ASSESSMENT OF DOMESTIC WATER SOURCE AND HEALTH IMPLICATION IN CHANCHAGA LOCAL GOVERNMENT AREA NIGER STATE

BY

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SUBMITTED TO DEPARTMENT OF GEOGRAPHY, NIGER STATE COLLEGE OF EDUCATION IN PARTIAL FULFILLMENT OF THE QUIREMENT FOR THE AWARD OF NIGERIA CERTIFICATE IN EDUCATION (NCE).

OCTOBER, 2013

CERTIFICATION

This is to certify that this project research work has been read approved in the partial fulfillment of the requirement for the award of Nigeria Certificate in Education (NCE) in social science, for the school of art and social science, Niger State College of Education.

.....
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Project Supervisor

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Sign & date

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Mall. Ndako Nma
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Head of Department

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Sign & date

DECLARATION

I hereby declare that this project is independently initiated, executed and completed by me, that the findings emanated from this research work is to the best of my knowledge and have not been accepted in substance for award of any NCE or programme of this college or any other institution.

DEDICATION

This research project is dedicated to almighty Allah who has given us life, knowledge, wisdom, divine health and protection to successfully finish this work. I also dedicate this project to my parents my late father Alhaji Abdulrafiu Adeyemi Hussaini and my beloved mother Hajiya Sidikat Abdulrafiu Hussaini.

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CHAPTER ONE

1.1 Background of the Study

The provision of adequate water supply to rapidly growing urban population is an increasing problem for government throughout the world. Population growth will probably add another 2.5 billion to 3 billion people over the next 25years. Which will be mainly in developing countries. Demographic growth rate are falling in absolute terms, but the population will continue to grow while in 1950, 30% of the world's population live in urban areas, in 1995, it was nearly 45% according to an estimated made by the United Nations. By one five people will live in big cities as compared to one in nine now. However, despite the growth rate in world's population there is no adequate increase in safe water supply to match the population (Bostemeyer, etal, 2000).

According to Hueb (2002) stated that well over 1000million people of the world have access to adequate supply of water. Also it was reported that more than 1.1million or one-sixth of the world's population do not only require water for it's everyday activities, but it in adequate quality, the quantity of water supplied to any urban centers depends on the resources available, level of technology, management and as well demand which is a function of economic activities life style and government policy.

According to hall and Dracup(1992); stated that, water is a catalyst for developing. It is also the opinion of Hueb, (2000) revealed that the problem of water supply is not lack of physical access to the existing water supply and sanitation infrastructure but also the lack of efficiency in the management of urban infrastructure. For example more than 25% of the water produced may developed cities, is lost before reaching the consumers with some drinking water supply network, losing more than 50% of the total water product while a considerable portion of water product is lost through failures in the production and distribution system.

The urban poor are deprived of this service and have to pay exorbitant price set by private vendors for small quantities of water of doubtful quality. There is need to make water available in a required quantity and quality to meet the demand of the various users. This becomes necessary especially in third world countries, when viewed against the social-economic development program of various governments. As the economic expands the pressures to increase water supply also increases water supply also increases (Cheesbrough 2003).

The pressure to invest and match production capacity is most felt in big urban agglomeration with large areas, where essential services are visibling lacking or clearly inadequate. However there is increasing pressure on government and public water utilities to meet the demand in a growing number of small and intermediary towns that aspire to have urban services (Ajibade 2004).

Most developing countries including Nigeria do not vest rationally in thi sector, factors affecting the sustainability of water supply are no systematically addressed. Most of time the focus is on expanding of existing schemes or development of new schemes rather than by looking at the management is a crucial and a central issue in sustaining any project including the provision of water. A good management of water utility will ensure appreciate response change in the quality of water demanded as a result of structure change from social-economic development. Therefore effective management of water is not negotiable of Nigeria's urban area are going to improve and sustain the supply of adequate safe water to their dwellers. Chapman (1992).

1.2 STATEMENT OF RESEARCH PROBLEM

Water next to air is the most important need to man. Inspire of the government investment in Nigeria over the years in this essential human requirement a large population still does not have access to adequate water both in quantity and quality. It is estimated that 48% of inhabitants in the urban areas in Nigeria 39% of rural areas have access to potable water supply. The quality is in most cases is suspect has various reasons responsible for their situation include poor planning, inadequate funding, insufficient relevant manpower and haphazard implementation of a national policy water supply(Ajibade 2004).

Niger state has also invested large sums of money in construction of Bos Dam in 1945, New Tagwai Dam in Minna, Kontagora, Suleja, Bida, and Ne Bussa water schemes and other water supply schemes across the state. Wat resource management and utilization is crucial to the country's efforts towar poverty reduction, economic growth and food security while maintainin sustainable ecological system even after early sixth years of water suppl development in Nigeria as much as 43% of the population still have access t tap water, with the situation worse in rural area. (Draft Niger State water and sanitation policy 2008). In spire of the effort put forward by the past and incumbent administrative there are still many challenges militating the supply of quality and quantity water as regard to human factors. instance of these are as follows; do you have stable supply of water both quantity and quality, do this water purify by the supply authority before pumped to the consumers, what is the level of health challenges as regard to domestic water, what are the source of water mainly used for consumption, what is the condition of water pipes to the outlaying surrounding or user, what are the managerial inefficiency of the supply authority or agencies.

1.3 AIMS AND OBJECTIVES OF THE STUDY

The aim of the study is to assess the way domestic water source in heal implications in Chanchaga Local Government Area of Niger State. To achiev this, the following objectives were proposed:

I. To determine the adequacy or inadequacy of water supply facilities i Chanchaga local government area.

II. To access the level of water related borne disease in Chanchaga loca government area.

III. To develop and sustain a program of operation and maintenance of the availability water supply facilities in Chanchaga local government area.

1.4 SIGNIFICANCE OF THE STUDY.

The need for quality and quantity domestic water in Minna and It neighborhood cannot be under estimate as to the development of the local government area. The government in her effort has tried to ensure safe drinking water for the populace which are (Ruwa Twasai, Tagwai Dam, Bosso Dam and so no. So as to reduce or limit the danger of water borne disease.

Coupled with the above the study is highly indispensible because both living and non-living thing are evolved in one way or the other from water. Therefore, there is need to apply quick and systematic approach in taking meanance and scourge of defective or ineffective quality and quantity domestic water supply.

1.5 THE SCOPE AND LIMITATION OF THE STUDY

The study is defined to some selected areas which are Kpakungu, Saul kahuta, Bosso, Maitumbi and Angwan Daji in Chanchaga local governmer area. The research is also limited by time, scarce resources and restricted to particular area which is Chanchaga local government area it is supposed t cover much government but as fresh researcher with little research at ou dispose.

1.6 THE STUDY AREA

The town lies on longitude 9° 37° N and latitude 6° 33° E, on geographical based of undifferentiated basement complex work of mainly quiets and ingratiated situated at the base of prominent hills in an insulating plan. The whole of Minna surrounding is very rock. The typical climate of the middle belt zone of Nigeria is a good reflection of Minna climate with rain season start around April and last till October. The month of September normally records highest rainfall. The mean monthly temperature is highest in March and lowers in August (UND/NISEPA, 2009).

Minna, the capital city of Niger State, Nigeria has a total population of approximately 506,113. The average population density in Minna is about 3448 persons per km square (UND/NISEPA, 2009). The population growth in the city is higher than the average of the whole country because of its proximity to Abuja, the new administrative capital of the country.

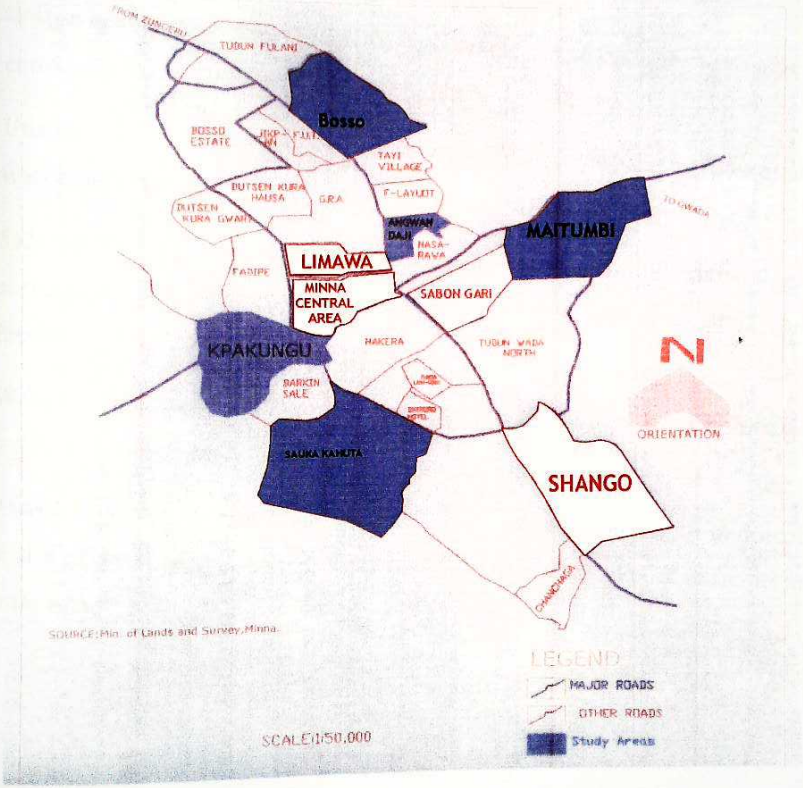
This shows that there may be a rapid population inflow into the city, perhap because of job opportunities in federal capital territory.

The creation of additional local government in 1991 saw the split o Chanchaga local government into the three to have Paiko Bosso loca government area in addition. However, more people means more water and more water means more resources needs for water management, the rapid population inflow should be considered in designing a water management plan. Being a small and densely populated town with a hot and dry climate, average temperature of 26.7 – 35.3 degree centigrade, daily average humidity at 44.4% and annual average rainfall 1334mm, Minna is potentially vulnerable to the outbreak of any infection disease. Minna is a multi ethnic cultural and multi language society. Its economic was ones exclusive based in agriculture commodities and now it is still one of the world's largest producers of maize, sorghum beans, rice, yam and millet. Minna was made first headquarters of Chanchaga local government since the creation of Niger state in 1976 although it still maintain its status of headquarter of Minna municipal council with all administrative and function requirement of full pledge local government. However when the defunction Chanchaga local government was moved to Kuta and named Shiroro local government then gained her autonomy of local government July 1989.

MAP OF NIGER STATE SHOWING MINNA TOWN.

SOURCE: Min. of Lands and Survey, Minna.

STREET GUIDE MAP OF MINNA SHOWING RANDOMLY SELECTED AREAS



1.7 DEFINITION OF TERMS

Domestic water:- This means water used mainly for house hold activitie such as cooking, bathing etc.

Water borne disease:- In this context water borne disease means the disease contracted as a result of water we consumed.

Unsafe water:- This refers to unimproved water that are include open wells, water vendor and soon.

Safe water:- This is attributed to water such as house hold connection, public stand pipe, borehole, protected dug well and so on, with zero effect on human health.

Water treatment:- This as to do with the purification of water before delivery to the general public.

Water quality: in this regard water quality means the sanity and ecological health of the water in terms of the presence or absent of contaminants such as ammonia.

CHAPTER TWO

2.1 REVIEW OF RELATED LITERATURE

Water is one of the most remarkable substances known. It is the onl substance found in vast quantities in nature in the states, solid, liquid an gaseous. Almost everyone knows that water is a chemical compound made o hydrogen and oxygen. Many people even refer to it in conversation as "H_2O rather than using the word water, it may be the only chemical symbol they recognize (manning 1992).

Water is a universal resources because of its free occurrence in nature, is often taken for granted and abuse, especially in third world nations where information is neither readity accessible nor disseminated to society (Omole and Longe 2008). Abundant as it may seen, water in its clean state, is one of the purest elements in the world.

Domestic water supplied are one of the fundamental requirement for human life. Without water life cannot be sustained beyond a few days and lack of access to adequate water supplier leads to the spread of disease. Children bear the greatest health burden associated with poor water and sanitation. Diarrhea disease attribute to poor water supply, sanitation and hygiene account for 1.73 millions death each year and contribute over 54 millions disability adjusted life years, a total equivalent to 3.7% of the global burden of disease (WHO 2002).

However, this places diarrheal disease due to unsafe water, sanitation an hygiene as the highest burden of disease on a global scale, a health burden tha is legally preventable (who 2002). Other disease are related to poor wate sanitation and hygiene such as Traichoma, Schrotosomiasis, Asseriasi Trichuriasis, Hookworm Disease, Malaria and Tapanese Encephautic, an contribute to an additional burden of disease (WHO 2002).

As of 2000 it was estimated that one-sixth of humidity (1.1 billion people lacked access to any form of improve water within 1 kilometer of their hom (WHO and UNICEF 2000). This trend is mostly associated with developing nations, Nigeria inclusive where more water is required in our homes than the amount we need to stay alive. We require water for cleaning, cooking, laundry, bathing and carrying away waste. But in the case of developed nation the united state of America for instance, has more homes with kitchen fauce or facilities and flushes toilets than any other country. On the average every America uses more than 100 gallons (380 litres) of water a day in a home. It takes about 7 gallons (26litres) of water to flush a toilet. It takes about 20 – 30 gallons (76 – 114 litres) to take a bath and each minute under a shower take at least 5 gallons (19 litres) . It takes more than 15 gallons (57 litres) of water to wash a day's dishs and about 40 gallons (152 litres) to run an automatic washing machine (world book encyclopedia vol. 21).

The various definition and conception given to water portray, it as a important and indispensible element/substance of human existenc Therefore, water is clouds, fog, dew, rain water is frost, snow, hail, a glacier, a ice berg, water is a bubbling spring a creek, a river, the ocean, water is port o every living things, water is the stuff of life itself (Gapta 2008).

2.2 INADEQUATE OF WATER SUPPLY IN MOST OF OUR CITIES.

An adequate, safe and portable water supply, easy of access is a major factor i raising the health standard of our cities and its beneficial effects is in th reduction of mobility and mortality, especially among of children and infants have been well established. The world health organization review of mid decade progress as at December 1985 showed that in the Africa region a estimated population of 75 million (25% of the total population) living in the rural areas and 90 millions. (78% of the total population) living in the urban area were provided with a community water supply. The remaining population in the rural and urban areas who had no access to a safe water supply had of necessity to sort to other traditional sources (Gleick 1996).

Because of the importance of providing the world population with an adequa water supply the united nations during the international drinking wat supply and sanitation decade, set water supply targets on which developme efforts should be focused by the countries in the urban area 60% of th population were to be secured by house connections and the remaining 40% public stand part, in the rural areas 20% of the population were to hav reasonable access to safe water whilst the remaining 75% would still hav inadequate and often contaminated water supplies.

On modest estimates by 1990 some 109.2 million people in African region (36.4 million in urban area and 72.8 million in rural areas) should be served with water supplies in the second half of the decade bring the level of service coverage up to 38% more than the 40% reported at mid-decade (WHO 2000).

However, in practice, the use of water for domestic purposes cannot easily be distinguished from productive use at the household level, particularly among poor urban communities. Domestic water is use to sustain livelihoods among the poor form of integral part of household coping strategies. There may also be important health and social gain from ensuring adequate quality services to support small-scale productive use for example where this involves food production. Access of water adequate for small scale productive activities in such area is therefore important part of poverty alleviation and may deliver significant in direct health benefit as result. The quality of drinking water as a powerful environment determinant of health.

These improve water supplies were, house hold connection, public stand pip borehole, protected dug well, protected spring and rain water collection who the unimproved water supplies were, unprotected well, unprotected sprin vendor provide water, bottled water, tanker truck provide which pose seriou challenges on the populace. Assurance of drinking water safety is a foundatio for the prevention and control of water borne diseases (WHO 2000).

2.3 HEALTH CHALLENGES INHERENT/FORCED

A considerable number of studies have been attempted to correlate th incident of water-borne and water associated diseases with water supply availability and the quality of the supply leads to a better health. Many diseases are traceable to chemical and salts dissolved in drinking water supplies. Such diseases are due to lead and other metals excess fluoride leave of more than 1.5m, excess intrate and excessive synthetic detergent residues source. There are other diseases due to biological factors which may affect man following injection of water. Over 100 types of enteric viruses have been identified from public water supplies, which include the viruses responsible for infections Hapetitis and Pohomyelitus, Adenovirus, especially these responsible for infection of the upper respiratory tract or eyes and echo-viruses (Ogunmekan 1996).

2.4 WATER QUALITY STANDARDS

Constant surveillance and water quality control are necessary on order t ensure that water delivered to consumers is at all times order to ensure tha water deliver to consumers is at all safe and portable.

In this respect each through treatment and storage of distribution mus function without risk of failure. To do this, the surveillance and quality contro programmes must include engineering laboratory and institutiona examination of the water supply and most under take remedial action t reduce or eliminate health hazards. Many African countries do not yet have laboratory for physical, chemical and biological analysis of water. Even where laboratories exist they do not always properly started, equipped or utilized (John C. Manning 1992).

The new world health organization's guiders on drinking water quality in its three volumes adequately covers the various aspects of quality surveillance control the standards normally enforced for water treatment of domestic water cover such aspects as suspected solids, settleable solids and total solids, dissolved solids pit value, temperature, turbidity and bacteriological test for Colyorum organism (Ogunmekan 1996).

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter tends to explain the various methods of data collection. Source the instrument employed population and sampling size and method of data analysis. The above steps taken are unique as regard to the people under consideration that is assessment of domestic water source and it health implication.

3.2 Primary Source

The primary sources are derived/gotten from the questionnaire administered to the respondant which where both structured and unstructured see appendix. The questioned were administered through interaction with the respondants.

The questionnaire used is both instructured or closed and instructured. In the former, the arrangement of question with fixed option which cannot be altered by the respondant while the respondant are unlimited in their views or opinion.

3.4 Secondary Source

For the secondary data carious pieces of work were collected from bo published and unpublished records collected from magazines text book internet, journals, projects work on domestic water resources an contemporary management research among other.

3.5 POPULATION AND SAMPLING PROCEDURE

The researcher as a result of time constraint targeted (200 persons (s) ir which only 100 persons respondented to the questionnaire. The manner and number of feedback gotten from each selected area varies as only 25 persons respondented in Kpakungu, 15 in Maitumbi, 18 in Sauka-Kahuta, 26 in Anguwan Daji and 16 persons in Bosso respectively.

These are areas with most needs of water for domestic activities perhaps as a result of high occupants with how density that are chosen because of resources constraints and time.

3.6 METHOD OF DATA ANALYSIS

The researcher employs statistical techniques such as tables, pie charts and percentages were used to analysed clearly various data collected during the course of the exercise. These are done to reveal vividly and explained further the response and suggestion of the respondants. More so the use of table, pie Chart and other statistical diagram helps to present large volume of data in a clearly and understandable manner.

CHAPTER FOUR

Data Presentation and Analysis

This chapter tends to analysis the existing domestic water condition in the fiv selected areas of Minna Metropolis, where a total number of 100 peopl responded to the questionnaire. The assessments are based on ther characteristics.

4.1 Marital Status

This is to find out the number of people who are married, single, widow and divorced.

Table 1

Income per Month	Frequency	Percentage (%)
Married	44	44%
Single	26	26%
Widow	18	18%
Divorced	12	12%
Total	100	100%

Source: field work (2013)

Table 1 reveals that 44% of the respondents are married, 26% singled, 18% widow and 12% divorced. This means that there will be demand of water for domestic usage.

4.2 OCCUPATION.

This is to ascertain the type of work done by the inhabitants of the area, whic determine the quality and quantity of water required.

Table 2

Income per Month	Frequency	Percentage (%)
Business	38	38%
Civil service	29	29%
Vocational (i.e dry cleaner, mechanic, Welder vulcanizer)	20	20%
Farmer	13	13%
Total	100	100%

Source: field work (2013)

Table 2 revealed that a greater percentage of people are engaged in business which is 38%, civil service 29%, vocation 20% and farmer are 13%. These tend to reveal that the occupants of the areas are mainly business men while the civil servant are junior officers. The business activities in the area are mostly food vendor as above stated tend to require more water than often.

Plate 1: Damage water pipe along drainage in Sauka Kahuta area.

Plate2: Dilapidated borehole in Angwan Daji area.

4.3 Sources of water supply

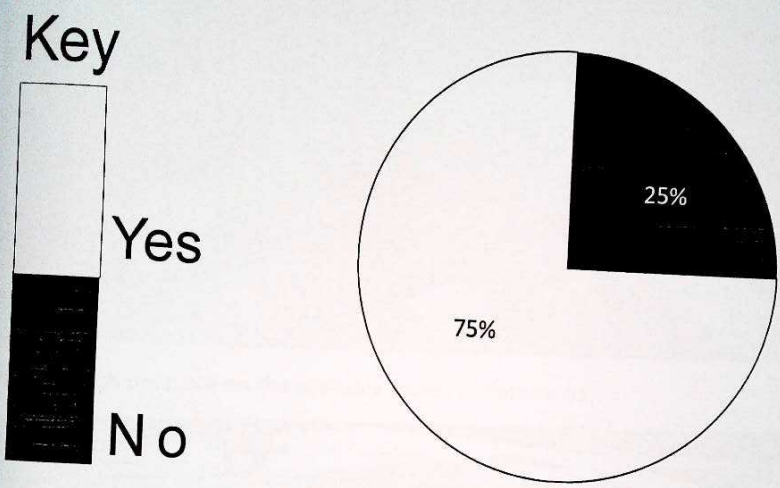
Table 3

Income per Month	Frequency	Percentage (%)
Pipe borne water	22	22%
Well water	38	38%
Borehole	27	27%
Other sources	13	13%
Total	100	100%

Source: field work (2013)

Table 3 indicates that pipe borne water account for 22%, well water which is their major source of water is 38%, borehole water 27%, while others source 13%. A good number of respondents have low access to clean water. This further expose them to the risk of water diseases.

4.4 Do you buy water from vendor for drinking purposes?



Sources: field survey (July, 2013)

Diagram 4.4 shows that 75% of respondants obtained drinking water from vendor and 25% do not. The implication is that vendor gallons grows green algae resulting to disease outbreak.

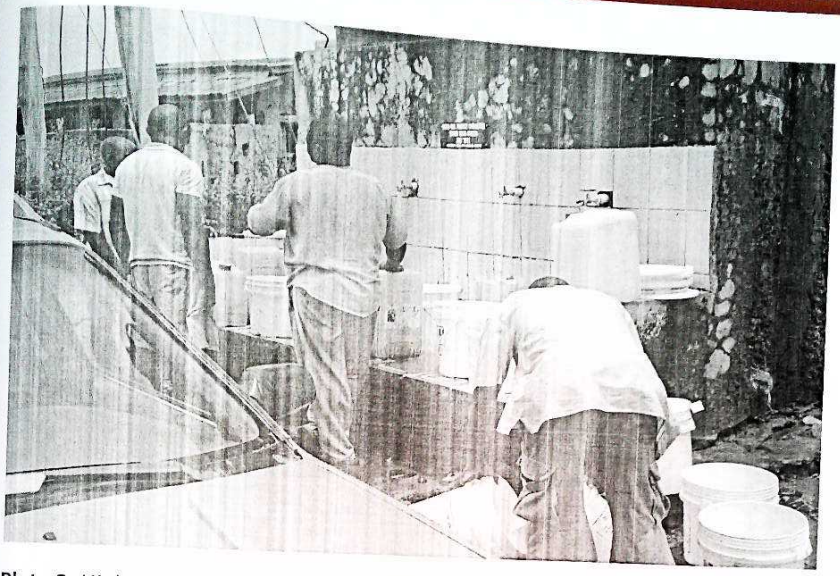


Plate 3: High pressure on the available source at Bosso area.

Plate 4: Epelitic Supply of water by water vendor at Maitumbi area

4.5 Nature of Refuse Disposal

Table 4

Nature of Disposal	Frequency	Percentage (%)
Burning incinerate	30	30%
Open space dumping	60	60%
Private collection	10	10%
Total	100	100%

Source: field work (2013)

Looking at table 4 above buring incinerate account for 30%, open dumping 60% while private collectors account for 10% meaning a lot of people dump their refuse in an open space. This invariably leads to pollutants of water from rivers also pollute the atmosphere.

4.6 Storage Facilities of Drinking Water

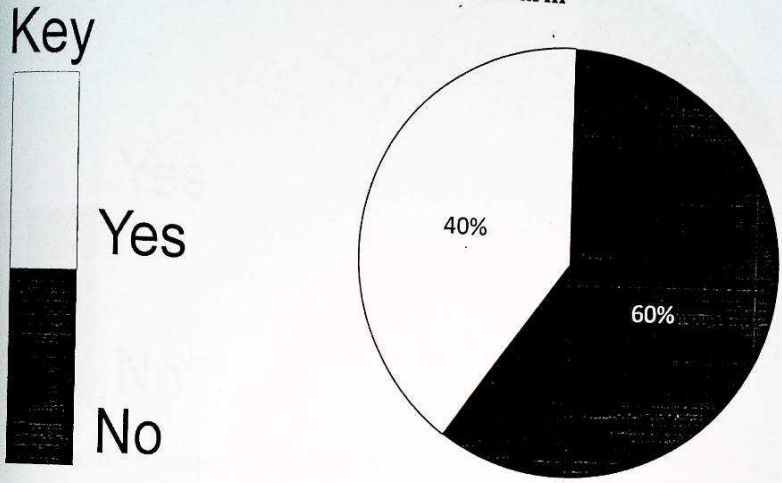
Table 5

Storage Facilities	Frequency	Percentage (%)
Refrigerator	20	20%
Plastic drum/container	35	35%
Clay pot	20	20%
Gallon	25	25%
Total	100	100%

Source: field work (2013)

Table 4.5 show case that 20% uses refrigerator, while plastic drum/container accounts for 35%, clay pot 20% and gallons 25%. The implication is that apart from refrigerator other storage facilities can easily harbor germs which is determinate to our well-being.

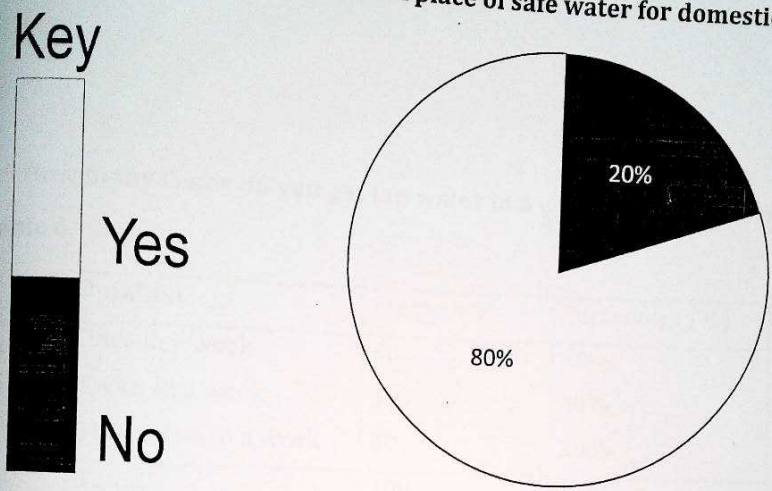
4.7 Water for Bathing Purpose/Cold or Warm



Source: field survey (July, 2013)

This is to find out the number of respondants which either use cold or warm water for bathing purpose.

4.8 Do you intend to relocate to a place of safe water for domestic use?



Source: field survey (July, 2013)

Diagram 4.8 shows that 80% of the respondants agrees for intend to relocate to a place of safer water for domestic use, while 20% prefer to remain, perhaps for personal reasons.

4.9 How many times do you get tap water in a week for domestic use?

Table 6

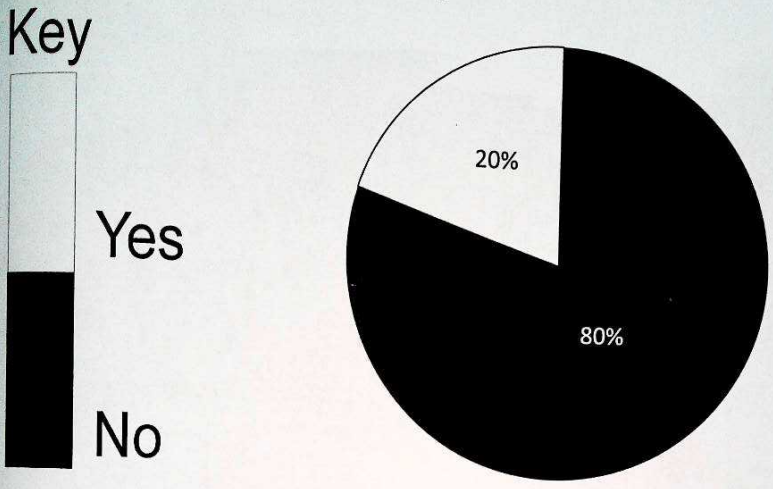
Duration	Frequency	Percentage (%)
Once in a week	50	50%
Twice in a week	30	30%
Three time in a week	20	20%
Total	100	100%

Source: field work (2013)

Table 6 shows that 50% of the respondants have tap water only once in a week, while 30% account for twice a week and 20% account three times in a week. This reveals that the areas are not sufficiently supply with tap water.

Hence the need for the occupants to seek for alternative source of domestic water like unprotected well, damage pipe along the drainage among others which is hazardous on the consumers.

4.10 Do you Treat water before usage?

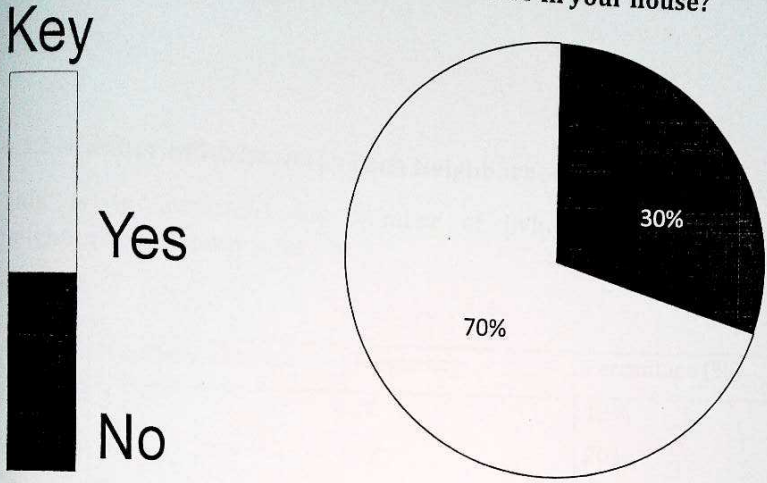


Source: field survey (July, 2013)

Diagram 4.10 indicate that only 20% of the respondants treat water before usage and 80% do not. The implication is that many atimes untreated water contains germs and when use for domestic purpose especially bathing cause damages to the skin and other related skin diseases.

Plate 5: Unprotected well which has health implicate on the consumer in kpakungu area.

4.11 Is there connection of pipe borne water in your house?



Source: field survey (July, 2013)

Diagram 4.11 shows that 70% of the respondants do not have pipe borne water connected to their building while 30% only has pipe borne water connected to their house. This means that the majority of the respondants solely depends on the public or government provide ones which is grossly insufficient.

4.12 Number of bedroom in each Neighborhood

This is to ascertain the number of living rooms in a particular neighborhood/compound

Table 7

Numbers of room	Frequency	Percentage (%)
3	12	12%
4	20	20%
5	28	28%
6 & above	40	40%
Total	100	100%

Source: field work (2013).

The number of room in a particular neighborhood that require water are too numerous to be satisfy with few tap available and eplethic supply table 7 give a pictorial view that there are people competing with few amenities.

4.13 Income per Month

The amount of money the respondant earns in a month
Table 8

Income per Month	Frequency	Percentage (%)
Less than 5,000	16	16%
6,000 - 10,000	33	33%
11,000 - 20,000	23	23%
21,000 - 30,000	20	20%
31,000 - above	8	8%
Total	100	100%

Source: field work(2013).

Table 8 indicate that less than N5000 has 16%, N6000 - N10,000 has 33% N11,000 - N2,000 has 23%, N21,000 - N30,000 has 20% and N31,000 - above has 8% this goes to shows that must people are low income earners, hence a factor for them not to connect pipe borne water to their neighborhood.

Hence the digging of well has alternative in some compound that has the capacity to do so.

CHAPTER FIVE

SUMMARY OF FINDINGS RECOMMENDATION AND CONCLUSION

5.1 SUMMARY OF FINDING

The study basically reveals that 44% of the respondent are married which increase the population in the study area. However 38% account for well water as domestic water, while is 27% with 22% as pipe borne water which means more pipe borne water should be put in place for adequacy. The study also indicate that 75% of the respondent buy from water vendor for drinking purpose with only 25% getting water from desirable source or agency.

Furthermore the study shows that 25% of the respondents use refrigerator for storing drinking water which is obvious that most of them are poor as 33% have an income level of about N6000 per month.

More so, 50% of the respondents agree that they only have water from pipe once in a week which cannot cater for the intending consumer.

Comprehensively chapter one deals with general introduction on domestic water and the project was able to find out historical background of the study areas others components of this chapter one: statement of research problem, aims and objective, the study area, scope and limitation, significance of study and among other. Chapter two treats review of related literature inadequacy of water supply in most of our cities mention others yourselves.

CHAPTER FIVE

SUMMARY OF FINDINGS RECOMMENDATION AND CONCLUSION

5.1 SUMMARY OF FINDING

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Equally chapter three statues how data was gathered or collected that i through personal interview and observation. Chapter four deals with dat presentation and analysis, and finally is chapter five which deals witl summary of findings recommendations and conclusion.

5.2 RECOMMENDATIONS

To take the means of supply water with particular reference to human health arriving from urban centre's both the public, private sector and the community at large to the following principles.

I. Government should enlighten the populate on the implication of water wastage.
II. Rehabilitation or renovations of some damaged water pipes along the drainage and routes so as both eradicate the spread of water borne – disease.
III. Subsidized the payment of water bill to enable the low income earner to benefit from the resources.
IV. Adequate or constant water supply at least more than twice in a week in each area study.
V. Private sector should participate in the provision of domestic water so as to complement government efforts.
VI. The community should establish maintenance culture of already existing amenities.

5.3 CONCLUSION

Conclusion therefore, the need to have improved safe drinking water, fo domestic activities cannot be under estimated. The capacity to achieve these depends on the political will and determination to do so. To reduce pressure on the amenities in the urban center particularly water resource, rural development programmed should be embarked upon by government.

Concerted effort should be geared toward reducing urban growth, television programme on the effect of unimproved water on human health which will turn promote their well-being.

REFERENCES

Ajibade (2004) assessment of water quality along river Asa, Ilorin, Nigeria. The environmental 1st, (24) 11 – 18.

Chapman D. (1992). Water quality assessment, a guide to the use of Biota, sediment & water in environmental monitoring. Chagiman & Hall, London.

Cheesbrough, M. (2003), water quality analysis district laboratory practice in tropical countries (2) Cambridge university press, United Kindom 146 -157.

Gleick P. (1996). Basic water requirement for human activities: meeting basic need S.L. ternatent water 21 (2): 83 – 92

John C. Manning (1992) applied principles of hydrology, Mevrill publishing company U.S.A

Journal of environmental health science volume

Ogunmekan (1996) principles & practice of public health in Africa University press plc Ibadan.

Omole D.O & Longe E.O (2008). An assessment of the impact of Abattoir effluents on river 1110, Ota, Nigeria. Journal of environmental science and technology, (2) 56 – 54

Ram S. Gapta (2008) hydrology and hydraulic system. Ware law press. Inc.

WHO (2000) Global water supply & sanitation assessment report, world health organization united nations children fund Geneva, Switzerland.

World book encyclopedia volume 21 233 north Michigan Chicago, 1l 60601.

APPENDIX I

NIGER STATE COLLEGE OF EDUCATION MINNA,

SCHOOL OF ART AND SOCIAL SCIENCE

DEPARTMENT OF GEOGRAPHY

QUESTIONNAIRE

Introduction: Please fill in the black space or tick the item that suit you situation where there is a choice of answer

SECTION "A" BIO DATA

1a. Local Government Area _____

b. Age of the respondants _____

2. What is your educational level attained?

(i) Illiterate ( ) (ii) Adult education ( ) (iii) Quran education ( )

(iv) Primary education ( ) (v) Secondary education ( ) (vi) Tertiary education ( ) (vii) others specify_____

3. Sex of respondents (i) Male ( ) (ii) Female

4. Marital status?

(i) Single ( ) (ii) Married ( ) (iii) Divorce ( ) (iv) Widow

5. What is your occupation?

(i) Civil servant ( ) (ii) Farmer ( ) (iii) Businessman ( )

(iv) others specify _____

SECTION "B"

6. Where do you source for water?

(i) Pipe borne ( ) (ii) Well water ( ) (iii) Borehole ( ) (iv) Stream ( )

(v) others _____

7. Do you buy water from water vendor? Yes ( ) No ( )

8. How many children and other dependant do you have living with you? Please tick

(i) 4 ( ) (ii) 5 ( ) (iii) 6 ( ) (iv) above ( )

9. How do you dispose your refuse?

(i) Burning incinerator ( ) (ii) open space dumping( ) (iii) private collection

(iv) others _____

10. What method do you use in storing water especially for drinking purposes

(i) Refrigerator ( ) (ii) Plastic doum/container ( ) (iii) Gallon ( )

(iv) other method _____

11. Do you treat water before usage? Yes ( ) No ( )

SECTION "C"

12. Is there connection of pipe borne water to your house? Yes ( ) No ( )

13. If Yes to the above (12) how many times do you get tap water in a week in your area

(i) Once ( ) (ii) Twice ( ) (iii) Three times ( )

14. Your monthly income is _____

(i) Less than 5000 ( ) (ii) 6000 – 10000 ( ) (iii) 11000 – 20000 ( )

(iv) 21000 – above ( )

15. Do you intend to relocate to a place of safe water? Yes ( ) No ( )

16. If No state your reason

i. _____

ii. _____

iii. _____

17. Please suggest possible way forward to ensure adequate supply of water to the populace

i. _____

ii. _____

iii. _____

iv. _____