nonconfidential, publishable data, including metadata, free of charge and online in a format that is analyzable and machine readable. Data should be produced and stored using international metadata standards, and open data principles should apply. Guidelines, including restrictions on using, reusing, and sharing the data for commercial or noncommercial purposes, should be clearly stated and explained. NSOs should publish public calendars that indicate when data are collected, released, and published. They should include documentation of standards and requirements for all data produced or disseminated, including digitization and open data requirements, in their national statistical strategy documents. All data submitted to official data portals should include the technical tools needed to access and submit metadata. These data should be made available in a user-friendly, easily extractable way. Loan and grant programs should include a clause about agreeing to pursue open data principles. These documents and plans should create and include mechanisms to link ongoing statistical capacity work with open data initiatives and to assist interested statistical agencies in building capacity.

The AfDB and World Bank should expand their lending to support statistical capacity building and leverage open data policies. Data financed using public monies should be released through open data portals for use by stakeholders including civil society, academic institutions, and the general population. At the World Bank, recent funding of the Living Standards Measurement Study and the Integrated Surveys on Agriculture builds in the release of data into grant agreement conditions. Full implementation of the Strategy for

> The process for defining MDG indicators and methodologies often involves little prior consultation with national statistical systems, despite the fact that they are the main providers of data.
>
> —*Jutting (2013)*

the Harmonization of Statistics in Africa will help build capacity, but other methods to improve coordination between the growing number of nongovernmental and private sector statistics and open data organizations are still needed. For instance, countries should decide which platform they use to post data, as long as the platform meets the minimum international standards. Countries should also control how data are managed and where they are placed. If a data portal is created in coordination with the country, the country should commit and assign staff to maintain and update the portal to ensure it continuously complies with international standards.

To prevent duplication of efforts at the country level and ensure better use of limited country resources, coordination and cooperation among UNECA, AUC, AfDB, AFRISTAT (Observatoire Économique et Statistique d'Afrique Sub-saharienne), subregional organizations, the UNESCO Institute of Statistics, the World Bank, and other major open data players should be increased.

Monitor progress, facilitate accountability

Improved country consultation regarding national needs and priorities must be incorporated into the selection of goals for the post-2015 agenda. These goals should include objectives to improve data capacity, such as motivating national progress on vital registration and data quality or progress in improving the accuracy, timeliness, and availability of routine data from administrative and sectoral health information systems and use for decision-making by different stakeholder groups. Other goals should be based on the availability of data and how data collection will complement or compete with the priorities of national and regional policymakers. Some share of financial support for post-2015 agenda goals should be allocated to measurement through national M&E systems and the strengthening of NSOs. Inconsistencies between national and international monitoring efforts and quality standards can undermine the credibility of national statistics.[12] At the very least, estimates used to quantify progress should not undermine national systems.

Civil society organizations, including think tanks, and nongovernmental organizations are well positioned to monitor the progress of both donors and governments in improving data quality and evaluating discrepancies. A UN report on the post-2015 agenda emphasizes the importance of civil society organizations monitoring

the results of commitments, progress toward goals, and accessibility of disaggregated data.[13] Debapriya Bhattacharya, of the Centre for Policy Dialogue, a Bangladesh think tank, defines a bold role for think tanks in the post-2015 agenda, suggesting that "Southern initiatives should link up, to create a stronger platform for Southern voices in intergovernmental processes."[14] In many cases, think tanks are able to initiate policy discussions that might prove challenging for large bureaucratic or politically sensitive organizations like the World Bank or UN.

Conclusion

Nowhere in the world is the need for better data more urgent than in Africa. The bourgeoning "data revolution" movement should seize on the opportunity to strengthen national statistical systems in the region from the ground up, focusing on underlying political economy issues that have slowed progress on data for decades. The Data for African Development Working Group hopes the recommendations of this report will help catalyze a real and sustainable data revolution in Africa, in order to improve well-being and development outcomes regionwide.

Notes

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Appendix 1

Biographies of Working Group Members and Staff

Working Group Members

Angela Arnott currently serves at the Team Leader of the Working Group on Education Management and Policy Support for the Association for the Development of Education in Africa, which is hosted by the African Development Bank. In this role, she coordinates the merger of three Working Groups on Education Statistics, Sector Analysis, and Education Finance, managing the Secretariat in Harare and the node in Dakar. In this role, she has built an Africa-wide network for national capacity building in EMIS, Finance, and Sector Analysis and to promote their application for policy support within regional and international development frameworks, such as AU Second Decade of Education, EFA, MDGs, and PRSPs. Prior to her management of the Working Group, Ms. Arnott worked as a consultant on health- and education-related projects for African governments, regional economic institutions, and international organizations. Ms. Arnott is South African and currently resides in Harare.

Ibrahima Ba has served as the Managing Director of the National Institute of Statistics of Côte d'Ivoire since July 25, 2012. Prior to his current position he served as a technical advisor to the Prime Minister from 2007 to 2011 in his role as Head of Operations Coordination Centre identification and electoral census. Prior to that Mr. Ba served as the ex-Deputy Project Manager responsible for statistics and demography project identification and election of the Prime Minister and as an independent consultant in statistics, demography, population, information, planning, design and project management, identification, and organization of the populations of elections.

Donatien Beguy joined APHRC in Nairobi in August 2007 as a postdoctoral research fellow after completing his PhD in Demography in April 2007 from University Paris 10, France. He also holds a Bachelor of Science degree in Statistics from the Ecole Nationale Supérieure de Statistique et d'Economie Appliquée, Abidjan (Côte d'Ivoire), and a Master of Arts degree in Demography from University Paris 1, France. He has 15 years of research experience in the population and health field, publishing in renowned peer-reviewed journals on a range of issues including adolescent health, particularly reproductive health, urban health, migration, and urbanization. He has led the development of the Statistics and Surveys Unit at APHRC, and currently leads the Unit, providing technical guidance through trainings and hands-on support to research programs at APHRC and external partners in Africa through survey design and implementation, and statistical analysis and modeling.

Misha V. Belkindas is a co-founder and managing director of Open Data Watch, a nonprofit organization supporting the open data agenda for national statistical systems. He is also a fellow at the Center for Social and Economic Research in Warsaw, and heads a Foreign Advisory Panel on Statistical Education at the Higher School of Economics in Moscow. He spent 20 years at the World Bank where he designed and managed the largest statistical capacity building programs worldwide—STATCAP, ICP, and numerous trust funds. He was instrumental in establishing and financing PARIS21 and contributed to development of the Marrakesh action plan and its implementation as well as to drafting the Busan action plan. Mr. Belkindas holds an MA in Mathematical Economics from Vilnius University in Lithuania and a PhD in Mathematical Economics from Academy of Sciences of Russia. He was awarded an Honorary Doctorate in Economics by the Academy of Sciences of Ukraine. Mr. Belkindas is an elected member of International Statistical Institute, Royal Statistical Society, American Statistical Associations, and many other scientific societies. He taught at Vilnius University and was an adjunct professor at Georgetown University. He has published on a wide range of topics of input-output analysis, transitional economies, and management of statistical systems.

Mohamed-El-Heyba Lemrabott Berrou held the position of Manager of the PARIS21 Secretariat at the Development Co-operation Directorate of the Organisation for Economic Co-operation and Development from March 2009 to March 2012. He joined the Health Metrics Network Executive Board in April 2009. Mr. Berrou, a Mauritanian national, has over eight years of experience in his country's government as an Adviser in charge of the Studies, Analysis, and Evaluation Unit and subsequently as Director of Studies and Planning at the Human Rights, Poverty Reduction, and Social Integration (Government) Commission. He was responsible for the design, monitoring, and evaluation of the Poverty Reduction Strategy Paper and targeted poverty reduction programs, as well as conducting studies aiming at a better understanding and monitoring of poverty and poverty-related issues (poverty profiles, qualitative and quantitative surveys, and so on). In August 2007, he was appointed Senior Adviser to the democratically elected President of the Islamic Republic of Mauritania. He was in charge of the Productive Sectors, Infrastructure, and Land Planning Unit. His duties included advising the President on policies in numerous sectors (mining, oil, and gas; agriculture; fisheries; livestock; water; energy; industry; environment; information and communication technologies; tourism); monitoring the implementation of government action plans and presidential instructions; and contributing to the preparation of presidential official visits and participation in relevant summits. He is now a freelance consultant in the fields of socioeconomic development and statistical capacity development. Mr. Berrou, who prefers to be called *Abadila*, holds two Master of Science degrees in Mathematics and Applied Mathematics from the University of Arizona, Tuscon, as well as a Master's degree in Applied Mathematics from the University of Paris-VII in France.

Ties Boerma is the Director of the WHO Department of Health Statistics and Informatics within the Innovation, Information, Evidence, and Research Cluster at WHO in Geneva. He obtained degrees in medicine (MD, University of Groningen, Netherlands) and medical demography (PhD, University of Amsterdam) and has over 25 years of experience working in public health and research programs in developing countries, including 10 years in Africa. In the United States, Dr. Boerma worked for Demographic and Health Surveys as Health Coordinator and as Director of the MEASURE Evaluation project, while holding an appointment as Associate Professor in the Department of Epidemiology at the University of North Carolina at Chapel Hill. In Africa, he worked for UNICEF both as Associate Regional Adviser in eastern and southern Africa and as a district-based Monitoring and Evaluation Adviser in Kenya, as well as the leader of a National Institute for Medical Research/Royal Tropical Institute-Amsterdam research and intervention project on HIV/AIDS in Mwanza, Tanzania. Dr. Boerma has published extensively on monitoring and evaluation, health information, HIV/AIDS, and maternal and child health in epidemiological, demographic, and public health journals.

Peter da Costa is a development specialist with more than two decades of experience working in Africa as well as on global issues and initiatives. His areas of expertise include policy uptake of research; strategic communication; monitoring and evaluation; and organizational development. He has consulted extensively with multilateral and bilateral development agencies as well as philanthropic foundations and independent monitoring organizations. As Africa-based consultant to the William and Flora Hewlett Foundation, he provides support across the portfolio of the Foundation's Global Development and Population Program. He holds a PhD in Development Studies from the School of Oriental and African Studies, University of London. He is based in Nairobi.

Alex Ezeh, after joining APHRC in 1998, was appointed APHRC's Executive Director in 2001, and has steered the institution to phenomenal growth to date. He is also the Director of the Consortium for Advanced Research Training in Africa and Honorary Professor of Public Health at the University of the Witwatersrand, South Africa. He holds a PhD and a Master of Arts degree in Demography from the University of Pennsylvania, and a Master of Science degree in Sociology from the University of Ibadan in Nigeria. He has more than 25 years of experience working in the population and public health fields and has authored numerous scientific publications covering a broad range of fields including population and reproductive health, urban health, health metrics, and education. He also currently serves on the boards and committees of several international public health organizations including the Alliance for Health Policy and Systems Research at WHO, PATH, International Union for the Scientific Study of Population, Health Policy and Systems Research Programme of the Netherlands Research Organizations, and the Wellcome Trust. He believes that African researchers and scientists can do more to improve life and well-being in Africa;

that African scholars can produce excellent, globally respected, and locally relevant research while being based in Africa; and that it does not take a whole lot to make visible a difference in Africa.

Dozie Ezigbalike is the Data Management Coordinator at the African Centre for Statistics of UNECA. His duties entail overseeing UNECA corporate data resources based on current and standard data management practices and providing policy advice to African countries on methods, policies, standards, and appropriate technologies for managing and disseminating statistical data products effectively and efficiently to various user communities. He also advises them on incorporating geospatial techniques and tools in all stages of statistical processes. Prior to this role, he was the Chief of Geoinformation Systems Section of UNECA. From November 2002 to May 2004, he coordinated the knowledge management activities of UNECA's change management initiative—the Institutional Strengthening Programme. Before joining UNECA in 2001, he lectured at the universities of Zimbabwe (1988–90), Melbourne (1990–98), and Botswana (1998–2000).

Victoria Fan is a research fellow at the Center for Global Development. Her research focuses on the design and evaluation of health policies and programs as well as aid effectiveness in global health. Fan joined the Center after completing her doctorate at Harvard School of Public Health where she wrote her dissertation on health systems in India. Fan has worked at various nongovernmental organizations in Asia and different units at Harvard University and has served as a consultant for the World Bank and WHO. Fan is investigating health insurance for tertiary care in Andhra Pradesh, conditional cash transfers to improve maternal health, and the health workforce in India.

Christopher Finch is a Senior Social Development Specialist at the World Bank based in Nairobi. He and the Kenya team are supporting policymakers to enhance transparency and accountability in public financial management and decentralization, as specified under Kenya's new Constitution. He is also helping community-driven and local service delivery projects to strengthen social accountability mechanisms that enable citizens to participate in and monitor local projects, including through geo-mapping community-level project information on web-based maps. He co-leads the Bank's recent support to Kenya's open data initiative, which makes multiple government datasets available for the first time in an electronic, downloadable format. He manages a small outreach program that is engaging media and civil society, together with technologists, to analyze and disseminate data in formats that are relevant to citizens. He also manages the Kenya Governance Partnership Facility grant.

Meshesha Getahun, an Ethiopian, studied statistics for his undergraduate degree and economics for his postgraduate degree. Much of his professional experience is in the area of statistics, particularly national accounts statistics. He served for several years as Head of the National Accounts Division at the Ministry of Finance and Economic Development of Ethiopia before joining the Common Market for Eastern and Southern Africa (COMESA). Since 2006, he has worked as a statistician in the Statistics Unit of COMESA.

Amanda Glassman is the Director of Global Health Policy and a senior fellow at the Center for Global Development, leading work on priority-setting, resource allocation, and value for money in global health. She has 20 years of experience working on health and social protection policy and programs in Latin America and elsewhere in the developing world. Prior to her current position, Glassman was principal technical lead for health at the Inter-American Development Bank, where she led health economics and financing knowledge products and policy dialogue with member countries, designed the results-based grant program *Salud Mesoamerica 2015*, and served as team leader for conditional cash transfer programs such as Mexico's *Oportunidades* and Colombia's *Familias en Acción*. From 2005 to 2007, Glassman was deputy director of the Global Health Financing Initiative at the Brookings Institution and carried out policy research on aid effectiveness and domestic financing issues in the health sector in low-income countries. Before joining Brookings, Glassman designed, supervised, and evaluated health and social protection loans at the Inter-American Development Bank and worked as a Population Reference Bureau Fellow at the U.S. Agency for International Development. Glassman holds a MSc from the Harvard School of Public Health and a BA from Brown University, has published on a range of health and social protection finance and policy topics, and is the editor and co-author of the books *From Few to Many: A Decade of Health Insurance Expansion in Colombia* (IDB and Brookings 2010) and *The Health of Women in Latin America and the Caribbean* (World Bank 2001).

Kobus Herbst is currently the Deputy-Director of the Africa Centre for Health and Population Studies. As a public health physician, his interest in research data management started with his involvement in the Wits/MRC Agincourt Demographic and Health Study in 1992 and his subsequent appointment as project leader of the center's demographic surveillance project in 2001. Internationally, Dr. Herbst served on the Developing Countries Coordinating Committee of the European Developing Countries Clinical Trial Partnership. He is the principal investigator of the Wellcome Trust–funded INDEPTH iSHARE2 initiative to harmonize and improve access to data collected by member demographic and health surveillance sites in 21 African and 5 Southeast Asian countries.

Kutoati Adjewoda Koami, AUC.

Catherine Kyobutungi heads the Health Challenges and Systems Research Program at APHRC, where she joined as a postdoctoral fellow in May 2006. Her research interests are in the epidemiology of noncommunicable diseases in the African region and in health systems strengthening. She is an alumna of the University of Heidelberg, having completed her doctoral studies in epidemiology in the then Department of Tropical Hygiene and Public Health in April 2006. She also obtained a Master of Science degree in Community Health and Health Management in 2002 from the same department. Prior to her graduate studies, she studied medicine at Makerere University, Kampala, after which she worked as a medical officer at Rushere Hospital, a rural health facility in Western Uganda for three years. Before and during her graduate studies, she was an assistant lecturer and later a lecturer in the Department of Community Health at the Mbarara University of Science and Technology. She is driven by the belief that Africa has the potential to solve its own problems, and she tries to make her own contribution, however small.

Paul Roger Libete is Chef de Département des Statistiques Démographiques et Sociales at the Institut National de la Statistique of Cameroon. He joined the National Directorate of Statistics and National Accounts in July 1985. In 1989, he joined the National Directorate of the Second General Census of the Population and Housing, in part responsible for thematic analysis, and responsible for analysis, technical coordination, and field operations of DCAT between 1991 and 1998. He has also been involved in the

technical preparation of the third RGPH. In September 2000, he was appointed Deputy Director, and in May 2009, he was promoted to Head of Department of Demographic and Social Statistics at the National Institute of Statistics. With international expertise in demographic and health surveys, surveys on AIDS Indicator, and MICS, he provided technical support in Cameroon, Chad, Republic of Congo, Côte d'Ivoire, DRC, Gabon, Madagascar, Mali, and Niger.

Themba Munalula is head of statistics at the Common Market for Eastern and Southern Africa (COMESA). He has overall responsibility for the development and implementation of a statistical strategy that aims to provide statistics to COMESA's regional integration agenda. This involves coordination of statistical policy for the 19 member countries to ensure their alignment to the COMESA Treaty mandate. Prior to COMESA, he worked as a statistician for the Zambia Central Statistical Office and after that as a socioeconomist for the United Nations World Food Programme. He holds a BSc in Mathematics and Statistics from University of Zambia, an MSc in Quantitative Development Economics from University of Warwick, and an MSc in Information Technology from University of Cape Town. He is currently serving on the International Statistical Institute's global Statistical Capacity Building Committee. He also coordinates the African Development Bank's Statistical Capacity Building program in COMESA member states.

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Peter Speyer is responsible for IHME's data-seeking, management, and dissemination activities. He oversaw the creation and implementation of the Global Health Data Exchange, a catalog and repository for health-related data. He collaborates with ministries, agencies, and international organizations globally to increase the availability and use of health-related data. And he manages IHME's data visualization activities. Prior to joining IHME, he spent most of his career in strategy and product management positions in the media industry. He holds a Master of Business Administration from Temple University and a Master in Business and Engineering from the University of Karlsruhe, Germany.

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Working Group Staff

Jessica Brinton served as the coordinator for APHRC's contributions to the Data for African Development Working Group, focusing on expert convening, policy engagement, and communications. In addition to her Working Group role, Ms. Brinton is a core member of the Center's Policy Engagement and Communications team, leading online communications and focusing on policy engagement efforts across the Center's chief research areas. Prior to APHRC, Ms. Brinton worked at CGD and as a U.S. Congressional Staff member. She holds a Master's degree in Political Science.

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