Monitoring Data for Decision-Making

Stephen Mugabo
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Importance of Monitoring Data

Water For People regularly uses data to implement the Everyone Forever model. We need reliable information to better serve our mission and effectively make decisions. The data we collect also helps our district partners to make better decisions in water and sanitation program implementation, and it is the basis for informing funding priorities on projects we co-finance with the Ministry of Infrastructure through the Water and Sanitation Corporation (WASAC).

The Water For People Rwanda team collects data through an annual monitoring process in the three districts where we work – Rulindo, Gicumbi, and Kicukiro Districts. The end goal of monitoring is that your audience has a meaningful understanding of what the data mean. Despite best practices and processes for monitoring, how data and information are presented is key for understanding and attracting critical input from concerned partners. Based on experience in the field conducting monitoring for the past seven years, this article highlights key issues to consider when presenting data, including packaging data using different tools and ensuring the data is easy to understand.

Presentation

"A picture is worth a thousand words." Pictorial representation of data makes the numbers much easier to understand. Trends and proportions become more obvious. To best present the data, we should first identify the story in the data, then identify how to best tell this story to the audience.

There are many techniques for presenting data to partners in a meaningful way that encourages utilization the data. After working with a student from the University of Colorado's WASH engineering program, Austin Riley, the Water For People Rwanda team has started using the following techniques to help tell stories with data:
1. GIS Maps
2. Excel Power Maps in Visual Basic

GIS Maps

As we collect data from the field, most applications have the capacity to collect GPS information which can be used in maps to tell our stories in more meaningful way. GIS Maps is a powerful tool to present data, allowing for easy identification of areas affected with a given issue and comparison of coverage of water and sanitation services, among other data trends.

The maps in Figures 1 and 2 easily identify built up areas, planned settlements, areas not served with adequate water services, and the 500-meter buffer within which a household should be able to access water.

Figure 1 shows community water points coverage, indicating functioning and non-functioning water points with a buffer zone of 500 meters. It is laid against planned settlements in Base Sectors in Rulindo District where we are implementing the Everyone Forever model

Figure 1: Water Point Distribution in Base Sectors of Rulindo District, using GIS Maps
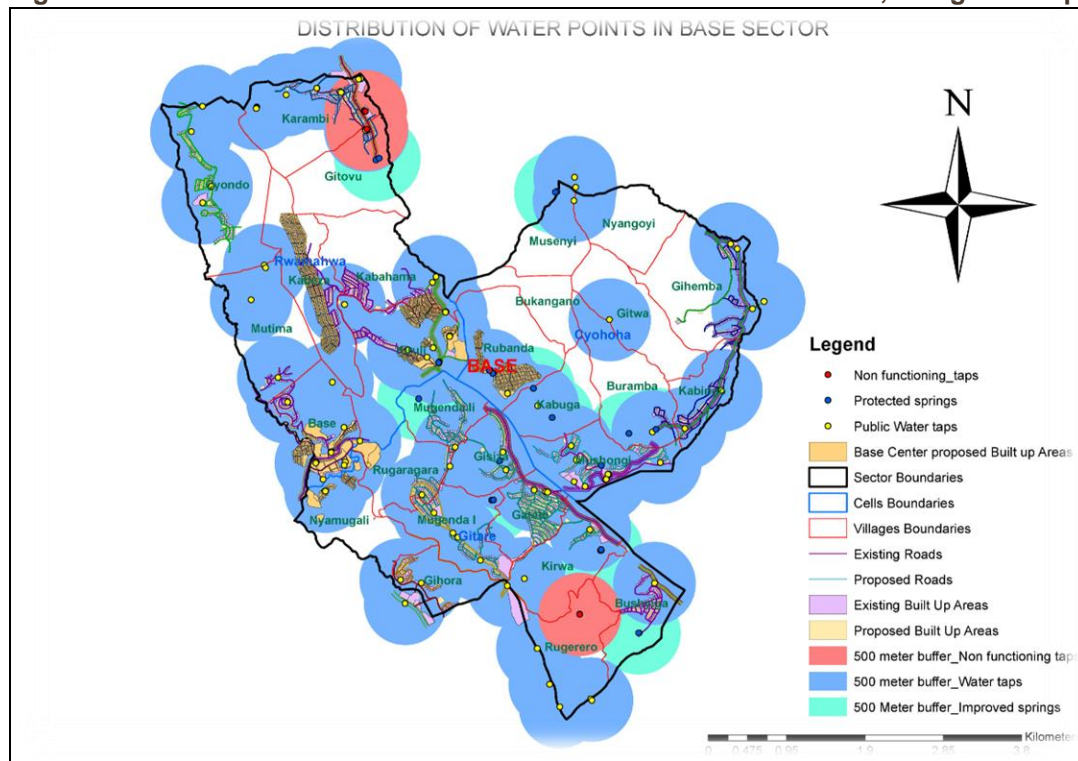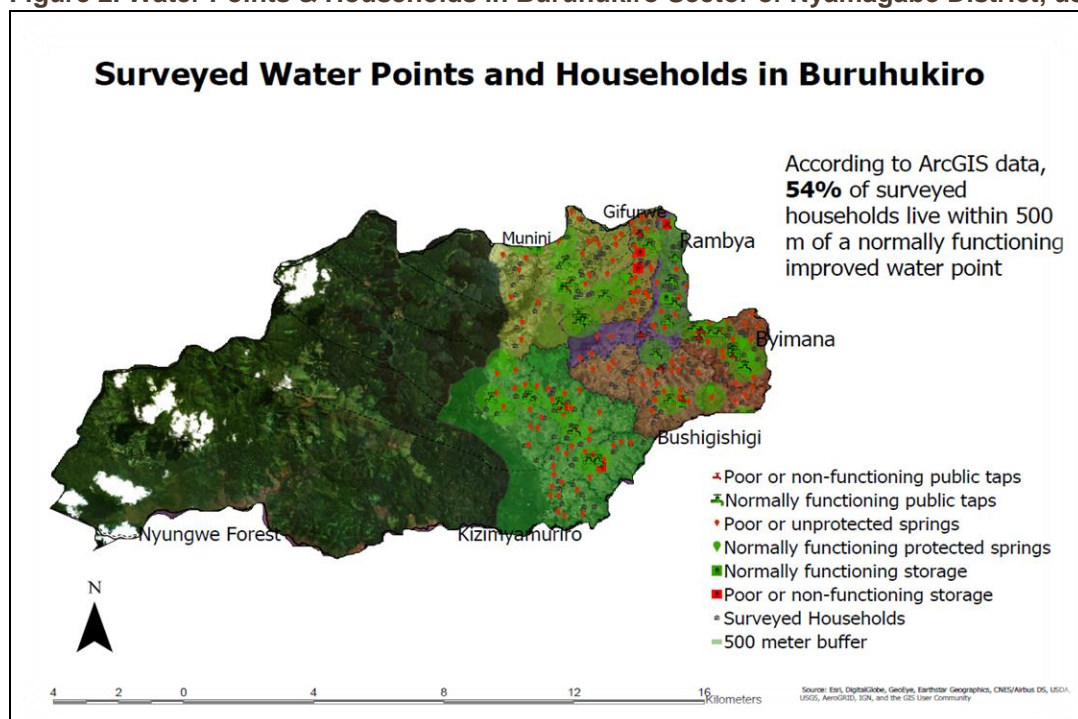

Figure 2 also shows community water points, indicating improved and non-improved water points. It is laid against households surveyed within the District Wide Approach intervention area in Buruhukiro Sector in Nyamagabe District.

Figure 2. Water Points & Households in Buruhukiro Sector of Nyamagabe District, using GIS Maps
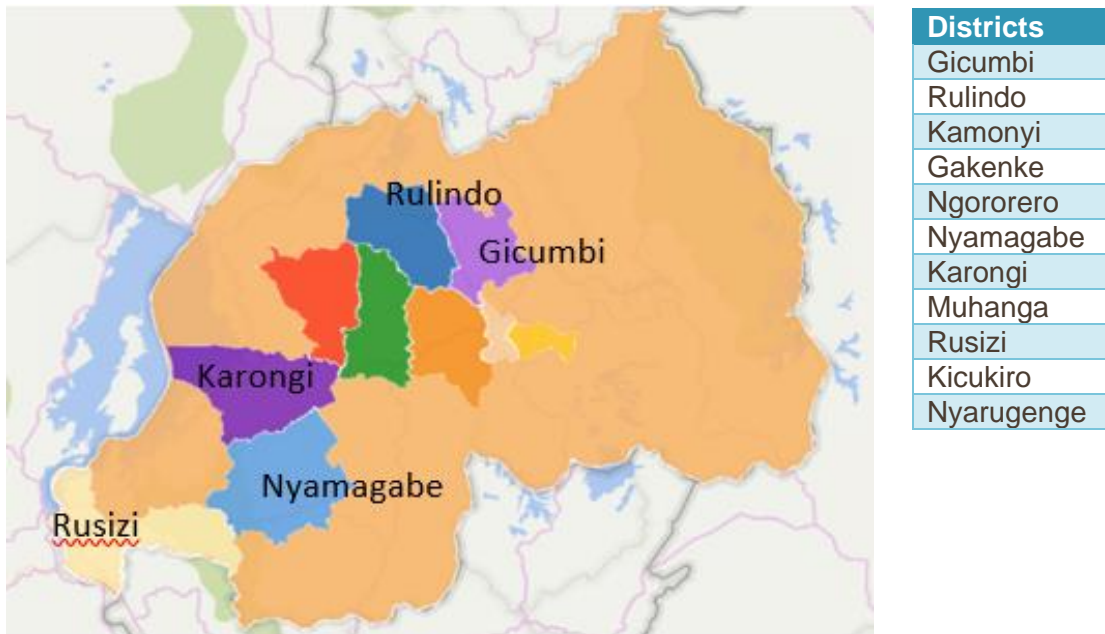

Map courtesy of Austin Riley, created during internship with Water For People Rwanda

Excel Power Maps in Visual Basic

Excel is a very powerful tool that can be used in many ways, including building shapes and using simple Visual Basic coding to attach data to that shape.

Excel Power Maps is a three-dimensional (3-D) data visualization tool that allows you to present information in creative ways. For example, if you enter all Rwanda districts in an Excel table, select them, and insert 3-D maps, then you can create a map like Figure 3. Using Macros and Visual Basic, you can write a code that attributes data to a given district, which can then be displayed in different assigned colors and easily updated with new data.

Figure 3: Districts in Rwanda, using Excel Power Maps

Districts
Gicumbi
Rulindo
Kamonyi
Gakenke
Ngororero
Nyamagabe
Karongi
Muhanga
Rusizi
Kicukiro
Nyarugenge

For smaller units like a sector, you may need to draw the shapes using lines of an existing map, then use Macros and Visual Basic coding to attribute data to a given area.

Figure 4 shows the levels of household water service in Nyamagabe District by sector. Data was added to the map using Excel Macros and Visual Basic coding and attributed to each sector. This data presentation shows the audience the status of households' access to water services in one place, without having to show all seventeen graphs to represent data for each sector. When this information was presented during a validation meeting, stakeholders were very engaged, and it was easy to compare performance areas across sectors and identify priority areas for future work.

Figure 4: Household Water Level of Service by Sector, using Excel Power Maps
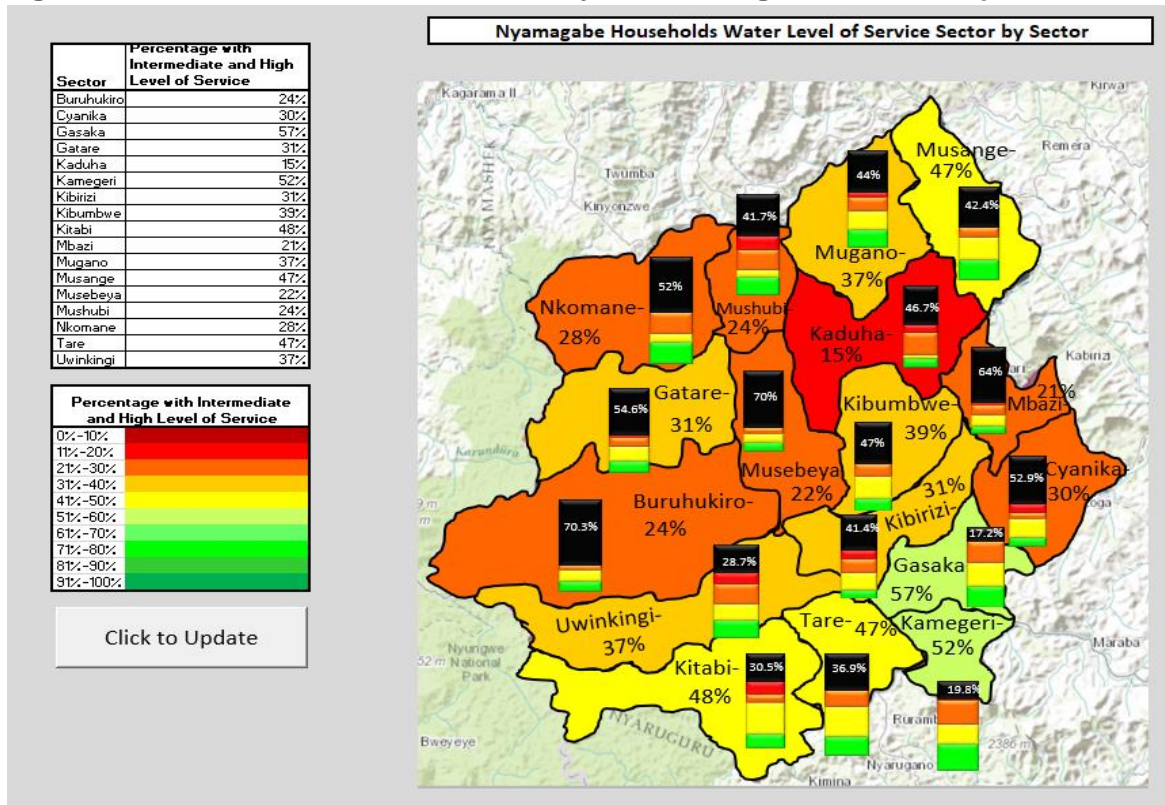
Map courtesy of Austin Riley, created during internship with Water For People Rwanda

Packaging Data

Packaging is an important aspect in data presentation. The phrase "don't judge a book by its cover" (its packaging) relates to data presentation as well. If data is not presented in an attractive, appealing way, then audiences may not be encouraged to dig deeper or use the data. Even with good data, audiences may only remember how disorganized it was, or nothing at all. Well-packaged data is more likely to be used for decision-making, Packaging data includes the following aspects.

Logical Flow of Information

Logical flow can be defined as all the aspects of your presentation that help your audience move smoothly from one slide, graph, or map to another with clarity. Starting with broader data or information, then narrowing down to more specific details, promotes a logical flow. Additionally, keeping similar information grouped together helps audiences easily follow the information.

Attractive Effects and Colors

Choosing colors in data presentation is important to help audiences clearly see and differentiate between text and graphic colors. The choice of colors for data presentation is one of the important decisions that must be made at the start of the process of developing your slides, graphs, or maps.

Most organizations dictate a template with brand colors that must be used for all presentations outside of the organization as part of a branding initiative. For example, Water For People promotes the use of our brand colors, found in Brandfolder, for all data presentation. Different colors evoke different feelings

among audiences This can be important when selecting colors for your presentation slides since you want to avoid colors that negatively impact the message you are delivering.

Importance of Story-telling

Human beings enjoy and respond to stories. Telling your audience, a story helps them follow the data and move toward insights and logical conclusions. Data is used to provide evidence for decision-making. While many people are uninterested in large data sets or tables of numbers, visual forms of data presentation can be used to help tell a story in a more meaningful way.

Storytelling has earned its place as the most important tradition that humans possess. Every story contains a lesson to instruct the audience. Storytelling is important because it is effective at teaching in a way that people can easily remember, and at helping people relate to one another, so it matters how you tell your story in conveying data and information to your audience.

Easy to Understand

While it can be tempting to use complex statistical analysis to show your hard work and expertise, simple data presentation encourages the audience to understand and use the data to make decisions that help advance our work.

In today's world, people don't want to spend much time on one thing. Data should be presented in a manner that is precise, clear, and straight to the point. To get reliable feedback to inform decision-making, data should be related to the current context and what is most important to your audience.

We should aim to ease the process of making comparisons and identifying trends, as comparisons and trends can be used to make and justify statements. There are simple and straightforward ways to compare various categories of data and information, using bar graphs and pie charts, among others, which help the audience better understand data sets.

Conclusion

Data presentation and visualization have a huge impact on how your audience takes in and reacts to information. Effective presentation provides clarity, encourages feedback, and allows for brainstorming solutions together with partners.

When the Water For People Rwanda team presented annual monitoring data in Rulindo District in 2013, the following resolution was taken: "For the very poor, the district is going to work with them to build proper toilets, and for households without a toilet, cell leaders may be fined to help build toilets." Because of the resolution, more than 1,300 toilets were built. This is how effective data presentation can help encourage decisions that advance our work to reach Sustainable Development Goal 6.

Using the GIS Maps and Excel Power Maps during District Wide Approach validation meetings has engaged the districts, and they have resolved to use the data for baseline and benchmarking for WASH project implementation. With the help of effective data presentation, district partners are owning the data and using it for future planning.