

Transparency through open government data

2.1. Introduction

Turning the 2030 Agenda for Sustainable Development into action, requires accountable and transparent public administration institutions that can mainstream the Sustainable Development Goals (SDGs) into national development plans, and/or sustainable development strategies, in order to implement coherent policies and innovative initiatives.

Transparency and accountability of institutions can be enhanced by opening up government data. Open Government Data is a new approach that can help public sector institutions improve the quality of their decision-making processes and of public services. Open Government Data refers to “government information proactively disclosed and made available online for everyone’s access, reuse and redistribution without restriction” (United Nations, 2014a, p.163). Open Government Data helps promote effective participation in decision-making processes, reduce waste of resources and unleash opportunities for innovation and economic growth. Combined with tools such as Big Data analytics, Open Government Data can also help public administration institutions anticipate future scenarios, including natural disasters.

This chapter highlights the strategies as well as the challenges that arise in implementing public sector open data plans. A holistic vision, political will, leadership capacities, regulatory and institutional frameworks and adequate strategies are required to maximize the benefits of Open Government Data. Data security and privacy also need to be addressed.

The chapter also examines ways to promote demand driven approaches to bridge the digital divide between those who are able to access and fully utilize government data and those who are left behind, in what is an increasingly data-driven society.

2.2. Using open government data to drive progress towards sustainable development

2.2.1. Effective, transparent and accountable government institutions: critical for sustainable development

According to a recent United Nations survey “My World,” an “honest and responsive government” was voted as the fourth highest priority right after education, good healthcare and jobs. Respondents agreed that: “People should have a say on what the government’s priorities should be, and confidence that they will implement those priorities competently. Governments should agree and implement standards for making information available to all people on how public money is spent”.¹



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¹ For details see MY World Analytics website. Available from: <http://data.myworld2015.org/>

The experience of the Millennium Development Goals (MDGs) showed that progress towards poverty eradication, education for all, and access to healthcare is undermined when public institutions² lack capacity or lack transparency and accountability. According to the Millennium Development Goals Report 2015, evidence from 44 countries shows that a serious challenge, such as slum reduction “requires a combination of complementary approaches, from raising awareness to increasing funding to providing basic services, along with policy reforms and institutional strengthening” (United Nations, 2015b, p.61). An analysis of the data of the World Bank on fragile states also indicated that there is a correlation between the conditions of fragility of state institutions and lack of progress towards the MDGs (Hartgen and Klessen, 2010, p. 12).

Weak government institutions impede the effective use of resources for development and undermine the fundamental values of a democracy: freedom, political equality, justice, respect for human rights and human dignity. Furthermore, the absence of effective, transparent and accountable government institutions makes citizens cynical and apathetic towards public affairs, erodes their confidence and trust in both the government and its elected officials, and generally leads to low levels of government legitimacy. The suspicion of government is reflected in the difficulties of attracting competent and idealistic people in public service, and in the general inability of the government to deliver services to its people. As highlighted by a recently published joint report of the United Nations and the International Organization of Supreme Audit Institutions (INTOSAI), “bad governance, corruption, abuse of power, weak institutions and lack of accountability corrode States from within. In some cases, this has brought about the collapse of institutions” (United Nations and INTOSAI, 2013, p. 1).

The 2030 Agenda acknowledges that “democracy, good governance and the rule of law, as well as an enabling environment at the national and international levels, are essential for sustainable development, including sustained and inclusive economic growth, social development, environmental protection and the eradication of poverty and hunger” (United Nations 2015c, para. 9). Goal 16 of the 2030 Agenda specifically calls for effective, accountable and inclusive institutions at all levels. The Agenda also encourages Member States to “integrate the SDGs into their national development strategies and plans, taking into account levels of development and capacities, and to devise a robust monitoring and review framework” (United Nations 2015c, para. 21). Public administration institutions are directly responsible for these tasks, and will therefore play a central role in the implementation of all goals and targets of the 2030 Agenda.

Access to information collected and generated by governments is an important pre-requisite to the exercise of other rights, including the right to fully participate in the political process; which is a condition for achieving inclusive and participatory decision-making, as called for in the 2030 Agenda. The rights to freedom of opinion and information are enshrined in the Universal Declaration of Human Rights of 1948 (article 19). In 1946, the United Nations General Assembly adopted Resolution 59(I), stating, “Freedom of information is a fundamental human right and ... the touchstone of all the freedoms to which the United Nations is consecrated” (United Nations, 1946). United Nations Member States also reaffirmed the right of the public to have access to information, at the turn of the millennium (United Nations 2000, sect. Vol. para. 25). More recently, they recognized “the importance of the free flow of information and knowledge, as the amount of information distributed worldwide grows and the role of communication becomes all the more important”. Member States also recognized “that information and communications technologies have shown their potential to strengthen the exercise of human rights, enabling access to information, freedom of expression, and freedom of assembly and association” (United Nations 2015g, para.42).

² Institutions are generally defined as “the rules of the game in economic, political and social interactions.” From a narrower perspective, they equate to “the formal (e.g., the constitution and party systems) and informal rules and procedures (e.g., distribution of power and social norms) governing human behavior.”, DESA Technical paper on “Challenges and Perspectives in Reforming Governance Institutions, 2005

Goal 16 (Target 10) encourages countries to ensure public access to information and protect fundamental freedoms in accordance with national legislation and international agreements. The right to freedom of information, which includes data, is particularly important for ensuring a transparent and accountable government. It is only through access to the information held by public authorities that people can understand what is happening within governments, how decisions are made and how funds are spent. Access to information empowers people to hold governments accountable for the actions that they ultimately take on their behalf. As highlighted by the United Nations Committee of Experts on Public Administration, at its fourteenth session, “access to information and open data, improvement of public procurement, strengthening of citizen and parliamentary oversight bodies, enhanced civic education and access to government by civil society are essential tools in activating citizens’ ability to oversee government administration and in confronting and limiting the impact of corruption” (United Nations, 2015d).

2.2.2. Open government data as an enabler of transparent, accountable and effective public administration institutions in support of the 2030 Agenda for Sustainable Development

The use of ICTs in government has allowed people to access data that was previously difficult to obtain unless one would visit a government office in person. Governments produce and collect vast amounts of data on numerous issues from expenditures for national education or the military, to the number of hospitals, quality of the air, transcript of judicial hearings, vital records, traffic congestion and weather to name a few. Providing government information online in open standards³ makes this information readily available for anyone to know or use. Today, government data can be found on regional, national and local online portals in many countries across the globe.

Open access to publicly held information is critical to sustainable development for a number of reasons. First, Open Government Data supports policy integration and institutional coordination by improving data sharing across ministries and levels of government (see Chapter 1). This, along with Whole-of-Government (WoG) approaches to service delivery, enhances the effectiveness of governments’ response to complex and multidimensional development challenges.

Second, Open Government Data contributes to the effectiveness of public institutions in fighting poverty, reducing hunger, providing essential social services and responding to the needs of women and vulnerable groups. Further, access to timely and reliable data about public sector policies, allocation of tax revenues and international aid provides people with the information they need to hold their governments accountable. As highlighted in a recent United Nations report, “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” (United Nations, 2014b).

Third, Open Government Data can enhance collaboration and partnerships across sectors in planning and decision-making processes, and in the design and delivery of services; therefore increasing value to the public. The availability of data for different government sectors and services can also be used to benchmark different services and thereby increase the performance of the public sector. Access to information about national priorities, policies, action plans and expenditures in support of the SDGs can also ensure that government institutions deliver on promises made. Moreover, quality, accessible, timely and reliable disaggregated data is critical to measure progress made in the implementation of the SDGs and ensure that the

³ "Open Standards", as defined by the ITU, are standards made available to the general public and are developed (or approved) and maintained via a collaborative and consensus driven process. "Open Standards" facilitate interoperability and data exchange among different products or services and are intended for 4

goals are making a difference for the poorest and most vulnerable and that no one is left behind. Secure and reliable data to monitor development requires effective, strong, and sound national statistical systems (Montiel, 2016). As information empowers people to hold their governments accountable and creates incentives for a more efficient use of public resources, Open Government Data can help follow-up and review the implementation of the SDGs. While this chapter does not focus on how to improve data collection for the implementation of the SDGs per se, disclosing the information once collected is vital for transparency and accountability purposes.

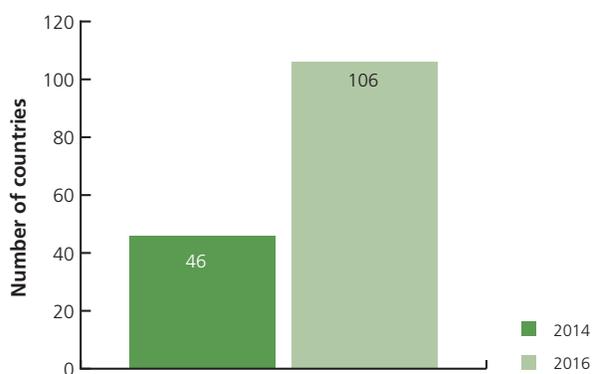
Readily available government data provides people with the tools to effectively participate in public affairs because they are more informed and better able to offer opinions and ideas in deliberative processes. For example, Kenya has developed an Open Government Data portal which enables citizens to suggest what data to disclose.⁴ Government data sets can also be used to produce services that better target people's needs and solve problems in innovative ways.

Fourth, making data available online allows the public to reuse and remix freely available data for any purpose, leading to new services, innovation and enhanced economic opportunities. The 2030 Agenda "is new to all of us and there is no paved way to follow, every country needs to find the solution that fits its own national context". Innovation in policies, institutions and practices will be a key ingredient (Wu, 2015).

• Open Government Data in the 2016 Survey

Overall, the Survey shows that the availability and use of Open Government Data initiatives vary around the world, not only in terms of number of datasets released and how they are presented and organized, but also in terms of the tools provided to increase usage of data. Many countries have established dedicated portals to share data, which are known as "Open Government Data portals". Many also have Open Government Data catalogues, which are lists of all datasets available, usually organized by theme (e.g., environment, spending, health, etc.) and/or by ministry, and available on the national portal or Open Government Data portal. As highlighted in Figure 2.1, the number of countries with Open Government Data catalogues has more than doubled in 2016 compared to 2014, with 106 out of 193 countries offering Open Government Data catalogues, compared to 46 countries in 2014. This is a significant increase and shows that many countries are investing in releasing open government data.

Figure 2.1. Countries with Open Government Data Catalogues in 2014 and 2016



⁴ For details see: Kenya Open Data website. Suggest Data section. Available from: <https://opendata.go.ke/nominate>

- **Tracking the money spent on sustainable development through open budgets**

The 2030 Agenda envisions “a just, equitable, tolerant, open and socially inclusive world in which the needs of the most vulnerable are met” (United Nations, 2015b, para.8). One of the most critical factors that will determine successful implementation of the SDGs will thus be whether resources, including aid, will be spent to eradicate poverty and ensure the well-being of all (United Nations, 2015e).

Increased transparency and financial accountability are also critical to prevent corruption, which diverts vital resources that can otherwise be allocated to addressing the needs of vulnerable groups. In addition, transparency gives people in developing countries the information they need to improve their lives. When farmers have access to timely and comprehensive information on prices, they can make better investment decisions for the future (United Nations, 2015f). When people can track whether tax revenue is being used to provide quality services for the benefit of all, they have greater trust in their own governments (United Nations, 2013).

The key pillars of budget accountability include budget transparency, public participation and formal oversight. According to the Open Budget Survey 2015, “the public needs access to budget information and opportunities to participate throughout the budget process. Coupled with oversight by legislatures and audit institutions, this contributes to a more accountable use of public money. A growing body of evidence indicates such budgetary checks and balances yield better outcomes for people, especially those who are poor or vulnerable.”⁵ According to the 2016 Survey, 128 out of 193 Member States of the United Nations provide open data about government spending, which is essential to holding governments accountable. This, however, does not show the degree of people’s participation in budget design or the effectiveness of oversight institutions at the national level.

Providing information online about government spending is essential for people’s participation in budget design and implementation, as well as in monitoring revenue expenditure through Supreme Audit Institutions (SAI).⁶ This requires the existence of appropriate policies and mechanisms to engage people in budgetary matters (see Chapter 3). According to the Open Budget Survey 2015, “in the vast majority of countries assessed, there is either, insufficient budget transparency, little or no opportunities for public participation in budgeting, weak formal oversight bodies, or some combination of these conditions. The prevalence of weak budget accountability ecosystems ultimately threatens national development outcomes and the success of global initiatives like the sustainable development goals and” agreements on climate change.⁷

In the Addis Ababa Action Agenda, the United Nations Member States reaffirmed the need to increase transparency and equal participation in the budgeting process, and promote gender responsive budgeting and tracking (United Nations, 2015e, para.30). They also committed to strengthening national control mechanisms, such as supreme audit institutions, along with other independent oversight institutions, as appropriate.

- **Promoting accountability and transparency of parliaments through open data**

National parliaments play an essential role in keeping governments accountable and in providing oversight of public expenditure. The 2030 Agenda acknowledges “the essential role of national parliaments through their enactment of legislation and adoption of budgets and their role in ensuring accountability for the effective implementation of ... commitments”

⁵ For details see: open Budget Survey 2015 at: <http://www.internationalbudget.org/>

⁶ Supreme Audit Institutions are national agencies responsible for auditing government revenue and spending.

⁷ For details see: International Budget Partnership website. Open Budget Survey 2015. Available from: <http://internationalbudget.org/opening-budgets/open-budget-initiative/open-budget-survey/publications-2/rankings-key-findings/key-findings/>

(United Nations, 2015c). As such, access to timely, reliable and relevant legal information can help implement the 2030 Agenda (Gass, 2015).

By publishing laws and other legal information online, parliaments can help people access justice and the rule of law and support public involvement in the legislative processes and in monitoring the work of parliament. This in turn, can make parliaments more transparent, accountable and effective.

According to the World e-Parliament Report 2012, the use of open data standards in parliament can support the legislative processes by facilitating the search, exchange, analysis and cross-referencing of legislative documents. For example, a section of a proposed bill could be automatically linked to the portion of an existing law that it would amend.

Open data standards in parliament can also ensure that documents are available in various formats (e.g. in electronic or printed form), thus providing flexibility to the user in terms of access. Among other advantages, such open standards can help to prepare legislations, amendments and other documents, preserve non-proprietary documents and ensure long-term access to legislative documents. For example, the United Kingdom established *legislation.gov.uk*, an online portal providing access to legislation documents which is designed around open standards. It also developed an online petition system to enable people to raise, sign, and track petitions online.⁸

Over the past few years, there has been growing interest in open parliaments. For example, a session in the recent Open Government Partnership Global Summit hosted by the Government of Mexico in October 2015, focused on open parliament action plans, which aim to strengthen transparency of the legislative process and to increase public involvement. A number of initiatives were discussed in this session, including those of Chile, France, Georgia and Mexico.

Furthermore, parliamentary networks on issues related to open standards are also being established. In particular, Latin America has launched the Network of Open Parliaments which is composed of the national legislatures of the 35 independent states, and supported by *ParlAmericas*.⁹

Several countries have also implemented a complete digital law making system, often called “e-Law” or electronic law making process. This system provides access to data in open standards for all stages of the legislative process (from the first draft to the promulgation of the law). The result is often greater transparency, collaboration, efficiency and public participation. The United Nations developed an initiative to support country efforts in Africa to make parliaments more open and accessible to citizens through the Bungeni Parliamentary and Legislative Information System. Bungeni (the Kiswahili word for “inside parliament”) is based on open standards and open source applications which aim to provide solutions for drafting, managing, consolidating and publishing legislative and other parliamentary documents. People are virtually allowed “inside parliament”.

- **Access to justice through open government data**

Access to judicial information enhances transparency of the judicial system as well as trust in the legal system of a country. Such access can also help to inform policies on the judiciary, track performance and ensure effective access to justice. Yet, access to judicial records and to information about the judiciary has been often overlooked (Open Society Justice Initiative, 2009, p.i). While there are many open government data initiatives for the executive and

⁸ For more information on this initiative and open standard principles in the United Kingdom, see Open Standards Principles, United Kingdom, 2012 available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/78892/Open-Standards-Principles-FINAL.pdf

⁹ For details see Parliamentarians for the Americas website. Members section. Available from: <http://www.parlAmericas.org/en/about/members.aspx>

increasingly for the legislative branch of government, there seem to be less for the judiciary. This, in part, could be related to the nature of its functions.

While not all information can or should be disclosed, there is plenty of information that people need for improved judicial transparency. The first type of information is about adjudicative work of the courts, including transcripts, documents filed with the court, trial exhibits, recordings, settlements, opinions and finally dockets,¹⁰ that are the most readily available to the public. The second type is about administrative processes, and includes data covering a number of areas such as court budgets, personnel and human resources, contracts between the court and third parties for construction, maintenance, office supplies, etc.; and organizational matters. The third type of information is about judges, including data about their salaries, personal finances (such as debts and investments), vacancies, disciplinary matters and selection of judges (ibid), which is not often provided.

In some countries, courts are adopting open government principles to build people's trust in the judicial process. Courts are also using social media tools to engage the public and promote collaboration. For example in the United States, according to the National Centre for State Courts, 34 states along with Guam, Puerto Rico and the District of Columbia use some form of social media to share information. This includes 30 courts that use Twitter. In a 2012 survey by the Conference of Court Public Information Officers, 46.1 percent of responding judges stated they use social media profile sites (McLaughlin, 2015).

A comparative study conducted in 2014 in Argentina, Chile and Uruguay shows that the only data that is presently open is about judicial outcomes. The study concluded that "making data public occurs out of the conviction that judicial services should be transparent, as opposed to the belief that it can lead to better outcomes; the result is that data is not used systematically in the design of quality judicial policies" (Elena, Aquilino, and Pichón Rivière, 2014). Furthermore, data was not used for innovation or economic opportunities.

2.2.3. Open Government Data initiatives in support of Sustainable Development Goals (SDGs)

Open government data initiatives can contribute in many ways to the achievement of the SDGs.

Goal 1: End poverty in all its forms everywhere



By providing online information about available public services, governments can facilitate access to basic services for people living in poverty. In addition, Open Government Data platforms can provide information to social innovators and entrepreneurs in order to help them generate innovative ideas that aid in fighting poverty and empowering the poorest. For example, the MapAfrica project was launched by the African Development Bank (AfDB) to support statistical development in Africa. This information is used for designing and managing effective development policies to reduce poverty. The project has a geocoding tool that allows the institution to improve the geographic allocations of its resources, and provides stakeholders with a better understanding of the Bank's activities, as well as its impact on local development.

¹⁰ Lists of cases awaiting action in court

Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture



Open Government Data promotes better education of farmers and consumers about agriculture and nutrition and raises awareness of vulnerable groups' needs. For example, the Plantwise Knowledge Bank is a comprehensive knowledge bank of data, which has brought together a number of organizations to partner in providing data, data points and information resources. Combined with data from the Centre for Agriculture and Bioscience International (CABI), a not-for-profit organization, users can access plant health information, pest diagnostic search tools, maps of pest locations and customized alerts on pest news. This information will allow users for the first time, to predict where and how fast plant diseases spread, so that farmers can be given timely advice to spot and prevent outbreaks.

Goal 3: Ensure healthy lives and promote well-being for all at all ages



Providing data about health and health services can assist people in more rapidly accessing health care facilities and can help address health epidemics in a more effective way. Some examples of relevant data include: the number, location and availability of health service facilities, information about the spread of health epidemics across regions within a country; and facts about where and how to access medicines. The Mobile Alliance for Maternal Action (MAMA), which extends to 70 countries world-wide, is an example of how governments can partner with other stakeholders to improve the well-being of new mothers and their babies. The programme provides pregnant women and new mothers with essential information that can also help them connect to local health services. The result is fewer complications in pregnancy, as well as fewer childhood deaths. MAMA comprises a multi-disciplinary team that “brings together leaders from across corporate, non-profit and government sectors. The initiative gathers data from clinical records, self-reports, phone surveys, enrolment data and data from government clinics.

Another example comes from the Government of Uruguay which won in 2015 an Open Partnership Award for its website “ATuServicio.uy.” This initiative allows direct access to key performance indicators of every health care service in Uruguay, and includes official and updated data on average wait times for treatment, user satisfaction and fee structures by providers, among others. The program’s objective was to drastically increase access to the indicators of 100% of the health care providers in Uruguay.¹¹

Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



Open Government Data can lead to increased access to public education. Data about schools’ performance can also help improve the quality of education through better policies and management of educational institutions. For example, South Africa’s Centre for Higher Education Transformation (CHET) project has developed an online open data platform providing data on the performance of the Higher Education system in South Africa. The intention is to assist university planners and councils in making assessments that contribute to evidenced-based management and governance. This platform is enriched by data from the government (education sector) but also from other stakeholders and their own surveys.¹²

¹¹ For details see Open Partnership Award. Available from: <https://www.opengovawards.org/data/OGPBooklet2015.pdf>

¹² For details see CHET website. Available from: <http://chet.org.za/data/>

Goal 5: Achieve gender equality and empower all women and girls



Open Government Data can help empower women by making information on a host of services available in open standards. Data can help improve gender sensitive policy-making; it can ensure better access to and quality of key services and help address the needs of women in under-privileged areas. For example, The Girl Impact Map platform in Rwanda allows organisations to identify girls' needs and challenges in a more strategic, informed manner, focusing specifically on where girls are physically located. This leads to more effective and efficient distribution of resources. The platform includes behavioural and attitudinal data from the National Census, Demographic and Health Survey and surveys commissioned by Girl Hub Rwanda. In addition, the government also provides data about the locations of public resources that are useful for girls (e.g. schools, hospitals, police stations).¹³

Goal 6: Ensure availability and sustainable management of water and sanitation for all



Open Government Data can support the sustainable management of water and sanitation for all by ensuring better access to information about water facilities and quality of water, and disseminating data about water-borne diseases in specific locations. It can also help to map water shortages and droughts, as well as water and sanitation needs of vulnerable groups, particularly in slums and dwellings in cities. For example, the Lava Project is a web-based platform that holds a large amount of information and scientific data on land, air and water in New Zealand. It helps local communities find the balance between using natural resources and maintaining their quality and availability. Focusing on four different topics, including lakes, water quantity, coastal regions and river quality, people are more aware of the urgent need to preserve their environment.

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all



By disseminating data about household energy consumption, governments can help better monitor and manage energy. In addition, government data can improve investments in renewable energy infrastructure and educate people about the importance of conserving energy. For example, the city of Amsterdam in the Netherlands has developed the initiative "Energy Atlas", which is available as open data via an interactive map. Its purpose is to stimulate the use of renewable energy as citizens and businesses become more aware of the usage of energy in their neighbourhoods and find out where both renewable sources of energy and energy infrastructure are located.¹⁴

Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



Opening up government data can lead to significant economic gains. It can help to transform every sector of the economy and to promote innovative services in order to increase employment and public value. In fact, a recent study conducted by McKinsey, indicated that, globally, seven sectors, including education, transportation, consumer products, electric power, oil and gas, health care and consumer finance alone could generate more than \$3 trillion a year - and perhaps as much as \$5 trillion a year - as a result of open data provided by governments (McKinsey, 2013). Other similar studies conducted by the European Union and by specific governments have also shown that the re-use of government

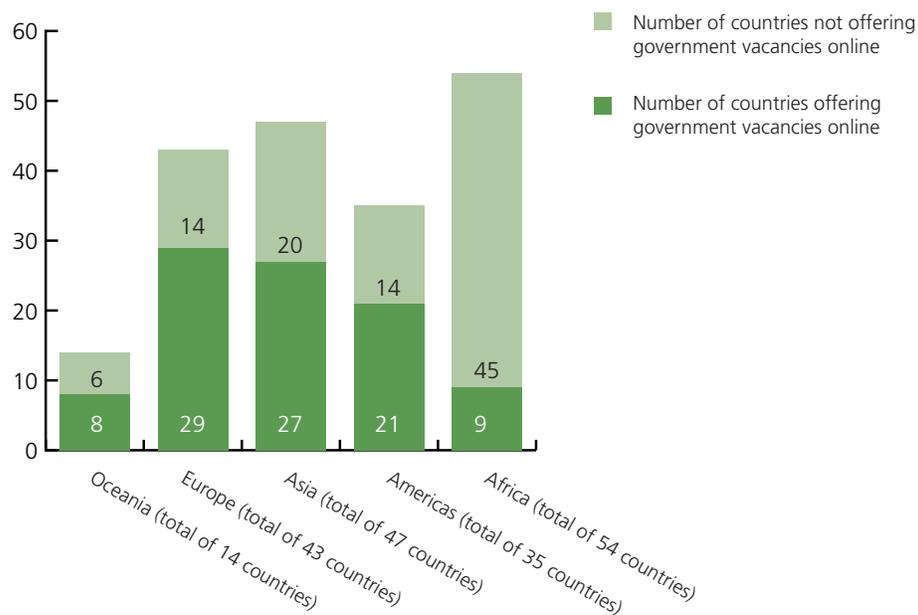
¹³ For details see Girl Impact Map website. Available from: <http://www.girlimpactmap.org/>

¹⁴ For details see Energy Atlas. Available from: <http://amsterdamsmartcity.com/projects/detail/id/71/slug/energy-atlas>

data can lead to considerable economic gains, and that the full potential of open government data is still untapped (Chui, Farrell, and Jackson, 2014). Additionally, there is evidence that start-ups and Small and Medium Enterprises (SMEs) are benefitting from the re-use of government data (World Bank, 2014). Making data available that can be re-used, allows people to develop new commercial services, thus generating new employment opportunities and facilitating the creation of start-ups (e.g., new apps for public transportation). For example, GovHack of Australia is an event that draws together people from government, industry, academia and the general public to mashup.¹⁵ reuse and remix government data. GovHack focuses on building better democracy through innovation, participation and the development of a strong community of civic innovators. The lead agency, the Digital Transformation Office of the Government of Australia, awards prizes to the best innovators.¹⁶

By putting government vacancies online, governments can share information about employment opportunities in the public sector. Based on the 2016 Survey, Figure 2.2 shows that such features are offered in 21 out of 35 countries in the Americas; in 29 out of 43 countries in total in Europe; in 8 countries out of 14 in Oceania; and in 27 out of 47 in Asia. 9 out of 54 countries in Africa offer online information about job vacancies.

Figure 2.2. Government vacancies online, by region



¹⁵ A mashup, in this regard, refers to the use of content from more than one source to create a single new dataset or service.

¹⁶ For details see GovHack website. Available from: <https://www.govhack.org/>

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



Open Government Data can promote innovation through the development of new services. It can also help increase access of SMEs to business opportunities. For example, India's FinInclusion Lab provides a list of business correspondents (BCs) and microfinance institutions (MFIs) at the state and district level. By uniting these two important datasets against a backdrop of demographic and development data, the user can gain a more comprehensive view about the access point and supply of financial services to low income households and their businesses. The data gathered come from different sources, including MFIs and supporting organizations, which share institutional data in order to increase transparency and gain visibility. Currently, the FinInclusion platform provides data for 4 Asian, 15 African and 3 Latin American countries.¹⁷

Goal 10: Reduce inequality within and among countries



With reference to reducing inequality within and among countries, Open Government Data can play an important role by providing information in open standards about vulnerable groups. This can support decision-making and provide national and local communities with appropriate tools to work more effectively with vulnerable groups. For example in Canada, the initiative "Imminy" uses data related to climate, labour industries and crime and unemployment rates, to provide city suggestions for immigrants moving to Canada.¹⁸ It connects immigrants to communities that match their life preferences and offer job opportunities. Using datasets from Employment and Social Development Canada, Statistics Canada, the Canada Revenue Agency and others, Imminy asks users to complete a simple survey. From there, individuals are matched with cities that provide them with the greatest potential for success based on their skills and preferences.

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable



Open Government Data can have several positive impacts in support of sustainable cities, providing information about local urban planning, finance, job availability, times and arrivals of transportation and access to education, healthcare and other facilities. Unleashing open government data, especially at the city level, promotes innovation and co-creation of public value¹⁹ in service delivery (see Chapters 3 and 4). For example, many cities in the People's Republic of China provide online open data government portals and encourage people's collaboration in developing new applications (see Box 2.1.)

Box 2.1. People's Republic of China: Initiatives of open government data

Beijing, Shanghai, Chongqing and many other cities have opened "data.gov.cn" websites in order to allow citizens to freely access government data. Beijing's open government data contains over 400 datasets, including tourism, education, transportation, land use zoning and medical treatment. Providing free information about maps, bus lines and other services, the availability of data helps people spend less. The website also provides a special "APP" column where people can upload an App developed based on the available government data, so that others may download and use it. At present, there are many examples of newly developed apps, such as for example, applications for "Food security", "I love health", and "Travelling in Beijing" among others.



Source: E-government Research Centre, China Academy Governance

¹⁷ For details see FinInclusion Lab website. Available from: <http://fininclusionlab.org/>

¹⁸ For details see Imminy website. Available from: <http://imminy.com/>

¹⁹ Co-creation of public value can be understood as the involvement of people in the design and delivery of a service.

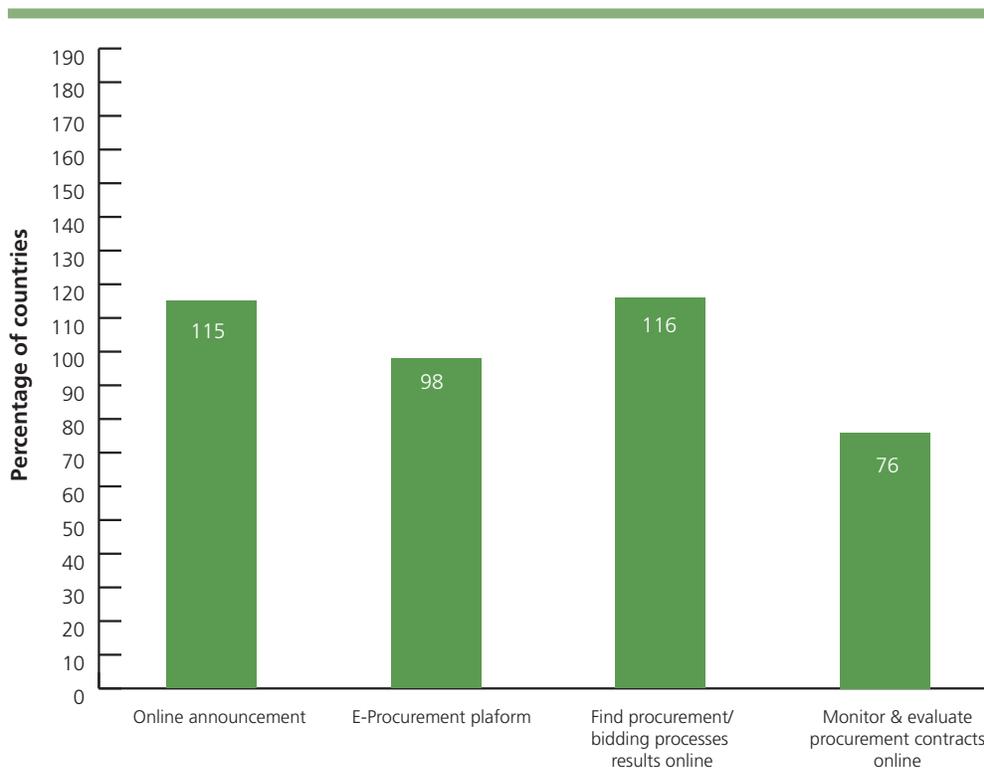
Goal 12: Ensure sustainable consumption and production patterns



Open Government Data can help inform people about consumption and production patterns and raise awareness to encourage more responsible behaviours. For example, Carbon Culture is an initiative based in the United Kingdom, which encourages both companies and governments to publish their energy and carbon performance in real time. Ideas and feedback are encouraged from both employees and the public, about how to get better results.²⁰ Target 12.7 encourages the promotion of “public procurement practices that are sustainable, in accordance with national policies and priorities”. Providing online information about bidding processes and results through an e-procurement online platform is an example of how governments can increase transparency and efficiency, ensure sustainable production patterns as well as unleash economic opportunities for all. This is particularly relevant for Small and Medium Enterprises (SMEs) since they can easily access information regarding public tenders and monitor bidding processes. E-procurement can also increase economic growth, cut costs by producing State savings and improve market competitiveness in a country.

The 2016 Survey shows that 98 out of 193 countries provide an e-procurement platform compared to only 63 countries in 2014 (see Figure 2.3). National portals providing information about results of procurement/bidding processes are available today in 116 countries compared to 55 in 2014. The number of national portal(s) that offer information about monitoring and evaluation of existing procurement contracts is 76 compared to 33 in 2014. An increasing number of countries thus give importance to disclosing online information about procurement processes.

Figure 2.3. Number of countries offering tools related to e-procurement out of 193



²⁰ For details see Carbon Culture website. Available from: <https://platform.carbonculture.net>

Of particular relevance to the SDGs is the recent practice of green e-public procurement. This refers to the “purchase of environmentally friendly products and services, the selection of contractors respectful to the environment and the setting of environmental requirements in a contract”.²¹ By providing businesses with incentives to undertake practices that, while ensuring profits, take into account preserving the planet, this information can help reduce negative impacts on the environment and promote eco-innovation. The European Union for instance, is promoting the concept of green public procurement on a voluntary basis and has published a compilation of best practices from across the region (European Commission, 2012). Tanzania has also devised a sustainable public procurement initiative which includes sensitization and raising people’s awareness about the importance of both, sustainability in public procurement, as well as preserving the environment.²² There are also initiatives to compile information about green purchasing in one place on national portals.²³ There is need for further developing initiatives related to the social impact of procured goods and services.

Goal 13: Take urgent action to combat climate change and its impacts



Open Government Data on climate, weather, land and other natural resources, combined with Big Data analytics (see section 2.2.4) and the Internet of Things (see Chapter 4), can help preserve the planet by tackling environmental issues in a more effective way. For example, the White House in the United States recently launched an initiative to expand the use of climate data nationwide, which is hosted on “Data.gov” at “climate.data.gov.” The goal is to help communities cope with the impacts of global warming. Further, data-driven analysis can help devise comprehensive strategies to address flooding challenges, and thus lead to significant government savings in the long-term. InfoAmazonia provides timely news and reports about the endangered Amazon region. A network of organizations and journalists deliver updates from each of the nine countries of the Amazonian forest. The data collected is freely available for download and is renewed frequently. Comparing various experiences and data among these countries leads to better public knowledge about and interest in issues of the Amazon region. This is very important as the Amazon region is one of the most biodiverse in the world, and helps to keep climate change in check by absorbing CO₂.²⁴

Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development



Open Government Data can help monitor and better manage ocean pollution. By disseminating data about fishing patterns, governments can also help monitor compliance with national regulations and better manage this essential resource. Depletion of fisheries is an alarming challenge, and some countries have started to take concrete measures to halt this process. For example, the Caribbean Open Institute seeks to facilitate the emergence of a Caribbean Knowledge Economy and help governments implement open government data principles.²⁵ It also helps communities to better use the data that is available. The Fisheries project of Trinidad and Tobago, which won an Award on Digital Innovation, develops mobile services and applications for Caribbean communities that live in poverty by providing useful data to fishers.

²¹ For details see Sustainability Concepts website. Green Procurement. Available from: <http://www.gdrc.org/sustdev/concepts/14-gproc.html>

²² For details see United Nations Sustainable Development Knowledge Platform website. Available from: <http://www.un.org/esa/sustdev/sdissues/consumption/procurement/clemencec.pdf>

²³ For details see: US General Services Administration website. Green Procurement Compilation. Available from: <http://www.gsa.gov/portal/content/198257>

²⁴ For details see InfoAmazonia website. Available from: <http://infoamazonia.org/about/>

²⁵ For details see Carribean Open Institute website. Available from: <http://caribbeanopeninstitute.org/content/open-data>

Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



Open Government Data can help disseminate information about natural resources with a view to enhancing preservation and management. Combined with Big Data and other types of data, open government data can support the development of knowledge networks and innovative services. For example the World Resources Institute (WRI), Google and a group of more than 40 partners launched Global Forest Watch (GFW), a dynamic online forest monitoring and alert system that empowers people everywhere to monitor the situation forests. This initiative brings governments, businesses and communities to work together toward forest preservation. Global Forest Watch unites the latest satellite technology, open data and crowdsourcing to guarantee access to timely and reliable information about forests.²⁶

Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels



As shown in the present report, Open Government Data can support access to justice for all and building effective, accountable and inclusive institutions at all levels in many ways. For instance, the Uzbek Open Government Data Portal²⁷ launched in 2015 offers more than 500 datasets to the public and promotes government agencies' cooperation through 25 visible hyperlinks that connect to the websites of other government bodies. Initiatives on opening up and sharing data about campaign finance are also important to promote a more transparent and accountable government.²⁸

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development



Open Government Data can also support the management and delivery of aid. For example with the "Aid Transparency Portal" which was developed in Timor-Leste, the government had a wide variety of aims: to improve aid management; to make aid reporting more accurate and predictable; to assist in preparing quality State Budgets that respond to the needs of people; to enable better coordination between development partners and Government; to encourage better coordination between development partners operating in Timor-Leste; and to reduce overlap and address development priority areas more effectively.²⁹

2.2.4. Open government data and Big Data for increased institutional performance and effectiveness

New technologies like Big Data and the Internet of Things, combined with advanced use of geospatial information systems and predictive analytics (see Chapters 1 and 4) are powerful tools for anticipatory governance, which is a way to deal with complex changes by providing tools to anticipate various possible future scenarios. Predictive analytics "is the practice of extracting information from existing data sets in order to determine patterns and predict future outcomes and trends. Predictive analytics does not tell you what will happen in the future". It uses technology and statistical methods to review vast amounts of data to predict outcomes in different fields of application. Predictive analytics and environmental innovation

²⁶ For details see Global Forest Watch website. Available from: <http://blog.globalforestwatch.org/>

²⁷ For details see Uzbekistan Open Government Data Portal. Available from: <http://data.gov.uz/uz/frontend>

²⁸ For details see example of the Campaign Finance Institute, http://cfinst.org/data/2014_House_Independent.aspx

²⁹ For details see Timor-Leste Aid transparency website, Available from: <https://www.aidtransparency.gov.tl/>

can, through e-government solutions, improve water management, reduce land degradation, decrease energy consumption and promote early warning and disaster management systems. In addition, new data-mining techniques are enabling governments to devise new solutions in every field of public concern, from managing traffic to measuring performance and identifying and pre-empting problems by providing more options based on intelligent analytics.

Anticipatory governance can help improve effectiveness and transparency of government institutions, particularly in regards to service delivery; and further progress in the three dimensions of sustainable development. At the same time, combining transparency of information with Big Data analytics can help track performance in service delivery and lead to gains in efficiency. Anticipatory or predictive governance through data analytics, if managed well, has the potential to allow governments to focus more on prevention than reaction. It can also help to enhance disaster risk management through better planning.

Though Open Government Data and Big Data (see Chapter 1) are two distinct concepts, Big Data can also be released as open government data. Governments collect Big Data from multiple sources and make it available to the public. This information can be related to weather and satellite data, geospatial data, some kinds of data on health, finance, energy and the environment. There is in fact a blurring between open government data and Big Data since much of the data that governments have is “inherently also Government Big Data due to the size of government operations and of the population and economy they serve and regulate” (World Bank, 2014, p. 8). “The expansion of open data, combined with advances in Big Data analytics is freeing information that was once trapped inside the dusty pages of overlooked reports” (Chui, Farell and Jackson, 2014, p. 8).

“Nowcasting”, which describes present weather conditions and forecasts weather changes that are immediately expected,³⁰ is becoming especially important to warn citizens about imminent disasters. Nowcasting can save many lives as in the case of earthquake early warning systems. In Japan, authorities established a “Nowcast” earthquake information system to provide information such as the times of seismic wave arrivals and estimated seismic intensities for areas where seismic waves have not yet come.

The National Disaster Management Information System in the Republic of Korea is an information system that offers comprehensive and timely data about each stage of disaster management procedures (prevention, preparation, response and recovery). Dissemination of disaster status information between local governments and related institutions currently takes only one minute, compared to the 35 minutes that were needed prior to the system’s development. Data is collected from 3,800 closed-circuit televisions (CCTV), which are used for disaster management in an open system. The public can also receive SMS messages on disaster information.

The city of Boston has developed an initiative called “Boston about Results”, which uses open government data combined with analytics to design effective strategies for weather hazards and emergency preparedness (see Box 2.2).

According to a recent study, “harnessing Big Data in the public sector has enormous potential. The same study shows that more than \$300 billion could be saved by using Big Data to drive efficiency and quality in the healthcare sector in the United States. In the developed economies of Europe, government administrators could save more than €100 billion (\$149 billion) in operational efficiency improvements alone by using Big Data (not including using Big Data to reduce fraud and errors and boost the collection of tax revenues)”.³¹ Several issues, however, need to be addressed to truly capture the potential of Big Data. Appropriate regulatory frameworks and policies (including on privacy and security issues), capacities to

³⁰ For details see http://www.oxforddictionaries.com/us/definition/american_english/nowcast

³¹ For details see The McKinsey Global Institute. (2011). “Big Data: The next frontier for innovation, competition, and productivity”.

Box 2.2. Boston About Results (BAR)

Source: <http://www.cityofboston.gov/BAR/>

“Boston About Results” is a performance management system, which was launched in 2006 in the City of Boston, United States. It was designed to help policy-makers make more informed decisions on the delivery of public services and to provide citizens with information on services, programme outputs and resource allocation. The system was set up to accomplish three missions: (i) ensure that citizens receive the best possible public services in all areas, (ii) identify opportunities for performance improvement and (iii) share performance information. The city publishes information about the performance of sixteen of its departments, as well as cross-departmental efforts, according to targets and priorities set by the Mayor. “Boston About Results” assesses service delivery performance by analysing the entire city’s data during regular meetings with department heads, management, budget and policy analysts, cabinet chiefs and the Mayor’s Chief of Staff. As such, the initiative improves the accountability and transparency of Boston’s public administration and strengthens the management of the city’s programmes by measuring their outputs.

use and analyse the data, as well as appropriate technology are all important considerations. Governments also need to learn how to validate and integrate data from different sources.

2.3. Open government data implementation: challenges and strategies

The issue that many governments face today is not whether to open up their data, but how to do so. Proper governance and careful consideration of both opportunities and challenges is needed. Opening up government data poses a number of challenges, including issues related to legal frameworks, policies and principles, data management and protection, identity management, privacy and cyber security. A UN-DESA project³² identified eight key factors as necessary for a successful Open Government Data implementation plan, including:

- Government commitment
- Policy/legal frameworks
- Institutional structures
- Responsibilities and capabilities within government
- Government data management policies and procedures
- Demand for open data
- Civic engagement and capabilities for open data
- Funding an open data program
- National technology and skills infrastructure

While opening up data can increase public sector transparency and accountability, it is only one of the key ingredients. A host of other mechanisms are also needed to promote effective public accountability, such as well-designed civil servants’ codes of conduct, human resources development and training, effective Supreme Audit Institutions, among others. Thus, open government data should not be seen as a panacea for making institutions more transparent and accountable, but rather as one key element. Accordingly, it is important to devise multiple strategies that complement one another in promoting transparent and accountable public sector institutions.

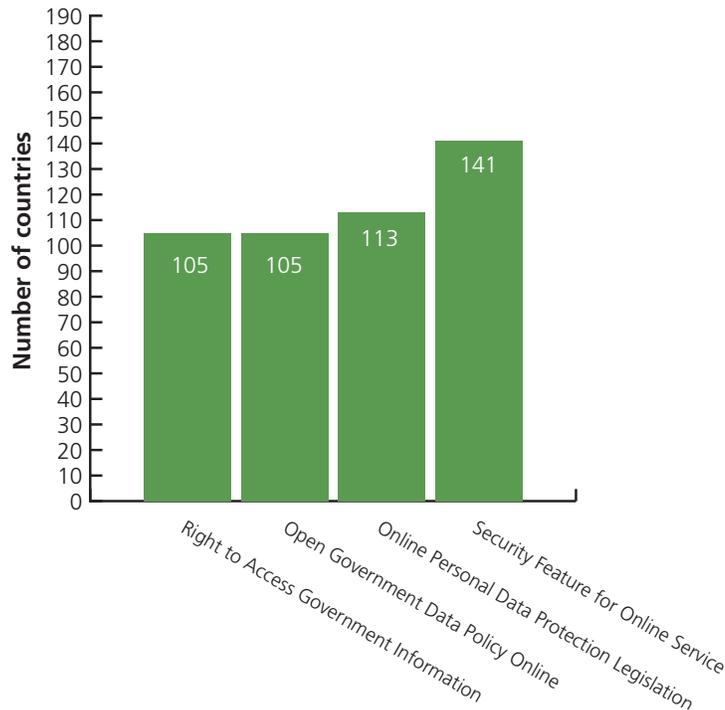
³² UN-DESA/DPADM is implementing a capacity development project on “Strengthening of Capacities of Developing Countries to Provide Access to Information for Sustainable Development through Open Government Data”. Information available from: <https://publicadministration.un.org/en/projects>

2.3.1. Leadership, regulatory frameworks and institutional coordination

Harnessing political will across different levels of government is a key challenge to providing open government data. In fact, opening up government data is above all a political decision about how much information the government is willing to share with people and to what extent it is willing to invest in capacity development for data literacy within government and society.

Access to information or freedom of information usually begins in constitutions as a political or civic right. A 2015 study conducted by the United Nations showed that provisions granting the right to information are contained in the constitutions of 118 out of 193 United Nations Member States, or 62% (United Nations, 2015f). Legislation on the right to information is usually contained in Freedom of Information Acts (FOIAs) or an equivalent. The 2016 Survey findings highlight that 105 out of 193, or 54% of Member States have such legislation on the right to access government information. On the one hand, this number is relatively low given the importance of freedom of information. On the other hand, while having the right to access information is an important first step, a study has shown that such laws do not guarantee the right to information in practice.³³ 105 countries also offer online policies on open government data and 113 countries offer online personal data protection legislation, namely Data Protection Acts or an equivalent. In addition, 141 offer security features for online services (see Figure 2.4) which allow users to access national portals in a secure way.

Figure 2.4. Number of countries offering Open Government Data related legislation



The Sunlight Foundation, a non-partisan organization based in the United States of America, has created a living set of open data guidelines to address what data should be public, how to make data public, and how to implement policy (see Box 2.3).³⁴

³³ For details see http://worldjusticeproject.org/sites/default/files/ogj_2015.pdf105

³⁴ For details see <http://sunlightfoundation.com/opendataguidelines>

Box 2.3. How to implement open government data policy

- Create or appoint oversight authority
- Create guidance or other binding regulations for implementation
- Incorporate public perspectives into policy implementation
- Set appropriately ambitious timelines for implementation
- Create processes to ensure data quality
- Ensure sufficient funding for implementation
- Create or explore potential partnerships
- Mandate future review for potential changes to this policy

Source: Sunlight Foundation

Having appropriate legislation and policies in place is critical to effectively open up government data; however, it first requires the development of a shared vision within government regarding the importance of promoting openness, transparency and accountability through data sharing. This shared vision needs to be bolstered by appropriate leadership capacities, organizational frameworks, resources and appropriate infrastructure.

One of the key challenges is instilling collaborative leadership, which is capable of ensuring that ministries and government agencies at all levels are willing to share their own information and make it publicly available. Collaborative leadership can be defined as the capacity of leaders to work across organizational boundaries to inspire, engage and motivate people and teams to work together in pursuit of common goals (United Nations, 2014a). Collaborative leaders have the task to exemplify the benefits of opening up data and demonstrating how society as a whole can use and reuse the data to its advantage. In this regard, civil servants need to be encouraged to break down organizational silos.

Another challenge is that public servants may not have data-driven mind-sets and capacities. They may not fully understand the great potential of opening up data and they may lack the necessary skills to open up data and manage open government portals, once made available. All of these issues require careful attention in terms of human resources planning, recruitment, training and development; as well as lifelong learning within the public sector. Government organizations may face a shortage of talent and capable employees who are able to manage open government data and use Big Data analysis. Data literacy among the general population is another critical challenge. In fact, only if people know how to access and use the data can they leverage it for increased participation and use it to hold governments accountable.

Clear data governance is also a must before opening up any data. To ensure better coordination of data governance within the public sector and to promote an overall strategy, some countries have put in place agencies that are responsible for Open Government Data, usually led by Chief Data Officers (CDO). The role of the CDO varies according to country-specific conditions, but in general, such a role is responsible for the design and implementation of an overall data governance strategy and structure, as well as for effective management processes, including data-flows across government. The CDO is responsible for setting standards, principles and monitoring mechanisms. It is also responsible for promoting a cultural transformation within government regarding perceptions about data. Through capacity development activities, public officials can come to view data as a valuable public asset that can be used for more effective decision-making and better public engagement.

In addition to institutional structures responsible for data governance in the public sector, some countries have also established Information and Privacy Commissioners. The latter are generally responsible for ensuring that government agencies comply with the right to information and privacy laws. They look into complaints of people who are denied access to

government information, they investigate privacy complaints about information managed by governments, and they provide advice on government legislation. The key elements of open government data regulatory and institutional frameworks are illustrated in Box 2.4.

Box 2.4 Key elements of open government data institutional and regulatory frameworks

- Provision in Constitution on Access to Information
- Legislation on Access to Information
- Provision in Constitution on Data Privacy
- Legislation on Data Privacy
- Legislation on Open Data
- Ratification of International Treaties on Access to Information & Data Privacy
- Open Government Data Policy

Organizational Framework

- Existence of Chief Data Officers
- Existence of Information (Privacy) Commissioner
- Information Commissioner or equivalent is independent of the Executive

Source: UNDESA, 2015

Recently, a number of countries have joined the new International Open Data Charter, which has an “overarching goal to foster greater coherence and collaboration for the increased adoption and implementation of shared open data principles, standards and good practices across sectors around the world”. To ensure these principles are translated into reality – with data published openly and used by all – the Charter also includes specific actions, practical advice and guidance on implementation. A robust, independent measurement process will be put in place, ensuring adopting governments are held to their promises. The Charter’s ongoing development is being overseen by a group of “lead stewards”, drawn from the worlds of government, civil society and the private sector.³⁵

2.3.2. Quality, relevance, accessibility, security and privacy of government data

In its recent report, the Secretary General’s Independent Expert Advisory Group on the Data Revolution for Sustainable Development highlighted the need for a “global consensus on data.” It called for the adoption of principles concerning legal, technical, privacy, geospatial and statistical standards which are designed to facilitate openness and information exchange while promoting and protecting human rights (United Nations, 2015b, p. 13). In fact, one of the critical issues that many governments face today is what data to open and how to open it, so that it is relevant, timely, accessible and usable. Some countries have adopted the principle that data should be “open by default”. This means that governments should release all electronic data in open standard formats unless there are serious reasons to believe that doing so would infringe upon privacy rights or cause threats to security.

Data can be considered open government data when the information is released in machine-readable format, there are no legal barriers to access, it is free of charge and it is available in widespread type of files or in open standards.³⁶ Technical openness of an open government data catalogue means that it is available on the web (regardless of format, but with an open license); available as machine-readable structured data, in non-proprietary format, uses open standards from World Wide Web Consortium (W3C) and provides linked data.

³⁵ For details see Web Foundation, “Seventeen Governments Adopt the New International Open Data Charter”, October 29, 2015. Available from: <http://webfoundation.org/2015/10/seventeen-governments-adopt-the-new-international-open-data-charter/>

³⁶ Types of files include XML, http, HTML, CSS and WAI, RDF, OWL, SKOS, SPARQL, CVS, Json.

According to the W3C organization,³⁷ there are three steps to publishing open government data, which include (a) release of data in raw form (e.g., an XML file of polling data from past elections) and in a well-known structure (such as XML, RDF, etc.); (b) creation of an online catalogue of the raw data, so people know it is available and can add information about the data; and (c) making data both human and machine-readable, following accessibility requirements (Daniel Bennett and Adam Harvey, 2009).

There are eight principles related to the properties of government data, namely that data should be complete, primary, timely, accessible, machine readable, non-discriminatory, non-proprietary and license-free (see Box 2.5). Data that is incomplete or provided in nonstandard formats cannot be used properly. The quality of data released also depends on whether it is provided as a complete dataset or whether only parts of data are shared.

Box 2.5. Eight principles of open government data

1. Complete: all public data is complete;
2. Primary: data is collected at the source, that is to say it has a high level of granularity³⁸ and is not in bulk;
3. Timely: it is released as soon as possible to ensure that it is readily usable;
4. Accessible: it is available on the Internet and in a form that allows it to be reused;
5. Machine readable: it is in a format that is readable by a machine for it to be reused;
6. Non-discriminatory: anyone can access the data without having to register online;
7. Non-proprietary: no entity has exclusive control over the data nor determines how it will be used; and
8. License-free: it is not subject to property rights, trademarks, patents, etc.

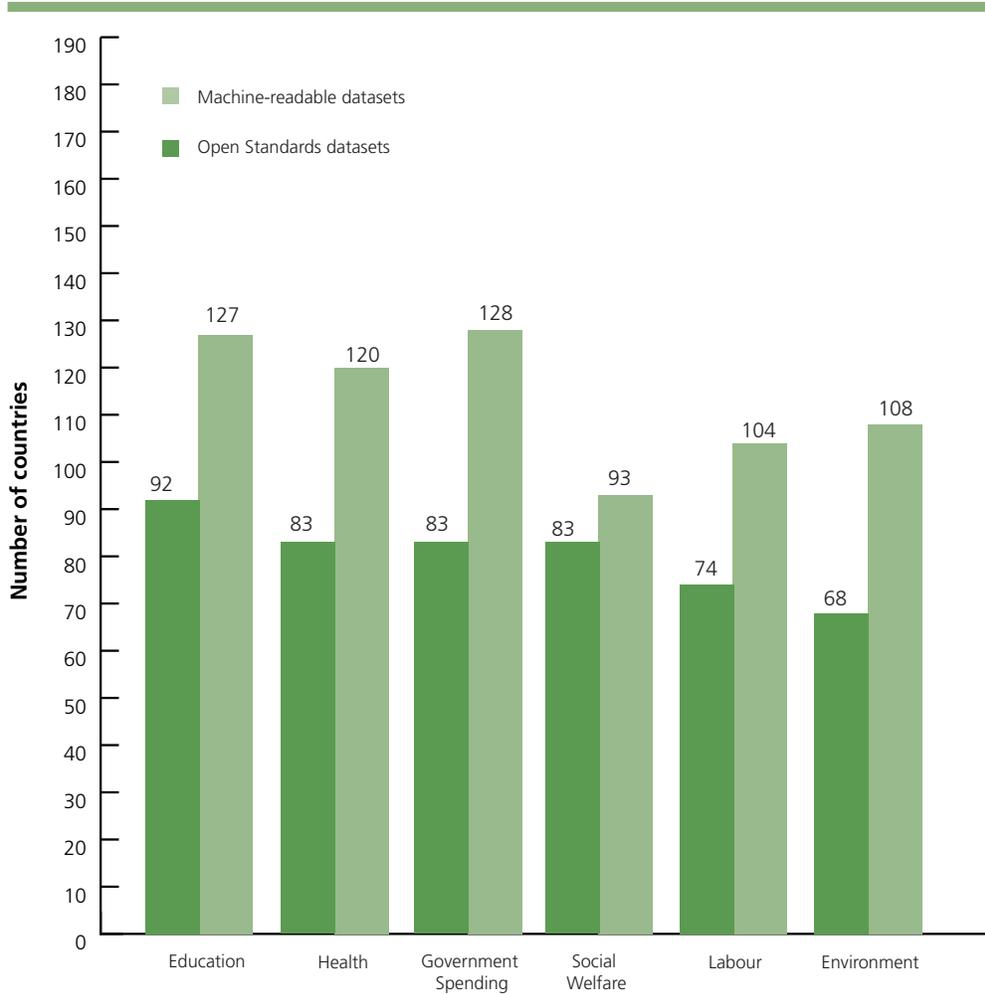
Source: <http://opengovdata.org/>

According to the 2016 Survey findings (see Figure 2.5), a higher number of countries release datasets about government spending in machine readable formats (128 out of 193 Member States) than about social welfare, labour and the environment. The latter datasets are released in open standards respectively by 83, 74 and 68 countries out of 193. These results indicate that much still needs to be done in these sectors to make them more transparent and to unleash the power of opening up government data.

³⁷ The World Wide Web Consortium (W3C) is an international community where Member organizations, a full-time staff, and the public work together to develop Web standards. Led by Web inventor Tim Berners-Lee and CEO Jeffrey Jaffe, W3C's mission is to lead the Web to its full potential. Contact W3C for more information. Available from: <http://www.w3.org/Consortium/>

³⁸ The granularity of data refers to the size in which data fields are sub-divided.

Figure 2.5. Number of countries offering machine readable versus open standards datasets, by sector



The regions with the highest percentage of countries that provide datasets in open standards are Europe, Asia and the Americas (see Figure 2.6.). In fact, 37 out of 43 countries in Europe offer open standards in education compared to 6 out of 14 countries in Oceania. According to the 2016 Survey data, there are 62 out of 193 United Nations Member States that provide datasets in open standards in 5 or more sectors. The countries that offer datasets in open standards in 5 or more sectors are in Europe and the Americas. Five countries in Africa provide datasets in open standards in 5 or more sectors: Ethiopia, Kenya, Malawi, Senegal and Uganda. Table 2.1 provides a list of countries that have open standards datasets in 5 or more sectors, by region.

Figure 2.6. Number of countries offering datasets in open standards, by region

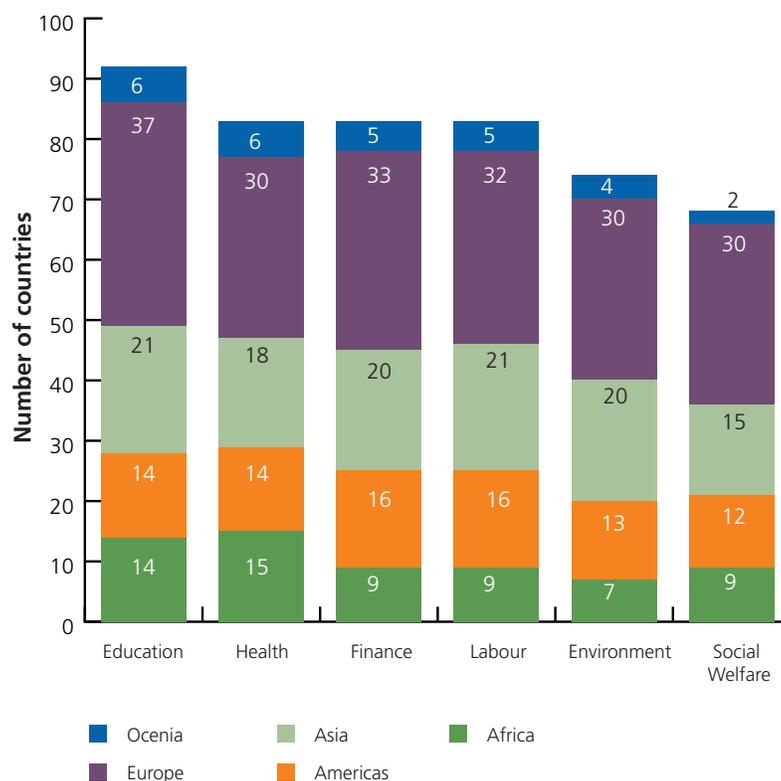


Table 2.1. Countries with open standards datasets in 5 or more sectors, by region (Education, Health, Government Spending, Social Welfare, Labour and Environment)

Africa	Americas	Asia	Europe	Oceania
Ethiopia, Kenya, Malawi, Senegal, Uganda	Brazil, Canada, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Mexico, Paraguay, United States of America, Uruguay	Bahrain, India, Japan, Mongolia, Pakistan, Philippines, Republic of Korea, Singapore, Uzbekistan	Andorra, Austria, Croatia, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Norway, Romania, Russian Federation, Serbia, Spain, Sweden, Switzerland, Macedonia (TFYR), United Kingdom of Great Britain and Northern Ireland, Ireland	Australia, New Zealand, Tonga

While opening up government data has many benefits, it is important to tackle the issues of privacy and data protection, which in recent years, have concerned many countries and people. Due to growing disquiet over digital surveillance and improper use of personal data, the United Nations General Assembly has recently adopted a resolution on the “Right to privacy in the digital era” backing the right to privacy, and calling on countries to take measures to end activities that violate human rights. The resolution underscored that the right to privacy is a human right, affirming for the first time that the same rights people have offline must also be protected online. It called on Member States to “respect and protect the right to privacy, including in the context of digital communication” (United Nations, 2015). The United Nations General Assembly also emphasized that “legal systems should protect the confidentiality, integrity and availability of data and computer systems from unauthorized impairment and ensure that criminal abuse is penalized” (United Nations, 2001, sect. I, para. e). Once more, it is essential that people trust that the government, while opening up data, will protect privacy and the confidentiality of personal data.

On 21 October 2015, the Inter-Parliamentary Union (IPU) also adopted a resolution on “democracy in the digital era and the threat to privacy and individual freedoms” (Inter-Parliamentary Union, 2015). It calls on parliaments to “enact comprehensive legislation on data protection, for both the public and private sectors providing, at the minimum, for strict conditions regarding permission to intercept, collect, analyse and store data, for clear and precise limitations on the use of intercepted and collected data, and for security measures that ensure the safest possible preservation, anonymity and proper and permanent destruction of data. It also recommends the establishment of independent and effective national data-protection bodies with the necessary power to review practices and address complaints, while further urging parliaments to ensure that their national legal frameworks on data protection are in full compliance with international law and human rights standards, making sure that the same rights apply to both offline and online activities”.

Security of government data is high on the agenda of many governments due to hacking and other malicious activities. Member States have reaffirmed that “building confidence and security in the use of information and communications technologies for sustainable development should be a priority, especially given growing challenges, including the abuse of such technologies for harmful activities from harassment to crime to terrorism” (United Nations 2015g, para. 41). Breaches of data security, which can be related to governments mishandling confidential information, are closely linked with cyber-security, which refers to malicious behaviours and activities on the Internet. United Nations Member States recognized the leading role for Governments in cyber-security matters relating to national security (United Nations 2015g, para. 50). They also recognized the important roles and contributions of all stakeholders, in their respective roles and responsibilities and reaffirmed that building confidence and security in the use of information and communications technologies should be consistent with human rights. They called for existing legal and enforcement frameworks to keep up with the speed of technological change and its application. In addition, they called for renewed focus on capacity-building, education, knowledge-sharing and regulatory practice, as well as multi-stakeholder cooperation at all levels (ibid).

2.4. Improving usage of open government data for social inclusion and citizen participation

2.4.1. Challenges of data access and usage for vulnerable groups

The Secretary-General's synthesis report on the 2030 Agenda emphasized the importance of a shared responsibility for the successful attainment of development goals. The report in particular stated: "If we are to succeed, the new agenda cannot remain the exclusive domain of institutions and governments. It must be embraced by people" (United Nations, 2014, p. 37). The 2030 Agenda underlined that: "People who are vulnerable must be empowered. Those whose needs are reflected in the Agenda include all children, youth, persons with disabilities, people living with HIV/AIDS, older persons, indigenous peoples, refugees and internally displaced persons and migrants" (United Nations, 2015c, para.23).

Availability of disaggregated data will be essential to help measure progress made in improving the situation of the various segments of the population, including the poorest and most vulnerable. It is also critical to shape more cohesive and inclusive policies, particularly to lift people out of poverty. Access to public information is a vital first step in promoting people's empowerment and citizen engagement in public policy decision-making processes to "leave no one behind". Access to public information is essential for democratic governance and social inclusion (United Nations, 2015f). However, if governments open up their data, but people are unable to access and use it or are unaware of its availability, this endeavour has little impact in terms of enhanced accountability and opportunities for innovation and economic growth. It is a fact that data on its own has no value. The added value comes from how people re-use the data in innovative ways.

Access to the Internet is crucial in order for people to be able to obtain online government information. As of 2015, only around 43 per cent of people globally had Internet access, only 41 per cent of women had Internet access and an estimated 80 per cent of online content was available in only a few languages. "The poor are the most excluded from the benefits of information and communications technology" (United Nations 2015g, para. 22). Bridging the digital divides between developed and developing countries and between men and women, and promoting affordable access to ICTs is therefore paramount to enabling access to government information and to reaping the full benefits of Open Government Data.

Even when people have access to the Internet, confidence in the data provided is essential to ensure data usage. In fact, "access to data alone is not enough to enable civic participation. Citizens need a belief in the quality of the information, and a trust in government responsiveness, and prior experiences often leave citizens sceptical about their ability to create change even when equipped with data" (Jesuit Hakimani Centre, 2014).

Furthermore, data is valuable when it responds to specific needs and is useful to various groups in society. For example, in the case of vulnerable groups, if the data is not relevant to their needs or accessible to persons with disabilities or older persons, it will not enable them to access information or fully participate in decisions that affect their lives. In addition to opening up data that targets the needs of vulnerable groups, it is also essential to improve data literacy, which gives people the necessary skills to interpret and use data. Supporting implementation of "data literacy programmes, providing e-learning opportunities and including data literacy as a part of school curriculum can be useful tools in this respect" (United Nations, 2015b, p.13).

The 2016 Survey shows that while open government data initiatives have increased across the globe in the past two years, less attention has been paid to opening up data that is targeted toward vulnerable groups. According to the 2016 Survey, 51 per cent of countries offer open government datasets for at least one vulnerable group. Approximately 94 countries out of 193 do not release any datasets in open standards that target the needs of vulnerable groups.

2.4.2. Innovative approaches to enhancing demand-driven open government data

A number of channels and modalities exist to increase people's usage of data. Government data toolkits are a noteworthy example. For example, the World Bank developed a government data toolkit that offers guidance on how to design data strategies and platforms.³⁹

As mentioned earlier, UN-DESA established in 2014 a capacity development initiative on how to use open government data, in pursuit of sustainable development. The project was designed to build awareness of the potential benefits of using Open Government Data in advancing transparency, accountability and sustainable development in selected countries of Latin America and East Asia, including in Bangladesh, Nepal, Panama and Uruguay. It also assists these countries with developing policy frameworks and technical infrastructure, as well as with building the necessary capacities, for implementing Open Government Data initiatives. As part of its methodology, the project has developed an Open Government Data Online Self-Assessment Tool,⁴⁰ which is designed to quickly assess the specific local contexts, including enabling factors and obstacles and their implications. Such an assessment helps identify opportunities and challenges when introducing Open Government Data initiatives to a country.

To facilitate ease of use and simplify the task of finding relevant datasets, many countries have established open government catalogues. Some governments also provide tools such as online guidance/tutorials, calendars to inform people about the release of datasets in real time, and to allow them to propose what datasets might be useful to them.

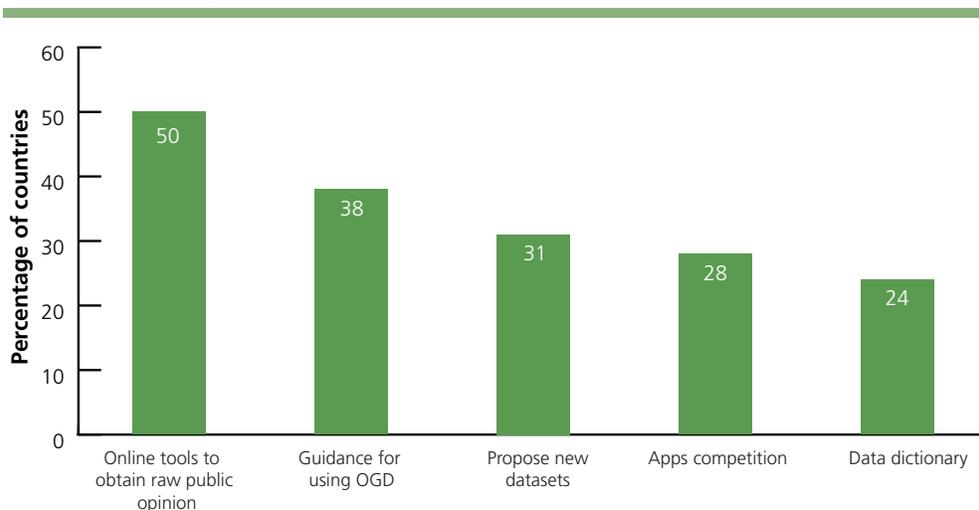
According to the 2016 Survey findings, 50 per cent of countries worldwide offer tools to access raw or unprocessed public opinion data and information (through online surveys and polls), which informs decision-making processes. Only 38 per cent of countries provide online guidance on how to use open government datasets, which means that greater efforts are needed to provide tutorials and information about what can be done with the datasets. Even fewer countries have mechanisms that allow citizens to propose new datasets that they might find useful. In fact, only 31 per cent of countries allow citizens to propose new datasets to governments.

Out of 193 countries, only 24 per cent provide data dictionaries, which are repositories for metadata (i.e. information describing the data underlying concepts, methodology and structures) and help navigate complex databases to find data quickly. 28 per cent provide apps competitions, which encourage developers to compete for the best new app using specific data (see Figure 2.7). 31% of countries provide their citizens with the opportunity to propose new datasets.

³⁹ Available from <http://opendatatoolkit.worldbank.org/en/index.html>

⁴⁰ For details see <http://bit.ly/DPADM-OGDProject-Methodology>

Figure 2.7. Percentage of countries offering tools for Open Government Data usage



As mentioned, some countries encourage competition for the development of applications (apps competition), which incentivize people to innovate new services with data. For example, in 2014, Singapore launched a Data Visualization challenge inviting all citizens to become more aware of data and how it can be used. The premise of the challenge was for people to tell a story about the country using the data available on the national open government portal, as the country approached its 50th anniversary. Free workshops were organized so that citizens could learn from experts about how to work with data and use visualization tools; prizes were also distributed.⁴¹

As part of their data literacy campaigns, countries also offer workshops and training courses. Malawi for example, was one of the first countries to host a Data Literacy Bootcamp earlier this year to strengthen the capacity of media and civil society organizations to access and make effective use of open data. The country was also the first to engage policymakers at a workshop specifically designed around the use of open data (World Bank, 2013).

Awareness campaigns can be built around the concept of how open government data can help achieve the SDGs and empower people with new tools. For example, workshops and trainings can be organized at community centres, particularly for vulnerable groups, including people living in poverty, older persons, persons with disabilities, immigrants, the youth and others. Data journalism, as well as intermediaries such as grass-roots organizations, religious associations, community centres, are also playing an increasingly important role. Their re-use of government data provides information that is relevant to the needs of people living in poverty and is also easily understandable. By providing such access to information, governments will also ensure greater ownership of the SDGs since they will be better understood and known. All communication channels can therefore be utilized to reach out to socially disadvantaged groups, including through TV/Radio, the Internet, social and/or religious associations, community centres and kiosks. For example, the Kenyan Open Government Data Platform (KODI) launched in 2014, is another relevant example (see Box 2.6).

⁴¹ More details on E-citizens Ideas! available from: <https://ideas.ecitizen.gov.sg/a/pages/visualisationchallenge-home>

Box 2.6. Kenya: Empowering Citizens with open government data

Kenya launched the Kenya Open Data Initiative in 2011, making government data freely available to the public through a single online portal. In 2013, a new constitution came into force, which included fundamental principles related to public participation and the promotion of a more open society. The Kenya Open Data Initiative (KODI) is geared toward increasing data availability and user accessibility for people's empowerment, especially vulnerable groups. The Data Release Calendar on the open data portal provides information on when government agencies produce and publish public datasets. The calendar is a working document to keep citizens informed about data availability. People can also request data through the 'Data Suggestions' section on the website. To target senior citizens and those with low literacy, Kenya Open Data Portal has been posting journals interpreting raw materials into graphs and simple language. The KODI team also organizes discussion fora with youth on education related issues. Research also shows that the Chief's Centres, Community Centres, Churches and Mosques can act as Intermediaries providing access to government data in urban slums and rural settlements. The open data initiative team is also developing tools to monitor the site's effectiveness. Finally, there is a blogpost section where journalists specialized in data analysis can upload information, thus highlighting data worth being considered by the public.



Source: <http://opengov-data.org/>

2.5. Conclusion

Promoting good governance and implementing the 2030 Agenda calls for effective, accountable and inclusive institutions. Not only is improving public institutions a distinct sustainable development goal, but sound public institutions are crosscutting and will underpin the achievement of all other goals. Opening up government data can be an essential measure to increase transparency and accountability, promote participation, and stimulate innovation in institutions. A number of lessons learned can be summarized as follows.

- The rights to freedom of information and open access to publicly held information are of paramount importance to ensure a transparent and accountable government.
- Increased transparency, accountability and effectiveness of public sector institutions can be enabled by e-government, particularly through Open Government Data. Providing government information online in open standards makes such information readily available for reuse by anyone.
- Open access to publicly held information may contribute to the advancement of the SDGs through better policy integration and institutional coordination, increased transparency, accountability and effectiveness of public institutions, enhanced participation and collaboration, and new opportunities for innovation and possibly, economic growth. Particularly important is data about public spending, policies and legislation to implement the SDGs, as well as information about judicial institutions in order to promote access to justice for all.
- The combination of new technologies like Big Data, the Internet of Things, geographic information systems and the use of predictive analytics are powerful tools for anticipatory governance, particularly for service delivery. Several issues, however, need to be addressed to truly capture the potential of Big Data, including appropriate regulatory frameworks and policies, notably on privacy and security issues. Also critical are the capacities to use and analyse the data and appropriate technology.
- Managing Open Government Data presents a number of challenges, including: (i) finding ways to increase political will in support of Open Government Data across different levels of government; (ii) having in place appropriate legal frameworks, policies and principles on publishing online publicly held data and allowing people to freely access information; and (iii) ensuring data management and protection, effective identity management,

privacy and cyber security. A government-wide vision, collaborative leadership, adequate human resources, appropriate legislation and institutional frameworks as well as clear data governance are essential to open up government data.

- Data on its own has no value. Innovative strategies to increase data use and to promote a demand-driven approach to data are needed, to ensure that Open Government Data has a positive impact in terms of enhanced accountability, transparency and participation in support of the SDGs. The special situation and needs of the poorest and most vulnerable people have to be addressed. Data accessibility, reliability, accuracy and usability, data literacy and trust in the data that governments share are also pre-requisites for data usage. Reaching out to the private sector, academia and civil society through multiple channels is essential. Communication channels, such as TV/Radio, the Internet, social and/or religious associations, community centres and kiosks, can all be used to inform people about the availability and many ways to use open government data. Innovative strategies, including capacity building programmes, tutorials, Open Government Data guidance tool-kits, data dictionaries, app competitions and data literacy campaigns, including awareness raising workshops for civil society, are essential to empower people to use government data. These tools should be employed to reach out to all people in society, including vulnerable groups. Ensuring access to the Internet and bridging the digital divides is critical.