

# Utilization of Water Sanitation Information in Oyo State

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## ABSTRACT

*This study, focused on utilization of water sanitation information in Oyo State. A multistage sampling technique was employed for the study. The first stage involved the purposive selection of all the four agricultural zones in Oyo State and those zones are; Ibadan/Ibarapa, Ogbomoso, Oyo, and Saki. The second stage involved purposive selection of two blocks from each of the agricultural zone which are known for water borne disease incidences and their access to information from water and sanitation (WATSAN) unit of the local government councils. So, Akinyele, Ibarapa east, Ogo-Oluwa, Oriire, Iseyin, Oyo east, Saki east and Olorunsogo respectively were selected. The third stage involved random*

*selection of two villages from each of the selected blocks: and a total of 230 household heads were sampled. Data collected were analyzed using descriptive statistics and chi square.*

*The mean year of experience is 22.58 years. The distribution of respondents by the membership of social organization shows 83 per cent of the respondents belong to one social organization or the other while 17 per cent did not belong to any social organization. The distribution of respondents by their farm size. 39.6 had between 1 and 3 hectares, 37.4 had between 4 and 6 hectares, 14.8 per cent of the respondents had between 7 and 10 hectares while 8.2 per cent of the respondent had above 10 hectares. The mean farm size is 2.3*

hectares. The mean annual income is 271,834.27. One major benefit of water and sanitation improvements is the time saving associated with better access. 78.3 percent agreed that it leads to increase in life expectancy. 64.3 percent. Another 60 per cent agreed that it reduces burden of water on women, 95.7 per cent reported that it leads to reduction in budget share on water borne diseases. 76.5 per cent. The use of clean and covered containers was ranked first with a weighted mean score (WMS) of 3.62 as a major way of utilizing water sanitation information. It was concluded that, the use of clean container, securing water from clean environment, securing germ free water, are among the frequency utilized water sanitation.

**Keywords-** Germ free water, sound health, water borne diseases.

## 1. INTRODUCTION

Water is a crucial component of sustainable development. However, limited access to clean and safe water associated with poor water supply and sanitation at household level is increasing the poverty gap, gender inequalities and the prevalence of water borne diseases. This accounts for 3.7% of the total global disease burden and 2.2 million deaths each year with rural households in the developing countries mostly affected (World Health Organization / United Nation Children Education Fund (WHO, 2008). Although the Millennium Development Goals (MDGs) target 7(c) seeks to “halve by 2015 the proportion of people without access to safe drinking water and sanitation” (United Nation Development Programme (UNDP, 2005), it is anticipated that Sub-Saharan Africa will only reach the MDGs water target by 2040 (Sutton, 2008). But still, many

people, as much 400million in sub Saharan Africa will be left without access to safe water with a majority of them living in rural areas (Sutton, 2008).

Water-borne diseases (diarrhea, typhoid, dysentery, guinea worm, filariasis, cholera and yellow fever) are human tragedy that kills millions of people every year. They hinder many people from living healthy lives and obstruct development efforts (Nash, 2003). According to Metwally *et al* .(2006), diseases such as cholera are spread rapidly during the dry season in the rural areas. Some household members, who are saddled with the responsibility of fetching and carrying water, are prevented from doing income-generating work or attending school, as the majority of their day is often spent walking miles in search of their daily water needs. Diseases that occur as a result of the intake or usage of unclean water and poor sanitation play major roles in the

economic activities of the rural households.

For example, diarrhea, which occurs from poor sanitary or hygienic habits and intake of unsafe water, is only second to malaria as the cause of infant mortality (Federal Government of Nigeria (FGN, 2010).

The objectives are to;

- Examine the socio-economic characteristics of the rural households heads in the study area.
- Ascertain the benefits of water sanitation information utilization in the study area.
- Assess the level of utilization of water sanitation information by the respondents study area.

Hypothesis of the study:

**H<sub>01</sub>:** There is no significant relationship between the benefits derived from water sanitation information and the level of water sanitation information utilization

## 2. METHODOLOGY

The study was carried out in Oyo-State, Nigeria. Oyo State falls appropriately between  $2^{\circ}38'$  and  $4^{\circ}35'$  East of Greenwich Meridian. The state is bounded on west by Osun State and the republic of Benin and in the North and South by Kwara and Ogun State respectively. The state lies in south western of the crystalline basement complex of Nigeria. Also known as the western upland, the crystalline basement complex areas had a relatively tidy relief with elevations varying from 220m to 650m above sea level, with occasionally steep hills of exposed bedrock (inselberg) rising higher than the undulating plain. The undifferentiated basement complex rocks made up of migmatites and gneisses are the most predominant rock type in the area, especially around Saki, Kishi and Sepeteri in

the Northern part, as well as Ayete, Ado-Awaye, Lanlate and Eruwa in the Southern part.

The population of the study were all the rural households in Oyo State of Nigeria. A multistage sampling technique was employed for the study. The first stage involved the purposive selection of all the four agricultural zones in Oyo State and those zones are; Ibadan/Ibarapa, Ogbomoso, Oyo, and Saki. The second stage involved purposive selection of two blocks from each of the agricultural zone which are known for water borne disease incidences and their access to information from water and sanitation (WATSAN) unit of the local government councils. So, Akinyele, Ibarapa east, Ogo-Oluwa, Oriire, Iseyin, Oyo east, Saki east and Olorunsogo respectively were selected. The third stage involved random selection of two villages from each of the selected blocks: and a total of 230 household heads were sampled.

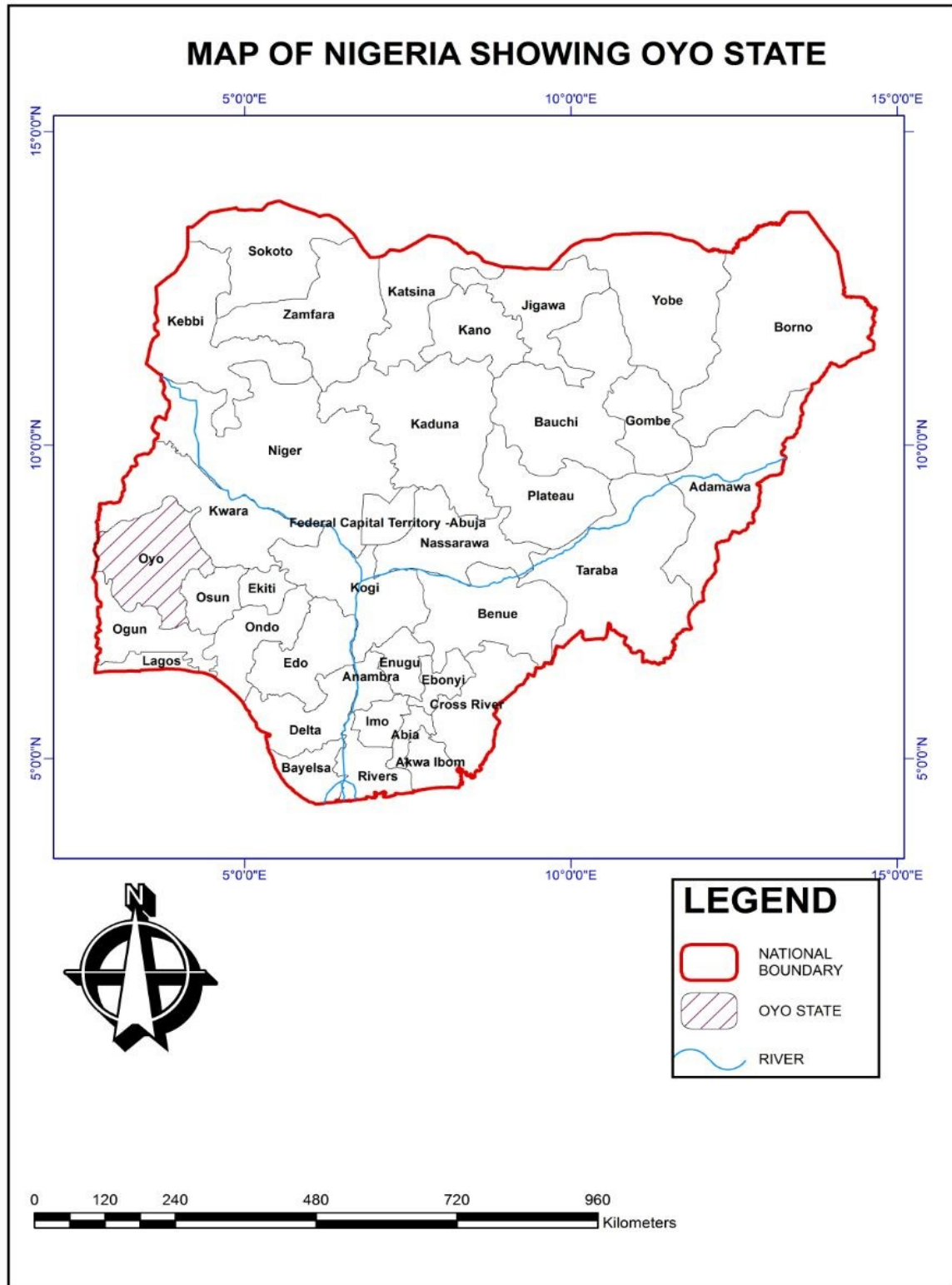
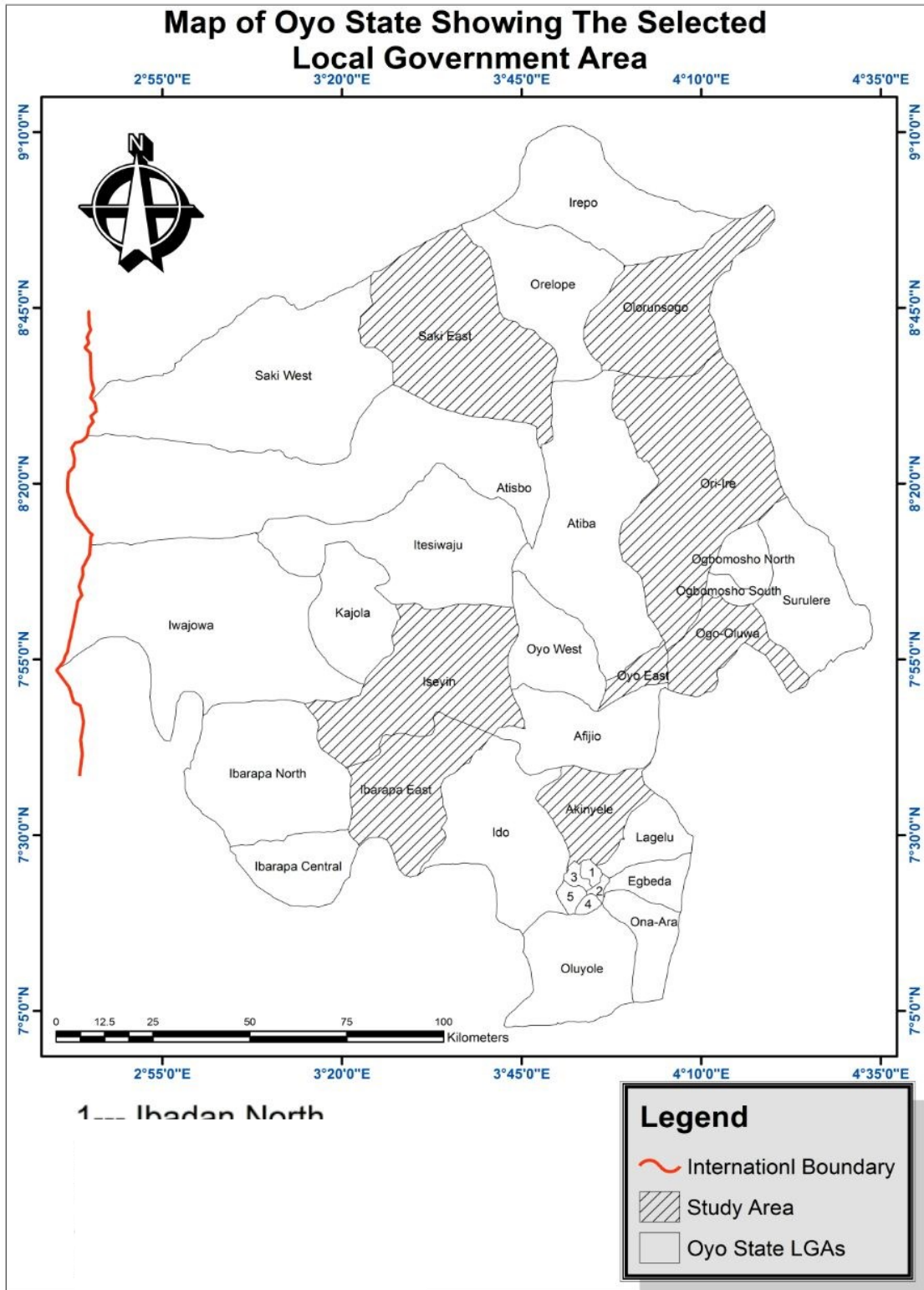


Figure 1: Map of Nigeria Showing the Selected State for the Study



**Figure 2:** Map of Oyo State Showing the Selected Local Government Areas.

**Table 1: Sampling procedure of the rural household heads from selected local government areas across Oyo state**

| Agric Zones        | Block        | Selected villages based on WATSAN Activities | Respondentsselected |
|--------------------|--------------|--|---------------------|
| Ibadan/Ibarapa     | Akinyele     | Onidudun                                     | 19                  |
|                    |              | Olanla                                       | 16                  |
| Sub total          | Ibarapa east | Adeekola                                     | 18                  |
|                    | 2            | Maya<br>4                                    | 22<br><b>65</b>     |
| Ogbomoso           | Oriire       | Ajinapa                                      | 15                  |
|                    |              | Aje  | 10                  |
| Sub total          | Ogo - Oluwa  | Pontela                                      | 15                  |
|                    | 2            | Lagbedu<br><b>4</b>                          | 15<br><b>55</b>     |
| Saki               | Saki east    | Agbonle                                      | 20                  |
|                    |              | OjeOwode                                     | 12                  |
| Sub total          | Olorunsogo   | BudoAlhaji                                   | 13                  |
|                    | 2            | TesiGaruba                                   | 15<br><b>60</b>     |
| Oyo                | Iseyin       | Ado Ogun                                     | 15                  |
|                    |              | Isherin                                      | 15                  |
| Sub total          | Oyo East     | Agboin                                       | 20                  |
|                    | 2            | Akinpeju                                     | 15<br><b>55</b>     |
| <b>Grand total</b> | <b>8</b>     | <b>16</b>                                    | <b>230</b>          |

The tools and procedure that were employed elucidated the objectives of the study: this includes the following.

Descriptive statistics:

They are the mean, percentages and frequency distribution. These were used as

tools to describe the socioeconomic characteristics of respondents, their income generating activities and specific projects benefited by respondents.

Chi square:

Chi square was used to estimate the test of hypothesis.

### 3. RESULTS AND DISCUSSION

Distribution of respondents by farming experience shows 26 per cent of the respondents having between 1– 10 years of experience in crop production 29 percent of the respondents had between 11 and 20 years while 21.3 percent of the respondents had between 21 and 30 years of farming experience. Another 13 percent of the respondents had between 31 and 40, 5.6 percent had between 41 and 50 years while 4.8 percent of the respondents had between 51 – 60 years of experience. The mean year of experience is 22.58 years.

The result shows that the farmers were very experienced in crop production which will make them to be versatile with regards to production systems and may therefore be better able to assess the risk involved in farming than the inexperienced ones. This high level of farming experience is also expected to significantly improve their farm

outputs because of the understanding of the production processes which would invariably lead to more income to be able to implement water sanitation information. This is in support of Adeola and Ayoade (2009) who opined that experience comes with age, and in traditional society the older a farmer gets, the more his opinion is respected and sought after in decision making.

The distribution of respondents by the membership of social organization shows 83 per cent of the respondents belong to one social organization or the other while 17 per cent did not belong to any social organization. Majority of the respondents are members of one social organization or the other. This could enable them to have access to various information and even fund that will help improve their production. The implication of this finding is that high membership of social organization by farmers could aid utilization of information



.This finding agrees with that of Colliers, (1998) who found that people that belonged to many social organizations tended to have more access to information which facilitated utilization decision. This also agrees with Godquin and Quisumbing (2006) who reported that membership of social organizations is generally perceived as a more efficient way of disseminating technologies to people in rural communities.

The table shows the distribution of respondents by their farm size. 39.6 had between 1 and 3 hectares, 37.4 had between 4 and 6 hectares, 14.8 per cent of the respondents had between 7 and 10 hectares while 8.2 per cent of the respondent had above 10 hectares. The mean farm size is 2.3 hectares. The findings shows that majority of the respondents were smallholder farmers producing at subsistence level. The findings corroborates with the findings of federal Ministry of Agriculture and Water

Resources (FGN, 2008 ) who reported that majority of Nigerian farmers are smallholder farmers cultivating less than three hectares of land. The implication of small scale farming is that it hardly gives yields beyond the level needed to keep the family hence, less income from sales of excess. Small incomes mean that farmers are poor and may have problems to buy disinfectant, soap etc, hence low utilization of the information.

The results of the table below indicates that 37.7% of the respondents earned between 1000 and 250,000 naira, 35.2% earned between 251,000 and 500,000 naira, 16.7% earned between 501,000 and 750,000 naira. Another 8.2% of the respondents earned between 751,000 and 1,000,000 while only 2.2% of the respondent earned an income above 1,000,000. The mean annual income is 271,834.27. With mean household size of 6, it means 45,305 naira annual income per person. This shows that the respondents are low income earners. That respondents were

low income earners might be the reason for low utilization of water sanitation information due to inability to afford soap and detergents, disinfectants, dig wells, build latrines etc. This is in consonance

with Yilkudi (2014) who reported low annual income was a contributory factor to the low adoption of water sanitation recommended practices in Plateau state of Nigeria.

**Table 2: Distribution of Respondents by Socio-Economic Characteristics**

|  | Frequency | Percentage | Mean value/Mode |
|--|-----------|------------|-----------------|
| <b>n= 230</b>                            |           |            |                 |
| <b>Years of Farming Experience</b>       |           |            |                 |
| 1 – 10                                   | 60        | 26.01      | 22.58           |
| 11 – 20                                  | 67        | 29.1       |                 |
| 21 – 30                                  | 49        | 21.3       |                 |
| 31 – 40                                  | 30        | 13         |                 |
| 41 – 50                                  | 13        | 5.6        |                 |
| 51 – 60                                  | 11        | 4.8        |                 |
| <b>Membership of social organization</b> |           |            |                 |
| Member                                   | 191       | 83         | Member          |
| Not a member                             | 39        | 17         |                 |
| <b>Farm size (hectares)</b>              |           |            |                 |
| 1 – 3                                    | 91        | 39.6       | 2.3             |
| 4 – 6                                    | 86        | 37.4       |                 |
| 7 – 10                                   | 34        | 14.8       |                 |
| Above 10                                 | 19        | 8.2        |                 |
|  |           |            |                 |
| <b>Income (₦)</b>                        |           |            |                 |
| 1000 – 250,000                           | 87        | 37.7       | 271, 834.74     |
| 251,000 – 500,000                        | 82        | 35.2       |                 |
| 501,000 – 750,000                        | 37        | 16.70      |                 |
| 751,000 – 1,000,000                      | 19        | 8.20       |                 |
| Above 1,000,000                          | 5         | 2.20       |                 |

Source: field survey, 2015

## Benefits of water sanitation information Utilization

The table below shows the distribution of the respondents based on the specific benefits derived from water sanitation information utilization. 98.7 percent agreed that utilization of water sanitation information leads to a healthy household. 87.4 percent agreed that it leads to reduction of water borne diseases and infections, which corroborates the report of Prusset *al* (2002) who reported that WATSAN leads to increased income indirectly in that a reduction in water-related diseases leads to cost savings in health care related expenditures mainly due to the reduced number of treatments of diarrhoeal cases. This is in agreement with Curry and Weiss (1993) who argued that whatever is actually done with time, the true opportunity cost is the amount in monetary units or in kind that the person

earns over the same period of time if he/she were not ill and was working.

One major benefit of water and sanitation improvements is the time saving associated with better access. 78.3 percent agreed that it leads to increase in life expectancy. 64.3 percent agreed that it leads to increased school attendance by the children which corroborates with Ajayi and Ogba (2008), who reported that there was an improvement in enrolment of children in school (74.3 %) with the adoption of water and sanitation practices. 87.5% of respondents used time saved due to utilization of water sanitation recommended information for other socioeconomic activities. Another 60 per cent agreed that it reduces burden of water on women, 95.7 per cent reported that it leads to reduction in budget share on water borne diseases. 76.5 per cent agreed that it leads to reduction in bills incurred on treatment of water borne diseases, this is in agreement with the

findings of Ajayi and Ogba (2008) who reported that 75% of respondents were of the opinion that there was a reduction in medical expenditure due to decrease in water and sanitation related diseases. 99.6 per cent says it gives sound health for improved productivity. This corroborates Whittington et al (1990) who reported that time saved from looking for water and treatment of water borne diseases results into either increase production, improved education levels or more leisure time. In another study, he went further to report that

it takes about 1-2 hours trek on the average to journey to the local spring to fetch water during the dry season in some rural communities in Nigeria, this even exclude waiting time at the spring. Whittington *et al* (2001). Time and energy gained may be applied to a variety of activities including agriculture, leisure and income generation (Parker and Skytta, 2000). While 93 per cent of the respondent said it gives long life and improved physical ability of household members.

**Table 3: Distribution of the respondents based on the benefits derived from water sanitation.**

| <b>Benefits derived from water sanitation</b>                    | <b>Frequency</b> | <b>Percentage</b> |
|--|------------------|-------------------|
| Healthy Household  | 227              | 98.7              |
| Reduction of water borne disease and infection                   | 201              | 87.4              |
| Increased production and productivity                            | 225              | 97.8              |
| Increased life expectancy  | 180              | 78.3              |
| Increased School attendance by children                          | 148              | 64.3              |
| Reduction of burden on women                                     | 138              | 60.0              |
| Reduction in budget share on treatment of water borne diseases   | 220              | 95.7              |
| Reduction of bills incurred on treatment of illness and diseases | 176              | 76.5              |
| Sound health for improved productivity                           | 227              | 99.6              |
| Long life and improved physical ability household member         | 214              | 93.0              |

**Source: Field survey, 2015.**

## Level of utilization of water Sanitation Information

The level of utilization of water sanitation information was measured on a four-point scale of Always, Occasionally, Rarely and Never. The use of clean and covered containers was ranked first with a weighted mean score (WMS) of 3.62 as a major way of utilizing water sanitation information while others were securing water from clean environment second with weighted mean score of 3.47, securing of germ free water third with WMS of 3.39, followed by allowing it cool down and settle before using which ranked fourth with the weighted mean score of 3.17. Treatment of water with

chlorine or potash alum comes fifth with the weighted mean score of 2.74, which is clearly followed by regular boiling of water before drinking with the weighted mean score of 2.04, followed by the use of water filter/sieve with the mean score of 1.97 and the last is the use of water guard with the weighted mean score of 1.45. Of all the available water sanitation information, the use of clean and covered containers to fetch and preserve water was more utilized. This could be due to the fact that the information was not too ambiguous for them to implement, the readily availability of containers used in fetching water might have also be a contributory factor.

**Table 4: Distribution of Respondents based on the Level of utilization of water Sanitation Information**

| Information                                  | Always    | Occasionally | Rarely    | Never     | Wms  | Rank            |
|--|-----------|--------------|-----------|-----------|------|-----------------|
| Always cover your kegs/containers            | 156(67.8) | 62(27.0)     | 12 (5.2)  | 0(0)      | 3.62 | 1st             |
| Secure Water from clean environment          | 152(66.1) | 50 (21.7)    | 13 (5.7)  | 15(16.5)  | 3.47 | 2nd             |
| Secure germ free Water                       | 121(52.6) | 82(35.7)     | 23 (10)   | 4(1.7)    | 3.39 | 3 <sup>rd</sup> |
| Let it stand and settle                      | 113(49.1) | 59 (25.7)    | 42(18.3)  | 16(7.0)   | 3.17 | 4th             |
| Treatment of water with Chlorine/Potash alum | 52 (22.6) | 76(33.0)     | 92(40.0)  | 10(4.3)   | 2.74 | 5th             |
| Boiling of water before drinking             | 28(12.2)  | 41(17.8)     | 74 (32.2) | 87(37.8)  | 2.04 | 6th             |
| Use of water guard                           | 33(14.3)  | 47(20.4)     | 31(13.5)  | 119(51.7) | 1.97 | 7th             |
| Use of Sieve                                 | 11 (4.8)  | 23 (10.0)    | 30(13.0)  | 166(72.2) | 1.45 | 8 <sup>th</sup> |

**Source: Field survey, 2015**

**H<sub>01</sub>:** There is no significant relationship between benefits derived from water sanitation and level of utilization. The Chi-square results shows there is a significant relationship between reduction of water borne diseases and infection ( $X^2 = 39.516$ ,  $p = 0.000$ ), increased production and productivity ( $X^2 = 54.650$ ,  $p = 0.000$ ), increased life expectancy ( $X^2 = 38.409$ ,  $p = 0.000$ ), increases school attendance ( $X^2 = 30.326$ ;  $p = 0.007$ ), reduction of burden on women ( $X^2 = 31.200$ ,  $p = 0.005$ ), reduction in budget share for treatment of diseases ( $X^2 = 32.128$ ;  $p = 0.004$ ), long life and improved physical ability of household members and level of water sanitation information utilization

**Table 5: Summary of the Chi Square Test Showing Relationship between Benefits derived from Water sanitation and Level of utilization**

| Benefits derived from water sanitation                           | $X^2$ | DF | P – Value | Decision        |
|--|-------|----|-----------|-----------------|
| Healthy Household  | 11.22 | 15 | 0.668     | Not significant |
| Reduction of water borne disease and infection                   | 39.51 | 15 | 0.000     | Significant     |
| Increased life expectancy  | 38.40 | 15 | 0.000     | Significant     |
| Increased School attendance by children                          | 30.32 | 15 | 0.007     | Significant     |
| Reduction of burden on women                                     | 31.20 | 15 | 0.005     | Significant     |
| Reduction in budget share on treatment of water borne diseases   | 27.78 | 15 | 0.015     | Significant     |
| Reduction of bills incurred on treatment of illness and diseases | 32.12 | 15 | 0.004     | Significant     |
| Sound health for improved productivity                           | 19.99 | 15 | 0.130     | Not Significant |
| Long life and improved physical ability household member         | 27.76 | 15 | 0.015     | Significant     |

**Source: Field survey, 2015**

**4. CONCLUSIONS AND RECOMMENDATIONS**

The respondent had certain number of years of experience in farming which suggest that they are not novice. Therefore, highly experienced individuals should be given adequate incentives that could improve both

their farming enterprise and standard of living.

Benefits of water sanitation Information utilization includes a healthy household sound health for improved productivity, long life and improved physical ability of household members, increased production

and productivity, increased life expectancy etc. Therefore, There is a need for continuous and effective water sanitation information delivery, efficient water quantity and quality availability in order to sustain and increase the gains of water sanitation programme in the rural areas. Also, any attempt or efforts geared at improving water sanitation information utilization and water supply through relevant agencies should be carefully and critically considered. Rural households' should be encouraged in effective and efficient utilization of various water sanitation Information so as to curb the menace of water-borne diseases.

The use of clean container, securing water from clean environment, securing germ free water, are among the frequency utilized water sanitation. Information that received highest ranking. Therefore, Government and sanitation agencies should take cognizance

of local people in designing and developing good approaches and methods of water sanitation which will aid the understanding of people and thereby encourage the efficient utilization of the Information. Also, more quality water access should be provided for the rural dwellers in order to ease the pressure on the existing ones.

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