MONITORING AND MITIGATING ELECTORAL VIOLENCE

THROUGH NONPARTISAN CITIZEN ELECTION OBSERVATION

NDI Guidance Document for the Global Network of Domestic Election Monitors (GNDEM)

04 CROWDSOURCING AND ELECTORAL VIOLENCE MAPPING

Collecting, analyzing and rapidly distributing verified information can help mitigate the escalation of violence. Citizen monitoring organizations in Kenya, Lebanon, Maldives, Malaysia, Myanmar, Nigeria, Nicaragua, Russia, Uganda and elsewhere have used hotlines to collect, report and track regular citizens' accounts of violent incidents and, in tandem with professional observer information, have visualized the relevant and verified data on a digital map. Hotlines provide citizens with a means to participate in the electoral process beyond voting, reporting problems and voicing concerns even if local officials or authorities are unresponsive or unreliable. Observer groups can also help mitigate electoral violence when they take measures to verify hotline reports. By verifying all reports, groups can be prepared to dispute unfounded rumors, such as accusations of large scale fraud, thereby helping to mitigate potential triggers of violence.

Gathering information from everyday citizens (i.e. , the "crowd") to solve a problem through an open call to participate is called **crowdsourcing** or **citizen reporting**. The participatory nature of the methodology and the inclusion of all verified reports in a crowdsourced electoral violence monitoring effort can encourage otherwise apathetic citizens to play a role in identifying and reporting violence, as well as in promoting electoral integrity. This can be particularly useful when groups seek to collect as much information as possible about violence or the potential for violence, as well when groups aim to mitigate the spread of rumors that could trigger violence.[14]

However, crowdsourcing has several limitations that should be taken into account. Crowdsourcing does not accurately or comprehensively reflect the conduct of an election. Information is anecdotal and raw. Reported information has a bias toward negative incidents and toward areas where citizens are better informed about the crowdsourcing effort, such as in urban areas. There is even the potential for bad actors to "game the system" or manipulate the findings by submitting untrue reports. That said, information from trained observers deployed systematically

[14] For further reading on crowdsourcing, visit: https://demworks.org/category/concepts/crowdsourcing and http://mobileactive.org/q-ian-schuler-election-monitoring-citizen-reporting-and-mobiles.

What is a Shapefile?

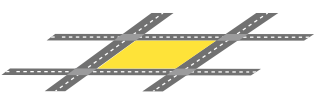
A shapefile is a common file type for storing geographic data, such as points, lines and areas (polygons). To map data for countries and smaller geographic units (such as provinces or districts) within countries, observer groups must have shapefiles, or at least some form of geographic files, for the relevant geographic boundaries. A shapefile is actually a set of at least three files that define the boundaries and attributes of each geographic shape: .shp, .shx and .dbf. Other common types of files that store geographic information are KML, KMZ and GeoJSON files.

POINTS

With map points, a specific x/y coordinate on a map is referenced. Points are usful for showing an exact location where an event occurred.

POLYGONS

Map polygons are configurations of boundary points that note a specific area on a map. They are meant to illustrate geographic units.



and from the crowd can be used in tandem. This approach can be crucial in closed and/or particularly violent political environments, where trained observers may be prevented access to parts of the electoral process.

Filtering crowdsourced data through a professional monitoring group helps ensure that information is categorized properly and that only verified, complete and relevant information is reported to the public. As mentioned above, by verifying whether crowdsourced reports are factual or not, citizen observer groups can help dispel rumors and, as a result, help to mitigate one of the possible triggers of electoral violence. Methods of categorizing and verifying reports are described in more detail in the next section.

Violence and electoral data that is visualized on maps, charts and infographics[15]

[15] Infographics are visual representations of information or data that present complex information quickly and clearly.

Using Tools Appropriately

Crowdsourcing and mapping are two separate tools that often complement each other. However, depending on the environment, the groups' goals and the target audience, monitoring groups may choose to do one but not the other. For instance, if in a given country very few people use the Internet, then digital mapping may not be effective but a citizen reporting hotline might still be helpful. Similarly, collecting citizen reports exclusively through SMS messaging would not be effective if few citizens have mobile phones or a reliable cellular network. Groups should collect reports from citizens using the most appropriate communications mechanisms for their local context.

can help simplify complex data while still representing it accurately. It can also help groups understand and respond to data better by, for example, highlighting geopolitical trends and correlations. Citizen observer organizations are well-positioned to provide important context to mapped data that tells the story they want to tell about the current political and electoral environment. Observer groups' professional, well-informed analysis can also help decrease the likelihood of misinterpretation. Thus, when used appropriately, data visualization can help groups have a greater impact in their work.

ELECTORAL VIOLENCE CROWDSOURCING

Strategy Development

Developing a crowdsourcing strategy is time and resource intensive. Groups should develop a strategy and detailed timeline at least several months before the hotline is open to the public.

The first step in developing a crowdsourcing strategy is to prioritize goals. This will help determine the methodology, reporting mechanisms and external communication that are best-matched for the group's priority goal. For example, if the goal is to promote citizen participation in the elections, then a crowdsourcing effort without rigorous, labor-intensive verification methods may be an effective use of resources. However, if the goal is to use reports to mitigate violence by identifying and verifying early warning signs and incidents of violence and reporting them to relevant authorities, then the crowdsourcing effort should include substantial resources for verification.

Hotline Timing

As with long-term violence and early warning sign monitoring by trained observers, groups will want to determine how long their citizen reporting hotline should operate based on when they anticipate incidents to occur. Groups often keep hotlines open during the pre-election period, election day, resolution of complaints and release of official results. Generally, organizations should strive to use the same timeline for their hotline as for their LTO deployment, which allows groups to potentially use verified citizen reports to complement the LTO data.

Public Advertising Campaign

A number of groups that have attempted to use crowdsourcing during elections have learned the hard way that a substantial and well-executed advertising campaign is essential for ensuring broad participation. Observer groups should carefully consider the time and resources needed to sufficiently publicize hotline information. Extensive outreach should be conducted prior to launch to ensure that the public knows how to report incidents, such as what phone number to call or text, what email address to use and/or what website to visit.

Reporting Mechanisms

Through hotline centers, observer groups can receive citizen reports of violence through a number of mechanisms, including:

- **Phone conversations** – Input is transcribed and entered into the database by a hotline call operator;
- **Text (SMS) messages** – Input is processed and entered into the database automatically;
- **Email or online web forms** – Input is passed straight into the database; and
- **Interactive Voice Response (IVR)** – Callers can select from a menu of options to input their reports.

Generally, it is advisable to use a combination of these methods, which helps reach broader segments of the population and ensures that there are other ways to report if one method does not work or is shut down. Groups should determine, based on resources and local context (infrastructure and prevalence of use), which technologies are the most appropriate. For example, if only email and Internet-based methods of reporting are provided, there will be a heavy bias toward technologically-connected citizens, who likely reside in urban areas. Each method of reporting has a different overall cost, and the distribution of that cost varies. For example, the citizen may need to pay the cost of sending a text message, while the citizen observer group might bear the cost of having a live telephone hotline. Observer groups should also keep in mind that hotlines require consistent staffing to process and verify information, as well as to respond to emergencies. This too can have budget implications.

Given its widespread use and relatively cheap availability for users, text messaging has become one of the most popular forms of citizen incident reporting. Moreover, it has proven to be a more efficient technology for receiving a large amount of data (many texts) in a short period of time. With the right software, SMS data can be

translated rapidly into usable information for analysis and visualization.

Observer groups that incorporate SMS into their crowdsourcing effort should consider using a short code to simplify texting for citizens. A short code is an abbreviated number of only 4 or 5 digits which can receive messages from any user. This helps encourage participation by making it easier for the public to remember hotline phone numbers. Moreover, short code arrangements often utilize the same number across multiple cellular networks and, in some cases, can transfer the airtime costs from the user (citizen reporter) to the recipient (observer group). Setting up a short code has initial administrative costs and may take up to several months to acquire depending on the business environment.

Categorizing and Verifying Crowdsourced Reports

Like all incidents reports, information collected via the hotline should first be categorized or "tagged" accurately. It would befit the observer group to follow a similar taxonomy that its LTOs use for violence monitoring, including incident type and verified status. Most groups choose to designate only a few (three to five categories) incident types, so that the types of incidents are easy for the public to understand.

Reports directly from citizens lack the quality assurances of trained citizen observer findings. Therefore, groups often seek to verify citizen reports before they are presented publicly. This is particularly the case for citizen reports received before and after election day, when the volume of reports is relatively low. Verifying reports on election day, when the reporting volume could be very high, would require significant additional resources. The page to the right provides an example of a citizen observation group in Uganda that carefully verified crowdsourced reports and, as a result, was able to dispel an unfounded rumor that could have triggered electoral violence.

While each group should determine its criteria for verifying reports, some general guidelines to consider are:

- obtaining the same information from at least two reliable sources;
- two or more reports about same incident from two different phone numbers or sources, and then a "verifier" has spoken directly to at least one of the people who reported;
- video, photo and/or audio evidence;
- copies of any legal documentation filed; and/or
- direct report from a trusted, knowledgeable person, such as a trained

Elements of Effective Crowdsourcing

Many groups embarking on a crowdsourcing effort initially believe that their most difficult tasks will be setting up hotlines, collecting citizen reports and mapping data. However, experience shows that these activities only make up a fraction of what it takes to conduct an effective crowdsourcing effort. The more difficult and time consuming activities include advertising the campaign, verifying and categorizing citizen reports and effectively sharing information with the public and/or relevant authorities. If crowdsourcing is employed to mitigate violence, then it is essential to establish and maintain relationships with relevant stakeholders who can follow up or take action based on the information (e.g. , local police or peace committees).

observer or trusted journalist.

Observer groups can categorize and verify citizen reports in a number of ways. While observer groups often have an existing observer infrastructure (including a centralized office, call center and LTOs) that can be expanded upon to verify citizen reports, groups should keep in mind that verification requires a significant amount of financial and human resources. Below is a method that groups could consider using, particularly for reports submitted before and after election day, when reporting volume is lower than on election day:

- Citizen report is submitted directly to central office (hotline center);
- A "tagger" in the central office (ideally someone who is skilled with technology) checks and tags each report to specify, for example, the geographic location, type of incident and whether it has been verified or not;
- Unverified reports are communicated to the relevant LTO (based on regional coverage of LTOs), and the LTO attempts to verify the report using the criteria established by the group; and
- LTOs report to the central office as to whether they are able to verify each report.

Using Feedback Mechanisms to Mitigate Violence

If the main goal of the crowdsourcing initiative is to use reports to help mitigate violence, there are a number of measures observers groups can take to effectively sharing information with the public and/or relevant authorities. Simply reporting incidences of violence or potential triggers of violence via press statements and web-based maps has little chance of mitigating electoral violence unless it is accompanied by rapid feedback mechanisms targeting specific individuals and institutions who can take action to mitigate, deter or mediate potential violence.

To establish these mechanisms, observer groups should build and maintain relationships with the relevant stakeholders who can follow up on the information, such as local police, security forces, election officials, political party leaders at the national and local levels, influential figures (i.e. , religious and community leaders), and peace activists. Citizen observer groups can then communicate their data and analysis to these stakeholders through regular meetings, direct emails and calls, an email listserv and other communication methods. For example, observer groups can identify locations where violence triggers are occurring, which actors are involved, and immediately inform the appropriate authorities to intervene. Examples of this in the Ugandan and Guatemalan contexts are provided in this section. Groups may also be able to use crowdsourced reports to inform

EXAMPLE

Mitigating Violence through Verified Crowdsourcing in Uganda

For Uganda's 2011 presidential election, the Democracy Monitoring Group (DEMGroup), a citizen election monitoring coalition, launched an interactive hotline called Uganda Watch (www.ugandawatch.org). Uganda Watch was a public hotline that enabled citizens to call or text to a short code (6090) with complaints and concerns about the electoral process. DEM Group designated a team of trained staff members and volunteers to review and verify each report. Verification methods included calling back citizen reporters for more information and/or asking DEMGroup field staff to investigate reported incidents. Each report was then digitally mapped, and only verified reports were tagged as "verified." Through this verification process, DEMGroup was able to refute a rumor that a Member of Parliament had been assassinated, which had been causing rising tensions. Had this rumor not been dispelled, it could have triggered violence. DEMGroup also was able to use much of the data collected to inform stakeholders of electoral reform priorities during dialogue sessions around the country with political parties, the election commission and local authorities. Feedback from Uganda Watch 2011 users demonstrated that users preferred an active two-way reporting system that would provide feedback on how their reports are being used rather than simply submitting reports.

peace campaigns, so that the campaigns can target specific individuals or groups that are at the source of potential violence triggers.

VISUALIZING ELECTORAL VIOLENCE DATA: MAPPING

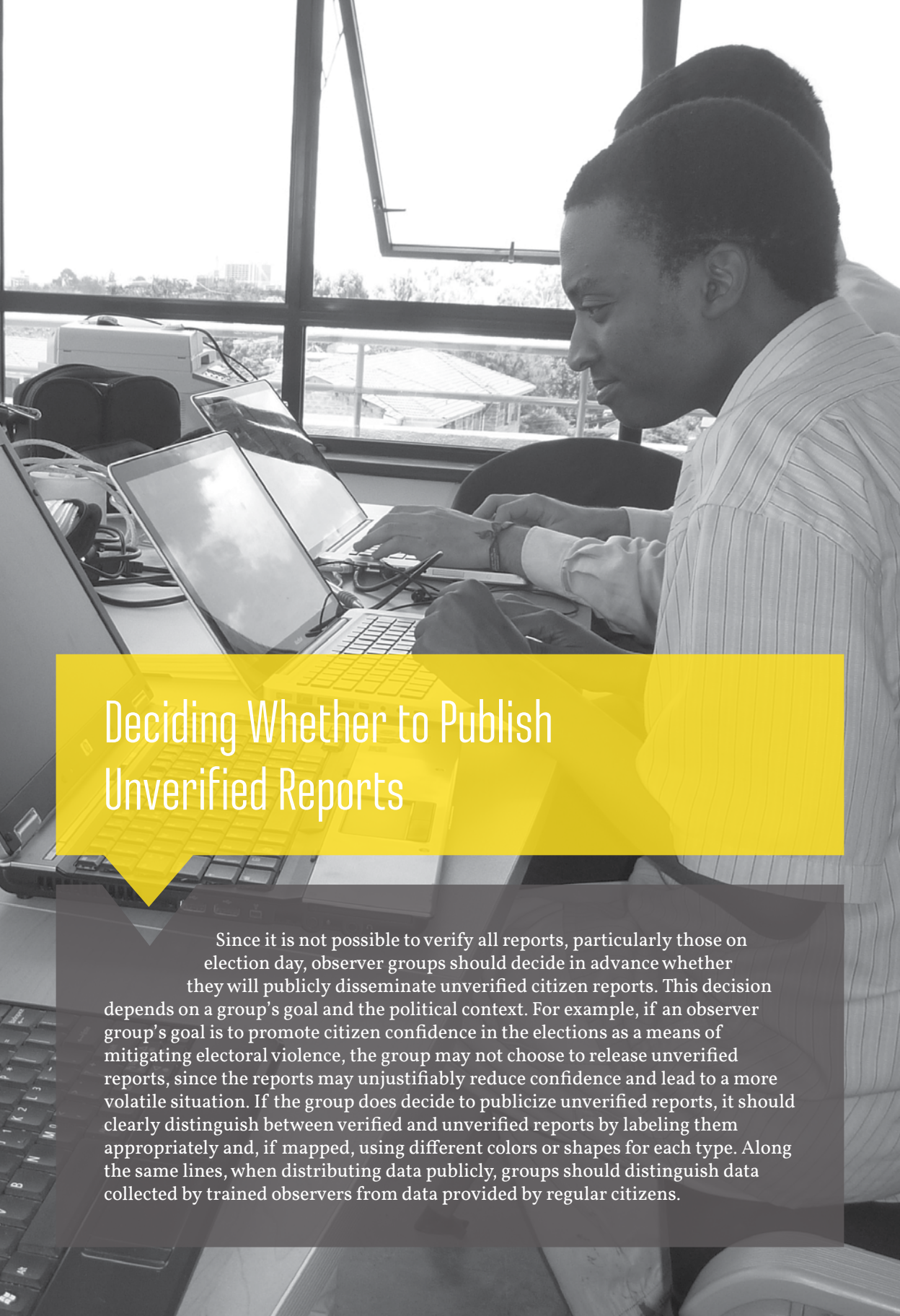
Visualizing data on maps, charts and infographics can help citizen observer groups communicate messages by telling visual stories about data that may otherwise be difficult to understand and interpret. For example, observer groups monitoring electoral violence can use maps to visualize the severity of electoral violence indicators across geographic areas and to highlight specific locations of high risk for violence. Today's technology has made mapping data possible for anyone with basic technical skills.

However, while the technology is becoming more accessible, the most important elements of an effective map are not related to technology. In addition, mapping is not always the most influential or effective way to publicize findings and communicate a story or message. The most important building blocks of effective data visualization are: collecting high quality data, conducting sound and thoughtful data analysis, and understanding how to tell a compelling visual story based on that analysis.

External Communication Strategy

In addition to analyzing data carefully, observer groups should develop an external communication strategy well in advance that includes objectives, prioritized target audiences, messages, communication methods (i.e. , live event, social media, radio, Internet, print media, etc.), tools and/or products, and deadlines for each product. When put into the context of a communication strategy, data visualization is simply one of several potential tools that can be used to communicate messages to specific target audiences.

While developing the strategy, observer groups should consider how their specific target audiences most commonly receive information and then tailor outreach methods and tools accordingly. For example, if one of the target audiences is urban, educated, tech-savvy youth, the observer group may aim to reach them through social media. This could include posting reports and photo and video evidence on YouTube and Facebook, as well as establishing a live Twitter feed of all verified citizen reports. This example demonstrates that, while mapping electoral



Deciding Whether to Publish Unverified Reports

Since it is not possible to verify all reports, particularly those on election day, observer groups should decide in advance whether they will publicly disseminate unverified citizen reports. This decision depends on a group's goal and the political context. For example, if an observer group's goal is to promote citizen confidence in the elections as a means of mitigating electoral violence, the group may not choose to release unverified reports, since the reports may unjustifiably reduce confidence and lead to a more volatile situation. If the group does decide to publicize unverified reports, it should clearly distinguish between verified and unverified reports by labeling them appropriately and, if mapped, using different colors or shapes for each type. Along the same lines, when distributing data publicly, groups should distinguish data collected by trained observers from data provided by regular citizens.

violence data can be useful, it is only one of many tools and is most effective when integrated into a broader external communication strategy.

It is also important for observer groups to keep in mind that there are a range of other data visualization tools beyond mapping. Maps are not always the best way to visualize data. Each visualization tool, such as a chart or infographic, has different strengths and weaknesses for using data to convey messages. For example, many groups use bar charts to clearly demonstrate wide variations across regions or among different types of electoral violence triggers or incidents. There may also be cases where a map is not the best way to visualize data, as explained in the above section on external communication strategy. Infographics can be used effectively when groups want to communicate a message very quickly, simply, and in a visually appealing way that can easily be shared via social media.

Key Elements of Effective Mapping

Before developing a map, there are several questions that observer groups should carefully consider:

- **What story do I want to tell with my data?** This will be the most important factor in determining what type of visualization a group develops, as explained below. What are the two to three key messages?
- **What kind of data do I have?** Is the data official government statistics, findings from trained observers, reports from everyday citizens, or a combination? In addition, data can only be mapped it if contains or can be assigned geographic coordinates (longitude and latitude), which is called "geocoding."
- **Who is the target audience(s)?** The type of map a group might develop for the international community or general citizens of the country may be different than the type of map developed for state institutions and security bodies.
- **Is a map the most effective way to visualize the data?**

Matching Types of Maps to the Key Message

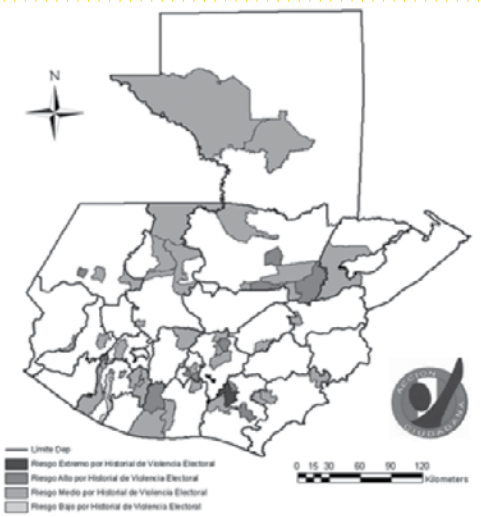
The answers to the above questions will determine how data can be mapped to convey a compelling story. While there are many different ways to map data on violence and elections, the two most common types of maps are described below. To help decide on the best way to map data, observers groups should keep in mind

the following mapping criteria:

- Does it clearly communicate the main message?
- Does it put the data in the right context?
- Does it clearly distinguish between verified and unverified reports?
- Is there a way for the user to get more detail if necessary (either by providing a way for users to "drill down" in the data or by making it clear that more data is available via a contact)?

FIGURE 4

Example of Gradient Map: Historical Data on Election Day Violence in Guatemala



For the 2011 elections in Guatemala, Accion Ciudadana (AC) analyzed and mapped historical election-day violence data across municipalities using a gradient from "extreme risk" (dark) to "low risk" (light). See the text box below for more information on AC's methodology.

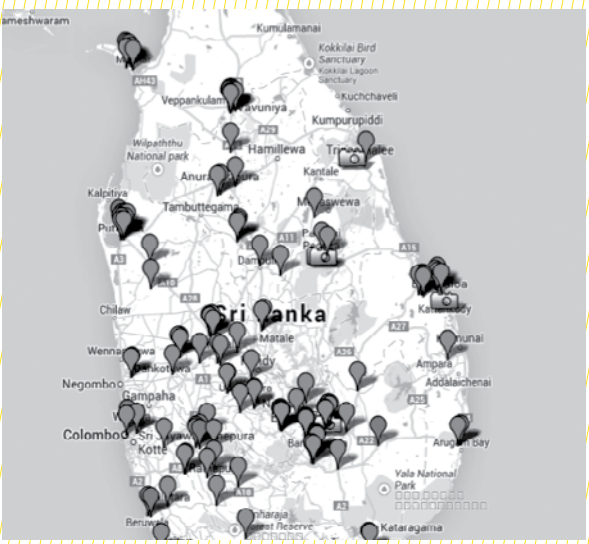
Gradient (or choropleth) maps use different colors or shading (i.e. , from light to dark) to show relative differences in data across geographic areas such as regions, states, provinces or districts.[16] A common usage of gradient maps for elections is to map election results by assigning each candidate a different color and shading each region according to which candidate received the most votes in

[16] Geographic areas drawn on digital maps are called "polygons."

that particular region.

For mapping electoral and violence data, gradient maps can be useful for a variety of purposes. They can be used to show regional differences in rates of historical electoral violence, prevalence of organized crime, or other indicators the observer group selects to illustrate the potential for or presence of electoral violence. Observer groups have also used gradient maps to demonstrate different electoral violence risk levels across different geographic areas. Figure 4 provides an example of a gradient map.

FIGURE 5



Example of Point Map: CMEV 2010 Presidential Election Observation in Sri Lanka

Point maps represent individual reports or other data (such as reports of electoral violence) by using pinpoints or other symbols for each report or data point. Figure 5 provides an example of a point map. As mentioned above, observer groups should distinguish between trained observer data and citizen-reported data, as well as between verified and unverified citizen reports by, for example, using different colors or shapes for each type.

While point maps can show the location of each report of electoral violence, they have several drawbacks. They often lack context and, as a result, can be very misleading. For example, if a map shows 50 reports (points) of violence in the capital and 50 reports spread throughout the rest of the country, it may give the impression that the capital is experience higher levels of violence than the rest of the country. However, if a majority of polling stations are in the capital (i.e. , 80 percent), then in reality the capital may be experiencing comparatively less violence than the rest of the country, since 50 percent of incidents that occurred

were in the capital, where 80 percent of the polling stations are. Not everyone who views the map will be familiar with the overall context, so it is the job of the observer organization to visualize and frame the data in the appropriate context.

Mapping Tools and Software

There are a number of tools for mapping data, some of which can be more costly and technologically complex than others. Some example of tools on the less complex and less expensive side are: desktop graphic publishing, which uses accessible design and geographic information system (GIS) software applications to create or edit country, state or regional maps; Google Fusion Tables, which allow observer groups to map data on top of the free, satellite-based geographic information of Google Maps; and free, open-source software platforms (such as Ushahidi) that allow for collecting and plotting individual reports, such as incidences of violence, on maps. There are a number of more complex and expensive tools for mapping data, including applications that are open source, proprietary and cloud-based.

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