MALARIA IN NEW KARU, NASARAWA STATE.

PART 1: COMMUNITY HEALTH ASSESSMENT OF KARU, NASARAWA STATE, NIGERIA

Introduction.

Nasarawa State is a state in Nigeria with Lafia as its capital. It was created in 1996 from Plateau State. It is located in the North Central region of Nigeria and covers a land area of 27,117 sq km. It shares borders with Benue, Plateau, Kogi, Taraba, Federal Capital Territory and Kaduna (Omale, 2016).

Map showing LGAs in Nasarawa State.

It is made up of 13 local government areas (LGAs) in which several ethnic groups such as Alago, Eggon, Kanuri, Gwandara, Igbira, Mada and Gbagyi amongst others can be found within the LGAs. Karu is one of the LGAs located in Nasarawa. It is one of the biggest LGAs and hosts major towns with most of the urban development in Nasarawa state. It has grown rapidly over the years due to the immigration of people from other states and mostly FCT. The towns and villages of Karu include: Ado, Maraba, New
Nyanya, New Karu, Masaka, Koroduma, Auta Balefi and other smaller villages. (Nasarawa State Ministry of Health, 2015)

**Geography and Climate.**

Karu occupies about 40,000 hectares (400km sq) of land. Its landscape consists of rocky and undulating highlands of 1,400m. It has a tropical climate with temperatures between 60oF -80o F and rainfall of 1100mm-1600mm. Rainfall starts in April and usually ends in November (NSMH, 2015).

**Population.**

Over 2 million people make up the population of Nasarawa and it is expected to increase (especially in Karu) over the years due to its close proximity to the FCT. Almost one million people reside in Karu. (National Bureau of Statistics, 2012).

**Economy.**

Karu is regarded as one of the fastest growing urban areas in the world at a growth rate of 40%. People that reside in the urban area are often of middle class and civil servants account for most of this population. Residents in the rural areas are predominantly subsistence farmers who cultivate crops such as yam, maize, cassava, groundnut, sorghum, melon seeds, rice, sesame and soy beans (NBS, 2012).

**Health Status of the Population.**

Most of the population utilize health services provided by the State government. Health is a priority for the Nasarawa State Government and it is on its 13 point agenda. However insufficient funding is one of the major factors that weaken the health system. The fund allocation which is already low is often not released for months. 64% of the population have access to health facilities in the area. The Nasarawa Health Survey reported that the state satisfaction rate with health services is 69%.

**PUBLIC HEALTH CONCERNS.**

Malaria, HIV/AIDS, tuberculosis, malnutrition, STDs, typhoid fever, hypertension, pneumonia, maternal and child mortality, lassa fever, cholera and road traffic accidents are some of the public health issues faced in this community (NSHDP, 2010). However,
only malaria and HIV/AIDS will be discussed as they are the leading causes of mortality in the region. The existing interventions to address these issues are also going to be discussed briefly.

**HIV/AIDS**

The HIV/AIDS prevalence rate in Nasarawa is 8.1% - the 4th highest in the country. Over 101,000 people are infected with HIV/AIDS in Nasarawa. It is one of the major causes of mortality in Karu (National Agency for the Control of AIDS, 2014). HIV/AIDS is an incurable condition caused by an infection of the HIV virus which is primarily spread by unprotected sex, mother to child transmission, breastfeeding, blood transfusion and infected needles (CDC, 2017). The trend in the burden of HIV/AIDS has been on a steady increase in the state. About 23,000 pregnant women enrolled for the Prevention of Mother to Child Transmission of HIV (PMTCT) in Nasarawa State in 2013; in 2015, this number increased to 175,755 (NACA, 2016). In 2011, a survey was conducted which showed that about 70% of infections occurred in people who practiced unsafe sex (NACA, 2014).

**Existing Interventions.**

The National Action Committee on HIV/AIDS (NACA) was formed in Nigeria in 1999 to coordinate multi-sectoral activities on HIV/AIDS in the country. By 2001, the Nasarawa State Agency for the Control of AIDS (NASACA) was established as the state’s HIV/AIDS control agency. NASACA activities, structure and guidelines are governed by NACA. NASACA advocates for public-private partnership and encourages all health organizations to tailor its interventions to reduce the rate of new HIV infections and provide adequate support and services for infected persons. (NSMH, 2017).

Health promotion using communication interventions such as advertisements, billboards and public campaigns such as the Zip Up! Campaign that are targeted at behaviour change are usually carried out in the state. This is aimed at increasing the level of HIV knowledge and institute in a change in behaviours including sexual behaviours and practice such as the use of condoms and abstaining from sharing sharp objects. HIV counselling and testing is also carried out in all public hospitals as an entry point to care and support. Support and care is also provided for HIV positive pregnant
women through the establishment of PMTCT service delivery points. Antiretroviral treatments are also free for infected persons at government hospitals and care and support is provide for related health problems (NCDC, 2015, NSHDP, 2010,).

**Barriers to interventions.**

Apart from unsafe health and sexual practices, a common practice that encourages HIV/AIDS transmission is the patronage of native doctors to conduct uvulectomy (removal or part of the uvula), locally called the belu-belu surgery. These native doctors often do not use sterilised instruments and this contributes to the spread of HIV/AIDS (Toluwani and Muhammed, 2016).

Although antiretroviral treatments are free, some men who have sex with men (MSM) are often reluctant to go for treatments due to fear of being arrested. This is because of the law against same-sex marriage or relations in Nigeria which comes with a penalty of 14 years imprisonment. The law however doesn’t prevent treatment from being rendered to this population and discourages discrimination against this population but still, this doesn’t alleviate the fears of the people (Onwujekwe, 2016; NACA, 2014, NACA, 2010).

**MALARIA**

Nigeria accounts for about 29% of reported malaria cases and 26% of malaria-related deaths globally (National Demographic and Health Survey, 2013). This is the leading cause of mortality and morbidity in Nasarawa and is responsible for 61% of under-five mortality in Nasarawa (NSMH, 2016). It is a disease which is caused by an infection with malaria parasites and is transmitted by the female *Anopheles* mosquito (Cahill, 2011). In 2016, 228,886 new cases of malaria were recorded, irrespective of the fact that 76% of households own long lasting insecticidal nets (LLINs) (Malaria Indicator Survey, 2015). The tropical savannah climate of Nigeria as a whole encourages the all year round transmission of malaria, with peak periods seen during rainy seasons.

**Existing Interventions.**

The diagnosis and treatment of malaria is carried out using either a microscope or RDTs in clinics or health centres (NCDC, 2016). Prevention strategies which are therapeutic
in nature are mainly targeted at children and pregnant women, the most vulnerable to the disease. The Intermittent Preventative Treatment (IPT) is used prevent malaria in pregnancy by the administration of a complete dose of sulphadoxine-pyrimethamine. LLINs are also given to all pregnant women during ante-natal visits to the hospital. For children 5 years and below, the Seasonal Malaria Chemotherapy (SMC) is used as a preventative measure just before the start of a rainy season. This involves the administration of sulphadoxine-pyrimethamine-amodiaquine to children.

Other prevention strategies are aimed at vector management and include the use of LLINs, Indoor Residual Spraying (IRS) and Larva Source Management in certain epidemiological sites. (NMEP, 2011).

**Barriers to Interventions.**

LLINs nets are easily accessible and are freely distributed but a lot of people do not make use of them. Reasons for this include because of the hot weather and some people are scared of the chemicals in the nets. (Chamberlain, 2013). This can mean disaster for malaria control activities as LLINs have proven to be an effective vector control tool.

Lack of skilled human resource for an effective healthcare system is also a huge challenge. Health centres are usually overcrowded as there is not enough human resources to attend to the patients. Patients often have to wait long hours at clinics before they can be attended to. A patient reported that the health centre at Karu was always overcrowded with patients and only two nurses were available to attend to them (NAN, 2017). A delay in the treatment of malaria can lead to severe consequences (NMEP, 2011).

Furthermore, some of the health facilities available need rehabilitation and medical equipment and consumables to function effectively. Lack of access to running water, electricity and no waste disposal system are also underlying factors. This causes low motivation for the few available staff as they have to attend to patients in poor working conditions leading to poor service delivery.

Lastly, Mrs. Mairo Bagudu, the Primary Healthcare Director of Karu LGA at a conference (NAN, 2017) attributed the high malaria prevalence of malaria to stagnant water, dirty environment and poor sanitation practices in the area.
Recommendations.

The Health Belief Model (Janz and Becker, 1984) will be used to analyse how public health interventions can be used to address health issues in Karu. The health belief model suggests that an individual will likely take action for a health problem if they perceive that they are susceptible to a problem or issue, understand benefits and barriers to action (Cragg et al., 2013).

For members of Karu community to adopt good health behaviours to prevent any health issue or disease, they will need to believe that they are a risk of this issue/disease, believe that the consequences are grave and serious. An effective way to trigger this will be with the use of tailored behaviour change health campaigns. For example, if people understand and know that maintaining a tidy environment is a way of preventing malaria as it destroys mosquitoes breeding grounds, they are more likely to adopt clean and healthy habits and not litter their surroundings and dispose of refuse properly. Their belief in the benefits of such actions will be highly beneficial and instrumental to the success of any interventions.
PART 2: PUBLIC HEALTH COMMISSIONING BRIEF

TITLE: A 4 year project targeted at reducing malaria incidence in Karu, Nasarawa State; create awareness about malaria interventions and health education on maintaining good hygiene and a clean environment.

TARGET GROUP: General population of Karu, Nasarawa State

PROJECT START DATE: January, 2018

PROJECT END DATE: December, 2021

PROPOSED BUDGET: ₦273,600,000 (Two Hundred and Seventy Three Million, Six Hundred Thousand Nigerian Naira).

BACKGROUND

Malaria is a major public health issue faced by the people of Karu. The MIS 2015 states that malaria parasite prevalence in Nigeria is 27% in children under age 5; 50.7% of children under 5 tested positive for malaria in Nasarawa. In Karu, the malaria parasite prevalence rate is 35.9% for children under the age of 5 using microscopy test and 57.1% when using RDT.

In Nigeria, people who live in rural areas and belong to a low socioeconomic background are more likely to be infected by malaria than those in urban areas and of a higher socioeconomic class (MIS, 2015).

PROBLEM STATEMENT/JUSTIFICATION FOR PROJECT

Despite the national and regional decline in malaria prevalence, malaria remains at a high transmission in Karu. The National Malaria Strategic Plan 2014-2020 highlighted the need to use appropriate preventative measures against malaria. Integrated Vector Management (IVM) is a key part in the control and prevention of malaria and has been recommended by the WHO since 2001 as a strategic approach (Castro et al., 2009). Several vector control strategies are used either alone or in conjunction with others to ensure that the environment becomes unsuitable for mosquito breeding (Musoke et al., 2013).
One major factor that has deterred the previous efforts of vector management in Karu is the dirty environment and poor sanitation. Littered around the towns of Karu are heaps of dirt, waste and stagnant water due to poor drainage and no waste management system. The messy environment has encouraged the transmission of malaria by serving as breeding grounds for the malaria vector (Presidential Malaria Initiative, 2017).

Photo of a popular street in Maraba “sharp corner” (Source: Butu et al., 2013).

Photo of Abacha road in Karu (Source: Butu et al., 2013)

Since the early 1900s, environmental management (EM) has been used to control malaria in several parts of the world. The WHO recommends that environmental
management should be used in conjunction with other prevention interventions (Castro et al., 2009). Environmental management for vector control involves the modification of the environment in other to reduce the breeding sites for mosquitoes to lay eggs, thus reducing malaria transmission (Keiser et al., 2005). The one advantage that EM has over interventions such as drugs and insecticides is the long-term sustainability factor. Over time, mosquitoes may develop resistance to insecticidals and the malarial drugs can also become ineffective. (NMEP, 2014).

The combination of various interventions in malaria programmes is most likely to be beneficially than just the use of a single intervention (CAMA, 2011). This is going to involve a multi-sectoral approach and successful implementation will rely on collaboration with the Ministry of Environment, Ministry of Works and Housing and Ministry of Agriculture.

**AIM:** To use effective IVM tools to reduce malaria transmission in Karu.

**OBJECTIVES.**

- Reduce the transmission of malaria with the use of effective vector control interventions.
- Prevent morbidity and mortality as a result of malaria infection through health promotion targeted at behaviour change: increase the use of LLINs in households, enhance treatment seeking behaviour and treatment adherence, promote clean and sustainable environmental practices.
- Provide timely and reliable information to assess project goals and targets.

**STRATEGY.**

This strategic approaches to implement the project will be the following:

- Environmental management
- Indoor Residual Spraying and Larvaciding
- Health Promotion

**Environmental management.**
This is a sustainable method that can aid in controlling the malaria vector. It involves environmental modification, environmental manipulation and habitation manipulation in order to restrict breeding grounds for the mosquitoes.

- Wastes and refuse around the town and in drains will be cleared and packed to a dumping yard and properly managed.

- Poodles of water will be filled with sand.

- New Large and Medium sized dustbins will be placed at various locations on streets and close to residential areas.

- Collaboration with the Ministry of Environment to enforce environmental sanitation laws and adoption of penalty fine for offenders.

- Incentives for houses or streets with the cleanest surroundings such as the removal of State Council Tax for a year.

- Health promotion and campaigns will be carried out to educate people on how keep the environment clean.

- Monitoring

**Indoor Residual Spraying and Larvaciding.**

IRS and larvaciding will be implemented as a core strategy for malaria transmission interruption according to the WHO guideline. Larvaciding will be done concurrently with IRS to as evidence has shown that mosquitoes can exhibit behavioural resistance. i.e. mosquitoes may avoid the indoor insecticides and land outside. This will be carried out in phases progressively.

- Each town under Karu will be geographically studied and divided into: area with short or high transmission seasons and epidemic prone areas.

- Regions that are epidemiologically feasible for IRS will be identified using entomological surveys.

- Identification of mosquito breeding sites.
-Procurement of IRS and larvicide insecticides and commodities.

-Application and spraying of quality and suitable IRS in selected areas around Karu.

-Collaboration with Ministry of Agriculture to ensure that arable farm lands and crops are not damaged or contaminated.

-Monitoring progress and impact.

**Health Promotion.**

-Billboards, flyers and pamphlets will be made to educate the public on how a clean environment can help prevent malaria and available malaria treatment options and interventions for preventions.

-Seminars and programs will be carried out in educational institutions.

-Advertisements using television, newspaper and radio.

-Town hall meetings will be carried out monthly with communities.

**Capacity building** will be carried out on health workers and workers with technical skills that are essential to the execution of the project. For health promotion, community leaders and youth leaders will be involved in sensitization and health education programmes.

**SWOT ANALYSIS**

It is important to take note of the Strengths, Weakness, Opportunities and Threats (SWOT) of this project in order to assess its implication for the project. This will help to minimize project failure (MDH, 2016).

<table>
<thead>
<tr>
<th><strong>STRENGTHS</strong></th>
<th><strong>WEAKNESS</strong></th>
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<tbody>
<tr>
<td>Increased awareness of malaria prevention strategies.</td>
<td>Limited or No funding</td>
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<tr>
<td></td>
<td>Lack of community participation</td>
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</tbody>
</table>
- Capacity building for health workers.
- Clear implementation guidelines.
- Collaboration with agencies and stakeholders
- Inclusion of community members in the execution of the project
- Use of IVM together with environmental management.
- Use of communication languages such as English, pidgin English, Hausa, Gbagyi and Gwandara in health promotion campaigns

<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
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</thead>
<tbody>
<tr>
<td>- Adoption and implementation of project in other LGAs in Nasarawa.</td>
<td>- Increase in cost of commodities.</td>
</tr>
<tr>
<td>- Reduce malaria vector distribution in Karu</td>
<td>- Lack of support by state government, local government and community leaders</td>
</tr>
<tr>
<td>- Reduce other illnesses and diseases due to environmental management</td>
<td>- Change of government officials who may not continue to sponsor project.</td>
</tr>
<tr>
<td>- Encourage communal relationship between individuals in communities.</td>
<td>- Unwillingness to allow IRS in homes</td>
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<td></td>
<td>- Refusal to use LLINs.</td>
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<td>- Ethnic conflicts</td>
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</table>
**IMPLEMENTATIONS OF SWOT ANALYSIS**

<table>
<thead>
<tr>
<th>THREATS</th>
<th>CHALLENGES (IMPLICATION)</th>
<th>STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in cost of commodities</td>
<td>The project may not reach all the targeted population.</td>
<td>i) Focus on environmental management and larvaciding.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Pick areas of high malaria transmission and implement project.</td>
</tr>
<tr>
<td>Loss of sponsorship or support</td>
<td>This may prevent the full execution of project</td>
<td>i) Seek funds from the general public.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ii) Partner or collaborate with organisations carrying out similar projects.</td>
</tr>
<tr>
<td>Ethnic conflicts</td>
<td>This can interfere or halt project activities.</td>
<td>i) Seek assistance from Police or relevant authorities</td>
</tr>
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**IMPLEMENTATION TIMELINE**

<table>
<thead>
<tr>
<th>STRATEGIES</th>
<th>PRIORITY ACTIONS</th>
<th>TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2018 2019 2020 2021</td>
</tr>
<tr>
<td>Environmental Management</td>
<td>i) Procurement of new dustbins</td>
<td>✔</td>
</tr>
<tr>
<td>Indoor Residual Spraying and Larvaciding</td>
<td>i) Geographical study and mapping</td>
<td>✓</td>
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<tr>
<td>----------------------------------------</td>
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</tr>
<tr>
<td></td>
<td>ii) Entomological surveys</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>iii) Identification of mosquito breeding sites</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>iv) Procurement of commodities</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>v) Application and spraying of houses</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>vi) Stakeholders meeting</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>vii) Monitoring of activities</td>
<td>✓</td>
</tr>
<tr>
<td>ii) Evacuation of refuse and dump</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>iii) Filling up of poodles</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>iv) Health promotion</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>v) Stakeholder meetings</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>vi) Monitoring</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Health Promotion</td>
<td>i) Use of billboards, flyers and other promotional materials.</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>ii) Seminars and programs in educational institutions</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>iii) Advertisements on tv, radio and newspapers</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>iv) Town hall meetings</td>
<td>✓</td>
</tr>
<tr>
<td>Capacity building</td>
<td></td>
<td>✓</td>
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</tbody>
</table>
SUSTAINABILITY

The RE-AIM Framework will be used to analyse the projects’ sustainability.

**REACH**

How will this program reach its targeted population?

People will be reached at homes, hospitals, workplaces, churches, mosques, educational institutions.

**INPUT**

- Human Capital
- Funds
- Time

**PROCESS**

- Environmental Management
- IRS and Larvaciding
- Capacity building
- Health promotion

**OUTPUT**

- Reduce the transmission of malaria in Karu
- Improve behaviours and practice to encourage prevention of malaria
- Provide up to date information on project goals

**IMPACT**

Reduce malaria transmission in Karu.
A cleaner and safer environment

A cleaner and safer environment
institutions and marketplaces.

Billboards and advertisement placements on television stations and radios. This will be carried out in English, Pidgin English, Hausa, Gbagyi and Gwandara.

<table>
<thead>
<tr>
<th>EVALUATION</th>
<th>How do I know if malaria transmission has reduced?</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>If the incidence rate of malaria has reduced to ( \leq 30% ) (half of the current statistics).</td>
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<tr>
<td></td>
<td>If the number of Households using LLINs increase to ( \geq 95% ).</td>
</tr>
<tr>
<td></td>
<td>If the number of people knowledgeable about malaria prevention and treatment increase to ( \geq 95% ).</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>ADOPTION</th>
<th>How do I develop support from State Ministry, Agencies and Communities?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collaboration efforts</td>
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<td></td>
<td>Public-private partnership</td>
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<td></td>
<td>Community member’s satisfaction.</td>
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</tbody>
</table>
### IMPLEMENTATION

**How do I ensure interventions are delivered properly?**

- Follow guidance from implementation strategy and guidelines.
- Ensure quality insecticidal commodities are used.
- Meeting with stakeholders and community leaders.
- Ensure participation of community members.

### MAINTENANCE

**How can this project be maintained and sustained effectively?**

- Continuous monitoring and evaluation of activities.
- Research studies and surveys in the community.
- Take note of lapses and find an effective solution to remedy the situation.
- Ensure proper documentation of activities carried out.

### ESTIMATED COSTING

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
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<tbody>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Procurement of new dustbins</td>
<td>₦1,000,000</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Evacuation of refuse/dumps</td>
<td>₦500,000</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Filling of poodles</td>
<td>₦250,000, ₦150,000</td>
<td></td>
<td></td>
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<tr>
<td>Health Promotion</td>
<td>₦5,000,000, ₦3,000,000, ₦2,000,000, ₦2,000,000</td>
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<td></td>
<td></td>
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<tr>
<td>Stakeholders Meeting</td>
<td>₦200,000, ₦200,000, ₦200,000, ₦200,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring and Evaluation</td>
<td>₦2,000,000, ₦4,000,000, ₦5,000,000, ₦7,000,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographical Mapping</td>
<td>₦4,000,000</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Capacity building</td>
<td>₦3,000,000, ₦3,000,000, ₦2,500,000, ₦3,000,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entomological survey</td>
<td>₦10,000,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identification of breeding sites</td>
<td>₦8,000,000, ₦10,000,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procurement of commodities</td>
<td>₦60,000,000, ₦60,000,000</td>
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<td></td>
<td></td>
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<tr>
<td>Application and spraying</td>
<td>₦40,000,000</td>
<td>₦35,000,000</td>
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<tr>
<td>Logistics</td>
<td>₦600,000</td>
<td>₦600,000</td>
<td>₦600,000</td>
<td>₦600,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>₦34,550,000</td>
<td>₦80,950,000</td>
<td>₦110,300,000</td>
<td>₦47,800,000</td>
</tr>
</tbody>
</table>

PART 3: REFLECTION

The planning of this project has helped me to acquire necessary and important strategic planning and management skills. One has to be able to think strategically and still be time-efficient in the process of planning. So much goes into the planning, execution, monitoring and evaluation of public health programmes. Many individual simple and complex processes all directed at a single or set of objective. At the end, all health interventions are focused on the same goal-to improve the health status of the population.

A community health needs assessment was carried out in Karu, Nasarawa state and Malaria was chosen as the major public health concern due to its very high prevalence. An intervention targeted majorly on vector control in community was proposed. Environmental management, Indoor Residual Spraying and Larvaciding were used as strategic tools.

Project implementation timelines was predicted and a budget cost was estimated. A SWOT analysis was also carried out. These may be unrealistic, over-estimated or under-estimated due to the fact that I have no previous experience of planning a health intervention program. Notwithstanding, the planning of this project was a challenge to myself and I am optimistic about future projects. Also, I have the knowledge of health theories that can be used for intervention mapping and monitoring and evaluation tools.

Examining and studying the health needs of a community that I practically grew up in has also brought to my realization that so many people don’t even consider how much our environment can affect them. Our environment and where we live can have a huge impact on our health and life in general.
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10. Onwejekwe O. 2016. Free ARVs are not enough: the hidden costs of treating HIV in Nigeria. Available at: http://theconversation.com/free-arvs-are-not-


