AN ECONOMIC EVALUATION OF COST OF GUINEA WORM INFECTION AND TREATMENT TO HOUSEHOLDS IN EBONYI STATE.

(A CASE STUDY OF EZZA NORTH L. G. A)

A PROJECT PROPOSAL

BY

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CHAPTER ONE

INTRODUCTION

Background of the study:

Health they said is wealth! A healthy nation is a wealthy nation. But, often many people ignore by omission or commission the importance of health in economic growth. Inspite of the important contribution health could make in enhancing productivity, little emphasis has been placed on health economics over time. For any sustainable development to take place in any society the labour force must be healthy (Chima 1998). Thus improving people's access to health services is a very important aspect of welfare economics. To reduce poverty and improve the standard of living of people, economic growth has remained the legitimate objective of the world community. Also the improvement of the health condition of the people cannot go without cost.

In Nigeria and Ezza North in particular guinea worm disease is one of the diseases that has been affecting the economic activities of the people negatively.

Guinea worm is an ancient affliction discovered about 15th century B.C. Guinea worm is an infection of mainly rural and agricultural areas in sub-Saharan countries where there exist poverty, ignorance, poor housing, inaccessibility to safe drinking water etc. Every year during dry season villagers in sub-Saharan Africa normally fall victim to the Guinea worm infection as a result of drinking pond water containing Dracunculiasis parasite, (parasite that cause guinea worm) the Guinea worm larvae moves to the victims abdominal tissue where they grow and mate. The male worms dies after mating, but the females make their way to other parts of the body usually the leg and feet.

Meanwhile, Guinea worm disease is known to present some physical, social and economic problems to the victims because it causes pains, disabilities, social stigma and man-hour loss of labour due to its incapacitation effect. Resources are used to cure or to prevent the disease. It reduces school attendance on the part of school children, erosion of investment in human capital, reduction in agricultural output etc.

In the year 1986 global attention was beamed on guinea worm disease. It has become the turning point for guinea worm sufferers and million others in danger of being afflicted. That same year, 1986, the World Health Organization (WHO) picked guinea worm as the next disease after small pox to be kicked out of the face of the earth. 1995 was set as the target year, though the ambition of total eradication is yet to be actualized in Nigeria and Ebonyi State in particular. But the world is almost getting to that point of total eradication. For instance, amongst the twenty endemic countries in 1986 when the fight against the disease started, it has already been eradicated from seven countries, which are: Cameroon 1997, Chad 1998, India 1996, Pakistan 1993, Senegal 1997, Yemen 1997 and Egypt 1996. In the year 2001 it had become a disease of the world forgotten people, poorest of the poor in thirteen African countries (Mitchell 2001).

SOCIO ECONOMIC AND DEMOGRAPHIC CONDITION OF THE STUDY AREA.

Ezza North Local Government Area is one of the Local Government Areas created in 1996 in Nigeria. Carved out of old Ezza Local Government Area, it (Ezza North) has no cultural or social dissimilarity from what is today known as Ezza clan.

The local government is located at the central part of Ebonyi State and it belongs to Ebonyi Central Zone.

There are nine (9) major communities that make up Ezza North Local Government Area. The communities are:- Umuezeokoha, Umuezeoka, Umuoghara, Ekka Inyere, Nkomoro, Ogboji, Oriuzor, Amaewula and Amuda. The local government was further split into three (3) new local governments in 2002. The new local governments carved out of Ezza North are: Ezza West, Imoha, and Ezza North Local Government Area. Up till the time of this research the newly carved out local government are yet to be recognized by the National Assembly and therefore this work focuses on the respective communities that make up the old Ezza North no matter which of the new local government it falls within.

In terms of Guinea worm eradication Programme, Ezza North is divided into 62 endemic villages, which are covered by the Nigerian Guinea worm eradication programme (NIGEP) workers in collaboration with Global 2000 agents (Andreas Haver 2002).

HOUSEHOLD OCCUPATION

The people of Ezza North Local Government area are predominantly farmers. They cultivate food crops like yam, cassava, cocoyam maize etc. though these crops are cultivated at subsistence level, many households depend on them as their only source of livelihood. They equally cultivate cash crops like rice, palm produce etc. petty trading ranks next to farming in the occupational ladder of the people. An insignificant number of the people are public servants like teachers, nurses etc.

EDUCATION OF THE PEOPLE

Prior to the creation of states in 1996 Ezza North had about 33 Primary Schools located in different parts of the communities that make up the Local Government Area. There were few Secondary Schools. Up till today there is no institution of higher learning located within the local government. Even before the creation of Ebonyi State in 1996, only Ikwo College of Agriculture and Abakaliki Campus of Enugu State University of Science and Technology existed as the only nearby higher institutions. This in no small measure constituted a hindrance to the people's academic pursuit especially as it concerns higher education. It was after the creation of Ebonyi State in 1996 that the state established her own University Campus at Abakaliki and College of Education at Ikwo, all near Ezza North Local Government Area. Also some private Universities are now at Abakaliki to complement the effort of the state owned schools. These changed the poor attitude of the people towards education. On the average about 50% of the people of the area have at least primary school education and about 40% have Secondary education. But for higher education is only about 6%, which seem disappointing.

HEALTH CONDITION OF THE PEOPLE

Ezza North local government area has some health facilities. These include one General Hospital at Achiegu with 50 sickbeds, one Medical Doctor, 30 Nurses and other paramedical members of staff, there is also one Comprehensive Health Centre At Oriuzo, one Community Health Centre, two Dispensary (M.O.H statistical record 2002). There exist other hospital and health clinics within the nearby local governments like the Ebonyi State University Teaching Hospital (EBSUTH) at Abakaliki, Mile 4 Hospital at Ishieke etc

Within the local government we have Guinea worm case containment centres established and managed by Global 2000 in all the communities in Ezza North.

In spite of the presence of these facilities, the health condition of the people is still very poor especially as it concerns water borne diseases. This is partly attributed to poor condition of the facilities, lack of drugs in the hospitals and clinic etc. there is also a poor patient to doctor ratio. Social amenities like pipe borne water bore holes, hand dug wells are not enough and in some places they are not available.

STATEMENT OF THE PROBLEM

To repeat, a healthy nation is a wealthy nation. No nation in the world can either grow or carry any of its developmental programmes without healthy citizens. Human development is difficult if not impossible without health. Life is not even meaningful under unhealthy condition. For instance a sick person cannot perform well at the work place if the person can perform at all. A sick child can neither learn very well nor even assist his/her parent at the work place carter (1990). Sickness breads situation of total dependency. To sum it up, human health holds key to survival, prosperity and future socio-economic development.

The world and Nigeria in particular acknowledges that guinea worn disease poses one of the major economic cost to the society and individual households in endemic areas and that the resources available for the treatment and prevention are scarce. However, individual household to date has not embraced any rational criteria for evaluating the economic cost of the guinea worm infection and treatment. Yet there is need for evaluation of cost of the Guinea worm infection and treatment.

In spite of the identification of Guinea worm as constituting health problem, its eradication programme in Ezza North is still facing some

serious problems due to lack of awareness of the causes and possible preventive measures. Many people still doubt the fact that it is a water borne disease (Andreas 2003). And even where people are aware of these facts, good drinking water is hard to come by, for instance, out of the 62 endemic villages only 24 have one borehole each, six have one community hand dug well each. The number of boreholes was increased to 32 as at June 2004 but today some of these bore holes are no longer functional. Some of these villages and households still depend on pond and stream water as their only source of drinking water, even though the ponds are occasionally treated by the village health based workers (VHBW) the treatment is not regular and therefore does not last.

With these problems one might be led to ask does it mean that the infection and treatment of guinea worn pass without cost? What should constitute appropriate cost of the infection and treatment of guinea worm in endemic area? How is it going to be estimated? These and other problems are what this research work is seeking to give answer to.

OBJETIVE OF STUDY

The broad objective of this study involved the estimation of the parameters of the cost of infection and treatment of guinea worm disease in order to understand the extent of man-hour loss and resource cost under the present economic circumstances and the choice amongst the competing option for resource use.

The specific objective include:

1. To determine the resource cost of the guinea worm infection and treatment to households.
2. To determine man-hour loss due to the guinea worm infection.

3. To determine indirect cost of the infection and treatment.
4 To develop a knowledge base for appraising preventive intervention by government and non- governmental institutions.

RESEARCH HYPOTHESIS

For the purpose of this study the following hypotheses are put forward:

(1) Guinea worm infection and treatment does not cost household anything.
(2) Guinea worm infection does not lead to man-hour loss of labour in production.
(3) Guinea worm infection and treatment has no indirect cost (opportunity cost).

CHAPTER TWO

LITERATURE REVIEW

2:1 THEORETICAL LITERATURE

Several factors affects economic conditions of countries and household but that of health has continued to be under emphasised by economists in the past. It was recently that economists started shifting more emphasis towards evaluation and assessment of health programmes and impact analysis of effect of some diseases. Today the science of economics has continued to pay more attention to the studying of the role of good health condition in labour input and output including its indirect effects.

For instance, with the recent global transformation in health that led to people living longer and healthier it was observed that there was relatively a boosted rate of economic growth worldwide (Bloom et al 2004). Economic historians and demographers still debate the genesis of these changes, but they increasingly point to rising incomes arising from improvement in health conditions. This points, seem to have given an answer to Anderson (1999) who in a conference paper entitled "Neighbourhood health partnership" contends that one of the question most central to the work of a country-based health programme is that of how communities can link health care with economic development. The central question raised in this paper is, can synergy be created between activities that foster public or private health and activities that stimulate economic development? In the final analysis the presenter of the paper argued that health intervention improves the quality of life and makes individual more productive and better able to contribute to the economic development of their respective household and their community in general.

Equally Lozona Baragan (1999) in a paper presented during a pontifical council entitled "health pastoral care" pointed out that the relationship between economy and health is one of the most important issue in the ongoing globalization of the economy. He further pointed out that presently health is at the centre of the interest of every society. It concerns human life and life itself finds its profound expression in individual's health .

Brudtland (1999) in a World Health Organization (WHO) report seem to have given another answer to questions raised in the two respective papers by Anderson and Lozona Baragan. In this reports, Brudtland pointed out that in a place where there are significant improvements in the health of families or household's economic and social condition often improves as well as economic output. For Brudtland the relationship between health and development is so intertwined that it is impossible to address one without the other.

Much of the recent literature in the study of health economics reveals that economic evaluation is beginning to be used widely to analyze the effect of most disease especially as it concern the cost to the suffers and their community in general.

For instance Cohen (1974) used economic evaluation approach to assess the economic cost of Schistosomiasis in Zanzibar basing the study on the cost of treatment. However this fall short of economic evaluation as it did not examine other competing strategies.

There are number of problem that are frequently encountered in the course of an economic evaluation of effect and cost of treatment of diseases. The analyst will face some difficult choices in deciding which cost to include, how to value them and how to adjust them for the actual condition under consideration Bryan (1990). This problem exists in works

of Muyiwa Akintunde (2003) who estimated that yearly cost due to guinea worm infection on rice farmers is about US $20m without considering other cost, such, as social stigmatization, cost of not being in school as a result of infection on children of school age, cost of scaring external investors etc.

As an attempt to take into cognizance of these various costs, Bloom et al (2004) pointed out that good health raises per capita-income through a number of channels some of which Bloom pointed out that it affects decisions about expenditure and saving over the life cycle. The idea here is that planning for retirement occurs only when mortality rate becomes low enough for retirement to be a realistic prospect. This will invariably have a positive effect on national savings. This will boost investment and economic growth rate, while it lasts. Another channel as pointed out in the literature is that of encouraging foreign direct investment, as investors will shun environment where labour force suffers a heavy disease burden. Thirdly healthy condition will boost education since children of healthy condition will relatively have higher rate of school attendance, improved cognitive development, and a longer life span can make investment in education more attractive. Now the implication of this study is that if better health improves an economy's productive potential, we would expect good health to go hand in hand with higher steady- state output.

As a support to this analysis Bhargava (2001) in the analysis of health issues contends that better health condition matters more for wage earners in low income countries than high – income ones. This implies countries of low-income needs good health for attainment of steady state growth.

Kenneth Arrow (2004), in the analysis of the economic implication of malaria pointed out that frequently sick population do not only have a

direct effect of economic retardation on the victim through low productivity but also scares off foreign investors and traders indirectly. Also Bloom et al (2000) in their impact analysis of health condition on economies used East Asian countries as reference point. They stated that what seem to be Asian Miracle can be attributed to rapid increase in health condition of the labour force leading to increased labour supply. It was this improvement in health that preceded and helped to improve the economy and not any miracle.

Meanwhile some specific literatures on the economic cost of guinea worm infection and treatment are all pointing towards the direction of other analysis on health and economy for instance, Carter (1990) as cited in Global 2000 report (1986), (1987) and (1998) stated that cost of infection and treatment are very difficult to quantify in numerical term. He attributed this difficulties to other costs like alleviation of suffering, social stigmatization, child care, elimination of infection related expenditure etc. he was equally quoted as saying that Guinea worm is horrible disease that has great social and economic cost to the sufferers and their society, for it cripples farmers for weeks during planting and harvest seasons, it prevents children from going to school and strikes at the heart of a community and household.

In a World Bank paper Hopkin (1998) postulated that economic rate of return on investment if guinea worm will be eradicated will increase by about 29% per year. This was based on a conservative estimate of the average amount of time infected persons are unable to work. The benefit of eradication will be limited almost exclusively to the household and countries in which the disease is endemic. Hopking seem to have lent support to Adeyuba et al (1991) who in a sensitivity analysis of the cost of the infection and treatment in south western Nigeria made some crucial

assumptions regarding average degree of incapacitation which they estimated to be 5 weeks.

EMPIRICAL LITERATURE

Several studies have underscored the adverse economic impact of guinea worm infection. For instance, Beldam et al (1975) revealed that in Southern Ghana adult male farmers were at great risk of contracting the disease and on the average the studies reveals that infected adult loses about 5weeks of work time. Belcham further pointed out that a review of other 22 published studies yields an average duration of disability caused by the disease to be about 8 weeks. The studies further pointed out that the economic cost of guinea worm infection is aggravated by the seasonality of its infection, which coincides with period of peak agricultural activities when few alternative to alleviate labour shortage caused by the disease existed.

A cross-country macroeconomic studies by the commission on macroeconomics and health (2001) posits that good health is found to have positive effect on growth. This implies that ill health will have negative effect to growth since time and money cost are involved in curing the disease. Also W. H. O (1996) epidemiological report about Nigeria indicates that infected persons lose 100 days of work per year and that children are absent from school several days when they are infected. In a similar studies carried in Benin Republic,the annual cost of guinea worm disease was estimated to be 1600 C F A France per patient.

Watts (1987) in studying the economic impact of the disease used net present value (N P V) methods to estimate the cost of the disease. The study reveals that about 3.3 million people are affected worldwide. This differs from

W H O (1986) figure of 2.25m reported cases. Watts result failed to show a previous figure of economic cost due to the infection and treatment but stated the cost as it reflects the opportunity cost and time preference.

On the other hand, Kim and Berton (1995) and Kim et al (1997) applied cob- Douglas production function in trying to estimate the economic cost of the guinea worm infection. In this case output Y is taken as a function of input. Inputs here comprises, effective labour input in efficiency units, land and capital. They assumed that there is a constant return to scale. The degree of incapacitation k was expressed in terms of man hours loss due to the guinea worm infection. The problem with the application of the model arises from the difficulties in calculating the elasticity of labour input and output.

In a related studies Achyung and Berton (1995) in evaluating the cost benefit of Onchocerciasis control programme (OCP) represented the benefits as additional labour and agricultural land made available through the control. The cost of the infection according to the research is represented by actual expenditure in the treatment of the infection.

Other related studies exists like Achyung and Ajayi (1997) that made a comparative cost analysis of the Global Dracuneulais eradication campaign (GDEC) with the result that cure of the infection though costly would lead to increase in agricultural output (all things being equal) since the cure would lead to increased labour input in agriculture. But their studies failed to take into account other factors that would affect agricultural output.

Meanwhile evidence from cross-country regression suggests that contribution of health is large. Indeed the initial health of a population has been identified as one of the most robust and potent drivers of economic

growth. Bloom et al 2000 equally found that one extra year of life expectancy raises steady state GDP per capital by about 4 percent.

On the other hand Bhargava et al (2001) in their studies revealed that better health matters more for economic growth but has to be associated with good economic policies, such as openness to trade and good governance.

William (2003) in assessment of the growth of full income per capita in United States in the 20th century concluded that over half of the growth in full income in the half of the century had resulted from mortality decline due to reduction in diseases.

CHAPTER THREE

METHODOLOGY

SOURCES OF THE DATA

Data for this study will be collected from primary and secondary sources. The primary data will be used to estimate the cost born by the household as a result of the infection and treatment of the guinea worm disease. It will be collected through the use of questionnaire the questions will be structured to elicit information needed from the sample population with ease. The respondents who cannot read or write will be interviewed orally using the dialect he\she can understand. And all the interview questions will be from the questionnaire where answers will be filled directly by interviewer. The sample will include those households where guinea worm cases have been identified. This will include those with the infection and contained or treated cases. The question will be made as simple as possible. The double bounded referendum methods with follow up questions will be used to get information easily from the respondents. The format was chosen because it is easy to administer and response are simple yes or no. This is most appropriate for the study area since most of the expected respondents may not be ready to write lengthy statements that are involved in a non-double bounded format.

The questionnaire is divided into three sections. The first section is concerned with the identity and social –economic characteristics of the respondents. The second part deals with information about the period of infection or non-infection and possible financial or non-financial cost of the infection.

The third part is concerned with the role of external agents that can bear the part or total financial cost of the treatment like the Nigeria guinea worm eradication agency and Global 2000 organization.

The instrument is not to be translated into local dialect in writing even though the interviewers to be employed are graduates and undergraduates of Ezza North origin who are trained by the researcher so as to be able to interpret the instrument orally to the respondent that are not literate. Before the main interview will be started some leaders of the communities and the team of Nigeria guinea worm eradication staff will be consulted as well. They will help the researcher to reach the targeted respondents easily and also they will identify us to the communities and households.

On the other hand the secondary data will be collected from the Government expenditure on guinea worm prevention and treatment. Also household expenditure of Global 2000 initiative in the treatment and prevention of guinea worm in the area of studies will be used.

SAMPLE DESIGN.

The study will focus on households within the endemic villages. The endemic villages are 62 in number and spread within the nine major communities that make up the Ezza North local Government Area (NIGEP 2003).

The guinea worm endemic villages in Ezza North local Government Area include;

Ndeagu Umuigboke, Igweledoko, Ndeagu Umuome, Ohainya Azuose, Azuewoko, Ugalaba, Ndufu, Ameta, Okposi I, Ndeaguazu Umuigboke, Odeligbo, Umuone Azuose, Egu Oboriga, Obuletiti Umuoru, Amegbu, Ewyim I, Okposi Ii, Ndeaguazu Umuoru, Ameta Umuoghara, Okpokuegbe, Ndeagu Umuoru, Buoro Amuda, Oguda Ndufu, Onuakadoro, Ndeagu Umuezeali, Azunramura Ii Ndeguazu Umuezeali, Enyim Ii Ogbona Onunworie, Ojolokpa Amuda, Akah Omege, Ohatekwe,

Igweledoha Nkomoro, Omege Umuezeoka, Alubeleke Ii, Azuituma Ekwetekwe, Ndeguazu,Umuoghara, Agbakoro Nkomoro Obuletiti Umuezali, Udenyi Umuezeoka Agbakoro Umuezeoka, Azuakparata Ekka, Obodoma Ekka, Omege Nkomoro, Azunramura I, Amainyima Oriuzor, Onunworie Ekwetekwe, Amainyima Umuezeokaha, Enyagharaigwe Okposi, Okalaru Umuezeokaho, Igwemini, Azunwogwu Umuezeokaho, Ekwuaragu Ekka, Ndiagu Ndufu, Oshiegbe, Egudinagu, Ndiagu Obinyaga, Etigidigwe Umuezeoka, Ogharugo Ii Umuogara, Ogharugo I, Azuituma, Odeligbo, And Nwagbakoro.

A multi-stage random sampling technique will be used in the selection of respondent households. From the list of all the 62 endemic villages 4 households will be systematically selected in each village to ensure that 2 households are from the infected household while 2 will come from non-infected households. This implies a total of 248 households.

According to Deaton (1997:10) as cited by Ukwueze (2002) in a national household survey it is most appropriate to have a sample to population of 1:500 or even 1:2500. But since this study involves a smaller population the ratio of sample to population will be as high as possible. Ezza north Local Government Area has a population size of about 132390 and assuming an average household size of six people we have 22065 households. The 248 households imply the ratio of 1:89.

THE MODEL

The failure of Net Present Value (NPV) method and Cobb-Douglas production function method to capture the cost of guinea worm infection and treatment to households has given rise to the researcher's plan to use an alternative model. For the purpose of this study I intend to use

propensity score matching (PSM) model (Ravellion 2001:125). The assumption of this model is that given the variable under consideration, the comparing of the affected and unaffected groups will give an unbiased estimate of the cost of the infection and treatment of guinea worm disease to the households.

The logit model will be used to obtain the probabilities of cost to the infected groups.

The model is specified as:

$Y_i = \beta_{xi} + \mu_i$ _____ (1)

Where

$\mu_i = N_{(o,o^2)}$

Cov $(U_i/U_i) = 0$.

The relationship between the affected group and non affected can be written as:

$Y_i = \beta_{xi} + \mu_i$ _____ (2)

I if affected

O if otherwise.

Where

Y_i affected

$_{xi}$ = function representing vector repressors of observed characteristics associated with the ith household.

The model is therefore specified as:

$Y = f(x)$ _____ (3)

Where

X = sex, EDU., NGET, OCC, MHL, Income, Expt, GZE and E_t.

Where Y = Group with Guinea worm infection

Sex = Dummy variable for sex of respondent

I if the respondent is male of working age, O if otherwise.

Edu = Dummy variable for education of household head

I if secondary school or above, O if otherwise

OCC = Dummy variable for occupation I if employed, O if otherwise.

MHL = professed variable for man hour of labour lost due to the infection.

Income = Income of the household measured by Professed income and assets in the compound.

Expt = Professed expenditure on treatment of the Infection.

NGET = NIGEP/Government expenditure on prevention and treatment of the infection per person Estimated from Government allocation to Guinea worm eradication programme.

G2E = Global 2000 expenditure on cure and prevention of the infection per household.

ξ_t = Error term which satisfies all assumption on stochastic random variable (Koutsoyiannis 1977).

Meanwhile inequality analysis, will be carried out, the Gin, coefficient will be used to calculate the inequality amongst the respondent households. According to Eboh (1998) the Gini coefficient has been found to be useful in assessing not only the subgroup inequality but also the subgroups contribution to total inequality.

The Gini – coefficient can be obtained using the convenient – co variants methods as

Gini $\frac{2 \text{ cov } (y, ry)}{m}$

Where

Y = income

M = mean of the income

ry = rank of income.

JUSTIFICATION FOR THE MODEL

Most of the studies on guinea worm eradication and its economic cost were based on the use of the Net Present Value (NPV) and Cobb-Douglas production function approach. For instance, Watts (1987) used NPV method to estimate the cost of the disease in what he called the worldwide incidence. Also Kim & Berton (1995) and Kim et al (1997) used Cobb-Douglas production function to carryout economic evaluation of guinea worm infection and eradication in South Eastern Nigeria.

However, these methods are not wrong but could lead to biased results. This is because of difficulties involved in estimating the discount rates and also non of the methods could give the magnitude of impact as a result of the failure use to comparative assessment of the magnitude of the cost of the infection and treatment in the area.

Ravellion (2001:125) as cited by Iwuagwu (2000) suggested that PSM is ideal for capturing the plausible cost of infections on the infected groups. The model requires an exhaustive questionnaire to accurately match the population of the affected groups and non-affected groups based on the observed characteristics.

DATA ANALYSIS

Objectives one and two will be realized using the PSM as used by Ravellion (2001:125). This will be done by the analysis of the cost of guinea worm infection and treatment on the infected group vis-à-vis the

non-infected group. Objective 3 will be realizes using production possibility curve and the objective 4 will be realised using general analysis of the research outcome.

ECONOMIC SOFTWARE:

The data will first be loaded into Excel spreadsheet from where they will be moved to PC-Give software package. SPSS 10.0 will be used to run the logit model.

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SAMPLE QUESTIONAIRE

Dear Respondent,

The researcher is a Master of Science (M.Sc.) degree student in the department of Economics, University of Nigeria Nsukka. He is carrying-out a research on the economic evaluation of cost of guinea worm infection and treatment to households in Ezza North L.G.A. It is purely a research work and information supplied should be treated as such. It has nothing to do with either tax assessment or levy of any kind and so is purely for academic purpose.

Please kindly fill in the questionnaire.

Thanks

Obaji Samuel

Dept. of Economic UNN

SECTION A

Ia, Are you a male? Yes ( ) No ( )

b what is your age ? ( )

c What is your occupation?

d Are you the head of your family? ( )

E Are you a public servant?( )

F what is your grade level if you are a public servant? ( )

G what is your level of education? (a) FSLC,
(b) WASC\SSCE (c) diploma & above

H which of the following do your average daily income fall in?
In? Less than ₦ 400 ( ) ₦ 500 –600 ( ) ₦ 1000 and above ( )

I what is your monthly income ( ) ?

K How long have you lived in this village?
5 years ( ) 10 years ( ) since I was born ( )

L What type of water do you have in this village or community (a) pond water ( )(b) spring water ( )
(c) hand dug well ( ) (d) borehole ( )
(e) pipe – borne water ( )

M Is the borehole ~~is it~~ functional? Yes( ) or No ( )

N if you have pipe borne water how often does it run?

O Do you consider the quality of water you drink in this village or community to be good? Yes ( ) or No ( )

P If it is bad why do you still drink it ? No alterative ( )
because I like it ( )

SECTION 11

2a have you ever had a guinea worm infection? No ( )
or yes ( )

B) If yes how long did it last ?

C) Were you able to work then? Yes ( ) No ( )

D) Do you think you sustained any economic loss due to the infection? Yes ( ) No ( )

E) If yes about how much do you lose daily as a result of the infection?

F) How many hours do you work in a day without the Infection?

G) Did you visit any hospital or clinic during the infection? ? Yes ( ) or No ( )

H) Were you treated locally? Yes ( ) or No ( )

I) About how much did it cost you to treat the infection?_____

G By what time of the year does it normally attack you? _____

K What other cost did you incur apart from monetary cost? _____

L Were you stigmatized as a result of the infection? _____

SECTION II

3a Do you have any Nigerian guinea worm eradication programme worker or staff attached to this village or community?

Yes ( ) No ( )

(b) If yes how frequent does he/she visit your home? Everyday ( )

weekly ( ) monthly ( ) occasionally ( )

(c) Do you have any treatment centre in your community? Yes ( )

No ( )

(d) Which agency is in charge of the treatment centre in your village

_____

(e) Did any other agency apart from yourself contribute in treating you during the infection yes ( ) No ( )

(f) If yes what is the name of the agency? _____

(g) Did they collect any money from you?

Yes ( ) No ( )

(h) If yes how much _____