37th WEDC International Conference, Hanoi, Vietnam, 2014

SUSTAINABLE WATER AND SANITATION SERVICES
FOR ALL IN A FAST CHANGING WORLD

Measuring and reporting the capacity development performance of organizations in water and sanitation

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REFEREED PAPER 2058

Within the Water, Sanitation and Hygiene (WASH) sector, a range of organizations offer education and training activities. The aim of these activities is to improve access to water and sanitation services through better design and implementation of WASH interventions (Broughton & Hampshire, 1997; Cracknell, 2000). However, it is often not clear how effective education and training activities are at achieving these objectives. A key challenge is lack of clarity on how the results of education and training in WASH should be measured and reported. In order to address this issue, CAWST (The Centre for Affordable Water and Sanitation Technology) and the Centre for Engineering for Sustainable Development at the University of Cambridge conducted a review of measurement and reporting strategies of education and training organizations. Strengths, limitations and best practices were identified and used to develop recommendations for how CAWST, and other education and training organizations in the WASH sector, can improve the way they measure and report their results.

Introduction

Within the Water, Sanitation and Hygiene (WASH) sector, a range of organizations including universities, vocational schools, private consultants, and Non-Governmental Organizations (NGOs) offer education and training activities to upgrade the capacities of organizations that are responsible for WASH provision. This is needed to address a human resources deficiency within the WASH sector, which limits the ability for organizations to plan and implement water and sanitation services (WHO, 2010; IWA, 2013).

It is important for organizations to measure and report the results of their education and training activities in order to understand the impacts of their work. This enables organizations to learn, to implement improved practices, and to be accountable to stakeholders. Unless results are measured effectively, organizations cannot evaluate and improve.

One of the key challenges is a lack of clarity on how the results of education and training in WASH should be measured and reported. A global review of 100+ leading capacity builders in the WASH sector found that only 1/3 reports their results (Ngai et al, 2013). Among these, the methods used are often ad-hoc and use prescriptive criteria to assess only whether outputs are achieved (e.g. the number of people trained).

CAWST, the Centre for Affordable Water and Sanitation Technology, is a Canadian non-profit organization that supports organizations that work directly with populations in developing countries who lack access to clean water and basic sanitation. CAWST provides education, technical training and consulting services to hundreds of organizations, improving their capacities to deliver water and sanitation programs locally. CAWST measures its results by what its clients do after receiving training and consulting services. Since CAWST's inception in 2001, CAWST has conducted approximately 870 education and training visits to clients in 46 countries. About 530 organizations that have been trained by CAWST have provided 7.5 million people in 63 countries with access to better water or sanitation technologies.

Objective

The objective of this study is to explore how CAWST can improve its reporting on the results of its education and training activities. The study addresses two key research questions:

- What indicators are used by education and training organizations to report the outcomes and longer-term impacts of their education and training activities, and what are the best practices?
- What are the strengths and limitations of CAWST's current methods for measuring and reporting results, and how can CAWST improve?

Methodology

CAWST collaborated with the Centre for Engineering for Sustainable Development at the University of Cambridge between January and March 2014.

The first part of the study reviewed the public reporting strategies of various education and training organizations, and determined the strengths and weaknesses of different approaches. Using a prior study on WASH capacity building organizations as a starting point (Ngai et al, 2013), a total of 36 organizations that provide education and training services were selected for in-depth examination. Some of these education and training organization were from the WASH sector, and some were from other non-WASH sectors. A mixture of NGOs, universities/research institutes, network or partnership organizations and government departments were included, resulting in a diverse range of measurement and reporting approaches. Figure 1 shows the breakdown of the 36 organizations that were included in the review. Each of the organizations conduct education and training as part of their services; some focus purely on education and training while others provide a range of other services as well.

The reviewed organizations which undertake WASH as part of their services were WaterAid UK, Water for People, Charity Water, Water Engineering and Development Centre, Community Led Total Sanitation Foundation, Water Research and Training Centre, Edge Outreach, GOAL, BORDA, FHI360, Medair, International Medical Corps, SNV, Intrac, the Swiss Federal Institute of Aquatic Science and Technology, UK Department for International Development, Practical Action, Austrian Development corporation, Building Partnerships for Development in Water and Sanitation, Gesellschaft für Internationale Zusammenarbeit (GIZ), UNESCO-IHE, The International Centre for Water Management Services (CEWAS), CAP-NET, International Water Centre, and the International Water and Sanitation Centre (IRC). Non-WASH related organizations that were reviewed include Red-R, Beyond Blue, The Big Issue, Teach for Australia, Tostan, The Centre for Digital Inclusion, Global Partnership for Education, Right to Play, Cranfield University, Design Revolution and Worksafe Australia. All information used in the review was publicly available and the review focused on what metrics were measured and reported, not how the data was collected by the organizations.

The metrics related to education and training that were reported by each organization were compared based on a range of criteria including relevance, effectiveness, timeliness, consistency and logic. The style of the publicly available information was also reviewed to determine effective methods for communication of organizational results.

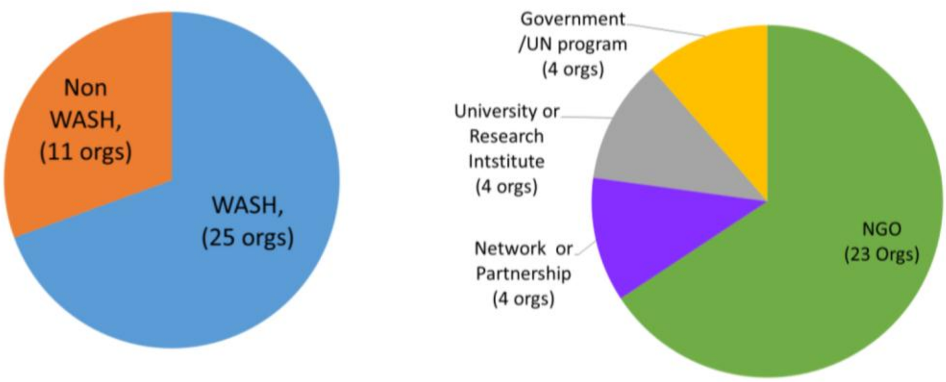

Figure 1. Types of organizations reviewed

The second part of the study compared the reporting strategies of these 36 organizations with CAWST's measurement and reporting protocols. Recommendations were developed for how CAWST can improve their measurement and reporting processes. Other education and training organizations can use the review findings to improve their own measurement and reporting processes.

Results and discussion

Types of metrics

Adams (2001) compared different types of metrics, and defined three categories; outputs, outcomes and impacts. Outputs are a measure organizational effort, indicated by the implementation of services. Outcomes are measures of effectiveness, indicated by benefits from the services. Impacts are measures of changes resulting from the services, indicated by the difference from the original problem situation. A balance between outputs, outcomes and impacts is needed to provide useful information for learning and improvement without requiring excessive resources (Cotton et al, 2013).

Figure 2 summarizes the type of education and training metrics that were reported from the 36 organizations that were reviewed. Twenty-five (67%) of the organizations reported metrics related to their education and training activities, while the remaining twelve (33%) either did not report metrics at all, or only reported metrics related to non-educational services (such as infrastructure services or general financial performance). Twenty-four percent of the organizations only reported outputs, such as the number of training workshops conducted. Another 24% of the organizations reported metrics relating to outputs and outcomes, and 19% of the organizations reported metrics related to outputs, outcomes and impacts.

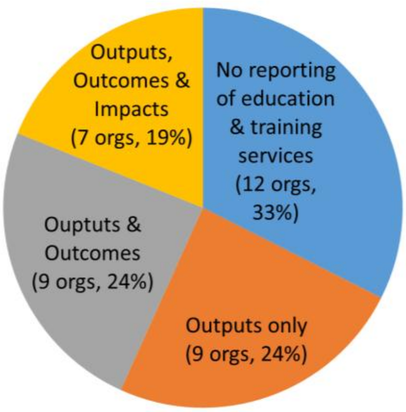

Figure 2. Summary of metrics

Figures 3, 4 and 5 summarize the metrics from the 25 organizations that reported metrics related to their education and training activities. A total of 65 metrics were reported and they have been categorized based on whether they are an output, outcome or impact. A total of 35 outputs, 19 outcomes, and 11 impacts were reported. The most common metric was the number of people trained. This is a relatively straightforward indicator, which should be possible for all organizations to report, provided they keep records of their services. This gives an indication of the scale of the work conducted by the organization, however does not convey how effective the services are and whether any changes to behaviour occurred in the participants as a result of the training. This represents a program output. Other outputs that were reported included number of countries worked in, the number of trainers delivering services, the number of educational materials developed and the amount of time spent delivering services. Outcomes that were reported included changes to the behavior or employment of participants, online activity, participant satisfaction with the training and changes in attitudes of the participants. These reflect mid-term benefits that occurred as a result of the training. Some of the organizations attempted to report the impacts of their work, through the number of total beneficiaries reached with improved services. This metric attempts to show the "downstream" improvements that have occurred as a result of the education and training services. Two organizations also reported the health impacts and economic impacts resulting from their services.

Quality of the metrics

The metrics from each organization were compared based on relevance, effectiveness, timeliness, consistency and logic in order to analyse their strengths and weaknesses (Refer Table 1).

The comparison showed that each indicator has a range of strengths and weaknesses. No single indicator performed well in all criteria. For example, the 'number of people trained' was rated highly for relevance, consistency and logic, but rated poorly for effectiveness. This is because it is a simple metric to understand and report, however its ability to provide new and rich information for organizational learning is limited. Conversely, the metric 'number of downstream beneficiaries reached' is highly effective in helping an organization to understand their ultimate impacts, however there is a gap between the education services and the impact, which makes reduces relevance and logic of the metric.

Figure 3. Summary of outputs reported

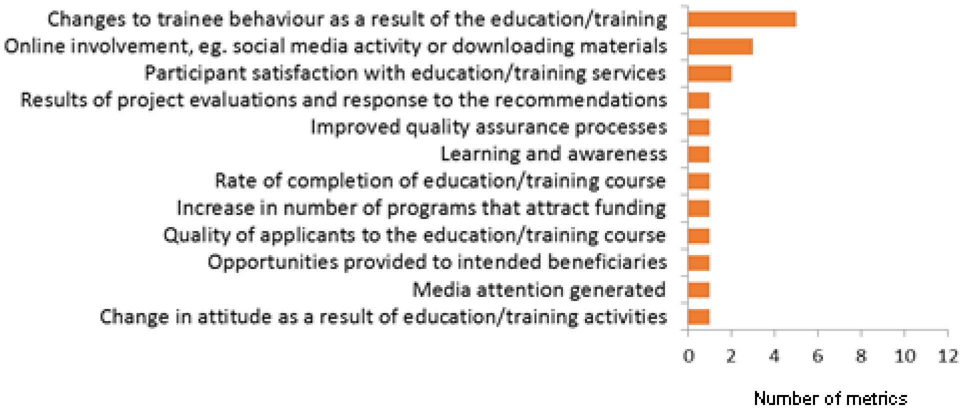

Figure 4. Summary of outcomes reported

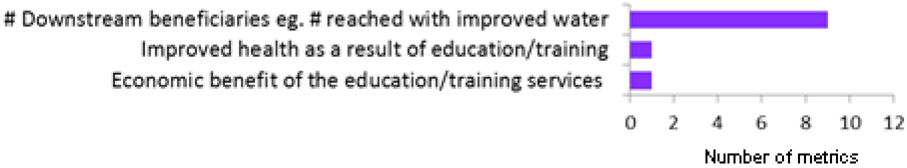

Figure 5. Summary of impacts reported

Best practice metrics were identified as metrics which provided a good mixture of moderate to high scores for all criteria. In particular, 'changes to trainee behaviour', 'online involvement', 'participant satisfaction', and 'response to past evaluations' were considered to be examples of best practice metrics. For a set of metrics, best practice is having a combination of metrics which complement each other. For example, the number of people trained was rated poorly for effectiveness, so another metric which is strong in effectiveness (such as trainee satisfaction), should be included.

Table 1. Summary evaluation of reported metrics

Criteria	Summary of strengths	Summary of weaknesses
Relevance: How well the metric represents some aspect of the work that the organization does.	Most metrics were considered to be relevant. Indictors that were rated most highly for relevance were simple and showed a direct link between the metric and what the organization has done. Eg. # people trained	For some metrics, it was difficult to understand the link between the metric and how it represents something about the organization's performance. For example, it is not clear what the organization's role is in 'the quality of the applicants', or the 'media attention generated'.
Effectiveness: How well the metric provides new knowledge of the performance of the activity	Highly effective metrics indicated that the organization can learn from them. They included 'changes to participant attitudes', 'changes to trainee behaviour' and 'participant satisfaction'.	Less effective metrics showed limited capability for organizational learning. These were often outputs, such as 'number of workshops' and 'number of countries'. They show what the organization is doing, but not how well.
Timeliness: The period over which the metric is reported and updated	Generally, the organizational metrics were reported on a yearly basis in annual reports. This was considered sufficient; however there was little variation for different metrics and organizations so the rating was not completed.	
Consistency: The repeatability of the metric and how it is reported each year	Metrics that were rated highly for consistency are those that are direct and can be easily repeated, such as the 'number of workshops'.	The metrics reported by each organization were often not consistent year to year. This prevented clear comparison of the overall organizational progress and long term trajectory toward goals.
Logic: The rationale behind the metric, and whether it's purpose is easily understood by stakeholders.	Clear, understandable metrics included 'response to training', or 'Online results', as it was clear why these metrics were chosen as indicators of organizational results.	Metrics that were rated poorly for logic were abstract, or did not make it clear how the metric relates to organizational success/failure. Impact type metrics were often rated poorly for logic, as the links between the education/training service and the impact were often not clear. E.g. downstream impacts.

Reporting style

It is important that NGOs can effectively communicate organizational results and opportunities for improvement to a range of stakeholders. Throughout the review, a range of observations were made related to the style of reporting, both in annual reports and on websites:

- It is effective to include both the target and the result when reporting results, as this provides an indication of organizational planning and whether expected results were met or surpassed.
- Clarity in the wording of metrics is required. Certain words can easily be misunderstood by people unfamiliar with the organization or the sector.
- Striking a balance between the amount of detail needed for clarity and brevity is important to encourage reader engagement. Creative use of graphics can assist with this.
- It can be challenging for education and training NGOs to effectively communicate their specific services and theory of change to stakeholders. Stories or case studies can be useful in demonstrating the services.

Comparison with CAWST reporting processes

Table 2 shows CAWST's Key Performance Indicators (KPIs), which are measured and reported each year in CAWST's annual report and on the CAWST website. The information from the review was used to analyse how effective CAWST's current KPI reporting process is and to recommend improvements. The review showed that CAWST's metrics and reporting processes are of high quality, especially when compared with other NGOs in the water and sanitation sector. The review provided ideas for how CAWST can further improve its KPI and reporting process, in order to achieve best practice.

A significant difference noted between CAWST's reporting style and the reviewed organizations was the level of consistency in the methods of data collection and metrics over time. Each year, CAWST measures and reports the same seven KPIs. This makes it possible to look back and see trends in the organizational results and see cumulative impacts over time. None of the 36 reviewed organizations used a consistent set of indicators from year to year.

The review exposed a gap in CAWST's KPI reporting, which is similar to a weakness shown by other organizations in the logic of metrics chosen for reporting on impacts. KPI 1 attempts to convey the impacts of CAWST's work, by reporting the number of people with better access to water and sanitation as a result of the work of CAWST's clients. However, there is no evidence for the logical link between CAWST's work and the work of CAWST's clients. It would be useful to have a KPI which can show how CAWST's services specifically result in changes to the way their clients implement projects.

The review provided ideas for additional metrics that could add value to CAWST reporting processes. These include; client satisfaction, trainee destinations, online involvement, changes in trainee behaviour, and details of evaluations conducted of CAWST's projects and CAWST's plan to respond and improve.

Table 2. CAWST key performance indicators

Key performance indicators
1. Number of people impacted by CAWST clients
2. Reach of CAWST education and training materials
3. Number of implementing clients
4. Number of community-based organizations working with clients
5. Revenue
6. Financial reserve
7. Cumulative CAWST expenditure per person impacted by CAWST clients

Recommendations and conclusion

CAWST and the Centre for Engineering for Sustainable Development at the University of Cambridge conducted a review of the measuring and reporting strategies of 36 education and training organizations. The metrics reported by these organizations were diverse and provided new perspectives on methods for organizational reporting.

The review revealed weaknesses and best practices in reporting the results of education and training in WASH. A major weakness in the reviewed organizations' reporting is that many organizations (33%) do not report the results of their education and training activities at all. For the organizations that did report, there was a lack of metrics reported which relate to program impacts. Only 19% of the reviewed organizations reported metrics related to program impacts, while the remaining 48% only reported outputs and/or outcomes. Another weakness was a lack of effectiveness in metrics which attempted to report impacts, as many were confusing, difficult to interpret, or without clear links between the education and training services and the impact. A lack of consistency in reporting from year to year was another overall weakness identified from the review. For best practice in organizational reporting, it is necessary to find a balance between the relevance, effectiveness, timeliness, consistency and logic of the metrics. The set of metrics should include a mixture of outputs, outcomes and impacts, and be credible and understandable to readers. The style of reports or websites should be designed to improve reader engagement and the ability to effectively communicate the results.

The results of the review were compared with CAWST's reporting processes. This provided ideas for new or improved metrics that could add value to CAWST reporting processes. These include client satisfaction, trainee destinations, online involvement, changes in trainee behaviour, and details of evaluations conducted of CAWST's projects and CAWST's plans to respond and improve.

The findings of this study can be utilized by other NGOs to develop effective organizational metrics. This can result in improved organizational reporting and organizational learning, and hence result in the delivery of more effective education and training services.

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