The relationship between post implementation impact evaluation and sustainability of rural water projects in Kenya [1]

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Abstract

Increased investment in rural water supply development in the last decade by both Government and development partners has not resulted in the desired levels of service anticipated. Access to safe water is a basic human need necessary for both the wellbeing and social economic development of populations living in rural Kenya. In spite of efforts to increase access, many rural water supplies completed have either stopped operating or are not operating optimally. This has resulted in loss of service to populations living in the rural areas of Kenya. Many of the dysfunctional water sources are operated and managed by community based organizations such as Community Water and Sanitation (WASH) Committees, Water User Associations or Women groups WELL. Monitoring, evaluation and review are the mortar that holds the building blocks for sustainability together and ensure the integration of the different sustainability factors. Monitoring is an ongoing process that should cover all levels of operation (from national governments to communities) and all aspects of rural water supply programmes (e.g. policy, institutions, finances, technology and O&M).

Introduction

Lockwood and Smits (2011) further notes that in general, monitoring is integral to evaluation. During an evaluation, information from previous monitoring processes is used to understand the ways in which the project or programme developed and stimulated change. Monitoring focuses on the measurement of the following aspects of an intervention; On quantity and quality of the implemented activities (outputs: What do we do? How do we manage our activities?), On processes inherent to a project or programme (outcomes: What were the effects /changes that occurred as a result of your intervention?), On processes external to an intervention (impact: Which broader, long-term effects were triggered by the implemented activities in combination with other environmental factors?), The evaluation process is an analysis or interpretation of the collected data which delves deeper into the relationships between the results of the project/programme, the effects produced by the project/programme and the overall impact of the project/programme.

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A report prepared for Global Programs, Field Support and Research identified several factors affecting sustainability of community managed water supplies (Hodgkin et al, 1994): Institutional factors comprising national, regional, community organizations and private sector entities), and Development processes which included sign, participation, operation and maintenance and M&E.

Technological factors such as Suitability, acceptability, responsiveness, servicing needs, standards and costs. Contextual factors and forces which include factors beyond the control of institutions involved to change. They include environmental, demographic (population size, growth and distribution as well as health indicators such as infant mortality and morbidity from water borne diseases), socio-cultural, political, economic- (rate of inflation, employment opportunities, income generation) and technological- (skills available in the 13 community, availability of equipment and spare parts and training opportunities relevant to the technology used). Other factors include project organization and processes including administrative and budgeting entities.

This pertains to capacity of local and regional institutions to continue development processes that have been initiated and apply skills that have been taught. There are also donor related sustainability issues including control, collaboration, standardization, coordination, flexibility and commitment- (long term). A study into rural water supply sustainability in Niassa Province in Mozambique found that among all communities visited, finance was compromising rural water supply sustainability as most did not have any savings or collected monthly contributions for operation and maintenance (Jansz, 2011). The study further found that while Water Committees understood their responsibilities, there were variations in how these responsibilities were practiced arising from inconsistencies in capacity and capability. The study found while some Committees raised and repaired some water points due to sufficient technical capacity, others did not because those trained with technical skills had left.

Water and Sanitation Programme-Africa Region (2002) in its Field Note No.13 on rural water supplies in Malawi, Ethiopia and Kenya made some common conclusions for adoption by countries planning community operated programmes. In its assessment of community management and sustainability of rural water supplies in these countries, WSP made the following conclusions on sustainability: Community Management works well in cohesive communities where there is clarity of purpose and sense of ownership, while sustainability requires sound financial management including the authority to set tariffs. Sustainability further depends on paying staff.

A few community members cannot be expected to donate a large amount of their time over an extended period in order to maintain a public good. Schemes need Sponsors not just for technical tasks, but also management and administrative. WSP also concluded that managerial and governance training is important. Relevant, practical and well-tailored training has major impact on success. Suitable training combined with good management systems can help people with little formal education to operate and maintain complex systems. Community management systems

benefit from on-going support. Support may not be continuous but must be available when needed from local departments and NGO partners.

A study of community operated and managed water supplies in Yatta Division of Kenya found that there was a strong relationship between sustainability of community water projects and technology, managerial skills of the committee members and community participation (Mwamati, 2007). The study further suggested that there was a significant relationship between government support and legislation and sustainability of community water projects.

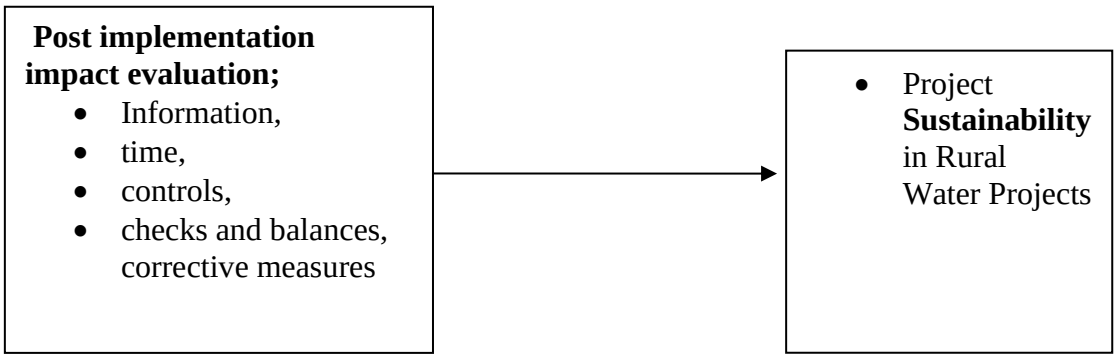
The Outcomes Logic Model Theory of Change

According to DWD (2002a) Theory of Change (ToC)-based approach to M&E, impact assessment and communications. A theory of change is the causal (or cause-effect) logic that links research activities to the desired changes in the actors that a project or program is targeting to change. It describes the tactics and strategies, including working through partnerships and networks, thought necessary to achieve the desired changes in the target actors.

A theory of change provides a model of how a project or a program is supposed to work. In other words it provides a road map of where the project is trying to reach. Impact evaluation tests refine the road map while communications help in reaching the destination by helping to bring about change. The value of testing and refining the model is that it challenges pre-conceptions, aids reflection and helps Sponsors regularly ask themselves 'are we doing the right thing to achieve the changes we want to see?'.

OLMs are first developed during the call for projects, further developed during the Project Development Workshop and then revisited periodically throughout the life of the project, in particular during the project inception period (note, this sequence applies to Ganges, Limpopo and Volta BDCs). OLMs are first developed during the call for projects, further developed during the Project Development Workshop and then revisited periodically throughout the life of the project, in particular during the project inception period (note, this sequence applies to Ganges, Limpopo and Volta BDCs).

Conceptual Framework



Target Population and Locale of the Study

The population of interest was the WASH Users of SNV funded rural water schemes Noondepen, Olturuto, Oldarpoi, Ng'atataek and Department of water all in Kajiado County. Specifically, the study will focus on rehabilitated existing shallow wells fitted with hand pumps and boreholes powered by electricity, diesel powered solar generators. For purposes of this research, the study population of 150 was constituted of SNV Sponsors engaged during the WASH Modelling process, in the supported projects and the WASH Users in Kajiado County. A sample was then selected from this population with a view to investigate the research questions.

3.4. Sampling Frame & Sample Size

For purposes of this study the sampling frame constituted a register with a list of Project Sponsorsin the 5 project localities.

In this study, 52 % of project Sponsors was selected from a total population of an estimated 150 project Sponsors and WASH Users. A 52% sample was considered representative because according to Kothari (2007) a representative sample is one that is at least 10% of the population of interest. Therefore, this sample qualifies more that representative of the target population. The 78 Sponsors helped this study to collect information that will be used to answer the study questions. This was considered appropriate for the research purposes according to (Kliem & Ludin, 2006). The total number of 78 respondents reduced sampling error and gave statistical significance for inferences to be made.

Table 1.1: Computation of Sample Size

Locality (Xi)	Population Size (X)	Sample Size (Y) =Y/100*X)
Olturuto	20	15.0
Oldarpoi	20	15.0
Noondepen	20	15.0
Ng'atataek	50	25.0
DWENR Kajiado	40	8.0
Total	150	78

DATA ANALYSIS, PRESENTATION OF RESULTS AND DISCUSSION

Response Rate

A total of 78 questionnaires were administered. Out of these, 52 were administered to sampled SNV rural committee members and users and 26 to sampled project Sponsors within the study area. The response rate was as shown in Table 1.2.

Table 1.2: Response Rate

Response Rate Group	Designated Sample size	Number Achieved	Response Rate
Project Staff	26	26	100%
Committee and users	52	47	90.38%
Total	**78**	**73**	**93.58%**

The entire designated Staff sample size of 26 was achieved, representing a 100% response rate for the household respondents. However, 47 out of 52 WASH committee members and users' questionnaires were successfully administered, representing a 90% response rate. Overall, a 94% response rate was achieved. This response rate was considered credible enough to allow for generalization of the findings to the target population besides the arriving at the conclusions of the study, as, according to Necamaya (1996), a response return rate of more than 75% is enough for the study to continue.

Validity Test Results

The Content Validity Index was used to determine the validity by adding up all the items rated using a scale of 3 and 4 by the managers and dividing the total sum by the total number of items in the questionnaires. The coefficient of the data gathered from the pilot study was computed with assistance of Statistical Package for Social Sciences (SPSS). A context of validity coefficient index of above 0.82 was obtained and this implied that the questionnaires were valid research instrument for the study.

Reliability Analysis

The measurement scales for reliability were tested using Cronbach's alpha coefficient and for an alpha of 0.7 and above, the instrument was interpreted as reliable (Cronbach, 2003). The results in the table 1.3 show Cronbach's alpha of well above 0.7 and most of it above 0.8 implying that the instruments were sufficiently reliable for measurement. The study accepted a Cronbach alpha

of 0.7 and above. Since most items total correlations were reasonably high, the construct validity of the instrument was considered reasonable (Brown, 2006)

Table 1.3 Reliability Results

Constructs	Cronbach's Alpha Values	Comments
Post implementation Impact evaluation	0.901	Accepted

Post implementation Impact evaluation and sustainability of rural water supplies

The objective of the study was to determine how post implementation impact evaluation influences sustainability of SNV supported community based and managed water supplies in the study area. This section presents and discusses post-implementation support in terms of the type, the agencies involved and the duration over which such support is provided. The section also explores the influence of the post-implementation support on the sustainability of the water supplies.

Post implementation Impact evaluation

The beneficiary respondents were asked to indicate if there exists any post-implementation impact evaluation from the water supplies implementing agencies/partners. Majority of the respondents at 66% indicated that there existed no post-implementation impact evaluation while 34% responded positively. The types of post-implementation impact evaluation provided were as shown in Table 1.4.

Table 1.4: Type of Post-Implementation impact evaluation

Type of post-implementation impact evaluation	Frequency	Percentage
No response	33	70.2
Community sensitization and organization	2	4.3
Operation and Maintenance training	5	10.6
Monitoring and guidance	7	14.9
Total	**47**	**100.0**

The findings indicate that 15% of the respondents received monitoring and guidance post-project implementation support, 11% received operation and maintenance training while only 4% were supported in community sensitization and organization after the projects had been implemented. Majority of the 70% who did not respond to the question on the type of training received included the 66% who had indicated that they did not receive any post-implementation support.

Agencies Providing Post-Implementation impact evaluation

The agencies that provided post-implementation impact evaluation as per the WASH Users' responses were as shown in Table 1.5.

Table 1.5: Agencies Giving Post-Implementation Impact evaluation

Agency	Frequency	Percentage
No Response	31	66.0
District Water Office	4	8.5
Regional Water Services Board	9	19.1
NGO partner	3	6.4
Total	**47**	**100.0**

The highest percentage of the WASH Users (19%) reported that they got post-implementation impact evaluation from the Regional Water Services Board, 9% from the District Water Office and 6% from the NGO partners. The 66% represented the WASH committee members who had earlier reported that they did not receive any post-implementation support.

4.5.5.3 Duration of Post-Implementation Impact evaluation

The respondents were asked to indicate the period for which post-implementation impact evaluation was required. Their responses were as shown in Table 1.6 below.

Table 1.6: Duration of Post-Implementation impact evaluation

Duration of Post-implementation impact evaluation	Frequency	Percentage
No response	3	6.4
A few months after handing over of project	2	4.3
One year after handing over	5	10.6
Two years after handing over	4	8.5
Continuously	33	70.2
Total	**47**	**100.0**

Majority of the WASH Users at 70% indicated that post-implementation impact evaluation was required continuously, 11% wanted post-implementation impact evaluation up to one year after handing over of the project, 9% wanted such impact evaluation across a two-year period after handing over while only 4% wished that such impact evaluation would be provided for a few months after handing over of project.

Post-implementation impact evaluation sustainability of water supplies

The respondents' responses on the provision of post-implementation impact evaluation and extent of sustainability of the rural water supplies were cross-tabulated to determine the influence of post-implementation impact evaluation on the sustainability of the water supplies. The findings were as shown in Table 1.7 below.

Table 1.7: Post-implementation impact evaluation and sustainability of water supplies

Post-Implementation Support	Extent of Sustainability					
	No Response	To a low extent	Sometimes good, sometimes bad	To a great extent	To a very great extent	Total
Yes	(2)	-	(3)	(8)	(3)	**(16)**
	12.5%	-	18.8%	50.0%	18.8%	**100.0%**
No	(1)	(1)	(4)	(12)	(13)	**(31)**
	3.2%	3.2%	12.9%	38.7%	41.9%	**100.0%**
Averages	**(3)**	**(1)**	**(7)**	**(20)**	**(16)**	**(47)**
	6.4%	**2.1%**	**14.9%**	**42.6%**	**34.0%**	**100.0%**

The figures in parentheses () represent frequencies

The findings indicate that half of those who reported that they had received post-implementation impact evaluation indicated that their water supplies facilities were sustainable "to a great extent" while 19%` in each case reported that their facilities were either sustainable to "a very great extent" or were "sometimes good, sometimes bad". On the other hand, those who had not received post-implementation impact evaluation reported sustainability across all levels ranging from sustainability "to a low extent" to "a great extent", with a significantly high percentage (13%) indicating that sustainability was "sometimes good, sometimes bad". These findings were supported by the respondents' views on the extent to which post-implementation impact evaluation influenced sustainability of SNV supported community managed rural water supplies as shown in Table 1.7.

Table 1.7: Influence of Post-Implementation impact evaluation on sustainability water supplies

Influence of Post-Implementation impact evaluation	Frequency	Percentage
Very low	3	6.4
Low	8	17.0
Moderately	14	29.8
High	14	29.8
Very High	8	17.0
Total	**47**	**100.0**

Whereas the highest and equal percentages of the WASH committee members reported that post-implementation impact evaluation either highly or moderately influenced sustainability the rural water supplies (30% in each case), other equal percentages (17%) either reported very high or low influence of post-implementation impact evaluation respectively as shown in the table. Only 6% of the respondents thought that the influence of post-implementation impact evaluation was very low.

Relationship between Post-implementation impact evaluation and sustainability of water supplies

A scoring strategy was adopted for the respondents' responses on the length of post-implementation impact evaluation t, where a score of 1 was adopted for support provided for "a few months after handing over of the project", 2 for "one year after handing over", 3= "two years after handing over" and 5 =" continuous post-implementation impact evaluation". These scores were used conduct the Pearson's Product Moment Correlation analysis against the scores for project sustainability and the findings were as shown in Table 1.8.

Table 1.8: Relationship between Post-implementation support period and sustainability of water supplies

		Sustainability of water supplies	Post-implementation support
Sustainability of water supplies	Pearson's (r)	1	.219
	P – value		.139
	Sample size (n)	47	47
Post-implementation support	Pearson's (r)	.219	1
	P – value	.139	
	Sample size (n)	47	47

The PPMC analysis revealed that there was no significant relationship between the length of post-implementation impact evaluation period and the sustainability of the rural water supplies. This indicates that sustainability of the water supplies was not associated with longer periods of post-implementation impact evaluation t. When a community identifies its needs and adequately participates throughout the project cycle, they take responsibility for the project to ensure long term benefits to the community even without external support. Thus, while some post implementation impact evaluation is desirable, the community may not require long-term post-implementation impact evaluation which explains the insignificant correlation between the length of post-implementation impact evaluation period and the sustainability of the water supply facilities in the study locations.

FINDINGS

An equal percentage of 30% of the respondents each agreed that post-implementation impact evaluation either highly or moderately influenced sustainability of rural water supplies. Thus 60% of the respondents agreed that post implementation is important to some extent. A Pearson's Product Correlation analysis revealed that there was no significant relationship between the length of post-implementation impact evaluation period and the sustainability of rural water supplies project ($r=.219$, $p< 0.05$) This indicates that sustainability of the water supplies was not associated with longer periods of post-implementation impact evaluation. However, majority of the WASH committee members at 70% indicated that post-implementation support was required continuously.

CONCLUSION

The study found there was no significant relationship between the length of post-implementation impact evaluation and the sustainability of rural water supplies. This indicates that sustainability of the water supplies was not associated with longer periods of post-implementation impact evaluation; majority of the water committee members indicated that post-implementation support was required continuously. Training on O&M and management and monitoring were some of the areas that respondents identified as requiring post implementation impact evaluation. Most facilities did not receive any impact evaluation from external actors after project handover.

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