

Citizen to government data
partnerships: What can we learn
from and recommend to civil
society groups working in the
official statistics domain ?

JAVIER CARRANZA

2018 edition



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Abstract

The Cape Town Global Action Plan for Sustainable Development Data subscribed in 2017 at the first World Data Forum highlights the need of National Statistical Offices (NSOs) to adapt to evolving demands. This need is triggered by all kinds of decision-makers, specially from governments under constant pressures to deliver focused, tailored and timely solutions. Based on a classification framework adapted from the e-governance concept, this document takes stock of various international, regional and local initiatives thought to aid or monitor government actions and that are granting access to and use of non-traditional data sources. These are citizens to government data partnerships, that use technologies like open geospatial information platforms and can complement surveys and traditional censuses in the official statistics data stream, with special focus in demographic and social statistics. Recommendations will address the question of how civil society NGOs can strengthen their general capacities inside the statistical production processes⁽¹⁾ to effectively support NSOs through collaboration projects at national and international levels.

Resumen (spanish)

Asociaciones de datos C2G: ¿Qué podemos aprender de ellas y recomendar a aquellas trabajando en el ámbito de las estadísticas oficiales?

El Plan de Acción Mundial de Ciudad del Cabo por los Datos suscrito en 2017 en el primer Foro Mundial de Datos resalta la necesidad de que las Oficinas Nacionales de Estadística (ONE) se adapten a cambiantes demandas. La necesidad es generada por todo tipo de usuarios de datos, especialmente de gobiernos bajo la presión constante de ofrecer soluciones enfocadas, adaptadas y oportunas. Basado en un marco de clasificación adaptado del concepto de la gobernanza electrónica, este documento realiza un análisis general de diversas iniciativas internacionales, regionales y locales pensadas para apoyar y monitorear acciones de gobierno y que pueden facilitar a ONEs el acceso a y el uso de fuentes de datos no tradicionales. Se trata de proyectos entre ciudadanía y gobierno nucleados en alianzas de datos, que aplican tecnologías como plataformas de datos geoespaciales abiertos y pueden complementar encuestas y censos tradicionales en la corriente de estadísticas oficiales, con especial énfasis en las estadísticas demográficas y sociales. Las recomendaciones abordarán la pregunta de cómo las ONG de la sociedad civil pueden fortalecer sus capacidades generales en procesos de producción estadística para apoyar en forma efectiva a las ONE a través de la colaboración a nivel nacional e internacional.

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⁽¹⁾ Statistical production refers to the activity that is carried out within the statistical information system and that are aimed to produce statistics. Inside those activities, data collection, its processing, analysis and visualization tasks are included.

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Partnering for global development

When the Millennium Development Goals (MDGs) were born the world was a completely different place. Twin Towers were still in place, the Euro was not even created and China was not a member of the WTO yet. The mindset of the United Nations Millennium Summit, mostly related to social and economic development in a hyperlocal world, couldn't operationalize many critical issues due to, among others, lack of data, technical capacities, and the evolving concept of globalization.

The post-2015 Development Agenda trusts not only to operationalize all priority goals listed in the MDGs but also to expand these already ambitious thresholds, aiming to develop sustainably a more integrated world. The world has kick started a data revolution since then, embracing the global development endeavor. Adopting a broader observance around priority areas, the Sustainable Development Goals (SDGs), aspire to cover a broader range of seventeen key areas. This agenda also attempts to solve global problems through collective action and recommends global approaches dressed in the form of partnerships, in a perfected version of those proposed in the 8th area of the MDGs in order to attain collaborative goals. A revamped goal number 17 seeks to promote a proactive partnering for global development and looks to develop partnerships at all levels in all countries. These are the selected targets of goal 17 of the SDGs that focus on collective action:

Selected targets related in the Sustainable Development Goal 17

| <i>Sustainable Development Goal 17: Build Partnerships</i> | |
|--|---|
| <i>Target #</i> | <i>Enunciation</i> |
| 17.16 | Enhance the global partnership for sustainable development complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technologies and financial resources to support the achievement of sustainable development goals in all countries, particularly developing countries |
| 17.17 | Encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships |
| 17.18 | By 2020, enhance capacity building support to developing countries, including for LDCs and SIDS, 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. |
| 17.19 | By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement GDP, and support statistical capacity building in developing countries |

Source: Own elaboration based on the SDG 17 goals.

Specially detailed in target 17.19 and following a pragmatic but also more realistic approach, new and traditional actors with common goals are called for collective action in innovative partnerships to develop measurements, analysis and visualizations for the monitoring of local and global agendas. It is expected that all invited actors will be also interested in the opportunities that the integration of data from different sources conveys. This vision takes to a higher level, a more participative one, the measurement and analysis of previously non operative goals.

The proposed ecosystem mingles a great diversity of actors: governments, academia, technological companies, civil society and international organizations. The agenda anticipates the innovative use of modern data technologies for every statistical production process including data collection, processing of big and open data and even integrated visualization of non-traditional data together with official statistics. The questions at stake are not much *when and at which official agency* is ongoing to take forward the data revolution, but mostly about *who and how NSOs will lead* the process with. One of the derived answers of

the 'who with' question includes the collaboration within and between governments, plus other stakeholders, as a key to the success of the discussion, measurement, monitoring and mutually beneficial fulfillment of the agenda.

In fact, NSOs from all around the world are increasingly aware of the need of mingling in partnerships with external parties, in particular pushed by the need to optimize decreasing budgets, to incorporate knowledge coming from new statistical applications (such as big data and artificial intelligence) and to fill existing data gaps. Unconventional business to government partnerships ⁽²⁾ are being developed at many authoritative data agencies, bringing together more allies into the statistical ecosystem from both the international statistic community and also from the business environment. At the same time, some other nontraditional communities of data producers and users are spontaneously discussing and developing innovative solutions, rallying around the 2030 agenda endeavor, interested in generating impacting solutions. Many of these communities come from the civil society and the academia, where citizen science ⁽³⁾ projects are undertaken. These initiatives intend to collaborate learning from and integrating with traditional sources of data.

In turn, the advantage of partnering with external actors for official statistical agencies is appealing: on one hand, it entails acquiring new domains of knowledge, broadening outreach and strengthening capacities, crucial to assure the sustainability, especially in the use of new data sources. On the other hand, it requires to embed a new mastery in the use of information technologies to supervise data collection by innovative methods like crowdsourcing or Big Data, as well as adapting data structures and processing platforms. At the end, it can allow a broader dissemination of data by co-creating enlightening visualizations through more disaggregated and decentralized external platforms, like those from the geospatial sciences.

Although at an experimental level, using nontraditional data from contributing actors like the ones coming from civil society is not anymore a sophisticated claim in pioneer statistical offices from around the world. In part to understand how far this trend has advanced, a joint survey about Big Data initiatives at NSOs and similar agencies was undertaken by UNSD and UNECE in 2013 / 2014 and sent to 78 countries and 23 international organizations. Results found that when considering new data sources, more than 58 % of the answering organizations were partnering with some kind of external organization or data provider. According to the results, it is clear that many governments are open to the possibility of integrating — at least at a trial stage — the growing availability of data coming from third parties. Although most of the third parties that interviewees partnered with according to the survey were commercial data providers, an important percentage (10%+) of these partners were coming from data producers of the civil society.

Share of different kinds of partner organizations and resource provided by partnership of NSO with non-traditional sources, 32 countries, 2013/2014

| Type of partner | Share | Type of resource provided by partnership | Share |
|----------------------------|-------|--|-------|
| Academia | 13% | Data | 65.5% |
| Commercial | 51.7% | Data aggregation | 17.2% |
| Government | 44.8% | Design partner | 17.2% |
| NGO | 10.3% | Technology partner | 17.2% |
| International Organization | 10.3% | Analytical Partner | 44.8% |
| Other (specify) | 3.4% | Other (specify) | 6.9% |

Source: UNSD and UNECE Survey on organizational context and individual projects of Big Data.

⁽²⁾ For instance Experian, a data consumer marketing firm, facilitated UK ONS in 2014 their own marketing datasets with counts of individuals to compare results with census estimates.

⁽³⁾ Citizen science is scientific research conducted, in whole or in part, by amateur (or non-professional) scientists.

Additionally, regarding new sources and the integration for visualization and disaggregation of data, many United Nations units like UNDESA, UNSTATS ⁽⁴⁾ and UNFPA are recommending governments the application of geo-referencing for official statistics. Meritoriously, the representation of realities in the form of geographic data can be a great ally to communicate and humanize by disaggregating further sustainability challenges. Geo data is favored by many data scientists: It is one of the top big data sources for social start uppers and researchers: according to the [World Bank Big Data Innovation Challenge](#) from 2014, when 54 initiatives out of 130 proposed open geo data as a source.

In this context, NSOs are called to lead the data revolution endeavor and at the same time revisit the value of nontraditional data contributions that can show to be crucial to their needs. Although many statistical agencies may not be totally aware of the captivating practices ⁽⁵⁾ that communities from civil society are developing, many advocacy groups and humanitarian communities are actively transforming the data for development scene. They are producing useful data bases and solutions that could indeed complement official statistics. These databases are creating a totally new area detached from the classic statistics domains, and it is unfolding previously nonexistent data ventures around a multitude of stakeholders.

⁽⁴⁾ See, for example, decision 48/108 of the United Nations Statistical Commission in its 48th session (see draft report, <https://unstats.un.org/unsd/statcom/48th-session/documents/Report-on-the-48th-Session-of-the-Statistical-Commission-E.pdf>).

⁽⁵⁾ This is the case of many open data projects — accessible public data reservoirs that citizenry, companies, and organisations are able to use and re use to their benefit — analyzing patterns and trends of unknown issues, taking data-driven decisions and solving complex local problems.

Data Governance partnerships with non-traditional actors

The Cape Town Global Action Plan for Sustainable Development Data was informally released in January 2017 at the first World Data Forum and highlights the need of governments to build new capacities regarding statistical production. The guidance that the Plan proposes is not restricted to capacity building just to produce SDG indicators. The implied goal is not only to strengthen National Statistical Offices (NSOs) but also all participating organizations in the National Statistics Systems (NSS) as a whole, especially calling governments to adapt to the evolving needs and advances of increasingly demanding decision takers. The overarching challenge encircles both, present and future decision areas in all countries, including but not restricted to SDG survey and follow up.

As introduced, the proposed plan calls for policy leaders and data stakeholders to achieve a global alliance, recognizing that NSS modernization efforts are essential to the full implementation of the 2030 Agenda. Regarding the participation of civil society and NGO, objectives 2.3, 3.1, 3.4, 3.6, 4.1 and 5.1 of the plan establish the basic activities for the strengthening, improvement and development of capacities at the NSS to integrate new data sources with the participation of external organizations in the collection, processing, analysis and dissemination of statistics at local, national, regional and global levels.

The involved objectives recommend key actions in order to assure, among others, taking advantage of information technologies and data coming from third parties, including civic groups and communities. Many key actions call for to action from the civil society: in objective 2.3 the plan recommends to NSOs and NSSs to ‘...facilitate the application of new technologies and new data sources into mainstream statistical activities’, specifically recommending to develop ‘... guidelines on the use of new and innovative data...’. Furthermore, key actions in objectives 3.1, 3.4 and 3.6 refer to the need of strengthening the general institutional capacity in statistical agencies, especially when considering new sources, in particular to expand surveys and data coverage, improve quality and increase data integration including the geospatial domain. Finally, objectives 4.1 and 5.1 include key actions to develop strategies to build dialogue and partnerships with third parties, specially recommending to cooperate with non-official sources.

The guidance that this plan offers claims that the increasing demand from sophisticated data users is supplied for governments, companies and citizenry in general. In fact, the plan does not only ask to involve and integrate external data efforts but also recognizes implicitly that all collaborating parties should be rewarded. Governments, international organizations, civil society, private sector and the general public should be in turn able to take informed decisions and to ensure the accountability of their representative bodies. This circular logic assures that nontraditional party contributions strengthen NSOs and NSSs with data and technologies. The rationale does largely feedback participating stakeholders in the form of better data and services.

This document will use here on the term ‘First party 2 second party data governance partnership’ and will specifically refer to acronyms like C2G dp or G2C dp to refer to initiatives where civil society participates in any task included in the statistical production processes (mostly data collection, processing, analysis and visualization) running collaborative data partnerships (dp) with the government, i.e. statistical agencies within the NSS, including NSOs.

Data Governance partnerships and examples of initiatives

| Stakeholder | Civil Society Organizations or NGOs | Government (NSS or NSO) | Business companies |
|--|--|---|---|
| Civil Society Organizations or NGOs | Civic Data Alliance / Civic Apps For Greater Portland / Malaysian CSO-NGO contributed open data site / OpenSchools KG | Uwezo initiative in Uganda / PEPFAR Population-based HIV impact assessments in CIV / OSM Stats Can | Google Maps survey in Mexico / Mapillary applications (involving openstreetmap contributors) / Local Guides community |
| Government (NSS or NSO) | NSOs data ⁽⁶⁾ on OSM GDB/ / A tu servicio in Uruguay/ Data Portals | Urban Dynamics and administrative records project at INE Chile | DataMarket — Economic Census |
| Business companies | Microsoft Open Maps team released open data on building footprints in the U.S. / Apple internal volunteer programme contributing to Missing Maps | Comparison of Experian MKT data to UK ONS census data / Twitter Big Data project at INEGI | Linkedin — Facebook — Google — AWS AI / BD / Database Management services |

Source: Own elaboration based on own survey, literature review and references.

The 'First Party to Second Party' definition assumes that data is mainly produced by the first actor for the benefit of use or addition of value by the second actor. The above matrix was created considering a particular application of e-governance projects, i.e. the application of information and communication technology (ICT) for delivering government services where two parties are connected or dealing with a electronic provision of a good or service.

Inspired also in the tradition of electronic commerce matrix, this document will refer to it as the 'data governance classification'. The choice of << 'Xi partner' to 'Xj partner' ⁽⁷⁾ ; for all i = C,G,B, dp >> denomination was preferred to other available definitions, like Citizen Generated Data ⁽⁸⁾ or 'Citizen Driven Projects' because they do not: 1) assume the collaborative purpose and flow of the data from one partner to another and 2) undertake the same range of tasks involved in the statistical production processes, circumscribing their actions to collection and advocacy mainly.

For the sake of simplification of the involved relationships and to improve understanding in this data governance classification, intervening partners are defined as follows: a) 'C' as in citizen partner, that considers NGOs that are working within the statistic production function , b) 'G' as in government partner, that considers both NSOs and / or ministries / agencies part of the statistical organizations within the NSS and c) 'B' as in business partner, that is considered within the subset of data, software and technology from private providers. In order to keep the analysis simple, other traditionally considered partners like academia and international cooperation partners are assumed marginal contributors of data.

The flow of data from one partner to another does not implies necessarily the ownership of the data from any of the parties involved, it in fact does not contemplate the nature in the intellectual property of the data. The components of the above matrix are filled with examples of each kind of data partnership according to the relationship that the parties involved have. Each of the examples in the matrix should be read as

⁽⁶⁾ Instituto de Estadística y Cartografía de Andalucía, INE de Chile, Census Bureau, Stat Can Canadá, Office fédéral de la statistique Switzerland, Office for National Statistics United Kindom, Uganda Bureau of Statistics, Australian Bureau of Statistics and Statistics New Zealand provide some kind of database for Openstreetmap database.

⁽⁷⁾ For a proper reading of the cases, the origin of main data should be understood as the first letter of the partnership and the second is the letter of the partner that benefits or adds some kind of value.

⁽⁸⁾ **Citizen-generated data (CGD)** is data that people or their organisations produce to directly monitor, demand or drive change on issues that affect them, beyond the use of the data.

involving the action of mostly those two partners crossing the lines and columns in the matrix. In the boxes, use cases are offered as an illustration of a specific partnership but shouldn't be seen as the only existing cases.

Some use cases are classified using a rule of thumb criteria because they deal with many data sources. In many cases, most of the data might be originated by the first data partner but some of the used datasets (like base maps, metadata or other features) might be originated from another party marginally. This is the case of many hybrid openstreetmap projects that might be mainly collected by civic surveyors using other base map sources from government and also satellite images data donated by private companies like Bing Maps or DigitalGlobe. In some cases the second letter of the partnership can be seen as being double: in the case of G2B DataMarket initiative, data from energy government databases are curated by private companies and are sold online to other business users ⁽⁹⁾.

⁽⁹⁾ See site in <https://datamarket.com/>

Taking stock of partnerships in the statistical scene

Based on the data governance classification, this document takes stock of various international and regional initiatives that could foster access to and use of non-traditional data sources, such as community driven massive collaboration for producing demographic and social data, participative mapping, CSR campaigns and the development of open geospatial information platforms implementing alternative institutional arrangements.

The studied cases are citizen to government efforts that complement traditional surveys and censuses, especially cases producing demographic and social (nonofficial) statistics by the direct partnering of NSOs and NSS with civic groups. These kind of partnerships can be set to complement the processes of data collection, data processing or data visualizations and sometimes may include the mediation of some kind of new technology.

For the identification of cases, online interviews were conducted among relevant communities of practice and other global stakeholders in 4 continents. Nevertheless, the sampling of the portrayed experiences is meant to be exploratory and would need further research work in the future, as the civic data revolution is still emerging in an experimental mode.

Research methodology

| Item | Description |
|-----------------------|---|
| Period of measurement | March 23 to August 27, 2018 |
| Research tool | Semi structured questionnaire. |
| Questions | Yes / no and open questions. Topics: partnership construction, input platforms and databases, methodologies used and obtained outcomes. |
| Sample | 52 open data driven communities of practices and data experts from Africa, Americas, Asia and Europe. |
| Output | 22 interviews confirmed and undertaken. |
| Selected cases | 6 final use cases |

Source: Own elaboration based on follow up records.

Considering the need of a certain level of representativity of the presented C2G and G2C data partnerships, this study used a general sampling criteria. The research team send 52 invitations to citizen generated data groups and other communities, receiving 27 confirmations to produce an interview. Out of those confirmations for interviews, 22 were undertaken and only 15 leads of citizen to governments cases — and vice versa — were identified in talks. Finally, only 6 cases were selected to represent C2G / G2C data partnerships, as many of the leads were not exactly the kind of data partnerships targeted. Selected cases were also mentioned more than once by different interviewees. Also, many of the interviewed organizations offered additional leads to other informal evolving cases at NSOs, although not yet formalized in documents or written references.

For instance, in Chile civil society participation at the National Statistics Institute (INE) has already been ruled and published online ⁽¹⁰⁾ but documented experiences are not available yet. The organization is committed to the data revolution by putting in place a civil society council composed by 15 governing members. Civil Society participation in the country is mandated by the national law of 'Associations and Citizen Participation in Public Management'. Besides, according to social media, one out of four volunteers administering last census survey were from local communal and organized citizenry. Also, officials from

⁽¹⁰⁾ See <http://www.ine.cl/participacion-ciudadana/consejo-de-la-sociedad-civil/consejo>

INE informally commented that humanitarian organizations provided geospatial data to that NSO to survey marginal territories ⁽¹⁾ in the planning of recollection of data.

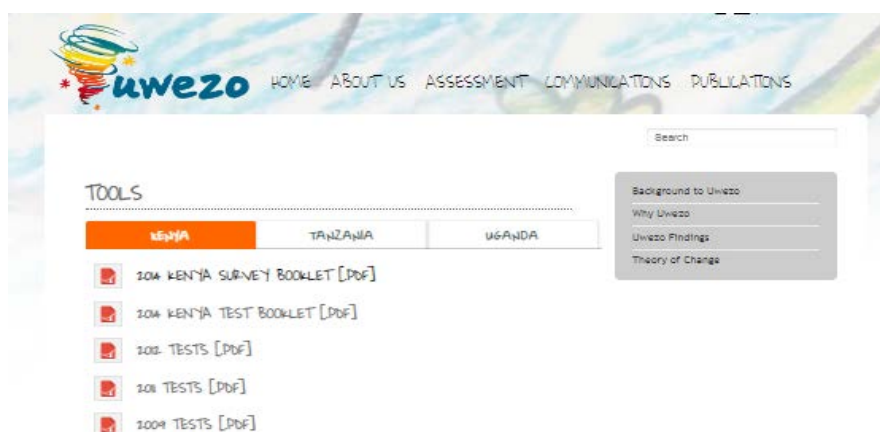
The mechanism to build partnerships that these initiatives use can be diverse. Their call for action can be triggered by a) identified needs at ministries within the NSS, b) proposed from civil society to NSOs and official actors or even c) promoted from the private sector to call for public collaboration on certain issues. In some cases, it can involve many additional actors involving technical roles, like academia applying knowledge, the private sector providing technologies and NSS organizations providing technical guidance and / or databases to orient the civil society actions.

As explained before, this document aims to provide a data governance framework to classify existing initiatives using an application of e-governance to analyze selected available cases. In the resulting stocktaking exercise, not all examples of the matrix will be portrayed. This is because the focus of this document directs to experiences where civil society partners in some kind of relationship with statistical government agencies and official departments or ministries. Although future research will address the rest of cases, all analyzed cases will have the 'C' and 'G' letters for involved actors.

Due to the few existing cases on one hand and the lack of standardized measurements to the impact of the available experiences on the other hand, further monitoring to these kind of cases is expected and recommended. The applied scheme of the presented analysis, nevertheless, pretends to offer valid insights and lessons that could nurture in the near future more developments and studies in the field.

The following are the selected projects according to the general characteristics described above:

1. Uwezo (meaning 'capability' in Kiswahili) project — Eastern Africa (C2G dp)



Institutional context and Partners: Started in 2009, the project originally aimed to evaluate levels of literacy and numeracy over a five-year period. The reason was that a official sample of 100 Ugandan schools revealed that more than 1 in 4 teachers, supposed to be in class, did not attend the actual school. The unanimous official review was that the previously used methodology was invalid. A civil society organization, Twaweza, partnered with the Ministry of Education in Uganda in order to produce the right data. The partnership included the Ugandan Bureau of Statistics, that in turn advised Twaweza about sampling techniques. This is a typical project where data governance spurs from civil society to fill a gap in government data needs.

Methodology : Based on official census data, Uwezo randomly selected 20 households per census district to ensure a statistically representative sample. The so called tool development panel guaranteed that numeracy and literacy were measured in accordance with official educational standards and complied with methodological and statistical norms and expectations from relevant public bodies. While the survey design and household sampling had to be elaborated together with official institutions, volunteers and civil society organisations in collaboration with Uwezo conducted the data gathering process, the processing,

⁽¹⁾ This research also found leads that a certain collaboration was generated by Chile's INE and the NGO TECHO, with support from the Housing and Urbanization Ministry to provide geospatial databases from slums for the Census.

evaluation and editing independently. In order to select ‘trustworthy’ volunteers, Uwezo collaborated with high official staff members who recommended four local organisations per district, from which Uwezo chose one. Based on the recommendations of these organisations, Uwezo chose in turn two volunteers that had a good reputation within the community and who had the necessary education to conduct surveys. These volunteers were sent to 20 randomly sampled private households in the corresponding census district.

Outcome: Uwezo presents its annual report to the Ministry of Education and findings are discussed before they are published. The NGO argues that the aim of the initiative is not to confront authorities but to highlight issues supported by well-documented and officially guided and recognised evidence. They are presently working with the Bureaus of Statistics of Tanzania and Kenya to collect data with similar sample arrangements in those countries too.

2. Openstreetmap / Stats Can partnership — Canada (C2G dp)



Institutional context and Partners: On September 15, 2016, Statistics Canada launched a web site to motivate citizens from Ottawa and Gatineau to participate in a pilot project. The project was kick-started and developed by a Steering Committee called ‘Statistics Canada’s Crowdsourcing’. The NSO established an alliance with the local OpenStreetMap (OSM) community and other established NGOs. The civic tech community summoned collaborators and partnered with the Canadian NSO to develop good communication channels with stakeholders and municipalities to allow the pilot to succeed. The goal of Statistics Canada’s Crowdsourcing was to collect crowdsourced quality data on buildings in Ottawa and Gatineau and related demographic data. The data included attributes such as each building’s coordinate location, address and type of use. In some cases, level of occupancy in buildings was estimated.

Methodology: To crowdsource the data, the project used basemaps from the OpenStreetMap platform, an open source online development that aims to map all features on the Earth’s surface through user-generated content. OSM allows anyone to contribute with data and, under the Open Data Commons Open Database License (ODbL), anyone can freely use, disseminate and repurpose this type of data.

A customized version of OSM iD-Editor was developed and deployed by Stat Can, so that it could allow participants to seamlessly add points of interest (POIs) and polygons on top of the base map. The survey asked about the commented georeferenced attributes of buildings (e.g., building footprint, address, type of use, name of businesses in the building, estimated population, etc.) The new design included instructions on how to sign up for OSM and how to edit, allowing anyone, with or without technological knowledge, to contribute with valuable georeferenced data.

Outcome: The obtained crowdsourced data is being studied to fill gaps in national datasets and to prospectively produce valuable information for various Statistics Canada divisions. The added value of this project is to provide insights into how Statistics Canada could apply new technologies and use new data sources in their mainstream statistical activities as the Cape Town Global Action Plan suggests. The adaptation of open source tools and platforms can go a long way in engaging and including public stakeholders and citizens to participate in the production of official statistics. The pilot project ended in March 2018.

3. Population-based HIV Impact Assessment (CIPHIA) — Côte d'Ivoire (C2G dp)



PHIA in Côte d'Ivoire

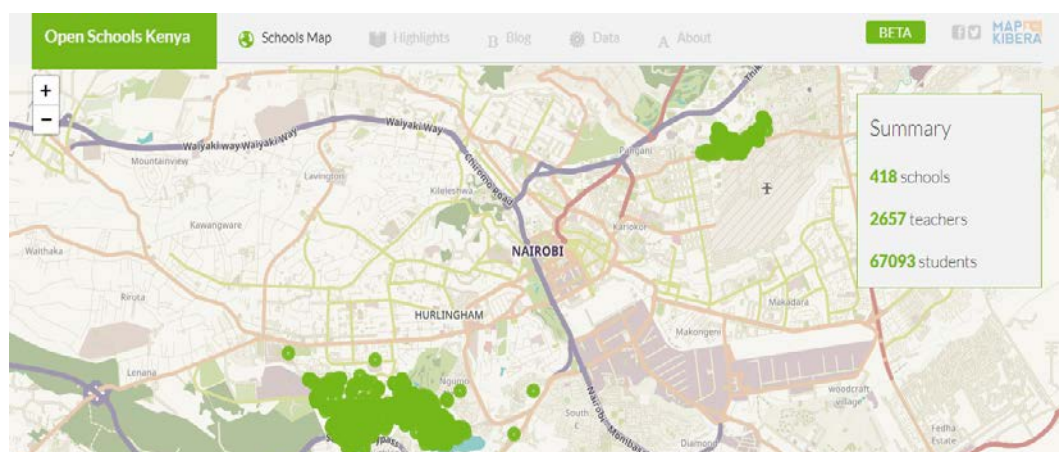


Institutional context and Partners: Côte d'Ivoire is a country with a high HIV prevalence rate (3.7%) in West Africa. A national campaign for HIV assessment was conducted between late 2016 and June 2017 in Côte d'Ivoire. Partners included diverse civil society groups in the undertaking. It was led by the Ministry of Health and Public Hygiene (MSHP) with funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and technical assistance through the U.S. Centers for Disease Control and Prevention (CDC). The survey was led by the MSHP and ICAP at Columbia University and implemented together with civil society volunteers. The role of civil society was considered crucial to the partnership, mainly due to the active advocacy on behalf of beneficiary populations, promoting human rights to combat stigma and discrimination and identifying challenges to and gaps in health care delivery. The National Institute of Statistics of Ivory Coast (INS) had an advisory technical role.

Methodology: The partnership worked out a community driven cross-sectional household-based survey with the acronym CIPHIA. This is a national survey designed to provide essential HIV data on adult and pediatric prevalence, incidence, blood cells count, transmitted resistance, key population estimates, and viral load suppression to help describe trends of the epidemic and measure response progress. The planning activities included cascade trainings (40 facilitators trained 200 data collectors) through six months. Collection was undertaken utilizing tablets to administer questionnaires using Open Data Kit and GPS navigation software for locating households. A national multidisciplinary supervisory group conducted site visits to provide additional coaching to field teams. Local laboratories were assessed too, valuing their operational capacity as well as proximity to enumeration areas of households.

Outcome: The results of this survey demonstrated the possibility to use innovative data collection techniques applied to patients affected by HIV. Also, laboratory capacity was enhanced in the country, based on existing infrastructure. Data analysis and validation is still being undertaken, as well as development and dissemination of the survey report. Findings from CIPHIA will be used to assess the impact of the national HIV prevention, care, and treatment services.

4. Open Schools Kenya — Nairobi, Kenya (C2G dp)

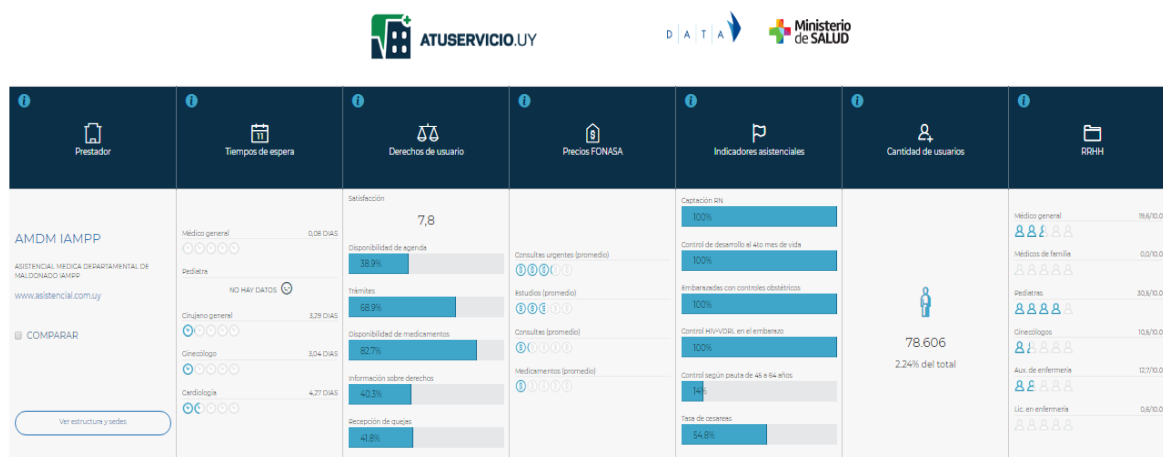


Institutional context and Partners: This citizen to government data project was originated from application of a civil society organization (CSO) to the Gates Foundation Grand Challenge contest on data interoperability in 2014. This partnership was aimed to fill gaps for the Education Ministry in Kenya regarding many demographic and non-demographic data like basic school information, number of teachers, students, school location, fees, class characteristics, or building types. This is especially needed in many informal urban settlements. The partnership was born from a joint initiative kick started by GroundTruth Initiative, Map Kibera, Development Gateway, Feedback Labs, and the Gates Foundation.

Methodology: The geodatabase, based on open data principles, produced by the initiative collected data from 418 schools in turn reporting 2657 teachers and 67093 students. Development Gateway developed the website portal and the administrative lead. The local NGO, GroundTruth, worked on overall project management, organizing the undertaking citizen community around the Map Kibera team that implemented the project on site. Implementation included technical guidance of the mapping process, data linking, data editing, cartography, photo uploads and community work with local teams over the OpenStreetMap.org platform.

Outcome: Complete datasets about education in Kenya were collected by volunteers in Kibera and partially in Mathare slums. The project also combined citizen data, official data, and other data sources, facilitating its merge and comparison with eye catching geographical visualizations. Users from governments are allowed to access profile information for nearly 350 schools; and also to compare services at different institutions; view pictures of the school; or leave comments on a school's page, starting a dialogue between education policymakers and the school administration. The geo datasets were linked to the Kenya Open Data government site, and were accessible both online and offline.

5. A tu servicio Portal — Uruguay (G2C dp)



Institutional context and Partners: In 2012, the Ministry of Public Health undersigned a MOU with DATA Uruguay civic tech group as part of an open data project with the purpose of protecting patient rights. This project was co funded by the Ministry of Public Health and a specific program from Avina Americas Foundation.

Methodology: The Ministry of Public Health made available to the civil society organization a set of demographic and social data (doctors, patients, health care services, etc.) from Institutions within the National Health Insurance system, in turn part of the NSS. With the available data, the partnership developed visualization codes to make interoperable and curate health care provider's information. The NGO organized the data using metadata from the National Open Data Catalog and transformed the datasets into machine-readable outputs, hence opening them. It also produced a Methodological Guide to help patients in the understanding of indicators and published data.

Outcome: Publicly available government data was transformed using a visualization tool to use by citizens seeking health care services. Users have access to health care performance indicators and may contact health care providers directly, while at the same time health care providers are held accountable for administered treatments. Journalists from the national media promoted the analysis of issues related to citizen health access and care based on the portal. CSV and shapefiles were made available from the site, including street level data, public procurement data, gender discrimination issues, plus regulatory and energy efficiency data in health care units.

6. The National Address Database (BAN) — France (G2C dp)



Institutional context and Partners: This G2C initiative aimed to make available a national repository to host geo-referenced addresses in the French territory by combining existing institutional databases. Its goal was to coordinate existing databases and at the same to rely on citizens' input to improve the quality of information, ensure data consistency and provide continuous, qualified and comprehensive updates. The partnership was originally developed by Etalab, La Poste France, the National Geographic and Forest Information Institute (IGN) and the Public Finances General Directorate (DGFIP) with the support of the Openstreetmap non-profit association, who added the knowledge and services of its platform.

Methodology: The database was created centralizing 25 million addresses listed in France that are associated with geographic coordinates. Each item of conventional data (classic postal information) was test to couple with geospatial data (latitude and longitude basically.). It also incorporates regularly the 300,000+ new addresses created annually in France. The database does not include personally-identifiable data but can estimate aggregated population statistics, the same as first aid patients, highway accidents and population affected by fire events.

Outcome: In the final version, citizens can contribute and freely use this database on the principles of collaboration (share, improve and reuse a common good) and choose between three levels of services including a) Free download of address open geo data files; b) Access to a state of the art geocoder and c) Counter for Local Addresses (Guichet Adresse Mairie) to support municipalities in creating, identifying and numbering the road network. Users who do not wish to share their data can access the BAN with conventional commercial licenses. BAN is essential to emergency services such as ambulances, fire brigades and the police (Le Gendarmerie) who rely on being able to find locations accurately in cities, on highways, and in rural areas.

Insights and lessons

As discussed, the above portrayal of experiences should be understood as an exploratory review and an initial analysis, rather than a methodical approach for descriptive statistics.

Moreover, the goal of the offered insights aims to find patterns of successful collaboration, identifying at the same time lessons and recommendations from the portrayed experiences. The cases described in this document are innovative and hence inspiring enough, although in a limited number, offering enlightening insights to policy designers and decision takers. An overall analysis of the above cases suggest that:

- Governments show a certain interest in data partnerships, as demonstration cases within NSOs for engaging with non-traditional data sources are found. This represents an important opportunity for civil society to keep on trying with collaborative partnerships.
- Citizen statistical production is in its first stages and developing valuable experiences. Nevertheless, careful attention is given to technical issues like samples from the side of civil society groups.
- Multiple data communities organized by citizens demonstrate proactivity to support statistical activities rather than the other way around, i.e. this research was not able to find induced participation⁽¹²⁾ from governments, except maybe in one case in Uruguay, where citizens were induced to collaborate and to organize themselves around health rights.
- The difference between monitoring and complementary data driven initiatives by civil society should be discriminated in the selected cases. However, whether data is used to compare it with official statistics or fill gaps in government's needs, this study assumes a certain partnership exists at least when considering visions over the same issue. Although most of the portrayed experiences are designed to monitor, and hence influence, public interpretation of a public problem; governments may be more inclined to find complementary statistics actions from civil society to fill gaps in data than looking for monitors.
- Signs show that civil society groups are complementing not only with self-driven data collection exercises — to fill gaps in the overall needs of NSO and NSS — but are also contributing with a broader range of tasks in the statistical production processes, i.e. additionally to data collection; processing, analysis and visualization.
- In the analyzed cases, a number of the portrayed C2G citizen driven initiatives are run with NSS parties (e.g. ministries) and only few have been undertaken in direct partnerships with NSOs. The explanation of the lack of direct partnerships between NSO and CSOs still remains to be answered by first statisticians and decision takers at official statistical agencies of all countries.
- Hence, new research should express expectations, resistances and overcoming proposals from governments, and NSS parties in particular, in order to answer to the convening of the Cape Town Global plan. It is understandable and foreseeable that critics and resistances may arise from genuine concern about collection methodologies, accuracy, privacy risks, and the compliance of spontaneous citizen 2 government initiatives with strict official procedures. These all are pending issues to be discussed and settled in the close future.

Many of the above lessons will probably raise more additional questions about how to follow up the evolving world of organized data actions from citizenry. Of course, more research about C2G initiatives is still needed in order to fully understand and potentiate data partnerships between civil society and NSOs (or the complete NSS for that matter) as the implementation of this trend begins to make more and more sense to governments.

⁽¹²⁾ Induced participation, refers to participation promoted through policy actions of the governments and implemented by NSOs. Note that government concept can include external governments working through bilateral and multilateral agencies, sometimes with the collaboration of academia, which usually operate with the consent of the sovereign state.

Recommendations to strengthen NGO's capacities in the official statistics domain

The proposed following step after getting broad answers to what can we learn from existing NGO efforts to aid official statistics is to address the question of how NGOs from civil society can strengthen their data production capacities. This is crucial to adequately aid NSOs with massive public engagement solidly built on top of the trust that brings foreseeable data standards, a proven statistical methodology and the respect for privacy and disaggregation limits.

Although civil society organizations are also strategically welcomed by the 'A world that counts' declaration to collaborate in aiding NSOs in the quest of filling data gaps, many tactical and operational issues are not immediately recognized in the walk to reality. A less studied topic when joining to global claims to start a data revolution is that technical and organizational capacities are needed to integrate this segment of non-traditional data actors. This is a gap that requires to be studied, supported and strengthened as well.

A study shows⁽¹³⁾ that NGOs from developing countries have a certain vocation to follow the Cape Town vision and consequently favor the opportunity of new data partnerships with governments. There are indications that C2G data partnerships can work as a support to official data rather than as a source for dissent on polemical issues. If faced with the possibility to impact with their efforts in ampler scenarios, organizations and CSOs can deliver innovative and supportive outcomes.

According to global open data forums and partnerships⁽¹⁴⁾ capacity building for civil society is crucial. Foundations like Avina and groups like 'the Engine Room' support very few NGOs but are working in the right track confident that technology and data can accelerate the impact of any group or organization that promotes equality, good governance and accountability. These kinds of capacity supporting projects aim to produce the needed changes that sustainable development claims by fostering capacities with learning civil society groups and making flexible and strong at the same time their organizations. To offer a general context, gaps in capacities are identified on the organizational, the technical and the financial field as follows.

In order to increase synergy with governments in mutually beneficial partnerships and at the same time gain momentum with productive data alliances, the following strategy and actions, based on the previous evidence, are recommended:

A. Optimize organizational capacity arrangements

It is crucial that besides the nature of data collection that a given NGO is undertaking, a healthy relationship with statistics officers at NSOs is developed and strengthened overtime. To do so, formal institutional arrangements, peer alliances like communities of practice and joint events are strongly recommended. In particular;

- If needs from both parties, civil society and government via its NSO, are identified when walking the talk, a necessary outcome should lead to a specific agreement of collaboration or MOU. The application of an agreement could include pilot projects and the demonstration of promising prospects. Of course, all agreements should include lawful requirements such a formal registries needed in accordance with national and local incumbent laws in the involved countries.

⁽¹³⁾ Statistical perspectives on Citizen-Generated Data. Respondents from INGOs showed willingness to prioritize taking actions about official statistics and giving new contexts or providing complementation. <http://civicus.org/thedatashift/frontpage-article/how-can-civil-society-collaborate-to-bolster-sdg-monitoring/>

⁽¹⁴⁾ Selected, formal and informal, talks at the [OGP Global Summit 2018: or the Open Government Partnership Summit in Tbilisi](#) discussed around this topic.

- Pioneers from C2G data initiatives are often misunderstood and their actions can feel isolated from other CSOs and most NSOs. The civic data collection activity though, is generally performed over a nurturing environment, and actors of the civic tech ecosystem should work together whenever possible to complement their efforts.
- It is advisable to devote efforts and regular resources to form a community of practice integrated by peers, collaborators and advisors from the official side in (online) participative formats. This can inspire collaboration among members and strengthen trusted networks of NGOs with similar profiles.
- Also, it is a healthy practice to produce and share regular information from communal surveys that might elicit information about present and future projects from all members, including follow up of their needs and proposals, to help to pushing the endeavour to safe ports. Additionally, developing institutional material can help to set the right expectations.
- The closeness that events in the spirit of data festivals brings can help both parties to understand the needs and incentives from each other. Also, the follow up of short joint assignments can help to identify data gaps that are relevant to statistical offices and where C2G initiatives can help. A positive and regular dialogue can tell which data should be collected, what methodology should be enhanced, and what standards and licences are to be adopted.

B. Bootstrap⁽¹⁵⁾ technical capacities and skills

As seen, resistances to C2G are foreseeable when including the consideration of NSO decision takers, especially around technical issues such as collection methodologies, coverage, accuracy, privacy and the compliance of this kind of initiatives with strict official procedures. These gaps should be incrementally bridged with specific training to standardize and enhance the quality of data.

- The challenge of providing tailored training must be addressed identifying needs and can be managed operating state of the art technologies. For instance, videoconference hangouts and other voice over ip tools can be applied in networks of NGOs and save costs for them.
- An attractive practice is to run tech camps applying to international cooperation programs where different learning dynamics can be combined to empower targeted citizenry with technological concepts and skills, with both on online and offline formats. Also, knowledge resources and experts from official environments need to be identified and invited to perform knowledge transference within the available resources.
- Actions oriented to enhance specific skills for the selected roles of the members of the NGO are strongly recommended, taking care to differentiate between those that will organize events, feedback to NSOs, organize data bases, coordinate crowdsourced data efforts, run data analytics and design visualizations following the needs and institutional mission of the organization.
- Regarding standardization, joint panels integrated by experts from NSOs are a working solution if data quality needs to be assured. In the existing analysed experiences like the Uwezo and the CIPHIA project, the assistance of knowledgeable personnel at NSOs was crucial for success.
- As per dissemination and community building, running hackathons⁽¹⁶⁾ can be a great source of collecting data and also to reinforce group identity. While techcamps will focus on developing and strengthening skills with the local community, the hackathon will be offered to a wider civic tech community including those identified challenges based on requirements coming from NSOs worked out in formal and collaborative agreements.
- It is recommended to plan, fund, organize and produce at least one massive collaboration event (like mapathons⁽¹⁷⁾, think-a-thons or datathons) once a year to gain visibility and projection. In the events, setting goals for the local context is crucial to connect the problems and concerns of the involved communities to possible solutions.

⁽¹⁵⁾ To start up (an Internet-based business or other enterprise) with minimal financial resources.

⁽¹⁶⁾ An event, typically lasting several days, in which a large number of people meet to engage in collaborative computer programming.

⁽¹⁷⁾ Coordinated massive collaboration event where a urban or rural territory is mapped using GPS devices [global positioning system] together with other data collection platforms.

- It is also advisable to build networks with remote communities and work out simultaneous goals in broader contexts whenever possible. Identifying and communicating attractive data challenges to drive interest and participation from individuals is also important and should be done in association not only with NSOs but also with private and other official sponsors.
- Finally, it is expected that some kind of feedback is produced coming from the knowledge and outreach experiences in synch with a follow up of the original requirements coming from the associated NSO. Executive documents including lessons learned and recommendations to all stakeholders considering future actions are expected as a proof of progress of the civil society initiative.

C. Strengthen funding capacities

Developing funding capacities at the civil society level, especially in developing countries, strongly relies on the framing and purpose of official regulations regarding the role of the sector in the economy. Claims from NGOs in many international scenarios ⁽¹⁸⁾ urge in general to discuss about a) the lack of donor funding, b) gaps in return of investment to donor priorities when funding is made available, c) inability to design and write attractive applications, d) unfavourable tax incentives, d) heavy transaction costs, e) complex government impositions and f) tough financial requirements.

These limitations have different rationales and some of them can be worked out from the side of civil society and some others respond to more general policy contexts. Generally speaking, this kind of restrictions and barriers point out the need of overcoming the lack of healthy dialogue between government and civil society actors to potentiate the impact of joint actions.

Little can be done from the civil society end regarding the general setting of regulations. If something could be done to prepare a receptive attitude from lawmakers and influence policy decisions, it is to provide signs to help to change suspicious perceptions in official circles towards non official statistical activity, switching practices like questioning the validity of unofficial data for more constructive ones. For this purpose, the following recommendations to enhance financial capacity are produced for NGOs:

- Structure a more collaborative and complementary narrative in the strategy for involvement with governments rather than a substitutive one. Produce outputs trying to avoid at all costs the perception that civil society monitoring may harm the reputation of government statistical outcomes. For many reasons, the confrontation of civic active data collection with official realizations generates incertitude over the financial planning.
- Plan appropriate financial actions leaning in the bootstrapping of technical capacities, especially if the organization wishes to avoid the improvisation character that in some cases is attributed to civil society initiatives.
- Finally, in order to build healthy innovations and credibility, disseminate a message with a solid structure of theory of change ⁽¹⁹⁾ and provide a long-term vision for civic initiatives.

Previous recommendations included recognizing and improving around gaps in technical capacities. Although part of those capacities, the planning of strategic partnering and support to applications for funding should be considered also part of the financial strengthening. Regarding what can actually be changed actively from the inside the civil society organizations, the following is recommended to all civic tech entrepreneurs:

⁽¹⁸⁾ The International Open Government Data Conference has been including the issue of capacity building to empower citizens and civil society since its first edition in 2010 (<https://www.opendatacon.org/>). Particularly Omidyar network and Open Knowledge Foundation have been advocating for civil society in different interventions.

⁽¹⁹⁾ Theory of Change is essentially a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context.

1. Investigate international NGO networks and projects, considering to launch mutually constructive partnerships with global civil society organizations. International civil society organizations like CIVICUS — or even think tanks like Open Data Institute, OKFN or Open Gov Lab — can help communities and other local groups to understand in which development areas to focus and also how to find support from other actors in the field so that the original initiative is revitalized. These actors can sometimes help to sponsor or fund projects and/or provide guidance to obtain international funding.
2. Get acquainted with funding framings like the used in cooperation agencies such as the logical framework⁽²⁰⁾, the cost effectiveness method, the lean startup method — used by private funders — and other project evaluation schemes used by governments and international organizations to understand and master the rationale of development funding.
3. Based on the lessons coming from the previous recommendations, funding should be easier to get if appeal of the C2G data partnership is demonstrated to private sector actors, especially linking efforts to business and CSR plans where civil society communities are considered to be impacted.
4. Permeate the community to more aggressive partnering approaches with a continuous improvement attitude, training constantly on pitching techniques and other communication skills, without affecting the original mission of the organization.
5. At all times follow up with social media and, when possible, participate at international events and conferences in order to network and learn from other NGOs, increasing exposition at the same time.
6. Evaluate platforms and learn from successful study cases to launch a crowdfunding campaign for the ongoing projects. It is important to choose the right platform partner and to offer more than just an experimental idea, adjusting the pitch and outcomes to the target audience
7. Register in international and regional development bank's databases with a short pitch portraying the values and actions that the C2G partnership is undertaking, showing that the organization is part of the civil society of the country where the main activity is developed.

⁽²⁰⁾ The logical framework is a document that gives an overview of the objectives, activities and resources of a project. It also provides information about external elements that may influence the project, called assumptions.

Final remarks

From all the above capacities to be developed, probably the technical ones are those getting more attention in the ecosystem of data for development. Besides the general orientation of the existing initiatives, other experiences — specifically focused in the statistical domain — have already started in order to generate proposals to train civil society and citizenry in C2G projects. These are the Stats Up program from GeoCensos Community and 'I Hate Statistics' initiatives, aiming to train young data entrepreneurs and provide knowledge and practical support. Their strategy teaches both to produce data for NSOs and to use in visualizations currently available data from public organizations and statistical offices.

Stats Up project from GeoCensos



Source: Dissemination video in <https://www.youtube.com/watch?v=9cfdYdQHZVY>

The valuable advances that civil society has attained by implementing C2G data partnerships could potentially contribute to the needs of policy making with valid and readily available statistical data sets and solutions if properly recognized, understood, consensuated and followed up by governments. The venture of citizen-to-government actions is one of the most foreseeable future solutions embedded in the the spirit of partnering that the Cape Town Global action plan promises and answers directly to the prioritization that progressive universalism means.

The pledge of 'leaving no one behind' should be fulfilled in many levels if the interpretation of the needed inclusion of collaborative groups and civic communities are considered more proactively in specific official and international cooperation programs. As soon as a crucially needed political push from NSOs decision makers can be made available, civic participation could be faced with the chance to demonstrating that quality data sets can be generated and used to complement available national statistics and other official data.

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Citizen to government data partnerships: What can we learn from and recommend to civil society groups working in the official statistics domain ?

The Cape Town Global Action Plan for Sustainable Development Data subscribed in 2017 at the first World Data Forum highlights the need of National Statistical Offices (NSOs) to adapt to evolving demands. This need is triggered by all kinds of decision-makers, specially from governments under constant pressures to deliver focused, tailored and timely solutions. Based on a classification framework adapted from the e-governance concept, this document takes stock of various international, regional and local initiatives thought to aid or monitor government actions and that are granting access to and use of non-traditional data sources. These are citizens to government data partnerships, that use technologies like open geospatial information platforms and can complement surveys and traditional censuses in the official statistics data stream, with special focus in demographic and social statistics. Recommendations will address the question of how civil society NGOs can strengthen their general capacities inside the statistical production processes to effectively support NSOs through collaboration projects at national and international levels. ext

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