

OPEN DATA FOR DEVELOPING ECONOMIES CASE STUDIES

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Improving Voter Turnout with Open Data

By Auralice Graft, Andrew Young and Stefaan Verhulst

JULY 2017



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# GOTTOVOTE! KENYA

## IMPROVING VOTER TURNOUT WITH OPEN DATA

### Open Data for Developing Economies Case Studies

## SUMMARY

In the lead up to Kenya's 2013 general election, the country's Independent Electoral and Boundaries Commission (IEBC) released information about polling center locations on its website. The information, however, was difficult to access, indicating the wide gap that separates making data open and actually making it usable. Seeking to bridge that gap, two members of Code for Kenya, a governance innovation initiative, conducted an experiment that aimed to unlock government data

and make it more useful to the public. To that end, they scraped the IEBC data and built a simple website where it could be more easily accessed. The result was the initial version of GotToVote! ([gottovote.cc](http://gottovote.cc)), a site that provided citizens with voter registration center information, and also helped them navigate the sometimes complex world of registration procedures. This first version was developed overnight at zero cost.



## CONTEXT AND BACKGROUND

### PROBLEM FOCUS/COUNTRY CONTEXT

The Republic of Kenya is a nation of 42.7 million people situated on Africa's eastern coast. Kenya has a sizeable economy, with the highest GDP in East and Central Africa.<sup>1</sup> Despite this, the country is burdened with high unemployment, poverty, and crime.<sup>2</sup> Public sector corruption is also a challenge: Transparency International ranked Kenya 139<sup>th</sup> out of 168 countries in its 2016 Corruption Perception Index (CPI), an index that measures perceived levels of public sector corruption. This ranking places Kenya below countries like Bangladesh and Iran, and even below other Sub-Saharan African countries like Nigeria, Tanzania and Ethiopia.<sup>3</sup>

In December 2007, Kenya held a hotly contested presidential election that ended in a stalemate and protests. Anger over perceived vote rigging and manipulations of the electoral process rapidly metastasized into a national crisis characterized by conflict and violence, including targeted ethnic violence. As many as 1,400 people were killed and 600,000 displaced from their homes during the crisis. A resolution was reached after a few months, following the intervention of former UN Secretary General Kofi Annan; one of the main elements of the resolution was a roadmap toward a series of reforms designed to overcome political divisions and curb electoral manipulation.<sup>4</sup>

1 International Monetary Fund, "Data," <http://www.imf.org/en/data>.

2 BBC News, "Kenya Country Profile," BBC, <http://www.bbc.com/news/world-africa-13681341>.

3 Mathews Muthai, "Kenya Ranked 139 Out of 168 in Global Corruption Perception Index (CPI)," *Citizen Digital*, January 27, 2016, <https://citizentv.co.ke/news/kenya-ranked-139-out-of-168-in-global-corruption-perception-index-cpi-112912/>.

4 James Brownsvell, "Kenya: What went wrong in 2007?" *Aljazeera*, March 2013, <http://www.aljazeera.com/indepth/features/2013/03/201333123153703492.html>.



Among the most important of the reforms was a redrafting of Kenya’s constitution, including a redrawing of constituency boundaries and a provision for a new national Independent Electoral and Boundaries Commission (IEBC). This commission was established in 2011 with a stated mission “to conduct free and fair elections and to institutionalize a sustainable electoral process.”<sup>5</sup> One of the IEBC’s first tasks was to register all Kenyan voters afresh, according to the new constituency boundaries as designated in the new constitution. Accordingly, a mass voter registration drive was initiated by the IEBC in November 2012 and 19 million people were registered.<sup>6</sup>

In order to achieve its ambitious registration goals, the IEBC released information about polling center locations on its website in late November 2012, a month ahead of the voter registration deadline. This information was considered critical as constituency boundaries had been redrawn, and voters needed

to know where to go to register. Yet while the IEBC’s release of data represented an important step, the data was actually quite complicated to access: the website itself was almost never available, and the information was provided in PDF format. Moreover, downloading the information was cumbersome because of the file’s large size. As Jay Bhalla, executive director of Open Institute, a Kenyan open governance organization, put it: “The file was so big it would have taken days for ordinary Kenyans to download. And, once they opened the document all they would have found was complex lists and tables of constituency centers.”<sup>7</sup>

It was at this point that a Code for Kenya fellow and the lead developer of the software development team decided to step in and unlock the data with the aim of making it more accessible to the public. Their intervention marked the birth of the GotToVote! website.

5 Independent Electoral and Boundaries Commission website, <http://www.iebc.or.ke/>.

6 GovLab interview with David Lemayian, lead technologist, Code for Africa, November 1, 2016.

7 Kenya GotToVote! website, <https://kenya.gottovote.cc/about.html>.

## KEY ACTORS

### KEY DATA PROVIDERS

Two datasets were ultimately used for the GotToVote! Project; both were made publicly available by the IEBC on its website. The first dataset consisted of national polling center location information, and the second visualized a map of registered voters.

#### *Key Data Users and Intermediaries*

Kenyan citizens wanting to determine the location of their local polling station in order to register to vote are the main users of the data. Other users included the team of Code for Kenya fellows who scraped the data, built the GotToVote! website, and uploaded the scraped data onto the GotToVote! website. Code for Kenya is a “non-profit civic technology lab and data journalism initiative” that uses digital tools to provide ordinary citizens with “actionable information” and a stronger voice around public interest issues. Code for Kenya opens data, builds tools, and supports progress.<sup>8</sup> Code for

Kenya began as a pilot program with funding from the World Bank, with the Africa Media Initiative (AMI) acting as a fiduciary sponsor. The pilot program consisted of four data fellows being embedded into major Kenyan newsrooms and civil society organizations for a period of five months in an effort to kickstart experimentation with data-driven civic engagement tools. The Code for Kenya team also included four software developers. The above-mentioned Open Institute also provided support by incubating the Code for Kenya fellows.<sup>9</sup> After the initial launch of GotToVote!, Code for Kenya became a founding member of Code for Africa, a “federation of civic technology and data journalism labs,” which now manages the initiative.<sup>10</sup>

### KEY DATA BENEFICIARIES

Kenyan citizens looking to register to vote, to locate their local polling center, or to get answers relating to the registration process benefited from the project. The IEBC, whose voter registration drive was facilitated by the data, was another beneficiary.

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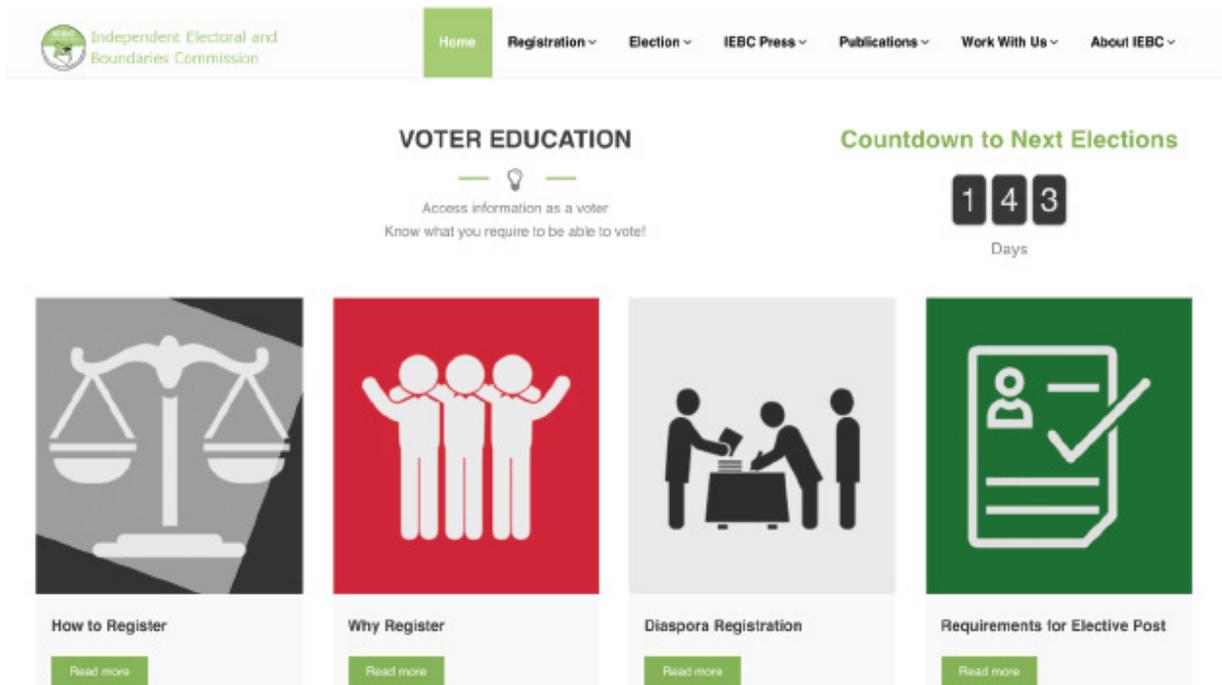
8 Justin Arenstein, “Finding Voter Registration Centre in Kenya Is Now Just a Click Away,” Code for Africa, March 7, 2016, <https://medium.com/code-for-africa/finding-voter-registration-centre-is-now-just-a-click-away-102d8206b12c#.gzqcxzsek>.

9 Al Kags, “GotToVote! A Way to Bring Open Data to the Ground,” Open Institute, November 22, 2012, <http://www.openinstitute.com/gotovote/>.

10 Justin Arenstein, “Finding Voter Registration Centre in Kenya Is Now Just a Click Away,” Code for Africa, March 7, 2016, <https://medium.com/code-for-africa/finding-voter-registration-centre-is-now-just-a-click-away-102d8206b12c#.gzqcxzsek>.

# PROJECT DESCRIPTION

## INITIATION



(<https://www.iebc.or.ke/>)

In late November 2012, Code for Kenya fellow Simeon Oriko logged on to his Twitter account and saw that the IEBC had shared voter polling center information on its website (<https://www.iebc.or.ke/>). He also saw that the information was difficult to access. He quickly contacted a colleague, David Lemayian, about the information release and the problems with accessibility. According to a third Code for Kenya fellow, Muchiri Nyaggah, who managed the GotToVote! project early on, “they decided to turn the information into a spreadsheet. They had not planned for this; the idea was purely opportunistic.”<sup>11</sup>

Mr. Oriko and Mr. Lemayian downloaded the polling center data, scraped it, and built a simple website. They spent some time trying to decide on a name, feeling a certain amount of pressure as they needed to purchase a domain name. Finally, they settled on GotToVote! and quickly built an initial version of the site, which made the IEBC data far easier for citizens to access and use. For instance, rather than downloading and scrolling through a cumbersome PDF file, users could select their county or constituency from a drop-down list and find out immediately where to register.

<sup>11</sup> GovLab interview with Muchiri Nyaggah, Executive Director, Local Development Research Institute, Kenya, October 20, 2016.

The first version of the site was developed overnight, at no additional cost.<sup>12</sup> “I stayed up all night to build it,” says co-creator David Lemayian.<sup>13</sup> The next morning, Mr. Oriko and Mr. Lemayian Tweeted the site out and it immediately got traction. “It did really well during those first days,” says Mr. Nyaggah, pointing both to site usage and shares on social media. “People such as Dr. Evans Kidero, the now-Governor, were using and sharing the site,” says Mr. Lemayian. “Celebrities were using and talking about it.” Overall, GotToVote! received about 6,000 hits during that first week.<sup>14</sup> After this early success, GotToVote! partnered with United States-based Mercy Corps to incorporate a feature that allowed users to spread messages of peace through the GotToVote! website. Users could send free SMS messages that urged constraint at the ballot box. This feature was intended to promote peaceful election and post-election environments, a sorely felt need after the violence of the 2007 elections.

In addition to the peace SMS tool, GotToVote! added a feature to help users find the voter registration center nearest them by mapping data in conjunction with IEBC-released data. Another new feature provided an overview of the registration process, with an explanation of who was eligible to register, and what documents and other material were required.<sup>15,16</sup>

Not all of these efforts were successful. For example, an IEBC map indicating newly changed boundaries could not be incorporated into GotToVote! as was hoped. The map had proprietary issues as a result of a IEBC-Google deal that meant other users were locked out.<sup>17</sup>

While this first GotToVote! iteration focused on helping citizens register, a second iteration, developed after the IEBC’s mass registration ended on December 19, 2012, aimed to mobilize people to vote in the upcoming March, 2013 elections, and then analyze results after the elections. Here, GotToVote! partnered with Dutch human rights organization Hivos and arranged to access data from the Kenya-based Ushahidi, a non-profit software company that develops free, open-source software. While these partnerships encountered a series of setbacks (see section on barriers below), they did produce a second GotToVote! iteration included a new post-election feature that provided access to official election results in local counties and constituencies, contextualization of those local level results by overlaying them with local level trends and official reports of fraud or irregularities. This feature was implemented to counter some of the hype that tended to prevail over post-election periods when the media focus was almost uniquely on presidential contest outcomes but ordinary citizens also wanted news about local level outcomes.

12 GotToVote! Kenya website, <https://kenya.gottovote.cc/about.html>.

13 GovLab interview with David Lemayian, lead technologist, Code for Africa, November 1, 2016.

14 GovLab interview with Muchiri Nyaggah, Executive Director, Local Development Research Institute, Kenya, October 20, 2016.

15 GovLab interview with Muchiri Nyaggah, Executive Director, Local Development Research Institute, Kenya, November 22, 2016.

16 Eric Mugendi, “This Website Is Using Publicly Available Data to Help Kenyans Register to Vote,” *TechCabal*, March 8, 2016, <http://techcabal.com/2016/03/08/got-to-vote-kenya/>.

17 GovLab interview with Muchiri Nyaggah, Executive Director, Local Development Research Institute, Kenya, November 22, 2016.

## Getting Citizens To The Polling Booth



*Image from the GotToVote! homepage*

## DEMAND AND DATA USE

The GotToVote! Kenya database contains a list of all Kenya's 47 counties, 290 constituencies, and 1450 wards, arranged by administrative area, with polling stations in each ward listed alphabetically. All the data used by GotToVote! Kenya is available for free reuse on the openAFRICA portal, another open data initiative from Code for Africa.<sup>18</sup>

Demand for this data comes from would-be voters wanting to register and/or searching for the polling station closest to them. Demand also comes from users looking for basic voter education information.

<sup>18</sup> "Voter Registration 2016," openAFRICA, <https://africaopendata.org/dataset/voter-registration-2016>.

# IMPACT

As often is the case with relatively recent open data projects, very little data exists to indicate GotToVote!'s impact. The very newness of these projects contributes to the difficulty. As Mr. Nyagah put it: "It is difficult to assess the impact because we didn't have baseline or anecdotal data to compare outcomes with." Nonetheless, certain forms of impact were evident.

## **SOLVING PUBLIC PROBLEMS THROUGH DATA-DRIVE ENGAGEMENT**

Given its popularity, GotToVote! appears to have helped many Kenyans register to vote by providing them with accessible information on voter center location. As mentioned, the site received approximately 6,000 hits during the first week after going live. Although neither baseline nor anecdotal data exists to contextualize this information or indicate actual impact on solving public problems, it suggests that the site was perceived as useful and was in fact used.

The apparent success of GotToVote! in helping voters register is indication that open data can be used—rapidly and with minimal cost—to provide citizens with tools that help them solve real public problems. One of the most powerful testimonies to the site's usefulness came from the IEBC itself, which built an almost identical platform soon after the GotToVote! site was unveiled, in the process clearly indicating that policymakers and government leaders recognized the project's tremendous potential.<sup>19</sup> As Code for Africa Director Justin Arenstein puts it: "[GotToVote!] proved that the real power of civic technologies is their ability to quickly and

cheaply translate complex data into 'actionable' information, and to then calibrate the information to a citizen's exact location or other circumstances."<sup>20</sup>

## **CROSS-BORDER DISSEMINATION**

According to co-founder David Lemayian, many sub-Saharan countries share similar problems (and opportunities for resolution) when it comes to the need for enabling more peaceful and inclusive elections. He believes that a tool like GotToVote! could be useful beyond the Kenyan context. "If we look at ways we can take tools that work in one country and apply them to other countries GotToVote! is clearly one of them," he says.<sup>21</sup>

Since its launch GotToVote! has, in fact, been replicated in several other African countries—a phenomenon that has been made possible by the open source nature of the original site. For example, Hivos, the Dutch organization that partnered with Code for Kenya to launch the original site, also showcased GotToVote! in Zimbabwe ahead of that country's 2013 general elections. "That was really heart-warming," says David Lemayian. "That's when we had a sort of lightbulb reaction, realizing this is wanted in different countries in Africa."<sup>22</sup>

The site has also been replicated in Malawi, where a similar platform (<http://gottovote.malawivote2014.org/>) was implemented by the Malawi Election Information Center, a local NGO, and the Malawi Electoral Commission. The project was adopted by the government

19 GovLab interview with David Lemayian, lead technologist, Code for Africa, November 1, 2016.

20 GotToVote Kenya website, <https://kenya.gottovote.cc/about.html>.

21 GovLab interview with David Lemayian, lead technologist, Code for Africa, November 1, 2016.

22 Ibid.

as its official voter registration solution and was used to register 7 million citizens. One distinctive trait of the Malawi project distinct was an SMS-to-SMS feature that allowed users to send messages containing their voter identification number, and then to receive a message in reply confirming whether they were registered to vote. Overall, 400,000 people in Malawi accessed registration information by SMS and online. “It was a fantastic roll-out,” says David Lemayian.<sup>23</sup>

GotToVote! was also replicated in Ghana, where local organization Odekro and civic technologists Emmanuel Okyere and Nehemiah

reached out to Code for Kenya expressing interest in the technology. While Odekro chased down polling station data, Code for Kenya providing technical assistance in this project. Ghana’s case offered a particular challenge (and opportunity) because polling station information was maintained separately in each province, with no centralized list. A first step was therefore to create Ghana’s first ever national consolidated voters roll, which was handed over to the government electoral commission. This list provided the basis for GotToVote! Ghana, which was built in two days for just \$500 and unveiled for the 2016 elections.<sup>24</sup>

## RISKS

Given that the project is primarily built around information provision and peace messaging, risks appear to be somewhat limited. That said, data quality is of paramount importance, due to the potential of providing citizens with incorrect – or biased – information regarding their voting process. Additionally, the two-way nature of the SMS functionality could create risks around the security of any personally identifiable information held by GotToVote!, but such risks appear to be minimal.

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23 Ibid.

24 GotToVote! Ghana website, <https://ghana.gottovote.cc/about.html>.

# LESSONS LEARNED

Several important lessons with wider applicability emerge from this particular case study. These can broadly be categorized by consid-

ering the key enablers of the project, as well as the most important barriers or challenges to its success.

## ENABLERS

### *Engagement*

The importance of local partner engagement was clear from the outset. “You can’t just fly into a country and solve problems,” says David Lemayian. “You have to work with local partners.” He adds, however, that national, regional or international partners are important as well. Over the years, the trio of Code for Africa, Code for Kenya and the Open Institute have been able to pull together their diverse yet complementary areas of expertise, incubating and mobilizing skills among their various fellows. Lemayian also notes that, “Governments and international partners add leverage and credibility, as well as funds.” Hivos and Mercy Corps, in particular, helped amplify and expand the site’s offerings and visibility.

### *Agility and MVPs*

A further key lesson of this project—one seen in other examples in this series of case studies—is that successful open data projects can be built quickly and without considerable expense. The initial development of GotToVote! incurred no additional cost, and the size of the founding team was very small, basically just two people (Simeon Oriko and David Lemayian), though they were later joined and helped by other colleagues.

Finally, the process of building an open data project does not need to be complicated or cumbersome. As noted, for example, GotToVote! was built in just one night. The data contained on the site was relatively simple, and did not require complicated algorithms to make useful. All told, GotToVote! is a good example of how much can be achieved with very little—at least in the early stages of an open data project (see the discussion of Sustainability in Barriers, below).

## BARRIERS

### *Sustainability of Event-Based Initiatives*

The impact of GotToVote! is clear, but the site’s focus on a single, time-bound event (e.g., a given presidential election) does raise questions about long-term sustainability. Questions re-

main about what to do with the project between elections, and whether the user base can be re-engaged during the next election. This lack of certainty also raises questions about access to further funding, a key consideration for the

sustainability of open data initiatives. The site's current status, discussed below, only increases this uncertainty.

### ***Unhelpful Partnerships***

According to Muchiri Nyaggah, it was assumed that relationships with big media companies would translate into those companies utilizing GotToVote! to disseminate election results. However, as it turned out, these companies had actually invested money creating their own results-dissemination platforms. They ultimately had no use for GotToVote! This was a big blow to GotToVote!'s success, with significantly less dissemination and ultimate use than initially assumed and worked toward.<sup>25</sup>

### ***Data Access Failures***

Another barrier came in the form of failed access to data. In one instance, the IEBC's system crashed while results were being tallied after the March 2013 elections. This was a major failure that ultimately led to a crisis in Kenya that had to be resolved by the national Supreme Court. For GotToVote!, the system crash meant it did not have access to election results data that it hoped to incorporate into the project. In an unrelated challenge, GotToVote!'s attempted data access arrangement with Ushahidi did not come to fruition as a result of backend technical issues. GotToVote! and Ushahidi had planned to work to tell a political story of what happened post-2013 elections by merging election results with a diversity of other datasets held by Ushahidi (including geospatial data).<sup>26</sup>

## LOOKING FORWARD

### **CURRENT STATUS**

Kenya's GotToVote! website was updated ahead of the 2017 general elections, but no concrete plans are in place for rolling it out. "We are definitely looking for people who can pick it up and run with it," says David Lemayian. "We [at Code for Africa] have been approached by three different organizations to run GotToVote! in Kenya ahead of elections planned for

August 2017. But we are hoping civil society will take it up. We've also actively reached out to IEBC and election observation groups on the same." With the next election fast approaching, the identification of an organization with the human capital and funding resources needed to maintain the platform capable of taking it up is becoming urgent.

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<sup>25</sup> Skype interview with Muchiri Nyaggah, Executive Director, Local Development Research Institute, Kenya, November 22, 2016.

<sup>26</sup> Skype interview with Muchiri Nyaggah, Executive Director, Local Development Research Institute, Kenya, November 22, 2016.

## REPLICABILITY

As described above, the potential for replicating GotToVote! has been realized across a number of countries in Sub-Saharan Africa. The simplicity and open source basis of the platform, the general availability of the data required and the clearly defined problem it seeks to solve are key drivers of this replicability.

Early project manager Muchiri Nyaggah believes that GotToVote! needs to be established

as a more formalized, cross-border civil society program or mission going forward. “Tech-heavy organizations are not very good at old school NGO language,” he says. “This needs to be turned into a program with people thinking about how to capture data on impact and other indicators.” Mr. Nyaggah also stated that GotToVote! needs to collaborate with the IEBC if it is to have any value in upcoming elections.<sup>27</sup>

## CONCLUSION

GotToVote’s impact is clear in the way it has improved public awareness of election information, the fact that it has been replicated throughout the continent, and in the messages of harmony and inclusiveness it has helped foster in more recent elections. The project’s birth and experience are in several ways indicative of many open data projects created across developing economies. It was created on a non-existent budget on a short timeline; it expanded in scope and usefulness as a result of partnerships across civil society

and international organizations. These are all markers of success. At the same time, the lack of a longer-term sustainability strategy has raised questions about whether the initiative will survive going forward. This, too, is characteristic of many projects examined in this series of case studies on open data. The opportunities and obstacles are clear for advocates of open data in developing economies: they need to seize the immediate potential of data while also finding ways to address the longer-term questions and challenges.

<sup>27</sup> GovLab interview with Muchiri Nyaggah, Executive Director, Local Development Research Institute, Kenya, October 20, 2016.