

Influence of Stakeholders in Project Monitoring and Evaluation on Sustainability of Water Projects in Kwanza Sub-County Kenya

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Abstract

The objective of the study was to find out the influence of stakeholders in project monitoring and evaluation on sustainability of water projects in Kwanza Sub-county. The study was guided by Community Participation Theory and Sustainability Theory. A descriptive survey research design was used. The target population of the study was 32,181 households in Kwanza Sub-County, Trans-Nzoia County. The researchers used the Sekaran sample size determination formula to obtain a sample size of 380 households. The researchers used simple random sampling to select the households. The study used a questionnaire to collect data. The researchers pre-tested the questionnaire on 38 households in the neighboring Kiminini Constituency. The researchers ensured and enhanced the validity of the data collection instrument by seeking advice from two experts on matters of water and irrigation. The researchers used the split-half method to compute the reliability of the instrument. The researchers observed ethical consideration such as informed consent, and confidentiality. Data analysis was aided by SPSS computer software. Quantitative data was analyzed using both descriptive and inferential statistics. Descriptive analysis generated frequencies, percentages, proportions, mean and standard deviation while inferential analysis generated Pearson's correlation to show the association between the dependent and the independent variable. The study found that there was a significant moderate positive correlation between stakeholder participation in monitoring and evaluation and sustainability of water projects, where the Spearman's $\rho(r) = 0.496$, $p=0.010$, $CL=95\%$. The study recommends that the government and other development agencies should enhance stakeholder participation in project monitoring and evaluation for sustainability of water projects for faster realization of Kenya Vision 2030 goals. Further studies should be conducted to establish the moderating effect of project leadership on the relationship between stakeholder participation and sustainability of water projects in Kwanza Sub-County, Kenya.

Key words: *Project monitoring, evaluation, sustainability of water projects*

Introduction

The global population has continued to increase and put pressure on crucial services such as water. Chitonge (2014) and Gaynor (2013) suggest that the challenge of water provision to emerging cities in Asia and Africa will continue to rise. The growth of population is expected to double by 2030 (Chitonge, 2014). To curb the eminent problem of water shortage stakeholders including governments and non-governmental organizations strive to involve communities in monitoring and evaluating water projects for sustainability.

The demand-responsive approach, popularized in the 1990s by the World Bank, is anchored on the concept of community participation that targets to enhance greater beneficiary involvement in water sustainability projects (Project Management Institute, 2013). The idea comprises communities taking the initiative towards the demand for quality water that is reliable to sustain the community. This goes alongside assuming active initiatives in formulating projects, financing, implementing, monitoring, and evaluating (GDN, 2009).

Stakeholders play a crucial role in setting objectives and priorities of water provision initiatives to ensure appropriateness and relevance. It is necessary that all stakeholders are included in the development of projects (Jansz, 2011). When designing, financing, implementing, and monitoring projects, more emphasis should be given to the engagement of stakeholders to participate in the process of making decision, learn how to communicate, associate, and cooperate with them for smooth running of the initiative.

Stakeholder participation in project financing is a key impetus to sustainability of water projects. Project coordinators are charged with powers and rights to involve community members in the design of projects within their areas of control and strengthening of democracy to enhance community development projects (United Nations, 2012). To encourage community initiatives, governments tend to decentralize the provision of basic social services, including education, healthcare extension services, community water supply, as well as sewerage systems (United Nations, 2008).

Kwanza Sub-County of Trans-Nzoia occupies an area of 466.9 km² and partitioned into four administrative wards Keiyo, Kwanza, Kampomboni, and Bidii with a population of 193,087 (United Nations, 2012). In modern times, it is evident that the bigger the population, the less the amount of water supply available to sustain the population. The claim is backed by the report (UNEP/SEI, 2009) that shows that households in Kwanza Sub-County are among some of Kenyans with the lowest access rate to clean and piped water supply. Water projects initiated by water service boards, water trust funds, county government, and some NGOs operating in the region have often assumed a snail pace.

Statement of the Problem

Sustainability of water projects within Kenya is still low despite the knowledge that stakeholder participation constitutes a core value in community development. As Nyandemo and Kongere (2010) state, while community development has since been recognized for a long time as a beneficial initiative, the importance of stakeholder participation in project financing in water sustainability projects has been inadequately stressed. The insufficiency can be alluded to lack of clear interpretation of project development (Chitonge, 2014). Hence, despite efforts that the government of Kenya and agencies dealing with community initiatives make to enhance community participation in project financing, stakeholder participation in water provision in most parts of the country is still inadequate.

Insufficient involvement of people in the development funding process often leads to lack of ownership and sustainability of development initiatives. The inadequacy usually makes communities lose interest in projects, this steps up dependency on government resources (Mulai, 2011). The looming gap prompts several questions that still require answers to realize sustainability of projects through effective participation, which include stakeholder participation in project design, financing, implementation, as well as monitoring/ evaluation (Owuor & Foeken, 2012). With the devolved system of government in Kenya, there is need to strengthen local participation in the financing phase all starting from planning and implementation. Studies have been conducted on supply of water and its effects on human life, but none of them, to researchers' knowledge has focused on Kwanza Sub-County of Kenya despite its high population, poverty rate, and persistent water shortage.

Jansz (2011) examined the sustainability of water supply and established that the rural water supply of Niassa province was inadequate. A study conducted in Kenya by Oraro (2012) on determinants of delays in construction of community water projects in districts. The study established that insufficient stakeholder participation in project financing delays implementation and derail programs on water sustainability.

Objective of the Study

The current study assessed the influence of stakeholder participation in monitoring and evaluation on sustainability of water projects in Kwanza Sub-County in Trans-Nzoia County of Kenya.

Literature Review

Stakeholder Participation in Project Financing and Sustainability of Water Projects

According to Gaynor (2013), community-based projects aim to transform the livelihood of the locals by emphasizing on provision and access of quality water. Kahiga (2011) emphasizes that in order to do enhance access to quality water; stakeholders have to unite in working and planning together as a team.

Ongoing professional development as well as technical assistance may yield benefits only if the stakeholders embraced the need to create a certain level of understanding of felt needs as well as relevant skills required to attain the desired outcomes. Hence, funding must be only directed to these crucial categories. Awortwi (2012) opines that the sum expenditure of operating a local project differs significantly in terms of services, operational design, size, as well as support required. Cheruiyot (2012) emphasizes that variations in funding sources is the foundation of a viable strategy for investment. The same claim confirms the assertion made towards the support water initiatives to benefit the community. Stakeholders tend to be more equipped to rise against problems of funding fluctuations, a project risk they mitigate by creating different sources to fund their interventions.

Stakeholders involved in sustainability of water projects should consider including permanent funding streams such as community sport marathons as part of their funding strategy. Ika (2009) suggests that creating different sources of funding is vital in the implementation of initiatives to support training, evaluation, assistance, and a number of operational supports. Stakeholders with a common objective tend to be committed towards availing resources from different sources to meet the needs of the community members (Njon, 2010). Owuor and Foeken (2012) conclude that community projects step up and their sustainability is achieved by availing a variety of financial support.

The process of diversification benefits from a continuous and reliable source of funding to drive the implementation and support of the related activities (Project Management Institute (2013). The initiative to diversify a range of project portfolio is critical in the sense that it attracts substantial resources that are applied in utilization of service delivery and strengthening capacity building initiatives like professional development and evaluation. Imunya (2010) confirms that financial resources are key impetus that affects sustainability and performance of different project initiatives largely. The assessment concludes that finances are identified as major determinant in realization of project sustainability. The study findings show that financial resources that exhibit a co-efficient of 0.24; $P < 0.01$ significantly explains the contribution of activity sustainability.

Community Participation Theory

The demand-responsive strategy calls for community participation in water service delivery. Proponents of this approach, including Vohland and Boubacar (2009) postulate that it is applicable as an alternative strategy in improving water access to the marginalized communities (Anderson & Ostrom, 2008). The demand-responsive approach is therefore subsumed under the context of the Community Participation Theory as an alternative approach to sustainability of water projects. In Africa, the community participation ideology gained prominence during the 1960s and more specifically in projects funded by donors. Alabaster (2010) however posits that community participation is not a recent phenomenon since it was practiced in pre-colonial Africa when community members came together to carry out some local development projects.

In Tanzania, communities worked collectively in building roads, schools, and community health units while using their own materials and labor (Njon, 2010). Kenya experienced the same under the late President Jomo Kenyatta and leadership of Jaramogi Oginga Odinga, communities under the guise of the spirit of participation coined the term harambee, a Swahili word, meaning pulling together for the realization of development. Community participation theory rests on the premise that local and national governments have failed in adequately managing community projects. It emphasizes on the need to maximize scarce resources such as water and land for the benefit of communities (Wisser et al., 2010). Community participation is an effective tool for positive outcomes in projects in which it has been administered, particularly in the inclusion of stakeholders in development projects in the water service sector in Africa.

Sustainability Theory

Sustainability Theory tries to integrate and give priority to social responses to cultural as well as environment problems. An economic model focuses on sustaining financial capital and natural resources, and looks at both ecological integration and biological diversity (Enfors, 2009). Sustainability generally implies that the capacity to maintain some outcome, entity, and processes over a period. The concept of sustainability comprises of ways of mitigating environmental problems that interfere with healthy economic conditions, social, and ecological systems. The question would be whether humans are capable of sustaining themselves without necessarily depleting the resources they depend on.

The Sustainability Theory is grounded on the basic tenet that as a development aimed to promoting the satisfaction of the felt needs without deterring the coming generations from satisfying their personal needs (Rockstrom et al., 2009). Sustainability models look at sustainability in the context of what have to be sustained. Economic, political, and ecological models are never mutually exclusive but integrate the complementary strengths of each other. Economic model of sustainability posits to maintain opportunity, and often in the form of capital. According to Wallace & Grover et al., (2008), sustainability should be perceived as investment option that demands careful selection and use of resources to create new opportunities of greater or equal value. The use of the sustainability model confirms that the water sustainability system is affected by environmental, institutional, technical, and socio-economic factors (Vohland & Boubacar, 2009). Stakeholders must therefore make institutional arrangements for operating and maintaining water systems that meet the felt needs of the direct beneficiaries.

Summary of Literature and Gaps

Community Participation Theory and Sustainability Theory found their practical relevance in examining the influence of stakeholder participation in monitoring and evaluation on sustainability of water projects. Literature is found on factors that curtail the provision and supply of water, but only a few focuses specifically on stakeholder participation in monitoring and evaluation of water projects with specific reference to Kwanza Sub-county of Trans-Nzoia County.

The current study was based in Kwanza Sub-county of Trans-Nzoia County because it is one of the sections of Kenya that face the challenge of water shortage, with water coverage of below 50 percent. The population is high of about 193,087 people, most of who live below the poverty line and can barely access clean water supply for domestic consumption and commercial use. The techniques of analysis used in previous studies appear to be insufficient, as data collected was subjected to simple descriptive analysis of statistic mean, percentages, and frequency charts. The current study filled these research gaps by incorporating a more robust tool of analysis, that is, the use of a regression analysis to establish the strength and direction of correlation between stakeholder participation in monitoring and evaluation and sustainability of water projects.

Conceptual Framework of the Study

The conceptual framework of the study is depicted on Figure 1. Community participation in project monitoring and evaluation is the independent variable. Sustainability of water projects is the dependent variable.

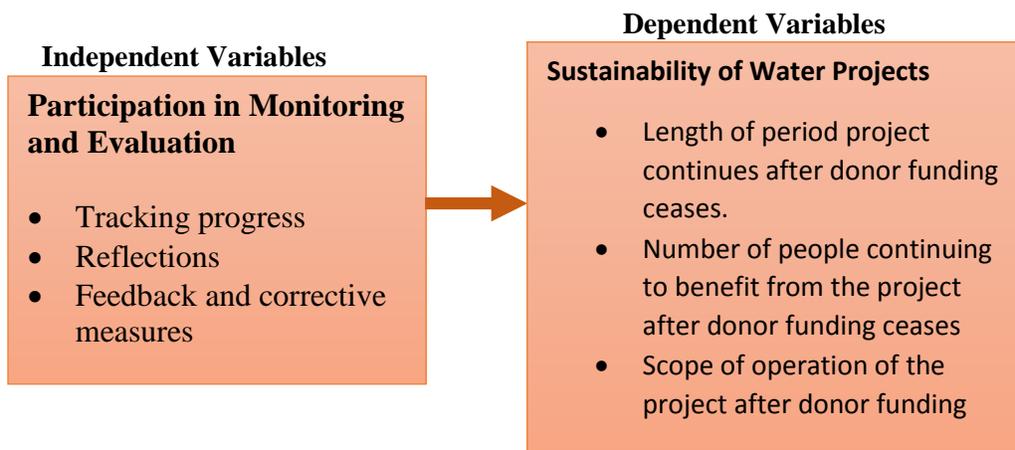


Figure 1: Conceptual Framework

Methodology

The study adopted a descriptive survey design. This study targeted households in Kwanza Sub-county, Trans-Nzoia County. The target population of the study was 32,181 households in Kwanza Sub-county, Trans-Nzoia County. The study targeted the household heads, in the absence of the household head, a representative was also targeted. According to 2013 population census estimates, Kwanza has a population of 193,087, the wards in Kwanza are Kwanza, Keiyo, Bidii and Kampomboi. Kwanza sub-county was chosen for the study because according to the report by UNEP/SEI (2009), residents of Kwanza Sub-County are among some of the Kenyans with the lowest accesses rate to clean and piped water supply. There were 32,181 households in Kwanza sub county, Trans-Nzoia County (KNBS, 2009). The researchers used the Sekaran (2003) sample determination, this gave a sample size of 380 Households. Since all the wards in Kwanza sub-county were homogenous in so far as water supply was concerned. The researchers used simple random sampling in picking the households for interviewing. The first household was identified and skipping intervals were as follows: $32,181 \div 380 = 84$. The researchers therefore picked every 84th household until the required sample size was reached.

Questionnaire was used to collect data. The researchers developed questions based on the variables and indicators that needed to be measured. The respondents were given several 5 point Likert Scale type questions to respond to of 1-Strongly Disagree, 2-Disagree, 3-Undecided, 4- Agree and 5-Strongly Agree. The researchers sampled 38 households for pre-testing in the neighboring Kiminini

Constituency, this formed 10% of the sample size. Validity was ensured by working with two experts on matters of water and irrigation with university lecturers. The experts checked the questions against the objectives, variables and indicators under each variable. These efforts enhanced content validity of the questionnaires, questions were modified accordingly. The researchers used the split-half method to compute the reliability of the instruments. Coefficient was computed using Spearman rank order correlation and that was established as 0.79. The questionnaires were therefore reliable based on Orodho (2009).

At the pre-analysis stage, the researchers sought and checked the questionnaire for completeness. Quantitative data was assigned codes and thereafter entered into the Statistical Package for Social Sciences version 21. The quantitative data were analyzed using both descriptive and inferential statistics. The descriptive analysis generated frequencies, proportions, mean and standard deviation while inferential analyses generated Spearman's correlations to show the relationship between the dependent and the independent variables. The researchers also used logit regression model to make predictions. The findings were presented through tables and narrations. The researchers sought informed consent from the respondents before they completed the questionnaire. The researchers assured the respondents of confidentiality, anonymity, neutrality and respect for their opinions.

Findings

Project Monitoring and Evaluation and Sustainability of Water Projects

The objective of the study was to find out the influence of stakeholders in project monitoring and evaluation on sustainability of water projects in Kwanza Sub-County. The frequencies are shown on Table 1 as well as the mean, standard deviations that were analysed and interpreted.

Table 1
Project Monitoring and Evaluation and Sustainability of Water Projects

Statement	SD	D	N	A	SA	Mean	SD
There is a committee constituted by community members to monitor water projects in my community	76 (20.2%)	92 (24.4%)	36 (9.5%)	94 (24.9%)	79 (21%)	3.02	1.464
I participate in routine tracking of water use from water projects in my community	51 (13.5%)	100 (26.5%)	0 (0.0%)	138 (36.6%)	88 (23.3%)	3.30	1.422
I participate community reflections regarding water project in my community	162 (43%)	97 (25.7%)	5 (1.3%)	55 (14.6%)	58 (15.4%)	2.34	1.518
I participate in assessing whether the water project are bringing the intended benefits to my community members	55 (14.6%)	74 (19.6%)	77 (20.4%)	93 (24.7%)	78 (20.7%)	3.17	1.352
We are often given feedback on water use and measures that we need to take to benefit more from the projects	40 (10.6%)	73 (19.4%)	58 (15.4%)	117 (31%)	89 (23.6%)	3.38	1.317
Mean of Means						3.04	

Nearly half of the respondents at 173(45.9%) stated that there was a committee constituted by community members to monitor water projects in their community narrowly followed by slightly more than two fifths of them at 168(44.6%) who stated that there was no committee as the least at 36(9.5%) were unclear whether the committee was in existence or not. A committee was constituted by community members to monitor water projects in the community to a moderate extent (Mean=3.02, SD=1.464). Community participation in monitoring and evaluation Challa (2011) contends that monitoring enhances compliance with the required procedures and achievement of planned targets.

Most of the respondents at 226(60%) participated in routine tracking of water use from water projects in their community as two fifths of them at 151(40%) did not participate in routine tracking forming the minority. It was popular that respondents participated in routine tracking of water use from water projects in their community to a moderate extent (Mean=3.30, SD=1.422).It is evident that the community members were able to tracking the progress of a project against planned tasks to ensure that the project is moving towards the right direction and at the right speed to achieve its outlined objectives as asserted by Nyonje, Ndunge and Mulwa (2012).

More than two thirds of the respondents at 259(68.7%) did not participate in community reflections regarding water project in their community, nearly a third participated at 113(30%) as those unclear whether they participated in the reflections or not forming the minority at 5(1.3%). It was typical to a low extent that respondents participated in community reflections regarding water project in the community (Mean=2.34, SD=1.518). Chitonge (2014) observed that community reflection is critical for project monitoring, he noted that community reflections also enables the project participants to gain analytical skills into comprehending their own difficult situations and come up with solutions to them.

Nearly half of the respondents at 171(45.4%) participated in assessing whether the water projects were bringing the intended benefits to their community members, those who did not participate followed narrowly at 129(34.2%) while one fifth of them at 77(20.4%) uncertain whether they participated in the assessment or not. It was commonplace that respondents participated in assessing whether the water project was bringing the intended benefits to the community members to a moderate extent (Mean=3.17, SD=1.352).

Most of the respondents at 206(54.6%) were often given feedback on water use and measures that they needed to take to benefit more from the projects, nearly a third at 113(30%) never gave feedback while the minority at nearly one fifth at 58(15.4%) were unsure whether they often gave feedback on the water source and measures needed to be taken or not. The community members were given feedback on water use and measures that they needed to take to benefit more from the projects to a moderate extent (Mean=3.38, SD=1.317). Overall, the respondents participated in monitoring and evaluation to a moderate extent (Mean of mean=3.04)

Correlation between Stakeholder Participation in Monitoring and Evaluation and Sustainability of Water Projects

The researchers conducted a Spearman's correlation to examine the association between stakeholder participation in monitoring and evaluation and sustainability of water projects. The results of the correlation between monitoring and evaluation and sustainability of water projects are as shown in Table 2. It was established that there was a significant moderate positive correlation between stakeholder participation in monitoring and evaluation and sustainability of water projects, Spearman's rho(r) = 0.496, $p=0.010$, CL=95%. This meant that monitoring and evaluation moderately influenced the sustainability of the water projects. The findings converge with those of King'ori (2014) that on participation in project monitoring and evaluation showed a positive correlation of 0.496 with project completion and performance.

Table 2

Correlation between Monitoring and Evaluation and Sustainability of Water Projects

			Stakeholder participation in monitoring and evaluation	Sustainability of water projects
Spearman's rho	Stakeholder participation in monitoring and evaluation	Correlation Coefficient	1.000	.496**
		Sig. (2-tailed)	.	.010
		N	26	26
	Sustainability of water projects	Correlation Coefficient	.496**	1.000
		Sig. (2-tailed)	.010	.
		N	26	26

Conclusions

It was concluded that the respondents participated in monitoring and evaluation to a moderate extent where Spearman's rho(r) = 0.496, p=0.010, CL=95%. The researchers inferred that there is a significant moderate positive correlation of 0.496 between stakeholder participation in monitoring and evaluation and sustainability of water projects.

Recommendations

The following recommendations were made given the findings and conclusions of the study: The government and other development partners need to encourage stakeholders in monitoring and evaluation processes for the water projects in Kwanza Sub-county. This would help them to identify gaps and challenges as well as the extent to which the project is impacting on their lives; this will enhance the sustainability of such projects.

Recommendations for Further Studies

The study established that community leadership played a role in ensuring stakeholder participation in the water projects. There is therefore need to establish the moderating effect of project leadership on the relationship between stakeholder participation and sustainability of water projects in Kwanza sub-county.

References

- Alabaster, G. (2010). *Urbanization and water management – trends, challenges and perspectives*. Presentation at World Water Week Stockholm. Retrieved from http://www.worldwaterweek.org/documents/WWW_PDF/2010/tuesday/T5/Graham_Alabaster.pdf accessed (1/4/2017).
- Anderson, K. P., & Ostrom, E. (2008). Analyzing decentralized resource regimes from polycentric perspectives. *Policy Sciences*, 41(1), 71-93.
- Awortwi, N. (2012). The riddle of community development: factors influencing participation and management in twenty-nine African and Latin American Communities. *Community Development Journal*, 48(1) 89-104.
- Challa, D. (2011). *An assessment of urban water supply and sanitation, the case of Ambo Town*. Addis Ababa, Ethiopia.
- Cheruiyot, J. (2012). *Effectives of the application of project management cycle strategy on the success of youth projects: A case study of youth enterprise development funded group projects in Nakuru North District, Kenya*. Unpublished project report.
- Chitonge, H. (2014). Cities beyond networks: The status of water services for the urban poor in African cities. *African Studies*, 73(1), 58 – 83.
- Enfors, E. (2009). *Traps and transformations, exploring the potential of water system innovations in dry land sub-Saharan Africa*. Department of Systems Ecology, Stockholm University. Ph.D. thesis.
- Gaynor, N. (2013). The tyranny of participation revisited: international support to local governance in Burundi. *Community Development Journal*, May 31.
- GDN (2009). *Global Development Network: Working paper series governance in water supply*. Stéphane Straub, Working Paper No. 11. Washington, USA.
- Ika, L. A. (2009). Project success as a topic in project management journals. *Project Management Journal*, 40(4), 6 - 19.
- Jansz, S. (2011). *A Study into rural water supply sustainability in Niassa Province, Mozambique*. Water Aid.
- Kahiga C. M. (2011). *Factors influencing effectiveness of monitoring and evaluation of constituency development funded projects: A case of Kuresoi Constituency, Nakuru County, Kenya*. Unpublished research project.
- KNBS. (2009). *Kenya Population and Housing Census*. Kenya National Bureau of Statistics, Nairobi, Kenya.

- Mulai, M. E. (2011). *Role of board governors in the management of secondary schools in Kasikeu Division, Nzau District, Kenya*. (unpublished research).
- Njon, A. J. (2010). *Municipal councils, international NGOs and citizen participation in public infrastructure development in rural settlements in Cameroon*. *Habitat International* 36(1): 101-110.
- Nyandemo, S. & Kongere, T. (2010). *Project management, from design to implementation*. Richmond Designers and Printers.
- Nyonje, R., Ndunge, D. & Mulwa, S. (2012). *Monitoring and evaluation of projects and programmes. A handbook for students and practitioners*. Aura Books.
- Oraro, J. (2012). *Determinants of delays in construction of community water projects in district. A Case of GOK UNICEF WASH Programme*. (M.A Thesis). University of Nairobi. Nairobi, Kenya.
- Orodho, J. A. (2009). *Elements of education and social science research methods*. Nairobi/Maseno, 126-133.
- Owuor, S. & Foeken, D. (2012). From self- help group to water company: The Wandiege Community Water Supply Project (Kisumu, Kenya) Transforming innovations in Africa. *Explorative Studies on Appropriation in African Societies*, 127-147.
- Project Management Institute (2013). *A guide to project management body of knowledge. (PMBOK Guide) 5th Edition*. United States of America.
- Rockstrom, J., Falkenmark, M., Karlberg, L., Hoff, H., Rost, S., & Gerten, D. (2009). Future water availability for global food production: The potential of green water for increasing resilience to global change. *Water Resources* 45. Doi: 10.1029/2007WR006767.
- Sekaran, U. (2003). *Research methods for business (4th Ed.)*. Hoboken, NJ: John Wiley & Sons.
- Schuster-Wallace, C. J., Grover, V. I., Adeel, Z., Confalonieri, U., Elliott, S. (2008). *Safe water as the key to global health*. United Nations. University International Network on Water, Environment and Health (UNUINWEH).
- United Nations. (2012). *The Millennium Development Goals Report 2012*. New York.
- UNEP/SEI. (2009). *Rainwater Harvesting: A lifeline for human wellbeing: A report prepared for UNEP*. Stockholm Environment Institute. ISBN 978-72-807-3019-7, www.unep.org/depi/

- United Nations. (2008). *The millennium development goals report 2008*. Retrieved from [http:// wdgs.un.org](http://wdgs.un.org) Accessed October, 2013.
- Vohland, K., & Boubacar, B. (2009). A review of in situ rainwater harvesting (RWH) practices modifying landscape functions in African dry lands. *AgrEcosyst Environ* 131(3–4):119–127.
- Wisser, D., Frohking, S., Douglas, E. M, Fekete, B., Schumann, A. & Voïroïsmarty, J. (2010). *The significance of local water resources captured in small reservoirs for crop production—a global scale analysis*. *J Hydrol* 384:264–275.