VILLAGE BEDNET COMMITTEES: EVALUATION OF PERFORMANCE, USE AND MAINTENANCE OF INSECTICIDE-TREATED BEDNETS IN RARIEDA, WESTERN KENYA.

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DECLARATION

I, Edwinah Atieno Syagga hereby declare that this thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION

This thesis is dedicated to my Father whose love, effort and patience enabled me to gain the knowledge that I use today.

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GLOSSARY

CDC ..... Centres for Disease Control and Prevention

CHW..... Community health workers

FGDs ..... Focus group discussions

HIV ..... Human immuno-deficiency virus

IEC ..... Information, education and communication

IMNs ..... Impregnated mosquito nets

ITBNs ..... Insecticide treated bed-nets

KEMRI ..... Kenya Medical Research Institute

MOH ..... Ministry of Health

NASCOP ..... National AIDS/STI control programme

PHC ..... Primary health care

RCT ..... Randomized controlled trial

SAS ..... Statistical applied software

TBAs ..... Traditional birth attendants

VHW ..... Village health workers

VBCs .... Village bed-net committees

VHV .....Village health volunteers

VHCs .....Village health committees

WHO ..... World Health Organization

UNICEF ..... United Nations Children's Fund

VIBEC ..... Village bed net committee

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ABSTRACT

The World Health Organization estimated that 300 - 500 million cases of malaria are reported annually with 90% being from Africa. In search for sustainable malaria control measures studies have shown that the use of insecticide treated bed-nets could be an effective malaria strategy. This information prompted the introduction of the KEMRI/CDC Bed-net project at their study site in Rarieda Division (Bondo District), aimed at the trial of insecticide treated bed nets (ITBNs) in the prevention of malaria in 1997. A randomised controlled trial (RCT) was started in Rarieda Division with a baseline work in 1996 followed by the issuing of insecticide treated bed-nets in 1997.

At the beginning of the project, voluntary village bed net committees (VBCs) were formed to help in the promotion of ITBNs' use and maintenance within the community, at the grass root level, in line with the primary health care (PHC) strategy of community participation. They were therefore, expected to closely monitor correct use and maintenance of the ITBNs and to be a link between the community and the project.

The nets were issued to 40 of the total 79 villages, randomized by public lottery, to act as intervention villages while the remaining 39 villages were issued with bed-nets two years later and acted as control villages. Thus, the control VBCs started working only after the second intervention, with the second issue of bed nets to the households.

However, to sustain the use of ITBNs in the community, a strong active bed-net committee was necessary. This study therefore set out to evaluate the performance of the VBCs' in the promotion of the use of ITBNs during the trial. The main objective of the study was to evaluate the performance of these VBCs as a channel of information, communication and

education in the use and maintenance of the insecticide treated bed nets by the community. This study was done in order to determine whether the village bed net committees would be able to promote the use and maintenance of ITBN when the funding ceased. The study used the information collected from VBC and household surveys that was supplemented by focus group discussions with the VBC members. The sample size comprised 115 VBC members with 65 from the Intervention and 50 from the Control villages. There were 598 households with 299 coming from the Intervention and 299 were from the Control villages. The data was collected using structured interviews and analyzed using descriptive statistics and Chi-square test for association using computer Statistical Application Software (SAS).

The results of the study indicated that the actual performance of the VBCs was less than the 50% margin and the difference in performance between the VBCs from the intervention and the control villages was not statistically significant. This therefore, indicated that there was not much association between the VBCs and the initial formal orientation given by the project officials as shown by the Chi-square test of association ($df = 1$; $p > 0.05$).

In conclusion formal orientation of village health workers does not make a difference in their performance. However, it creates unmet expectations. For the sustainability of ITBNs, village bed net committees can be useful if well supervised, supported and given the appropriate knowledge through continuing education.

CHAPTER ONE: INTRODUCTION AND LITERATURE REVIEW.

1.1 General introduction

Malaria is one of the leading parasitic disease causing morbidity and mortality in developing countries particularly in Sub-Saharan Africa. The World Health Organization (WHO, 1998) reported that 300 - 500 million cases of malaria occurred annually with 90% being in Africa. Although accurate figures are difficult to find, in Africa alone malaria is responsible for over one million deaths of infants and young children each year (Kitua, 1998). *Plasmodium falciparum* is the human plasmodia responsible for an estimated 25% of childhood mortality below 5 years of age excluding neonatal mortality (Cattani and Lengeler, 1986).

In Kenya, for instance, in 1995 malaria was the leading cause of morbidity, accounting for 29% of all new malaria diagnosis, thus making it a public health concern (Munguti, 1998). Currently an estimated 70% of the Kenyan population is at risk of contracting malaria and, everyday the disease kills more than 72 Kenyan children below 5 years (Roll Back malaria, Kenya, 2000).

As a result of various trials on the effectiveness of insecticide-treated bed-nets (ITBNs) in the control of malaria, it has been shown that ITBNs could reduce malaria morbidity and consequently malaria-related mortality. Many community-based trials have therefore been established in a number of countries including Tanzania (Bagamoyo), Kenya (Kilifi), Haiti, Papua Guinea, Equador, and Colombia. These were in line with the primary health care (PHC) strategy of community participation in disease prevention and health promotion which is a central part of the WHO objective of health for all (Jewkes and Murcott, 1998).

The bed net project in Rarieda was based on community participation and included activities providing a lot of information, education and communication that are very important in health promotion. This involved a number of communication channels aimed at making the implementation of the ITBNs successful. One such channel was the formation of Village bed-net committees (VBCs) on which this study was based.

The VBCs were divided into two categories namely those from intervention and those from control villages. The VBCs from the intervention villages were given an initial orientation about the project and the project's expectations. The VBCs from the control villages received no initial orientation. However, the project expected them to perform as well as their counterparts from the intervention villages.

Community participation is the process by which a community mobilizes its resources, initiating and taking responsibility for its own development activities and sharing in decision making for, and implementation of all other development programmes for overall improvement of its health status (WHO,1986).

1.2 Literature Review

1.2.1 Epidemiology of malaria

Malaria is defined as a systemic disease, acute, sometimes severe and often chronic, characterized by rigors, rapidly rising temperature and a palpable spleen (Roberts, 1974). After an interval free of fever, the cycle is repeated either daily or every third day depending on the species of malaria parasite. It is confirmed by the presence of the parasites in the individual's blood. Much of this infection is caused by *Plasmodium falciparum*, which poses great risk to under-fives especially in the latter part of first year of life and non-immune individuals (Kitua, 1998).

Human malaria is caused by four species of the genus plasmodium (Warrell, 1993; WHO, 1998). These are:

- *Plasmodium falciparum*, which causes the most dangerous form of malaria because of its potential to invade erythrocytes of any age thereby developing an overwhelming parasitaemia and fulminating infection in the non-immune individuals. This if not treated may be fatal. If treated early, the infection usually responds rapidly to appropriate treatment and relapses do not occur. If treatment is inadequate, however, infection may result in the multiplication of parasites that persist in the blood.
- *Plasmodium vivax* causes milder clinical attacks than those of *Plasmodium falciparum* and has a low mortality rate in untreated adults.
- *Plasmodium ovale* causes a rare malarial infection with a periodicity and relapses similar to those of *Plasmodium vivax* but it is milder and more readily cured.
- *Plasmodium malariae* causes an infection that is common in endemic areas

of the tropics. Clinical attacks may occur years after infection but are much rare than infection with *Plasmodium vivax*.

Only female anopheles mosquitoes, which are closely associated with humans, are important as malaria vectors. The infected mosquito remains infective for the rest of its life which lasts one month (Roberts, 1974).

Epidemiological pattern of malaria varies and is affected by many factors. These factors include parasite species and strains, human population dynamics, economic conditions, mosquito species, climate and land topography and utilization. These factors also determine the levels of endemicity and the development of immunity (Munguti, 1998).

1.2.2 Malaria control

The fact that female *Anopheles* mosquito transmits malaria was established from the combined field experiment carried out by Patrick Mason and his colleagues near Rome and in London in 1900 (WHO,1986). It can therefore be observed that protection from the bites of female *Anopheles* mosquito prevents the occurrence of the infection (WHO, 1986; Gilles, 1993).

In 1955, the WHO began a malaria eradication campaign that was strongly supported by the Pan African Health Organization, UNICEF, the US Public Health Service, the USAID, and by many health departments (WHO, 1986). This program directly or indirectly resulted in the eradication of malaria from the USA, most areas of Europe, much of the Middle East and areas in the Caribbean and South America (WHO, 1986). However, malaria continues to be a major problem of developing countries in the tropics and subtropics and has reappeared in

areas freed from the disease in the 1960s (Russell, 1978). The reasons for the present situation include technical, administrative, financial and social factors (Russell, 1978). Certainly, technical factors such as resistance of insect vectors to insecticides played a major role in these changing fortune. Inadequacy of planning, administrative shortcomings, financial stringency, shortage of personnel, poor training were equally responsible for the recent shift of strategy from malaria eradication to malaria control in countries not equipped for the undertaking of complex and difficult programmes of eradication (Bruce-Chwatt, 1993).

Adequate training of malaria experts has not been forthcoming, and there has been a crippling decline in the attention devoted to malaria control by the international and national agencies (Russell, 1978). Other health problems appeared more urgent or more interesting compared to malaria control programmes (Russell, 1978). It is likely that the situation would be reversed once the ability of malaria to slow down socio-economic development in addition affecting human health is unequivacally demonstrated in endemic areas (Roll back Malaria, 2000).

The global strategy for malaria control puts renewed emphasis on selective measures and sustainable preventive measures (Bruce-Chwatt, 1993; WHO, 1995). Since 1978 the concept of primary health care has been widely adopted, and anti-malaria activities have become essential components of national health systems in many developing tropical countries (Bruce-Chwatt, 1987). The selective approach, based largely on chemotherapy has been successful in a few countries but in other areas the degree of integration of anti-malaria and the PHC system was less effective. Patterns of such integration depend on different epidemiological, socio-economic, cultural, and other factors (Bruce-Chwatt, 1987). The

perceptions by the community of any medical problem and intervention strategies designed to bring changes have important implications for successful implementation of the control measure (Munguti, 1998). The finding that some community members know that the disease is transmitted by the mosquito is important especially in implementing community supported malaria control programmes focusing on vector reduction. The members of the community are likely to protect themselves against infective mosquitoes thus preventing malaria infection (Munguti, 1998). Therefore, related to the search for successful control strategies, the expected response of the community in endemic areas to the introduced measures is considered critical.

For many people, the single factor that promotes health and increases the welfare of a country is access of the population as a whole to scientific knowledge about health and decisions affecting it and requires active and informed participation by the community (Molina, 1980). A study in Marigat Division of Baringo District concluded that understanding community perceptions of aetiology, symptoms identification and treatment of malaria is an important step towards the control of the disease (Munguti, 1998). It appears that the current *status quo* in malaria recurrence may only be improved by effective community-based chemotherapeutic, chemoprophylactic and vector control strategies.

(a) Chemotherapy

Chemotherapy has in the recent years assumed a major role in the primary health care (PHC) and in complying with the basic objectives of preventing mortality and curbing malaria morbidity (WHO, 1986). In sub-Saharan Africa, the cornerstone of malaria control has been promotion of the appropriate use of anti-malarial drugs for prevention and treatment. While

this remains an essential component of any integrated malaria control effort, the spread of chloroquine-resistant *Plasmodium falciparum* strains has stimulated the search for novel albeit more expensive malaria control agents (Winch *et al.,* 1997). Drug resistance in Eastern Asia and Oceania has affected Indonesia and practically all areas of India with major alarming changes reported in Africa, south of Sahara and in islands off the eastern coast of Africa (WHO, 1986).

b) Vector control

Parasite resistance to the commonly used anti-malarial drugs is an increasing problem and has resulted in greater attention on intervention strategies aimed at the control of the vector (Gyepong *et al.*, 1996).

There are five preventive measures namely to:

i) Prevent mosquitoes from feeding on humans.

ii) Prevent or reduce the breeding of mosquitoes.

iii) Destroy the adult mosquitoes.

iv) Eliminate the malaria parasites in the human host.

The measure expected to yield valuable results particularly in the presence of acute epidemic malaria is the protection from mosquito bite a method that has been practised for a long time through the use of nets (Onori *et al.*, 1993). One of the most effective methods of vector control that has been studied is the use of insecticide treated bed-nets (Alonso *et al.,* 1991).

1.2.3 Insecticide treated bed nets

During the last 10 years several field trials have demonstrated that the protective effect of mosquito nets can be greatly enhanced by treating them with a repellant or

insecticide. Substances used to treat nets are pyrethroids, especially permethrin and to a lesser extent, deltamethrin. Good results have also been reported with the utilization of treated curtains on windows and doors (Kachur *et al.,* 1999). Randomised controlled trials in different malaria transmission settings have shown insecticide-treated bed-nets (ITBNs) and curtains to be effective in reducing child mortality and morbidity (D'Alessandro *et al.,* 1995; Binka *et al.,* 1996;

Neville *et al.*, 1996; Habluetzel *et al.,* 1995;). The reduction shown in these trials ranged between 14% (Burkina Faso), 29% (Coastal Kenya) and 23% reduction in the Gambia (Alonso *et al.,* 1993). Meanwhile international and national agencies in Africa are planning sustainable bed-net programmes, and the research focus has been diverted from efficacy trials to effectiveness studies (Lengeler & Snow, 1996).

The ongoing studies indicate that ITBNs reduce the number of infected bites by as much as 90% (Hawley, personal communication, 2001). In response to the need for low cost preventive measures, renewed attention has been directed to assessing the potential benefits of insecticide impregnated bed-nets. Recent studies have shown that such nets are a cheap and effective method of reducing man-vector contact and child morbidity (Binka *et al.*, 1996). From the literature it remains the most promising measure in reduction of man-vector contact as indicated in many studies for example, the Gambia, Kenya, Tanzania, Burkina Faso among others (Kachur *et al.,* 1999).

1.3 The use of community health workers in ITBN projects for malaria control

Given the right attitude of health service staff and members of the community, an organizational structure can be devised to initiate community based projects (Tarimo and Fowks, 1989). Among the most pressing operational research issues in ITBN studies is the question of how best to develop a tradition of voluntary re-treatment of bed-nets within the communities (CDC/KEMRI, Proposal1996). The response of the community in endemic areas to the introduced measures is considered critical because their perceptions of the medical problems and intervention strategies have important implications for the successful implementation (Newell, 1989).

In many countries, the health services do not reach most people because they are too expensive, too distant or inaccessible or irrelevant for technical, linguistic or cultural reasons. Furthermore, it has become clear that many health interventions have to be performed by people based at home rather than in institutions (Newell, 1989). Winch *et al.,* (1997) noted that institutionalization of community-based bed-net intervention trials was particularly difficult. Recent studies by Green (2000) indicate that the trend in health promotion and disease prevention, of which the bed-net use was a part of, had increased the number and scope of community-based interventions. The involvement of the community resulted in community participation through mobilization of resources, initiating and taking responsibility on development activities, sharing in decision making and implementation of such development programmes for overall improvement of its health status (WHO, 1986).

Traditionally, community participation in primary health care (PHC) meant that people gave time, labour, and money to initiated health care programmes in their settings. In the current context, community participation involves among others, stable structures created for:

i. planning together
ii. regular exchange of information between health workers and community leaders
iii. co-ordination and control of the implementation of the agreed plan of action
iv. participation of community health workers in the management meetings of community organization (Ferrinho *et al.*, 1993).

Genuine and useful community participation should be instrumental in the project success, include all people in decision making and training in independence and self-determination (Mclvor, 2000).

In a study done by Rozendaal (1989) in Papua New Guinea there were, Village Health Volunteers (VHV) equivalent to the village bed net committees in this study whose roles were similar and included:

- Promoting the ITBNs with emphasis on the under fives and pregnant mothers.
- Visiting households once a month to check the proper use of ITBNs
- Organising the impregnation of nets every sixth months
- Collecting money for the nets and selling nets at the health centres
- Assessing the number of nets needed per house.

The study in Papua New Guinea (Rozendaal, 1989) also had paid village health workers equivalent to the TBAs in the current study who supervised them.

Village or community health workers (VHW or CHW) usually understand local communities better and are responsible to them in political process and development at the local level. They are usually also active in the health education and promoting health to groups in their community through visiting and talking to women's groups, teachers and school children in local primary and secondary schools (Ferrinho *et al.*, 1993).

Where ITBNs are used, village health committee (VHC) elected by the community if available can expedite sustainability process by informing the bed-net users about technical problems, actual effects of mosquito nuisance, lice, bedbugs, and disease morbidity and prevalence (Rozendaal, 1989).

In a study done in Morogoro for example, the village administration comprised a *balozi* (*10 cell leader*) responsible for an average of 10 households each. They were responsible for reporting population movements and provided information on births and deaths to the village committee (Kitua, 1996). This would be equivalent to the village bed-net committees who were also responsible for a number of households but with a difference, in that the number of the households served by a VBC member was not specific. They were only responsible for the promotion of the use and maintenance of ITBNs.

A study on sustainability and community empowerment on VHCs done in Zimbabwe indicated that genuine participation of those who had been traditionally excluded from important decision making helps in training on independence and self-determination. These VHCs were given 3-one day workshops at 2-4 weeks intervals. Of the 700-800 VHC members, only 10 had defaulted by 1989 due to employment or migration while some

defaulted due to lack of salary. Poor attendance at meetings by the VHC members was a common phenomenon.

A peripheral village-based tier of health services is acceptable only if it is both an integral part of the community tier it serves and it is intimately linked with the tier of services above it (Newell, 1989). It is in line with this that the CDC/KEMRI bed-net project introduced the village bed-net committees (VBCs) to be a link between the community and the bed-net central office. This link was to prepare them for the sustainability of the treated bed-nets once the study is completed.

1.4 Rationale for the study

Malaria control measures should not only be cost effective and affordable to most individuals, but should also meet the requirement for sustainability.

It is in this context that this study specifically concentrated on evaluating the VBCs as a grass-root channel in the promotion of the use and maintenance of ITBNs in malaria control. It is important to identify early the capabilities of this community organization so that any appropriate intervention takes place to empower them to carry out their activities effectively.

The project formed the village bednet committees for the promotion of correct use and maintenance of the ITBNs. Following the trial it was hoped that the correct use and maintenance of the nets would continue even after the funding ceased, if control of malaria were to be successful and sustainable. However, to sustain the use of ITBNs in the community, a strong active bed net committee was necessary. Given that the funding would soon stop, it was necessary to evaluate the performance of the VBCs in order to identify areas

that might need intervention in order to empower and enable the committees for the future of the bed net use and maintenance. It would also be an example to be used nationally and internationally, if successful, in the implementation of ITBNs as a method of malarial control.

Many evaluations of primary health care programmes have been done but usually they have concentrated on the management issues and only a few control studies have been undertaken to determine whether community-based PHC programmes could achieve any of their objectives (Greenwood *et al.,* 1990). The purpose of this study was therefore to identify the strengths and weaknesses of the VBCs with regard to their performance in the promotion of ITBNs. This was in line with the PHC strategy, to generate information that would contribute towards improving community participation in the ITBN promotion through village health workers (VHWs).

The information would be useful to policy makers and programme developers in implementing programmes pertaining to malaria control using ITBNs. It would also be useful for the implementation of any other programme that would in future require the assistance of the village health workers. Such programmes would in the end be cost-effective and beneficial to the underprivileged communities. Because investment in community-based programmes has grown, it is important to evaluate their effectiveness in order to be sure about their future without external supervision, thus the need to evaluate the effectiveness of the VBCs before the end of the donor funding.

1.5 Hypothesis

There is no difference in performance between the VBCs who were trained before the start of their work (intervention) and the VBCs who were not given any prior training (control).

1.6 Objectives of this study

1.6.1 General objective

To evaluate how effectively the VBCs have performed their verified activities in the promotion of the use and maintenance of ITBNs.

1.6.2 Specific objectives

(a) To determine the number of the original VBCs, and committee members in both intervention and control villages still existed at the time of this study.
(b) To verify the activities of the existing VBCs and evaluate their performance.
(c) To identify those factors that influence the performance in the verified activities.
(d) To determine the impact of the VBCs on the households.

CHAPTER TWO: MATERIALS AND METHODS.

2.1 Study area

This study was conducted in the CDC/KEMRI study site in Rarieda Division Bondo District (Figure 1). The site lies northeast of Lake Victoria in Nyanza Province, and is about 50km from Kisumu City in Western Kenya (Figure 2). The nearest towns of Kisumu and Siaya border Bondo District. The site is 200 sq km and had a population of approximately 56,000 (National census, 1999), most of whom are members of the Luo ethnic group. They live through subsistence farming and fishing.

This site was established to investigate the efficacy of ITBNs on the reduction of child mortality. The study site was administratively divided into 13 geographical sectors and consisted of 79 villages. Forty of the villages were randomly selected by ballot as intervention villages while the remaining 39 were to be the control villages. The project baseline work began in 1996 and was followed by the issuing of ITBNs to 40 treatment villages. Treatment villages were issued with nets in early 1997 while the control villages were issued with nets in late 1999 through to early 2000.

After the issuing of ITBNs, village bednet committees (VBCs) were constituted as community groups serving as a liaison between the bednet project office and the community. The VBCs in the Treatment villages were given a one-day formal orientation workshop organized jointly by the project officials and the VBCs. This was to orientate them to ITBN issues before they go to work within their villages. The workshop objectives were as follows (Project document):

- To bring a close relationship between the office and the VBCs.
- To allow the VBCs to learn about the project by sharing ideas with the project officials.
- To discuss with the VBCs the role they were supposed to play in their various villages.

- To ease communication between the project staff and the community in its future plans.

The orientation was done at the sector level and 40 villages participated. The second group of villages (control) was issued with nets in late1999 – early 2000. The VBCs of this group were not given any initial formal orientation workshop.

The workshop methodology included:

- trainer-pupil relationship
- chance to ask questions regarding what has been learnt
- joint sharing of ideas
- use of local language (Dholuo)

Fig 1 Map of Kenya:- Showing W. Region

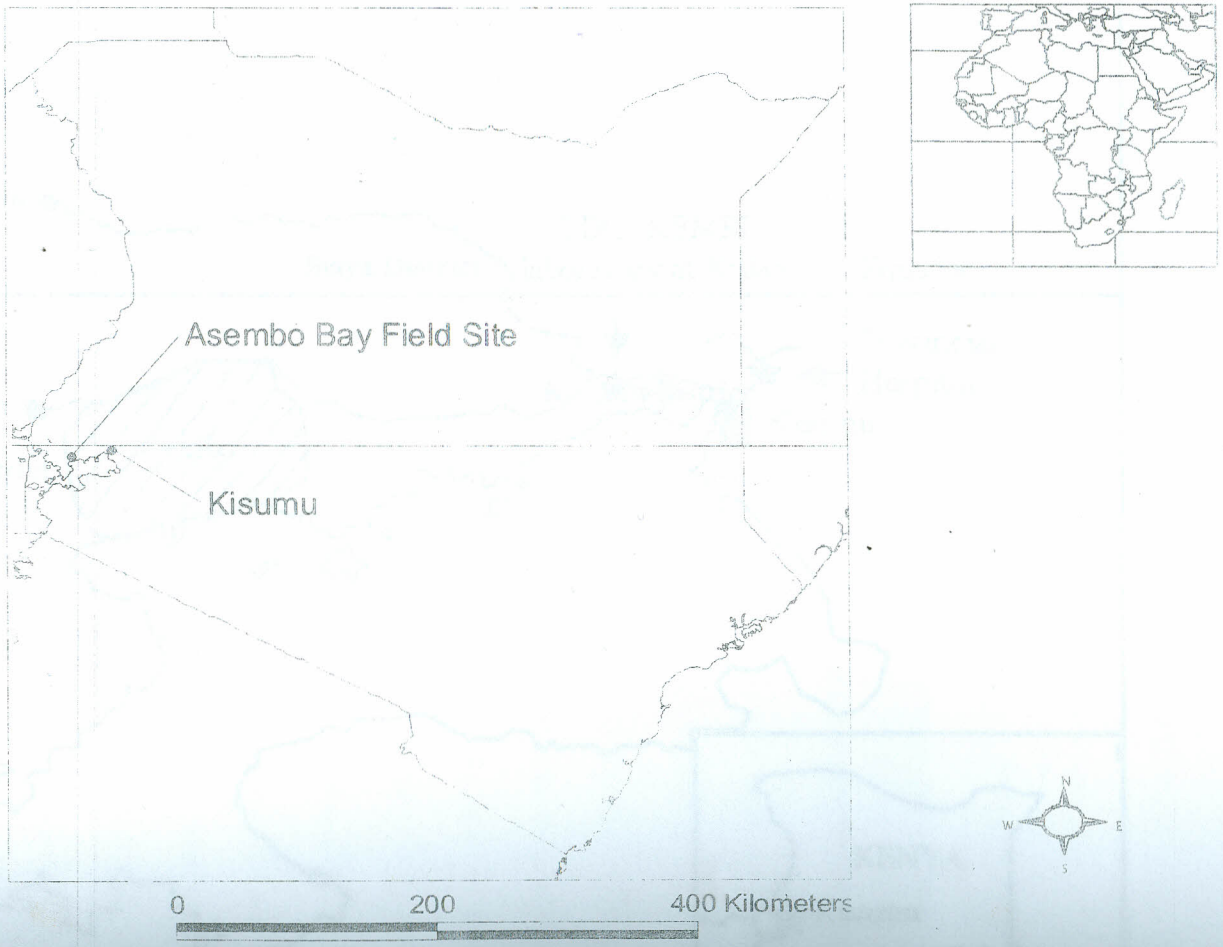
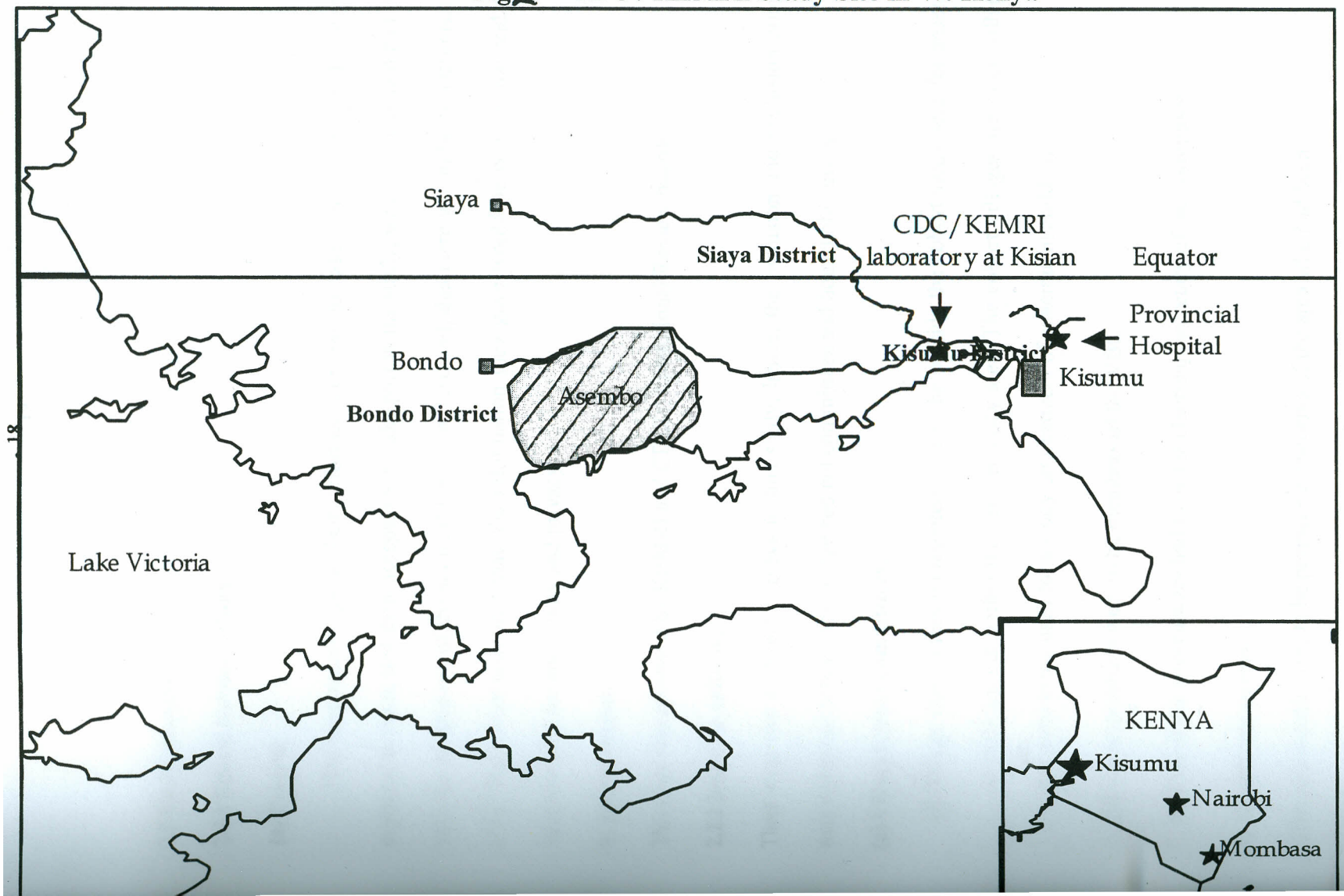


Fig 2: CDC / KEMRI Study Site in W. Kenya



2.2 Study subjects

2.2.1 Ethical considerations

(a) Consent

The respondents gave their informed consent to take part in the study. It was explained to them, that their acceptance to take part in the study, was voluntary and that they were free to drop out of the study, if they so wished and, that there would be no victimisation at all. They were reassured that, the information they gave would be confidential and that there was need for anonymity and privacy.

b) Ethical review.

This study was reviewed by KEMRI and CDC's Institutional Review boards.

2.2.2 Inclusion criteria.

There were two different surveys in this study, hence, the inclusion and exclusion criteria were divided as follows for village bed net committees and household surveys:

(a) Village bednet committees.

(i) Village committees represented were to be outside the cohort study area for anaemia in children, but within the bed-net study area. The cohort villages are those villages that were being used for a study on treatment of anaemia in children.

(ii) The respondents were to be members of the VBC.

(iii)One of the interviewees had to be the chairman/secretary of the committee.

(b) Households survey

(i)The respondents were to be permanent residents of the area who had been given ITBNs so that they were in contact with the VBC members.

(ii) The respondents must have lived in the study area for at least one year

following the issue of nets in order to be acquainted with the activities of the VBCs.

(iii)The villages were to have VBCs that had been in existence since their constitution.

(iv)The eligible age for participation in the study was above18years and of sane mind.

(c) VBC Focus group discussion

(i) Participants were to be members of a VBC outside the cohort area.

(ii) They were to be those that had not been interviewed during the VBC survey.

(iii) They were to be non-officials of the committees.

2.2.3 Exclusion criteria for VBCs

(i) Any member who was unwilling to take part in the study.

(ii) Any member of the committee who had not been in the committee for one year

2.3 Sampling method

Within the overall study site, 19 villages were used for an intensive cohort study of the effect of ITNs on malaria. Because the intervention was applied more rigorously in these areas, the 60 non-cohort villages were used as the site of the current investigation into the effectiveness of VBCs. Every village was supposed to have a VBC giving an expected total of 60 VBCs. Two interviews were to be conducted in each village, to give a sample size of 120.

However, two villages had no VBCs while one village had no chairman and the secretary was not available for interviewing therefore, the total sample size reduced from 120 to 115 VBC members.

From each VBC in the 60 non-cohort villages either the chairman or the secretary was interviewed together with another member of the committee who was of a different sex from that of the chairman or secretary in order to ensure gender balance.

The households were therefore asked to mention who gave them more information regarding the following:

i. Washing of nets
ii. Mending of torn nets
iii. Reporting of stolen or burnt nets
iv. Hanging of nets, etc

Four structured focus group discussions were also held with the members of the VBCs.

The household survey was done in order to evaluate the impact of the VBCs on the households. The data was taken from the Information, Education and Communication (IEC) evaluation surveys that were done in order to evaluate the channels of IEC of which the VBCs are part. These surveys were done to find out whether the IEC channels were effective in the dissemination of information within the households and to compare them in order to find out which of them was more effective. The sampling method used was the cluster sampling with probability not proportionate to size of the villages and the sample households were drawn from randomly selected villages. The households were randomly picked from 10 intervention and 10 control village clusters per quarter using computer-simulated tables. One primary compound was then randomly picked from each selected village followed by sequential nine households clustered around the compound. The household surveys were conducted at intervals starting in 1997 to 2001. For the purposes of this study only data from the years 2000 and 2001 was used. The sample size for the household survey was as follows:-

Year	Intervention villages	Control villages	Total
2000	199	100	299
2001	199	100	299

This gave a total sample of 598.

2.4 Data collection methods

The methods of data collection for the study included:

a) Questionnaires, which were used for the structured interviews of the VBCs and the households (Appendix 1, 2 and 3 respectively).

b) Some records were received from the sector offices where the VBCs made their reports. These were for the verification of the VBCs' activities and these included the names of the members as a confirmation of the existence of the members in the committee.

c) Structured focus group discussions with the VBC members (Appendix 4).

The data collection from the VBCs was done at their homes using the guidance of the TBAs (Nyamrerwa) who went along with the interviewers. Appointments were made with those to be interviewed so that they could be available at the appointed time. This was logistically convenient because the villages were so scattered that if they were missed initially, it meant that revisits would be made at an extra expense. Only one village committee was interviewed per day because of the distances between the two respondents to be interviewed as well as the long distances from one village to the next. For the household survey, the interviews were held in the homes or wherever the respondents were met.

2.5 Data management and analysis

The research assistants were trained to collect data correctly in both the surveys and the focus group discussions. This was done in one day followed by pre-test of the questionnaires.

After the collection of data, the forms were verified as they were returned so that any necessary corrections were made while the forms were still in the field. A code-book was prepared and coding of qualitative data was done before the forms were sent to the central office for filing. Quantitative and qualitative data were then entered into the computer. The data was entered into the computer using double entry method for easy data cleaning. After data was entered into the computer, it was reorganized in order to make any corrections that may cause statistical errors, before the actual analysis. The analysis was done using SAS (SAS V.6.12).

In this study intervention group had a total of 32 villages and a sample size of 65 VBC members while the control group had 25 villages and 50 VBC members.

To verify the total number of the VBC members the chairmen or the secretaries of the committees were asked to mention the number of members in their committees. The proportion of the initial membership was compared with the proportion of the current VBC membership in order to find out who had defaulted so far. The initial VBC membership was supposed to be 600 (10 members per committee).

To find out their knowledge about their roles the respondents were asked to recall the roles that were ascribed to them by the project. This was to measure whether they performed according to the objectives of the project.

Their responses were used to evaluate their performance based on how many of the specified activities they were able to perform. They were therefore asked to mention what activities they were engaged in within their villages. This was later verified by the responses obtained from the household survey, on whether they knew their VBC members and whether they assisted them on issues concerning ITBN use and maintenance. The VBC's level of performance was measured by the responses obtained from the household survey as per the respective villages of the households. The comparison between the performance of the VBCs from intervention and control villages was done using Chi-square test of association. This was to find out whether any difference in their performance was due to the initial orientation or lack of it.

To measure those factors that influenced their performance the VBC members were asked to mention the factors that motivated them and the difficulties that they had encountered during their term. This was necessary in order to find out whether the factors had any effect on the performance of the two committees.

The relationship between the VBCs and the households was measured by the households' knowledge of the presence of a VBC within their village and whether they have been in contact with their VBC member. The household's acceptance that their VBC continue to serve them was considered to be a measure of good relationship in addition to the above. This was also a measure of the impact of the VBCs on the community. It was also necessary to identify the specific activities of the VBCs to rule out the performance of the same activities by other channels involved in the promotion of ITBNs. This was done by looking at the specific responses from the households that involved VBCs, TBAs (Nyamrerwa), *barazas,* leaflets, etc. that promoted ITBNs.

CHAPTER THREE: RESULTS

The acceptable measurement for the overall performance was 50% and above.

3.1 Identification of VBCs and membership

To verify the total numbers of VBC members the chairmen/secretaries of various VBCs were asked to mention how many members were in their committees. The sector office supervisors were asked to bring the names of the committee members within the villages under their jurisdiction. Two committees were not in existence while one had no chairman.

3.1.1 VBC membership per village

There were 57 villages studied of which 32 villages were from the Intervention while 25 were from the Control. The total expected number of VBCs members was 570. This comprised 320 from the Intervention and 250 from the Control villages. However, to date there are a total of 571 members inspite of some members having defaulted.

Out of the 571 members 335 (58.7%) were in the Intervention villages while 236 (41.3%) were in the Control villages. The results in Table 1 indicate that the outcome was not consistent with the expected total membership because some VBCs had more than 10 members. This has made the current membership to be more than expected despite the defaulters. Overall 41(72%) of the 57 studied villages still had maximum number of VBC members (10 members and above), while the remaining 15 (26%) had less than 10 members each 6 (six) of them being in the intervention while 9 (nine) were from the control. One village, whose officials were not available for the study, did not give in the members of its committee thus it was not included above but it was studied. Of the 41 villages, 26 were

Intervention villages and 15 were Control villages. From the results it could be observed that the total VBC coverage was above 50% since 72% of the villages had the maximum number of members (10 – 13 members per village).

TABLE 1: Current VBC membership per village type

Members per VBC	Intervention VBCs N = 32	Control VBCs N = 25	TOTAL VBC MEMBERS
5	1 (3.13%)	0	5(0.9%)
6	0	2 (8.33%)	12 (2.1%)
7	1 (3.13%)	0	7(1.23%)
8	3 (9.38%)	1 (4.17%)	32 (5.6%)
9	1 (3.13%)	6 (25.00%)	63 (11.03%)
10	12 (37.50%)	9 (37.50%)	210 (36.78%)
11	1 (3.13%)	0	11 (1.93%)
12	10 (31.25%)	6 (25.00%)	192 (33.63%)
13	3 (9.38%)	0	39(6.83%)

3.1.2 Proportion of deserted VBC members

To find out how many members had deserted the committees so far the chairmen were asked to mention who had deserted their committees since the election of their members. The results in Table 2 show that in total only 56 (10%) out of the expected total membership of 570 had so far deserted. Of the defaulters 30 (5%) were from the intervention villages while 26 (5%) were from the control villages. The total membership to date is not in conformity with the expected membership of less than 570, since the current total number of VBC members remains almost the same, yet it is clear, from Table 2, that some VBCs had less than 10 members. This could be because some committees might have replaced some of their missing members, exceeding the required membership of 10 members per committee. The results show that there is no difference in the dropout rate between the Intervention and Control villages. This might be an indication that the committees were both committed to their services.

TABLE 2: Proportion of VBC members who have so fardeserted

Members	Intervention VBCs N = 32	Control VBCs N = 25	TOTAL DESERTED MEMBERS
1	9 (28.13%)	9 (36%)	18 (22%)
2	2 (6.26%)	3 (12%)	10 (12.2%)
3	3 (9.38%)	1 (4%)	12 (14.6%)
4	2 (6.25%)	0	8 (9.8%)
8	0	1 (4%)	8 (9.8%)

3.2 Proportion of VBC members who had prior exposure to bed-net issues

Although the project stipulated that the VBCs would be given an initial formal orientation before they started their work, only those in the intervention villages received the initial orientation on issues pertaining to ITBNs. It was expected that the initial formal orientation might have some influence on the performance, especially of the intervention VBCs. This orientation was the treatment that would be used to compare the performance of the two village types.

It was therefore necessary to find out who among the VBC members had been given initial information on ITBNs. As shown in Table 3 some of the VBCs in the control villages mentioned that they received some orientation within their respective villages. However, the results show that more intervention VBCs received the orientation than the control VBCs. The remaining 14% of the members of intervention group who did not receive it might have missed for various reasons.

Table 3: Proportion of VBCs that were oriented to their roles.

Orientation offered	Intervention villages N = 65	Control villages N = 50
YES	56 (86%)	29 (58%)
NO	9 (14%)	21 (42%)

3.3 The persons who gave orientation

From the results in Table 4 some VBC members from the control villages indicated that they were given orientation. To determine where they got the orientation from, the respondents were asked to identify who gave them the orientation at any time during their work. Table 4 shows that the project officials and the field supervisors who were project employees gave most of the orientation to the VBCs. The results have an implication on the future of the bed-net promotion. It would mean that the VBCs might not be able to carry out their activities in future when the project officials cease to function since there will be no other voluntary community worker to give them any orientation before any activity takes place.

From the results in Table 4, 86% of the Intervention VBCs were given orientation while 58% of the Control VBCs were also given orientation some time during their work within the villages. The results in Table 4 are almost consistent with the results on Table 3.

Table 4: Cadre of Persons who Trained the Committee Members

Trainers	Number of VBC members from Intervention villages N = 65	Number of VBC members from Control villages N = 50
Field Supervisors	27 (42%)	8 (16%)
Project Officials	25 (38%)	17 (34%)
Nyamrerwa (TBAs)	3 (5%)	3 (6%)
Others	1 (2%)	1 (1%)

3.4 Performance by VBCs.

3.4.1 Verification of the VBC roles.

For the VBC members to work better in their villages they were expected to be conversant with their roles as stipulated by the project during the initial formal orientation. It would be expected that those VBC members who were not given the initial formal orientation would not perform as well as expected by the project. To verify whether the VBC members knew their roles in the community it was necessary to find out whether the VBC members could remember their roles as stipulated by the project. (*A list of activities to be carried out by the VBCs was compiled from project documents that were used for the initial workshop*).

The results in Table 5 show that generally most respondents remembered most of their roles. However, the responses from both the intervention and the control villages indicate that the VBCs recall was below 50% except for the intervention VBCs who remembered most, the role of education on correct use and maintenance of the ITBNs. From the results it might be observed that the VBCs from the intervention recalled their roles better than the VBCs from control villages although the proportion of the recall was below 50% except for education on correct use of ITBNs. There were highly significant relationships between recalling education on correct use of nets and the type of orientation given to the VBCs ($\chi^2 = 11.7$, df=1, $p < 0.001$), report on net issues ($\chi^2 = 5.31$, df=1, $p < 0.01$), encouragement on mending nets ($\chi^2 = 9.10$, df=1 $p< 0.01$) and discouragement of migration ($\chi^2 = 4.42$, df=1, $p < 0.05$).

Table 5: The performance roles recalled by the VBC members.

Roles	Members from Intervention village N = 65	Members from Control villages N = 50	P Values
Educate on correct use of nets	43 (66%)	17 (34%)	P = 0.0006
Report on net issues	32 (49%)	14 (28%)	P = 0.02
Discourage migration of nets	20 (31%)	7 (14%)	P = 0.03
Encourage mending of nets	16 (25%)	2 (4%)	P = 0.002
Ensure nets are treated when due	11 (17%)	6 (12%)	Not significant
Treat nets	9 (14%)	6 (12%)	Not significant
Follow-up stolen nets	4 (6%)	0	Not significant
Liaise between project and community	3 (5%)	3 (6%)	Not significant

Insignificant P > 0.05

3.4.2 The VBCs that performed their activities

In order to find out about their performance the VBC members were asked to mention some of the activities they were involved in within their villages. The results in Table 6 show various activities that the VBC members took part in within their respective villages. These activities were based on the roles that the VBC members were given during their initial orientation and which they could recall as shown in Table 5. Table 6 shows that the activities that the VBCs performed better were:

- Education of the households on how to hang the nets and encouragement to hang their nets every night.
- Visiting the houses to identify any problems regarding the nets.
- Encouraging the community to mend their nets when they are torn.

From the results it can be observed that the committees from the intervention villages were more engaged in educating the community on correct hanging of nets, household visits and encouragement of the community to mend their torn nets, respectively. They were therefore engaged in giving information to the community. The committees from the control villages were more engaged in home visiting, education of the community on correct hanging of nets and encouraging the community to mend their torn nets, respectively. These results show how different the committees were, in their priorities, in the way they performed and that these were the activities they performed to the expectation of the project (above 50%). From these results it can be observed that the VBCs were more engaged in giving information to the households on the use and maintenance of nets and identifying problems concerning the nets through the home visits. They were not involved in the actual treatment of the nets that was part of their main role in the maintenance of the ITBNs. It could be concluded, therefore,

that the VBCs might be used as a channel of IEC in community participation since they were mainly involved in information giving.

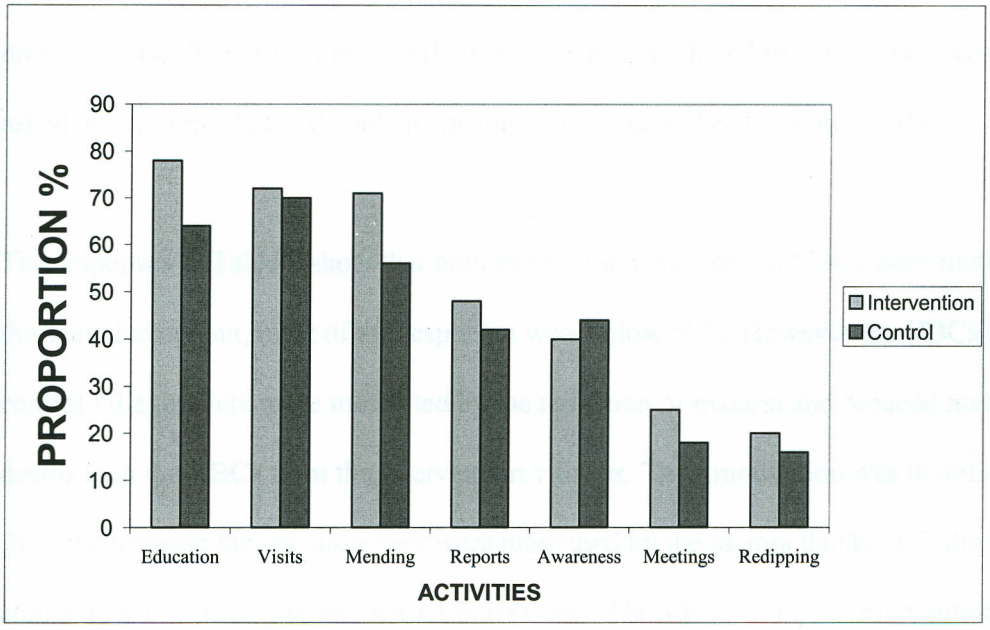
From the results in Table 6, it was observed that the VBCs in the intervention villages performed better than their counterparts in the control villages. The differences were significant in education on correct hanging of nets (χ^2 = 2.94 df=1, $p < 0.05$) but not significant in the rest of the activities.

Table 6: VBCs responses concerning the activities they undertake by type of village

Activities	Members from Intervention villages N = 65	Members from control villages N = 50	P Values
Education on hanging of nets	51 (78%)	32 (64%)	0.08
Household visits	47 (72%)	35 (70%)	Not significant
Encourage on mending of nets	46 (71%)	28 (56%)	Not significant
Receive reports of missing nets	31 (48%)	21 (42%)	Not significant
Help Nyamrerwa create awareness	26 (40%)	22 (44%)	Not significant
Hold meetings	16 (25%)	9 (18%)	Not significant
Assist with re-dipping	13 (20%)	8 (16%)	Not significant
Others	4 (6%)	7 (14%)	Not significant

Figure 4 shows clearly the variations in the differences in the performance between the two types of villages. Generally, the VBCs had performed most of their activities below average (below 50%). It might be concluded that the initial orientation given to the VBCs from the intervention villages did not influence their performance much since the differences were small as seen in Figure 4 and not significant.

FIGURE 4: VBCs responses concerning the activities they undertake by type of village.



3.5 Factors that influence performance

3.5.1 Motivating factors

A community health worker is usually a volunteer selected by the community from which he/she lives (Dawa, 1995). In the same way the VBC members had been working voluntarily since they were elected at the beginning of the project. According to Yangne (1991) CHW dropout is usually high yet these VBC members had continued to work. They were therefore asked to mention what had made them continue being in the committee to date.

The responses in Table 7 show that both intervention and control VBCs were motivated by the same factors but, most of the responses were below 50%. However the VBCs from the control villages were more motivated by the reduction of malaria and reduced malaria-related deaths than the VBCs from the intervention villages. Their motivation was therefore more from the intrinsic factors since they were motivated by the factors that benefit the whole community thus giving them internal satisfaction. The VBCs from the intervention were motivated by appreciation of the ITBNs, their respect from the community and the community's motivation to work with them than the VBCs from the control villages. Their motivation was therefore more from the extrinsic factors since they were motivated by external events that only benefit them as individuals. The differences in proportions of the other factors were not significant. From these results the motivating factors for both VBCs from the intervention and control villages appear to be the same although the differences in proportions are not significant.

Table 7: Factors that have motivated VBC members to date

Motivating factors	Members from Intervention villages N = 65	Members from Control villages N = 50
Reduction of malaria within the community	27 (42%)	26 (56%)
Appreciation for nets	25 (38%)	12 (24%)
Respect from community	19 (29%)	9 (18%)
Improved health of community members	11 (17%)	8 (16%)
Reduced malaria- related deaths	10 (15%)	9 (18%)
Community's motivation to work	10 (15%)	5 (10%)
Development brought by the project	8 (12%)	7 (14%)
Love for the community	3 (5%)	6 (12%)
Good communication with "Nyamrerwa"	3 (5%)	3 (9%)
Others	25(38%)	23 (46%)

3.6 Impact assessment.

3.6.1 Household's knowledge of the existence of the VBCs.

To assess the impact of the VBCs on the community the households were asked whether they were aware of the presence of any committees responsible for nets within their villages. The results on Table 8 showed that the knowledge of such committees within the households in the intervention villages was lower than that of the households in the control villages in both the years 2000 and 2001. This was significant given that the VBCs in the intervention villages had been within their respective villages longer than the VBCs in the control villages. It would therefore be expected that their households would know them better.

The knowledge of the VBCs within the households in intervention villages was below 50% while the knowledge within the control villages was above 50%. Using Chi-square it was shown that the responses associated with the intervention and control households significantly in the year 2000 and not in 2001.

Table 8: Proportion of households that knew the existence of the VBCs, in the year 2000 and 2001.

	2000		2001	
Knowledge	Intervention N = 199	Control N = 199	Intervention N = 100	Control N = 100
YES	106 (53.3%)	130 (65.3%)	49 (49.0%)	56 (56.0%)
NO	93 (46.7%)	69 (34.7%)	51 (51%)	43 (43.0%)
	$\chi^2 = 5.996$, df 1, $p < 0.05$		$\chi^2 = 1.143$, df 1 $p > 0.05$	

3.6.2 Topics discussed with households.

The households were asked to mention what the VBC members discussed with them regarding ITBNs during their home-visits. The results in Table 9 show that the VBC members from the two village types seemed to have concentrated more on giving information on the washing than caring of the nets. The VBCs from the control villages gave more information to their households than the VBCs from the intervention villages did, in both washing and caring of nets and this was statistically significant as shown in Table 9. However despite the differences, the results on Table 9 show that the VBCs generally performed better in giving information to the households, on the washing the nets than giving information on the care of nets but the performance was below 50%.

Comparing the years, the VBC members were more active in the year 2000 than in the other years (*unpublished document*), including the year 2001. This might have been because the community had been informed by the project that the funding was coming to an end and that those who were eligible to owning nets should forward their names to the Sector offices. Probably the VBCs were therefore given the responsibility of looking for the households that had not been given nets but were to be given. There was also the issue of sustainability of the ITBNs whereby the IEC team held discussions with groups that could be able to purchase ITBNs and sell to the other community members. This could have brought the VBCs and the community together. It would also explain their better knowledge of the people responsible for nets in these two years than previously (*project's previous data 1997, 1998 and 1999*)

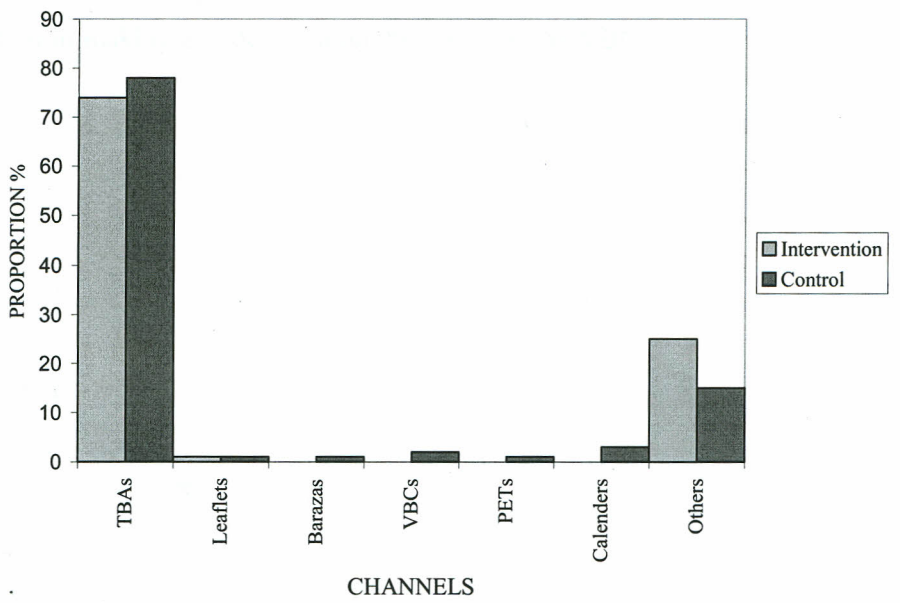
Table 9: Proportion of households that received information on Washing and Caring of nets in the year 2000 and 2001.

Year	2000		2001	
Information received	Intervention N = 199	Control N = 199	Intervention N = 100	Control N = 100
Washing	71 (35.7%)	96 (48.2%)	24 (24.0%)	40 (40.0%)
	$\chi^2 = 1.330$ df 1, $p > 0.05$		$\chi^2 = 5.534$, df 1, $p < 0.05$.	
Caring	27(13.6%)	51 (25.6%)	14 (14.0%)	17 (17.0%)
	$\chi^2 = 4.9$, df 1, $p < 0.05$.		$\chi^2 = 0.04$, df 1, $p > 0.05$.	

3.6.3 Channels of communication that gave information to households

Asked who gave them most of the information, the households responded as shown in Figure 5. The results indicated that the TBAs were very active in the dissemination of information to the community. The other channels rated very low comparatively. From the results, it might be observed that the VBCs and other channels are not necessary in dissemination of information.

FIGURE 5: Channels of communication that gave information to the households



3.6.4 Need for the VBCs by the households

The members of the households were asked if they would recommend that the VBCs continue to serve them. The results in Table 10 indicate that overall the households from the Control villages were more positive towards the idea that VBCs continue to serve them, than the households from the Intervention villages were. The responses from the intervention villages were less than 50% while the responses from the control villages were above 50%.

From Table 10 it was observed that the VBCs from the control villages had more impact on the households than the VBCs from the intervention villages thus the willingness to recommend further service by the control VBCs. However, only 29% of the total sample agreed that they still need the VBCs to continue. This was less than 50% that would probably assist in making any decision on the future of the VBCs.

Table 10: Proportion of households who recommended that the VBCs continue to serve them in the year 2000 and 2001.

2000		2001	
Intervention N = 199	Control N = 199	Intervention N = 100	Control N = 100
36 (18.0%)	46 (23.1%)	38 (38.0%)	52 (52.0%)
χ^2 =2.44, df 1, p > 0.05		χ^2 = 4.36, df 1, p < 0.05	

Table 11: Proportion of the households who agreed to assist VBCs materially in the year 2000 and 2001

2000		2001	
Intervention N = 199	Control N = 199	Intervention N = 100	Control N = 100
30 (15.1%)	52 (26.1%)	40 (40.0%)	50 (50%)
χ^2 = 11.8, df 1, p < 0.05		χ^2 = 2.22, df 1, p > 0.05	

3.6.5 Support for VBCs by the community

If the VBCs were to continue serving their villagers and be effective, it would be necessary to know how the community would assist them with their work. The households were therefore asked whether and how they would assist the committee in order to make their work better and easier in future. The results in Table 11 (p.64) show the proportion of respondents who agreed that the committee members be assisted by the community. The results showed that households from the control villages were more positive to the assistance than the households from the intervention villages, in both years. The responses from the intervention villages were below 50% while those from the control villages were above 50%. The percentage that agreed to assist the VBCs in the year 2000 was only 20% while in the year 2001 45% of the households agreed to assist the VBCs. In total, for the two years only 172 respondents out of 598 agreed that they would assist the VBCs, which was only 29% of the total sample, interviewed.

3.6.6 Proposed community support to the VBCs.

Table 12 shows the types of assistance the community members mentioned as methods by which they would support the VBCs. Overall the response to this question by the households was very low as only 79 (20%) of the total respondents agreed to assist the VBCs in the year 2000 while only 88 (44%) of the total respondents agreed to assist the VBCs in the year 2001. These results would not assist in making any conclusion about the community's assistance to the committees, as the numbers are not 50% of the total sample. However, from their responses it could be observed that neither of the two types of villages wanted to give money. The respondents from the intervention villages were willing to give labour while the respondents from the control villages wanted to give in kind by giving the VBC members some of their harvest or any material item they could afford but which would be useful to the individual member.

Table 12: Proposed types of assistance to the VBCs by the households in the year 2000 and 2001.

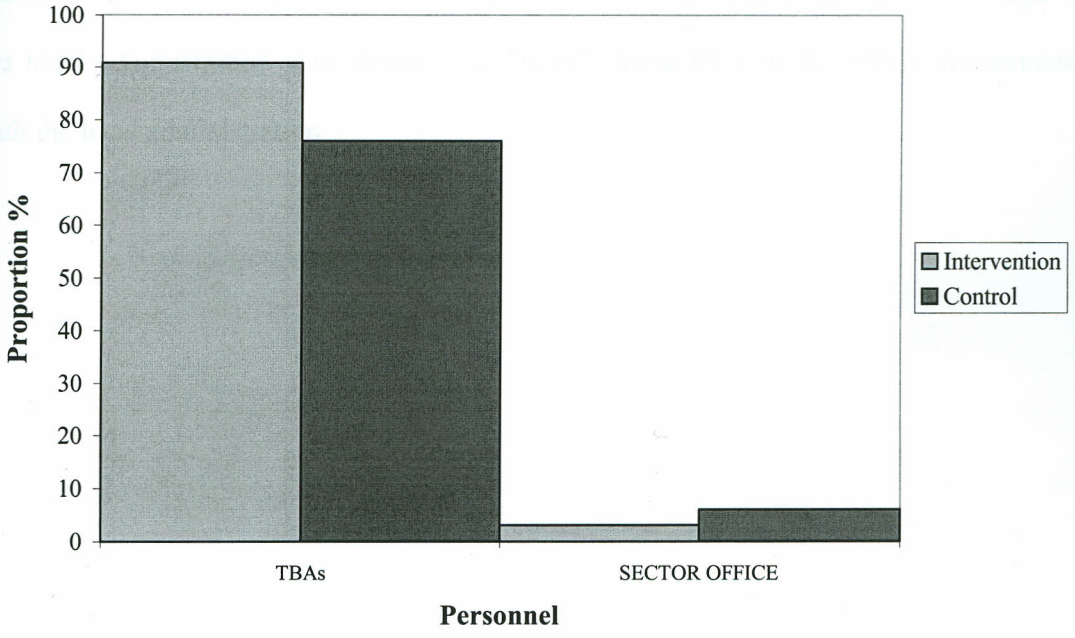
	2000		2001	
Types of Assistance	Intervention n = 199	Control n =199	Intervention n = 100	Control n = 100
Give in kind	10 (5%)	29 (14.6%)	10 (10%)	23 (23%)
Give money	5 (2.5%)	13 (6.5%)	7 (7%)	12 (12%)
Give in labour	13 (6.5%)	9 (4.5%)	22 (22%)	14 (14%)

3.6.7 VBCs communication with the project members

To evaluate further the relationship between the VBCs and the project, the community and the VBC members were asked to mention who, of the project staff, they contacted most. From the results in Figure 3 it is observed that the contacts were at the community level with the VBC members communicating most with the TBAs.

The sector office, which was manned by field supervisors, had very little direct communication with the committees. However, the VBCs were free to report any problems that they could not solve, directly to the project office.

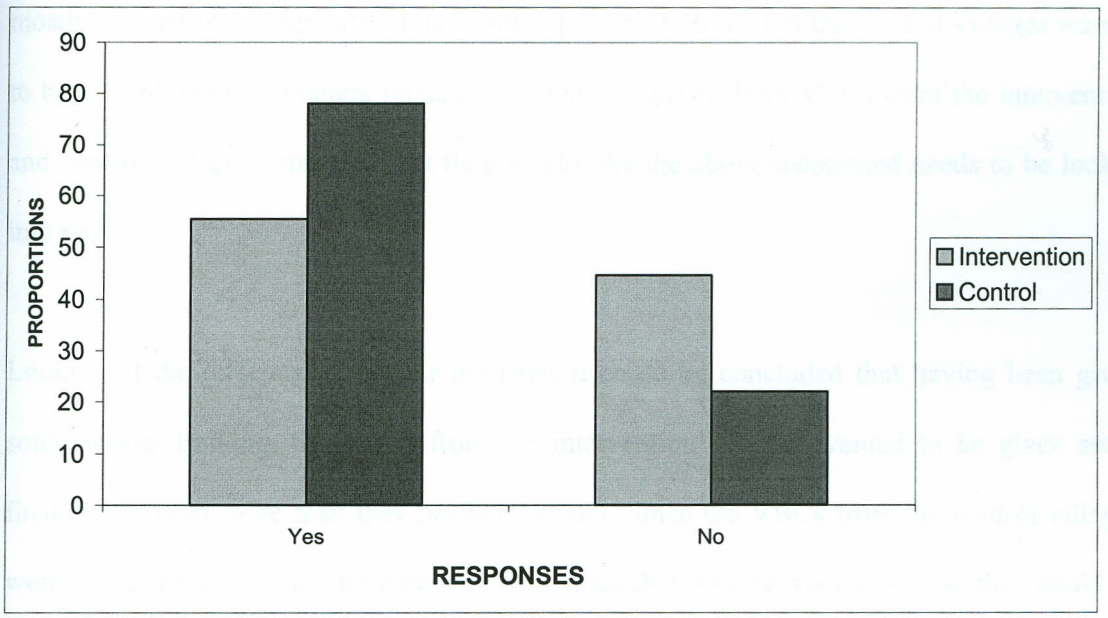
FIGURE 6: Personnel contacted most by the VBCs



3.6.8 Communication between the VBCs and the local administration

The VBC members were also asked whether they were assisted by the local administration in their community activities during the course of their work. The responses in Figure 4 show that communication between the VBCs from the intervention villages and the local administration, was good while communication between the VBCs from control villages and the local administration was outstanding. Overall about 65% of the VBCs communicated with the local administration.

FIGURE 7: LOCAL ADMINISTRATION'S ASSISTANCE TO THE VBCs



4.6.9 Recommendations made by VBCs for the improvement of their future work.

To find out how to improve their work the VBCs were asked to mention what they would like done. The results on Table 13 show the different needs expressed by the VBCs from intervention and those from the control villages. The VBCs from the intervention villages mostly wanted to be supported financially while the VBCs from the control villages wanted to be trained most on matters related to ITBNs. However, both VBCs from the intervention and control villages expressed that they would like the above-mentioned needs to be looked into most.

Looking at the differences in their priorities it could be concluded that having been given some formal training, the VBCs from the intervention villages wanted to be given some financial support more than they needed training. Since the VBCs from the control villages were not given any formal training they demanded that they be trained so that, they could be more competent to carry out their work. In the responses on financial support the difference between the intervention and control villages was not statistically significant ($\chi^2 = 1.8$, df 1, $p > 0.05$). For the responses in the need for training, the difference between the intervention and control villages was also not significant (($\chi^2 = 1$, df 1, $p > 0.05$). This shows that statistically there were no relationships between the formal orientation given and the type of recommendations the VBCs gave.

Table 13: Recommendations by VBCs to improve their future work.

Improvement	Intervention villages N = 65	Control villages N = 50	P values
Financial support	38 (58%)	23 (46%)	0.18
Training on net-related issues	33 (51%)	31 (62%)	Not significant
Frequent meetings with the project office	4 (6%)	3 (6%)	Not significant
Support on transport	4 (6%)	4 (8%)	Not significant
Venue for easy communication	1 (2%)	3 (6%)	Not significant
Office to specify their roles	2 (3%)	1 (2%)	Not significant

3.6.10 Focus group discussion

To supplement the information obtained from the VBCs four VBC focus group discussions (FGDs) were held at various venues.

Focus group discussions with four VBC groups were conducted to verify data collected during the interviews. The focus groups consisted of two VBC members from each of the 24 selected VBCs with a maximum of 12 members per focus group discussion.

The discussions started by finding out how many of the VBC members were working within the villages they were assigned. Most of the participants said they were working in the said villages. They also mentioned the activities they were involved in. The activities they mentioned corresponded with the activities mentioned during both surveys. They also mentioned roles the project had spelt out for them and there was no difference between the intervention and the control villages. They both had the same roles and that they both knew the expectations of the project.

Asked whether they had added any dimensions to their work within the community, they indicated that malaria had been reduced, and that the community knew and respected them. They also said that the community consulted them when their nets were damaged or torn. This was a sign that the community recognized their work. They were then asked what had made them continue working inspite of their complaints. Their motivating factors were the same as those mentioned in the VBC survey namely that they work because of the health of the community and that the nets had given the community protection from mosquito bites because there was reduction in malaria attacks. The community's health status had also improved since there was reduction in hospital attendance. There was, moreover, improved

harvest so that, members of the community ate better than before when they could not work hard in their gardens. This was because they suffered less from malaria and were therefore healthier than before. They worked harder thus produced more food.

They also appreciated the developments the project had brought to the community for example, employment opportunities for the community members. The fact that the net programme reduced malaria and malaria-related deaths motivated VBC members most and they said that was what made them continue serving the community. The other discouraging thing was the fact that other community workers (TBAs) were paid but not the VBCs. They observed that if given some allowance they would work better. However, they still hoped that the project would one day remember to reward them for their work. From their point of view, they had worked and the households knew them very well to the extent that they sometimes told them what was said in the chief's baraza specifically about their meetings. Households also reported to them about their lost, burnt or torn nets. After receiving reports about missing nets, the VBCs in turn reported the matter to the TBAs who would issue patching materials in cases of the torn nets. The TBAs would report stolen nets to the area chief or report burnt nets to the project so that new ones would be issued to the households.

They were also asked whether they had any expectations when they were elected. Some of their expectations included reward for their work, the presence of nets in the community, reduction of malaria, and the need to be trained on net issues. Asked whether they had achieved these expectations they said that they had achieved most of them except the reward for their work and the training to equip them with skills for the future. Some said that they had been working but had never seen any incentive from the project, nor had the project

officials ever come to meet them and find out how they were doing. Some thought that they would one day be considered for employment since they are already in the system. As one VBC member put it on behalf of his colleagues:

"We have been working in our own way but we have not seen any incentive to encourage us. Since we were elected we have been wondering and saying that since we were elected, are these people going to give us something small? We have never seen anyone coming to encourage us or talk to us. It is today that we have seen you people come. They never came back (Translated from Dholuo)."

The quoted statement shows that they valued communication between them and the project and that there was need for a reward system as a sign of appreciation. This was a shared sentiment from all the four focus groups. They did not specifically mention a salary but they all termed it "a token of appreciation". Most of them had expected to be given something in return for their work as elected leaders.

They also emphasized the need for training and said that lack of training contributed to their poor performance since they were not sure what to tell the households in terms of net issues. They termed it "working blindly". Those who had been given some orientation felt that the knowledge was not enough for them to carry out their activities confidently.

When asked whether they would continue working in future, all the groups strongly indicated that they would because the nets had reduced malaria infections so that they could now sleep well and the children went to school without missing because of illness due to malaria. Reduced malaria infection had also improved their economic status. These same sentiments were expressed during the VBC and household surveys.

The focus groups were also asked how the households differentiated the VBC members from the TBAs. This was to find out whether there were specific activities for the VBCs which the TBAs did not perform, in order to compare the two in terms of who gives more information to the community and also to verify knowledge of the two types of community workers by the households. The VBC members in the focus group discussions gave a number of responses. First, they reported that the TBAs introduced them to the households initially, and then later they worked on their own after creating rapport. Secondly, the TBAs undertook some activities that the VBCs did not. These include re-dipping of nets using the insecticide and collection of research data within the community. Although there was good cooperation between the VBCs and the TBAs in handling issues related to nets, a few VBC members complained that there were instances when TBAs never involved them in work on nets. This kind of action by some TBAs, seemed to indicate that some VBCs were not independent enough to be left on their own to make decisions. Asked about additional difficulties they had encountered, the following issues emerged:

- Lack of transport when trying to search for the missing nets.
- Failure to be involved in decision making regarding events that happen in their villages.
- Lack of consultation between them and the project administrators/managers. In other words, these issues pointed to lack of close support and supervision of the VBC work.

The members of the FGD were finally asked whether or not they would be able to work when the funding ceased. They responded that while they would be willing to continue to work, such a possibility was compromised by the fact that village members were

currently purchasing their own nets. Moreover, some indicated that they were not yet sufficiently competent to handle some net issues. As one representative of a FGD put it:

"I don't think it will go on since we have no knowledge on how the nets are redipped or how to get the insecticide. If the office started earlier it would be better but now it is too late because collaboration has been very limited".

Another representative of a focus group also said:

" If the project personnel and the TBAs leave, some villagers will just sell the nets because the committee has no authority".

The above sentiments demonstrated how dependent the committees were on the project field staff and TBAs as their source of indispensable authority. They feared that they would not have authority over personal nets. Asked whether the community would give them material support as an incentive to continue their work they said that this would be difficult.

CHAPTER FOUR: DISCUSSION

4.1 Introduction

The bed-net project in Rarieda was based on community participation in line with the Primary Health Care strategy. PHC involves two categories of personnel namely community health workers, who are in the fore-front of the village health system, and conventional health workers, such as nurses, midwives, physicians, pharmacists and many other health personnel (Yangne-Angate, 1991).

Following the emergence of the Chinese barefoot doctors the world has witnessed the arrival of the village health workers, village aides, and health volunteers (Newell, 1989). The VBCs were village health workers and were also equivalent to the health volunteers since its members were voluntary workers. According to Newell (1989), the village health workers were supposed to link the public at home with the services and they were meant to respond to basic needs of the small communities, a role that the VBCs were supposed to play. The role of the VBCs in malaria control was to help in the promotion of the use and maintenance of the ITBNs within the community during the randomised controlled study. However, the project also focused on the future of the community after the project funding ceases.

Rozendaal (1989) observed that in the long-term village health committees (VHCs), if available, could carry on with health education in order to inform the bed net users about technical problems. This kind of work, therefore, become necessary at this moment since the VBCs are the only community structural organisation that would remain when the other organisations cease to function due to lack of funding. There are people currently buying new ITBNs who will need some guidance on how to use the nets since they might have been away

during the study period and may require assistance to be educated on the use and maintenance of nets.

4.2 VBC Membership

An evaluation of VHCs done in Siakago (Mbeere) indicated that the VHCs had 7-13 members of whom 90% were men because it was believed in Siakago, that men make better leaders than women (Maina, 1991). In this study the initial VBCs had 10 members each elected by their village mates. The results on VBC membership showed that the numbers of the VBCs ranged between 5 to13. This is because some committees included their village TBAs to their membership as a result of the TBAs having been included in the prior workshop/orientation. Probably the need for this inclusion was to be reinforcement to the committees since the task at hand was new to them.

The VBCs were expected to work voluntarily like any other community health workers as mentioned by Dawa (1995). As observed by Yangne-Angate (1991) that dropout rate in CHWs was high, it was expected that some of the VBC members might have dropped out through death, going to look for jobs, feeling de-motivated and other various reasons. It was therefore necessary to reassess their commitment to date. The results on Table 2 concluded that dropout rate was fairly low especially from the VBCs in the control villages but this could be because they had worked for a shorter period than the intervention VBCs. However, the extra members that the committees had, compensated this short fall.

The committees that had less number of members would raise questions as to why they did not replace the members who had left yet the committees were allowed to ask the community to elect new members to replace the dropout members. This led to questions like:

- Were people too demoralised that they did not care whether there were enough members or not?
- Were they really working within their villages so that their absence was felt in order to make a replacement necessary?
- Was there a good relationship between the community and the VBC members

These three questions are necessary for concluding the relationship between the VBCs and their impact on the households that they serve.

The results exhibited that the intervention villages had more members still existing than the control villages. Although the intervention villages had more they both had a good coverage of the VBC members (above 50%). This may prove them right when they say that things other than financial support motivated them(Table 7), since they had stayed in the committee this long. However, this coverage does not reflect better performance by the VBCs as seen in the results on impact assessment (Tables 8 and 9, Figure 5). Therefore as much as the coverage is fairly satisfactory they did not perform as expected (above 50%), as indicated by the responces from both the VBC members (Table 6) and the households (Tables 8 and 9, Figure 5).

In most cases there was no association between VBCs coverage and their performance as indicated by the various Chi-square values on the respective tables ($p > 0.05$).

4.3 Performance by the VBCs.

Village health committees reflect the needs of the people and help the community to look after its health. WHO (1983) stated that there may be variations in the tasks of the village health committees in different communities, but in general they collect information, identify needs and problems, identify solutions and plan for achieving them. They establish priorities, obtain resources, carry out plans in collaboration with health workers, mobilise the community and communicate results. They are a source of support to the CHWs and their activities. Looking at these facts the VBCs carried out activities according to the WHO objectives and according to CHWs model, but in their own different ways according to the specific project they were involved in although some VBCs performed some activities better than others

By visiting the households to find out if they had any problems related to net issues, they were collecting information, identifying needs and problems that the households might have. By meeting to discuss net issues, contacting the project office and collaborating with the local administration they were collaborating with other village health workers and leaders, and looking for solutions in order to intervene on behalf of the villagers. They were, therefore, not working in isolation.

The performance in this study was measured against the roles of the project objectives, which were stipulated to the VBCs during the initial orientation and which the members could recall during the interviews.

In Siakago, Eastern province of Kenya, the VHCs were expected to:

- Identify community health problems.
- Identify possible solutions to health problems in the community.

- Liaise with the government extension workers and non-governmental organizations within the community to solve community problems (Maina, 1991).

These they did voluntarily and their roles almost correspond with the situation in this study, except that the VBCs were not exposed to any roles other than the roles pertaining to ITBNs.

In Papua New Guinea the VHVs organised for the re-dipping of nets together with other tasks, a task which was intended for the VBCs but which they did not venture into probably because the TBAs took the responsibility completely (Rozendaal, 1989).

As mentioned by Dawa (1995) a community health worker (CHW) is expected to motivate community, so as, to improve their health and economic status. If the VBCs performed their activities as expected of them by the project then the community would suffer less from malaria since they would be using the nets and maintaining them in the acceptable way. This would improve their health and economic status since the rate of hospitalisation would reduce. This fact was expressed a lot during the focus group discussions when the VBC members said that the community no longer go to the hospitals as often as they used to, and that the children do not miss school as much as they used to. It means that the ITBN promotion was effective but whether it was as a result of the VBCs is difficult to decide, since there were other channels of communication taking part in the ITBN promotion (Figure 5).

4.3.1 Verification of the VBCs' roles

For the VBCs to perform better they had to understand their roles in the community. From Table 5 it is evident that overall the VBCs from the Intervention villages recalled their roles better than the VBCs from the Control villages. There were significant differences in the way intervention and control VBCs recalled their roles. This showed that the prior formal orientation had influence on the VBCs from the intervention villages since they recalled their roles better than the VBCs from the control villages. However, in both cases, except for recalling education on net issues which was 66% for the Intervention villages, the responses were in each case below 50%. This low recall might have been due to the time lapse between the orientation and the interview. It could also be due to lack of activity within their respective villages.

Although it was thought that formal orientation was the only method by which the VBCs would learn about the net issues, this study (Figure 5) shows that other sources including TBAs, leaflets, and Baraza were used to disseminate information to the community, thereby giving opportunity for the VBCs from the Control villages to pick their roles. It may therefore not be suprising that sometimes the VBCs from the Control villages performed better in dissemination of information than their counterparts in the intervention villages (Table 9). Although there were differences in the way the two types of VBCs recalled their roles, not all differences were significant. As evidenced by the Chi-square values on Table 5, there were relationships between the formal orientation and the way the VBCs recalled education on correct use of ITBNs, report on net issues, discouragement of the community on migration of ITBNs, and encouragement of the community to mend torn nets. Since the

VBCs from the Control villages could recall their roles to some extent it may be evident that formal orientation is not the only means of introducing community workers to a programme.

4.3.2 Roles performed by the VBC members

From the results of the performed activities in Table 6 it may be concluded that the VBCs performed what they recalled and what was expected of them by the project. They performed according to the CHW model as stipulated by the WHO (1986) although their performance was far below 50% in most cases. This could be probably because of the problems they expressed (Table 13 and the FGDs). There were insignificant differences in the actual performance between the two types of VBCs. This was supported by the Chi-square test of association, which showed that there were no relationships between the performance of various roles, and the formal orientation given to the Intervention VBC members.

The activities that concern the use and maintenance of nets as shown in Table 6 and figure 5 are the household visits, education on hanging of nets, encouraging household members to mend the torn nets, and receiving reports on ITBNs, issues that require the necessary intervention by the VBCs. These activities formed the basis for the constitution of the VBCs, for the promotion of the use and maintenance of ITBNs within the community. Although the household survey showed that the VBCs did not give enough information to the community (Table 9 and Figure 5), they are necessary for the promotion of the use and maintenance of ITBNs within the community as shown by the results on Table 9 and Figure5. They only need to be given the technical support in order to perform better in future. This is supported by what the TDR News (2000) recommended that for community to be equipped for home

management of malaria it is important to train the identified community members. These include VHCs, Traditional drug sellers, VHWs of which the VBCs would be a part.

From the results in Figure 5, the *Barazas* rated low in the dissemination of information probably because of the low attendance of the chief's *baraza* by the households. It should be noted that the TBAs go to the homesteads to give information, thus, they are well known by the households. It is therefore not suprising that they gave the most information to the households (Figure 5). Since the VBCs from the control villages sometimes performed better than the intervention VBCs (Table 9), other channels might be important organizational structures in community participation. The other channels/structures therefore need to be empowered with knowledge of specific issues at hand, and more emphasis put on the attendance by the community during the meetings in order for any program to be successful.

In general, results from this study showed that the roles were not clear and so there was overlap/duplication of the roles of the VBCs and the other channels of communication say, Barazas, TBAs, PET, and Leaflets. The VBCs were supposed to take part in the re-treatment of the nets, for example, a role they did not play but which is very important in the maintenance of the nets. Instead, the TBAs did the re-treatment of nets. This made it difficult to make a definite conclusion that the VBCs promote ITBNs, but they might be used in the promotion of ITBNs.

Lack of continuing education on net issues, and lack of incentives could have contributed to their poor performance. The statement *"if given allowance we would work better"* from the FGDs would have meant that they could not work as required because they were busy

looking for ways of earning a living, since their service to the community was voluntary. They also lacked proper guidance, supervision and support from those concerned. These were confirmed by their complaints during the FGDs that the TBAs did their work on their own without teaching them what they were supposed to do therefore, they were not properly guided. Among these was the issue of re-dipping, which should have been done by the VBCs, but which they didn't.

From the results of this study there was a lot of dependence on the TBAs by the VBCs, which means that they could not be left in charge of the community on their own. They also emphasized the fact that they would need some backing from the project or the local administration to enable them carry out their work since currently people are buying their own nets. This is because it is not easy to control people on what to do with their personal property.

4.4 Factors influencing performance.

The VBCs observed that the health of the people had improved as a result of their work. This was especially expressed in the FGDs where they said that they achieved some of their expectations that included the fact that malaria had reduced, and, people did not go to hospital often. They also said that the children did not miss school and that their performance in class had improved. On the economic status, they could work better in their farms than before so that there was improvement in their harvests. These facts would support the statement:

" *Sustainable development is feasible if countries can tame the infectious diseases that dis-empower their people. If these diseases continue unchecked, they damage the social fabric;*

diminish agricultural and industrial production; undermine political, social and economic stability; and contribute to regional and global insecurity" WHO (2000).

If these factors were to be considered as motivators then the VBCs would be appreciated for the future of the project since they might be able to work without a salary if well trained and supported. There would therefore, be hope for the sustainability of programmes at the grass-root level. However, the results of the study would not assist in making any decisions for the future at this stage since the proportions were much below 50% except for the reduction of malaria where the responses from the control VBCs were above average.

In Nicaragua the CHWs were motivated by the commitment to, and the recognition they got from the community, and free medication they got for themselves and their families. Evaluators of various community-based health care (CBHC) programs have expressed concern over lack of reward system for CHWs. This could be seen in a study done by Maina (1991) in Kitui and Siakago, in Eastern Province of Kenya where the evaluators wondered for how long the CHWs would continue working without any reward system. The VBCs also had an outcry over reward system as seen in Table 13, and also during the FGDs. They did not however mind working voluntarily, but they wanted the project to recognize the fact that they needed some token of appreciation to motivate them.

In community participation, the community is supposed to decide on the reward system for the CHW (WHO, 1977) thus the community, in the household survey, were asked about what they would do to assist the VBCs in their work. The results from the household survey showed that the community members were not committed to the idea of assisting the VBCs, given that, few respondents were positive. This might mean that many members within the

community did not identify themselves with the VBCs, and, they did not know their existence as seen in the answers that gave, when asked about their knowledge about the VBCs.

In Siakago (Maina, 1991) the CHWs felt recognized because they were sometimes given opportunities to address the community during the Barazas. This boosted their self-esteem that several important factors were responsible for the effectiveness of health programs. In a study done in Nigeria, Bamisaiye *et al* (1989) observed that several important factors were responsible for the effectiveness of health programs. These included the quality of training, support, and supervision of the health workers, the target area served by the health workers, the supplies for the health workers and the levels of the community organization, collaboration with the local health services, and political involvement and support. These, he (Bamisaiye) said, greatly influenced the transfer of knowledge from the health agents to the community and that this transfer is important to promote preventive health behaviours and to increase program success. This area was not implemented in details as observed from Table 13 and from the FGDs. where the respondents expressed lack of supervision and their need for training on net issues.

According to Faghbule and Kalu (1995) continuing education could improve health worker knowledge and skills but the ability to perform a task correctly does not in itself guarantee that services of adequate quality will be provided. In this context, the VBCs might have performed, appropriately, what was expected of them, but whether they had the knowledge that would help them in future concerning net issues was difficult to judge. They seemed to have realized the same, thus, the outcry for education. As some of them mentioned in the FGDs they were willing to work in order to sustain the net use and maintenance, but they were not well equipped with enough knowledge on net issues to do so. Results on Table 13

show that they needed the project to specify their roles. This may be supported by a study done by Kaseje *et al*, (1987), in Kisii District of Kenya, in which he found that, attrition was due to lack of support from the community (particularly leaders), lack of regular technical supervision, lack of clear criteria of selection, long distance between homes, and husbands who did not understand why wives should work. It was therefore felt that reward system would have reduced the rate of attrition. In Tenwek Mission, Kenya, the CHWs who received non-financial incentives performed better than the controls that did not receive such incentives.

The performance of the two types of VBCs indicated that the initial formal orientation made the intervention VBCs develop a vision that they needed remuneration in utilising skills for which they were trained. The control VBCs on the other hand did not feel that they had skills for remuneration so they worked with a lot of commitment without remuneration. This could be associated with the extrinsic and intrinsic factors that motivated the intervention and the control villages respectively, thus the difference in performance.

4.5 Impact assessment.

In a study done in Brazil, Edpuganti (1995) said that village health workers who collaborated with community members could be key to successful insecticide-treated bed-nets control program. From the results on the impact assessment, one would conclude that there was very little impact by the VBCs on the community since the VBC members' visits were minimal. This could be supported by the results in Table 8, which show the knowledge of the VBC members by the households. If the members had been visiting the households more frequently they would be known and more households would have remembered what was

discussed during the visits. This might explain why few members of the community recommended them to continue serving and also to assist them in any way possible. This could also be seen from the responses from the households where they were asked to mention who gave them more information. They mentioned the TBAs more (Figure 5)

The TBAs gave more information than any other channels, with the VBCs giving very little information (Figure 5). Since the VBCs worked together with the TBAs probably the households could not differentiate between them especially when the TBAs doubled for VBCs. This could have made TBAs appear to have overshadowed the VBCs by giving more information to the community than the rest of the channels though at a lower level. The performance by the TBAs could be due to either the fact that they were being paid, and therefore they were more motivated, or, they overshadowed other channels by doing almost everything. The community could not therefore differentiate between, say, a TBA and a VBC member since they sometimes worked together.

Vaughan (1983) observed that the success of schemes was judged on the relationship between community and the village health workers (VHW). Good relationship between the VBCs and the households was therefore necessary in order to make the maintenance and use of the ITBNs a success. This would also be necessary for the future sustenance of the net use by the community in line with Vaughan's observation. However, there is need for collaboration especially with the community leaders in order to make the work of the VBCs a success in the use of the nets as a measure of malaria control.

As noted by Vaughan (1983) the support and respect of the community leaders would be a vital factor in ensuring VHW's success in ITBN prevention and promotional tasks. The results of this study conclude that, the VBCs' communication with the local administration was satisfactory. The control VBCs contacted the local administration more than the intervention VBCs. Probably the VBCs from the intervention villages felt confident in their work, since the project officials had given them an initial formal orientation, thus, they did not need much help from the local administration. The VBCs from the control villages might have sought the assistance of the local administration more because they had to learn from the community leaders about their activities. However, there is need to improve on this communication for better results in the use and maintenance of ITBNs. Their relationship was confirmed during the FGDs where most of the members said that when they had an activity they informed the TBAs who in turn informed the chief to announce and emphasise the need for community participation, at the baraza. They explained that this gave their announcements some weight because it came from an authority. This again showed that the VBCs were in collaboration with other existing community health workers (CHW).

The observation by Vaughan (1983) that the VHWs would be able to provide their services only if the village leaders strongly supported them in order to make the community be fully involved in community activities supports this collaboration between the Local Administration and the VBCs. It is in line with this that the VBC members were asked whom they contacted most and whether they received any help from the local administration. Both these contacts are community based and would go a long way to make the implementation of ITBN successful. The sector office, which was manned by field supervisors, had very little direct communication with the committees. Probably the VBCs saw the TBAs as their equal

since they had no office to operate from but operated within the community in the same way the VBCs did with the households. The field supervisors on the other hand operated from an office so they might have appeared superior to the VBCs. It could also be possible that they were following the chain of command as prescribed by the project so that the TBAs would report any problems to the project office. This collaboration within the community could be a good sign for the future relationship among the community health workers, in the community participation, as a means of solving community problems.

They should be able to provide their services as and when the community requires them. This would only be possible when there is strong support from the local leaders and the health services so that the community would be involved in their activities (Vaughan, 1983). The VBCs and the local leaders would then be empowered to make their own decisions and to intervene as appropriate. This would go well as a solution to the feeling by the VBCs that they are not given authority to make decisions and act on their own initiatives. It may be necessary to study why they did not contact them as necessary although it could be that they were not empowered enough to go to their local leaders or they did not know when to seek their guidance. In Siakago the CHWs felt recognised because they were sometimes given opportunities to address the community during the Barazas thus boosting their self-esteem (Maina, 1991). This would in turn provide an environment of trust between the local administration and the VBCs in order to make the VBC members communicate with the local leaders easily. El Bandari and Smith (1992) observed that support entails not only exercising adequate supervision over their service, but also provide appropriate social recognition.

CHAPTER FIVE: A SUMMARY OF CONCLUSIONS

- From the VBC membership one can conclude that despite lack of reward system VHWs could still work and maintain good community coverage as expected. All they needed was strong support and supervision by the project officials clearly spelt out recruitment method so that there is stability in the membership.

- The performance of the VBCs compares well with the studies in other countries including Papua, New Guinea, Haiti, Equador, and Columbia. They also measure to some studies done locally in Kisii, Siakago, and Tenwek as mentioned earlier in the literature. Probably the VBCs only lacked proper support and supervision that was necessary for the motivation and evaluation of CHWs performance. Therefore, if better prepared VHWs could be used in giving information, education and communication (IEC) in the community, on ITBN use and maintenance. This would make them useful in the promotion of the ITBNs as a malaria control measure.

- There was no difference in general performance between the VBCs from the intervention and control villages. This would mean that the initial formal orientation given to VHWs did not make much difference unless it was intensively done. It may be concluded that formal orientation by a project creates unmet expectation particularly regarding financial reward. It may be necessary to revise a method of giving orientation so that the VHWs are well prepared to face the community. Any orientation should be followed with proper supervision, programme evaluation and continuing education of the community workers.

- As was heard from the FGDs, the fact that the VBCs worked together with the TBAs could have overshadowed the VBCs performance, thus making the TBAs more popular than the VBCs. The roles of the VHWs should therefore, be well defined to avoid an overlap and conflict with other VHWs/CHWs within the same region.

- From the communication between the community and the other community workers/ leaders, the VHWs preferred to identify themselves with their fellow community leaders. Thus, in any community participation it would be necessary to empower the community leaders to work with the VHWs. This would allow for very little supervision from outside the community, say, Project officials. This confirms that when a community identifies itself with a project as their own they work well with their leaders for it to be a success.

- From the expressions the VBCs brought forward during the FGDs, they were willing to work except for the limitations as mentioned in the interviews suggesting that voluntarism makes sustainability of a programme difficult.

CHAPTER SIX: RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

6.1 Operational recommendations

- To be effective it may be necessary to prepare an intensive workshop for a longer period instead of just one day's seminar/workshop. This would empower VHCs to face the community and should be followed by in-service sessions and continued evaluation of their performance as mentioned earlier in the literature although this may appear an expensive method but worthwhile. It may also be necessary to give a lead-time before the implementation of a programme to give the community time to get acquainted. This would also enhance their accountability to the programme.

- They also need to be empowered so that they have enough confidence to communicate at all possible levels of the community as necessary. Giving them continuing education to update them on events taking place in the community could help in this empowerment. It will also give them skills and knowledge to carry out basic tasks within the community as expressed during the FGDs.

- In any community programme, regular visits to the community health workers should be considered, to give them a sense of belonging and a feeling of recognition. Although only one respondent admitted that there is need for regular evaluation, it is necessary to evaluate VHWs work in order to assess their problems and intervene in time for the benefit of the community as well as the

project's progress and success. This was expressed very much during the FGDs and is supported by the findings of a study done by Lauby *et al.*, (2000).

- As observed by Mieke *et al.*, (1998), the regular visits allowed for the assessment of performance and quality of service provided. They also motivate them to make improvements, keep their morale high, and assuring them of their valuable role in the project and community.

- The findings in the study indicate that community level interventions might need to be implemented and evaluated over several years before increases in behavioural change become evident. Just as there is regular IEC evaluation there is need for regular VHW evaluation and evaluation of any other community health work within a community. This may motivate them to work because the VBCs had complained that nobody checks what they do or find out how they work.

- The community should be educated on the necessity of the ITBN committees so that, although they are buying their individual nets, there is need for joint co-ordination especially of the re-dipping of nets. This education should involve all concerned groups including the community leaders so that they emphasise issues to the community members in order that they understand the importance of the committees' role in the net issues. For those buying nets it is necessary to emphasise the need for them to collaborate with the committee members of the villages where they leave. This education would involve many parties namely: Ministry of Information for education over the media, Ministry of Social Services

which deals with most community organisations since it is easier to pass messages through groups, Ministry of Health as an authority over health matters etc. as channels of information dissemination.

- The policy makers should consider the above issues when making policies concerning the use and maintenance of ITBNs as a measure of malaria control and any other community programme that would require community participation. The policies should take into consideration the assistance of the voluntary community workers to make them a more viable and therefore less expensive means of malaria control/prevention.

- From the extra questions asked by the FGDs after the discussions, there is need for integration of programmes as per PHC objective of integration. This may benefit the community physically, socially and economically. In all projects, community expects their socio-economic status to improve and so they keep seeking advice on how to make some income. Therefore there is need for all round information, education and communication thus looking at the community holistically.

Primary health care programs employing community-based health workers have now been established in many developing countries. Many evaluations of PHC programmes have so far concentrated on the management issues and only a few controlled studies have been undertaken to determine whether community-based PHC programmes can achieve one of the

PHC objectives. It is hoped that this study will go a long way to help in the future research to determine how well the community health workers can be successful in the implementation of community-based health programs in a voluntary way. It will assist, in particular, the implementation of the ITBNs in order to make PHC a reality in the prevention and control of malaria.

6.2 Suggestions for future research work

- There is need for more research on community-based programmes on how to solve the issue of the reward system since it is a barrier to the implementation and sustainability of the community projects.

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APPENDIX 1:

VBC EVALUATION SURVEY FORM

File No. .....Interviewer.....

VBC EVALUATION: ASEMBO 2000 **DATE.....**

Village name ..... Household No.....

Respondent
Christian name.....Juok name .....last name.....

Age.....(yrs) Sex 1=Male 2=Female ☐

Position in VBC 1= Chairman 2=member 3=Secretary 6=Others (specify) _____ ☐
(If chairman or Secretary then use the check-list also)

Marital status: 1=Married 2=Widowed 3=Divorced 4=Never married 6=Others(*specify*) ☐

Education attained: 1=1-4 2=5-8 3=Form 1-4 6=Others*(specify)*_____ ☐

Occupation: 1=Peasant farmer 2=Teacher 3=Housewife 4=Nyamrerwa 5=businessman/woman 6=Others(*specify)*_____ ☐ ☐

(If retired, indicate what he/she is doing now as well as his/her previous occupation).

(Unless indicated, all questions will have one response)

1.1 When was your village bed-net committee elected?

Probe question: Was it during the first issue or the second issue of nets?

(first issue of nets will be round one and second issue round two)

1=Round one ☐

2=Round two

1.2 Have you had any orientation or training from the time you were elected or appointed to serve the community?

Probe: (i)Have you ever been called together by the project members to be told about your work within the community?

(ii)Bende nonro osemiyou tiegruok moro amora nyaka nene yieru e committee?

1=Yes 2=No 9=Can't remember ☐

(If Yes ask Q1.3 and 1 .4 if No proceed to Q 1.5)

1.3 Who gave you the training? *(Clarify who the following are for the respondent to remember)*

1=Nyamrerwa

2=Field supervisor ☐

3=Sector office

4=Project officials

6=Others (*specify)*_____

1.4 Can you tell us what you were told that your roles in the project were, by the Facilitators of the workshop? (*Let the respondent give as many roles as applicable)*

a) _____ ☐

b) _____ ☐

c) _____ ☐

d) _____ ☐

e) _____ ☐

f) _____ ☐

1.5 If No, from where/whom did you learn about your roles in the community regarding the bed-nets? *Probe: Who told you what to do within the community?*

Ng'ano mane opuonji kaka onego iti ne oganda?

1=Baraza 2=Project officials 3=Nyamrerwa

4=Community 5=No one 6=Others (*specify*) _____ ☐

1.6 Mention some of the things that have motivated you to continue serving the community ?

Probe(i) What has made you continue working for the community as a committee member?

(ii) En ang'o ma osemiyi jiwruok e tiyo ne oganda kaka ja committee ?

(write as many responses as applicable)

a) _____ ☐

b) _____ ☐

c) _____ ☐

d) _____ ☐

e) _____ ☐

f) _____ ☐

g) _____ ☐

h) _____ ☐

1.7 Mention some of the difficulties that you come across during your work as a committee member.

Probe: Pek mage ma iyudo e tiji kaka ja committee?

a) _____ ☐

b) _____ ☐

c) _____ ☐

d) _____ ☐

Performance.

2.1 What activities pertaining to nets have you taken part in, within your village, during the last one year?

Probe: Kaluore gi tiji mar nede, gin tije mage ma isebedo ka itimo kaka ja committee kuom higa achiel mosekadho?

(Tick as many responses as necessary)

a) Visiting the households in order to help them solve problems pertaining to the bed net use and maintenance ☐

b) Making sure that the household members know how to hang nets ☐

c) Assist with the redipping *(If mentioned then ask Qs 2.2 and2.3)* ☐

d) Encouraging the household members to mend their nets ☐

e) Receiving reports of any missing nets and trying to look for them ☐

f) Have not yet started working in households ☐

g) Hold meetings in case of any problem concerning the bed-net use and maintenance *(If mentioned then ask Q2.4)* ☐

h) Help nyamrerwa create awareness about the nets ☐

i) Others *(specify)* _____ ☐

2.2 Do you as an individual ever participate in the redipping of bed nets? ☐

1=Yes 2=No 8=Don't know

2.3 If yes, what do you actually do in the redipping of nets?

_____ ☐

2.4 Name a few issues related to bed-nets that you have discussed in your meetings in the last One year*(write as many responses as applicable)*

a) _____ ☐

b) _____ ☐

c) _____ ☐

d) _____ ☐

e) _____ ☐

2.5 Is your committee always represented at the Chief's Baraza?

1=Yes
2=No ☐

8=Don't know

2.6 How is information from Baraza passed to other VBC members?

Probe: Ere kaka jo committee mamoko kelo ng'eyo weche ma ogol e baraza?

_____ ☐

2.7 How is the above information passed to the community? ☐

Probe: Ere kaka ukeyo weche mag baraza ni jo pidhe ma ok odhi e baraza?

_____

2.8 Do your local administrative leaders *(chief, assistant chief, village elders)* assist you in any way when you have a problem related to the bed-nets? ☐

Probe:Bende jotelo mamoko mag pidhe konyi kaluore gi tiji mar nede?

1=Yes 2=No 6=Others *(specify)*_____

2.9If Yes, name areas where they help you ☐

Probe: E yore mage ma gikonyie?

_____

Interviewer's comment: _____

_____

Do you ever visit/contact anyone from the bed-net project office/sector office or Nyamrerwa?

1=Yes 2=No ☐

If yes how often do you visit/contact them?

1=Weekly

2=monthly ☐

3=Yearly

4=Anytime

5=Others*(specify)*_____

3.1 What makes you visit/contact them?

Probe: Yore mage kaluore gi nede mamiyo idhi nenogi?

(Allow the respondent to give as many reasons as appropriate without prompting)

1=To give any report about net problems ☐

2=To give notice about committee meetings ☐

3=When summoned by them ☐

☐

4=To learn more about the care of nets

6=Others *(specify)* _____ ☐

3.3 When was the last time you visited/contacted them? ☐

1=Week ago 2=Month ago 3=Year ago 6=Others (specify)_____

3.4 Whom do you contact most regarding the use and maintenance of bed-nets? ☐

Probe: Kuom ng'a ma idhiga, moloyo, ka in gi chandruok mag nede?

1=Sector office 2=Nyamrerwa 3=Project office 6=Others(specify)_____

3.5 *How much has the bed-net project office been helpful to you regarding your work as a VBC member?*

Probe: Ofis mar nonro osebedo ka konyi marom nadi ka luore gi tiji mar nede?

(It has to do with their work not with the supply of nets)

1=Very much

2=Much ☐

3=Little

4=Not helpful

6=Others

8=Can't tell

3.6 During your work on the VBC, who of the following has been directly *(tick as many as applicable)*

	Very helpful	helpful	Less helpful	Not helpful
a) Community	☐	☐	☐	☐
b) Nyamrerwa	☐	☐	☐	☐
c) Sector office	☐	☐	☐	☐
d) Project office	☐	☐	☐	☐
e) Others *(specify*	☐	☐	☐	☐

3.7 What would you like to see done by the bed-net project office to assist you function better in future? *Probe: How can the project help you, to make your work better and easier in future? En ang'o ma diher ni nonro otim mondo tiji obed maber kendo mayot kuom ndalo mabiro? (* write *as they mention. Do not prompt)*

_____ ☐

_____ ☐

_____ ☐

General comment from the eespondent_____

Interviewer's general comment_____

Thank the respondent for his/her cooperation. Explain that the information will be used to improve their work regarding bed-net use and maintenance now and in future.

APPENDIX 2:

VBC CHECK-LIST FOR VBC EVALUATION SURVEY

File No. ..... Interviewer. .....

VBC EVALUATION: ASEMBO 2000 **DATE.....**

CHECK-LIST FOR THE CHAIRMAN/SECRETARY

Village ..... Household .....

Respondent: Christian name Juok name family name

Age: ..... *(yrs)* ☐☐ Sex: 1=Male 2=Female ☐

Education attained: 1=1-4 2=5-8
3=Form 1-4 6=Others(*specify)* ☐

Occupation: 1= Peasant farmer 2=Housewife 3=Nyamrerwa
4=Businessman/woman 6=Others(*specify)* ☐☐

Marital status 1= Married 2=divorced 3=widowed
4= Never married ☐

1.How many members are you in your committee as at now? ☐☐

2. How many members have deserted the committee since the committee was formed? ☐☐

3. How many households does one member of the committee serve? ☐☐

4. How often does a member visit a household? 1=Weekly
2=monthly
3=Only when there is need *(specify the need)*_____ ☐
6=Others *(specify)*_____

5.Who keeps the records of your activities within the village?
1=Chairman of the committee
2=Secretary
3=Nyamrerwa ☐
6=Others
8=Don't know

6. Who keeps the records of nets owned by the households? 1=Nyamrerwa

   2=Sector office

   3=Project office ☐

   6=Others *(specify)* _____

   8=Don't know

6. How many times have you attended the chief's baraza within the last three months? ☐☐

7. What activities do you take part in as a committee within the village you serve?

   _____ ☐

   _____ ☐

   _____ ☐

   _____ ☐

   _____ ☐

   _____ ☐

PPENDIX 3 HOUSEHOLD EVALUATION SURVEY.

le No..... **Interviewer:**.....

IEC EVALUATION: ASEMBO 2000		Date ☐☐/☐☐/☐☐	
Location ..... ☐		Sublocation ..... ☐☐	
Village ..... ☐☐		Compound, House ☐☐☐,☐	
Head of compound	*Christian Name*	*Juok Name*	*Father's Name* .....
Respondent	*Christian Name*	*Juok Name*	*Father's Name*
Age	(*yrs*) ☐☐	Sex	(*M/F*) ☐
Position in Household	*1= Male Head of Compound* *3= Male Head of household* *5= Female Head of household*	*2= Wife of Head of compound* *4= Wife of Head of household* *6= Other*	☐
Education attained	Standard ☐	Form ☐	College (yrs) ☐

1=Yes, 2=No, 8=Don't know, 9=N/A

Are you aware of the bednet project that has been going on in Asembo? ☐

1 Which organization is running the project?_____ ☐☐

2 How long have you known about the project?

(*1= < 1 y, 2= 1-2 y, 3= 2-3 y, 4= > 3 y, 8=D/know)* ☐

3 Why was Asembo chosen for the project?_____ ☐☐

4 Is this the first area in Kenya where a bednet project is being carried out? ☐

5 If you think others have been done, where else in Kenya?_____ ☐

6 What is the project for?*(do not prompt, spontaneous answer then fill in boxes)*

☐ Giving free nets ☐ Protecting adults from malaria ☐ Don't know

☐ To help family sleep at night ☐ Protecting children from malaria ☐ Other

7 How did you come to know about this project? From *(tick the ones mentioned)*...

☐ theater (PET) ☐ CDC calendars ☐ information leaflets

☐ nyamrerwas ☐ CDC staff ☐ village bednet committees

☐ knew anyway ☐ don't know/remember ☐ other_____

8 Do you know whether there is a bednet committee in your village? ☐

9 *If yes, how many committee members do you know?* _____ ☐☐

10 At the end of the project, who will keep the nets?_____ ☐

11 How do people catch malaria *(tick as many as mentioned, do not prompt)*

☐ some foods ☐ mosquitoes ☐ standing in rain ☐ wind

☐ dirty water ☐ spirits ☐ Getting cold ☐ Other_____

12 Who are most vulnerable to malaria? *(do not prompt)*

☐ Pregnant women ☐ Children < 2 years ☐ Children 2-5 years ☐ Old

☐ Males ☐ Females ☐ Other_____

13 Why is chemical (insecticide) used to impregnate the nets?

_____ ☐☐

14 When do you use the bednets?*(do not prompt)* When:

☐ it is hot ☐ it is cold ☐ it rains ☐ there are mosquitoes

☐ Every night all year round ☐ any time we want ☐ don't know ☐ other_____

15 What other things do you know about the bednets? *(do not prompt, tick boxes for any answers given)* Nets:

☐ are not given to non-residents ☐ are to be repaired if torn

☐ will be owned by residents at end of the project ☐ are to be used always

☐ are not to be taken on long journeys ☐ are given free

☐ are washed every six months ☐ Other_____

☐ are mainly issued for use by children

16 After how long should the nets be redipped in insecticide?

☐ every 2 months ☐ every 3-5 months ☐ every 6 months ☐ Don't know

☐ no need for redipping ☐ Whenever one wants ☐ Other _____

17 If a net is seriously damaged and cannot be repaired, what should you do?

_____ ☐☐

18 Why is census done?_____ ☐

19 Why did we have control (Round 2) villages *(do not prompt, tick all answers)*

☐ compare deaths with net villages ☐ did not have enough nets ☐ make people wait

☐ to test if bednets work ☐ Don't know ☐ Other_____

20 What is the chemical used in the nets?_____ ☐

21 ***Bednet households:*** How do you keep your nets in the day?

☐ hung, leave hanging down ☐ Hung, fold up ☐ take down, but leave in room

☐ Take down and lock away ☐ Other_____

22 ***Bednet households:*** What are the problems with using nets *(tick answers, do not prompt)*

☐ no problem ☐ children fall out ☐ can't use as pregnant ☐ too tired to put up daily

☐ forget to hang/use ☐ visitors use net ☐ no mosquitoes ☐ problem hanging net

☐ too hot to use ☐ leaking roof ☐ still don't have bed ☐ Other_____

23 ***Bednet households:*** How often do you wash your nets?

☐ every 2 months ☐ every 3-5 months ☐ every 6 months ☐ Don't know

☐ just before redipping ☐ Whenever needed ☐ Other _____

24 ***Bednet households:*** Do any children sleep in the kitchen? ☐

If yes, how old are they? ☐ 2-5yrs only ☐ >5yrs only ☐ Mixed <5 and >5yrs

How often do they use the nets: ☐ each day ☐ miss sometimes ☐ never use

If they use them, how are nets kept in the day_____ ☐

oup meetings or women group meetings

Have any of your household been to a **women group meeting** which discussed the bednet project? ☐

2 Who in your family attended the group meeting? (*Tick all mentioned*)

☐ Head of HH ☐ Wife of head of HH ☐ Any In-law in the family ☐ Son

☐ Daughter ☐ Any child in household ☐ Other_____

3 When did you or your family **most recently** take part? Month_____ ☐☐ Year ☐☐☐☐

4 What was discussed?_____ ☐☐

5 **If none** of your household attended the women group meetings, has anyone else told you about them ☐

If Yes, who told you: What did they tell you was discussed at **the women group meetings**:

_____ ☐ _____ ☐ ☐

_____ ☐ _____ ☐ ☐

Do you think women group meetings pass on useful messages about the project to the community? ☐

If yes, describe_____ ☐

*Interviewers comment:*_____ ☐

formation leaflets

1 Do you have, or have you seen, any information leaflets about the bednet project? ☐

2 When did you **most recently** see a project leaflet? Month_____ ☐☐ Year ☐☐☐☐

3 Where did you get the leaflet from?

☐ Baraza ☐ Women group ☐ School child ☐ Other_____

4 What colour were they? ☐ yellow ☐ blue ☐ Don't know ☐ Other

5 Was it written in: ☐ Dholuo ☐ English ☐ Don't know ☐ Other

6 What do you think is the purpose of the leaflets _____ ☐

7 Have you read any of them? ☐

If yes, what message was in it _____ ☐

If no, why not_____ ☐☐

8 Do you think leaflets pass useful information about the project? ☐

If yes, describe_____ ☐

terviewers comment:_____ ☐

arazas

1 Have any of your household been to a *baraza* which discussed the bednet project? ☐

2 Who in your family attended the *baraza*? (*Tick all mentioned*)

☐ Head of HH ☐ Wife of head of HH ☐ Any In-law in the family ☐ Son

☐ Daughter ☐ Any child in household ☐ Other_____

2 When did family member **most recently** take part? Month_____ ☐☐ Year ☐☐☐☐

3 What was discussed?_____ ☐☐

4 **If none** of your household went to the *barazas*, has anyone else told you about them? ☐

5 **If Yes**, who told you: What did they tell you was discussed at the baraza?

_____ ☐ _____ ☐☐

_____ ☐ _____ ☐☐

6 Do you think *barazas* pass on useful messages about the project to the community? ☐

8 If yes, describe_____ ☐

terviewers comment:_____

IBEC

.1 Are you aware of any people in your village who take responsibility in the project to help the rest of the village with net matters?

2 If yes, what is the group called?_____

3 What is the group supposed to do?_____

4 How many members belong to this group (committee)?

5 Were all zones of the village represented in their selection?

6 How often has this group (VIBEC) talk to your household about the project **this year** (2000)?

☐ daily ☐ weekly ☐ monthly ☐ never ☐ don't know ☐ Other_____

7 Have they **ever** talked to your household about any of the following (since the project began).

☐ Purpose of project ☐ clinical surveys ☐ washing nets/redipping ☐ sustainability issues

☐ night spot checks ☐ caring for the nets ☐ Community role ☐ Other_____

8 Have you ever (at any time) sought out a member of this group for help?_____

9 If yes; what was it about _____

Would you say the work of the VIBEC has been useful?

terviewers comment:_____

alendars

1 Do you know about the bednet project calendars?

2 Who in your compound still has any project calendar in their house?

☐ Head of compound ☐ sister/brother ☐ any in-law ☐ Co-wife ☐ Other _____

3 Have you been able to look at any of the project calendars?

4 If yes, which calendar? (*Tick all mentioned*)

☐ 1997 calendar only ☐ 1998 calendar only ☐ Both 1997/1998 calendars

5 When did you **most recently** read the calendar? Month_____ ☐☐ Year ☐☐☐☐

6 Who drew the picture drawings on the calendar?

1= artists *2=CDC/KEMRI* *3=School children* *4=other* *8=Don't know*

7 Can you remember any drawings from the calendar you **most recently** saw?

If yes: Specify calendar (**one only**) ☐ 1997 calendar ☐ 1998 calendar

Drawing 1 _____ ☐☐

Drawing 2 _____ ☐☐

Drawing 3 _____ ☐☐

8 Did you see any messages about the project written on that very calendar? ☐

9 If yes, can you remember some of the monthly messages on that very calendar? ☐

3 If yes, describe at least two important messages:

Message 1 _____ ☐☐

Message 2 _____ ☐☐

erviewers comment: _____ ☐

yamrerwa

What is the name of the "CDC" *nyamrerwa* in your village _____ ☐

What does your village *nyamrerwa* do for the bednet project?

☐ Census ☐ IEC songs ☐ Helps if a problem ☐ Information on project

☐ don't know ☐ Nothing ☐ Other _____

Has she ever talked to your family about the bednet project this year (2000)? ☐

If yes, about what?

☐ Purpose of project ☐ clinical surveys ☐ washing nets/redipping ☐ Sustainability issues

☐ census ☐ caring for the nets ☐ Other _____

Have you heard any *Nyamrerwa* songs about the project? ☐

If yes, what were the songs about?

Song 1 _____ ☐☐ Year ☐☐☐☐

Song 2 _____ ☐☐ Year ☐☐☐☐

Song 3 _____ ☐☐ Year ☐☐☐☐

viewers comment: _____ ☐

nk the respondent for their help, explain it will be used to improve communication on the project. Ask if he/she has any comments, specifically on

1 *who has given the best information on the project,* _____ ☐☐

2 *what CDC/KEMRI could do to improve communication.*_____ ☐☐

---

hecked by: _____ **Date:** ☐☐/☐☐/☐☐

APPENDIX 4

Village Bednet Committee, Evaluation Focus group interview guide.

General statement: Let's talk about the work you have been doing in the villages. What has it involved? What are your opinions about it?

Q How many of you have been working within the villages you were Assigned? **(Take the number of people raising their hands).**

PROBE:

- What exactly have you been doing?
- What areas of community work did the project assign for you?
- Do you think you have been doing what you are expected by the project to be doing?
- Do you think you have added any new dimensions to your work? (Has the community gained from their work, have they made a difference to the community etc.)
- What do you think about the households' response to your work?

Q. Did you have any expectations when you were elected to work as a committee member?

PROBE:

- What were your expectations? (These should include renumeration, achievement of work objectives and others)
- How do you feel now that you have worked for sometime?
- Do you think you have achieved your expectations?
- Explain

Q So far, what factors have made you continue working as a committee member?

PROBE:

- Have you gained in any way by working as a committee member?
- Given another chance would you continue working as a committee member within your community? Explain why.

Q What difficulties have you encountered during your work as a VBC member?

PROBE:

- How has the work been generally?
- What are your expectations of the project regarding your work?

Q Do you think something could be done to make your work better in the future? If so, how?

- **PROBE:**
- Do you think the community would assist you in your work? How?
- Do you think the local administration would assist you in your work? How?
- Do you think the project would assist you in your work? How?
- Do you think the Nyamrerwas would assist you in your work? How?

Q What do you think about the households' response to your work?
PROBE:

- Did they comply with your work? Explain.
- Did they ever come to consult with you about the net use and maintenance?

Q Generally, do you think your work has been worthwhile?
PROBE:

- Has your work generally borne any good fruits for you individually/within the community?
- As you may be aware the bed net project is coming to an end, and there may not be any support networks as you have had with Nyamrerwas and the project staff. In view of this, do you think you would manage working with the community on your own? Explain.

APPENDIX 5

VILLAGE BEDNET COMMITTEES: EVALUATION OF PERFORMANCE, USE AND MAINTAINANCE OF INSECTICIDE-TREATED BEDNETS IN RARIEDA, WESTERN KENYA.

By
EDWINAH SYAGGA

AT THE 8TH ANNUAL POSTGRADUATE SCIENTIFIC CONFERENCE, DEPARTMENT OF ZOOLOGY, KENYATTA UNIVERSITY ON 6TH – 9TH AUGUST, 2002.

ABSTRACT

In search for sustainable malaria control measures studies have shown that the use of insecticide treated bed-nets could be an effective malaria strategy. This information prompted the introduction of the KEMRI/CDC Bed-net project at their study site in Rarieda Division (Bondo District), aimed at the trial of insecticide treated bed nets (ITBNs) in the prevention of malaria in 1997.

At the beginning of the project, voluntary village bed net committees (VBCs) were formed to help in the promotion of ITBNs' use and maintenance within the community, at the grass root level, in line with the primary health care (PHC) strategy of community participation.

The nets were issued to 40 of the total 79 villages, randomized by public lottery, to act as intervention villages while the remaining 39 villages were issued with bed-nets two years later and acted as control villages. The intervention village bed net committees were given a prior formal orientation. The control VBCs started working after the second intervention, with the second issue of bed nets to the households. They were not given any prior formal orientation.

The main objective of the study was to evaluate the performance of these VBCs as a channel of information, communication and education in the use and maintenance of the insecticide treated bed nets by the community.

This study was done in order to determine whether the village bed net committees would be able to promote the use and maintenance of ITBNs. The sample size comprised 115 VBC members with 65 from the Intervention and 50 from the Control villages.
The results of the study indicated that there was not much association between the VBCs performance and the initial formal orientation given by the project officials as shown by the Chi-square test of association ($df = 1$; $p > 0.05$).

In conclusion formal orientation of village health workers does not make a difference in their performance. For the sustainability of ITBNs, village bed net committees can be useful if well supervised, supported and given the appropriate knowledge through continuing education.