Leveraging Wash Data Management for Better Planning and Sustainability of Wash Service Delivery at Sub-National Level in Sierra Leone

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The importance of quality data for planning purposes has remained a global concern as indicated in the UN Sustainable Development Goals. Good data management is essential for all development purposes for every sector in Sierra Leone. Over the last two decades, most sectors have remained ineffective in achieving their development plans. This is largely caused by a lack of institutional capacity and interest to empower government employees, students and economically active entrepreneurs to access funds for new ventures or add value to existing projects with quality data generation and management. Among the sectors greatly affected by the low quality of data production is the Water, Sanitation and Hygiene (WASH) sector, which significantly affects human capital development. This is evidenced in the country's ineffective WASH project service delivery. The origin of WASH sector management is the quality of services rendered to the poor who account for over 70 percent of the country's 7.1 million people who live in the rural areas (Sierra Leone Census Report, 2015).

Monitoring of WASH activities is mostly dictated by those who control the financial resources (donor, local councils, implementing partners among others) and in the public sector (water, health, education or local government) where the project has been initiated, planned or implemented. Although there is an institutional arrangement for coordination and collaboration of WASH sector players at the sub-national level, it seems ineffective (The Sierra Leone National WASH Policy, 2010). Donors mostly slow down or withdraw their support from a specific ministry, department or agency mainly because of ineffective coordination and collaboration among WASH sector players, especially when sustainability is not feasible. Coordination of WASH project activities is mostly done in principle. Certain stakeholders are either involved at the initiation of the project and left out during implementation or invited during the closing phase of the project. This approach has led to poor project performance and ignores effective knowledge management of WASH data that would assure learning outcomes that improve service delivery.

Even though WASH data management programs account for a large volume of the health statistics, little attention has been paid to the digital monitoring platform since its launch in 2019. According to Dickson (2017), Sierra Leone was one of the West African governments selected by the Open Government Partnership to launch a data portal (Akvo FLOW) that would cater to UN Sustainable Development Goal 6. The WASH database, data portal and WASH policy and regulations have been established for implementation by the Ministry of Water Resources (MoWR), Ministry of Health and Sanitation (MoHS) and Ministry of Education, but

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with few details for merger into a monitoring and evaluation (M&E) framework. The country has actually been at an advanced stage for WASH data collection and management, but the implementation of data management strategies remains ineffective. This disconnect between M&E needs and expectations about the use of WASH data is inefficient at the sub-national level. Connecting the dots will be the beginning of improving WASH service delivery at the sub-national level of Sierra Leone.

A national WASH database (1wash-salone) captures data from a wide range of fields, such as sample surveys; knowledge systems innovation (KSI); wireless application protocol (WAP); knowledge, attitude and practice (KAP); water point mapping (WPM); and community led total sanitation (CLTS), with defined indictors to sustainably continue the collection, analysis and use of high-quality, timely and disaggregated data on WASH service delivery at both the national and sub-national level. This system is user friendly, as data from other data collection tools could be accommodated.

The WASH Sierra Leone database was designed to host two administrative levels: a national- and a district/sub-national-level dashboard administration with the goal of effective and efficient WASH data management to improve WASH investment planning at all levels in Sierra Leone. The MoWR is the lead administrator at the national level to carry out all administrative activities in collaboration with the MoHS and other ministries, departments and agencies, as well as donor and implementing partners.

Many questions, however, remain at the sub-national level for WASH data management. Typical among these are, who are the people responsible for collecting data at the various WASH intervention areas (schools, health-care facilities, communities, households and other institutions)? What institution will house the data and handle the data analysis? Who will need to receive the data in a timely manner?

There is need for a second level of data governance that would cater to data needs for decision making for rural WASH investment to ensure that accurate and reliable data are available at all times.

Answers to the above questions were considered in bringing together the four ministries (Water Resources, Health and Sanitation, Education, and Local Government and Rural Development) to establish a country-led M&E that provides an M&E framework and plan at the sub-national level.

However, the M&E framework for WASH has not been effectively rolled out to ensure who will be responsible for data collection and management, or who will be the lead personnel, ministry, department or agency charged with the management to ensure the availability of WASH data to stakeholders for decision making. This is one of the causes of ineffective WASH project monitoring at the sub-national level.

There is also a need for information technology skills for data management, equipment and logistics, due mainly to ineffective coordination and collaboration among WASH sector players for regular monitoring and evaluation of WASH project activities. Because of inadequate human, technical and financial support for routine WASH data collection and management, accessing accurate, reliable and timely data to effectively allocate resources and inform policy and investment decisions remains a challenge.

Although routine data collection is yet to be operationalized, the introduction of a machine learning model called the Water Point Data Exchange (WPDx) remains a clear pathway to aid quality decision making. WPDx is a decision support tool for investment decisions mainly for rural water services in Sierra Leone. This powerful tool would assist decision-making bodies to understand why credible and reliable data is required to guide policymaking, especially for resource allocation for rehabilitation and construction of water points at the sub-national level.

The WPDx is another phase of digital water data management in Sierra Leone that has aided the harmonization of water data from households, health-care facilities, schools, communities and other institutions. Data from all intervention areas are shared with the WPDx global data repository. Data collected using different tools can be uploaded to the exchange in line with a standardize data format, including a data playground that provides access to the entire WPDx dataset, offering users the opportunity to filter based on geographical interest. The WPDx requires updated data to inform decision makers to make real-time decisions for investment in rural water services. To ensure data sharing, the Water Directorate of the Ministry of Water Resources has mandated all sector organizations to share water point data with the Directorate. The Directorate also encourages organizations to work with the Akvo FLOW tool to collect water point data using standardized WASH surveys. It further instructed that data collected should be shared with district water mapping officers within a specified data-collection time period, usually 30 days. The compiled water point data will be analyzed to inform annual workplans and other programs using WPDx decision-support tools. Updated data will help predict outcomes and uncover patterns not easily seen by human observers through machine learning available in the WPDx. However, this approach is currently ineffective, because the standardized data collection tool (Akvo FLOW) is underutilized for regular WASH data collection.

To better leverage WASH data management for better planning of WASH service delivery at the sub-national level, there is need for training, equipment and logistics support for designated data collection and management staff of the Ministry of Water Resources, as well as the establishment of regional WASH database platform. This additional layer will serve as a link between the national WASH database manager and district-level WASH mapping officers to leapfrog the decentralization process and improve WASH data management for service delivery. Considering that leveraging data improves service delivery, the country-led monitoring and evaluation plan needs to be implemented and evaluated to ensure routine data collection to provide correct and timely information to decision makers for resource allocation.

The Akvo FLOW tool has harmonized the WASH data into one platform, 1-WASH Sierra Leone, but the utilization of the tool is relatively ineffective due the need for training, equipment and other logistics for effective management at the sub-national level.

The Ministry of Water Resources gives policy oversight for the two water utility companies, Guma Valley Water Company (GVWC) and Sierra Leone Water Company (SALWACO). The former is responsible for providing access to portable water supply in Freetown, whilst the latter is responsible for water supply services in the regional areas. Data from these utilities are expected to be stored and managed using the Akvo tool, but this has been ineffective in recent years.

Regulation for service provision is done through the Electricity and Water Regulatory Commission (EWRC), and the regulation of water resources is done through the National Water Resources Management Agency (NWRMA). The EWRC was established to formulate, implement and monitor quality and compliance; provide tariff guidelines and licenses; and implement regulatory frameworks for the safe, secure, affordable and reliable supply of water and electricity. whilst the NWRMA is mandated to ensure effective management of Sierra Leone water resources at both the national and sub-national level.

The Ministry of Water Resources has the mandate to analyze to generate insights on specific actions to be taken on monitoring and enforcement of WASH regulation, in collaboration with the ministries of health and education and local governments. This standardized data collection and analyzing tool (Akvo) is widely used by major development partners (UNICEF among others) in monitoring and evaluating WASH projects. Thus, the benefit of operationalizing at the sub-national level may be enormous. Limiting the use of this tool to UNICEF-implementing partners, for instance, may create huge gaps in data management for competitive advantage in WASH service delivery at the sub-national level.

There is greater need for the independence of the WASH M&E system at the sub-national level. The previous institutional arrangement by the Ministry of Water Resources for data management to inform sound decision making for WASH service delivery in schools, health care facilities, communities and other institutions is ineffective. Decisions are always made by senior managers without referencing the standardized data, which facilitate the decision-making process.

The lower demand for data is a result of WASH data not being regularly updated. Although water point data collection is expected to be a routine activity of water mapping officers at the MoWR, collection appears to have become a once every four-year project in the WASH sector. New WASH facilities cannot be accounted for in the Akvo FLOW dashboard, as data is currently fragmented among WASH sector players at the sub-national level.

For accountability, the Individual Performance Appraisal System (IPAS) as introduced by the Human Resource Management Office (HRMO) is directed to monitor the output of all civil servants. However, accountability cannot be fully assured for those collecting and presenting high-quality data or making decisions in accordance with data in cities. HMRO monitoring of staff performance at the national level is more effective than at the sub-national level. Challenges faced by staff, as well as their recommendations, are often not considered by key decision makers at both the national and sub-national level. This remains another challenge affecting accountability in WASH projects, although the Ministry of Finance remains a key user of data in all investment decisions for rural water services.

Improved regulation of WASH data collection, management accountability and transparency would help in leveraging WASH data management for effective and efficient WASH service delivery at the sub-national level. The current service-level agreement for WASH in Sierra Leone only caters to WASH service delivery in health- care facilities. Service-level agreements for WASH are also required to be developed and implemented in communities/households, schools and other institutions. Such agreements can ensure accountability on the part of service providers, assuring WASH service delivery at the sub-national level.

The Ministry of Planning and Development for data collection and management was established to improve WASH data accountability and transparency at both the national and sub-national level. Also laudable was the establishment of the Directorate of Science, Technology and Innovation (DSTI) at the State House to support the government of Sierra Leone deliver its national plan effectively and efficiently, and to help transform the country into an innovation and entrepreneurship hub. Both the Ministry and the Directorate are mandated to work with Statistics Sierra Leone to ensure accountability and transparency for data collection and management for rural WASH investment. However, the DSTI presence is yet to be felt at the sub-national level.

In order to have quality data for the WASH data ecosystem that would ensure achievement of Sustainable Development Goal 6, there is need to increase human resource development at the national and sub-national level for rural water supply services, especially for the sub-national water directorate offices of the MoWR. This effort would include training support; improved institutional arrangement for data collection and management; logistics support for regular data collection and management; and adequate budget allocation for WASH data collection in households, schools, health care facilities, communities and other institutions. However, many in-service trainings organized by data collection and management staff of the MoWR, MoHS and other government agencies have not been implemented due to poor logistical arrangements. There is need for a
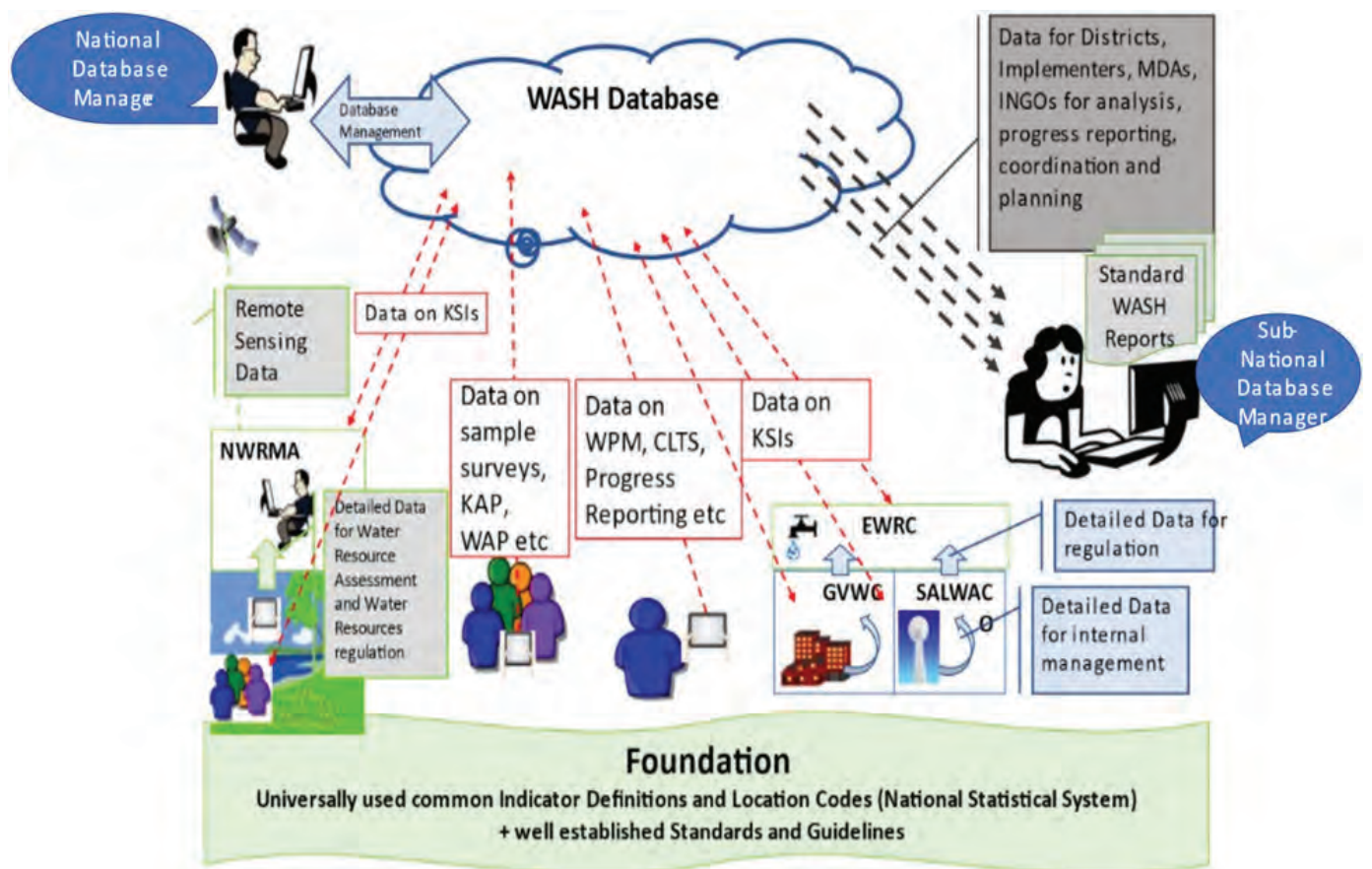
strong service-level agreement with implementing partners that is coordinated by the MoWR for WASH in health care facilities, schools, communities and other institutions.

The benefit of having WASH service delivery at the sub-national level will be enormous, creating an enabling environment to continuously manage the process of turning raw WASH data into actionable information to facilitate the decision-making process for resource allocation for the construction and rehabilitation of WASH facilities, with clearly defined roles and responsibilities among sector players.

In conclusion, there is a need for institutional support for WASH evidence-based decision making to improve WASH service delivery through smarter use of data, better monitoring, and greater emphasis on analysis and evidence building. This support would help strengthen WASH sector policies and strategies, and provide WASH sector players the opportunity to share experiences and lessons learned. This would also assure that knowledge management is recognized at the sub-national level, creating a robust system that will strengthen WASH sector data management capacity and influence sound decision making for planning, budgeting and monitoring WASH projects and programs for effective and efficient service delivery at the sub-national level.

Figure 1:
Sierra Leone Wash Data Ecosystem

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