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# ASSESSMENT OF THE SUSTAINABILITY OF UNICEF PROGRAMME ON WATER PROVISION, SANITATION AND HYGIENE (WASH) IN THREE LOCAL GOVERNMENT AREAS OF NASARAWA STATE, 2008-2013

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## ABSTRACT

The study explores the impact of UNICEF's programme on Water Provision, Sanitation and Hygiene (WASH) in Awe, Nasarawa Eggon and Nasarawa Local Government Areas of Nasarawa State. It examines sustainability of UNICEF's intervention in rural water supply, sanitation and hygiene systems in terms of quality, functionality and access to improved facilities that define the level of service delivery to communities and schools in the study area. Both primary and secondary sources of data were used to generate relevant data with a mixture of quantitative and qualitative studies. Functionalist theory of international politics was applied as the framework of analysis. A structured questionnaire was employed as the instrument to obtain the sets of data from a survey of 300 systematically selected respondents in the six selected communities of the three LGAs covered in the state. Qualitative data were also generated from in-depth interview with 6 key informants and FGD with 12 participants in the projects communities. The data were subjected to descriptive statistical and logical analysis. The results revealed that UNICEF's intervention in WASH projects has reasonably satisfied the needs of beneficiary communities in the study areas. Some of the obvious benefits include improved livelihoods and education attendance and retention. A considerable number of boreholes and all the latrines constructed by UNICEF have continued to deliver services to users between 2008 and 2013 and beyond. Despite the progress UNICEF has made in this regard, a number of significant challenges notably, poor funding, lack of regular follow-up support and low level of women participation that severely undermined sustainability performance of the projects were identified. The work recommends among others, that women and children being the main beneficiaries should be more actively involved in the programme to drive the greatest possible benefits while regular sensitization should be carried out to enhance knowledge of

communities on the benefits and proper use of improved WASH facilities as prerequisite for sustainability of the projects.

**Keywords:** *Improved Hygiene, Safe Water, Sanitation, Sustainability, UNICEF*

## INTRODUCTION

A safe water supply, basic sanitation and improved hygiene are fundamental for healthy, productive and dignified life. Lack of sustainable access to essential services is undoubtedly a big challenge for billions of people around the world. Developing countries in particular lag behind in water supply and sanitation coverage, especially in rural communities where most of the poor live and where related facilities are grossly inadequate. A 2009 Report of the Global Water Initiative (GWI) revealed while more than I billion people lack access to improved water sources, more than 2.6 billion people lack adequate sanitation (CDD, 2011). Approximately, 1.6 million people die every year from diarrheal disease (including cholera) attributable to lack of access to safe drinking water and basic sanitation and 90% of these are children under 5 and women mostly in developing countries (WHO, 2014).

Nigeria has more than 12 million people without access to safe water and another 40 million people without access to improved sanitation than it had in 1990. The problem in developing countries like Nigeria is not just a health issue; it affects girls' education and their security. Women and girls are the major haulers of water, especially in rural areas, walking long distances and encountering associated security hazard (UNICEF, 2010). Although access to safe water supply in both urban and rural areas has improved in recent years, the situation is far from satisfactory in almost all parts of the country. Most people in the rural areas depend on unsafe surface water such as ponds, unprotected streams and wells as well as poor rainwater harvest etc. The level of sanitation and hygiene coverage has also been generally poor in the country. Together, the problem of water, sanitation and hygiene constitute a tremendous burden in Nigeria (UNICEF, 2011). The prevailing situations in Nasarawa state are not different from the general conditions across rural communities in the country as a whole.

Every year, millions of dollars are invested by national governments and international donor agencies alike in project implementation and despite

ever increasing attempts to tackle the problem, many still fail to maintain the flow of expected benefits over their intended lifetimes of 15 or even 20 years (OEDC, 2003). As part of government's determination and commitment to provide amenities and basic necessities of life to the people of the state, Nasarawa State Government in 2002, had partnered with UNICEF in Water Supply, Sanitation and Hygiene (WASH) programme to realize this goal for the benefit of children and their families in rural areas of the state. WASH is a high-impact health intervention that seeks to promote sustainable access to safe water, adequate sanitation and improved hygiene services to rural areas with emphasis on community engagement and empowerment for management of operation and maintenance of Hand pump boreholes and VIP latrines as well as monitoring of good hygiene practices by beneficiaries after intervention with support from external agency, Government and UNICEF. The study, therefore, examines the sustainability of the UNICEF's Programme on Water provision, Sanitation and Hygiene (WASH) in Nasarawa state, especially, in terms of the expected functionality and benefits of related facilities and good hygiene practices.

## STATEMENT OF THE PROBLEM

The study assesses the sustainability of UNICEF's intervention programme on Water provision, Sanitation and Hygiene (WASH) in rural communities of Awe, Nasarawa Eggon and Nasarawa Local Government Areas of Nasarawa State, 2008-2013. Every year, millions of dollars have been invested by national governments and international donor agencies alike, in projects' implementation and despite ever increasing attempts to tackle the problem, several of these projects still fail to maintain the flow of expected benefits over their intended lifetimes of 15 or even 20 years (OEDC, 2003). In recent years, there has been increasing focus on, and understanding of the design and implementation phase of rural water and sanitation projects as part of attempts to ensure they are more successful and efficient in terms of impacts on the health and socio-economic life of the beneficiaries. However, little attention has been devoted to the post-implementation (sustainability aspect) stage, now considered most critical in every development intervention or endeavours. Thus, to what extent were the technology used in WASH projects appropriate for local sustainability? What were the sustainable benefits of UINCEF's WASH programme to beneficiary communities?

# LITERATURE REVIEW

## Sanitation

The concept of sanitation has been described as the maintenance and delivery of clean, hygienic conditions that help prevent disease through services such as drinking water supply, garbage collection and safe disposal of human waste (Gale, 2008). The term sanitation is also used to refer to as the provision of facilities and services for disposal of human feces (WHO, 2014). More elaborately, UNICEF and Water Aid (2008) defined sanitation as measures necessary for improving and protecting health and well-being of the people. It is any system that promotes proper disposal of human and animal wastes, proper use of toilet and avoiding open space defecation. In the context of this study, the focus is on basic sanitation which entails disposal of human waste by means of toilet facility with the exclusion of animal waste and garbage disposal which according to Contrell (2004) implies access to improved sanitation services such as public sewage system, septic tanks and pit latrines that safely remove excreta from potential human contact.

## Hygiene

Hygiene simply refers to the practice of keeping oneself and one's surrounding clean, especially to avoid illness or the spread of preventable disease (UNICEF and Water Aid, 2008). It implies human conditions and practices that help maintain health and prevent the spread of disease (WHO, 2016). What is significant, therefore, is the sustained behaviour change and safe hygiene practices in local communities and how they determine people's perception of the link between unhygienic practices and the prevalence of water and sanitation related diseases. These involve the issues of safe disposal of feces, hand washing with soap or ashes after using latrine, and defecating and safe collection and storage of water.

## Defining Sustainability

In recent years, the issue of sustainable livelihood has become an important part of the global challenge of eliminating poverty. This approach considers the resilience of livelihoods to shocks and stresses over the long term and the ability to manage available assets (including natural, physical, social human and financial assets) both in the present and in the future, without undermining the natural resources base (Awoke, 2012). Sustainability relates to the maintenance and enhancement of environmental, social and economic resources in order to meet the needs of current and future generations (Brennan, 2009).

Whereas the idea of economic sustainability is achieved only when a given level of expenditure can be maintained over time or related to resilience to risk or net benefit flows over time (OEDC, 2003), social sustainability is a life-enhancing condition, and a process within communities that can achieve that condition. It involves mechanism for a community to fulfill its own needs where possible through community action (McKenzie, 2004). The concept has also been extended to incorporate institutional or management aspects in that sustainability is achieved when prevailing structures and process have the capacity to continue their functions over the long term (DFID, 2000). In every recent development endeavor, the issue of sustainability is, therefore, accorded considerable attention. A system is deemed sustainable if it attains its full expected life span.

**Sustainability in Rural Water, Sanitation and Hygiene Projects**

Various ideas and explanations have been provided by different scholars from different perspectives on what constitute sustainability and inherent challenges in rural water, sanitation and hygiene interventions. In a plausible explanation, Webster, Dejacchew, Tseion, Mehari and Tesfaye(1999) make it sufficiently clear that the overriding objective and goal of sustainability in water and sanitation projects is not just to ensure that a community's capacity is built to enable them to function in a committee or fix a pump. Rather, it is combination of this aspect plus the development of the vision, attitudes, confidence, and competence among all stakeholders, especially the beneficiaries that ensure a sustainable and responsible effort towards the project. On their part, Ademiluyi and Odugbesan (2008) observe that performance on sustainability of rural water and sanitation scheme is often measured in terms of the number and proportion of functioning and non-functioning facilities. This incorporates a range of managerial, social, institutional, and technical facilities.

Sustainability is also defined from two approaches namely, continuous service approach and life cycle approach. Continuous service approach: Sustainability can be defined as if Water, Sanitation & Hygiene (WASH) services and good hygiene practices continue to work and deliver benefit over time. No time limit is set on those continued services behavior changes and outcomes. In other words, sustainability is about permanent beneficial change in WASH services and hygiene practices. Life cycle approach: A service is sustainable when it functions properly and is used;

functions over a prolonged period, according to the designed life-cycle of the equipment; provides the services for which it was planned, including delivering the required quantity and quality of water; easy access to the service; continuity and reliability; and providing health and economic benefits (Jha, Thepa, Dahal&Yoseph, 2019)

**Determinants of Sustainability in WASH Services**

Several studies have identified various factors that determine the sustainability of rural water, sanitation and hygiene system. Prominent among the factors include: types of technology, quality of implementation, community motivation, community participation, continuing support, cost recovery, maintenance organization and environmental factors. As Jha, Thepa, Dahal and Yoseph (2019) observe; for a Community Based Drinking Water Supply (CBDWS) system, the following five aspects constitute the basic components of sustainability:

- Social Aspects requiring equitable access to safe drinking water in adequate quantity and of good quality and ensuring protection of human health and social welfare;
- Institutional Aspects requiring effective local community organization and management units, who are responsible for all operations and budgets and for collection of the needed funds from community members;
- Economic Aspects requiring the lowest optimized life-cycle cost, besides the project being financially self-sufficient with the agreed contributions from community members. Funds would always be available for maintenance, which must never be deferred;
- Environmental Aspects involving the required environmental assessment, maintenance of the renewable source capacity and protecting it from contamination;
- Technical Aspects involves conception, feasibility studies, design, construction, maintenance, operations, rehabilitation (when necessary), and finally, decommissioning and sustainable disposal at the end of its useful service life. Basically, these constitute planning, design and management of the physical infrastructure, and the technologies involved.

From the foregoing explanation, it becomes obvious that easier and simpler scheme, using locally available/replaceable materials where possible and appropriate, in addition to creating the local availability of

these materials (e.g. encouraging local shop to stock pump spares) contribute greatly to sustainability. It also implies that where technology deployed is remote from the user's capacity to maintain, operate or pay for it; without adequate institutional support and policy arrangements and proper and adequate motivation of the beneficiary community to utilize the new water source or excreta disposal facility; and the absence of continuing support to communities to managed water services, the prospect of sustainability of services is not guaranteed.

**Benefits of Improved Water, Sanitation and Hygiene Services**

Access to improved water supply, sanitation and hygiene services, particularly in rural communities, is a crucial right vital for development and poverty reduction. It is posited that organized community life require twin services of water supply and sewage disposal and sanitation cannot be maintained without adequate water supply system. Without proper disposal, the waste of a community can create intolerable nuisance, spread diseases, and create other health hazard (Punmia, 1995). Issues of water and sanitation are mutually reinforcing and are recognized to be essential for life and serve as basic human need.

Moreover, the impact of improved water and sanitation oftentimes imply that water consumption should increase while there should be reduction in the time spent in water hauling. Saving from what could have been spent on health treatment can be used in improving household livelihood (Ademiluyi &Odugbesan, 2008). According to Blyther (2012) use of improved sanitation and water facilities can help to prevent the spread of diseases that are transmitted through human feces including intestinal worms and other neglected tropical diseases. Similarly, effective health promotion and education lead to improved public health and personal well-being as well as reduction in common diseases such as diarrhea, guinea worm, typhoid and gastroenteritis. This consequently, lead to reduction in cost of curative health care and improvement in productivity of school children and family members as less time is wasted in seeking health services for treatment of sanitation and water related diseases (UNICEF, 2011). Apart from reducing the hardship of women and children, in terms of security of the rural people, it is further stressed that access to safe water and improved sanitation is very important for the woman and girl child who are at high risk of being exposed to physical attack or molestation if they travel long distances especially at night or in the deserted places to use water and toilet facilities (UNICEF, 2011).

These views are clearly and well in tandem with the goals of rural water supply and sanitation intervention and practically reflect the dominant interest of development partners in community development projects.

## THEORETICAL FRAMEWORK

The study is anchored on functionalist theory of international politics as framework of analysis. Some of the leading proponents of functionalist theory are David Mitrany (who first developed the theory), Ernest Haas and Leon Linberg. Functionalism is an approach to the formation of international organizations that advocates international cooperation across nations and people on scientific, technical, humanitarian, social and economic issues or concerns (Imber, 2016). It refers to the policy of shifting responsibility for resolving various problems from the nation-states to international institutions and bodies, indirectly through multilateral development cooperation (Banyan, 2005). The central assumption of the theory is that the activities of functional international organizations involve taking action on practical and technical issues based on common interest to solve international problems

Based on the idea of functionalism, through resolution 64/292, the United Nations General Assembly explicitly recognized the human right to water and sanitation and acknowledged that the clean drinking water and sanitation are essential to the realization of all human rights. This resolution call upon states and international agencies like the UNICEF to provide financial resources, help capacity building and technology transfer to help countries, in particular developing countries such as Nigeria to provide safe, physically accessible and affordable drinking water and sanitation for All (UN, 2014).

From the standpoint of the assumption of the theory, safe drinking water and basic sanitation are internationally recognized by the UN as basic needs that are essential for human health and dignity. For instance, the Mar Delplata (1977) which led to the proclamation of international Drinking Water Supply and Sanitation Decade; The World Forum in Marrakech (1997), the UN Millennium Summit in New York (2000), the World Summit on Sustainable Development in Johannesburg (2002), and Sanitation and Water for All high level meeting which resulted in call for improved use of available resources, capacity building, public private partnership, integrated approaches and decisions are based on empirical evidence (MFA, The Netherlands, 2001). Critics, however, argue that

highly developed countries are the main beneficiaries of functional international organizations which rendered the Third World societies in perpetual socio-economic and political dependence.

## METHODOLOGY

The study employed a mixed method of quantitative and qualitative research. Data for this study was, therefore, obtained from both primary and secondary sources. In generating primary data, Questionnaires were administered and In-depth Interview and Focus Group Discursion (FGD) were also conducted. A total of 300 questionnaires were administered to selected respondents (household heads) from the six selected communities, proportional to the sample size per community. For the In-depth Interview and FGD, the respondents were purposively identified representative stakeholders. Those covered in the structured and unstructured interview were the state's UNICEF officials, NARUWASSA officials and Local Government Sanitary officers while heads of primary schools, health care centers and WASHCOM, community leaders and leaders of women groups were mobilized for FGD. The secondary data came mainly from academic publications and reports.The sample size of the study is 300, then, the community sample size is obtained by applying this formula:

$$\textbf{Community Sample Population} = \frac{\textit{No of Community Household Population}}{\textit{Total Household Population of selected Communities of the LGAs}} \times \frac{300}{1}$$

Using the above formula, the community sample population size was obtained by dividing the number of Household population per community by the total household population of the six (6) communities of the three (3) selected LGAs multiplied by the desired sample size of the study. This gave the sample size of each community in proportion to its household population.

**Table 1.Distribution of the Total Household Population and Sample Size According to the Community's Population in the three LGAs**

| SN | Names of Community | Household Population Per Community | Sample Size Per Community |
|---|---|---|---|
| **1** | Alogani | 588 | 19 |
| **2** | Arugbadu | 1604 | 53 |
| **3** | Azara | 2831 | 94 |
| **4** | Bakono | 880 | 29 |
| **5** | Loko | 2146 | 71 |
| **6** | Magajin Mallam | 1013 | 34 |
| **Total** | **6** | **9,062** | **300** |

**Source:** Field work, 2015

**Table 2: Administration and Retrieval of Questionnaire according to the Community sample size in the selected LGAs**

| SN | Selected Communities in the 3 L.G.As | Questionnaire Administered | Questionnaire Retrieved | Valid Questionnaire |
|---|---|---|---|---|
| **1** | Alogani | 19 | 18 | 16 |
| **2** | Arugbadu | 53 | 49 | 43 |
| **3** | Azara | 94 | 73 | 67 |
| **4** | Bakono | 29 | 26 | 25 |
| **5** | Loko | 71 | 61 | 56 |
| **6** | MagajinMallam | 34 | 30 | 26 |
| **Total** | **6** | **300** | **257** | **233** |

**Source:** Field work, 2015

As illustrated in table 2 above, a total of 300 questionnaires were administered in the six (6) selected communities from the three (3) LGAs in proportion to their respective sample population size. Out of the 300 questionnaires administered, 257 (86%) were retrieved and only 233 were properly filled representing 78% and, therefore, considered valid for analysis.

## Analysis of Results

### Table 3: Socio-economic Characteristics of Respondents

### i) Age of Respondents

| Age Bracket | Frequency | Percentage |
|---|---|---|
| 25-30 | 49 | 21.0 |
| 31-45 | 128 | 54.9 |
| 46-60 | 44 | 18.9 |
| 60 and above | 12 | 5.2 |
| **Total** | **233** | **100** |

**Source:** Field work, 2015

Table 3 variable i, above shows that 49 respondents (21.0%) were between 25 and 30 years, 128 of them (54.9%) were from 31-45 age bracket while 44 respondents (18.9%) fall within 46-60 age bracket. Only 12 representing 5.2% have fallen within 60years and above. This implies that the study obtained data from all categories of adult population in the study communities with a view to understanding the impact of UNICEF on sustainability of WASH programme in the study area.

### ii) Sex of Respondents

| Sex | Frequency | Percentage |
|---|---|---|
| Male | 163 | 70.8 |
| Female | 68 | 29.2 |
| **Total** | **233** | **100** |

**Source:** Field work, 2015

Table 3 variable ii, above indicates the sex distribution of the respondents. Out of the 233 respondents, 165 (70.8%) were males while 68 (29.2%) were females. This means that in the selected households, more men filled the questionnaires than their female counterparts, apparently, because they are mostly the heads of households and community leaders.

**iii) Categories of Respondents in the community**

| Category | Frequency | Percentage |
|---|---|---|
| Community members | 117 | 50.2 |
| Community leaders | 48 | 20.6 |
| Teachers | 21 | 9.0 |
| Health workers | 25 | 10.8 |
| WASHCOM members | 22 | 9.4 |
| **Total** | **233** | **100** |

**Source:** Field work, 2015

Variable iii, presents categories of respondents in the study areas in which 117 of them (50.2%) were community members, 48 (20.6) were community leaders, 21 (9.0%) teachers of primary schools, 25 (10.8%) were health workers and 22 (9.4%) were members of WASHCOM. These results reveal that over 50% of the respondents were community members, who constitute the main beneficiaries of the WASH projects.

**iv) Educational Level of Respondents**

| Educational Level | Frequency | Percentage |
|---|---|---|
| O/Level | 56 | 24.1 |
| Tertiary | 138 | 59.2 |
| Non-formal | 39 | 16.7 |
| **Total** | **233** | **100** |

**Source:** Field work, 2015

From table 3 variable iv, 56 respondents representing 24.1% were holders of Ordinary School Certificates, 138 (59.2%) of them have tertiary education while only 39 (16.7) have no formal education. This indicates that majority of the respondents have formal education because some communities like Azara, Magajin Mallam and Loko are small towns and have good number of formal educational institutions.

**Table 4: Level of Community Satisfaction with the Benefits of UNICEF WASH Projects**

This section presents respondents' views on weather UNICEF's WASH programme has satisfied the needs of beneficiaries in the projects communities.

**i) Respondents views on the existence of UNICEF WASH projects in their communities**

| Responses | Frequency | Percentage |
|---|---|---|
| Yes | 209 | 89.7 |
| No | 24 | 10.3 |
| **Total** | **233** | **100** |

**Source:** Field work, 2015

Table 4 variable i, above reveals respondents' awareness of the existence of UNICEF WASH projects in their various communities.209 (89.7%) were of the view that they were aware of the UNICEF's WASH projects in their communities while only 24 (10.3%) said they had no knowledge. Owing to the fact that about 90% of the respondents had knowledge of the WASH project proved that the projects exist in the focus communities in the state. This picture is clear because from the researcher's personal observations, the said projects were actually carried out. Also, data from the UNICEF and NARUWASSA which is the state government agency established to support community management of WASH project towards achieving sustainable use of facilities and promotion of hygiene practices further attested to this.

**ii) Distribution of respondents on the type of projects carried out in their communities**

| Responses | Frequency | Percentage |
|---|---|---|
| Motorized boreholes/VIP Latrines | 0 | 0 |
| Hand Pump-equipped boreholes/VIP Latrines | 203 | 97.1 |
| Hand dug wells/VIP Latrines | 0 | 0 |
| Solar-powered water pumps/VIP Latrines | 6 | 2.9 |
| Rehabilitated water sources/VIP Latrines | 0 | 0 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Table 4 Variable ii, presents respondents' views on the type of projects carried out across communities in the study area. The field results shows that 97.1% indicated Hand pump equipped boreholes/VIP Latrines as the main projects carried out by UNICEF. However, only 6 (2.9%) said Solar Powered Water Pump/ VIP Latrines but no response was recorded for the other categories of projects. In the words of WASH project Manager, corroborated by UNICEF coordinator in the state (Interview, 2015), UNICEF supported the construction of Hand pump fitted boreholes/VIP latrines in schools, market centers, abattoirs, motor parks and health centers, as the main infrastructure components of the WASH projects in the focus project communities.

**iii) Distribution of respondents on appropriateness of technology/installation**

| Responses | Frequency | Percentage |
|---|---|---|
| Very High | 1 | 0.5 |
| High | 193 | 92.4 |
| Low | 13 | 6.2 |
| Very Low | 2 | 0.9 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Table 4 variable iii, above sought respondents' opinions on appropriateness of technology and installation in WASH projects communities. Only 0.5% rated technology and quality of installation very high while 93.4% of the respondents said appropriateness of technology type and installation was high. However, only 6.2% and 0.9% of the respondents rated appropriateness of technology and installation low and very low respectively. It could be deduced from the field results that beneficiary communities had well-constructed systems which were more likely to be sustainable in the long term. As explained by the WASH project manager, Hand pump borehole/VIP latrines were adopted because they are low cost design that ensure local sustainability in view of the economic status of the projects communities both in terms of money and materials.(Interview, 2015). Additionally, users preferred Hand pump over hand dug well and protected springs because measures to protect the latter are usually difficult after the projects are being completed (FGD, 2015) and in term of health benefits as UNICEF Coordinator observed, hand pump yields better results (Interview, 2015).

### iv) Distribution of respondents on Provision/Local availability of Tools and Spare Parts

| Responses | Frequency | Percentage |
|---|---|---|
| Very High | 9 | 4.3 |
| High | 102 | 48.8 |
| Fairly High | 86 | 41.1 |
| Low | 11 | 5.3 |
| Very Low | 1 | 0.5 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Variable iv above, presents views of the respondents on the performance of UNICEF/Government provision/local availability of tools and spare parts. 4.3% considered performance very high, 48% rated performance High, for 41%, performance was fairly high, 5.3% however disagreed and rated performance low while only 0.5% found performance of UNICEF and Government on provision/availability of tools and spare parts very low. The field survey, therefore, shows altogether about 90% of the respondents were reasonably satisfied with the performance of UNICEF/Government in this aspect of Rural Water Sanitation and Hygiene projects in their respective communities. According to a water engineer in the State Water Board, hand pumps which are the best suited for community based maintenance and local manufacture are fabricated locally and are widely circulated across local markets in Nigeria (Interview, 2015). It is further confirmed by community members that UNICEF has done a lot in promoting local availability of tools and spare parts for local operation and maintenance. Apparently most project communities were said to have access to these materials within their reach at critical times whenever the need for replacement of worn-out pipes and or damaged pumps arose and even for construction of new ones (FGD, 2015).

### v) Distribution of respondents on the Sources of Materials used in the WASH Projects

| Responses | Frequency | Percentage |
|---|---|---|
| External | 55 | 26.3 |
| Local | 6 | 2.9 |
| Both | 148 | 70.8 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Variable v above, reveals 55 respondents (26.3%) indicated that WASH projects materials were sourced externally while 6(2.9%) said only local materials were used. However, majority of the respondents 148(70.8%) agreed that both local and foreign materials were used. As the field results demonstrate, combine materials from both external and local sources were used in WASH projects. This was to ensure that, on the one hand standard was not compromised and on the other hand to increase and enhance communities' access to related materials to promote local operation and maintenance as part of effort towards sustainability of WASH project

**vi) Respondents views on functionality of facilities provided by WASH Project**

| **Responses** | **No. of functional Hand Pump boreholes** | | | | | | | **No. of functional VIP latrines** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | None | No Idea | **Total** | 2 | 4 | None | No Idea | **Total** |
| **Frequency** | 16 | 69 | 77 | **7** | 3 | 38 | **209** | 69 | 111 | 10 | 19 | **209** |
| **Percentage** | 7.7 | 33.0 | 36.8 | 3.3 | 1.0 | 18.2 | **100** | 33.0 | 53.1 | 4.8 | 9.1 | **100** |

**Source:** Field work, 2015

Variable vii sought to ascertain respondents' views on functionality of facilities provided during the WASH intervention. The field results show that 7.7% said only 1 borehole was functional across communities, 33.0% said 2 boreholes, 3.3% indicated 4 boreholes, however, 1.6% argued that none was functional by 2013 and only 18.2% did not reply the question. With regard to latrines 33% said 2 latrines were functional up till the end of 2013, 53.1% mentioned 4, 48% argued that none was functional while only 9.1% did not reply the question. This analysis demonstrates that though not all but a reasonable number of facilities provided by UNICEF WASH programme continue to deliver services to users across the project communities in the study area. This is clearly indicative of

enhanced level of sustainability of the projects. However, physical observation and data from the FGD at the community level revealed that of the 21 Hand pump fitted boreholes constructed by UNICEF, 12 were functional at the time of the study in 2015 while all the latrines were functional, though some were in better condition than others due to different level of commitment to sustainability across communities.

**vii) Distribution of respondents on the impact of UNICEF WASH Projects on incidence of diarrheal, dysentery and guinea worm**

| Responses | Frequency | Percentage |
|---|---|---|
| Highly positive | 10 | 4.8 |
| Positive | 174 | 83.3 |
| Negative | 25 | 11.9 |
| Highly negative | 0 | 0 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Variable vii, shows respondents' views on the impact of UINCEF WASH projects on incidence of diseases in the focus communities. 10 (4.8%) rated impact highly positive, 174 (83.3%) who constitute the majority were of the opinion that the impact of the projects was positive while only 25 (11.9%) said the impact of the UNICEF projects was negative. This implies that the programme has made profound positive impact on the incidence of poor water and sanitation related diseases across beneficiary communities.Hygiene promotions such as home cleaning, Community-led Total Sanitation (CLTS) and hand washing were also introduced to prevent outbreak of cholera and reduce the incidence of diseases like diarrhea, bilharzias and scabies, among others (FGD, 2015). Re-echoing the above, UNICEF official explained that with continuous health education and sensitization people have developed positive attitude towards improved sources of water supply and sanitation systems constructed by UNICEF and even those installed by individuals and communities themselves (Interview, 2015). It also observed that in guinea worm endemic communities like Azara and Magajin Mallam, the programme had helped in eradicating the problem. The data also demonstrated the relevance of functional cooperation in addressing the concern of poor communities.

**viii) Distribution of respondents on the impact of UNICEF WASH Programme on school enrolment/retention**

| Responses | Frequency | Percentage |
|---|---|---|
| Highly positive | 56 | 26.8 |
| Positive | 146 | 69.9 |
| Negative | 7 | 3.3 |
| Highly negative | 0 | 0 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Variable viii, above indicates that 56 respondents representing (26%) admitted that UNICEF WASH programme has made highly positive impact on enrolment/retention of school children, 146 (69.9%) of them rated impact of WASH program on enrolment/retention of school children as positive. However, 7 (3.3%) argued that the impact of UNICEF WASH programme in this aspect of sustainability of water, sanitation and hygiene systems was negative but there was no response for highly negative option. In line with these field results, UNICEF Project Manager in the state explained that with the improved access to safe water supply and sustained health education, through School Environment Health Cubs and WASHCOM in the focus communities, the rate of school enrolment and completion has improved significantly with corresponding improvement in the performances of the children in the class from 2008 to 2013 and even beyond (Interview, 2015). However, personal observations and experiences revealed that the impact of the programme varied considerably across communities, depending on their status, education and level of commitment to sustainability. In small towns like Azara, Loko and Magajin Mallam, people tended to be more consciously aware of the programme and its attendant health and socio-economic benefits than in smaller communities of Alogani, Bakono and Arugbadu.

**ix) Respondents views on the impact of UNICEF WASH Projects on open defection**

| Responses | Frequency | Percentage |
|---|---|---|
| Highly positive | 33 | 15.8 |
| Positive | 159 | 76.1 |
| Negative | 17 | 8.1 |
| Highly negative | 0 | 0 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Table 4 variable ix, reveals the impact of UNICEF WASH programme on open defecation in the study area.15.8% of the respondents said highly positive while 76.1 who were in the greater majority said impact of UNICEF WASH program on open defecation was positive. However, 8.1% of the respondents were of the view that the impact of the programme was negative while no response was recorded for highly negative option. From the field result the opinion of those who admitted that UNICEF WAS programme has made significant positive impact on the attitudes of communities in reducing the prevalence of open defecation is well in tandem with the position of UNICEF's Coordinator in the state that UNICEF WASH programme has made and would continue to make positive impacts on the health status and attitudes of the people in the focus communities. He further remarked that before intervention, open defecation was rampant around the bush and river side, posing serious public health risks when washed off by rain water. This practice he said also exposed girls/women to sexual assaults and sometimes snake/scorpion bites (Interview, 2015). However, it was also revealed that high level of poverty and the general poor welfare condition of the people in the project communities negatively affected the rate of household latrine construction and attendance of Open Defecation Free status by focus project communities (FGD, 20015).

**x) Respondents views on the impact of UNICEF WASH Projects on Hand Washing**

| Responses | Frequency | Percentage |
|---|---|---|
| Highly positive | 21 | 10.1 |
| Positive | 185 | 88.5 |
| Negative | 3 | 1.4 |
| Highly negative | 0 | 0 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Variable x, above sought to know the views of respondents on the extent UNICEF'S WASH programme has changed the attitudes of beneficiaries regarding the habit of hand washing. 10.1% of the respondents were of the opinion that the impact of the programme on hand washing was highly positive. The large majority of respondents (88.5%) revealed that impact was positive. However, only 1.4% argued that the impact of the programme on hand washing was negative. Taking these data into

consideration, it could be deduced that UNICEF's intervention has created positive attitudes among beneficiaries towards the habit of hand washing. From the Focus Group Discussion, it was further established that focus communities had become sufficiently aware that hand washing is one of the most effective means of preventing diarrhea and cholera. As a result, hand washing has become a common practice across communities in the study area especially after using the toilet, before eating, after cleaning baby's buttocks and before feeding them (FGD, 2015).

**xi) Did UNICEF WASH Projects raise awareness of communities/schools on the benefits of Sanitation and Hygiene Practices**

| Responses | Frequency | Percentage |
|---|---|---|
| Yes | 199 | 95.2 |
| No | 10 | 4.8 |
| **Total** | **209** | **100** |

**Source:** Field work, 2015

Variable xi, above asked respondents whether UNICEF's WASH project has raised awareness of communities/schools on the benefits of improved sanitation and hygiene practices. Results show that satisfaction with the impact of the programme on awareness of the benefits of sanitation and hygiene practices prevail among across beneficiary communities for 95.2% of the sample while only 4.8% of the sample expressed dissatisfaction. These results point to a high level of satisfaction with the performance of UNICEF WASH programme in the study area. In the words of an informant, in communities where UNICEF has delivered improved water supplies and sanitation facilities, people became enthusiastic about the new infrastructure and behaviour change and have equally shown strong commitment to sustainability (Interview, 2015). Investigation (through physical observation) and discussions further reveals that UNICEF intervention in rural water supply and sanitation has apparently made beneficiaries become consciously aware of the benefits of good hygiene practices and risks associated with open defecation as evidenced in the rising number of household latrines and local toilets in the study area. More importantly, the programme has helped to create awareness of the link between some common diseases like cholera, diarrheal, dysentery and guinea worm and unsafe drinking water and sanitation as their causes (FGD, 20015).

## DISCUSSION OF FINDINGS

UNICEF WASH programme, in line with the Functionalist theory, is meant to improve the living condition of beneficiary communities by contributing to the realization of children's rights to survival and development through support to national programmes that increase equitable and sustainable access to and use of safe water and basic sanitation services and promotion of improved hygiene practices, especially to rural and poor communities. From the analysis of field data above, one of the key findings of this study is that UNICEF's intervention in water, sanitation and hygiene projects had reasonably satisfied the needs of focus project communities in the study area. The obvious impacts were improved livelihoods, school enrolment and retention of children, security and time saving. The study demonstrates, in clear terms, that women and children especially, received more benefits as they no longer had to trek a whole day or several hours searching for unsafe drinking water.

The study further revealed that focus communities have sustained their water and sanitation systems for many years after intervention. The WASH systems including, the Hand pump borehole/VIP latrines, constructed across the projects communities were appropriate because they are low cost design that ensures local sustainability. This perhaps, explains why more than half of the boreholes constructed by UNICEF were still providing water to some extent while all the latrines were in good condition and continued to serve users in the focus communities between 2008 and 2013 and even beyond as confirmed by more than 70% the respondents (Field work, 2015) and attested to through FGDs and personal observations. It should be noted, however, that in another finding, achievements of sustainable use of facilities and promotion of good hygiene practices vary between the semi-urban and more rural communities in the study areas. The study found that three (3) communities of Azara, Magajin Mallam and Loko, by virtue of their status as small towns coupled with their level of education, tended to have demonstrated greater level of commitment than the rest, and were rated highly for sustainability.

## CONCLUSION AND RECOMMENDATION

The UNICEF WASH programme in Nasarawa state has made significant and sustainable impact on the lives of beneficiary communities. The programme has substantially raised the number of people who use

improved water sources, hygiene facilities and children that were able to attend and remain in schools. For women and children who had to travelled long distances to fetch water, often from unsafe sources, UNICEF intervention has made significant improvement in their health, saved time and energies and ultimately enhanced their livelihood opportunities. However, critical challenges had to do with making available, adequate resources for sustainability activities in the post construction phase of the projects, inadequate capacity building to community institutions and low level of women participation in the projects. The study recommends that women and children being the main beneficiaries of UNICEF WASH project should be more actively involved in the program to drive the greatest possible benefits. Considering the socio-economic realities of government implementing Agencies, UNICEF'S long lasting Partnership with (NARUWASSA) local institutions and NGOS and communities is pre-requisite for sustainability of WSAH projects in the study area.

## REFERENCES

Ademiluyi I. A & Odubegsan, J. A (2008). Sustainability and Impact of Community Water Supply and Sanitation Programme in Nigeria: An Overview, Africa

Awoke, Z. (2012) Assessment of Challenges of Sustainable Rural Water Supply, Quarit Woreda, Amhara Region: A Project Paper presented to the Faculty of the Graduate School of Cornell University Ethiopia

Banyan, W. (2005) Outflanking the Nation-state: David Mitrany and the Origin of the Functional Approach to the New World Order.

Blyther, T.S (2012) Global Access to Clean Drinking Water and Sanitation, US and International Programme

Brennan, E. (2009) Definitions for Sustainability and Social Work Paper, Pottland State University School of Social Work

CDD (2011) West Africa Insight: Water, Monthly News on Democratic Governance, Gender Peace and Security, Vol.2 No. 91.

Contrell, B, L (2004) An Evaluation of a Water, Sanitation and Hygiene Programme in Rural Communities, Outside of Port au-Prince Haiti, Institute of Public Health, Geogia State University.

Imber, M. F. (2013). Functionalism International Organization, Encyclopedia Britannica. htt/ps/www.Britanica.com/topic/Functionalism-international organizations.

Gale, T. (2008) International Encyclopedia of the Social Sciences (www.encyclopedia.com/topic/ sanitation aspt Encyclopedia sanitation.

Jha, B., Thapa, N. and Yoseph, M. (2019).Review on Sustainability of Community-Led Rural Water Supply and Sanitation Systems with Special Reference to Berik Sub-Zone in Eritrea,. American Scientific Research Journal for Engineering, Technology and Sciences Vol. (59) No.1

McKenzie, S. (2004) Social Responsibility: Towards some Definitions, Hawke Research Institute, Working Paper Series No. 27

OEDC, (2003): Internal Guidelines and Criteria for OEDC Project Evaluation Washington, DC:OED

UNICEF (2011) Sanitation Analysis of Children and Women in Nigeria, 2011 Update: UNICEF Nigeria.

UNICEF (2010) Water, Sanitation and Hygiene in Nigeria: Fact sheet updated April, 2010 (www.Unicef,org/Wcaro/Wacaro-Nigeria) Factsheets wash. Accessed: 7/05/2013

UNICEF/Water Aid (2008) International Year of Sanitation in Nigeria

Webster, J. Dejacchew, G, Tseion, B. G, Mehari M and Tesfaye G. (1999) Integrated Development for Water Supply and Sanitation: Sustainability of Rural Water and Sanitation Project, Addis Ababa

WHO (2014) www.who.int/water sanitation-health/mdgi/en/.

WHO (2016) Basic Hygiene Promotion, http:/www.who.int/topics/hygiene/en/Accessed: 10/02/2016