A WORLD THAT COUNTS

MOBILISING THE DATA REVOLUTION FOR SUSTAINABLE DEVELOPMENT

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ACKNOWLEDGEMENTS

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A WORLD THAT COUNTS

MOBILISING THE DATA REVOLUTION FOR SUSTAINABLE DEVELOPMENT

Report prepared at the request of the United Nations Secretary-General, by the Independent Expert Advisory Group on a Data Revolution for Sustainable Development.

November 2014

EXECUTIVE SUMMARY

Mobilising the data revolution for sustainable development

Data are the lifeblood of decision-making and the raw material for accountability. Without high-quality data providing the right information on the right things at the right time; designing, monitoring and evaluating effective policies becomes almost impossible.

New technologies are leading to an exponential increase in the volume and types of data available, creating unprecedented possibilities for informing and transforming society and protecting the environment. Governments, companies, researchers and citizen groups are in a ferment of experimentation, innovation and adaptation to the new world of data, a world in which data are bigger, faster and more detailed than ever before. This is the data revolution.

Some are already living in this new world. But too many people, organisations and governments are excluded because of lack of resources, knowledge, capacity or opportunity. There are huge and growing inequalities in access to data and information and in the ability to use it.

Data needs improving. Despite considerable progress in recent years, whole groups of people are not being counted and important aspects of people's lives and environmental conditions are still not measured. For people, this can lead to the denial of basic rights, and for the planet, to continued environmental degradation. Too often, existing data remain unused because they are released too late or not at all, not well-documented and harmonized, or not available at the level of detail needed for decision-making.

As the world embarks on an ambitious project to meet new Sustainable Development Goals (SDGs), there is an urgent need to mobilise the data revolution for all people and the whole planet in order to

monitor progress, hold governments accountable and foster sustainable development. More diverse, integrated, timely and trustworthy information can lead to better decision-making and real-time citizen feedback. This in turn enables individuals, public and private institutions, and companies to make choices that are good for them and for the world they live in.

This report sets out the main opportunities and risks presented by the data revolution for sustainable development. Seizing these opportunities and mitigating these risks requires active choices, especially by governments and international institutions. Without immediate action, gaps between developed and developing countries, between information-rich and information-poor people, and between the private and public sectors will widen, and risks of harm and abuses of human rights will grow.

An urgent call for action: key recommendations

The strong leadership of the United Nations (UN) is vital for the success of this process. The Independent Expert Advisory Group (IEAG), established in August 2014, offers the UN Secretary-General several key recommendations for actions to be taken in the near future, summarised below:

1. **Develop a global consensus on principles and standards:** The disparate worlds of public, private and civil society data and statistics providers need to be urgently brought

together to build trust and confidence among data users. We propose that the UN establish a process whereby key stakeholders create a "Global Consensus on Data", to adopt principles concerning legal, technical, privacy, geospatial and statistical standards which, among other things, will facilitate openness and information exchange and promote and protect human rights.

2. Share technology and innovations for the common good: To create mechanisms through which technology and innovation can be shared and used for the common good, we propose to create a global "Network of Data Innovation Networks", to bring together the organisations and experts in the field. This would: contribute to the adoption of best practices for improving the monitoring of SDGs, identify areas where common data-related infrastructures could address capacity problems and improve efficiency, encourage collaborations, identify critical research gaps and create incentives to innovate.

3. New resources for capacity development: Improving data is a development agenda in its own right, and can improve the targeting of existing resources and spur new economic opportunities. Existing gaps can only be overcome through new investments and the strengthening of capacities. A new funding stream to support the data revolution for sustainable development should be endorsed at the "Third International Conference on Financing for Development", in Addis Ababa in July 2015. An assessment will be needed of the scale of investments, capacity development and technology transfer that is required, especially for low income countries; and proposals developed for mechanisms to leverage the creativity and resources of the private sector. Funding will also

be needed to implement an education program aimed at improving people's, infomediaries' and public servants' capacity and data literacy to break down barriers between people and data.

4. Leadership for coordination and mobilisation: A UN-led "Global Partnership for Sustainable Development Data" is proposed, to mobilise and coordinate the actions and institutions required to make the data revolution serve sustainable development, promoting several initiatives, such as:

- A "World Forum on Sustainable Development Data" to bring together the whole data ecosystem to share ideas and experiences for data improvements, innovation, advocacy and technology transfer. The first Forum should take place at the end of 2015, once the SDGs are agreed;

- A "Global Users Forum for Data for SDGs", to ensure feedback loops between data producers and users, help the international community to set priorities and assess results;

- Brokering key global public-private partnerships for data sharing.

5. Exploit some quick wins on SDG data: Establishing a "SDGs data lab" to support the development of a first wave of SDG indicators, developing an SDG analysis and visualisation platform using the most advanced tools and features for exploring data, and building a dashboard from diverse data sources on "the state of the world".

Never again should it be possible to say "we didn't know". No one should be invisible. This is the world we want – a world that counts.

For more information on the composition, terms of reference and work of the IEAG, see www.undatarevolution.org

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WHAT IS THE **DATA REVOLUTION** FOR SUSTAINABLE DEVELOPMENT?

Data are the lifeblood of decision-making. Without data, we cannot know how many people are born and at what age they die; how many men, women and children still live in poverty; how many children need educating; how many doctors to train or schools to build; how public money is being spent and to what effect; whether greenhouse gas emissions are increasing or the fish stocks in the ocean are dangerously low; how many people are in what kinds of work, what companies are trading and whether economic activity is expanding.

To know all this and more involves a systematic effort of finding out. It means seeking out high-quality data that can be used to compare outcomes and changes over time and between and within countries, and continuing to do so, year after year. It means careful planning, spending money on technical expertise, robust systems, and ever-changing technologies. It means making data available, building public trust in the data, and expanding people's ability to use it, so that their needs are at the heart of these processes.

Since 2000, the effort involved in monitoring the Millennium Development Goals (MDGs) has spurred increased investment to improve data for monitoring and accountability. As a result, more is known now about the state of the world and, particularly, the poorest people in it. But despite this significant progress, huge data and knowledge gaps remain about some of the biggest challenges we face, and many people and groups still go uncounted. These gaps limit governments' ability to act and to communicate honestly with the public. Months into the Ebola outbreak, for example, it is still hard to know how many people have died, or where.

And now the stakes are rising. In 2015, the world will embark on an even more ambitious initiative, a new development agenda underpinned by the Sustainable Development Goals (SDGs). Achieving these goals will require integrated action on social, environmental and economic challenges, with a focus on inclusive, participatory development that leaves no one behind. This in turn will require another significant increase in the data and information that is available to individuals, governments, civil society, companies and international organisations to plan, monitor and be held accountable for their actions. A huge increase in the capacity of many governments, institutions and individuals will be needed to deliver and use this data.

Fortunately, this challenge comes together with a huge opportunity.

**THE GROWTH OF DATA:
TRENDS IN DATA
AVAILABILITY, DATA
OPENNESS AND
MOBILE PHONE USE**

— All Surveys

— Open Access Surveys

— Mobile-cellular
subscriptions
(per 100 inhabitants)

Number of surveys registered
by the International Household
Survey Network, by year in which
data collection was finished*

Subscriptions per 100 inhabitants**
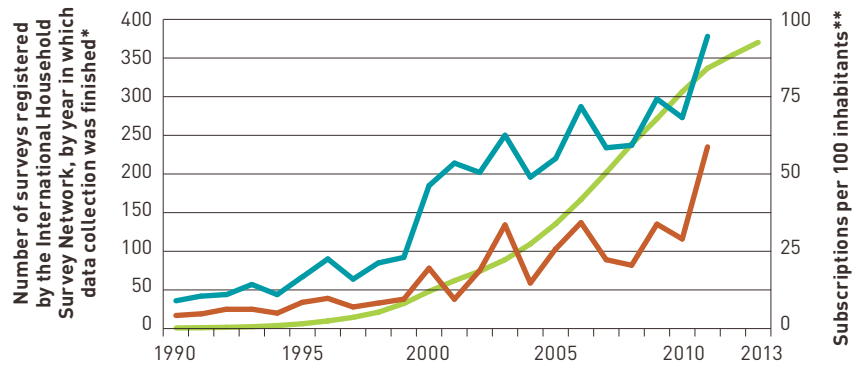
Source: * International Household Survey Network (http://catalog.ihsn.org/index.php/catalog). For a detailed analysis of global
trends in survey data availability, see, e.g., Demombynes and Sandefur (2014), "Costing a Data Revolution", Center for
Global Development, Working Paper 383.

** World Bank (http://data.worldbank.org/indicator/IT.CEL.SETS.P2), based on data from the International
Telecommunication Union (ITU), World Telecommunication/ICT Indicators database

The volume of data in the world is increasing exponentially: one estimate has it that 90% of the data in the world has been created in the last two years.[i] As the graph above demonstrates, the volumes of both traditional sources of data (represented by the number of household surveys registered) and new sources (mobile subscriptions per 100 people) have been rising, and openness is increasing (numbers of surveys placed online). Thanks to new technologies, the volume, level of detail, and speed of data available on societies, the economy and the environment is without precedent. Governments, companies, researchers and citizens groups are in a ferment of experimentation, innovation and adaptation to the new world of data. People, economies and

societies are adjusting to a world of faster, more networked and more comprehensive data – and all the fears and dangers, as well as opportunities, that brings.

This is the "data revolution": the opportunity to improve the data that is essential for decision-making, accountability and solving development challenges. This report calls on governments and the UN to act to **enable data to play its full role in the realisation of sustainable development by closing key gaps in access and use of data:** between developed and developing countries, between information-rich and information-poor people, and between the private and public sectors.

This report has been prepared in response to a request by

the Secretary-General of the United Nations. We hope it will also be helpful to Member States, the UN System as a whole, and to the large constituencies that support the three pillars of the UN: peace, human rights and development.

Revolutions begin with people, not with reports, and the data revolution is no different. This report is not about how to create a data revolution – it is already happening – but how to mobilise it for sustainable development. It is an urgent call for action to support the aspiration for sustainable development and avert risks, stop and reverse growing inequalities in access to data and information, and ensure that the promise of the data revolution is realised for all.

DEFINING THE **DATA REVOLUTION**

Since the phrase was coined in May 2013 in the report of the High-Level Panel of Eminent Persons on the post-2015 Development Agenda, the "data revolution" has come to mean many things to many people. Here, we take it to mean the following:

The data revolution is:

» An explosion in the volume of data, the speed with which data are produced, the number of producers of data, the dissemination of data, and the range of things on which there is data, coming from new technologies such as mobile phones and the "internet of things", and from other sources, such as qualitative data, citizen-generated data and perceptions data;

» A growing demand for data from all parts of society.

The data revolution for sustainable development is:

» The integration of these new data with traditional data to produce high-quality information that is more detailed, timely and relevant for many purposes and users, especially to foster and monitor sustainable development;

» The increase in the usefulness of data through a much greater degree of openness and transparency, avoiding invasion of privacy and abuse of human rights from misuse of data on individuals and groups, and minimising inequality in production, access to and use of data;

» Ultimately, more empowered people, better policies, better decisions and greater participation and accountability, leading to better outcomes for people and the planet.

Minimising the risks and maximising the opportunities of the data revolution

As with any change, **the data revolution comes with a range of new risks**, posing questions and challenges concerning the access to and use of data, and threatening a growing inequality in access to and use of information. These risks must be addressed.

Fundamental elements of human rights have to be safeguarded: privacy, respect for minorities or data sovereignty requires us to balance the rights of individuals with the benefits of the collective. Much of the new data is collected passively, from the 'digital footprints' people leave behind, from sensor-enabled objects or is inferred via algorithms.

The growing gap between the data people actively offer and the amounts of "massive and passive" data being generated and mediated by third parties fuels anxiety among individuals and communities.

Some of this is well-founded. As more is known about people and the environment, there is a correspondingly greater risk that the data could be used to harm, rather than to help. People could be harmed in material ways, if the huge amount that can be known about people's movements, their likes and dislikes, their social interactions and relationships is used with malicious intent, such as hacking into bank accounts or discriminating in access to services. People and societies can be harmed in less material, but nonetheless real ways if individuals are embarrassed or suffer social isolation as a result of information becoming public.

There is a longer-term cost if a breakdown in trust between people and the institutions that have access to their data means that people do not feel confident giving consent to uses of their data for the social good, such as to track patterns of disease or assess inequalities.

People and the planet could also be harmed inadvertently, if data

that have not been checked for quality are used for policy or decision-making and turn out to be wrong.

There is also a risk of growing inequality. Major gaps are already opening up between the data haves and have-nots. Without action, a whole new inequality frontier will open up, splitting the world between those who know, and those who do not. Many people are excluded from the new world of data and information by language, poverty, lack of education, lack of technology infrastructure, remoteness or prejudice and discrimination. While the use of new technologies has exploded everywhere in the last ten years, the costs are still prohibitive for many. In Nicaragua, Bolivia and Honduras, for example, the price of a mobile

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As part of a project to engage young people in disaster risk reduction, teenagers in Rio de Janeiro have used cameras attached to kites to gather aerial images, helping to identify the presence or absence of drainage systems, the availability of sanitation facilities, and potential impediments to evacuation. In Rio, this has already led to the removal of piled-up garbage and the repair of a bridge.

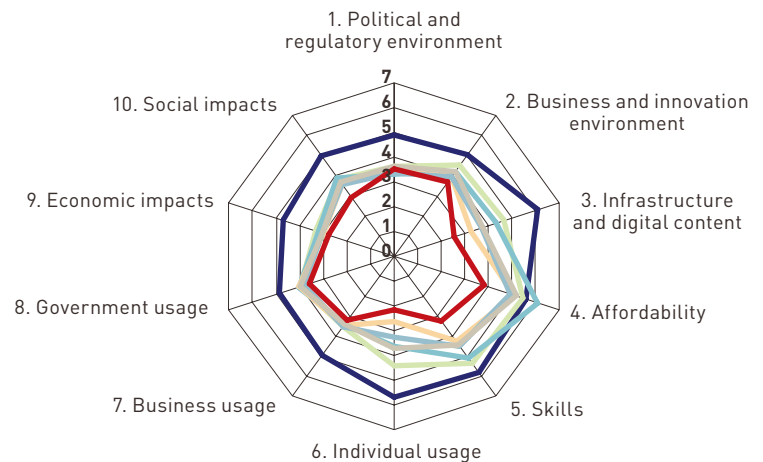*Source: UNICEF (http://www.unicef.org/statistics/brazil_62043.html)*

broadband subscription exceeds 10% of average monthly GDP per capita, compared to France and the Republic of Korea where it is less than 0.1%.[ii] The information society should not force a choice between food and knowledge.

In several countries, the public sector is not keeping up with companies, which are increasingly able to collect, analyse and respond to real-time data as quickly as it is generated. Richer countries are benefitting more from the new possibilities than poorer countries that lack the

resources for investment, training and experimentation. According to McKinsey, African countries spend about 1.1% of GDP on investment in and use of internet services, less than a third of what, on average, is spent by richer countries – meaning that the gap in internet availability and use is growing every year, as some regions accelerate ahead.[iii] The graph below shows how advanced economies are ahead of the rest of the world on almost every indicator of access to, use of, and impact of the use of digital technologies.

INEQUALITIES IN ACCESS TO AND USE OF ICT SERVICES*

- Advanced economies
- Southern, Central and Eastern European Countries
- Commonwealth of Independent States and Mongolia
- Developing Asia
- Latin America and the Caribbean
- Middle East and North Africa
- Sub-Saharan Africa

1. Political and regulatory environment
2. Business and innovation environment
3. Infrastructure and digital content
4. Affordability
5. Skills
6. Individual usage
7. Business usage
8. Government usage
9. Economic impacts
10. Social impacts

* Regional score averages based on the Global Information Technology Report 2013, by the World Economic Forum

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We believe that the data revolution can be a revolution for equality. More, and more open, data can help ensure that knowledge is shared, creating a world of informed and empowered citizens, capable of holding decision-makers accountable for their actions. **There are huge opportunities before us and change is already happening.**

But if our vision is of a world where data and information reduce rather than increase inequalities, we are still a long way from realising that ambition. Without deliberate actions, the opportunities will be slower in coming and more unequally distributed when they arrive, and the risks will be greater.

It is up to governments to put in place the rules and systems to realise this vision, working with domestic stakeholders and in the multilateral system, at regional and global levels. Governments, through the legal systems they enforce, are the ultimate guarantors of the public good. If the new world of data is to be based on public trust and public consent, there has to be a confidence that governments can and will play this role, at least in part through the creation and enforcement of new rules.

It is governments – ideally working in collaboration with forward looking and socially responsible private institutions, civil society and academia – that can set and enforce legal frameworks to guarantee data privacy and security of data for individuals, and ensure its quality and independence. It is governments that can balance public and private interests and create systems that foster incentives without creating unacceptable inequalities, adopt frameworks for safe and responsible use and manage the international system that can transfer finance and technical expertise to bring the least informed people and institutions up to the level of the most informed. And it is governments that are elected to respond to citizens on their choices and priorities.

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Indonesian authorities estimated that 50,000 people in Sumatra suffered from respiratory illness as a result of forest fires in March 2014. Several major cities were effectively closed for weeks. The environmental impacts were equally severe, with valuable forest and peat land burned, contributing significantly to Indonesia's greenhouse gas emissions. The immediate availability of free forest fire data on the World Resources Institute (WRI)'s Global Forest Watch site (GFW) enabled companies – Asia Pulp and Paper (APP) and Asia Pacific Resources Limited (APRIL), Indonesia's two largest pulp and paper producers – to evaluate daily where their limited resources are best deployed to respond to fires on lands they are responsible for. The governments of Singapore and Indonesia also used GFW-Fires' ultra–high resolution imagery, available through a partnership with Digital Globe, to crack down on illegal burning by companies. And GFW-Fires, combined with the Indonesian Government's Karhutla (Land and Forest Fires) Monitoring System, enabled firefighters to reduce response time from 36 hours to 4 hours.

Source: World Resources Institute (http://www.wri.org/our-work/project/global-forest-watch)

WE BELIEVE
THAT THE DATA REVOLUTION CAN BE A
REVOLUTION FOR EQUALITY

New institutions, new actors, new ideas and new partnerships are needed, and all have something to offer the data revolution. National statistical offices, the traditional guardians of public data for the public good, will remain central to the whole of government efforts to harness the data revolution for sustainable development. To fill this role, however, they will need to change, and more quickly than in the past, and continue to adapt, abandoning expensive and cumbersome production processes, incorporating new data sources, including administrative data from other government departments, and focusing on providing data that is human and machine-readable, compatible with geospatial information systems and available quickly enough to ensure that the data cycle matches the decision cycle. In many cases, technical and financial investments will be needed to enable those changes to happen, and strong collaboration between public institutions and the private sector can help official agencies to jump straight to new technologies and ways of doing things.

NEW DATA, HEALTH SERVICES AND MALARIA

Malaria
is one of the biggest killers in several developing countries and imposes a huge strain on health systems. Using new data sources to inform planning and policy can improve services and reduce deaths.

The Mtrac programme in Uganda,[iv] supported by UNICEF, the WHO and USAID, uses SMS surveys completed by health workers to alert public health officials to outbreaks of malaria, and lets them know how much medicine is on hand at health facilities, so they can anticipate and resolve any shortages. Before Mtrac, the Ministry of Health had very little health facility-level data, either paper or electronic. By March 2014, thanks to this programme, about 1,200 district health officials, 18,700 health facility workers, and 7,400 village health team workers were using the system. Now the Ugandan government is collecting data from thousands of health facilities, capturing and analysing results within 48 hours at a total cost of less than US$150 per poll. The Anonymous Hotline receives on average more than 350 actionable reports per month, and approximately 70% of these reports are successfully followed up at the district level within 2 weeks. The number of facilities that are out of stock of Artemisinin-based Combination Therapies (ACTs) to treat malaria at any given time has fallen from 80% to 15%.

Research in Cote d'Ivoire shows how, in the longer term, new sources of data might also have a role in tracking and predicting epidemics of malaria or other diseases. Combining strongly anonymised data on communication patterns from the Orange mobile telephone network with information on the spread of malaria from the WHO, the University of Minnesota School of Public Health produced epidemiological models that are more detailed than any currently in use. This knowledge could be used to create services to notify doctors, field hospitals and the general public ahead of epidemics, using mobile networks or local radio. Similar work has been done on the spread of AIDS, cholera and meningitis, and could, if the data is made available, be used for rapid response and planning for new epidemics.[v] ▶
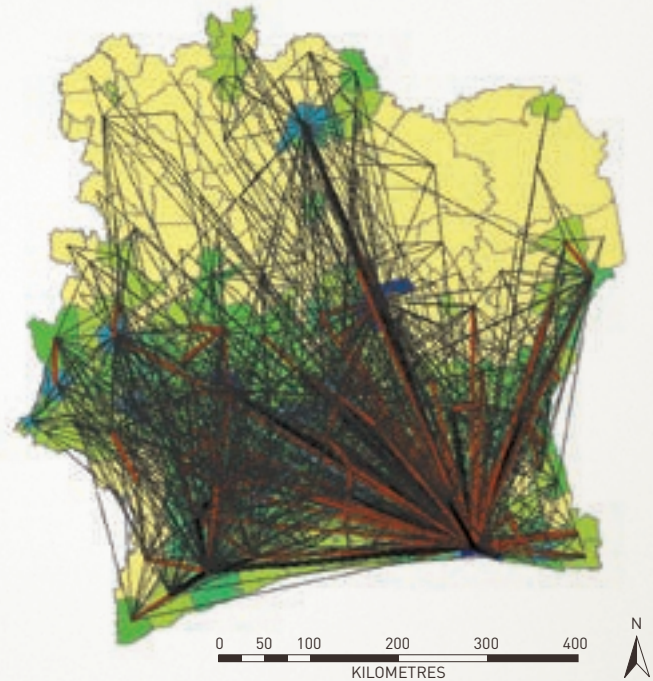
**POPULATION DENSITY AND
COMMUNICATION BY SUB-PREFECTURE**

Number of calls between sub-prefectures

—— 5.001 - 98,489
—— 98,490 - 382,559
—— 382,560 - 1,507,291
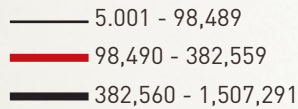
Population density per sq Km

- 4 - 25
- 26 - 45
- 46 - 64
- 65 - 95
- 96 - 176
- 177 - 585
- 586 - 4388

**MALARIA PREVALENCE AND
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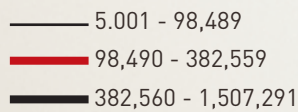
Estimated malaria prevalence

- 21.2% - 38.3%
- 38.4% - 48.7%
- 48.8% - 61.3%
- 61.4% - 81.69%
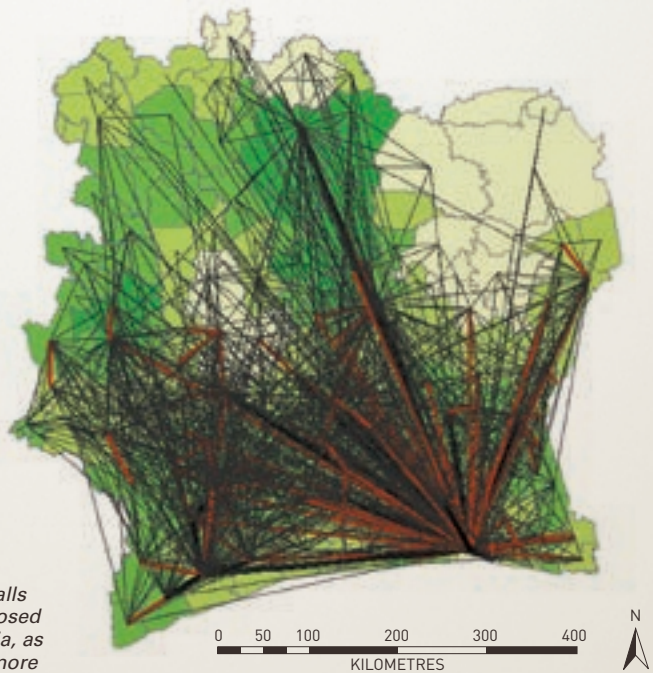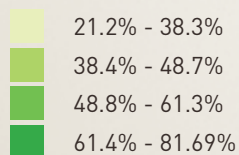
*Communication patterns of mobile phone users in Côte d'Ivoire
between sub-prefectures are shown, weighted by the number of calls
that were made between December 2010 and April 2011, superimposed
on (a) the 1998 population density and (b) the prevalence of malaria, as
estimated by Raso et al. [25]. For clarity, only edges representing more
than 5,000 calls over the 5-month observational period are shown.*

2

THE **DATA REVOLUTION** FOR SUSTAINABLE DEVELOPMENT

In September 2015, the UN Member States are expected to commit to an ambitious new set of global goals for a new era of sustainable development. Achieving them will require an unprecedented joint effort on the part of governments at every level, civil society and the private sector, and millions of individual choices and actions. To be realised, the SDGs will require a monitoring and accountability framework and a plan for implementation. A commitment to realise the opportunities of the data revolution should be firmly embedded into the action plan for the SDGs, to support those countries most in need of resources, and to set the world on track for an unprecedented push towards a new world of data for change.

THERE IS MUCH TO BE DONE, AND THIS IS THE MOMENT TO DO IT.

Why a data revolution for sustainable development?

Although there have been steady and dramatic improvements in recent decades, there is still work to do to create a clearer and more up-to-date picture of the world, to use in planning, monitoring and evaluation of the policies and programmes that will together achieve the SDGs, and in holding to account those in positions of power over resources and other decisions that affect people's lives.

There are two main problems to address:

- **Not enough high-quality data.** In a world increasingly awash with data, it is shocking how little is known about some people and some parts of our environment.

The world has made huge strides in recent years in tracking specific aspects of human development such as poverty, nutrition, child and maternal health and access to water and sanitation. However, **too many countries still have poor data, data arrives too late and too many issues are still barely covered by existing data.** For example, in several countries data on employment are notoriously unreliable, data on age and disability are routinely not collected and a great deal of data is difficult to access to citizens or is not available until several years have passed since the time of collection.

PERCENTAGE OF MDG DATA CURRENTLY AVAILABLE FOR DEVELOPING COUNTRIES BY NATURE OF SOURCE*

Nature of data source:

- Global monitoring
- Modelled
- Estimated
- Country, adjusted
- Country
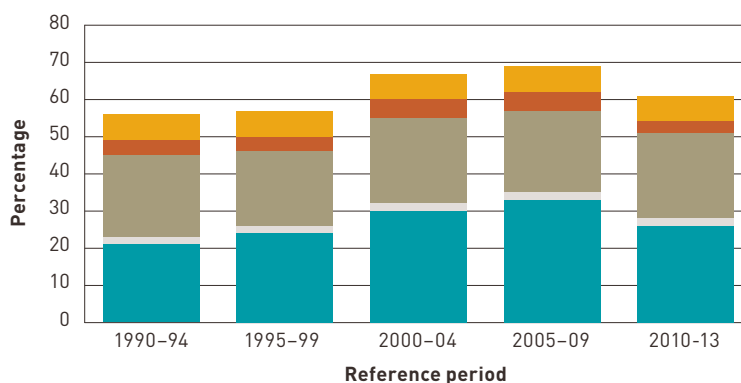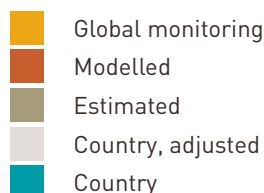
Availability is defined as the proportion of country-indicator combinations that have at least one data observation within the reference period. Figures are based on 55 MDG core indicators, as of October 2014.

Source: MDG database, maintained by the United Nations Statistics Division

The figure above presents a summary snapshot of current data availability in the MDG database (as of October 2014), covering 55 core indicators for 157 developing countries or areas. There, a country is counted as having data for an indicator if it has at least one observation over the reference period, and availability is broken down by whether the data comes from country or international data sources, and whether it is estimated, adjusted or modelled.[vi] Overall, the picture is improving though still poor, so there is no five-year period when the availability of data is more than 70% of what is required. The drop in data availability after 2010 demonstrates the extent of the time lags that persist between collection and release of data.

There is considerable variation in data availability between indicators, where, for example, data on malaria indicators is very scarce, while for the ratio of girls to boys enrolled in primary, secondary and tertiary education there is relatively good country level data available for most countries and years (though much remains to be done in tracking other indicators essential to monitoring educational outcomes).

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As part of the development of their National Strategy for the Development of Statistics (NSDS) completed in partnership with the Partnership in Statistics for Development in the 21st Century (PARIS21), Rwanda identified some simple, yet systematic, improvements that could dramatically help make better use of evidence for policy making. One innovation included moving up the publishing date of the Consumer Price Index by five days each month in response to needs from both policy makers and businesses. The release date of the Demographic and Health Survey and Living Conditions Survey was changed so that the information could be used in measuring Rwanda's first poverty reduction strategy and so the information could inform planning for the next one. These changes in data scheduling increased the usefulness of the data and allowed for better evidence-based decisions to be made.

Source: PARIS21 (http://www.cgdev.org/blog/better-data-rwanda)

THIS IS THE REVOLUTION

If data availability is still low for some individual indicators and/or countries, the graph below highlights how, when looked at from a country level, there has been a tremendous improvement in the ability of national statistical systems to provide data directly over the past ten years. This has been one of the greatest achievements of MDG monitoring, and is testament to the tremendous efforts of many national and international organisations.

Beyond the MDG indicators, other disturbing gaps exist. **Entire groups of people and key issues remain invisible.** Indigenous populations and slum dwellers for instance, are consistently left out of most data sets. It is still impossible to know with certainty how many disabled children are in school.

Indonesia is one of the most social-media dense countries in the world today. Indonesians tweet about a range of topics, including the cost of living. A project by UN Global Pulse, the Indonesian Ministry of National Development Planning and the World Food Programme found public tweets mentioning food prices closely approximate official figures, leading to the development of a technology that extracts daily food prices from public tweets to generate a near real-time food price index. This data mining approach could be adapted to other food items and locations, not just leveraging Twitter but other crowd-sourced and social data sources.

*Source: UN Global Pulse (http://www.unglobalpulse.org/nowcasting-food-prices)*

Globally, the fact of birth has not been recorded for nearly 230 million children under age five. In 2012 alone, 57 million infants – four out of every ten babies delivered worldwide that year – were not registered with civil authorities.[vii] Violence against children is often under-reported, leading to failures to protect vulnerable children.

Data is often insufficiently disaggregated at sub-national level, making it hard for policy makers or communities to compare their progress with that of other communities or the country as a whole. In water supply, for example, the analysis of many household surveys produces a single national estimate of access to clean and safe water in rural areas, but does not show how it varies between districts.

INCREASE OVER TIME IN NUMBER OF MDG INDICATOR SERIES FOR WHICH TREND ANALYSIS WAS POSSIBLE FOR DEVELOPING COUNTRIES*

No. of indicator series with at least two data points:

- 0–5
- 6–10
- 11–15
- 16–22
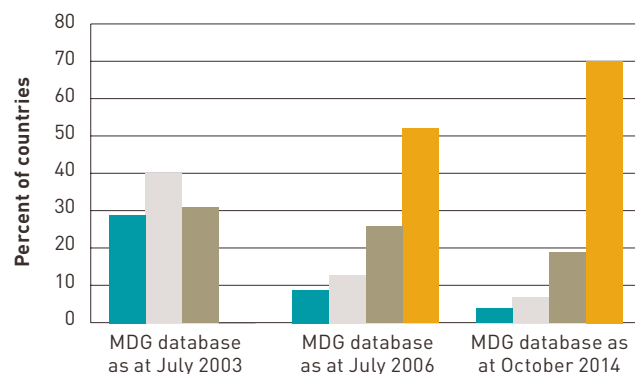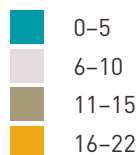
* Figures are based on a subset of 22 MDG indicators.

Source: Updated figures based on United Nations, "Indicators for monitoring the Millennium Development Goals", Report of the Secretary-General, 45th. Session of the United Nations Statistical Commission, 4-7 Mar, 2014. (E/CN.3/2014/29).

Gender inequality and the undervaluing of women's activities and priorities in every sphere has been replicated in the statistical record. Many of the issues of most concern to women are poorly served by existing data; just over half of all countries report data on intimate partner violence, and where it is reported quality is not consistent, data is rarely collected from women over 49, and data are not comparable.[viii] Very little data is available on the distribution of money or the division of labour within households. Much more data are needed on the economic roles of women of all ages as caregivers to children, older persons and the disabled in the household and in the labour force. Of the 42.9 million persons of concern to the United Nations High Commissioner for Refugees (UNHCR) globally at the end of 2013, sex composition was known for only 56 percent of the population, and sex-age composition was available for just 35 percent. A lack of demographic and location information frequently hinders needs assessment and monitoring of the global response to emergencies.[ix]

The new goals will cover a wider range of environmental issues than the existing MDGs. Data on many environmental issues is particularly sparse. There is almost no useful data on chemical pollutants, despite toxic waste dumping being a serious environmental and health issue in some countries. Likewise, we lack sound and agreed-upon metrics for tracking excessive flows of reactive nitrogen.

It is quite clear that **the monitoring of the SDGs will require substantial additional investment** in order to consolidate gains made during the MDG era and to develop reliable, high-quality data on a range of new subjects, such as climate risk mitigation or inequality, ensuring that no groups are excluded, and with an unprecedented level of detail.

- **Data that are not used or not usable.** To be useful, data must be of high quality, at a level of disaggregation that is appropriate to the issue at hand, and must be made

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In Mexico, a budget research and advocacy group called Fundar developed an online database of government farm subsidies. One of the problems brought to light was the way in which billions of dollars of the funds were distributed. Though many farm subsidy programs claim to target the neediest farmers, the database revealed that a small group of wealthy farmers had captured the vast majority of subsidy funds over time (the top 10 percent of recipients had received over 50 percent of the funds). The studies contributed to the government decision to review and change the distribution of the subsidies.
Source: Fundar (http://fundar.org.mx)

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Household survey data can be of enormous value in identifying patterns of progress among different groups and using this to inform policy. For example, the Indian government's Total Sanitation Campaign, launched in 1999, has a budget of $3.9 billion to improve access to sanitation in the country. However, data from household surveys showed that between 1995 and 2008, the outcomes were far from satisfactory. In this period, the percentage of households from the poorest 20% of Indian society practicing open defecation fell from 99% to 95%, while among the second-richest quintile it fell from 56% to 20%. Analysis of household data by UNICEF and others has helped to inform the government's efforts to improve the targeting of subsidies, in the hope of helping a larger number of the poorest people.

Source: UNICEF (http://www.unicef.org/wash/)

accessible to those who want or need to use them. Too many countries still have data that are of insufficient quality to be useful in making decisions, holding governments to account or fostering innovation. Good data are relevant, accurate, timely, accessible, comparable and produced free of political interferences.

Comparability and standardisation are crucial, as they allow data from different sources or time periods to be combined, and the more data can be combined, the more useful they are. Combining data allows for changes of scale – e.g., aggregating data from different countries to produce regional or global figures. It allows for comparison over time, if data on the same thing collected at different moments can be brought together to reveal trends. But too much

data is still produced using different standards – household surveys that ask slightly different questions or geo-spatial data that uses different geographical definitions. There is, for example, no standard definition of an "urban" area. And too little data are available at a level of disaggregation that is appropriate to policy makers trying to make decisions about local-level allocation or monitoring equitable outcomes across regions. This prevents researchers, policy makers, companies or NGOs from realising the full value of the data produced.

Access, too, is often restricted behind technical and/or legal barriers, or restricted by governments or companies that fear too much transparency, all of which prevent or limit effective use of data. Data buried in pdf documents, for

example, are much harder for potential users to work with; administrative data that are not transferred to statistical offices; data generated by the private sector or by academic researchers that are never released or data released too late to be useful; data that cannot be translated into action because of lack of operational tools to leverage them. This is a huge loss in terms of the benefits that could be gained from more open data and from being able to link data across different sectors.

Data needs to be generated with users in mind. Too often data providers underinvest in identifying and engaging those in a position to use data to drive action. Agencies with a mandate to collect public information are not always well-suited to ensuring their information is used by stakeholders, while civil society and the private sector could play a critical role in translating data into a form that is more readily useable.

The data we want for sustainable development

Too much that needs to be known remains unknown. Data could be used better to improve lives and increase the power

and control that citizens have over their destinies. Data is a resource, an endless source of fuel for innovation that will power sustainable development, of which we must learn to become effective and responsible stewards. Like any resource, it must be managed for the public good, and to ensure that the benefits flow to all people and not just the few. Data must be available, and must be turned into the information that can be confidently used by people to understand and improve their lives and the world around them.

The world we need, if the data we have is to be used to the fullest to achieve sustainable development, is a world of data that is transformed in the following ways:

- **Data for everyone.** The rules, systems and investments that underpin how official data is collected and and managed should be focused on the needs of people, while protecting their rights as the producers of that information. These data, and the information produced from them, should reflect what is important to people and the constraints and opportunities that affect their lives. This process should include all people – leaving no one out, and disaggregating in ways that allow the relevant differences and similarities between people

and groups to be reflected in analysis and policy.

Rules and standards should be aimed at reducing information inequalities and providing the highest-quality information for all, in the most easily understood format. The priority should always be to use data and information to improve outcomes, experiences and possibilities for people in the short and long term.[x]

When the data is not confidential, it should be available and useable as open data. There must be respect for privacy and personal ownership of personal data, and mechanisms in place so that people themselves have access to the information and are able to make choices accordingly. Crucially, people must have

means for redress if they feel that they are being harmed or their rights infringed by the use of their data.

- **Data for now.** If data is to be useful and support good decision-making, it has to be ready at the time when decisions are being made or where the opportunity for influencing the outcomes is there. Trade-offs between timeliness and other quality dimensions depend on the purpose to which data is being put. New technologies and innovations provide the opportunity for the public sector, citizens groups, individuals and companies to have access to data that, with due regard for privacy, security and human rights, is aligned with their own decision-making cycles and information needs – available when and

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Integration of different data sources can reduce costs, increase coverage and drive faster data collection. The MY World survey, run jointly by the UNDP, UN Millennium Campaign and the Overseas Development Institute, has gathered over 5 million responses worldwide to a question about people's priorities for themselves and their families. Data has been collected through face to face interviews, via mobile phones and online. Standardisation of the question has meant that all the data has been aggregated into a single database, open to all, and the data can be disaggregated by country, gender, age and level of education. People have used it to identify country priorities, to identify patterns of concern about specific issues, and to illustrate differences and similarities in concerns by age and gender. MY World has shown how international organisations, together with civil society groups, can use data to feed people's perceptions and priorities into the heart of political processes.
Source: UN Millennium Campaign (http://vote.myworld2015.org/)

how they want it – and strengthen policy planning, crisis early warning, programme operations, service delivery, impact evaluation, and disaster response.[xi]

● **Data for the future.** Data are a key resource not just for decision-making now but for future modelling and problem solving. It is almost impossible to precisely predict future needs, or know how current data could be re-used in the service of complex and interconnected problems as yet unknown or unsolved. Data at different timescales will be most useful for solving future problems if they are part of a flexible and connected system, not tied to one project or research question. Data that can be re-used at different scales, and combined with other data, can better reflect the complex and dynamic interactions between people and the planet. We need to begin investing in data today as a shared resource that will enable the innovations required to meet the challenges of tomorrow.

Our vision for the future

By 2020, we hope to be witnessing the emergence of a vibrant "global data ecosystem" to support the monitoring and implementation of the SDGs and in which:

● **Governments** empower public institutions, including statistical offices, protecting their independence, to take on the needed changes to respond to the data revolution and put in place regulatory frameworks that ensure robust data privacy and data protection, and promote the release of data as open data by all data producers, and build capacity for continuous data innovation.

THE VALUE OF BETTER AND MORE OPEN DATA

Collecting data, processing data and turning them into information, using data and making them open for others to use and re-use all have costs. Deciding how much money to spend on data, as opposed to other priorities, is an economic and a political decision, and spending more money on data will not always be the right choice. Although research in this area is still limited, there is some evidence that more open data and new methods of data collection and use, can save money and create economic, social and environmental value:

● A report produced by accountancy firm Deloitte for the UK's Department for Business, Innovation and Skills estimates the economic value of the data held by the public sector in the UK and released for use and re-use to be around £5 billion per year. This includes £400 million per year as the value of lives saved from reduced death rates among cardiac patients, and time savings worth between £15-58 million from the use of real-time transport data and consequent adjustments in behaviour.[xii]

● A report from McKinsey Global Institute puts the global value of better and more open data at $3 trillion per year (with most of this benefit accruing to the USA and Europe).[xiii]

● The U-report social monitoring platform established by UNICEF in Uganda has more than 240,000 young people reporting on issues that affect their communities. Early reporting of an infectious disease in banana production contributed to halting the spread of the disease, which could have cost the country $360 million per year if left unchecked.[xiv]

● Using mobile phone records to track the link between employee interactions and productivity, a small change in the schedule of coffee breaks at a Bank of America call centre, so that employees took their breaks together to encourage more interactions was found to increase productivity by $15 million a year.[xv]

- **Governments, international and regional institutions and donors** invest in data, providing resources to countries and regions where statistical or technical capacity is weak; develop infrastructures and implement standards to continuously improve and maintain data quality and usability; keep data open and usable by all. They also finance analytical research in forward-looking and experimental subjects.

- **International and regional organisations** work with other stakeholders to set and enforce common standards for data collection, production, anonymisation, sharing and use to ensure that new data flows are safely and ethically transformed into global public goods, and maintain a system of quality control and audit for all systems and all data producers and users. They also support countries in their capacity-building efforts.

- **Statistical systems** are empowered, resourced and independent, to quickly adapt to the new world of data to collect, process, disseminate and use high-quality, open, disaggregated and geo-coded data, both quantitative and qualitative. They may be less about producing data and more about managing and curating data and information created outside of their organisations.

- **All public, private and civil society data producers** share data and the methods used to process them, according to globally, regionally, or nationally brokered agreements and norms. They publish data, geospatial information and statistics in open formats and with open terms of use, following global common principles and technical standards, to maintain quality and openness and protect privacy.

- **Governments, civil society, academia and the philanthropic sector** work together to raise awareness of publicly available data, to strengthen the data and statistical literacy ("numeracy") of citizens, the media, and other "infomediaries", ensuring that all people have capacity to input into and evaluate the quality of data and use them for their own decisions, as well as to fully participate in initiatives to foster citizenship in the information age.

- **The private sector** reports on its activities using common global standards for integrating data on its economic, environmental and human-rights activities and impacts, building on and strengthening the collaboration already established among institutions that set standards for business reporting. Some companies also cooperate with the public sector, according to agreed and sustainable business models, in the production of statistical data

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RapidFTR (Rapid Family Tracing and Reunification, http://www.rapidftr.com/) is an open source mobile application used to collect crucial information about children who have been separated from their families in disaster situations. Information is shared securely on a central database for family members looking for a missing child. RapidFTR uses the same type of security as mobile banking to ensure that family-tracing information, especially photos, is accessible only by authorised users, to protect these vulnerable children. In Nyakabande transit centre in Uganda, and Rwamwanja refugee settlement camp in South Sudan, RapidFTR reduced the time required for information to become available from more than six weeks to a matter of hours, speeding up the process of family reunification.

Source: UNICEF (http://www.unicef.org/infobycountry/uganda_70090.html)

for SDGs monitoring and other public purposes.

- **Civil society organisations and individuals** hold governments and companies accountable using evidence on the impact of their actions, provide feedback to data producers, develop data literacy and help communities and individuals to generate and use data, to ensure accountability and make better decisions for themselves.

- **The media** fairly report on the statistical and scientific evidence available on relevant dimensions of sustainable development and foster an evidence-based public discourse using advanced visualisation technologies to better communicate key data to people.

- **Academics and scientists** carry out analyses based on data coming from multiple sources providing long-term perspectives, knowledge

and data resources to guide sustainable development at global, regional, national, and local scales. They make demographic and scientific data as open as possible for public and private use in sustainable development; provide feedback and independent advice and expertise to support accountability and more effective decision-making, and provide leadership in education, outreach, and capacity building efforts.

PROGRESS TOWARD UNIVERSAL CIVIL REGISTRATION AND VITAL STATISTICS (CRVS)

One of the most fundamental inequalities is between those who are counted and those who are not. Millions of people of all ages in low- and middle-income countries are denied basic services and protection of their rights because they are absent from official records. Lacking records of their birth and civil status, they are excluded from health coverage, schooling, social protection programs, and humanitarian response in emergencies and conflicts.

A well-functioning CRVS system is essential to overcome this injustice. It is also vital for policy making and for monitoring, generating statistics for policy formulation, planning and implementation, and monitoring of population dynamics and health indicators on a continuous basis at the national and local level. These data help to identify inequalities in access to services and differences in outcomes. They also improve the quality of other statistics, such as household surveys, that depend on accurate demographic benchmarks. One proven solution is through issuance of a digital identity, which gives government and business the ability to deliver citizen services

electronically, boosting efficiency and driving innovation and serving people, often in isolated areas.

Despite progress in recent years, many countries still lack the capacity, infrastructure, and resources to implement well-functioning CRVS systems.

The good news is that international partners and countries have recently agreed on a CRVS Scaling Up Investment Plan.[xv] The plan covers activities over a 10-year period from 2015 to 2024, with the goal of universal civil registration of births, deaths, marriages, and other vital events, including cause of death, and access to legal proof of registration for all individuals by 2030. Africa and Asia have already established regional programs to motivate political support, systematic national planning, and provision of technical assistance. And key donors[xvi] announced recently the establishment of a trust fund to support developing countries' plans to establish CRVS systems with the aim of accelerating progress toward the health-related Sustainable Development Goals.

3

MOBILISING THE **DATA REVOLUTION** FOR SUSTAINABLE DEVELOPMENT: A CALL TO ACTION

A revolution is an idea – an inspiring vision of a world of fast-flowing data deployed for the public good, and of citizens and governments excited and empowered by the possibilities this creates. But it is also a practical proposition. **Getting from here to there involves deliberate actions and choices.**

Decisive action now, taking advantage of the current political opportunities, can set the scene and have a positive impact for years to come. Achieving the SDGs demands embracing the data revolution. We urge the **UN Member States and system organisations to dramatically speed up their work in this field** to support the global aspiration for sustainable development.

Data will be one of the fundamental elements of the accountability framework for the SDGs. Having high-quality data, and using it to create information that can track progress, monitor the use of resources, and evaluate the impacts of policy and programmes on different groups, is a key ingredient in creating more mutually accountable and participatory structures to monitor the new

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goals. However, we recognise that data is not the whole story. This report is about how data, and information, can be improved and made more accessible. The decisions on how those data and

information will be used in any specific accountability framework for the SDGs belongs to the UN Member States and, as such, remains beyond the scope of this report.

Our recommendations for how to mobilise the data revolution for sustainable development suggest a comprehensive programme of action in four areas, illustrated to the right:

- **principles and standards,**
- **technology, innovation and analysis,**
- **capacity and resources,**
- **leadership and governance.**

At the heart of the recommendations in every area are people and the planet – our revolution is with them and for them.

Principles and standards

One of the key roles of the UN and other international or regional organisations is setting principles and standards to guide collective actions within a global community and according to common norms. We believe that mobilising the data revolution for achieving sustainable development urgently requires such a standard setting, building on existing initiatives in various domains.

WE RECOMMEND …

… that the UN develop a comprehensive strategy and a roadmap towards a new **'Global Consensus on Data'**,

building upon existing efforts in other domains, setting principles and agreeing standards to build trust and enable cooperation, including:

- ***Agree on and promote adoption of specific principles related to the data revolution***, drawing from and building upon those described in the next two pages, to be further developed by the appropriate UN bodies and agreed by their Member States;

- ***Accelerate the development and adoption of legal, technical, geospatial and statistical standards***, in a range of areas including, but not limited to:

  – Openness and exchange of data and metadata, including interoperability of data and information systems; demographic and geospatial information, including "geographic semantic" management and exchange; global exchange of information on illicit financial flows; open data and digital rights management and licensing;

  – Protection of human rights, including: standards for anonymising data that is personally identifiable, and standards and enforcement mechanisms for data security, integrity, documentation, preservation, and access.

BASIC PRINCIPLES FOR THE **DATA REVOLUTION** FOR SUSTAINABLE DEVELOPMENT

The data revolution will need to be harnessed for sustainable and inclusive development through proactive measures and guided by the following **KEY PRINCIPLES:**

1 » DATA QUALITY AND INTEGRITY

Poor quality data can mislead. The entire process of data design, collection, analysis and dissemination needs to be demonstrably of high quality and integrity. Clear standards need to be developed to safeguard quality, drawing on the UN Fundamental Principles of Official Statistics and the work of independent third parties. A robust framework for quality assurance is required, particularly for official data. This includes internal systems as well as periodic audits by professional and independent third parties. Existing tools for improving the quality of statistical data should be used and strengthened, and data should be classified using commonly agreed criteria and quality benchmarks.

2 » DATA DISAGGREGATION

No one should be invisible. To the extent possible and with due safeguards for individual privacy and data quality, data should be disaggregated across many dimensions, such as geography, wealth, disability, sex and age. Disaggregated data should be collected on other dimensions based on their relevance to the program, policy or other matter under consideration, for example, ethnicity, migrant status, marital status, HIV status, sexual orientation and gender identity, with due protections for privacy and human rights. Disaggregated data can provide a better comparative picture of what works, and help inform and promote evidence based policy making at every level.

3 » DATA TIMELINESS

Data delayed is data denied. Standards should be tightened and technology leveraged to reduce the time between the design of data collection and the publication of data. The value of data produced can be enhanced by ensuring there is a steady flow of high-quality and timely data from national, international, private big data sources, and digital data generated by people. The data cycle must match the decision cycle.

4 » DATA TRANSPARENCY AND OPENNESS

Many publicly-funded datasets, as well as data on public spending and budgets, are not available to other ministries or to the general public. All data on public matters and/or funded by public funds, including those data produced by the private sector, should be made public and "open by default", with narrow exemptions for genuine security or privacy concerns. It needs to be both technically open (i.e., available in a machine-readable standard format so that it can be retrieved and meaningfully processed by a computer application) and legally open (i.e., explicitly licensed in a way that permits commercial and non-commercial use and re-use without restrictions). The underlying data design and sampling, methods, tools and datasets should be explained and published alongside findings to enable greater scrutiny, understanding and independent analysis.

5 » DATA USABILITY AND CURATION

Too often data is presented in ways that cannot be understood by most people. The data architecture should therefore place great emphasis on user-centred design and user friendly interfaces. Communities of "information intermediaries" should be fostered to develop new tools that can translate raw data into information for a broader constituency of non-technical potential users and enable citizens and other data users to provide feedback.

6 » DATA PROTECTION AND PRIVACY

As more data becomes available in disaggregated forms and data-silos become more integrated, privacy issues are increasingly a concern about what data is collected and how it is used. Further risk arises where collectors of big data do not have sufficient protection from demands from State bodies or interference from hackers. Clear international norms and robust national policy and legal frameworks need to be developed that regulate opt-in and opt-out, data mining, use, re-use for other purpose, transfer and dissemination. They should enable citizens to better understand and control their own data, and protect data producers from demands of governments and attacks by hackers, while still allowing for rich innovation in re-use of data for the public good. Within the agreed privacy constraints, people's rights to freedom of expression using data should be protected. People who correctly provide, collect, curate and analyse data need freedom to operate and protection from recrimination.

7 » DATA GOVERNANCE AND INDEPENDENCE

Many national statistical offices lack sufficient capacity and funding, and remain vulnerable to political and interest group influence (including by donors). Data quality should be protected and improved by strengthening NSOs, and ensuring they are functionally autonomous, independent of sector ministries and political influence. Their transparency and accountability should be improved, including their direct communication with the public they serve. This can include independent monitoring of the same public services, for example, or monitoring of related indicators such as public satisfaction with services.

8 » DATA RESOURCES AND CAPACITY

There is a global responsibility to ensure that all countries have an effective national statistical system, capable of producing high-quality statistics in line with global standards and expectations. This requires investments in human capital, new technology, infrastructure, geospatial data and management systems in both governmental and independent systems, as well as information intermediaries. At the same time, national capacity for data science must be developed to leverage opportunities in big data, to complement high-quality official statistics. Increased domestic resources and international support for developing countries are needed to have the data revolution contribute to sustainable development. Applications of big data for the public good must be developed and scaled up transparently, demonstrating full compliance with applicable laws.

ALL PUBLIC DATA
SHOULD BE
'OPEN BY DEFAULT'

9 » DATA RIGHTS

Human rights cut across many issues related to the data revolution. These rights include but are not limited to the right to be counted, the right to an identity, the right to privacy and to ownership of personal data, the right to due process (for example when data is used as evidence in proceedings, or in administrative decisions), freedom of expression, the right to participation, the right to non-discrimination and equality, and principles of consent. Any legal or regulatory mechanisms, or networks or partnerships, set up to mobilise the data revolution for sustainable development should have the protection of human rights as a core part of their activities, specify who is responsible for upholding those rights, and should support the protection, respect and fulfilment of human rights.

STRENGTHENING NATIONAL CAPACITIES
WILL BE THE ESSENTIAL TEST OF
ANY DATA REVOLUTION

Technology, innovation and analysis

Technology has been and will continue to be a fundamental driver of the data revolution. To harness the benefits of new technology, large and continuing investments in innovation are required at all levels, but especially in those institutions which are currently lagging behind. In addition, but beyond the scope of this report, an urgent effort needs to be made to increase access to information technologies by, among other things, increasing access to broadband, increasing literacy, including adult literacy, and increasing the use of ICT in schools worldwide, to ensure that all people, including the poorest, have access to the technologies that can improve their lives.

WE RECOMMEND …

… that the UN foster the establishment of a **"Network of Data Innovation Networks"** for sustainable development bringing together a range of partners and existing networks to generate knowledge and solve common problems. Some specific areas of activity could be:

- *Urgently leverage emerging data sources for SDG monitoring, through an 'SDG data lab':* The lab should mobilise key public, private and civil society data providers, academics and stakeholders to identify available and missing data and indicators, as well as opportunities for benefitting from new methods, analytical tools and technologies to improve the coverage, timeliness and availability of indicators in each of the SDG areas. Drawing on the existing MDG monitoring architecture, and working with other networks such as the Sustainable Development Solutions Network, it would develop new methodologies for monitoring new goals from January 2016

- *Develop systems for global data sharing:* Identify areas where the development of common infrastructures to exploit the data revolution for sustainable development could solve capacity problems, produce efficiencies and encourage collaborations. One such suggestion would be a "world statistics cloud", to store data and metadata produced by different institutions but according to common standards, rules and specifications.

- *Fill research gaps:* Identify critical research gaps, such as the relationships between data, incentives and behaviour. Engage research centres, innovators and governments in the development of publicly available data analytics tools and alogrithms to better capture and evaluate long-term trends affecting sustainable development.

- *Create incentives:* Engage social entrepreneurs, private sector, academia, media, civil society and other individuals and institutions in this global effort through initiatives such as prizes and data challenges.

Capacity and resources

Strengthening national capacities in all areas from data production to use will be the essential test of any data revolution, in particular in developing countries where the basic infrastructure is often lacking. Monitoring a new and expanded set of Sustainable Development Goals will not be possible in many countries without new and sustained investment, so urgent mobilisation of new funds is needed.

WE RECOMMEND ...

... that a proposal be developed for a **new funding stream** and innovative financing mechanisms to support the data revolution for sustainable development, for discussion at the "Third International Conference on Financing for Development", which will take place in Addis Ababa in July 2015. The proposal should be built on the following five pillars:

- *Investment needs:* An analysis of the scale of investments needed for the establishment of a modern system to monitor progress towards SDGs, especially in developing countries. This analysis, building on various attempts currently ongoing, should highlight the costs as well as opportunities for efficiency gains associated with different production systems. Particular attention should be paid to the need for investment in data to

analyse the challenges facing the very poorest people and communities, and to involve them as users of data.

- *Managing funds:* A proposal on how to manage and monitor new funding for the data revolution for sustainable development, taking stock of existing sources and forms of funding. This should look at how funding from a range of sources could be used most effectively, and managed and disbursed in line with national priorities to incentivise innovation, collaboration and whole systems approaches, while also encouraging creativity and experimentation and accepting that not all initiatives will succeed.

- *Private sector participation:* A proposal on how to leverage the resources and creativity of the private sector, including an examination of suggestions for creating incentives for the private sector to invest given

companies' expectations of time horizon and returns.

- *Capacity development:* A proposal to improve existing arrangements for fostering the necessary capacity development and technology transfer. This should include upgrading the "National Strategies for the Development of Statistics" (NSDS) to do better at coordinated and long-term planning, and in identifying sound investments and engaging non-official data producers in a cooperative effort to speed up the production, dissemination and use of data, strengthening civil society's capacity and resources to produce, use and disseminate data.

- *Global data literacy:* A proposal for a special investment to increase global data literacy. To close the gap between people able to benefit from data and those who cannot, in 2015 the UN should work with other organisations

to develop an education program and promote new learning approaches to improve people's, infomediaries' and public servants' data literacy. Special efforts should be made to reach people living in poverty through dedicated programmes.

Governance and leadership

Strong leadership by the UN is vital to make the data revolution serve sustainable development. Such leadership should be made very concrete through various actions and activities, and the continuous engagement of all relevant partners, maintaining a very open and transparent approach with governments, the private sector, NGOs, the media, and academic researchers. The primary aim would be to add value to existing institutional setups, accelerating the delivery of their outputs and building new partnerships. Short- and medium-term results should be clearly spelled out, and periodic reviews should be undertaken to ensure that global cooperation in this area is on the right track.

WE RECOMMEND . . .

...the establishment of **a "Global Partnership for Sustainable Development Data"** (GPSDD)

to mobilise and coordinate as many initiatives and institutions as possible to achieve the vision sketched above. The GPSDD could promote several initiatives, such as:

- ● ***World Forum:*** The establishment of a biennial "World Forum on Sustainable Development Data", and associated regional and country level events and ongoing engagements. These would maintain momentum on data improvements, foster regular engagement between private, public and community level data collectors and users, showcase ongoing activities and initiatives, create a network of 'data champions' around the world, and provide practical spaces for innovation, knowledge sharing, advocacy and technology transfer. The first Forum should be organised by the end of 2015, once the SDGs are agreed.

- ● ***Users forum:*** Establish a "Global Forum of SDG-Data Users", to ensure feedback loops between data producers, processors and users to improve the usefulness of data and information produced. It would also help the international community to set priorities and assess results achieved, and could encourage replication and

experimentation with user forums at country and agency level, increasing demand for and use of data. Particular attention should be paid to how to involve poor and marginalised people and communities in the forum.

- ● ***Partnerships and coordination:*** Work in partnership with international and regional organisations, and with other initiatives looking at best practices related to public data such as the Open Government Partnership (OGP) and the G8 Open Data Charter. The aim would be to enhance coordination of work in various areas, share knowledge on SDG monitoring, and encourage good practice such as open data and harmonisation. Also, to work together on developing common legal frameworks around rights to data and information and redress from abuses of data, to work together to implement new standards once agreed, and to streamline capacity building initiatives and reduce duplicated effort, mobilising new resources.

- ● ***Data sharing:*** Broker some key global public-private partnerships with private companies and civil society organisations for data sharing. Drawing on existing efforts

already underway, these would provide models for best practice, useful for national and regional bodies trying to negotiate similar arrangements, would identify incentives and constraints specific to various industries, would allow for economies of scale, and would demonstrate the value and the possibility of sharing data and collaborating between public and private sectors.

WE RECOMMEND …

… some **"quick wins" on SDG data** to demonstrate the feasibility of different approaches, experiment and innovate with partnerships and methods as a first step to setting up longer term initiatives. In addition to the proposed "SDG Data Lab", these could include:

- *SDGs analysis and visualisation platform:* To be launched in September 2015, using the most advanced tools and features for exploring and analysing and re-using data, and demonstrating best practices in the engagement with data users through the provision of guidance and educational resources for data re-use, building on and coordinating with other platforms in other sectors. The development of the website would also represent a laboratory for fostering private-public partnerships and community-led peer-production efforts for data collection, dissemination and visualisation. It would be continuously updated during the lifetime of the SDGs, remaining a showcase for new ideas and innovations and a source of high quality and up to date information on progress.

- *A dashboard on "the state of the world":* This would harness the richness of traditional and new data, maintain the excitement and openness of the whole SDG process, engage think-tanks, academics and NGOs as well as the whole UN family in analysing, producing, verifying and auditing data, provide a place for experimentation with methods for integrating different data sources, including qualitative data, perceptions data and citizen-generated data, and eventually produce a 'people's baseline' for new goals. ◼

Taken together, we believe that these recommendations could move the world onto a path of information equality, where all citizens, organisations and governments have the right information, at the right time, to build accountability, make good decisions, and ultimately improve people's lives. **This is the world we want …**

… A WORLD THAT COUNTS

Endnotes

i   See, e.g., http://www-01.ibm.com/software/data/bigdata/what-is-big-data.html

ii ECLAC (2014). "Latin American Economic Outlook 2013: SME Policies for Structural Change", p. 124 (http://www.cepal.org/publicaciones/xml/5/48385/leo2013_ing.pdf)

iii McKinsey Global Institute (November 2013). "Lions go digital: The Internet's transformative potential in Africa." (http://www.mckinsey.com/insights/high_tech_telecoms_internet/lions_go_digital_the_internets_transformative_potential_in_africa)

iv See Ugandan Ministry of Health (www.mtrac.ug)

v   Enns, E.A and Amuasi, J.H. (2013). "Human mobility and communication patterns in Côte d'Ivoire: A network perspective for malaria control", published in *Mobile Phone Data for Development: Analysis of mobile phone datasets for the development of Ivory Coast. Selected Contributions to the D4D challenge sponsored by Orange.* (http://perso.uclouvain.be/vincent.blondel/netmob/2013/D4D-book.pdf)

vi The coding of the nature of the data in the MDG database (http://mdgs.un.org/unsd/mdg/Data.aspx) is as follows:
    - *Country data:* Produced and disseminated by the country (including data adjusted by the country to meet international standards).
    - *Country data adjusted:* Produced and provided by the country, but adjusted by the international agency for international comparability to comply with internationally agreed standards, definitions and classifications.
    - *Estimated:* Estimated are based on national data, such as surveys or administrative records, or other sources but on the same variable being estimated, produced by the international agency when country data for some year(s) is not available, when multiple sources exist, or when there are data quality issues.
    - *Modelled:* Modelled by the agency on the basis of other covariates when there is a complete lack of data on the variable being estimated.
    - *Global monitoring data:* Produced on a regular basis by the designated agency for global monitoring, based on country data. There is no corresponding figure at the country level.

vii UNICEF (2013). Every Child's Birth Right: Inequities and trends in birth registration. (http://www.unicef.org/mena/MENA-Birth_Registration_report_low_res-01.pdf)

viii A UN Women's compilation of country surveys on violence against Woman is available from http://www.endvawnow.org/uploads/browser/files/vawprevalence_matrix_june2013.pdf

ix UNHCR (June 2014). "UNHCR Global Trends 2013: War's Human Cost". (http://unhcr.org/trends2013/)

x   This is also the aim of the initiatives launched around the world to go 'Beyond GDP'. For a review of these initiatives see www.wikiprogress.org

xi UN Global Pulse (June 2013). *Big Data for Development:* A Primer, p.4 (http://www.unglobalpulse.org/bigdataprimer)

xii UK Department for Business, Innovation & Skills and Cabinet Office (May 2013). "Market assessment of public sector information." (https://www.gov.uk/government/publications/public-sector-information-market-assessment)

xiii Chui, M. Farrell, D. and Jackson, K. (April 2014). "How government can promote open data". McKinsey&Company. (http://www.mckinsey.com/insights/public_sector/how_government_can_promote_open_data)

xiv Kumar, R. (2014) "How Youth Saved Bananas in Uganda" (http://blogs.worldbank.org/youthink/how-youth-saved-bananas-uganda)

xv Pentland, A. (October 2013). "The Data Driven Society", *Scientific American*, pp. 78-83

xvi World Bank and WHO (May 2014). Global Civil Registration and Vital Statistics Scaling Up Investment Plan 2015-2024. Working Paper 88351. (http://www.worldbank.org/en/topic/health/publication/global-civil-registration-vital-statistics-scaling-up-investment)

xvii The World Bank Group and the governments of Canada, Norway, and the United States

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