The Data Revolution and the Post-2015 Agenda: A Preliminary Assessment[1]

C. Zhang, W. Gao

Zhang Chun – Senior Researcher, Deputy Director of Center for West Asian and African Studies, Deputy Editor-in-Chief of *Global Review* (Chinese) and *China Quarterly of International Strategic Studies* (English), Shanghai Institutes for International Studies, 195-15 Tianlin Road, Shanghai 200233, China; E-mail: zhangchunster@163.com

Gao Wei – M.A. student, Shanghai Institutes for International Studies, 195-15 Tianlin Road, Shanghai 200233, China; E-mail: kiwi1991@163.com

The United Nations Post-2015 Development Agenda, the successor to the Millennium Development Goals (MDGs), calls for the effective means of implementation, especially a data revolution to inform decision making, monitor implementation and promote governmental accountability. Although the developed world or the economic North attaches great importance to the data revolution, most of the developing world or the economic South is unaware of it, with Africa as an exception. Current debates focus exclusively on technical rationality, ignoring the huge political risks of data revolution, intentionally or unintentionally. The data revolution is not only about the transformation of data collection and the analysis, dissemination and use of the data; it also has significant political implications for government accountability, global data partnerships, the data division of labour between the North and the South, and even standards of civilization in the international community. For a reasonable and balanced data revolution, the international community should balance technical rationality and political risks, universal and divergent focuses, and common but differentiated responsibilities, and build a global partnership for development data. As a rising great power, China could play a bridging role between the North and the South, promoting a reasonable and sustainable data revolution through global partnership building and political risk management, and facilitating the implementation and monitoring of the Post-2015 Development Agenda.

Key words: Post-2015 Development Agenda, data revolution, means of implementation, data sovereignty, national statistical strategy, China's Role.

Introduction

In May 2013, the Secretary-General's High-Level Panel of Eminent Persons on the Post-2015 Development Agenda (HLP) coined the term 'data revolution' in its report to realize the sustainable development goals (SDGs) of the UN Post-2015 Development Agenda (hereafter 'Post-2015 Agenda'[2]) [HLP, 2013B]. According to the report, as a key component of means of implementation (MOIs) of SDGs, data revolution is a new international initiative to improve the quality of statistics and information available to people and governments, to actively take

---

[2] In August 2015, the UNGA intergovernmental negotiations concluded with a suggested Outcome Document renamed this agenda as "2030 Agenda for Sustainable Development" (hereafter "2030 Agenda"), see *Transforming Our World: The 2030 Agenda for Sustainable Development*, Outcome Document of Summit for Adoption of the Post-2015 Development Agenda, New York: United Nations, August 15, 2015.

advantage of new technology, crowd sourcing, and improved connectivity to empower people with information on the progress towards the targets [HLP, 2013B, 21].

Since then, data revolution for sustainable development was emphasized again and again by international community. For example, the outcome document of the Open Working Group of the General Assembly on Sustainable Development Goals (OWG) issued in July 2014, while not using the term 'data revolution', argues for availability of high-quality, timely and reliable data disaggregation, statistical capacity building in developing countries [OWG, 2014, 21]. Based on this outcome document, UN Secretary-General Ban Ki-moon named an Independent Expert Advisory Group on the Data Revolution (IEAG-DR) for Sustainable Development, whose task is to provide him with inputs to shape 'an ambitious and achievable vision' for the Post-2015 Agenda on August 29, 2014. In November 2014, the IEAG-DR issued its vision about data revolution [IEAG-DR, 2014]. On December 4, 2014, UN Secretary-General Ban Ki-moon issued a *Synthesis Report* on the Post-2015 Agenda, calling for catalyzing a multi-stakeholder Global Partnership for Sustainable Development Data, to mobilize and coordinate the actions required to make the data revolution serve sustainable development, promoting initiatives such as the holding of inclusive 'World Fora on Sustainable Development Data' [Ban Ki-Moon, 2014, 29]. In 2015, an authoritative cost assessment of data revolution was made by Sustainable Development Solutions Network (SDSN) [SDSN, 2015].

Data revolution, with no rigorous definition, was first coined in information technology and was used to describe big data's transformative power. The wide application of big data technology is seen as a revolution which "changes markets, organizations, the relationship between citizens and governments, and more" [Schonberger and Cukier, 2013, 9]. Lots of researches on this big data revolution are more on its application in various sectors. For example, the use of big data is found to make poverty eradication more effective as target groups are more accurate [Yu, 2014]. Also, the practice of big data is seen as a way to promote government transparency and anti corruption [Manley, 2015].

Since data revolution for sustainable development was emphasized in UN documents repeatedly, studies on data revolution for sustainable development is also heating up quickly. In March 2015, Overseas Development Institute (ODI) issued its report on data gaps, shedding lights on the significance of Data Revolution in bridging gaps among countries and groups [Stuart, Samman, Avis, Berliner, 2015]. The Partnership in Data for Development in the 21st Century (PARIS21) advocates a country-led data revolution approach since it built up a road map which contains coordination, human resource and statistical aid [PARIS 21, 2015]. Center for Global Development (CGD), issued report on data revolution in Sub-Saharan Africa with Africa Population and Health Research Center (APHRC) [CGD, 2014], paving way for the Africa Open Data Conference is to be held in September 2015.

It is interesting to note that most institutes on data revolution are centered in Washington, D. C., New York, and London. Researches of ODI, Paris 21 and CGD are exclusively focus on data revolution in developing world, concentrate on technical rationality In a word, as a 'revolution' for universal development, current discussions and researches only ask for 'revolution' in specific geographical areas rather than the whole world; and only discuss about the rationality of data revolution, without heeding its possible (political) risks. Moreover, current studies and exploration are quite limited to a small group of northern technicians and elites.

Such a phenomenon drives us to wonder. Why do we call for data revolution? What kind of data revolution is needed? What are the benefits and risks of data revolution? How to realize a reasonable and balanced data revolution? Who is supposed to pay and to pay how much for this data revolution? How to build a global partnership for data revolution? How different are the roles between the North and the South in data revolution? And so forth.

The article aims to answer above questions. By analyzing reasons for data revolution, probing into the contents of data revolution, and digging into benefits and costs for different country groups, this paper will give a preliminary assessment about the political risks, and making brief suggestion for China's policy stands on data revolution.

Why Data Revolution?

It is said that 'too often, development efforts have been hampered by a lack of the most basic data about the social and economic circumstances in which people live...', thus 'we must take advantage of new technologies and access to open data for all people' [HLP, 2013A]. However, it is never sure about the belief that only what is counted counts; we still need to ask the question why we need a data revolution.

Lessons of MDGs

The most convincing argument for data revolution is that the experience of implementing the MDGs shows how important a data revolution is, because low statistical capacity and poor data provide weak evidence for scientific policy making on which the MDGs' realization relies.

Most researches by international organizations and governmental think-tanks argue that, the failure of MDGs in many places, especially most if not say all African countries, is attribute to the lack of proper and timely data. For example, the *2014 MDGs Progress Chart* published by UN Statistical Division (UNSD) shows that nearly half of the targets are insufficient progressed or even with no progress and deteriorate [UNSD, 2014]. That is to say, those targets will not be achieved by the deadline. Appreciated about the progress in data improvements in recent years, the MDGs Report 2014 lamented that 'lack of data hampers effective policymaking' because basic data for development are missing, data gaps for MDG monitoring remain, and existing data are underutilized [UN, 2014, 7].

Reliable statistics for monitoring development remain inadequate in many countries. Indeed, there is a growing consensus among international observers that official statistics in many Sub-Saharan African countries are woefully inadequate and unreliable [Jerven, 2013], what Devarajan calls a 'statistical tragedy' [Devarajan, 2013]. Most sub-Saharan countries lack complete registration systems, and it is estimated that one of three children under age five worldwide has never been registered [UN, 2014, 7]. However, gaps of statistical capacity, existing not only between developing and developed countries, but also among developing ones, plays a key role in impairing data collection. The Statistical Capacity Indicators (SCI) built by the World Bank, provides individual country scores for the overall SCI average, measured by statistical methodology, source data, and periodicity. According to the 2014 edition of this indicator, Somalia gets only 23.93 out of 100 for the overall score--the lowest among the developing countries, while Kazakhstan gets 92.21 [World Bank, 2015]. What's more, there are huge gaps between national and international data system due to the absence of consultation of national statistical system, as well as the lack of participation of a wide range of stakeholders [IAEG-MDGs, 2013]. This leads to inconsistency and chaos between goals, targets and indicators.

Based on an assumption that more and better data guarantees better policymaking, better monitoring and better implementation of development strategies, international community argues for a data revolution, with IEAG-DR playing the most prominent role in this advocacy effort. The IEAG-DR report in November 2014 calls for closing of key data gaps, between developed and developing countries, between information-rich and information-poor people,

and between the private and public sectors. It underscored the importance of increasing access to quality data, remedying inequalities in the areas of access to information, data literacy, promoting civic space and enhancing the sharing of data and information. It also called for the strengthening of national institutions to provide capacities for statistics and the interface with new technologies [IEAG-DR, 2014].

Technology Advances

Another convincing argument for data revolution is the feasibility of technology. As UN Secretary-General Ban Ki-moon stated, 'we see how new technologies can open up more sustainable approaches and more efficient practices', 'we know that a data revolution is unfolding, allowing us to see more clearly than ever where we are and where we need to go, and to ensure that everyone is counted' [Ban Ki-Moon, 2014, 9].

The revolution in information technology over the last decade provides an opportunity to strengthen data and statistics for accountability and decision-making purposes, and lays the foundation and pave way for the realization of data revolution for the 2030 Agenda. One of MDGs' fruits is easier and more open access to modern information and communication technology. For example, Internet users from developing countries doubled in the past five years and compose two thirds of the world total [UN, 2014, 53], along with an increase of mobile phone use in remote areas, both of which lay the foundation for further data collection and information distribution while implementing the data revolution. Meanwhile, the emerging use of big data, cloud computing in private sectors has set good examples for wider application of these technologies for public benefits in the practice toward SDGs. For example, in the U.S., big data start-ups have cropped up, based on their comparative advantage in data, these companies provide services of data needed for customers, processing skills, as well as good ideas [Schonberger and Cukier, 2013, 160-178]. Moreover, traditional corporations like UPS and Walmart revolutionized their practice by using data-based predicative analysis and Retail Link, the process of which is termed as 'datafication' [Schonberger and Cukier, 2013, 104, 116]. Various experiences of this kind can be adopted in SDGs' monitoring, evaluation, as well as decision-making provided a partnership be built between public and private sectors and an active participation of the non-governmental parties. Thus, practices of data contributing to better business and governance ask for a data revolution to wider data utilization in other development practices.

Requirements of the 2030 Agenda

The third argument for data revolution is the much broader coverage of the 2030 Agenda comparing to the MDGs and relatively greater demand for higher quality data. As the IEAG-DR report stated, data revolution for sustainable development is to address two main problems, namely not enough high-quality data and not usable data [IEAG-DR, 2014, 11-15]. As the successor of MDGs, the 2030 Agenda, according to its proposed (OWG) version, including 17 goals and 169 targets, requires another significant increase in the data and information that is available to individuals, governments, civil society, companies and international organizations to plan, monitor and be held accountable for their actions [IEAG-DR, 2014, 4]. Moreover, according to the indicators proposed by United Nations Statistical Commission in their technical report, the indicator framework for the goals and targets of the Post-2015 Agenda will embrace a framework of 304 indicators, which is far beyond MDGs' 60 official indicators, namely, it requires a larger quantity of detailed data.

Reliable and robust data is needed not only by the realization of the Post-2015 Agenda as a whole, but also by individual governments for gearing their national development strategies

into this international development programme. 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. The importance of high quality data is embodied in three aspects: the set of scientific development plans, objective monitoring on the practice of these development projects, and at last, evaluation and adjustment of the former practice. For example, statistics plays a key role in the process of selecting goals, targets and indicators for MDGs. To take a glimpse of a successful case in implementing MDGs, Tanzanian government established a statistic-based comprehensive monitoring system for its poverty eradication and social development. According to this system, data shows that there was a big disparity and overlook in fields like agriculture, primary education and health care; thus it provides facts basis for the government to hone its Poverty Reduction Strategy and to put more investment in these fields. As a result, the enrollment for primary school in Tanzania of 2008 has doubled that of 1999 [UN, 2014, 6].

Abnormalities of Discussions

Data revolution is very important and urgent for the forging and future implementation of the 2030 Agenda. However, if exploring the current discussion on this topic, one finds strange abnormalities.

The first and foremost abnormality is the confusion between data revolution in sustainable development and data revolution in broader and different technological term. Thanks to the rapid advancement since 1990s, digital revolution, or internet revolution in particular, is the core of data revolution, with 'big data revolution' as its most recent version. Thus, to choose 'data revolution' for improvement or transformation of development data, to some extent, is to hide the real intention behind and to sale the idea wider, especially when reviewing the evolution of this discussion, one can find that there do exist efforts to discussion 'data revolution', 'big data revolution', and/or 'statistics revolution' of the 2030 Agenda and sustainable development [Jerven, 2014].

The second abnormality is that the discussion mainly concentrated in the North but not the South. For example, the most influential think tanks in data revolution are of UK and USA respectively, namely ODI in London and CGD in Washington, D.C. Taking the places of discussion, London, New York, and Washington, D.C., are the centers. Perhaps the only exception is Africa where an Africa Data Consensus adopted in March 29, 2015, in Addis Ababa. The reason is easy to understand, while various documents and reports call for data revolution in "developing countries", Africa is the real target and main focus of data revolution. Besides Africa, most of developing countries did not pay full attention to data revolution under the Post-2015 Agenda. When talking about data revolution, most refer to that of technology, such as its promising application in library science, health care, e-business, etc.

The third abnormality is that the discussion mainly focused on technical but not political aspects. To be sure, data revolution under the Post-2015 Agenda, more than a technological initiative, embraces more political contents and implications, because governments, citizens, and civil society at large use data as a 'currency' for accountability. The authors will elaborate this further.

What Data Revolution

Such importance of data revolution and abnormalities of relevant discussions inspired us to identify what is a data revolution under the Post-2015 Agenda. There is no any single definition of this initiative existed and no consensus emerged by now. For example, HLP report, firstly

coined this term, argues that 'a true data revolution would draw on existing and new sources of data to fully integrate statistics into decision making, promote open access to, and use of, data and ensure increased support for statistical systems' [HLP, 2013B, 24]. A year later, the IEAG-DR report advocates for a 'data revolution for sustainable development' that 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 minimizing 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 [IEAG-DR, 2014, 6].

With a more simple logic, PARIS21 defines data revolution as 'providing the right data to the right people at the right time and in the right format' [PARIS21, 2015, 16]. For Africa, the most negatively affected region of bad data, data revolution means 'a profound shift in the way that data is harnessed to impact on development decision-making, with a particular emphasis on building a culture of usage' [AU, 2015, 2].

As noted above, data revolution is not only about technology, but more about politics. Thus, the authors argue that data revolution for sustainable development includes following four pillars:

A Revolution of Data in Technology

Data revolution for sustainable development is first of all a revolution of data in technical term, including 3 elements, data gathering, data processing, and data access.

Data revolution asks for high-quality data first, means to 'overthrow' untimely, mistaken and high cost data. By 'high-quality', it means comprehensive, time-efficient, classified, detailed, and specific data that could provide solid evidence for decision makers, with a dramatically declined, affordable cost. When applying traditional household surveys, remote and marginalized people are always be left behind, as those people can hardly be engaged. To narrow down these existing data gaps and to leave no one behind, data revolution involves enhancing the infrastructure and approaches for data collecting. Thanks to the wider use of cellphones and internet connection in developing countries in recent years, people in remote areas are better surveyed. To push down the barriers of different kinds for high quality data, various means for data collection, such as mobile phone-based collection, internet-based collection, non-governmental led collection, social data collection will provide new choices.

Data revolution implies transformative changes in data processing as well. We are facing both old and new challenges in data processing and analysis. Traditionally, chaos is widely existed between national and international levels. Despite lots of work has been done by United Nations Statistical Division (UNSD) since the organization initiated its monitoring on MDGs in 2002, coordination between national statistical system and international agency still remains a major concern [UNSD, 2015, 4]. Meanwhile, more data does not mean better data; rather, it 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. Thus, on one hand, data revolution is supposed to build better data processing capability at multi-levels, timely producing indicators for monitoring the progress of the Agenda; on the other hand, there

is a need to solve the chaotic situation by coordinating different monitoring data from each country in this process of data processing.

And data revolution aims to "overthrow" obstacles for free and easy access to data. There are different policies for data publishing. In economic field, for example, some countries take IMF's General Data Dissemination Standards (GDDS), and others take the Special Data Dissemination Standards (SDDS), with the latter of higher requirements for economic statistics. Very essentially to make it more convenient for users in need to get open and free access to data. While pursuing this common goal, it is important to notice the different sensibility and vulnerability to data publishing of each country. With an ultimate goal to open access to data, there can be different standards and stages to achieve the goal step by step. To avoid any detrimental aspects, it should be allowed to choose the most suitable policy of each country, as did in IMF's data publishing standards. Therefore, data revolution is a balance between open and free data sharing and differentiated and reasonable standards.

A Revolution Driven by Needs

More data is only better data if they contain meaningful information. But most data are unusable for users. Traditionally, data is provided in one-way by National Statistical Offices (NSOs). Now, a data revolution for sustainable development calls for a two —way approach for data provision; in other words, data revolution implies a transformation from supply-driven to demand-driven data gathering, processing and dissemination.

On one hand, for effective monitoring and reviewing of the 2030 Agenda, it is necessary to provide reliable data and informative indicators of progress that can be compared between countries and regions [European Commission, 2015, 15]. Good-quality data are essential for country governments, international institutions, and donors to accurately plan, budget, and evaluate development activities. Without basic development metrics, it is not possible to get an accurate picture of a country's development status or to improve social services, to achieve the MDGs or SDGs, to make economic improvements, and to improve global prosperity for all [CGD, 2014, 1]. Thus, data must be disaggregated by gender, geography, income, disability, and other categories, to make sure that no group is being left behind.

On the other hand, data must also enable us to reach the neediest, and find out whether they are receiving essential services, which asks that all data should belong to the people and be open to all. 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 [CGD, 2014, 4]. National governments and donors should release all non-confidential, publishable data, including metadata, free of charge in an online format that can be analyzed and is machine readable.

A Revolution Led by the South

Most literature of data revolution for sustainable development assumes that data revolution should happen in developing country but not the developed world. The classical expression of this is the IEAG-DR report that calls for the closing of key data gaps, between developed and developing countries [Ban Ki-Moon, 2014, 13]. A natural conclusion of this assumption is that the data revolution should be led from the global south. Developing countries stand to gain the most from the data revolution because data gaps are most significant in those countries. The necessity of 'lead by the South' has been recognized by African countries, for example, the Partnership for African Social and Governance Research (PASGR) held a two-day forum on

Building Capacity for Africa Data in January 2015, then the African Union adopted the Africa Data Consensus in March 2015.

However, it is important to note that data revolution can not be limited in developing countries only, developed countries need data revolution as well especially when taking account of those quality-oriented goals and targets of the 2030 Agenda, for example, the measuring of national inequality, rule of law, peace and security, etc.

A Revolution of Data Partnership

Data revolution emphasizes both demand and supply; the former means a revolution driven by needs, the latter means public private partnerships (PPPs) of development data. First of all, data revolution aims to create an interactive data ecosystem that requires a wide variety of actors (beyond just government) involved at every stage of the process: driving decisions about what data to collect, gathering that data, and using the results.

At country level, data partnership means that any effort to implement the data revolution will need to address the role of the NSOs while still working to expand the definition of a broader statistical system. Given its capacity and continuity, depending on the existing networks with NSOs at the center will be far more efficient than building (and maintaining) a new system from scratch. To "leave no one behind" and get more data, we need to build capacity in national statistical systems [Cointreau and Subedi, 2013]. However, data revolution is not just about governments, then civil society organizations and private sectors should be involved. As the Africa Data Consensus calls for PPPs 'should be adopted, fostered and strengthened as a strategy for knowledge transfer and to promote sustainable collaborations' [African Union, 2015, 2].

At global level, data partnership requires a 'Global Partnership for Sustainable Development Data' which is proposed to mobilise and coordinate the actions and institutions required to make the data revolution serve sustainable development, promoting several initiatives [IEAG-Dr, 2014, 3]. We will explore such a partnership later.

What Benefits and Risks

As discussed above, data revolution is very important for sustainable development in general and the Post-2015 Agenda in particular. However, it never means that data revolution is always a good thing for everybody. We need to have a net assessment of its benefits and risks.

Benefits

The first and foremost aim of data revolution is to support sustainable development and implement the Post-2015 Agenda. Without information on where people live, how much they earn and what services they can access, it is impossible to respond to the populations' needs and impossible to realize the ambitious goals of the Post-2015 Agenda [SDSN, 2015, 8]. Only with better data provided, policy-making can become more evidence-based and scientific; Only with better data provided, monitoring and evaluation can be more effective, the adjustment of inappropriate development projects and policies can be more timely and efficient; Only with better data provided, accountability for the implementation of the SDGs will be clearer. That is to say, to promote data revolution is beneficial to the whole human being, which is not only a net income but also a moral highland.

To be more realistic, data revolution will help most developing countries, especially those with poor statistical system, to achieve 'datafication', thus pave way for fulfillment of the Post-2015 Agenda and country development strategy. For example, African countries' statistical system is far from advanced according to the World Bank's Bulletin Board on statistical capacity. In spite of a fast economic growth for more than 5 years in most of African countries, there was little improvement for the statistical capacity of this region [IEAG-DR, 2014, 1-2]. For these countries, data revolution is also an impetus to build national consensus, to mobilize resources for multilevel statistical capacity building, and a catalyst of national consolidation through the PPPs building.

Given that data revolution focusing exclusively the improvement of statistical capacity in developing countries, it seems no great momentum for developed countries to contribute to data revolution. Such a conclusion is full of misunderstanding about data revolution. For developed countries, the net benefits of data revolution include two aspects. The first is that data revolution will help the North to measure those 'quality-oriented' goals and targets, or contribute to the build of a social development index, which is a long-term goal; some countries including UK have started such an effort. The second benefit is more short-term in nature, due to better data capacity and mushrooming data-based companies, data revolution brings huge potential profits for developed countries and their data industries.

Related to above point, data revolution will provide huge business opportunities for the business and private sector. To carry out a data revolution, many sectors, governmental and civil, technological and business, will be involved. Data-based companies, with innovative technology, provide better data, processing and analytic services, data storage, and so on. For traditional business, more accurate and human-centered data are collected, more evidence-based products and services can be produced. To boom traditional industry as well as to generate new ones, data is wished to inject new economic vitality and bring about 'data economy'. Moreover, the calls for open and free access to data, as well as data transparency, play as an impulse for the improvement of better governance of social affairs. Allowing for a deeper involvement of the civil sectors, these parties will have a bigger say on global development issues. In this sense, data revolution is indeed a revolution of global business governance.

Risks

The advocates for data revolution always argue that data revolution will contribute a lot to improvement of good governance and governmental accountability [SDSN, 2015, 8]. However, the biggest risk is a kind of external-driven accountability that has potential to destabilize the target country. It is important to note that, while advocating for data revolution, such a revolution indeed is regarded as a subset of an 'accountability revolution' [Development Horizons, 2013]. According to the HLP report, accountability is central to the Post-2015 Agenda, but,

> Accountability only works when people have the right information, easily available and easy to use. New types of transparent accounting make this possible. We need data to be available, and we need the accountability that follows [HLP, 2013B, 23].

Thus, the most important requirement of data revolution is the engagement of people, or to promote a bottom-up revolution in regard to information and data. An accountability revolution with citizen engagement is both premise and consequence of data revolution.

That is why some advocators argue that data 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. When produced properly and exchanged openly, data thus bind a cycle of accountability [CGD, 2014, 1].

Here is not the place to discuss whether accountability good or bad, but it is important to note that, given the importance of global partnership of development data, data revolution (in developing countries) is supported greatly by external resource and technology, the resulted accountability is an external-driven one in nature, which is obviously highly risky. The most dangerous result is something expressed by the outcome document of an expert workshop taken place from July 11 to 12, 2014, in London that "data is used for action and accountability" [Post2015.org, 2014] (but not necessarily for sustainable development).

The second risk comes from the pretended 'universality' of data revolution. As stated above, current discussion about data revolution divides the world as two parts in a simple way, namely poor data (developing) countries and good data (developed) countries. Such a dichotomy has significant implications for future global partnership of development data, which implies a traditional one-way relationship, that is, a donor-recipient mode. Advocating for breaking such a traditional relationship, the data revolution is indeed creating a new one with better mask of some new standards of civilization according to different levels of data quality. Because of its higher data capacity, the North has a higher position on the ladder of civilization and thus a kind of division of labor in data revolution is settled down. In other words, the Post-2015 Agenda, involving all stakeholders, is said to break traditional civilization standards; however, the data revolution is actually a substitute for it, under the cloak of 'neutral' technical rationality. The political meaning behind such technical rationality will be revealed when we consider new proposals of 'perspective data', 'better life index', just name a few. With all these data and indices, which are never in a neutral or universal spirit, the conditionality of aid, condemned by the recipients and challenged by no-strings attached principle of emerging development partners, back again in the name of technical rationality.

The third risk is more technical, namely data sovereignty and data independence of developing countries. Data revolution aims to provide solid evidence for monitoring sustainable development, thus helping to form reasonable policies. Due to different data capacity, countries with underdeveloped statistical system have to accept the criteria and standards set by those advanced countries, without a real consideration of their own needs and situations. A kind of data dictatorship emerges from the fact that the North controls the data producing process of the South, in the name of better policymaking, better monitoring, data revolution driven by needs, etc. Such a data dictatorship not only engenders the South's data sovereignty and data independence, but also distorts the latter's development data capacity building. Because of developing countries' comparative disadvantage and 'daunting initial conditions' [UNECA, 2014], there will be deepened disparities if insufficient support is provided for the realization of data revolution in these countries. Wider data gaps will turn to reality if failed in this revolution, leading to huger development gaps among different groups of people; and building up higher barriers for the completion of Post-2015 Agenda.

What Kind of Global Partnership

Given different data capacities and for promoting a modern 2030 Agenda monitoring system, a multi-stakeholder Global Partnership for Sustainable Development Data is needed. While proposed by the UN Secretary-General Ban Ki-moon, the importance, format, content of this partnership has not been fully discussed. The only detailed exploration is the IEAG-DR report that advocates for several initiatives, such as a 'World Forum on Sustainable Develop-

ment Data', a 'Global Users Forum for Data for SDGs', and brokering key global PPPs for data sharing [IEAG-DR, 2014, 3]. The authors argue that such a partnership should include at least 4 pillars:

An Integrated Standard System

One of the key challenges for data revolution is 'lack of common standards allowing comparison of data across sectors and countries' [African Union, 2015, 2]. To develop such a system, we can benefit from the lessons learnt from establishing and implementing the International Aid Transparency Initiative (IATI), a multi-stakeholder initiative comprised of donors, partner countries, foundations, open data experts and civil society. Agreed in 2011, the IATI Standard is a technical publishing framework allowing open data from different development organizations to be compared, aligned with partner country budgets, and linked to results at national level. The Standard was developed after extensive consultations on the information needs of partner countries, CSOs and donors [PublishWhatYouFund.org, 2014].

Thus, it is important to ensure the interoperability of different standards to enhance the richness and usefulness of data, and further develop a single global standard to measure the progress of the Post-2015 Agenda. For example, the Fundamental Principles of National Official Statistics (FPDOS) should be embraced by all governments. All international norms and standards related to official statistics should, where applicable, be extended to all data so as to improve their validity and credibility. Given the different nature of different kinds of data, especially those perspective data, it should be allowed to develop some subsets of data under the global framework, which will also contribute to alleviate the danger, that is, something of "standards of civilization" in the process of data revolution.

A Global Technical and Knowledge Transfer Platform

Global partnership for development data is the key for data revolution and the monitoring of the Post-2015 Agenda in general, which calls for not only interoperability of different standards, but also basic capacity and infrastructure needed by all. The first step should be mapping the data ecosystem of different countries to review their different capacity needs, data assets and gaps, which lays concrete foundation for the establishment of the global partnership. For example, the African group expressed at the Joint Session FFD (Financing for Development) and Post 2015 Sessions in April 2015 that,

> The Group support the establishment of an online platform to map existing technology facilitation initiatives, enhance international cooperation and promote networking and information sharing, knowledge transfer and technical assistance [Boureima, 2015, 2].

The Goal 17.18 of OWG outcome document calls for,

> By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts [OWG, 2014, 21].

It is important to note that knowledge transfer and technical assistance should be delivered via a unified platform. For example, African group has propose a Capacity Building mechanism

in the Post-2015 Agenda, and 'see it as a complementing mechanism to the pillar already identi-fied in the FFD track' [Boureima, 2015, 3].

A Framework Based on CBDR Principle

Due to different capacities, data revolution should follow the common but differentiated responsibility (CBDR) principle. Such a framework should be designed in accordance with the requirements depriving from the Post-2015 Agenda. An analysis on the SDGs targets shows that 13 targets are of high relevance to data revolution (Table 1), with developing and developed countries different responsibilities burdened. Simply put, this division of labor is a framework for building developing countries' data capacity with the support of the developed countries.

Table 1. Division of Labor under Data Revolution

Target	Relevance to Data Revolution	Role of North	Role of South
9.a	statistical infrastructure building	Financial support	Domestic statistical infrastructure building
9.b	Statistical technology updating	Technological support	Updating domestic statistical technology
9.c	Open access for data revolution to information	Technological support	Open access to technology/ internet
16.6	Institutional building for data revolution	/	Institutional building
16.9	Basic registration	/	Domestic statistical building
16.10	Open access for data revolution to information	/	Open information; legislative support
17.2	Statistical technology updating	Financial support	/
17.8	Statistical technology updating	Technical support	Statistical capacity building
17.9	Partnership for data revolution	Partnership building	Partnership building; Statistical capacity building
17.16	Partnership for data revolution	Partnership building	Partnership building
17.17	Partnership for data revolution	Partnership building	Partnership building
17.18	Statistical capacity building	Financial and technical support	Statistical capacity building
17.19	Statistical capacity building	Financial and technical support	Capacity building

Source: the authors compiled.

However, things are never this simple. When designing such a framework, policymakers must be highly aware of the re-emergence of traditional donor-recipient approach. As discussed above, current analysis ignores domestic capacity building of the North, especially in those 'quality-oriented' targets. Thus, policymakers should always keep in mind that responsibility sharing and mutual accountability are the key for a successful data revolution.

A Global Funding System

Data revolution has its cost for sure, according to SDSN report, countries aspire to spend as much as $1.1 billion annually to increase the capacity of their statistical systems, with a median share of 52 percent of the funding coming from external resources [SDSN, 2015, 6].

As it happens, financing is always a key challenge for global sustainable development. 'The most common obstacle is a shortage of financial resources, which makes it hard to recruit and retain qualified staff and to develop adequate infrastructure' [PARIS21, 2015, 23]. The most important reason for this embarrassment is that developed countries always failed to honor their commitment in providing Official Development Aid (ODA). For example, according to OECD's statistics, in 2014 for example, out of the 28 DAC countries, only 5 (Denmark, Luxembourg, Norway, Sweden and the UK) meet their commitment on providing their ODA [OECD, 2015].

To urge the developed countries to meet commitments and to build financing mechanism for the Post-2105 Agenda, international community formulated the FFD conference. Thus, there have been lots of discussions about how to integrate the data revolution into the FFD discussion, especially on the occasion of the 3rd FFD conference in Addis Ababa, Ethiopia, in July 2015 [Lucas, 2015]. However, the progress still needs to wait and see.

Conclusion: What Role for China?

Data revolution is necessary for the effective implementation and monitoring of the Post-2015 Agenda and to make the SDGs a real upgraded version of MDGs, though risks exist. As an emerging power, China is called to provide more global public goods. Based on its success in MDGs implementation and MDGs global partnership building, China can play a bigger role in the Post-2015 Agenda in general and data revolution in particular.

As a big country, and similar to the MDGs' achievements, domestic progress is always the biggest contribution of China to any international efforts, the Post-2015 Agenda will be no exception. Despite of its economic size, China is still a developing country in terms of data. Thus, like most developing countries, China needs to grasp this opportunity to learn from advanced experience and develop its national statistical system thus to better fulfill the targets of the Post-2015 Agenda. In fact, China has declared in November 2014, that China will subscribe to the SDDS of IMF, indicating that China welcomes data revolution and determines to contribute to it.

China can contribution to the global partnership for development data as well through 3 ways mainly. The first is to promote this partnership building through bridging the North and the South, enhancing knowledge transfer and technical assistance, jointly establishing 'laboratories' for the innovation of data revolution, strengthening the Capacity Building mechanism, facilitating the building of global data standards and global financing mechanism, etc. The second is, standing with and supporting the South, China will contribute to the balance of technical rationality and political risks especially help the South to avoid losing of data sovereignty and data independence, to escape the trap of 'standards of civilization' in data form, among others. And the final way to contribute to the global partnership is to drive the North to take their right responsibility in data revolution for preventing the re-emergence of traditional donor-recipient relationship in data revolution.

References

African Union (2015) *Africa Data Consensus*. Addis Ababa. 29 March. Available at: http://www.uneca.org/sites/default/files/PageAttachments/final_adc_-_english.pdf (accessed 04 September 2015).

Ban Ki-Moon (2014) *The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet, Synthesis Report of the Secretary-General on the Post-2015 Agenda*. New York: United Nations. 4 December. Available at: http://www.un.org/disabilities/documents/reports/SG_Synthesis_Report_Road_to_Dignity_by_2030.pdf (accessed 04 September 2015).

Boureima B. (2015) *African Group Statement during the Joint Session FFD and Post 2015 Sessions: Technology Facilitation Mechanism and other Science Technology and Innovation Issues*. 22 April.

CGD (2014) *Delivering on the Data Revolution in Sub-Saharan Africa. Final Report of the Data for African Development Working Group*. Washington, D.C.: Center for Global Development and the African Population and Health Research Center.

Cointreau M. and Subedi M. (2013) May Data Revolution is not Your Data Revolution. *Post2015.org*. 7 November. Available at: http://post2015.org/2013/11/07/my-data-revolution-is-not-your-data-revolution (accessed 04 September 2015).

Devarajan S. (2013) Africa's Statistical Tragedy. *Review of Income and Wealth*, vol. 59, issue Supplement S1 (January). DOI: 10.1111/roiw.12013.

Development Horizons (2013) *The Next Development Goals: Do we need a Data Revolution or an Accountability Revolution?* 23 October. Available at: http://www.developmenthorizons.com/2013/10/the-next-development-goals-do-we-need.html?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+DevelopmentHorizons+%28Development+Horizons%29 (accessed 04 September 2015).

European Commission (2015) *A Global Partnership for Poverty Eradication and Sustainable Development after 2015*. Brussels. 5 February. Available at: https://ec.europa.eu/europeaid/sites/devco/files/com-2015-44-final-5-2-2015_en.pdf (accessed 04 September 2015).

HLP UN (2013a) *High Level Panel Bali Communiqué*. High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. Bali. 27 March. Available at: http://www.un.org/sg/management/pdf/Final%20Communique%20Bali.pdf (accessed 04 September 2015).

HLP UN (2013b) *A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*. The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. 30 May. Available at: http://www.un.org/sg/management/pdf/HLP_P2015_Report.pdf (accessed 04 September 2015).

IAEG-MDGs (2013) *Lessons Learned from MDGs Monitoring From a Statistical Perspective*. Report of the Task Team on Lessons Learned from MDGs Monitoring of the IAEG-MDGs. March. Available at: https://unstats.un.org/unsd/broaderprogress/pdf/Lesson%20Learned%20from%20MDG%20Monitoring_2013-03-22%20(IAEG).pdf (accessed 04 September 2015).

IEAG-DR (2014) *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. New York: United Nations. Available at: http://www.undatarevolution.org/wp-content/uploads/2014/11/A-World-That-Counts.pdf (accessed 04 September 2015).

Jerven M. (2013) *Poor Numbers: How We Are Misled by African Development Statistics and What to Do about It*. Ithaca, N.Y.: Cornell University Press.

Jerven M. (2014) Writing about A Data Revolution: Between Rhetoric and Practical Action. *Post2015.org*. 5 December. Available at: http://post2015.org/2014/12/05/writing-about-a-data-revolution-between-rhetoric-and-practical-action/ (accessed 04 September 2015).

Lucas S. T. (2015) Financing the Data Revolution — Elements for Success. *Post2015.org*. 2 February. Available at: http://post2015.org/2015/02/02/financing-the-data-revolution-elements-for-success/ (accessed 04 September 2015).

Manley L. (2015) *Open Data for Business in Kazakhstan*. The World Bank. 24 August. Available at: http://blogs.worldbank.org/opendata/ (accessed 04 September 2015).

OECD (2015) *Development Aid Stable in 2014 but Flows to the Poorest Countries Still Failing*. 8 April. Available at: http://www.oecd.org/development/development-aid-stable-in-2014-but-flows-to-poorest-countries-still-falling.htm (accessed 04 September 2015).

OWG (2014) *Introduction to the Proposal of the Open Working Group for Sustainable Development Goals*. 19 July. New York: UN.

PARIS21 (2015) *A Road Map for a Country-led Data Revolution*. Paris: OECD. Available at: http://datarevolution.paris21.org/sites/default/files/Road_map_for_a_Country_led_Data_Revolution_web.pdf (accessed 04 September 2015).

Post2015.org (2014) *Towards A Strategy for the Data Revolution: Outcomes from the July 11-12 Experts' Workshop*. 24 July. Available at: http://post2015.org/?attachment_id=5497, (accessed 04 September 2015).

PublishWhatYouFund.org (2014) *Achieving a Data Revolution in Sustainable Development: Open Data for Development*. Submission to the UN Expert Advisory Panel on the Data Revolution. 15 October. Available at: http://www.publishwhatyoufund.org/resources/submission-un-expert-advisory-panel-data-revolution/ (accessed 04 September 2015).

Schonberger V. M. and Cukier K. (2013) *Big Data: A Revolution That Will Transform How We Live, Work and Think*. Chinese Edition, Hangzhou: Zhejiang People's Publishing House.

SDSN (2015) *Data for Development: a Needs Assessment for SDG Monitoring and Statistical Capacity Development*. 17 April. Available at: http://unsdsn.org/resources/publications/a-needs-assessment-for-sdg-monitoring-and-statistical-capacity-development/ (accessed 04 September 2015).

Stuart E., Samman E., Avis W. and Berliner T. (2015) The Data Revolution: Finding the Missing Millions. *ODI Research Report*, no. 3. Available at: http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9604.pdf (accessed 04 September 2015).

UN (2014) *The Millennium Development Goals Report 2014*. Available at: http://mdgs.un.org/unsd/mdg/Resources/Static/Products/Progress2014/English2014.pdf (accessed 04 September 2015).

UNECA (2014) *MDG Report 2014: Assessing Progress in Africa toward the Millennium Development Goals*. United Nations Economic Commission for Africa. October. Available at: http://www.endpoverty2015.org/en/2014/11/05/mdg-progress-reports-assessing-progress-in-africa-toward-the-millennium-development-goals/ (accessed 04 September 2015).

UNSD (2014) *Millennium Development Goals: 2014 Progress Chart*. New York: United States, Statistics Division, Department of Economic and Social Affairs. Available at: http://unstats.un.org/unsd/statcom/exhibition/2015/Posters/MDG%20Progress%20Chart%202014.pdf (accessed 04 September 2015).

UNSD (2015) *Statistical Division at a Glance 2015*. Brochure of the 46th Session of the UN Statistic Commission. Available at: http://unstats.un.org/unsd/statcom/brochures/UNSD_Brochure.pdf (accessed 04 September 2015).

World Bank (2015) *Statistical Capacity Indicator Dashboard*. Available at: http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx (accessed 04 September 2015).

Yu M. (2014) Poverty Eradication under Big Data. *China Poverty Alleviation*, vol. 10.