

Community Participation in Integrated Water, Sanitation & Hygiene (WASH) Programs in Supply of Safe Water in Trans Nzioa, Kenya

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Abstract

37% of Developing world's population lack access to clean water; 2.5 billion people lack improved basic sanitation and hygiene facilities, over 780 million people still use unsafe drinking water. Trans Nzioa County, in Kenya faces considerable challenges in reaching water and sanitation Millennium Development Goals (MDGs) and objectives of primary prevention. The County has four Divisions: (Bondeni, Suwerwa, Kaplamai and Waitaluk), blended with inadequate access to safe water and sanitation services, couple with poor hygiene practices that, kill and sicken vulnerable groups being women and under fives, who spend 4–5 times per day fetching for water and are overwhelmed with burden of water related diseases. It was this reasons in the County that, Government of Kenya GOK comes in collaboration with Development partners (WHO, UNICEF, USAID and UN Habitat) to form integrated water resource management programmes, to supply safe and clean water to its community household in order to alleviate water- related diseases. Cross-sectional design, using mixed data collection procedure was conducted. Sample sizes of 297 respondents participated. Purposive, proportional sampling design, from sampling frames of households in each Division was utilized. Structured questionnaire, Key Informant Interviews (KII) guides, Focus Group Discussion, (FGD) guides were used, Quantitative, data was statistically analyzed by MS excel and SPSS version 16, to measure central tendency, and dispersion. Qualitative data, themes and sub-themes were discussed to saturation. Results showed secondary attained households are critical for efficiency implementation of safe and clean water supply compared to primary attained households, male participation in water issues was minimal (41%). Accessibility to safe water from one source, by majority residents, remains low (30 %). Hand washing after visiting latrine still low (43%). However majority of households (88%) utilized latrines. Need for more grants and wel-wishers for Public Private Provision programmes in water resource management, policy to increase male involvement in community participation in integrated Water, Sanitation and Hygiene WASH programmes in Trans Nzioa County is timely required.

Keywords: Synergistic partner, Millennium development goals, Empowerments, Sustainable, Accessible Affordable and households

1.0 Introduction and Background Information

Water and sanitation (WATSAN) programs form a foundation to accessible and affordable quality and safe water globally in on-tracking to meet the MDG sanitation target [Vision (2008-2030)]. Water, sanitation and hygiene program aims to mitigate health burden prevalence's, where interventions could make a major difference, and where the present state of knowledge is poor on Cholera surveillance and prevention of other water related diseases (anemia, dehydration and malnutrition) [UNICEF (2010)]. Though Trans Nzioa District has launched, broad ranging water sector reform and stepped up investment in water supply, sanitation and hygiene (WASH) [GOK (2007)], the District still faces considerable challenges in reaching water and sanitation Millennium Development Goals (MDGs) and primary prevention that aims to promote safe water, prevent water exposures and prevent water and health disease at each household. It was the reasons that study was formulated to evaluate WATSAN programs through community assessment on utilization of Water, Sanitation and Hygiene (WASH) concepts on a holistic approach.

Thirty seven percent (37%), of the Developing world's population lack access to clean water; 2.5 billion people lack improved basic sanitation and hygiene facilities, Trans-Nzioa County is being affected by similar challenges. Over 780 million people still use unsafe drinking water [World health /UNICEF report (2008 - 2011)] which is similar in the County. Inadequate access and affordable to safe water and sanitation services in Trans-Nzioa is couple with poor hygiene practices kill and sicken vulnerable groups being women and under fives who spend 4–5 times per day fetching for water and are overwhelmed with burden of water related diseases which are not clear documented. In Sub-Saharan Africa, where Kenya belongs, over 3million people do not have access to safe water and over 5 million lack basic sanitation and improved hygiene, [Habitat (2008-2012)], which can only be solved through focused innovative and integrated water programs, synergistic participatory in situation analysis and feedback workshops, at communities households level [Southerland (1998)], in order to improve sustainable water resource management programs Conroy (2001-2002). Trans Nzioa District, has

launched such programs for last decade, but no substantial achievement has been made towards MDG 7 target 10 and primary prevention [World Bank (2004.)].

Integrated water resource management programs, defined as a combination of projects, methods and tools by which water and health policy programmes may be judged, as to its potential effects on health population and distribution of those households, within the population to supply safe water in quality and equity by involving entire households in planning, at entry point of community need assessment and participatory planning, in feedback workshops[Southerland (1998)]. The WASH concepts are based on ecosystem approaches, and seek to target, solving most household water and health problems by maximizing social capital and social economic welfare of households, at equitable resource distributions and empowering the community, through capacity building. Defined as training of household by using appropriate local techniques that will empower and sustain projects to future scales, by creation of an enabling water and health policies in the environment, that are effective and efficient to institution strengthening and targeted human resources development [World health /UNICEF report (2008 - 2011)]. Success of such programs is determined by type of community participation and planned context of indigenous knowledge and appropriate technology, [R716 (2005)], which enable the community to improve on the achievement of Millennium development goal MDG 7 target 10 (aims to reduce by half the proportion of people without access to safe drinking water and basic sanitation by 2015,[World Bank]. Despite documentation of these information, utilization and application of WASH concepts in community health and its effect on population health in Kenya, remains unexplained in the District. It was these reasons that the County was approached to measure extend of its achievement in both integrated WATSAN programs and MDG goals.

This study evaluates, water-related challenges in the County, not limiting to water supply and sanitation services GOK[(2002-2008)]. The County is classified, among the most scarce Counties with safe water supply to households at doorsteps, where water shortages are experienced throughout the year [WSBs (2008)]. Sometimes, Kenya is plagued with chronic cycles of flooding and drought that are increasing in frequency and severity, in part exacerbated by climate change and coupled with population growth, significant upland watershed destruction and non-equitable distributed of water resources [GOK (2007)] The study ,sought to establish the effect of community participation in integrated Water Sanitation and Hygiene (WASH) programs in supply of safe water in the District, by assessing the impact, on level of household education, empowerments, defined as, the idea that gives employees skills, resources, opportunity, authority, motivations as well holding them responsible and accountable for outcome of their actions, which, will contribute to their competence and satisfaction with sustainable projects at household level, and community participation in practical aspects of (WASH) concepts in actions e.g. washing of hands after visiting the latrines [Habitat (2008-2012)], prevalence of the households, to access and affordable one water source, and ascertain how knowledge, attitude and cultural practice influence sustainability of these programs, that were initially launched by in collaboration with Development partners, but still need substantial support from them [GOK (2007)].

2.1 Water-Related Diseases

The quality of safe water, whether used for drinking, domestic purposes, food production or recreational purposes has an important impact on population health [WHO (2013)]. Water of poor quality can cause disease outbreaks/epidemics, and it can contribute to background rates of disease manifesting themselves on different time scales. Initiatives to manage the safety of water do not only support population health but also, often promote socioeconomic development and well-being as well. Integrated water management projects were adopted from WHO to manage water quality with views of protecting and promoting human health [World health /UNICEF (2008 - 2011)]. Water, sanitation and hygiene (WASH) programmes, have important impetus, on both health and disease mitigation and prevention, contaminated water contain micro-organisms and chemicals in water people drink; diseases like schistosomiasis, which have part of their lifecycle in water, malaria with fresh water-related vectors; drowning and some injuries; and others such as legionellosis carried by aerosols containing certain micro-organisms [WEDC (2013)] However the quality of safe water conception in the County is not clear, thus the study is sought to discover, men involvement, community participations and utilization WATSAN programs.

Persistence backdrops of water and health issues in the County, are rampart and marked limited with missed opportunities and lack of priority given to the Water and Sanitation sectors, lack of financial resources, lack of sustainability of water supply and sanitation services, poor hygiene behaviours and inadequate sanitation, in public places like facilities and institutions WHO. Providing access to sufficient quantities of safe water, synergistic participation of facilities for sanitary disposal of excreta [Pretty (1998)], and introducing sound hygiene behaviours are of capital importance to reduce the burden of disease caused by these predisposing risk factors in four divisions of the District.]. Despite documentation of this primary prevention information, on WASH concepts, community participation and its effect on population health, District remains unexplained. It was these reasons that result to evaluate the collective functions of WATSAN programs and synergistic roles of

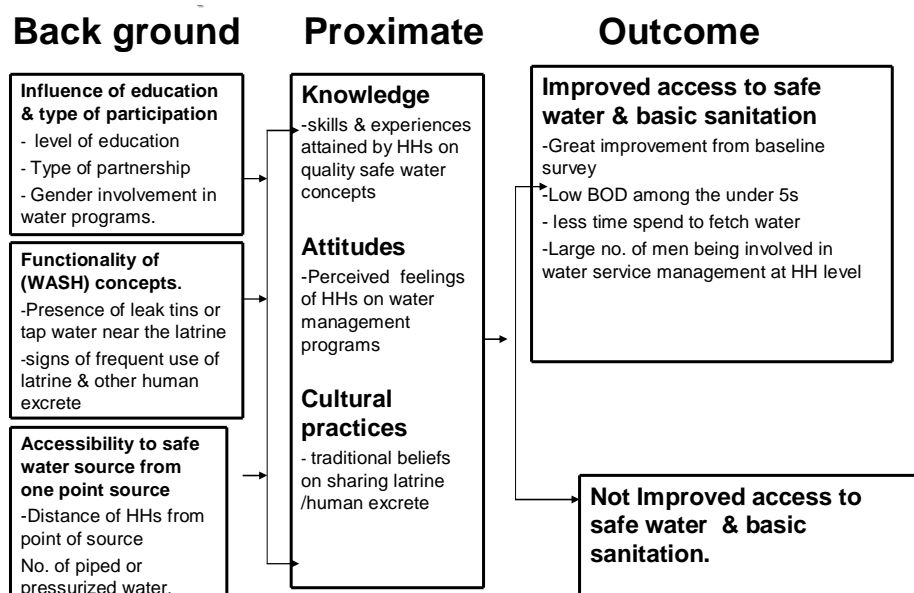
Development partners at household level in terms of resource distribution and management at household level, in the County.

2.2 Aim of the Study

The study sought answers to the following questions:-

- i. How does level of education among households attained and type of community participation influence empowers sustainability of integrated water resource management programs in the community?
- ii. Does population health utilize and apply (WASH) concepts in reality (e.g. washing of hands after visiting the latrines)?
- iii. How many households have access to one water source?
- iv. How does Knowledge, Attitude and Cultural Practice influence sustainability of integrated water and health programs to supply safe water?

The summary on principles of WASH concepts and other scholars' reviews, are illustrated below in Conceptual framework.



3.1 Methodology.

A cross-sectional design, using mixed data collection procedure (quantitative and qualitative research) was conducted, within 3 months of study period. Sample sizes by fisher's formula, where 297 respondents were sampled. Purposive, proportional sampling design from given sampling frames of households in each Division (Bondeni, Suwerwa, Kaplamai and Waitaluk) was utilized to evaluate the functionality of WASH concepts in reality. Structured questionnaire, Key Informant Interviews KII guides, Focus Group Discussion, FGD guides were used via canvasser methods. Quantitative, data was statistically analyzed by MS excel and SPSS version 16, to measure central tendency, and dispersion. Qualitative data, themes and sub-themes were discussed to saturation points, while original words of discussants were retained as captions in boxes. Fourteen integrated water programs in the District out of 27 met the criteria for inclusion (projects initially launched by Developing partners but still need resources supports from national units, and contained most households, who had stayed in the community for more than 15 days, in the same location and were being involved with water issues). Matters of one point water sources mapping in relation to population health and the utilization of pit latrines by locals was confirmed by checking foot paths in an observation survey by chief researcher during Transect walk. The study utilized only integrated public water programs. There are other water related programs, especially by local government and religious organization that were not taken into consideration.

This research was approved by the Great lakes of university of Kisumu, Ministry of Science and technology research council. Permission and clearance from relevant offices in Ministry of Health, consents were sought from all respondents before questionnaire could be administered. All the information obtained from respondent

was treated with confidentiality. The study was flexible to allow any respondent to withdraw if any case he /she feel uncomfortable to continue with the study. The interviews were based on voluntary participation and only respondent who were willing to answer questions honestly were recruited, .the respondents were not be paid or compensated for their participation

4.1 Findings

4.1.1 Demographic Distribution of Respondents and male participation in projects

A total of 297 respondents were surveyed and interviewed in four divisions (Bondeni, Suwerwa, Kaplamai and Waitaluk). Out of these, 258 (87.4%) were married and of the respondents 35 % (90) were male while 65 % (168) were females (**Fig 1**).

The proportion of gender who did participate in the study was 58.6% female and 41.4% male. An example of typical response from a female to why few male participate water issues is:-

“Our husbands or fathers, rarely participate in integrated management of water programs though they were empowered in feedback workshops, only come for meeting of District management Committee DHMTs or when donors are visiting project to evaluate progress, they never participate in implementation, we believe that most men have short skills and experience to solve water challenges still faced by us women, despite initiating the programmes in last decade. (KII interviewed in Tulwet, Bonden and Waitaluk water management programs on 23, 24 and 25 October 2010).

4.1.2 Impact of Household Education Attained, Training and Participation in the Implementation of Integrated WATSAN Programs

The study shows, Level of household education attained, training and synergistic participation influence implementation of water programs, thus majority of respondents from secondary education level, noted to be active during feedback workshops and need assessment evaluations, with (200) 79%, compared to primary education in the same.

There was great concern on the overall commitments from majority of stakeholders by most community participants and discussants, in the overall projects implementation, because, their integrated feedback workshops, results were skewed and limited across the board, as response below illustrates:-

“In most of water and health programs in this division, we community owners are only called upon to implement projects, that we do not know how they came up to existence, thus, these projects surely, lack our indigenous appropriate technology and community blessings to prosper and therefore, we lost hope of ownership and implementation, to those who claims to owns them in our territory”. (KII interview Suwerwa, 24th June 2010

The study show, (211) 71% households, accepted that regular training and follow up in feedback review workshops and community regular brainstorming on integrated WATSAN programs in supply of safe water, adds value to appropriate knowledge, develops positive attitude and practical orientation in implementing WATSAN projects, since they enhance capacity building and empowerments, defined as the idea that gives employees skills, resources, opportunity, authority, motivations as well holding them responsible and accountable for outcome of their actions, will contribute to their competence and satisfaction with sustainable projects at household level, However, there was no significant relationship between continuous training/education and implementing of integrated water projects by the households (**Fig 2**).

An example, typical of the responses, showing the lack of linkage, is shown:-

“We do not have warmed welcoming and proper linkage of capacity building, among water stakeholders and the community households, due to skewed and limited human resources, misunderstanding, and less spatial infrastructures. However public health officers and the community own resource persons (CORPS) are trying to implement WATSAN projects in basic needy areas, by planning focused training.” (KII and FGD discussant Bondeni Division 23 rd October 2010

4.1.3 Accessibility and Affordability of Households to Utilize a Single Water Source.

Study discovered that only 33% of households were at considerable distance and can afford for domestic consumption, while 67% were far away, from safe water single source or cannot afford levy put against sourcing water with time. (**Table 1**)

Majority of respondents felt that, they had to make compromises between ease of accessibility, affordability and security of safe water, before they could come to alternative sources of water available and cost less at their disposal :-

“Because our homes are far away from safe water supply point, we usually use water guard or just drink direct from the river or borehole because running water is not poisonous.” FGD discussant Suwerwa Division 25 October 2010

However, there was recommendable, use of pit latrines with marked signs of foot parts observed in 88% with skewed and limited utilization of hand washing after visiting latrine as an hygiene measure, with only 22%, households being realized and noted by, presence of leak tins or water pipes in homestead or build adjacent to the pit latrine (**Table 2**).

“Little water we have in earthen pot and guards, is preserved only for animal consumption and food preparation, FGD discussants in Suwerwa and Kaplamai Divisions. 25 October 2010”

The study established, Knowledge and actions, like positive attitudes by households’ towards safe water supply, influence drastic developments and innovations in the supply of safe water programmes at household level in most of Divisions.

5.1 Discussion

Study on Community Participation in Integrated Water, Sanitation & Hygiene (WASH) programs in supply of safe water in Trans Nzioa County, established that, despite frequent, public advocacy, that “Health Community is a Wealth Household” in the County, many drawbacks still exist, in developing innovative WASH concepts, in order to achieve both Primary health defined as aim to promote health, to prevent exposures and prevent spread of infectious disease and MDG 7 target 10, and utilization and application of community participation in integrated water projects, as stated [Southerland (1998)]. Like roles of education level attained and training, also men participation at households level in uptake of WASH concepts, influence sustainability, of integrated water resource management programmes through community participation, in which, a greater part of the population have not put into action from knowledge achieved, contrary to [Haines (2004)]. Synergistic community partnership is critical, from point of community entry, while need assessment by stakeholders using strength, weakness, opportunity and treats (SWOT) analysis is paramount before planning for feedback workshops to enhance program empowerment [Southerland (1998)]. This study found results inconsistency with [Conroy (2001-2002)] guidelines on natural resources.

The study show only 33% of household are accessible and can afford safe water on regular basis, inconsistency with the Kenya “Vision 2030” [Vision (2008-2030)] and Ministry of Planning and National Development Trans Nzioa County Development plan, both of which state that by 2015 half of the population will have access to safe water supply and basic sanitation [WorldBank (2004.)]

The fact that majority of men, are enrolled in community integrated water project, only few men are actively involved in the implementation, which, is against Article 81b of Kenya constitution (2010), that does not allow more than two-thirds of the same gender in a development programme. However, the study discovered significant hygiene development and innovative on utilization and application of pit latrines, which is in line with guidelines from Ministry of Public Health and sanitation on fecal disposal [GOK (2002-2008)].

Lastly, observed drawbacks on utilization and application of hand washing hygiene concept, after visiting pit latrines in majority of homesteads, do not exist or apply it accordingly, which is due to scarcity of water accessibility and affordable to most community household, which is the major aim of mitigation and prevention, during the formation and implementation of water projects in the District.

6.1 Conclusion

A functional structure of Community Participation in Integrated Water, Sanitation & Hygiene programs is made up of holistic approaches of community issues, as a single identity at household level. In Kenya there is need for National government and County Management Teams, to allocate more resources in developing new water point sources, in order to quench accessibility and affordability factors. Advocates for policy change, to increase active male’s involvement and uptake in integrated water projects, in supplying safe water at household level, completely empower, community households with quality water management principles and Water, Sanitation & Hygiene WASH concepts by both Development partners, in Private Provision Partnership (PPP) programs and central government, for purpose of future sustainability of programmes.

Validated pilot study analysis, practicability of WASH concepts is encouraging and promising in communities which have equitably internalised the concepts at household level, through national decentralization policy.

Suggested future works include developing a software package to facilitate the feedback workshops on importance of WASH concepts in healthcare provision and exploring the use of WASH concepts in the other forms of either facility or institutional primary prevention models. (e.g. flow-line of education /patient production and work-cell assembly of each household health), and attaching a costing framework of community participation to determine the specific cost of each resource or to help minimise the aggregated health cost expenses and increase efficiency at household live hoods.

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References:

- Calverton, M. (2008-09)) Demographic Health and Survey CBS and ORC Macro, pg. 114-119
- Conroy (2001-2002) Participatory situation analyses with population health .A guide Natural Resource. Institute Chatham.
- GOK (2002-2008) Ministry for Public health and sanitation, Nairobi Kenya, District development plan Trans-Nzioa district Government printer. Effective water project implementation at district level
- GOK (2007) Ministry for Water and Irrigation, Water sector reform in Kenya and Human right to water
- Habitat, U. (2008-2012) Strategic Plan for UN Habitat and Sanitation Trust Fund
- Haines, A., Kuruvilla, S., Borchert (2004) Bridging the implementation gap between knowledge and action for water and health, Bulletin of World Health Organization (10) 82, 724-732
- R716 (2005) Indigenous knowledge, participatory appraisal and water health information system in Tanzania 362 -368
- Southerland, A. (1998) Participatory Research in Natural resources, social –economic methodologies .Best practice Guidelines. Chatham, UK Natural resource Institute.
- Pretty, J.G., I. and Thompson, J (1998) Trainer’s Guide for Participatory learning and Action London.
- UNICEF, W.H.O. (2010) Joint Monitoring Program for Water Supply and Sanitation.
- Vision, K. (2008-2030) To be implemented in successive five - year medium- term plans with first plan covering period
- WEDC, W.H.O. (2013) Technical notes on WASH in emergencies water Engineering Development Centre
- WHO (2013) Integrated Water Assurance in Water safety Plans and Quality assurance tool
- WHO, U. (2010) Joint Monitoring Program for Water Supply and Sanitation
- World Bank (2004) Millennium Development Goals for health rising to the challenges. Multi-country evaluation of IMCI effectiveness, cost and impact progress report
- World health /UNICEF report (2008 - 2011) Working together for health. Geneva. World health organization Available at <http://www.who.int.whr/2008/en>
- WSBs (2008) Water Service Boards Responsible for Assets management and Sewerages facilities planning and implementation.

Appendices

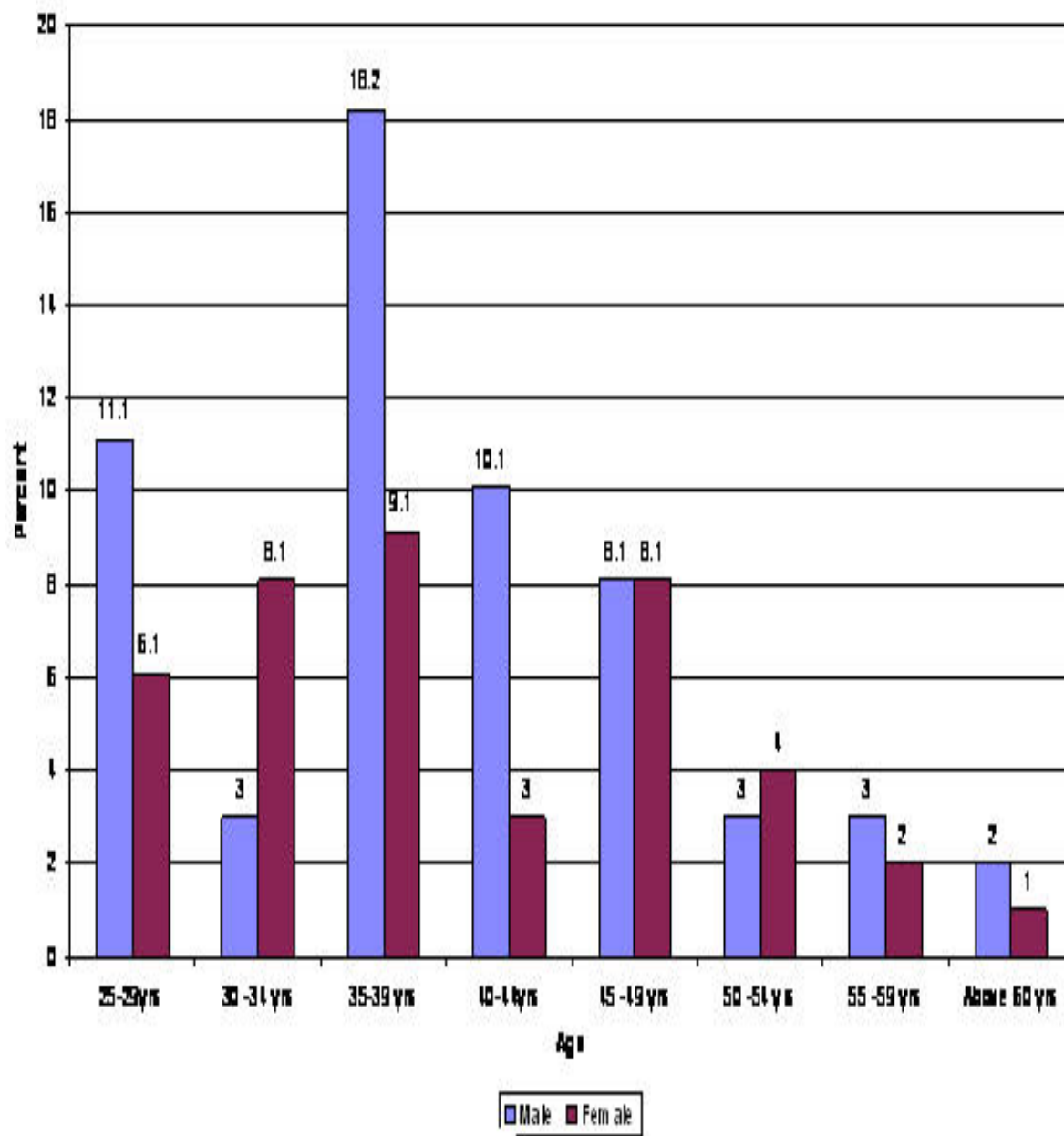


Figure 1 Above illustrates Demographic distribution of age and gender participation in water projects in the District.

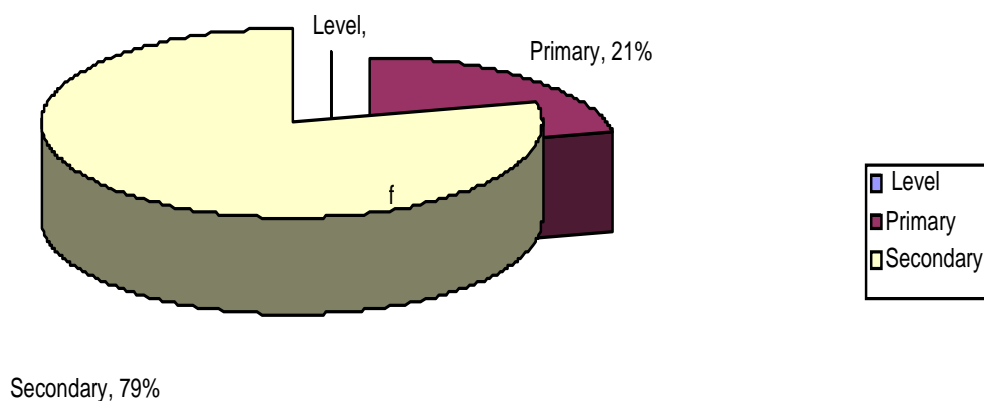


Figure 2 Above Illustrate how association of level of education attained by households influence on implementation and sustainability of water programmes in the district

Distance from one point source of water	Respondents Yes	Respondents No	Alternative source of safe water
Very close	97 (33%)	200 (67%)	Secure boreholes
Close	157 (53%)	140 (57%)	Rivers, unsafe boreholes
Far	199 (67%)	98 (33%)	Rivers, unsafe boreholes

Table 1: Above show Community accessibility/ affordability to one point water source

Hygiene indicator	Yes	No
Presence of leak tins/pipe water	57 (22%)	200 (78 %)
Use of latrine	261 (88%)	36 (22%)
Foot parts/mark observation	297 (100%)	-

Table 2: Above show Utilization of pit latrines to control diseases burden

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