

Sustainable WASH Systems Learning Partnership

# UNDERSTANDING COORDINATION IN KITUI COUNTY'S WATER SECTOR: AN ANALYSIS OF STAKEHOLDER INTERACTIONS AND PERSPECTIVES

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**Front cover:** Study participant drawing their organization's network in Kitui County, Kenya. Photo by Pauline Kiamba.

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## Table of Contents

Acronyms.....	5
Executive Summary.....	7
Introduction .....	9
Methodology .....	10
Results.....	12
Network Analysis Validation Workshop .....	29
Conclusion.....	30
Annex A: Interview Methodology .....	31
Annex B: ONA Results Validation Workshop Report.....	36

## List of Figures

Figure 1 Visualization of the Overall Information Network Map Across All Frequencies of Interaction..	13
Figure 2 Visualization of Groups (Represented by Color) Within the Larger Information Network.....	15
Figure 3 Visualization of the Overall Skills Exchange Network Across All Frequencies of Interaction.....	16
Figure 4 In-Degree: Skills Inflow Within the Network.....	17
Figure 5 Out-Degree: Skills Outflow Within the Network.....	18
Figure 6 In-degree: Resource Inflow Within Network.....	20
Figure 7 Out-Degree: Resource Outflow Within the Network.....	21
Figure 8 Actors' Perspectives on Priorities for Rural Water Sustainability in Kitui County .....	27
Figure 9 Example of Completed Network.....	31
Figure 10 Flip Chart Paper for Network Mapping.....	33
Figure 11 Legend Showing the Tie Categories.....	34

## List of Tables

Table 1 Distribution of Interviewees by Organization Type .....	12
Table 2 Emergent Factors from Interview Transcripts.....	23
Table 3 Top Factor Mentions by Organization Type.....	26
Table 4 Thematic Priority Areas for Increased Likelihood of Sustainable Rural Water Service Delivery	27

## Acronyms

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<b>IRB</b>	Institutional Review Board
<b>MAWLD</b>	Ministry of Agriculture, Water, and Livestock Development
<b>MCA</b>	Member of County Assembly
<b>SWS</b>	Sustainable WASH Systems Learning Partnership
<b>UNICEF</b>	United Nations Children’s Fund
<b>USAID</b>	United States Agency for International Development
<b>WASH</b>	Water, sanitation, and hygiene
<b>WASREB</b>	Water Services Regulatory Board

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## Executive Summary

Kitui County Government is one of 47 county governments in Kenya established under the devolved system of government created by the Constitution of Kenya in 2010. It is mandated to provide water and sanitation services to all residents within its area of jurisdiction. Multiple actors under the leadership of the County Ministry of Agriculture, Water, and Livestock Development (MAWLD) support progress toward this goal of universal water coverage. These actors include county and national government line ministries and agencies, NGOs, development partners, private sector actors, social enterprises, community-based organizations playing the role of informal water service providers, and academic or research institutions, among others. The ministry convenes quarterly WASH Forums with support of the UNICEF Kenya Country Program. The WASH Forums provide a regular avenue to bring together sector actors to deliberate issues for improved coordination, communication, and planning, with the overall vision of enhancing sustainability in the sector. Attendance at the Fora is drawn from the aforementioned actors.

This study looks at the current state of interaction among stakeholders in Kitui County's water sector to identify opportunities to improve coordination. The United States Agency for International Development (USAID)-funded Sustainable WASH Systems Learning Partnership (SWS) undertook an organizational network analysis and collected data through interviews with 25 sector actors selected for their relevance, authority, and the overall involvement of their respective organizations in the sector. Organizational Network Analysis (ONA) is a methodology used to study interactions across a variety of groups or organizations. The methodology maps the network of actors to create visualizations of the relationships between them, making it possible to identify critical connections and potential barriers to collaboration. Interviews consisted of a network mapping activity, followed by questions about the successes, challenges, and solutions to achieving sustainable rural water services in the county.

The authors reconstructed and aggregated network maps from individual interviews using network analysis software. They developed network maps for each of the relationship types described by interviewees: information, skills, and resource exchange. Interviewees identified an additional 50 organizations to the 25 actively present in the WASH Forum, for a total of 75 organizations working in the county on water-related programs and projects.

The information network analysis revealed a few core organizations with high interactivity in the network and several organizations with much less interaction occupying positions on the periphery. Some organizations act as "bridges" linking the periphery organizations to the central core. While these bridging organizations serve an important linking role, they may also be bottlenecks to information flow and the nature of their roles needs to be further understood. The analysis also identified clusters of organizations that frequently interact with each other. Some of these clusters consist of peripheral organizations linked to a single bridge organization without much interaction with each other.

The analysis identified the core organizations as consistent participants of the WASH Forum. The majority of organizations at the periphery of the network either do not attend the Forum consistently or at all. These findings create an opportunity for the WASH Forum to identify organizations to leverage for information exchange. Some entities are expected to have a bridging role (as was the case from the analysis). For instance, the County WASH Coordination Office is mandated to mobilize and oversee stakeholder coordination and collaboration within the county.

The network analysis of skills and resources revealed that community-run schemes are the primary recipients of skills training and resources (funds and equipment) from the largest number of actors in

the network. Community-run schemes operate under the rural community-based management model. Once an entity sets up a water project, it is handed over to the local community to operate and manage.

The authors overlaid the priority factors for sustainable rural water delivery of each organization on the network map. They found a misalignment in the priorities of the central core, despite having the strongest information exchanges. Within the county directorate (headquarters) of water, there is alignment around the need for water scheme monitoring. However, this priority does not cascade to the sub-county water offices, which prioritize capacity building, management, finances, and alternative energy sources for water pumping.

The analysis indicated the WASH Coordination Office within the County Ministry of Agriculture, Water, and Livestock Development (MAWLD) plays a key linking role across all of the relationship types under study. Qualitative analysis of stakeholder interviews determined that many believe coordination of organizations is working well in the sector. The most frequently cited challenges were related to finances, management of schemes, and technical capacity of the community. Accordingly, the most cited recommendations for solutions to these challenges were the development and adoption of alternative management models, re-allocation of funding, and capacity building of rural water scheme managers. The findings will be shared with the county government department of water and WASH Forum stakeholders. SWS will hold facilitated discussions to trigger the development of strategies for enhanced collaboration among the actors.



# Introduction

## Background

The promulgation of the Constitution of Kenya 2010 brought into effect a two-level system of governance made up of one national government and 47 county governments. The Constitution recognizes the right of every person to “clean and safe water in adequate quantities,” as well as the right to “reasonable standards of sanitation” under Article 43. The Fourth Schedule to the Constitution which details the distribution of functions between the national government and the county governments assigns the role of county public works and services including water and sanitation services to county governments. As such, water and sanitation services are a devolved function and the responsibility of county governments. County governments are therefore required to take the necessary steps to ensure the realization of the right to water and sanitation services.

In Kitui County, multiple actors under the leadership of the County Ministry of Agriculture, Water, and Livestock Development (MAWLD) support progress toward this goal. These actors include county and national government line ministries and agencies, NGOs, development partners, private sector actors, social enterprises, community-based organizations playing the role of informal water service providers, and academic or research institutions, among others. These actors hold quarterly WASH Fora with the support of UNICEF’s Kenya country program to deliberate issues for improved coordination, communication, and planning in the water sector.

The United States Agency for International Development (USAID)-funded Sustainable WASH Systems Learning Partnership (SWS) is supporting the WASH Forum to document, understand, and share information on operational, financial, and institutional aspects of the Kitui County rural water system. SWS is investigating how systems-based approaches can improve the likelihood of sustainable WASH service delivery. SWS’s work in Kitui County focuses on understanding the local WASH system, defined as the interacting actors and factors that influence WASH service sustainability. In July and August 2018, SWS engaged in an organizational network analysis (ONA) and stakeholder understanding interviews with key actors. The goal was to capture the interactions and perspectives of water sector stakeholders within Kitui County.<sup>1</sup>

## Organizational Network Analysis

ONA is a methodology used to study interactions across a variety of groups or organizations. In this case, the analysis focuses on interactions across water sector actors in Kitui County relating to information, skills, resources, and authority relationships. The methodology maps the network of actors to create visualizations of the relationships between them, making it possible to identify critical connections and potential barriers to collaboration. The maps enable identification of:

1. Actors who are central to the network — i.e., those who have a high number of connections with and are potentially influential to others in the network.
2. Actors at the periphery who have few connections to other actors.
3. Actors who function as bridges, linking those in the central core to those on the periphery.
4. Groups or clusters of actors interacting more closely with each other than with the rest of the network actors.

<sup>1</sup> The methodology, data management, and dissemination of this work was approved by the University of Colorado Institutional Review Board (IRB), which determined that the research protocol (# 18-0314) met ethics requirements. Interviews were conducted on a voluntary basis, with verbal consent obtained from participants prior to network mapping and audio recording. Names and personally identifiable information of participants were not included in transcripts, although interviewee attributes, such as organization name and type, were used during analysis.

The study sought to identify the position of organizations in the network and understand network gaps, successes, challenges, and actors' perspectives on possible solutions to achieve rural water sustainability. Additionally, the study wanted to identify stakeholder priorities for interventions to increase rural water services sustainability.

## Methodology

The stakeholders selected for the exercise came from the Kitui County WASH Forum. A variety of stakeholders comprise the Forum, which meets every quarter to deliberate, discuss, and plan around county WASH issues and the progress of water-related interventions and projects. The selection of stakeholders for study participation focused on accurately representing the full range of Forum groups — government entities, NGOs, private sector actors, development partners, academic institutions, and others. Consistent Fora attendance was also a factor. The selection of organizations' high-level officials ensured those involved in the interviews were knowledgeable of their organization's interactions with other stakeholders in the county.

Report terminology includes:

- The interchangeable use of stakeholder, actor, and organization.
- Interviewee refers to interview session participants.
- An organization on the network maps is a node.

Two data collection activities occurred during a single interview session with each stakeholder. In the first, interviewees mapped out their networks, indicating other stakeholders their organizations interacted with in the past year across four relationship types: information, skills, authority, and resources. Second, interviewees used a provided list of active organizations in Kitui County's water sector to also indicate additional organizations with which they interact. Annex A provides the details of the procedure. Network maps were analyzed and interpreted using relevant metrics through Gephi and NodeXL software programs.

After the network mapping activity, stakeholders participated in a short interview regarding their perspectives on rural water sustainability. Questions included:

1. In your opinion, what aspects of this network are working well in sustaining water services in the county?
2. What are some of the main problems in sustaining water services in the county?
3. What ideas or recommendations do you have for solutions to these problems?
4. Of the solutions you mentioned, which do you consider to be the most important?
5. If that solution were to occur, can you walk me through what would happen next?

The interviews were recorded, and the audio was transcribed with the permission of the interviewees. Transcription analysis was performed using the qualitative analysis software, Dedoose. Transcript excerpts were organized into pre-determined high-level categories called "parent codes," including:

- **Questions:** the specific question the interviewee is answering in the excerpt.
- **Factors:** emergent components or aspects of the rural water system described by interviewees (e.g., coordination, capacity building, finances).
- **Actors:** any person, organization, or government entity mentioned by the interviewee.
- **Actions:** descriptions of specific activities undertaken by mentioned actors.
- **Interactions:** descriptions of interactions between factors, further coded for dynamics (descriptions of a time component to an interaction) and polarity (descriptions of the impact of changes in one component on another).

- **Quotes:** any interesting or noteworthy quotes from interviewees.

Analyses considered how frequently interviewees mentioned different factors, the specific factors they considered most important for achieving sustainable water services, and disaggregation of factor mention frequency by interviewee attributes, such as organization type.

SWS conducted a validation workshop to verify the study's preliminary findings with participants and incorporated feedback from the event into the final analysis and report. Annex B presents the validation workshop report.

## Results

### Key Findings from Analysis of the Organizational Network Maps

#### Participation in the Study

Twenty-five interviewees participated in the study; eight represented NGOs and seven were sub-county water officers. The remaining interviewees represented other government entities, water service providers, a development partner, an academic institution, a social enterprise, and a private sector company.

*Table 1 Distribution of Interviewees by Organization Type*

Organization Type	Number of Interviewees
NGO	8
Sub-County Water Office	7
County Water Directorate	2
National Government Agency	2
Water Service Provider	2
Academic Institution	1
Development Partner	1
Private Sector	1
Social Enterprise	1

Notably, the study identified a total of 75 organizations working in the county. This added 50 organizations to the 25 organizations initially identified that participate in the WASH Forum. Further analysis indicated that the additional organizations fell into two broad categories: those that attend the quarterly WASH Forum meetings inconsistently and those that never attend. On the one hand, the mandates of some of the identified entities might not necessitate they be part of the WASH Forum (for instance, the national treasury, which has a mandate that includes formulation, implementation, and monitoring of macro-economic policies involving expenditure and revenue). On the other hand, the involvement of other entities in the Forum might be dependent on their programming cycles and the relevance of the Forum meeting agenda topics. The county government department of water, in collaboration with the WASH Forum participants, can identify and reach out to the relevant organizations to bring into the Forum.

#### Information Network Analysis

The overall information network map shows a diverse collection of stakeholders in the county, including government, NGOs, private sector actors, development partners, water service providers (formal and community-based), social enterprises, community groups, academic institutions, and faith-based entities, with interactions of varying frequency (weekly, monthly, quarterly, and yearly).

There are high levels of connection among network of actors, primarily between the Kitui County WASH Forum organizations, and several peripheral organizations whose roles need further analysis to assess their potential WASH Forum participation. Figure 1 shows the information exchange network map of actors in the county.

Notably, all actors included in the study have an information-sharing relationship. In other words, every organization in the network participates in some form of information exchange. Connections are not ubiquitously present for other relationship types (skills, authority, and resources).

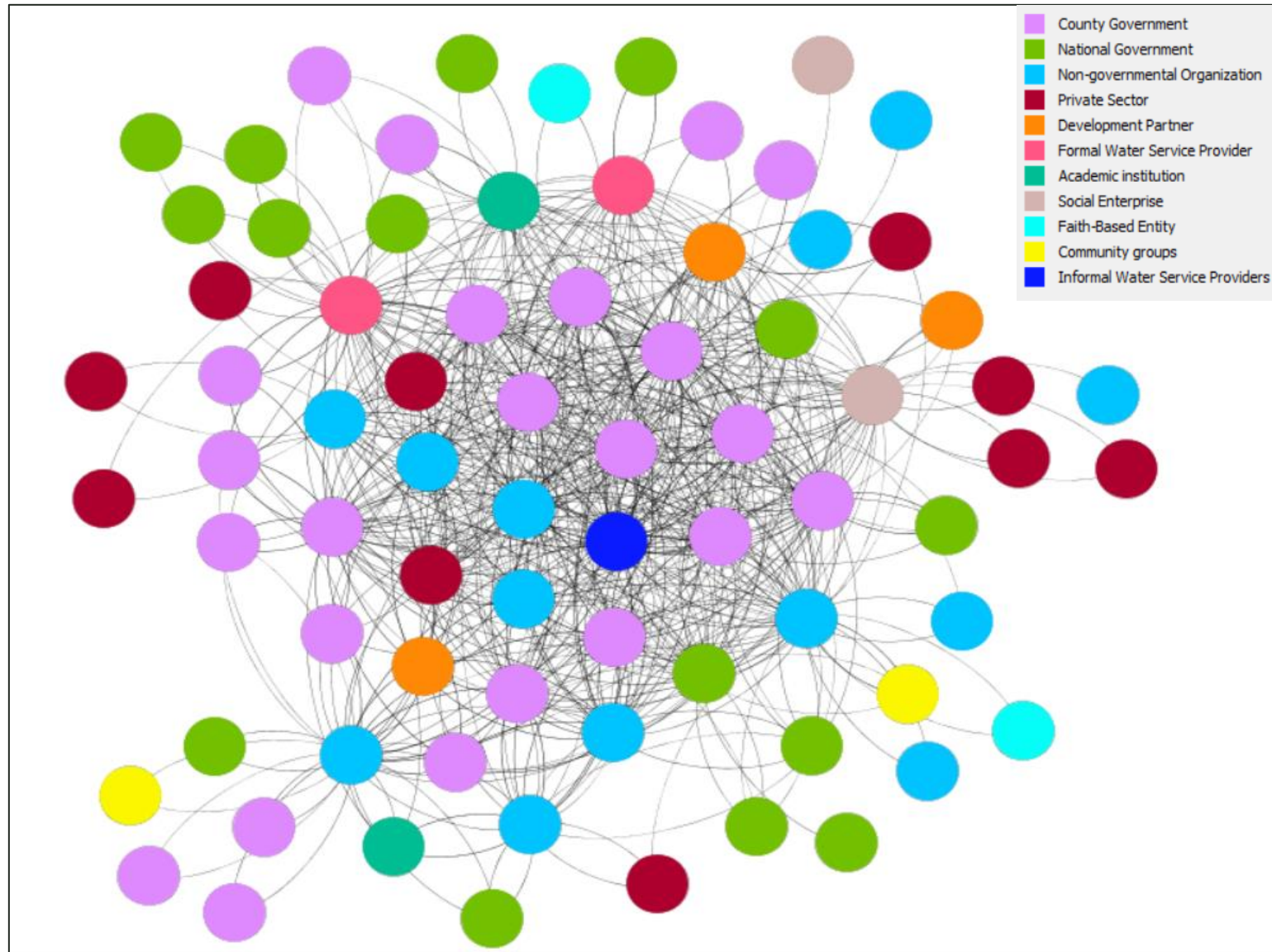


Figure 1 Visualization of the Overall Information Network Map Across All Frequencies of Interaction

### *Bridges/Connectors*

The measure “betweenness centrality” identifies actors who serve as bridges within the network. Betweenness centrality measures the number of times a node lies on the shortest path between other nodes and can identify actors who influence information flow within a network. The actors identified as information bridges are key messengers providing information to organizations that are not connected to many others. However, actors who appear as bridges within the network can also be bottlenecks, as they can limit information sharing between the peripheral and core network actors. The five organizations with the highest betweenness centrality include two NGOs, the WASH coordination office, a formal water service provider, and a social enterprise.

The network maps indicate the social enterprise is playing the role of a “bridge,” exchanging information with three private sector actors who are not linked to any other actors in the network. The social enterprise is therefore viewed as the only entity that can link the private sector actors to the rest of the network, including the core network made up of WASH Forum participants. The social enterprise can advise the private sector actors on how to expand their reach within the network, while the private sector actors can leverage the social enterprise’s position, relationships, and contacts within the network to further their work in the county.

### *Organizational Clusters*

Using the NodeXL software, groups or clusters of stakeholders were determined based on the Clauset-Newman-Moore cluster algorithm that automatically calculates organizations showing a high level of interaction. Five unique groups of stakeholders, shown in Figure 2, were identified within the overall information network. The size of the nodes in the figure demonstrates their level of betweenness centrality. Each group is formed around a bridge organization with high betweenness centrality. Groups demonstrate a high level of information sharing within themselves, but some groups on the periphery are formed solely because of interactions by isolated actors with a single bridging actor.

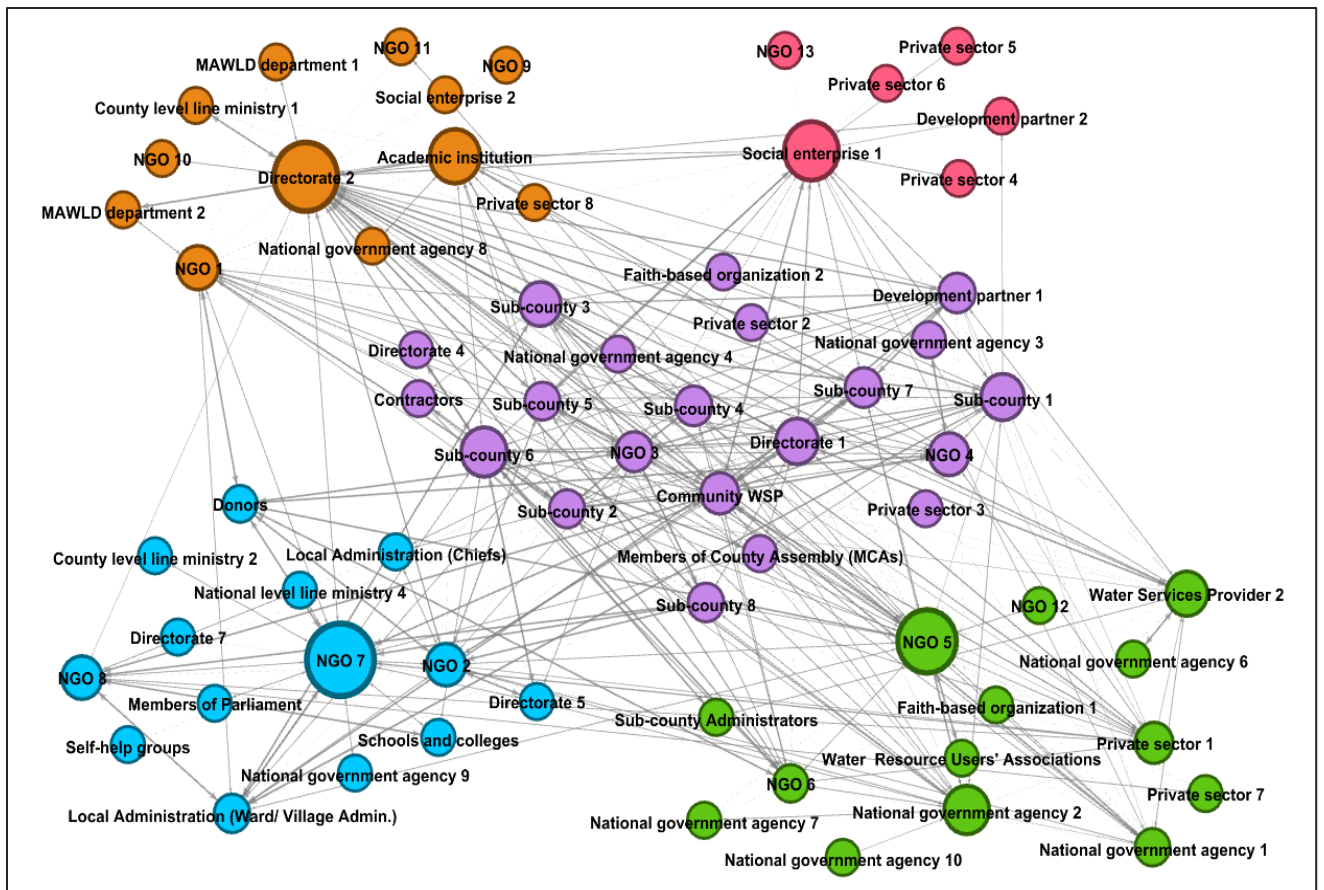
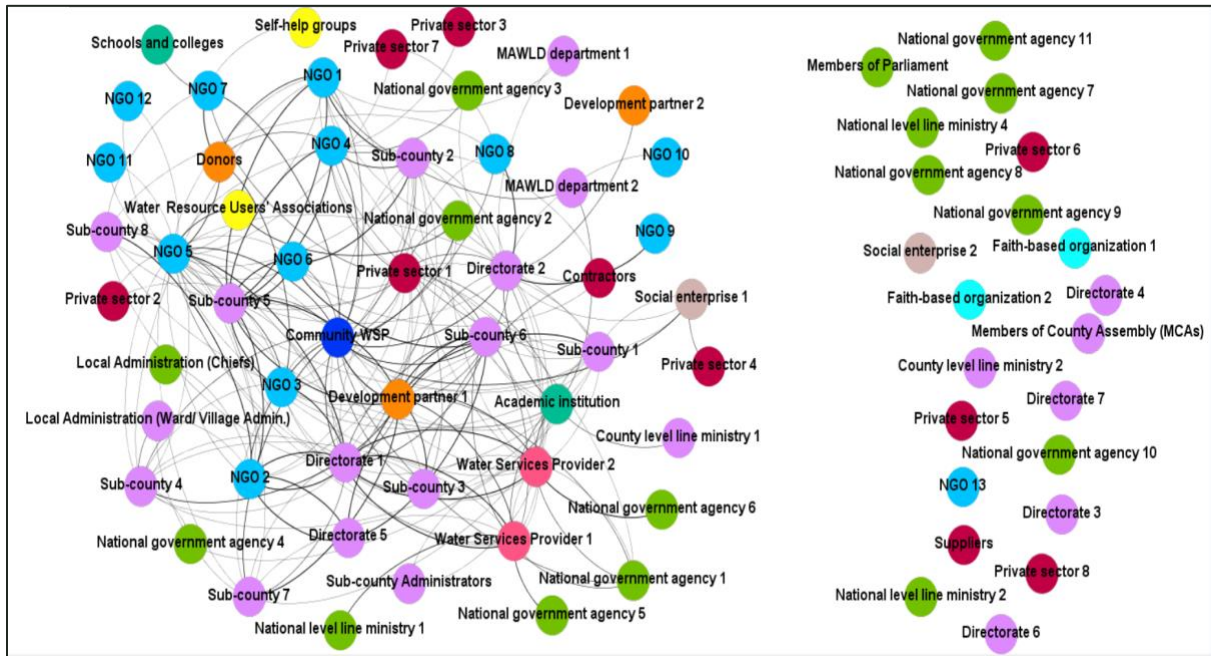


Figure 2 Visualization of Groups (Represented by Color) Within the Larger Information Network

Notably, Group 1 (purple) has the highest representation of county government entities and Group 3 (blue) has NGOs solely working in Kitui South Sub-county. Within Group 4 (orange), the County WASH Coordination Office has the highest level of betweenness centrality. It is followed by an academic institution which bridges two actors (a water equipment and product supplier and a national government coordination office) to the rest of the group. Group 5 (pink) has one development partner and three private sector organizations that are not connected to any other organizations in the network, except through a social enterprise that provides repair and maintenance services for rural water infrastructure. The groups indicate there is higher interaction among similar organization types or, in the case of Group 3, those working in the same sub-county, suggesting common attributes can contribute to interactivity.

### Skills Network Analysis

Skills relationships — where one actor imparts skills to another through either the provision of consultancy services, training, coaching, or co-development — do not exist among all organizations in the network. Figure 3 presents the overall skills exchange network map. The organizations without a skills exchange relationship are completely detached from the core network and are represented by the nodes on the right-hand side of the network map. Of the actors absent from the skills network, 36 percent are national government entities (ministries and agencies), 27 percent are county government, and 18 percent are private sector actors. To some extent, this finding speaks to the nature of the organizations; relationships involving skill exchanges are not part of their mandate. Although in some cases the development of skills relationships could help strengthen the network, particularly the integration of the NGO, faith-based organizations, and some private sector and county government organizations missing from the skills network. The participation of sub-county water offices and most NGOs in skill exchanges is an encouraging finding, not only because of their interaction with communities but also because of their willingness to learn from each other in many cases.



*Figure 3 Visualization of the Overall Skills Exchange Network Across All Frequencies of Interaction (color of nodes corresponds to the organization type as per legend provided in Figure 1)*

In-degree and out-degree are network analysis metrics that were used to analyze the skills network and identify which actors are receiving or providing skills training or development, respectively. Community schemes are receiving skills training and resources from the highest number of actors in the network. One private sector actor, whose work entails supply of water equipment and products, appears to be providing skills training to the highest number of actors within the network (high out-degree). It is worth noting that as the predominant equipment supplier in the Kitui County water sector, the skills this actor shares are the installation, operation, and maintenance of equipment sold. Skills inflow and outflow are represented in Figure 4 and Figure 5, respectively.



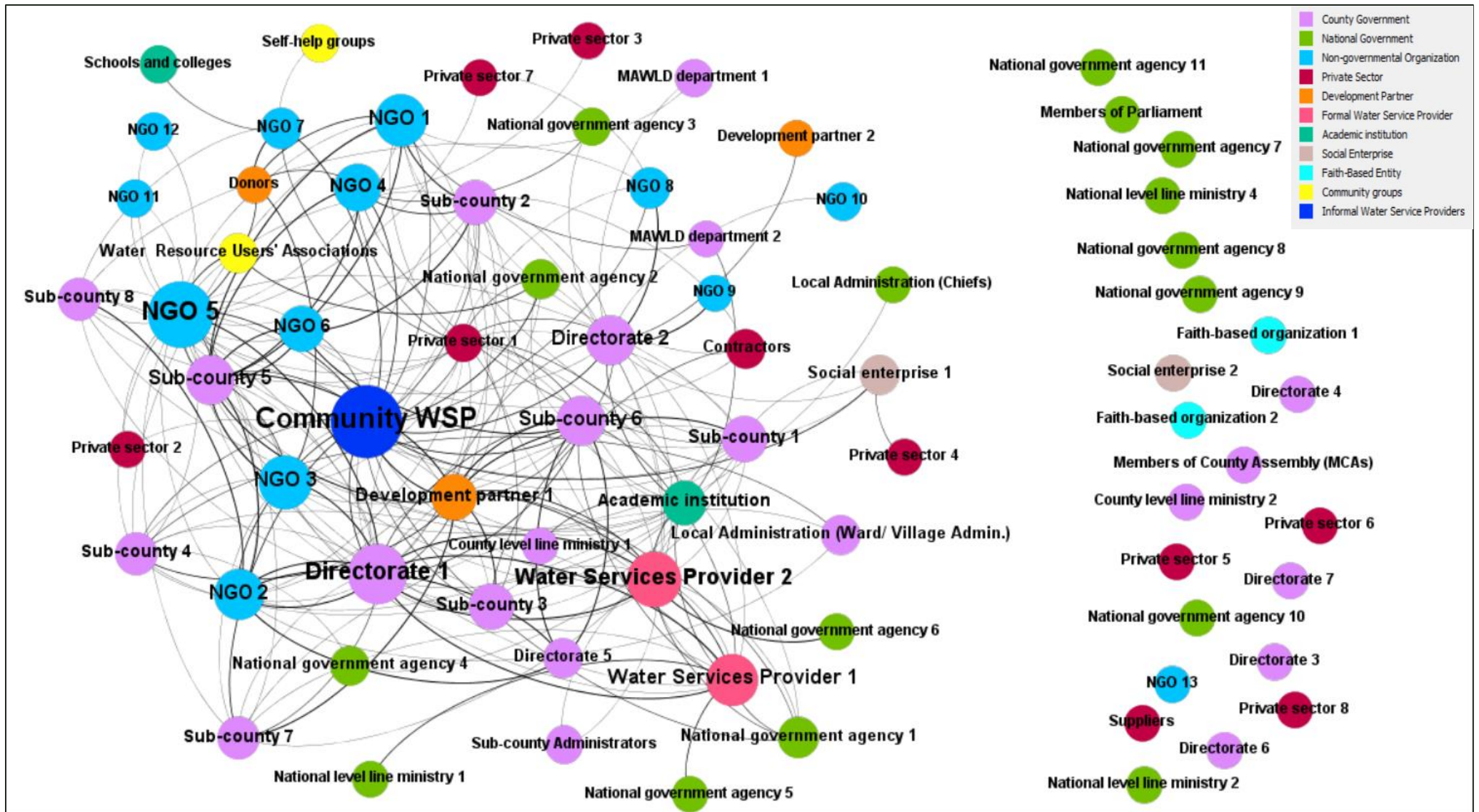


Figure 4 In-Degree: Skills Inflow Within the Network (the node size is indicative of the number of actors from which an actor is receiving skills training)

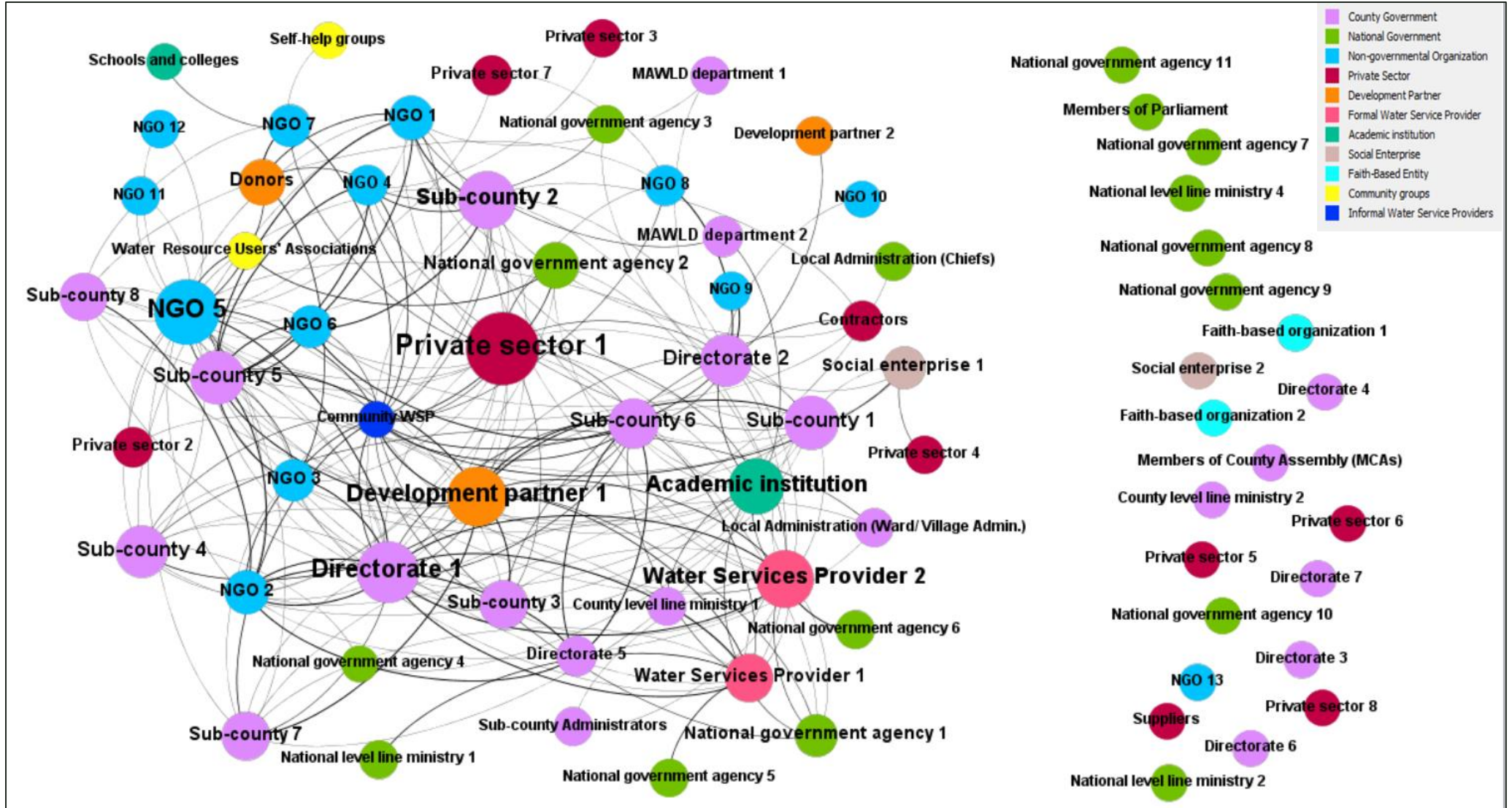


Figure 5 Out-Degree: Skills Outflow Within the Network (the node size is indicative of the number of actors to whom an actor is providing skills training)

### Authority Network Analysis

The research defined authority by two categories: influence and control. Influence refers to the ability of an actor to indirectly impact or sway the behavior and interests of another actor. Control refers to the ability of an actor to enforce consequences for non-compliance. This kind of relationship does not exist among all of the WASH actors in the county.

Analysis of this network is guided by two metrics:

- **In-degree:** the number of actors who influence or have authority over an actor.
- **Out-degree:** the number of actors that an individual actor influences or has authority over.

The analysis identified private sector actors, NGOs, social enterprises, and formal water service providers as the most influential over the majority of actors within the WASH Forum. This is in contrast to national government agencies, the county directorate of water resources and services, and sub-county water offices, which have authority over a majority of actors within the WASH Forum. The findings suggest that organizations comply with government requirements out of necessity, but more willingly make self-imposed changes based on interactions with organizations that do not have direct control over them. Details of specific organizations and their relationships within the authority network are withheld due to the sensitive nature of such information, particularly around government relationships.

### Resources Network Analysis

The study defined a resource relationship as one in which an actor gave or received resources in the form of money or equipment. The metrics used to analyze the network were in-degree and out-degree, where in-degree indicates receipt of resources and out-degree indicates the provision of resources. Figure 6 shows the resources network with node-size based on in-degree. It shows that community-run schemes receive resources from the greatest number of actors within the network – an understandable finding since these schemes are the focal point of Kitui’s rural water sector. Figure 7 shows the same network with node-size based on out-degree. It shows an office at the county directorate, a development partner, and an NGO provide resources to the most organizations in the network. Private sector actors who receive payments for goods or services were removed from the network map to focus on resource flows separately from commercial exchanges.

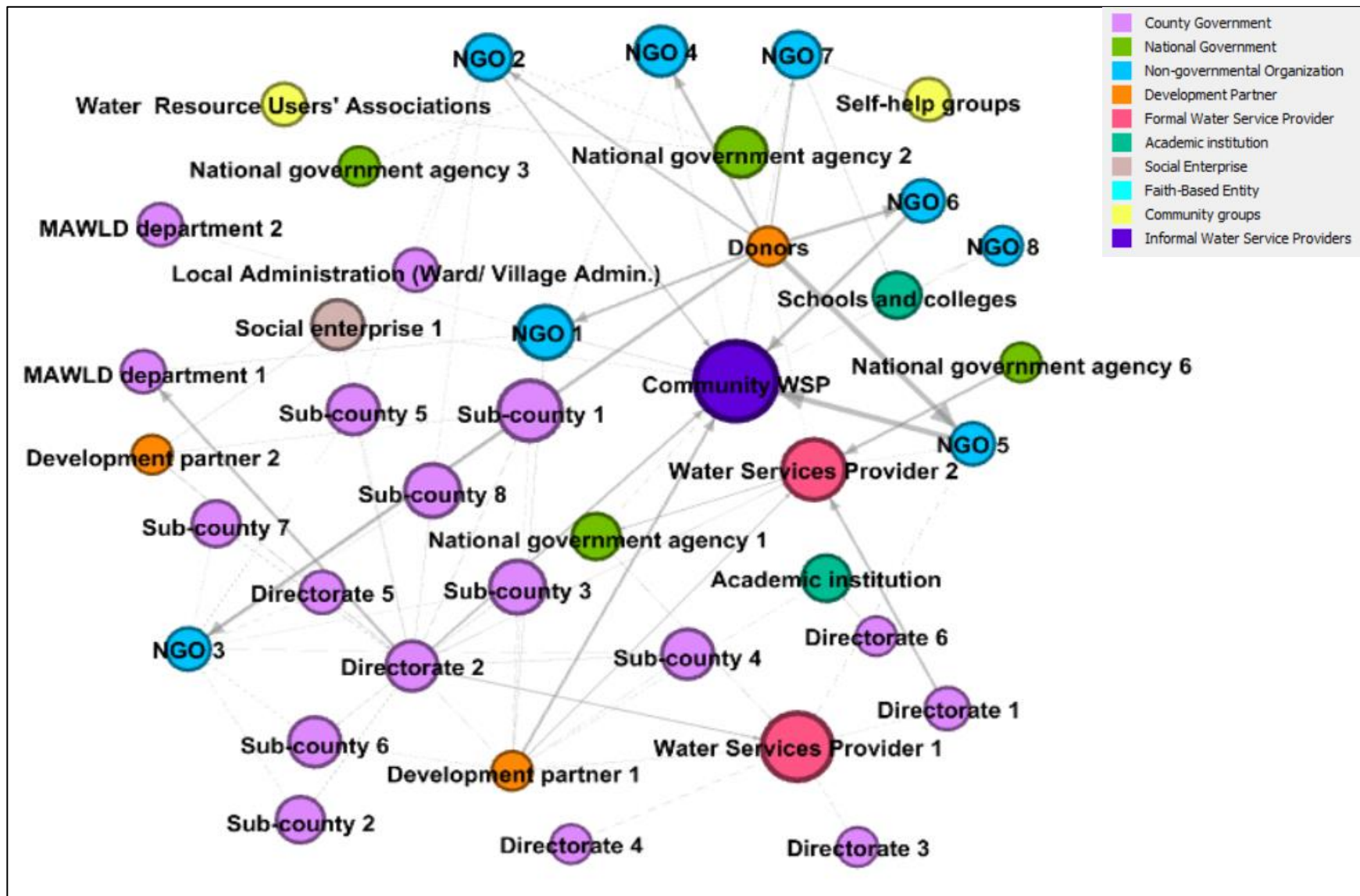


Figure 6 In-degree: Resource Inflow Within Network (the node size is indicative of the number of actors bringing in resources)

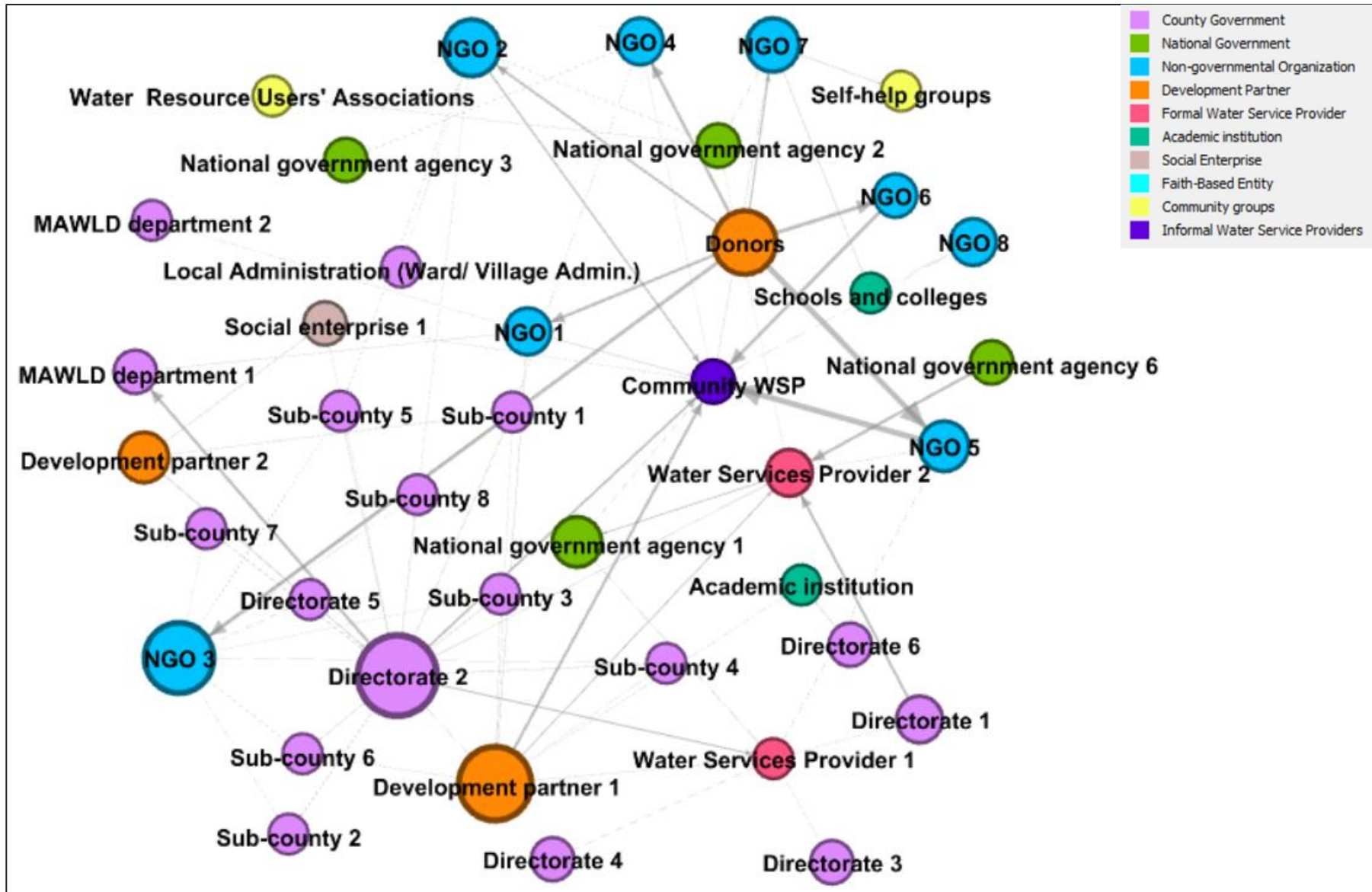


Figure 7 Out-Degree: Resource Outflow Within the Network (the node size is indicative of the number of actors being given resources)

## Qualitative Analysis of Stakeholder Understanding Interviews

A qualitative analysis of the interview transcripts for each organization looked for emergent factors, or aspects of the Kitui County water sector that arose from interviewee responses to questions about sector successes, challenges, and recommendations. “Mention frequency” is a metric to determine the most commonly mentioned factors across all stakeholder interviews. It is the number of mentions a particular factor receives divided by the total number of mentions all factors receive in response to a question. Mention frequency is an indication of the relative importance of each factor, based on the perspectives of stakeholders representing different organizations in Kitui County’s water sector. Table 2 compiles the emergent factors related to successes, challenges, and recommendations identified in the interviews, their definitions, and the mention frequency of each.

## Successful Aspects of Current Network

When asked what aspects of the network were working well, the most common responses involved coordination, interaction, and relationships among stakeholders (42 percent). Respondents often mentioned partnerships between government and non-governmental entities, sharing of information between organizations, and understanding of mutual challenges as beneficial to the network. Nearly one third (32 percent) of respondents specifically mentioned the quarterly WASH Forum as a platform for sharing information and networking. In most cases, respondents mentioned multiple factors that were working well, such as the government and donors funding projects and actors’ initiative (participation and internal motivation). Nevertheless, the majority of respondents (83 percent) mentioned some aspect of coordination, interactions, and relationships between sector actors. The remaining respondents mentioned infrastructure development and community capacity building work of specific actors as factors that were working well.

Table 2 Emergent Factors from Interview Transcripts

Factor	Definition	Mention Frequency from 25 sources (to nearest %)		
		Successes (n = 66)	Challenges (n = 132)	Recommendations (n = 115)
Capacity Building	Strengthening the ability of a population with respect to the water sector. This may include training or knowledge transfer activities that go beyond community engagement.	6%	6%	14%
Community Engagement	Interacting with community members as a means of information and knowledge exchange.	5%	1%	3%
Coordination	Organized interaction between actors toward a common goal, including information sharing.	21%	3%	4%
Documentation	Records or materials that provide necessary information about various aspects of work.	5%	2%	2%
Energy Source	The source of energy used to power a water scheme, such as diesel and/or solar.	0%	2%	3%
Equipment	Physical tools or components required for a water scheme to operation, including spare parts.	2%	3%	3%
Ethics or Integrity (lack of corruption)	Conducting work to high moral and ethical standards.	3%	6%	3%
Finance or Funding	Money to support water system improvements, including references to external funding and tariffs.	8%	16%	16%
Implementation	The installation or rehabilitation of water schemes, including the execution of improvement initiatives.	2%	1%	1%
Influence or Authority	The ability of an organization to impact the behavior of another.	2%	1%	1%
Infrastructure	The physical components of a water system, such as a well, storage tank, and/or pipeline.	3%	1%	2%
Initiative	Internal motivation within actors to accomplish a task. Includes references to commitment, dedication, passion, ownership, etc.	6%	5%	2%
Land Ownership	Issues regarding land rights and land usage, private land allocation for public facilities, etc.	0%	2%	1%
Legislation, Regulation, Policy	Rules enforced by a regulatory authority that must be adhered to.	2%	5%	5%
Maintenance	The upkeep of a water system.	3%	5%	5%
Management	Overseeing the proper operation of the water system, including post-infrastructure management of implemented schemes.	5%	14%	18%
Monitoring	Awareness or data collection of a water scheme's functionality and operating parameters.	0%	3%	4%
Nature	The impact of the environment, climate, or weather on the water scheme.	0%	2%	1%
Politics	Activities associated with governance, but also the influence of political objectives on decision-making around water supply.	2%	4%	3%

Procurement	The process of purchasing or obtaining resources or equipment.	2%	1%	0%
Relationships or Interactions	Interactions between actors, either the interviewee's organization and another, or a description of relationships between other organizations.	21%	2%	2%
Roads	Means of accessibility and mobility.	0%	1%	1%
Technical Knowledge	Knowledge of scientific and technological aspects of managing water systems.	2%	5%	2%
Transportation	Mobility from one location to another.	2%	2%	0%
Water Access	The availability of water when needed.	2%	4%	2%
Water Quality	The characteristics of the water.	0%	3%	2%
Water Source	Ground and/or surface water resource supplying a scheme.	2%	2%	1%



### Challenges in Delivering Sustainable Water Services

Interviewees mentioned factors attributed to problems in the sector twice as frequently as factors that were working well. Stakeholders also mentioned a greater variety of problems than factors that were working well. The most commonly mentioned problems related to financing and funding allocations (16 percent) and water schemes management (14 percent). Other factors mentioned were the capacity of the community (6 percent), corruption (6 percent), and lack of maintenance (5 percent). These are interconnected factors and, in many cases, respondents described mismanagement or embezzlement by unmotivated, inept, or corrupt community water committees as the main problem with sustaining water services. However, descriptions of financial challenges also mentioned the lack of funding to support water systems maintenance, high operating costs, and the low economic status of communities unable to pay the necessary tariff levels for the water committee to break even.

### Recommended Solutions from Stakeholders

Responses regarding solutions to challenges focused on:

- Improved models of water scheme management (17 percent),
- Increased or re-allocation of funds — often to the interviewee’s organization (16 percent), and
- Capacity building (14 percent).

When explicitly asked about the most important solution to sustaining water services, management and capacity building each constituted 19% of the factors mentioned by interviewees. Perspectives on improvements to the management of water systems varied. Some recommendations focused on increasing the capacity of community water committees to grow their scheme management capabilities. Other recommendations deviated from the community-based management model and suggested private companies should manage schemes. Another variant was the devolution of funds to the sub-county water office to increase officers’ capacity to oversee community schemes. One water service provider recommended the use of scheme managers staffed by the utilities to oversee a few water systems in a region with support from a central control point. These recommendations touch on the need for levels of accountability for water system management.

One development partner noted the difference between the education and water sectors. Education has institutionalized levels of management, such as parent-teacher associations, head teachers’ associations, and district education officers, up through the levels of government. In comparison, water systems are expected to be solely managed by communities without established levels of accountability for scheme management.

Based on the recommendations, interviewees were asked for subsequent theories of change. Recommendations for improvements to scheme management focused on the long-term shift of rural water schemes into the mainstream sector where the rules and regulations currently governing the urban utilities would apply. This shift would enable rural schemes to be adequately monitored and controlled, improving accountability. Recommendations for capacity building mostly had shorter-term theories of change centered around improving a community’s ability to conduct repairs when necessary or training mechanics to do so. Longer-term theories related to capacity building emphasized reducing community reliance on donors and generating a sense of ownership to improve the sustainability of

services. Subsequent outcomes from both management-related and capacity building-related recommendations mentioned that improved functionality of water points would reduce walking distances for rural communities, create time for economic activities, and contribute to overall societal well-being.

### Relative Importance of Factors to Stakeholders

Issues pertaining to management, capacity building, and finance were mentioned more frequently in the interviews than any other factors. Table 3 shows the average number of times these factors were mentioned in an interview, disaggregated by the interviewee’s organization type. The academic institution, NGOs, and county government directorates mentioned capacity building most frequently, while water service providers mentioned management and finance. The data illustrates the relative importance of the most frequently mentioned factors to different types of organizations.

*Table 3 Top Factor Mentions by Organization Type*

Organization Type	Average Number of Mentions Per Interviewee		
	Management	Finance	Capacity Building
Academic Institution	16	0	16
Directorate	20	16	16
National Government Agency	16	8	4
NGO	21	17	15
Private Sector	8	16	8
Social Enterprise	16	24	0
Sub-County	14	21	13
Water Service Provider	32	36	8
<b>Total</b>	<b>143</b>	<b>136</b>	<b>80</b>

### Stakeholder Priorities for Achieving Rural Water Sustainability

Stakeholder perspectives on the factors they view as most important for achieving rural water sustainability in Kitui County were collected during the qualitative interviews. Nine thematic priorities were identified from the interviews (see Table 4). Figure 8 presents a visualization of the priorities mentioned per actor type. It appears the priorities around the need for monitoring of water schemes align at the county directorate (headquarters) of water. However, this does not align with the sub-county offices priorities. Ideally, the sub-county water offices should cascade the directorate’s agenda or interests to the sub-county level. This misalignment could slow progress toward achieving the county’s objective of ensuring water access to all its residents. However, identifying this misalignment creates a starting point for county officials at all levels to discuss which priorities will support progress toward sustainability within the county’s rural water sector.

Table 4 Thematic Priority Areas for Increased Likelihood of Sustainable Rural Water Service Delivery

Rank	Priority Factor
1	Capacity Building
2	Management
3	Coordination
4	Monitoring
5	Finance
6	Community Engagement
7	Water Source
8	Investigating Failure
9	Energy Source

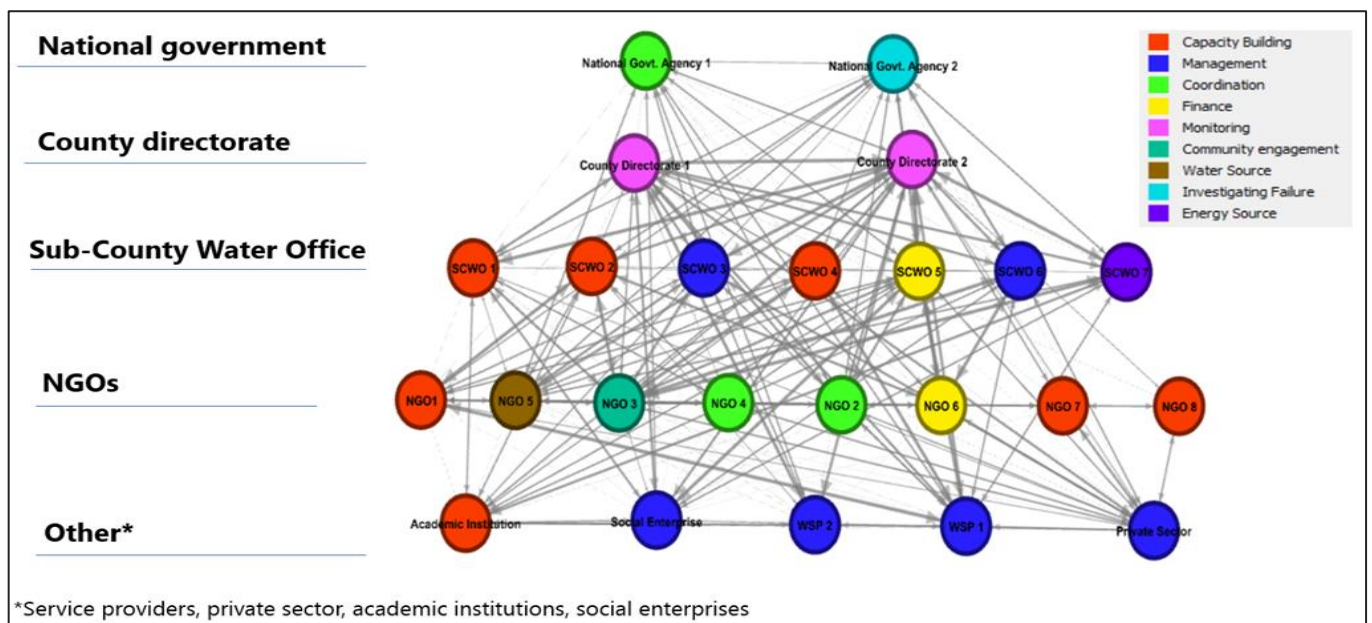


Figure 8 Actors' Perspectives on Priorities for Rural Water Sustainability in Kitui County

Generally, the priorities of the members of the WASH Forum are quite varied. However, capacity building and management stand out as the most popular priorities among the actors. The WASH Forum would benefit from some level of alignment of priorities as this would largely inform decision making and enhance coordination among the actors.

Three out of seven sub-county water officers prioritized the need for capacity building of the water committees. This aligns with the sub-county water officers' mandate of regular training of water committees within their areas of jurisdiction and is indicative of the recognized need for continued capacity building of the committees for better management of rural water supplies. Further analysis of the amount of skill development (out-degree) the organizations prioritizing capacity building are offering to the entire network found only one of the actors with this priority among the top five actors with a

high out-degree. This actor, a sub-county water office, is providing skills training to 11 out of 40 actors in the entire skills network. This finding shows the priorities of organizations may not be reflected in their relationships with other actors in the sector.

## Network Analysis Validation Workshop

SWS held a validation workshop of the study findings to discuss and verify the findings and conclusions of the study. Key observations made at the workshop were:

- The two levels of government are not very visible in the sector, with the county government having a low profile in terms of providing resources for the sector.
- The national government's role is not very explicit.

It was also observed that a significantly high number of WASH actors are working in the county, most of whom are not involved in the WASH Forum. The additional actors identified can be profiled by the county government department of water and the Forum participants to identify those relevant for inclusion. Annex B provides a detailed report of the key outcomes of the validation workshop.

## Conclusion

Coordination among organizations in Kitui County's water sector is complex, but the network analysis of stakeholder interactions and perspectives revealed opportunities to improve coordination and alignment. The variety of actors identified, within and outside of the WASH Forum, presents an opportunity to pool resources and expertise to facilitate progress toward achieving sustainability of water service provision in Kitui County.

Information exchange appears to be the only relationship existing across all actors. While organizations represented as information bridges on the network maps can aid information flow in the network, they can also restrict flow, which can lead to higher levels of disconnect between peripheral and central actors in the network. Given the potential importance of these organizations, their roles should be better understood to determine how they influence the flow of information in the network. SWS will organize quarterly follow-up meetings with key stakeholders identified through the network analysis.

Community-run schemes were seen by the greatest number of other actors in the network as needing resources (finance and equipment) and skill development, implying that many actors see the need to support the improved operation of rural water schemes. Skill development support aligns with stakeholder interview findings, which identified lack of community capacity as a challenge. However, the significant financial support to the communities in the face of other challenges related to poor financial management by scheme operators is an issue of concern. To maximize the value of investments to schemes and support financial sustainability, proper governance structures, including accountability mechanisms, should be developed at the scheme management level.

Generally, the priorities of WASH Forum members are quite varied. However, capacity building and management stand out as the most frequently mentioned priorities among these actors. The county directorate (headquarters) of water aligns on the need to monitor water schemes. There is, however, misalignment with the priorities of the sub-county water offices. Ideally, the sub-county water offices should cascade the directorate's agenda or interests to the sub-county level. A potential outcome of the misalignment could be slow progress toward achieving the county's objective of ensuring water access to all its residents.

Qualitative analysis of stakeholder perspectives reveals that coordination and interactions among organizations are viewed to be working well. Finance challenges are a significant concern, both in terms of mismanagement of funds at the community level and the difficulties community-run schemes face to break even given high operating costs. Alternative management models and re-allocation of funds are seen as necessary solutions, to shift the responsibility of water system management from communities to professional service providers.

The validation workshop presented an opportunity for actors to deliberate on strategies and approaches for improved coordination within the sector. Participants identified better information-sharing practices among actors and clear governance structures as key interventions for improved coordination and alignment of actor interventions. These findings will be used to support discussions among WASH actors regarding better coordination strategies within the sector in the county.

# Annex A: Interview Methodology

## Part I: Introduction

The United States Agency for International Development (USAID)-funded Sustainable WASH Systems Learning Partnership (SWS) is seeking to develop, demonstrate, learn, and share findings related to systems-based approaches to improving the sustainability of WASH services delivery. In Kenya, SWS's work is conducted in Kitui County and focuses on understanding the WASH system, which is made up of actors and factors that influence WASH service sustainability. SWS partners the University of Oxford, UNICEF, Rural Focus Limited, and the University of Colorado at Boulder (UCB) are conducting a study to understand the network of stakeholders and their interconnectedness.

We are asking you to participate in a brief interview to draw the network of your organization or stakeholder and identify both the benefits and challenges of this network. The interview should take approximately 30 to 40 minutes.

In the first step, we will draw a network to understand who you interact with and how. The completed network will look like this:

*[The enumerator shows an example of a complete network (Figure 9), then produces the flip chart paper to be used for the interview. The enumerator then writes the name of the stakeholder interviewee on a post-it and places it in the center of the flip chart.]*

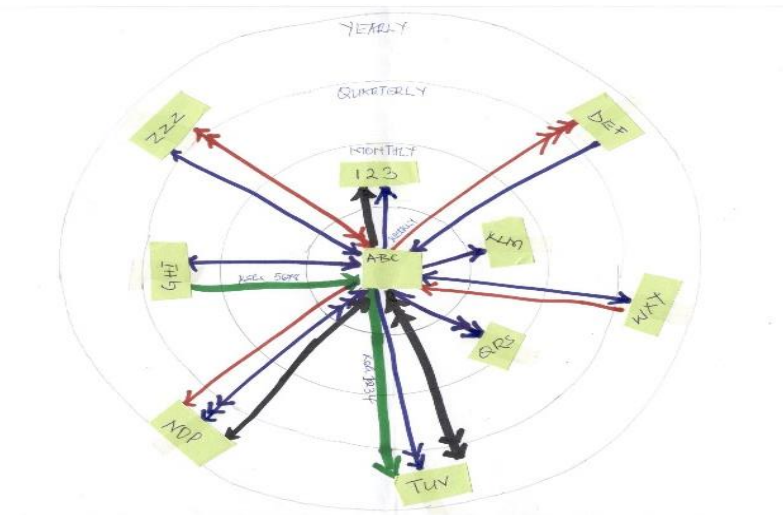


Figure 9 Example of Completed Network

First, let us begin with your contact information for any necessary follow up. We will not share your contact details outside of the analysis team.

*[The enumerator should then record, on the back of the flip chart, the following information for the respondent.]*

- First name:
- Last name:
- Organization:
- Position:
- Mobile phone number:
- Personal email address:

Now, please select the term that best describes your organization or stakeholder type and the scope of your work.

*[Answers are selected from the list of stakeholder types and scope presented previously and written on the post-it with the name of the stakeholder interviewee.]*

## Part 2: Network Mapping

*[The enumerator then presents the list of stakeholders involved in the study and asks the participant to identify whom they have had information, skill, resource, or authority relationships with over the past year. These can be either incoming or outgoing ties.]*

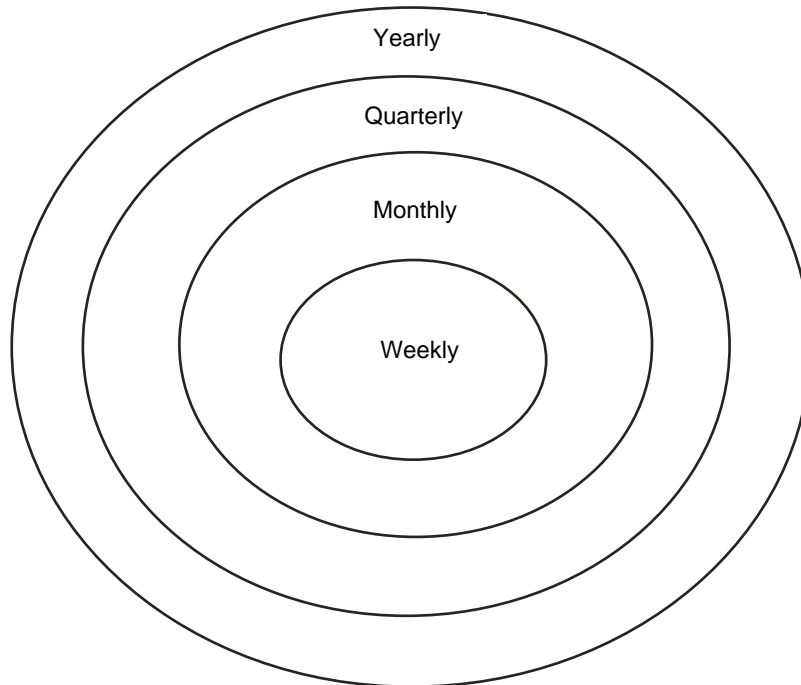
From this list of stakeholders, please identify whom you have had a relationship with in the past year. This can be anyone you **share information with, give or receive support from, pay or are paid by, or who you influence or control** in the Kitui County WASH sector. Please also identify if any important stakeholders are missing from this list.

*[As the participant identifies each stakeholder, the enumerator writes the name on a post-it and places it on the flip chart paper. Responses are expected to include both stakeholders already identified in the network and any others perceived to be important.]*

*[The flip chart paper presented to the respondent has concentric circles with different time scales labeled Weekly, Monthly, Quarterly, and Yearly, as in Figure 10 below.]*

Please now move the stakeholders on the flip chart to indicate how often you interact. Is it weekly, monthly, quarterly, or only once within the past year?





*Figure 10 Flip Chart Paper for Network Mapping*

*[The participant should then move the post-its that label stakeholders identified to the appropriate ring on the flip chart paper. It is ideal if the participant does this directly instead of the enumerator doing it on the respondent's behalf.]*

*[The enumerator then presents the tie categories, starting with information. For each tie category, the participant is handed the appropriate colored marker and instructed to draw their ties. The legend showing the categories (Figure 11) is presented to the respondent, and the enumerator describes the tie categories and clarifies that the number of arrows corresponds to the strength of the tie or relationship. Any questions from the respondent are answered as appropriate.]*

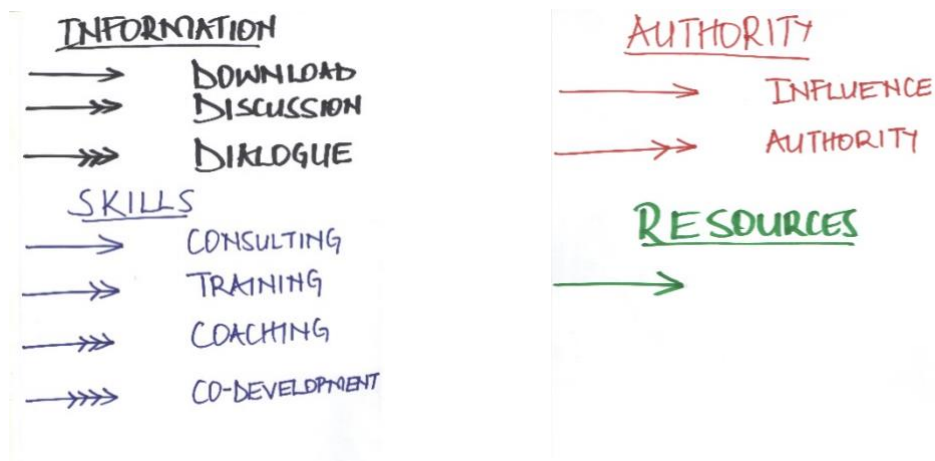


Figure 11 Legend Showing the Tie Categories

We will now draw the relationships between you and the stakeholders you identified. We will start with information, followed by skills, resources, and then authority. We will use colors to indicate the relationship type, arrowheads to indicate the direction, and the number of arrowheads to indicate the strength of the relationship. Let's start with this stakeholder. What is your relationship here?

*[The process continues until relationships for each tie type for each stakeholder have been discussed. For resource ties, the enumerator should also write down the estimated annual size of the resource flow in Kenyan shillings.]*

Please check the network you have drawn and feel free to make any changes. Does anything need to be added or changed? Is anyone missing?

*[The enumerator can proceed to the final part of the interview when the participant is satisfied that the network is complete.]*

### Part 3: Qualitative Interpretation of Factors

This final part of the interview captures participant perspectives of factors affecting rural water services and qualifies the importance of particular network relationships. The interview format is a semi-structured interview consisting of four questions. Responses to are audio recorded, and enumerators are expected to make summarizing notes of key points simultaneously.

Importantly, for all questions, enumerators should encourage participants to elaborate on their responses through prompts, including “tell me more,” “and,” and simply pausing to encourage further detail. Other than necessary clarifications, enumerators should minimize specific follow-up questions that could influence responses, and instead allow participants to direct the conversation toward what they perceive as most important. If a response becomes too lengthy or redundant, enumerators can interrupt to summarize the point to ensure it is understood correctly, and encourage respondents to

move on to new points with the prompt of “what else?” Responses are not anticipated to require more than 15–20 minutes. Training on these interview techniques will be provided to all enumerators.

Finally, I would like to ask you a few questions about how this network works and about water services sustainability in Kitui County. To make sure we do not miss any points you make, we would like to audio record this part of the interview. Is it okay to record you? *[Begin audio recording.]*

1. In your opinion, what aspects of this network are working well in sustaining water services in the county?
2. What are some of the main problems in sustaining water services in the county?
3. What ideas or recommendations do you have for solutions to these problems?
4. Of the solutions you mentioned, which do you consider to be the most important?
5. If that solution were to occur, can you walk me through what would happen next?

On completion of the interview, the enumerator should thank participants for their time, and capture any further feedback, comments, or reflections from the interview. Enumerators should also photograph the drawn network and be sure the audio recording is saved correctly.

# Annex B: ONA Results Validation Workshop Report

## Objectives of Workshop

1. Presentation the ONA preliminary findings
2. Discussion and verification of the main findings and conclusions from the study

## Participants

Workshop participants included individuals from the organizations that were involved in the ONA data collection process. Selection of stakeholders for the ONA study aimed to ensure accurate representation of various the groups that comprise the county-led quarterly WASH Forum — government entities, NGOs private sector actors, development partners, academic institutions, and others. The consistent WASH Forum attendance was also considered.

## Discussions at Workshop

A brief on SWS, as well as a reminder of the ONA data collection procedure, was presented to the participants.

The ONA findings detailing the results of the analysis across the four relationship types studied (information, skills, authority, and resources) were presented, and participants split into groups to discuss the findings.

## Key Outcomes from Discussions on Findings as presented on the Maps

1. There is a significantly large number of WASH actors in the county, some of whom are not involved in or part of the WASH Forum. The fact that information exchange relationships exist among the different WASH actors was seen as commendable and a good indication of some level of collaboration among organizations in the county.
2. The clustering of organizations within the network in the county was confirmed. One of the five information-sharing groups resulted from decentralized annual WASH forums at the sub-county level where partners co-fund the WASH Forum, review their work progress, and share their plans for each coming year to enhance collaboration and avoid duplication of initiatives.
3. In relation to resource flows, the role of the two levels of government in resource provision is not explicitly visible.

## Key Outcomes from Discussions on Findings Relating to Priority Factors for Increased Likelihood of Sustainability

Feedback from the session was as follows:

1. The respective roles and mandates of the County Directorate of Water Services and the sub-county water offices may explain their seeming misalignment around priority factors. The

oversight and decision-making roles the County Directorate plays may explain their interest in monitoring. Alternately, the supervisory and conflict resolution roles the sub-county water office's play at the sub-county level may explain their emphasis on capacity building of rural water scheme managers, adoption of alternative models for rural water schemes management, and devolvement of finances to the sub-county levels.

2. Progressing sustainability of rural water service delivery is a common agenda for all water sector organizations or actors in the county. Priorities may differ among organizations, but ultimately, interventions and priorities are aimed at the common goal of working toward achieving sustainability.
3. The outcome of the ONA study presents an opportunity for county leadership and WASH stakeholders to deliberate and decide on approaches for improved coordination and alignment to the extent these actors consider appropriate.
4. Information sharing and governance were identified as two broad areas to enhance partner coordination and alignment.

**Information sharing practices or interventions required:**

- Appropriate communication channels from the lowest administrative levels (wards) to the highest level (county).
- Goodwill and commitment by partners to share information on their interventions, areas of operation, budgets, and plans.
- The quarterly WASH Forum to be devolved to the sub-county level to allow organizations to collaborate effectively through joint planning. This would also provide an opportunity to carry out extensive follow up before sharing progress at the county level.
- Establishment of information desks and secretariats at sub-county levels and county headquarters (directorate) for partner engagement and to ensure all partners can have their activities and interventions recorded. The secretariat could also provide an opportunity to have issues of concern relating to any WASH interventions handled in a timely manner.
- Establishment of a website and database of actors and their interventions in the county.

**Governance structures required:**

- Establishment of a central point for the coordination of partners, especially NGOs
  - Formulation of a County Water Policy and Bill to entrench modalities to enhance accountability and transparency among partners.
5. Despite the agreement that different organizations have different priorities for rural water sustainability, informed by their programming and interventions, a Forum bringing together all

county WASH actors should be organized for partners to meet and reconcile their sustainability indicators so that one aligned approach to address sustainability can be developed.

6. Proper coordination also has the potential to ensure appropriate alignment of activities and interventions in the sector.
7. The major challenge to alignment is that donor funding terms and conditions may hinder integrated planning.
8. There is a need for more networking and collaboration in the sector. The sector can benefit from all actors knowing each other's activities or interventions and developing modalities of sharing resources and working on common initiatives.
9. The County Ministry of Agriculture, Water, and Livestock Development was urged by partners to request partners for any required inputs and resources to support the collaboration and coordination processes.

To learn more about the Sustainable WASH Systems Learning Partnership, visit:  
[www.globalwaters.org/SWS](http://www.globalwaters.org/SWS)

