

Sustainable WASH Systems Learning Partnership

Network Analysis and Systems Assessment in the Rural Sanitation and Hygiene Sector in Cambodia

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Introduction

This research brief presents the initial findings and lessons learned from a study of the stakeholder relationships and key success factors for the Rural Sanitation and Hygiene (RuSH) Network in Cambodia. The Royal Government of Cambodia's National Strategy for Rural Water Supply, Sanitation and Hygiene 2011-2025 has set a clear but ambitious sector vision: "Every person in rural communities has access to safe water supply and sanitation services and lives in a hygienic environment by 2025." However, the RuSH subsector in Cambodia faces significant challenges to achieving that vision. It is composed of a crowded field of stakeholders; the National Action Plan notes that it is uncoordinated and disjointed; and the outcomes of conventional interventions suffer from low sustainability. Current coordination efforts tend to involve a core group of NGOs and government, without significant engagement of the private sector or many other traditional actors in the sector.

To address this, Cambodian NGO WaterSHED, in collaboration with LINC, is facilitating a locally-led, locally-owned systems approach to engage RuSH stakeholders at the national level in a highly structured collaborative effort. LINC led a baseline analysis of the actors working on RuSH issues. (This informal group is referred to as the RuSH Network). The objective of this study was to support the RuSH Network to generate common understanding, discussion and coordinated actions that will accelerate progress toward the sector vision. The analysis explores relationships in the RuSH Network and the inter-relationship of various success factors and barriers to achieving the sector vision.

Strategic Objectives from Cambodia's National Strategy for Rural Water Supply, Sanitation and Hygiene

- 1. Water Supply:** 50% of rural population will have access to improved water supply by 2015, and 100% by 2025.
- 2. Sanitation:** 30% of rural population will have access to improved sanitation and live in a hygienic environment by 2015, and 100% by 2025.
- 3. Hygiene:** 30% of rural population will practice basic safe hygiene behavior by 2015, and 100% by 2025.
- 4. Enabling Environment:** By 2015, institutional arrangements, legal instruments and human resources will be in place and able to rapidly increase and sustain services.
- 5. Financing:** Funding for capital and recurrent expenditure will be available.

Methodology

WaterSHED and LINC designed the analysis to assess the RuSH Network and its alignment with the Government's 2025 vision. After a June 2017 workshop was held to introduce network stakeholders to network analysis and systems mapping, the survey instrument and initial pre-determined list of over 100 stakeholder organizations was developed. This list represents the total population of organizations that were expected to meet the criteria for network membership.¹ From June to September 2017, representatives of 99 organizations were interviewed – including government, development partner, private sector, academic and NGO actors. Of those, 88 were identified as belonging to the network based on membership criteria and had relationships with other network members. The interview had three sections:

1. Closed-ended questions about the respondent organization's attributes;
2. Questions about the relationships that the respondent organization has had with other actors on the stakeholder pre-defined list during the previous six-month period; and
3. Five open-ended questions about the key success factors and barriers to achieving the sector vision.

The data analysis included three complementary components:

- **Network Analysis:** Actor relationships were examined to identify patterns of interaction in the network, well-connected and influential (as defined by their network) actors and groups, and network gaps or opportunities.
- **Factor Analysis:** The transcribed responses to the open-ended questions on the sector vision and perceived success factors and barriers were coded, grouped and analyzed for prevailing themes.
- **System Map:** Again, based on the interdependencies described in the open-ended interview responses, an initial and incomplete system map – or “messy map” – was also generated to show the interactions between key success factors and barriers to achieving the sector vision.

¹ RuSH Network membership criteria: (a) a permanent office in the capital, Phnom Penh and (b) a commitment to RuSH as demonstrated by at least one of the following: a strategy or mission that includes a focus on RuSH; OR three or more staff that spend 50% or more time on RuSH issues; OR an annual budget for RuSH activities that is US \$25,000 or more.

After the preliminary analysis, LINC and WaterSHED held a consultative workshop with more than 100 participants from the RuSH sector to begin to engage stakeholders with the data, discuss the findings, and collect initial feedback that has been incorporated into the analysis.



More than 100 participants from the RuSH sector attended a workshop to discuss the findings of the Organizational Network Analysis. Photo courtesy of WaterSHED.

Findings

The initial systems analysis uncovered a number of interesting potential leverage points for improving progress towards achieving the RuSH sector vision. The following are a sample of key findings that resonated with stakeholders and demonstrate the types of insights that arose from the analysis. More detail is available in the full report.

1. Network interconnectivity disparities exist based on gender and language.

The Network Analysis identified clear differences in several measures of interconnectedness based on the gender of the head of the organization and the language the interview was conducted in (Khmer or English).

With respect to gender, woman-run organizations are significantly less connected and central to the network than organizations run by men. On average, they reported fewer than 60% of the number of connections that organizations run by men had. The network of only woman-run organizations is half as well-connected² as that of only organizations run by men. Woman-run organizations

² Based on the density of each network. Density is the ratio of actual connections to all possible connections within the network.

averaged less than half of the betweenness centrality of organizations run by men, meaning they are much less likely to be an informational bridge between two other actors.

Findings on language revealed that although organizations interviewed in English represent a small fraction of the overall network, they are significantly better connected to one another and to the network overall. The network of organizations interviewed in English is almost four times as well-connected as the network of organizations interviewed in Khmer; on average they have over 80% more connections than organizations interviewed in Khmer. They are also among the most centrally positioned in the network and a connection to them is among the most desired connections by other members of the network.

Given that gender of organization head and language of interview are only proxies for identifying gender and language issues in the network, these findings imply that the RuSH Network should conduct further investigation to understand the underlying contributors to these network inequalities. The Network has already begun to respond to these potential biases with steps to empower women in WASH and more use of dual-language communications (see Lessons Learned below).

2. The Ministry of Rural Development is well-positioned to lead improved coordination and collaboration.

The Network Analysis revealed that the Ministry of Rural Development (MRD) is the most centrally positioned actor in the network. MRD is the most frequent bridge between other actors and has twice as many connections as the next-most-connected actor (see Figure 1 for the map of MRD's network). The Factor Analysis also showed that "Government Involvement" was the second most-cited success factor for achieving the sector vision.

Still, the analysis has identified some potential duplication of efforts. On average, each organization is implementing 5.6 of the 13 activity type choices given in the interview, with some NGOs implementing 11 activity types and a total of 26% of the network (23 organizations) implementing eight or more activity types. Additionally, in the Factor Analysis, a collaboration mechanism was the most-cited success factor. However, when asked about what to invest time and effort in, collaboration and coordination mechanisms dropped to the sixth most frequently named factor.

These findings suggest that MRD should leverage its centrality and high level of connectivity to facilitate improved coordination and collaboration among other actors. To support this, other RuSH Network actors should actively engage and partner in developing mechanisms for structured collaboration.

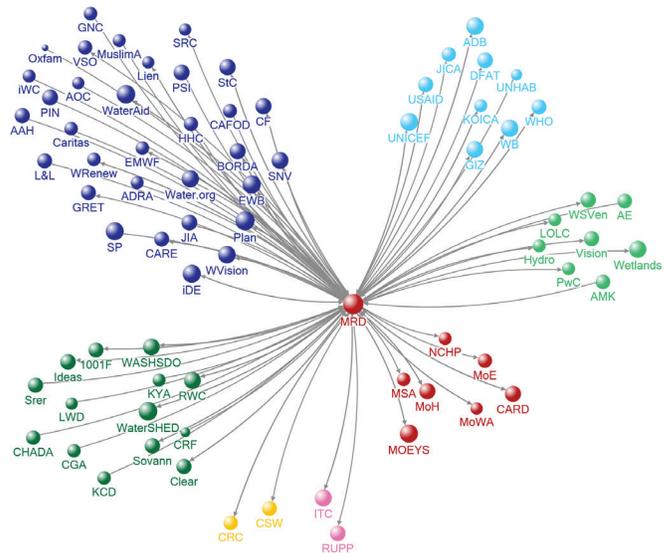


Figure 1. Map of the Cambodia Ministry of Rural Development's Network

3. Existing thematic subgroups within the network represent strong models for coordination.

The sector has several existing thematic groups that meet on a somewhat regular basis. Membership in those subgroups is not formal; organizations self-select to participate. Analysis of the active participants in three existing subgroups (based on their attendance at meetings in the months prior to and during the study) highlights some interesting differences from the overall network. The Network Analysis indicates that the existing subgroups are very well-connected internally, and are also quite central and well-connected to the network as a whole. The Factor Analysis also shows that members of these groups were much more likely than the overall network to cite collaboration mechanism as success factor (the most-cited factor for all the subgroups with over 80% of organizations citing it compared to 58% of the whole network). Unlike the overall network, when asked about what to invest time and effort in, collaboration remained the most-cited factor by the existing subgroup members.

The key takeaway is that the existing subgroups are a potential mechanism and model for increasing structured coordination and collaboration with the network writ large. Analysis of these subgroups (and potentially others that form) should also be included in a follow-up analysis conducted in two to three years to measure change over time.

Lessons Learned

Several noteworthy lessons on the process and value of systems analysis were gleaned from the study and stakeholder feedback. Hopefully these lessons are not only relevant to WaterSHED's work in Cambodia's RuSH sector, but in the application of network analyses and system assessments more broadly.

Engaging stakeholders in interpreting, understanding and acting on systems analyses is challenging.

The December 2017 Consultative Workshop was highly participatory and interactive, providing stakeholders with the opportunity to learn about and interact with the data. This was believed to be an important step both for the stakeholders to begin to interpret and act on the data, and for the LINC and WaterSHED teams to gain further insight into the context and improve the presentation of results.

However, this set of analyses is generally new to many stakeholders for several reasons. First, new concepts were introduced – in particular, the network analysis data collection as a census and the data structure built around relationships, and coding of factor analysis open-ended responses. Second, it is much more common to present findings than to gather input from stakeholders in a consultative workshop. Additionally, these stakeholders are used to reviewing data about rural households, not data about themselves. Combined, these conditions require that the stakeholders spend more time to absorb the data and its implications and continue to contemplate results and next steps.

The RuSH Network has already begun to act on some findings.

The most clear and actionable findings from the analysis have catalyzed efforts that had been building before the study. Despite the clear need for stakeholders to take time to understand the data, network members have already begun to take initiative to address some of those findings. One example is a women-led initiative to garner interest in forming a Women in WASH subgroup. The interest had existed before the study, but the findings around lower interconnectivity of woman-headed organizations have accelerated the movement. As a second example, the incongruity of language motivated MRD to hold the December 2017 RuSH Subgroup meeting in Khmer with simultaneous English translation for the first time.

The analysis is providing guidance to be used in next steps for the network to accelerate progress.

It is often difficult to understand how and where to make meaningful interventions in a complex system. Beyond catalyzing the efforts of small groups of stakeholders to address some of the most actionable findings, this study is providing insight for the discussions and actions of the RuSH Network as a whole. In particular, it sheds light on the need for support for network strengthening to create the conditions for structured collaboration in the sector. Because the Ministry of Rural Development is highly central and well connected, they are well positioned to support, and benefit from network strengthening. Among the next steps planned will be a visioning session for the RuSH Network around the changes they would like to see in the network structure and the system.

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