



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*



## BENEFITS DERIVED FROM MILLENNIUM DEVELOPMENT GOALS FACILITATED BOREHOLES IN RURAL AREAS OF ONDO STATE, NIGERIA

Adejuwon, O. T. and Oyesola, O. B.

Department of Agricultural Extension and Rural Development, University of Ibadan, Ibadan, Nigeria

Correspondence e-mail address: opeyemiadejuwon@gmail.com

### ABSTRACT

Rural infrastructural development has a crucial role to play in the development of any nation. Despite the efforts of the three tiers of governments in Nigeria and that of the international organisations to improve rural wellbeing, most of the infrastructural development efforts have not been sustainable. Therefore, this study assessed the benefits derived from the Millennium Development Goals (MDGs) facilitated boreholes in rural areas of Ondo State, Nigeria. Three stage sampling procedure was used to obtain data from 152 beneficiaries in the study area. Information on socioeconomic characteristics, level of use of the infrastructure, constraints to use of the infrastructure, and benefits derived from the infrastructure were obtained using both qualitative and quantitative methods of data collection; information obtained were analyzed using descriptive and inferential statistics. Majority (66.5%) of the respondents were between the age range of 31 and 60 years with mean age of  $44 \pm 14.28$ , 55.3% had a household size of between 1 and 5 people, 61.2% were female, 95.4% had formal education, 60.5% were Christians, and 59.9% were married. High percentage (98.6%) of the respondents stated that borehole was not in use always. The highest ranked constraints faced by the beneficiaries in the use of the borehole was lack of maintenance ( $\bar{X}=1.14$ ). The major benefit derived was provision of drinkable water ( $\bar{X}=1.87$ ). Significant relationship existed between level of use of the infrastructure ( $r=-0.358$ ,  $p=0.002$ ) and the benefits derived from the infrastructure. It was therefore concluded that the beneficiaries did not benefit from the infrastructure as expected due to low level of use.

**Keywords:** Benefits, Millennium Development Goals, Borehole

### INTRODUCTION

Over the last half century, foreign aid has emerged as a dominant strategy for infrastructural development, human capacity building and thus addressed poverty alleviation in the rural areas of Nigeria; yet it seems that the rural dwellers continue to suffer from economic hardship, raising questions of whether foreign aid is worthwhile and effective in Nigeria. Despite the intervention of the international organisations, the non-availability of infrastructures and the poor state of the available ones is alarming. Corroborating this, Fasanya and Onakoya (2012) argued that many government programmes and policies in Nigeria have focused on improving living standards of Nigerians, but have found it difficult to reduce rural poverty.

MDG is another foreign supported intervention in Nigeria, financed by the United Nations; it was born at the United Nations Conference on Sustainable Development, in 2012. The objective was to produce a set of universally applicable goals that balances the three dimensions of sustainable development: environmental, social, and economic (affecting every sector). MDG completed her mandate in December, 2015. MDG (2015) asserted that the goals had been achieved. It was agreed that the goals should be sustained, this gave birth to Sustainable Development Goals (SDGs), which was primarily aimed at sustaining the development that the MDGs achieved. Among the eight goals of MDGs, the following seven (7) were supposed to have direct effect on the rural dwellers; to eradicate extreme poverty and hunger, to achieve universal primary education, to promote gender equality and

empower women, to reduce child mortality, to improve maternal health, to combat HIV/AIDS, malaria, and other diseases and to ensure environmental sustainability. The infrastructures provided in the rural areas of Ondo State can only be traced to four of these goals. These goals are; to achieve universal primary education, to reduce child mortality, to improve maternal health, to combat HIV/AIDS, malaria, and other diseases. In achieving the goals, MDGs provided maternity centres, boreholes, construction and rehabilitation of classroom blocks in selected rural communities of Ondo State where the facilities were lacking. Boreholes were provided to make water available and accessible to the people; this is targeted at achieving goal 4 which is to reduce child mortality.

Despite the provision of borehole in the study area, Olugbamila and Ogunyemi (2015) asserted that continued low level of access to potable water may not be unconnected to non-functional status of the public pipe borne or borehole water. However, the state of and hence the level of benefits derived from borehole water through MDGs has not been investigated to ascertain the extent to which this has contributed to alleviating stress associated with lack of water in rural communities.

According to Omogbemi, Dogara and Olabode (2015), rural infrastructures are found today in many rural areas in Nigeria. However, there are a number of abandoned/unused or non-serviceable infrastructures spread all over the country despite the fact that the cost of their execution is quite alarming. Thus, there has been growing awareness on the need for stakeholders to execute only those

infrastructures that can be operated and maintained at the village level with little or no institutional support. Furthermore, past experiences have shown that except the community is carried along from the time of planning to the time of completion, there is bound to be failure in its sustainability.

So many researches has been done in the area of availability of intervention projects as well as accessibility of the projects in rural areas of Nigeria; but there is no adequate information on the benefits derived from the interventions, especially the boreholes provided by foreign organisations. Therefore, this study ascertained the benefits derived from MDGs facilitated boreholes in rural areas of Ondo State.

The specific objectives were to;

- i. describe the socioeconomic characteristics of the beneficiaries.
- ii. ascertain the beneficiaries level of use of the infrastructure;
- iii. identify the constraints to the use of the infrastructure in the study area.

The hypothesis of the study is as stated; there is no significant relationship between the level of use of the infrastructure and benefit derived from the infrastructure in the study area

## METHODOLOGY

This study was carried out in Ondo State, popularly called the Sunshine State. The state was created on 3 February 1976 from the former Western State. It originally included what is now Ekiti State, which was split off in 1996. Akure is the state capital. Ondo State is located in South-West Nigeria, on latitude  $5^{\circ}45'N$  to  $8^{\circ}15'N$  and longitude  $4^{\circ}45'E$  to  $6^{\circ}00'E$ . It has the tropical wet-and-dry climate with mean annual rainfall of about 1500 mm and 2000mm in the derived savannah and humid forest zones respectively. (Akinyemi and Andreas, 2011). The state is divided into three senatorial districts, namely; Ondo North, Ondo Central and Ondo South. There are 18 local government areas in the state. The population of Ondo state according to National Population Census report stood at 3,440,000 people (NPC, 2008).

The population of this study consisted of all household heads in the local government areas that had benefited from MDGs facilitated boreholes in Ondo State, Nigeria.

Multi-stage sampling procedure was used to select respondents from the population of household heads in the selected Local Government Areas.

Stage 1: Purposive sampling was used to select two (2) local Government Areas with the highest number of MDGs borehole, namely Okitipupa and Ondo East).

Stage 2: The communities where the projects were executed in each LGA were purposively selected.

Stage 3: Two communities were randomly selected from the selected communities in each of the two selected

Stage 4: In each of the selected communities, proportionate random sampling technique was used to select twenty five percent (25%) household heads which covered all the sub-groups in the family. In all, two hundred and twenty (152) respondents were selected for data collection.

Measuring the dependent variable of the study, i.e. benefit derived from the intervention, respondents were asked to tick Yes or No to indicate if they benefited from the borehole available in their area, Yes had a value of 1 while No had a value of 0. They were also asked to indicate the level of benefit on a three point scale of High, Moderate, Low and Not beneficial with scores of 3, 2, 1 and 0 respectively. Minimum score was 0.00, maximum score was 24.00 and the mean was 9.64.

## RESULTS AND DISCUSSION

### Socioeconomic characteristics

Result in Table 1 reveals that 47.4% of the respondents were between the ages of 41 and 60, 20.4% were between 61 and 70, 19.1% of the respondents were between ages of 31 and 40, 10.5% were below 30 years of age, while only 2.6% were above 70 years of age. Mean age of  $44 \pm 14.28$ . The result shows that majority (53.1%) were below 50 years of age.

The Table also reveals that majority (55.3%) of the respondents had between 1 and 5 household size, 38.2% had between 6 and 10 household size, with 5.2% having between 11 and 15 household size, while 1.3% had above 15 household sizes. Mean household size of  $5 \pm 3.18$ . This implies that majority of the households in the study area had large household size which could lead to high pressure on the infrastructure. Furthermore, majority (61.2%) of the respondents were female, and 38.8% were male.

Result on education attainment of the respondents reveals that majority (65.9%) had tertiary education, secondary 19.0% and primary education 10.5% while only 4.6% of the respondents had no formal education. This implies that indigenes of the study area are well educated. The findings also corroborates the findings of (Adepoju and Obayelu, 2013) who stated that most indigene of the study area (Ondo State) have one form of formal education or the other

Majority (60.5%) of the respondents were Christians, 38.8% were Muslims, while only 0.7% was a traditional worshiper. This implies that majority of the people in the study area were Christians. Previous researches indicate that



Muslims in the study area are about 35% of the total population (SCSN, 2005).

**Table 1: Distribution of respondents according to their socioeconomic characteristics**

Variable description	Frequency	Percentage	Mean / Std. deviation
<b>Age (years)</b>			
Less or equal to 30	16	10.3	Mean = 44 Std. Deviation = 13.18
31-40	29	19.1	
41-50	36	23.7	
51-60	36	23.7	
61-70	31	20.4	
Above 70	4	2.6	
<b>Household size</b>			
1-5	84	55.3	Mean = 5 Std. Deviation = 3.18
6-10	58	38.2	
11-15	9	5.2	
Above 15	1	1.3	
<b>Sex</b>			
Male	59	38.8	
Female	93	61.2	
<b>Highest level of education</b>			
No formal education	7	4.6	
Primary education	16	10.5	
Secondary education	29	19.0	
HSC/OND	19	12.5	
NCE	30	19.7	
B. Sc / HND	39	25.6	
Master degree	10	6.8	
Ph.D	2	1.3	
<b>Religion</b>			
Christianity	92	60.5	
Islam	59	38.8	
Traditional	1	0.7	
<b>Marital status</b>			
Single	23	15.1	
Married	87	59.9	
Divorced	9	5.9	
Widowed (er)	27	17.8	
Separated	6	1.3	

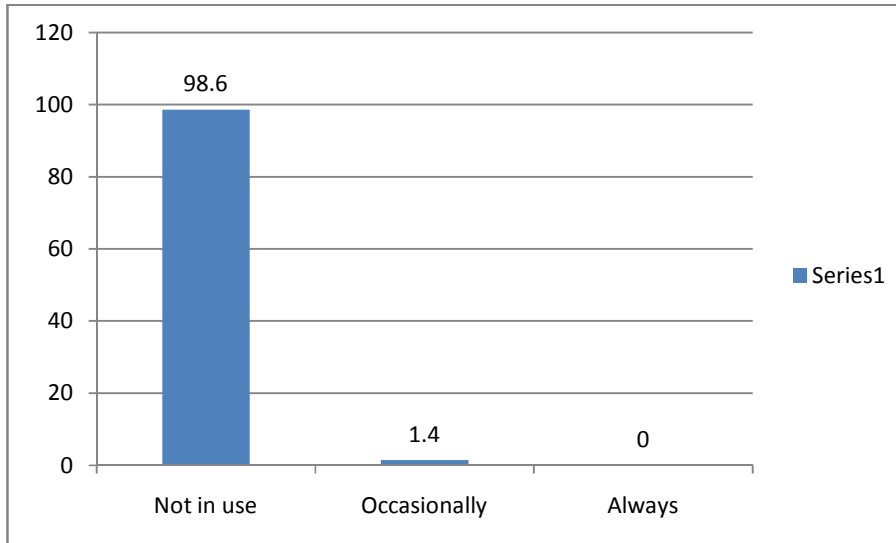
Source: Field survey, 2017

Table 1 also reveals that majority (59.9%) of the respondents were married. This implies that majority of the respondents were married and thus classified as being responsible as marriage is believed to confer responsibility on individual. As asserted by Jibowo (2000) that marriage is an important institution in any community for it is an

important framework within which social role and status are prescribed.

#### **Frequency of use of the infrastructures**

Result of analysis presented on Figure 1 on the frequency of use of the boreholes reveals that majority (98.6%) of the respondents were not using the infrastructure, while the remaining 1.4% use it occasionally,



Source: Field survey, 2017

**Figure 1: Distribution of respondents' level of use of the infrastructures**

This is in agreement with the view of FGD participants that all the boreholes were not in use because they were not in good condition. The discussants at the FGDs stated that reasons for the bad state of the borehole were lack of maintenance by the donor agency, use of inferior materials and not completion of some of the project.

**Constraints to the use of borehole**

Result in Table 2 shows that lack of maintenance ( $\bar{x}=1.14$ ), small over-head tanks

( $\bar{x}=0.89$ ) and lack of technical knowhow on maintenance ( $\bar{x}= 0.79$ ) were the most severe constraints faced by the respondents in the use of the borehole provided by MDGs. Some other constraints faced by the beneficiaries were bad road ( $\bar{x}=0.73$ ), some borehole projects were not completed ( $\bar{x}=0.60$ ) and level charge before use ( $\bar{x}=0.34$ ).

**Table 2 Distribution of the constraints to the use of borehole**

Constraints	Very severe		Severe		Not a constraint		Mean	Rank
	Freq	%	Freq	%	Freq	%		
Levies charged before use	12	17.1	0	0.0	58	82.9	0.34	6 <sup>th</sup>
Location of the borehole	3	4.3	1	1.4	66	94.3	0.10	8 <sup>th</sup>
Technical know how	24	34.3	7	10.0	39	55.7	0.79	3 <sup>rd</sup>
Lack of maintenance	34	48.6	12	17.1	24	34.3	1.14	1 <sup>st</sup>
Small over-hand tank	24	34.3	14	20.0	32	45.7	0.89	2 <sup>nd</sup>
The project was not Completed	21	30.0	0	0.0	49	70.0	0.60	5 <sup>th</sup>
Bad road	15	21.4	21	30.0	34	48.6	0.73	4 <sup>th</sup>
The project stopped Working	8	11.4	0	0.0	62	88.6	0.23	7 <sup>th</sup>
<b>Grand mean</b>							<b>0.60</b>	

Source: Field survey, 2017

This corroborates the findings of Enefiok and Ekong (2014) that lack of maintenance is the major problem with MDGs water projects in Nigeria.

**Benefits derived from borehole by respondents**

Results in Table 3 indicate that benefits derived through the provision of borehole in the study area through MDGs intervention included provision of drinkable water ( $\bar{x}=1.87$ ), reduction in hours spent in search of water ( $\bar{x}=1.07$ ) and improve unity in the community ( $\bar{x}=0.80$ ).

This implies that MDGs only succeeded in providing drinkable water and could not provide other beneficial impact because it did not serve the people for long. This corroborate the statements of the discussants during the FGD that the borehole only provided drinkable water and also reduced distance covered in search of water for few months before they stopped working.



**Table 3: Distribution of benefits derived from boreholes by respondents**

Level of benefit	High		Moderate		Low		Not beneficial		Mean	Rank	
	Freq	%	Freq	%	Freq	%	Freq	%			
Provision of drinkable water	35	50.0	11	15.7	3	4.3	21	30.0	1.87	1 <sup>st</sup>	
Reduce incidence of cholera and other related ailment	3	4.3	3	4.3	2	2.9	62	88.6	0.24	5 <sup>th</sup>	
Provision of water for Irrigation	3	4.3	2	2.9	2	2.9	63	90.0	0.21	7 <sup>th</sup>	
Reduce hour spent in search of water	15	21.4	13	18.6	4	5.7	38	54.3	1.07	2 <sup>nd</sup>	
Reduces child mortality	3	4.3	3	4.3	2	2.9	62	88.6	0.24	5 <sup>th</sup>	
It improves sanitation of the environment	3	4.3	3	4.3	4	5.7	60	85.7	0.27	4 <sup>th</sup>	
It improves the unity in the community	8	11.4	10	14.3	12	17.1	40	57.2	0.80	3 <sup>rd</sup>	
<b>Grand mean</b>									<b>0.67</b>		

Source: Field survey, 2017

**Categorisation of level of benefits derived from the infrastructure**

Table 4 shows the level of benefit derived from boreholes provided by MDGs in the study

area. The result shows that majority (84.9%) said it was low while 15.1% said the benefit derived from the borehole was high. The low benefit derived may be due to low level of use.

**Table 4 Distribution of categories of level of benefits derived from the infrastructures**

Level	Frequency	Percentage
Low (0.00-4.70)	129	84.9
High (4.71-21.00)	23	15.1
Total	152	100.0

**Relationship between level of use of the infrastructure and the benefit derived from the infrastructures**

Results of analysis in Table 5 show that there is significant relationship between the level of use

of borehole ( $r = -0.358, p = 0.0002$ ), and the benefit derived from the infrastructure, hence, the null hypothesis is rejected. The boreholes were not in use, hence it affected the benefits.

**Table 5: Results of test of relationship between level of use of the infrastructure and the benefit derived from the infrastructure**

Variable	r-value	p-value	Decision
Level of use	0.358	0.002	Significant

Source: Field survey, 2017

**CONCLUSION AND RECOMMENDATION**

The study concluded that the level of use is very low because most of the infrastructures were in bad conditions because they were not properly maintained. The benefit derived was low due to the low level of use.

Based on the findings of the work, the following recommendations are hereby made:

- i. The donor agency should have a maintenance team for the infrastructure; also the beneficiaries should be encouraged to maintain the infrastructure in the study area.
- ii. MDGs should rehabilitate all abandoned boreholes in the study area.

- iii. MDGs should engage professionals in the field of rural sociology for her community entrance process.

**REFERENCES**

Adepoju, A. O. and Obayelu, O. A. (2013). Livelihood diversification and welfare of rural households in Ondo State, Nigeria. *Journal of Development and Agricultural Economics*. Vol. 5 pp. 482-489. DIO 10.58971/JDAE2013.0497.

Akinyemi, G. O. and Andreas, M. (2011). Climate and bio-climate analysis of Ondo State, Nigeria. *Meteorologische Zeitschrift. An Empirical Analysis for Nigeria*.

- International Journal of Economics and Financial Issues* Vol. 20, No. 5, pp 1.
- Enefiok, E. I. and Ekong, E. E. (2014). Rural water Supply and Sustainable Development in Nigeria: A case analysis of Akwa Ibom State. *American Journal of Rural Development*, 2014(4), pp 68-73. DOI: 10.12691/ajrd-2-4-2.
- Fasanya, I. O. and Onakoya, A. B. (2012). Does Foreign Aid Accelerate Economic Growth?
- Jibowo, A. A. (2000). *Essentials of Rural Sociology*. Gbemi Sodipo press Ltd, Abeokuta, Nigeria, 244p
- Millennium Development Goals (MDG) (2015). The 2015 Millennium Development Goals Report. Retrieved from [www.google.com](http://www.google.com) on 10/03/2017.
- National Bureau of Statistics (NBS) (2016). National Bureau of Statistics 2016 report. Retrieved from [www.nbs.com](http://www.nbs.com) on 26/02/2017
- Nigerian Population Commission (NPC) (2008). The report on live birth, death, and stillbirth Registration in Nigeria (1994-2007). Retrieved from [www.google.com](http://www.google.com) on 11/10/2017
- Olugbamila, O. B. and Ogunyemi, O. F. (2015). Assessment of Water Supply Situation in Owo, Ondo State, Nigeria: Implications for the Attainment of the Millennium Development Goals. *International Journal of Scientific and Research Publications, Volume 5, pp 4*.
- Omogbemi, Y., Dogara, B. and Olabode, O. T. (2015). Operation and Maintenance of Rural Water Supply Schemes in Nigeria: an Overview. P 2 Retrieved from [www.google.com](http://www.google.com) on 1/3/2017.
- SCSN (2005). Supreme Council for Sharia in Nigeria press release. Retrieved from [www.google.com](http://www.google.com) on 22/07/2017.
- UNICEF (2016). Highlights of 2016 UNICEF report on the state of the world's children, retrieved from [www.unicef.com](http://www.unicef.com) on 14/01/2017 *Vol. 2, No. 4, 2012, pp.423-431, ISSN: 2146-4138*  
[www.econjournals.com](http://www.econjournals.com)