

January 2017

# long-term investments in a short-term world

arguments for sustainable data

Discussion paper

Author: Bill Anderson

# Contents

Introduction.....	3
We need a lot more than better household surveys .....	4
Civil registration and vital statistics .....	5
Perpetual censuses: community-based data collection .....	10
Kenya: Data from and for the community .....	11
Zimbabwe and Malawi: an electronic village register .....	13
Uganda: UBOS' Community Information System .....	13
The Cape Town Global Action Plan .....	17
Endnotes .....	18

# Introduction

To establish consistent monitoring of the Sustainable Development Goals (SDGs) a data deadline has been put in place for 2020. Efforts being made to ensure that the data that is needed to drive the SDG indicators can be produced by all countries within this timeframe. Most of the few resources that are available are therefore being channelled to meet this target. This is problematic because it means there is currently a focus on household surveys that are not adequate to serve the data needs of developing countries in *meeting* the SDGs, as well as on national and regional development targets. It also perpetuates an already stark divide between poorer and richer countries when it comes to quality data that is essential for effective decision-making.

---

**Do we need to accept that in addition to the continuing *digital divide* there is a *data divide* in which by 2030 most rich countries have adopted cost-effective and sustainable data systems while poorer countries continue to depend on systems that are neither sustainable, representative, affordable nor disaggregated?**

---

The World Data Forum that took place in Cape Town in January 2017 presented the ideal opportunity to discuss these issues. Development Initiatives (DI) focused on the need for better data to 'leave no one behind'. As part of the [Programme Committee](#),<sup>1</sup> we organised a plenary session that made the political case for better data, and two breakout sessions highlighting two facets of the struggle for sustainable data in developing countries: civil registration and vital statistics (CRVS), and community-based censuses. This paper unpacks our discussions and makes the case for the wider acceptance of these issues.



DI's Judith Randel leads the World Data Forum plenary: 'Counting People to Make People Count: The need for better data to ensure that no one is left behind'. Photo credit: IISD Reporting Services.

# We need a lot more than better household surveys

In October 2015 the World Bank [committed](#) to mobilising the resources needed for the 78 poorest nations to have household-level surveys every three years until 2030. This initiative is estimated to cost US\$1.5 billion – US\$300 million every three years – in addition to what countries are already spending on core data collection.<sup>2</sup>

Household surveys are useful for national estimates, to plug data gaps and for quality control. They are, however, expensive to run and cost prohibits them from being conducted at a level of disaggregation that provides meaningful data for subnational government. If data is required to leave no one behind, household surveys are not the answer; and for this reason:

- The [African Charter on Statistics](#) maintains that ‘statistics authorities shall not embark on statistical surveys except where pertinent information is unavailable from administrative records or the quality of such information is inadequate in relation to the quality requirements of statistical information.’<sup>3</sup>
- The [Strategy for the Harmonisation of Statistics in Africa](#) ‘calls for the strengthening and leveraging of administrative and other sources of statistical information, and the development of a statistical base to ensure the availability of a broad range of statistics at low cost.’<sup>4</sup>

National censuses *do* count every person but they are only conducted every 10 years. While providing a key benchmark, they do not meet the increasing demands for more timely data. Hence, the trend in many developed countries is increasingly to invest in registry and administrative data. Personal, household and enterprise registers are combined with the data that government departments and agencies collect to fulfil their duties, resulting in cheaper (once established), more accurate and more timely statistics. [The Netherlands](#),<sup>5</sup> [Sweden](#),<sup>6</sup> [Slovenia and six other](#) European countries,<sup>7</sup> for example, no longer conduct questionnaire-based national household censuses.

But where does this leave developing countries? Do we need to accept that in addition to the continuing [digital divide](#)<sup>8</sup> there is a *data divide*? Meaning that by 2030 most rich countries will have adopted cheaply maintained sustainable data systems while poorer countries will continue to depend on international agencies to deliver data collection systems that are neither sustainable, representative, affordable nor disaggregated? If governments, donors and policy makers continue to focus on three-to-five-year timelines to deliver results on data systems to monitor the 2030 Agenda for Sustainable Development, the answer to this question is, depressingly, “Yes”.

# Civil registration and vital statistics

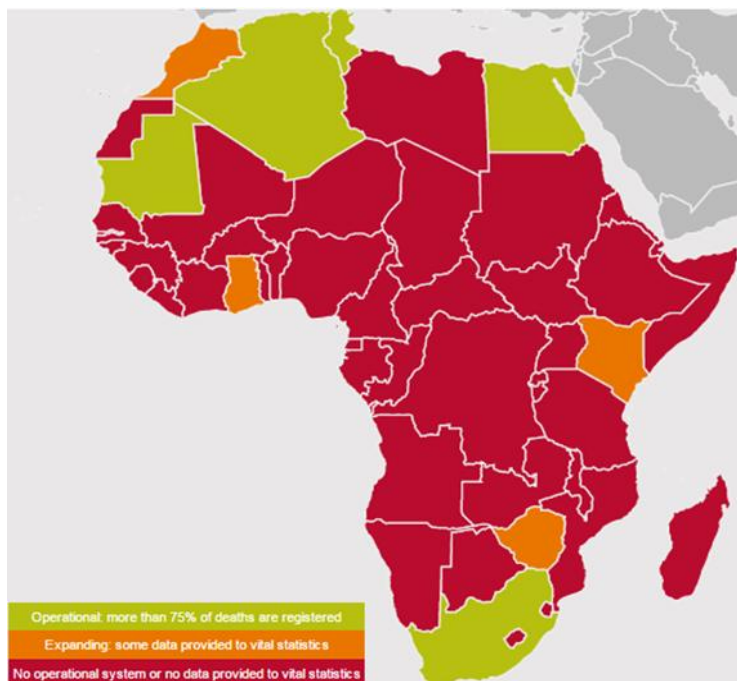
Most African countries currently have no capability to collect statistics on death, let alone the causes of death. This is not a problem that can be solved by 2020.

We organised a breakout session to highlight the issue and convened a panel of some of the world's leading experts in this field.

**Muchiri Nyaggah**, Executive Director of the Local Development Research Institute in Kenya, introduced the session with a call to [making the invisible visible](#)<sup>9</sup> and questioned whether we are making the best case possible for investments and the returns they can bring.

---

## Availability of vital statistics on death from CRVS systems in Africa



Source: Development Data Hub

---



Muchiri Nyaggah – Executive Director at the Local Development Research Institute



Irina Dincu – CRVS Specialist, Centre of Excellence for CRVS Systems, International Development Research Centre



Maletela Tuoane-Nkhasi – Senior Health Specialist: CRVS for the Global Financing Facility at the World Bank

---

**Irina Dincu**, a CRVS Specialist working for Canada’s International Development Research Centre spelled out the problem. “We may have made some progress in registering births, but a huge problem remains in registering deaths and the causes of death. 80% of deaths are still not registered. There is a US \$2 billion funding gap between now and 2024. We need another \$200 million per year to make CRVS work.” These figures come from the Global CRVS scale up plan of WHO and The World Bank<sup>10</sup>. Canada has provided, along with IDRC, seed funding for the creation of the Centre of Excellence for CRVS Systems, as part of its contribution to big data and the data revolution. The Centre works closely with the Global Financing Facility<sup>11</sup> secretariat to provide support to CRVS system strengthening in selected LMIC countries. According to Irina, “strengthening of CRVS is systems is crucial in the context of the leave no one behind agenda, as this is the only administrative system that can provide disaggregated data at the lowest level, that would be crucial as we move the conversation forward to reaching the most marginalized and underserved.” One of its initiatives, together with UNICEF, has been to invest in [strengthening CRVS](#) in Mozambique.<sup>12</sup>

## Global Financing Facility: Estimate of the CRVS financing gap for the 2015–2024 scaling up investment plan (US\$ million)

Costs	Required resources	Available resources	Financing gap
Development costs	2,281	677	1,604
Recurrent costs	1,201	1,152	49
International support to CRVS, including knowledge sharing and strengthening the evidence base	228	0	228
Monitoring and evaluation	114	0	114
<b>Total</b>	<b>3,824</b>	<b>1,829</b>	<b>1,995</b>

Source: Global Financing Facility

**Maletela Tuoane-Nkhasi**, a Senior Health Specialist working on CRVS for the Global Financing Facility, highlighted the need to mobilise domestic resources to ensure that, once developed, systems are maintained in a sustainable way. She argued that the benefits national health systems derive from CRVS show excellent returns on investment in health and that efforts should be intensified by donors, international agencies, the private sector and governments to build sustainable CRVS systems. She also highlighted the role of the Global Financing Facility in supporting CRVS in low- and lower-middle income countries as an investment in data required for reducing preventable maternal, newborn, child and adolescent deaths. She further emphasised the importance of coordination among development partners and donors to support country-led priorities to strengthen CRVS.

**Richmond Tiemoko**, Policy Advisor on population dynamics with the UN Population Fund (UNFPA) stressed the ‘VS’ in CRVS. “Vital statistics are essential for making progress. We cannot continue using algorithms that produce estimates with huge margins of error. We need accurate numbers on maternal mortality and other causes of death. If we continue to focus on quick wins we will be forced to continue to produce, as we did with the MDGs, a lot of potentially untrustworthy data.”

### Algorithm for estimation of maternal mortality

The model was fitted with three selected covariates (GDP, GFR and SAB) and random intercept effects for countries and regions. It can be described as follows:

$$\log(\text{PM}^{\text{na}}) = \beta_0 + \beta_1 \log(\text{GDP}) + \beta_2 \log(\text{GFR}) + \beta_3 \text{SAB}_i + \alpha_{j|ij}^c + \alpha_{k|ij}^r + \varepsilon_i$$

where the following are associated with each observation  $i$ , within country  $j|ij$ , within region  $k|ij$ :

$\text{PM}^{\text{na}}$  = proportion of maternal among non-AIDS deaths in women aged 15–49 years (non-AIDS PM)

$\text{GDP}_i$  = gross domestic product per capita (in 2005 PPP dollars)

$\text{GFR}_i$  = general fertility rate (live births per woman aged 15–49 years)

$\text{SAB}_i$  = skilled attendant at birth (as a proportion of live births)

$\alpha_{j|ij}^c$  = variable intercept component for country  $j$

$\alpha_{k|ij}^r$  = variable intercept component for region  $k$

$\varepsilon_i$  = error.

Source: World Health Organisation





Richmond Tiemoko – Policy Advisor on Population Dynamics at UNFPA



Yacob Zewaldi – CRVS Consultant for African Development Bank working with Secretariat of APAI-CRVS, UNECA

---

**Yacob Zewoldi** has many years of statistical and CRVS experience behind him. He is currently a consultant for the African Development Bank, working with the secretariat of the [Africa Programme on Accelerated Improvement of CRVS](#) (APAI-CRVS), UN Economic Commission for Africa (UNECA).<sup>13</sup> His key message was the need for the agency or agencies responsible for CRVS to be inextricably linked with the Ministry of Health and the national statistics office. “CRVS is like a three-legged stool. If one of the legs is too short the stool doesn’t work, the system will break”. He called for regional leadership to advance the agenda and for the CRVS community to learn from the successes achieved in most countries for the funding of national population and housing censuses. He ended with a plea for a holistic approach, “Think as a nation, not isolated government agencies, when building CRVS.”

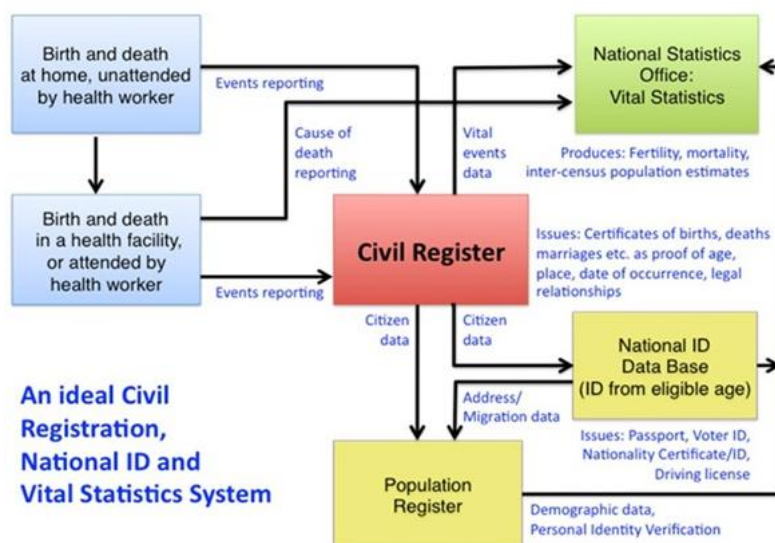


Edward Duffus – Head of Birth Registration Innovation at Plan International

**Edward Duffus** has a private sector background in innovation and is now applying his experience to Plan International’s work with children. He echoed the call for coordination among stakeholders: this applies to development partners as well as the implementing agencies. He argued that many of the orthodoxies of CRVS have been carried forward from colonial days and need to be challenged. Building effective CRVS systems requires smart innovation, not just the digitisation of existing manual processes. He questioned why no one has got round to building cost-effective open source systems for CRVS, something that Plan International is now working on.



**Plan for the strengthening of the CRVS system in Mozambique supported by Canadian investment**



Source UNICEF, Mozambique

# Perpetual censuses: community-based data collection

National household censuses, when properly conducted, are the most comprehensive and accurate source of data on most of the people in a country. They are, however, held only once every 10 years.

Producing socioeconomic statistics that can be disaggregated down to the lowest level of government and service delivery is currently a prohibitively expensive business. But what if local government was responsible for the collection of the data needed to plan and allocate its own resources? What if local communities benefited directly from their own data? What if local data collection were to become a key vehicle for building trust between communities and local government? Our second breakout session in Cape Town set out to answer these questions.



Herbert Buyondo – Principal Statistician,  
Local Government Statistics at the  
Uganda Bureau of Statistics



Caroline Masendeke – Electronic Village  
Register, Research and Information  
Services, Zimbabwe



Chief Francis Kariuki – Responsible for administrative management of governmental, public and private affairs in Lanet Umoja, Kenya



Benjamin Charagu – Innovations Lead, Open Institute, Kenya

---

## Kenya: Data from and for the community

**Chief Francis Kariuki**, now known internationally as the ‘[tweeting chief](#)’<sup>14</sup> is responsible for administrative management of governmental, public and private affairs in Lanet Umoja in Kenya, providing a structured system of security for people living in the location. He attracted attention after beginning to use SMS-based twitter interactions to communicate with his constituents and as a result was invited to the [Africa Open Data Conference](#) in Tanzania in September 2015<sup>15</sup> where he learnt about the SDGs. With the support of the Nairobi-based [Open Institute](#)<sup>16</sup> he was inspired to see what impact he could have on five of the goals – Poverty, Health, Education, Gender and Water – in his area of responsibility. To achieve this, he needed data and so the Lanet Household Census was born. The first round of the census used a paper-based questionnaire. **Benjamin Charagu**, Innovations Lead at the Open Institute, was soon on the scene with his tech team to digitise the paper results, to transfer the questionnaire to tablets, to build a database for the Chief to administer the data and an online [dashboard](#)<sup>17</sup> for the community to view and use the data.

---

## Summary of Lanet Umoja household census questionnaire

Role In the family	Age	Registered voter	Occupation	Has livestock?
Does farming?	Farming detail	House type	Sanitation facility	Source of drinking water?
Is electricity installed?	Is There sanitation facility?	Have there been any crime?	Health category	Visited health facility?
Which health facility?	Are children immunised?	Are mosquito nets available?	What is the power source	Energy source for cooking

Source: Adapted from Lanet Umoja household census questionnaire

---

One of the first findings to emerge from the data was the extent of waterborne diseases and the impact they have on people's livelihoods. Armed with this data, the Chief was able to connect with an organisation that could supply point-of-use water filters. As a result, all of the over 12,000 Lanet households now have access to safe drinking water. SDG target 6.1 – 'By 2030, achieve universal and equitable access to safe and affordable drinking water for all' – has been met.



Delivery of water filters in Lanet Umoja. Photo credit: Open Institute.

---

Chief Francis Kariuki is now engaging with neighbouring chiefs. The Open Institute is seeking to consolidate the technical infrastructure so that it becomes more robust. The Kenya National Bureau of Statistics is looking on with great interest. Will this become a scalable solution to provide an annual national census that serves governments and citizens alike? The signs are promising.

## Zimbabwe and Malawi: an electronic village register

**Caroline Masendeke** is from Zimbabwe and after years of work in UN agencies founded an NGO to meet the challenge of improving data collection at the local level. In collaboration with the Ministry of Local Government and [ZimStat](#),<sup>18</sup> the national statistics agency, and with financial support from the UN Economic Commission for Africa she initiated a pilot programme for electronic village registers.

---

### Objectives of the electronic village register



Source: Adapted from the Caroline Masendeke's presentation at WDF

---

The Zimbabwe [Traditional Leaders Act](#)<sup>19</sup> mandates traditional leaders to maintain a list or register of names of people in their areas of jurisdiction. Caroline successfully advocated for the expansion of the register to contain demographic, socioeconomic and environmental data. The electronic register was thus designed as a tool for the continuous recording of selected information on each member of the resident population of a village/area using a hand-held device.

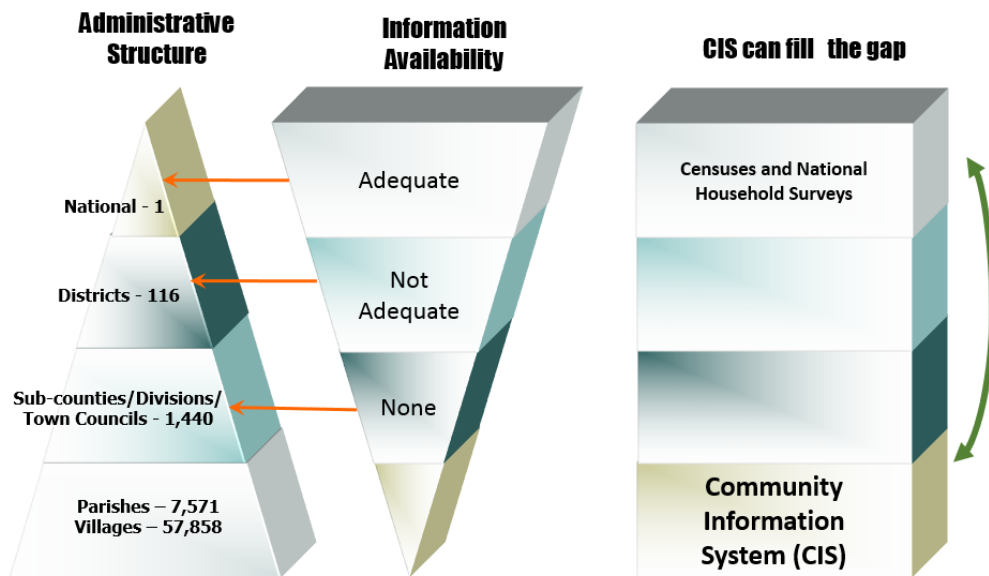
Despite early successes, the project ran into political blockages and Caroline is now focused on transferring her learnings in Zimbabwe to a similar project in Malawi.

## Uganda: UBOS' Community Information System

The two projects already presented have originated, bottom-up, from a local government and an NGO respectively. What happens when the concept of perpetual community-based data collection is embraced by a national statistics office? **Herbert Buyondo**, Principal Statistician for Local Government Statistics at the Uganda Bureau of Statistics (UBOS), introduced us to their [Community Information System](#) (CIS).<sup>20</sup>



## Demand Versus Availability of Information for Decision Making



Source: UBOS

Most statistics produced in Uganda cannot be usefully disaggregated below national level. This includes the data collected through the various household surveys, because the 10 statistical regions used for surveys are at a higher level than the administrative areas through which services are delivered and decentralised government takes place.

The CIS provides disaggregated data at parish level that can be aggregated up to link directly to budgets and planning frameworks at the sub-country and district level.

The programme also ensures that households and communities have access to their own information, and make use of it at that level. Data collection takes place at village and parish level. This is still a manual process. The physical register, however, remains with the community. It belongs to them. It contains carbon copies that UBOS removes annually for processing into the main database

CIS Community Register Questionnaire



The CIS has lofty objectives: “to identify households and communities within the lowest administrative unit by their socioeconomic characteristics and hence their needs; to enhance the use of reliable and accurate data by communities; to support participatory development planning at the various levels of administration; and to facilitate regular and sustainable monitoring of the effectiveness of government, NGO and other agencies’ development initiatives among communities.” It provides the foundations for a data ecosystem that can serve all levels of government.

In 2014 Uganda successfully conducted its 10th [Population and Housing Census](#).<sup>21</sup> UBOS used this opportunity to review the accuracy of its CIS data in the light of the census. The comparison proved to be favourable: a major achievement as the accuracy of community-based data collection is a serious issue and a major challenge.

### UBOS Comparison of CIS and 2014 Census for Kayunga District

County	2014 CIS			2014 Census (provisional)			
	Sub county	Male	Female	Total	Male	Female	Total
<b>Bbaale</b>		<b>73,666</b>	<b>74,475</b>	<b>148,141</b>	<b>73,448</b>	<b>74,130</b>	<b>147,578</b>
	Bbaale	7,898	7,488	15,386	8,660	8,001	16,661
	Galiraaya	14,034	13,767	27,801	13,752	13,068	26,820
	Kayonza	29,133	29,237	58,370	29,359	29,695	59,054
	Kitimbwa	22,601	23,983	46,584	21,677	23,366	45,043
<b>Ntenjeru</b>		<b>109,610</b>	<b>115,227</b>	<b>224,838</b>	<b>107,093</b>	<b>115,539</b>	<b>222,632</b>
	Busana	30,190	31,045	61,236	27,559	29,029	56,588
	Kangulumira	25,777	27,377	53,154	25,449	27,890	53,339
	Kayunga	19,877	20,861	40,738	20,092	21,552	41,644
	Kayunga TC	11,775	13,094	24,869	12,409	14,179	26,588
	Nazigo	21,991	22,850	44,841	21,584	22,889	44,473
<b>Kayunga District</b>		<b>183,276</b>	<b>189,702</b>	<b>372,979</b>	<b>180,541</b>	<b>189,669</b>	<b>370,210</b>

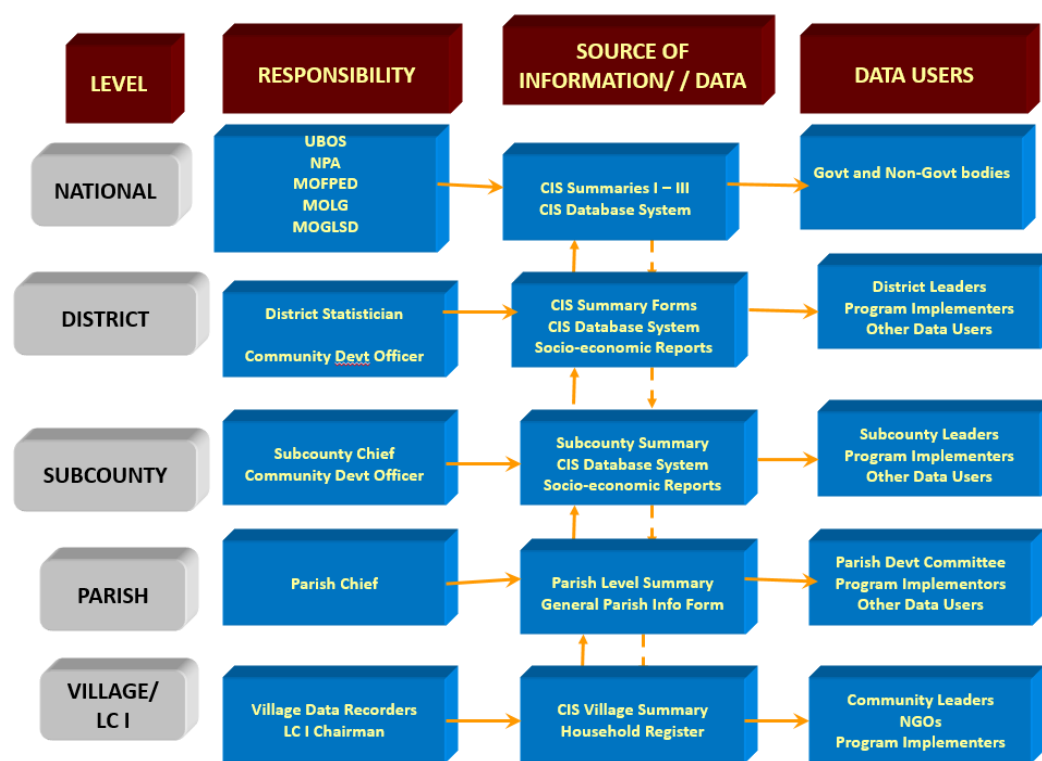
Source: UBOS

CIS has been rolled out in just under half of Uganda’s districts. There is, however, a major problem – a lack of funding: establishing the CIS infrastructure costs around US\$36,000 per district. Resources earmarked for expansion of the CIS were apparently diverted to the national census in 2014 and progress has been slow since then.

It is worth exploring the arithmetic here. Establishing and maintaining the CIS nationally would cost US\$4 million per year. (This is an over-estimation as maintenance costs are less than the initial investment.) The 2014 census cost over US\$50 million<sup>22</sup> (US\$10 million more than the cost of investing in CIS for 10 years).



## The data ecosystem provided by UBOS' Community Information System



Source: UBOS

If Uganda was to invest in the CIS with the intention of, within 10 years, producing census-standard data on an annual basis for all households:

- it would have put in place an infrastructure that could maintain a high quality CRVS system
- it would become the first African country to derive its census from existing data structures
- it would have produce a cost-effective, sustainable data infrastructure.

# The Cape Town Global Action Plan

The World Data Forum closed with the launch of a [Global Action Plan](#).<sup>23</sup> It is a wide-ranging and ambitious programme covering many facets of leadership, capacity, data production and data use. If we are to leave no one behind there is one objective we need to pay particular attention to: investment in registry and administrative data. This is the path towards building sustainable data infrastructures.

---

## Objective 3.2 of the Cape Town Global Action Plan for Sustainable Development Data

**Objective 3.2:** Improve the quality of national statistical registers and expand the use of administrative records integrating them with data from surveys and other new data sources, for the compilation of integrated social, economic and environmental statistics and in relation to follow up on the 2030 Agenda

---

### Key Actions:

- *Develop, standardize and improve the coverage of registers of persons, property and businesses for statistical purposes.*
- *Establish the preconditions for greater use of and better access to administrative data and develop the necessary infrastructure and skills of statistical and other relevant technical staff to link administrative records with statistical registers.*
- *Develop guidelines and best practices on optimal use of administrative data for official statistics, including statistical standards, harmonisation tools and development of metadata.*
- *Support countries as they develop national plans to achieve improved use of administrative records in the production of official statistics, in cooperation with the national partners.*

Source: World Data Forum

---

# Endnotes

- 1 <http://undataforum.org/WorldDataForum/partners/>
- 2 <http://www.worldbank.org/en/news/press-release/2015/10/15/world-bank-new-end-poverty-tool-surveys-in-poorest-countries>
- 3 <https://www.au.int/en/treaties/african-charter-statistics>
- 4 [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB,%20SHaSA\\_web.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB,%20SHaSA_web.pdf)
- 5 <https://www.cbs.nl/en-gb/news/2014/47/dutch-census-saves-time-and-money>
- 6 [http://neon.vb.cbs.nl/casc/ESSnet2/Jansson\\_CensusSDC\\_workshop.pdf](http://neon.vb.cbs.nl/casc/ESSnet2/Jansson_CensusSDC_workshop.pdf)
- 7 <http://www.stat.si/popis2011/eng/Default.aspx?lang=eng>
- 8 <http://a4ai.org/affordability-report/report/2015/>
- 9 <https://www.youtube.com/watch?v=TjXhX1e3Dck>
- 10 <http://www.worldbank.org/en/topic/health/publication/global-civil-registration-vital-statistics-scaling-up-investment>
- 11 <https://www.globalfinancingfacility.org/>
- 12 <http://www.unicef.org/mz/en/launching-of-program-for-accelerated-investment-civil-registration-and-vital-statistics-crvs/>
- 13 <http://www.apai-crvs.org/>
- 14 <https://twitter.com/Chiefkariuki>
- 15 <http://www.africaopendata.net/schedule/>
- 16 <http://www.openinstitute.com/the-long-road-to-citizen-power/>
- 17 <http://www.lanet.opencounty.org/index.php#/>
- 18 <http://www.zimstat.co.zw/>
- 19 <http://www.parlzim.gov.zw/acts-list/traditional-leaders-act-29-17>
- 20 <http://www.ubos.org/statistical-activities/community-systems/district-profiling/community-statistics/>
- 21 <http://www.ubos.org/2014-census/>
- 22 [http://www.newvision.co.ug/new\\_vision/news/1340887/national-census-cost-sh190b](http://www.newvision.co.ug/new_vision/news/1340887/national-census-cost-sh190b)
- 23 <http://undataforum.org/WorldDataForum/launch-of-the-cape-town-global-action-plan-for-sustainable-development-data/>

---

Development Initiatives (DI) is an independent international development organisation working on the use of data to drive poverty eradication and sustainable development. Our vision is a world without poverty that invests in human security and where everyone shares the benefits of opportunity and growth.

We work to ensure that decisions about the allocation of finance and resources result in an end to poverty, increase the resilience of the world's most vulnerable people, and ensure no one is left behind.

Copyright © 2017 Development Initiatives  
We encourage dissemination of our work provided a reference is included.

Contact  
Bill Anderson  
Information Architect  
[Bill.Anderson@devinit.org](mailto:Bill.Anderson@devinit.org)

To find out more about our work visit:  
[www.devinit.org](http://www.devinit.org)  
Twitter: @devinitorg  
Email: [info@devinit.org](mailto:info@devinit.org)

Development Initiatives is a group headed by Development Initiatives Poverty Research Limited, a not-for-profit company established in England no. 06368740. Registered office: North Quay House, Quay Side, Temple Back, Bristol, BS1 6FL, UK.

#### **UK OFFICE**

Development Initiatives  
North Quay House  
Quay Side, Temple Back  
Bristol, BS1 6FL, UK  
+44 (0) 1179 272 505

#### **KENYA OFFICE**

Development Initiatives  
Shelter Afrique Building  
4th Floor, Mamlaka Road  
Nairobi, Kenya  
PO Box 102802-00101  
+254 (0) 20 272 5346

#### **DEVELOPMENT RESEARCH AND TRAINING (DRT)**

Ggaba Road, Mutesasira  
Zone, Kansanga  
PO Box 22459  
Kampala, Uganda  
+256 (0) 312 – 263629/30  
+256 (0) 414 – 269495  
[www.drt-ug.org](http://www.drt-ug.org)

#### **US OFFICE**

Development Initiatives  
1110 Vermont Ave NW,  
Suite 500, Washington DC  
20005, US