

## Qualitative Assessment of Community Health and Development Needs in the Flood Prone Nyando Sub-County, Kisumu County, Kenya

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### Article info

Received: 12 May, 2024

Accepted: 14 July, 2024

Volume: 4

Issue: 2

DOI:

### Keywords

Qualitative Assessment;  
Community Health Needs;  
Participatory Gathering

### Abstract

The County government of Kisumu and Non-Governmental Organizations (NGOs) have been reactive to the plight of the residents of Nyando Sub-County during floods, rather than addressing the community health and development needs. There is a knowledge gap regarding institutional knowledge of the issues that may positively contribute to the resilience of the residents of the flood prone Nyando Sub County. The overall objective of this study was to gain insight of the community health and development needs of the residents of flood prone Nyando Sub-County, Kisumu County in order to inform the county government and local NGOs in the area. A total of 84 participants were assigned into 12 Focus Group Discussions (FGDs). The FGDs covered 10 thematic areas with a variety of questions. Informed consent was sought from the participants during recruitment into the study. The FGDs were conducted in the local Dholuo language, and tape recorded. Transcription of the data was done thematically through content analysis and coding. Common threads from the themes were outlined as; desire to improved access to safe domestic water, construction of more health facilities, employment of more nurses and other healthcare workers, improved primary schools' infrastructure, creation of income generation activities, and improvement of security in the area to avoid cattle rustling. The qualitative assessment indicated that residents understand their needs and lack of safe water, poor health services and infrastructure were the main needs of the residents of Nyando Sub County.

Publisher: Ara Digital Mandiri

### Introduction

Community health and development needs assessment is a participatory systematic process involving the community to identify and analyze their health needs and community assets and resources in order to plan and act upon their unmet needs (1). A central element of community health and development needs assessment is participatory gathering of information on local people's views on the prevailing health and development situation in their community (2). There will always be a great deal of expertise and knowledge to draw on among the local population, in particular their assets and resources, the factors that influence their health, what is most important to them, local health beliefs and solutions to the community health and development problems (3). The conceptualization of this study was based on the premise that experience of local population who share economic, social, and cultural characteristics and are affected by the same environmental factors are key to the success and sustainability of any community health and development programmes (4).

The County government of Kisumu, Kenya and Non-Governmental Organizations (NGOs) operating in the County have been reactive to the plight of the residents of the flood prone Nyando Sub-County, rather than gathering information on local people's views on the prevailing health and development needs. There is therefore a knowledge gap regarding the understanding of the factors that positively contribute to the resilience of the residents towards perennial floods in the area. The overall objective of this study was to understand community health and development needs of the flood prone Nyando Sub-County, Kisumu County, Kenya. Specifically, the study aimed at gathering information on the resident's perceived quality of life, community resources and assets, their health and development concerns common health problems, perceived threats and opportunities, community health and development needs and barriers, their disease prevention strategies and suggestions for improvement of community health and development programmes in Nyando Sub County.

## METHODS

### Settings

The study was undertaken in Nyando Sub-County, Kisumu County. The area lies between longitude 33° 20' -35° 20' East and latitude 0° 20' - 0° 50' South. Its total size is approximately 163km<sup>2</sup> and a population of about 161,508 people (2019 census) (6). The area receives a mean annual rainfall of 1000mm and mean annual temperature of 20°C (7). The area experiences flooding due to its flat topography and location where many rivers enter Lake Victoria (8). In addition, the Sub-County is located on the low ridges where rivers occasionally break into causing loss of property and human life due to flooding (9). It is drained by two major rivers namely Nyando and Obuso rivers. The area is dominated by black soils which develop deep cracks in dry season. During the onset of the rainy season, the soils expand, cracks close and water cannot further infiltrate the soil leading to flooding of the plain terrain (10).

The survey was conducted between 13th June and 24th June 2024. Three sites were chosen for data collection, namely; Rabuor, Bwanda and Nyamware Wards in Nyando Sub-County. Rabuor ward is located close to the Kisumu - Nairobi highway and has many business premises, a slaughter house, an open-air market and a health centre. Thus, many residents of Rabuor are business people while a few are involved in small scale agriculture among other economic activities (11). Nyamware Ward extends towards Lake Victoria and is dominated by crop farming and small-scale livestock husbandry (12). Bwanda ward is located further away from the highway and experiences less flooding as compared to Nyamware ward on the shores of Lake Victoria. Residents of Bwanda practice small scale agriculture as their main economic activity. Many farmers from Bwanda and Rabuor graze their cattle in Nyamware due to the presence of extensive pasture lands, rivers and nearness to the lake. Due to erratic amounts of rainfall, most rice farmers in the Sub County practice irrigation farming. Figure 1 below shows the map of Nyando Sub-County in Kisumu County, Kenya.

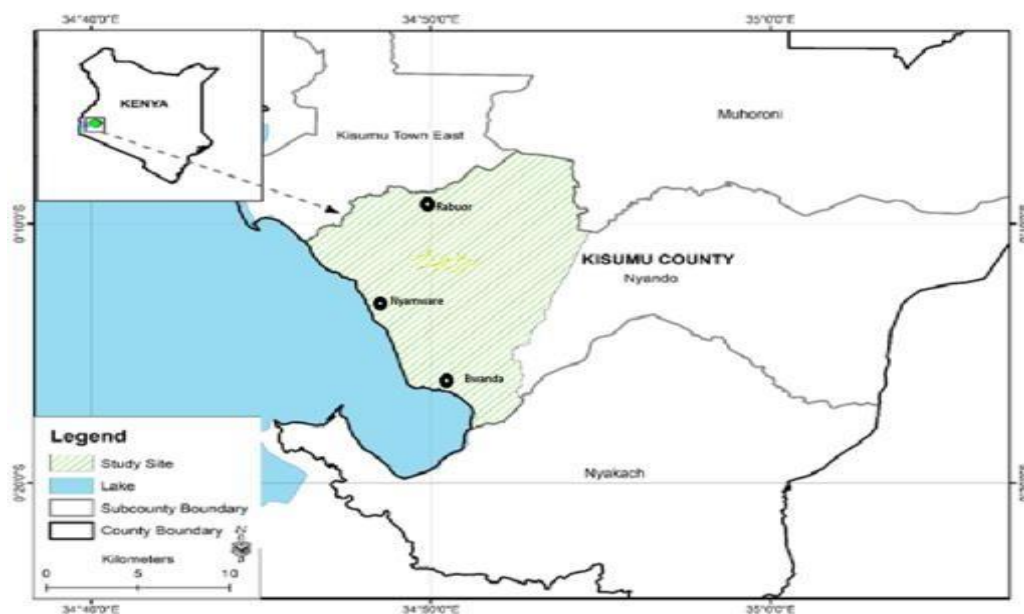


Figure 1. Nyando Sub-County, Kisumu County, Kenya

### Study design

The study was conducted through a cross-sectional survey, using Focus Group Discussion (FGD) techniques. The participants' socio demographic information was recorded quantitatively during the recruitment process. The participants were also given numbers (i.e. 1-84) for identification purposes during FGDs.

## Participants' inclusion Criteria

Participants were selected to participate in the study based on; their knowledge of the area, life-experience, role in a community (13). A participant had to be 18 years of age or older and had lived in the Sub County for more than three years.

## Focus Group Discussion Data Collection

A total of 84 participants were recruited and later divided into 12 FGD groups consisting of 7 members each. The participants were spread across the Sub County in three purposively selected flood prone wards. Each FGD session lasted approximately 80 minutes. The FGD questions were divided into 10 thematic areas which denoted the codes of interest (14). The themes were utilized to elucidate shared opinion and differences among FGD participant responses about community health and development in Nyando Sub County. Proceedings of the FGDs were recorded with the aid of a microphone audio recording device. Hand written notes were also taken during the FGD sessions to supplement the audio recording device. Table 1 shows the thematic areas and FGD questions on community health and development in Nyando County.

**Table 1.** Thematic areas and FGD questions on community health and development in Nyando County

Thematic Areas	FGD Questions
Understanding of quality of life of the residents of Nyando Sub-County, Kisumu County.	<ul style="list-style-type: none"> <li>• What are your reflections on the current healthcare services in Nyando Sub-County?</li> <li>• What is your unmet health needs or desires?</li> <li>• What is your perception of quality of in Nyando Sub-County?</li> </ul>
Community Resources and Assets in Nyando Sub county	<ul style="list-style-type: none"> <li>• What community resources or assets do you have in Nyando Sub-County?</li> </ul>
Residents' health and development concerns in Nyando Sub county.	<ul style="list-style-type: none"> <li>• Which are the things you would like improved in Nyando Sub-County?</li> <li>• What do you feel are less than ideal or healthcare gaps in services in Nyando Sub-County?</li> </ul>
Threats to and Opportunities for Community Health and development in Nyando Sub-County, Kisumu County.	<ul style="list-style-type: none"> <li>• What do you see as threats to community health Service in Nyando Sub-County?</li> <li>• What do you perceive as the development Opportunities in Nyando Sub-County?</li> </ul>
Community Health and development needs in Chiga ward, Kisumu East Sub County	<ul style="list-style-type: none"> <li>• What do you see as gaps in community health unmet healthcare need in Nyando Sub-County?</li> </ul>
Community health choices for the residents in Nyando Sub-County, Kisumu County.	<ul style="list-style-type: none"> <li>• What are the residents in Nyando Sub-County currently doing to prevent or treat prevailing diseases?</li> <li>• Which facilities do you go for healthcare services in Nyando Sub-County?</li> </ul>
Community health experiences of the residents in Nyando Sub-County, Kisumu County.	<ul style="list-style-type: none"> <li>• What are your experiences with the healthcare workers at the local health facilities in Nyando Sub-County?</li> </ul>
Community health and development barriers in Nyando Sub-County, Kisumu County.	<ul style="list-style-type: none"> <li>• What do you perceive as the barriers inhibiting residents to receiving or benefiting from healthcare services in Nyando Sub-County?</li> </ul>
Disease prevention strategies for the residents in Nyando Sub-County, Kisumu County.	<ul style="list-style-type: none"> <li>• What are the common disease prevention strategies applied by the residents to be healthy and prevent illness, injury or other physical or mental health conditions?</li> </ul>
Participants Suggestions for Improvements in Community health in Nyando Sub-County.	<ul style="list-style-type: none"> <li>• What can you suggest as solutions or alternative ways to improve community health in Nyando Sub-County?</li> </ul>

## Data Analysis

The data was analyzed using qualitative content analysis (15]. Audio recordings were translated into English language soon after completion of each FGD session and later uploaded in NVivo qualitative data analysis software (16) for data management. Transcription was done by an experienced qualitative research assistant and double-checked by the principle investigator, who verified the translation from the local dialect to English language.

## RESULTS

The participants' socio demographic information was summarized in a table form, while the FGDs were presented verbatim in text. In total twelve (12) FGDs were conducted with a total of 84 adults' participants. The range in age was between 31 and 69 years (mean/average = 42 years). Table 2 below shows the socio demographic information of the participants.

**Table 2.** Summary of Participant socio demographic information (n=84).

Characteristic	Number	Percentage
<b>Gender</b>		
Male	39	46.4%
Female	45	53.6%
<b>Education</b>		
Less than high school	3	3.6%
High school	70	83.3%
Some college	11	13.1%
Bachelor degree or higher		
<b>Age Group</b>		
30 – 40	16	19.1%
41 – 50	39	46.4%
51 -60	18	21.4%
61-70	11	13.1%
<b>Marital Status</b>		
Married	71	84.5%
Single (Widowed, separated, or divorced)	13	15.5%
Never married)		
<b>Occupation/Employment</b>		
Civil Servant	9	10.7%
Business/Self employed	36	42.9%
Retired	18	21.4%
Farmer	21	25.0%

### Quality of life in Nyando Sub County

The participants were asked to describe what a good quality of life mean to them. The participants stated that a good quality of life included: 1) Ability to put food on the table for the family, 2) Access to healthcare and other services, 3) Ability to access opportunities and compete equally, 4) Availability of essential services, 5) Stable source of income

According to me, i think good quality life means having enough food, getting medical care when you need it and living without fear of insecurity. —Participant no.11 (Female, 40 years).

To me good quality life means having a lot of money, a healthy, happy family...being able to feed your children and for family and the relatives. --Participant no.76 (Female, 33 years).

I think it is all about having enough money to meet your daily needs and not suffering from diseases. To me, good quality life being able to meet your needs and family like food, good house, and educating children. Also being healthy and energetic enough. Not lacking out on anything. --Participant no.22 (Male, 45 years).

Good quality life to me means good health, good socio economic status, the ability to take care of my family and leave in peace and harmony--Participant (Male 48 years).

Good quality life means being physically healthy, with enough food, good medical services and at peace with everyone, no fear of insecurity. --Participant no. 17 (Male 66 years).

### **Community resources and assets in Nyando Sub County**

The participants noted that Nyando Sub County has large tracks of land suitable for rice, sugarcane and cotton production. The area also boasts of having a modern highway (Kampala to Nairobi) passing through it. This they said was important for commerce. They highlighted assets such as large quantity of building sand and rough stones in the area. They also stated that their proximity to Lake Victoria wetlands which is home to several species of birds and reptiles make the area fit as a tourism destination in western Kenya. Many Youth drama groups and faith-based organizations in the area were seen as community assets. Local expertise in burnt brick making was also cited as an asset for developing.

What I would like to say about Nyando Sub County is that it has large tracks of agricultural land and also its closeness to Lake Victoria is a major economic strength. --Participant no.16 (Male 61 years).

The youths in Nyando Sub County have a lot of talent in drama, comedy and music which is an important asset. --Participant no. 3 (Female, 50 years).

### **Residents' Community health concerns in Nyando Sub County**

There were common concerns noted across the Sub County during the FGDs. General concerns centered around lack of safe water, high disease prevalence, low income, poor food security, insecurity, poor infrastructure, poor road network, few agricultural extension officers among others. Highway road traffic accidents around Rabuor Market centre was cited as a major threat, especially to children crossing the highway. Participants also worried about bad decision making among the youths which has led to increased drug addiction, lack of values and lack of income generation innovations. Regarding services, participants lamented poor infrastructure of the local health facilities, lack of community recreational centers, lack of basic drugs in the local health facilities, and inadequate medical staff e.g. nurses and clinical officers. They also highlighted insecurity in the border areas due to cattle thieves at night.

Related to economic status, participants noted that majority of the residents cannot afford the monthly subscriptions to the National Hospital Insurance Fund (NHIF) due to poverty in Nyando Sub County. On diseases, cancer, diabetes and kidney diseases are the major non-communicable diseases of concern in the Sub County. They also mentioned Malaria, diarrhea, HIV and AIDs as the major diseases of concern in Nyando Sub County.

The following concerns were also discussed: 1) Diseases, 2) Food security, 3) Insecurity, 4) Road traffic accidents, 5) Drugs and substance abuse among the youth, 6) Environmental issues (e.g., Pests, animal diseases, domestic water), 7) Lack of employment opportunities, 8) Inability to subscribe to NHIF

In the words of participants...

The youth are making wrong decisions because of peer pressure, social media (smart phones) the environment they're in. If they had employment opportunities around here, I feel like it would be a little better place for them. --Participant no. 20 (Female, 39 years).

There are a lot of diseases for example malaria, diarrhoea due to lack of safe water in this sub county. There isn't enough food since food stuff come from outside the sub county.--Participant no.32 (Female, 47 years).

### **Threats and opportunities for Community Health and development in Nyando Sub County**

The number of threats cited by the participants outnumbered the mentioned opportunities. Common threats were lack of safe water for domestic use, poor drug supply in health facilities, few clinicians and nurses, and lack of income generation opportunities.

There are too few medical staff in this Sub County and when you go to hospital you waste a lot of time on the queue...and many times you are sent to buy drugs which is very expensive in the local chemists. --Participant no. 44 (Male, 54 years).

Participants highlighted inadequacy in community health education, low National hospital insurance fund (NHIF) uptake by the residents among the community health threats. Cases of malaria, diarrhoea and typhoid in children are common in households.

Malaria is too common in households and our children have to sleep under insecticide treated nets...otherwise you will be visiting the hospital every week. But we don't have money since there are very limited income generation opportunities in Nyando sub County.--Participant no. 6 (Female, 34years).

The prevalence of bilharzia has gone down in recent years due to the mass drug administration programme in primary schools in Nyando Sub County, however, they lamented the lack of drugs in local government health facilities and high cost of medicine in the private chemists. Dilapidated buildings in most primary schools, few teachers were mentioned as threats to quality education in Nyando Sub County.

Two common themes arose regarding opportunities. First, participants noted that there are many self-help groups for table banking or merry-go round system financial support system. Second, participants stated that there are Non-governmental organizations operating in the Sub County which support agribusiness especially horticulture projects.

In the words of participants...

Most of the women belong to self -help or table banking groups where they contribute a small amount weekly and members are able to take small loans to solve their financial problems ...--Participant no.39 (Female, 45years).

### **Community Health Needs in Nyando Sub County**

Safe water and maternal and child health issues were of great concern. Participants stated that community health delivery system was disjointed and wanted better communication and greater coordination across providers, especially the County staff and the NGOs staff working in Nyando Sub County. They highlighted that NGOs staff tended to look only at particular issues related to their programmes and their clinicians/nurses are not enthusiastic on other community health issues- especially HIV supporting projects. Participants wanted more dedicated community health workers especially in the local health facilities. Overall, participants desired low NHIF subscription and availability of drugs in the health facilities at all times, free medical care for the elderly and women with children under five years.

In the words of participants...

We need safe drinking water; contaminated water is the source of most health problems we face in this Sub County. --Participant no. 2 (Male 61 years)

There are many Communities based Organizations (CBOS) and NGO in Nyando Sub County but they seem not to coordinate their operations. They only concentrate on their issues of concern especially HIV supporting projects and will not attend to non-registered members.

--Participant no. 84 (Female, 49 years).

I feel the monthly subscription fee for NHIF is too high for the ordinary person... I also think that the elderly and women with children under five years should receive free medical care in government health facilities.-- Participant no. 70 (Male, 59 years)

### **Healthcare choices and sources of information for the residents of Nyando Sub County**

Regarding healthcare, participants often sought care from private clinics, and traditional experts especially on fracture fixing. Several people seek healthcare at the County referral hospital because of the diagnostic facilities there. Inadequate insurance coverage of NHIF drive some individuals to seek services from traditional healers and private clinics some of which are not qualified but less expensive. Self-diagnosis is widely practiced and residents often go for over the counter drugs for immediate assistance especially during floods.

Participants stated that they get healthcare information from community health promoters (CHP) and local Public Health Officers (PHOs), especially about maternal and child care, cholera and diarrhoea prevention. Other common sources of information included local vernacular FM radio stations. Others highlighted that they attended seminars and workshops organized by NGOs.

In the words of participants...

The CHPs do a good job because they pass very important health information especially on common children problems. They also advice on disease prevention in rural areas--Participant no. 51(Female, 60 years).

There are private clinics around and if the sickness is abrupt i will take my child to a private clinic first before I go the county hospital. --Participant no. 21 (Male, 58 years)

Sometimes if people seek help from traditional healers or herbalists because they are less expensive. -- Participant no. 63 (Male, 29 years).

### **Community health Experiences by the residents of Nyando Sub County**

Participants narrated their experiences with the healthcare services rendered in the County medical facilities. Many had positive experiences,

In their own words ...

I took my son to the hospital at night and there were very good nurses on duty...my son was assisted. I've not had any problems with local staff... I think the indigenous health workers are more responsive because they are known by most people around). --Participant no. 9 (Male, 58 years).

### **Community health and development barriers in Nyando Sub County**

Participants identified several barriers to the improvement of community health and development in the Sub County. However, corruption was said to be the greatest barrier. Participants expressed their lack of trust on the County government officials due to their lack of transparency in running development projects. They felt County government officials did not listen to their needs and stated that most County government project officers were motivated by corruption. They also felt that the local health workers were not facilitated enough by the County government to serve the community better. Financial limitations by health workers was noted as a major barrier for running of community health programmes in Nyando Sub County. They participants also cited disconnects in communication among the various community health workers as barrier to efficient service delivery. Poverty and health literacy was also a major barrier in the implementation of community health and development programmes in the area.

Another community health barrier was the high cost of prescription drugs, general items required when one is admitted in hospital. They felt that medical costs were too high for the poor residents. Participants also noted the dilemma of choosing between buying food for the family and paying for NHIF from their meagre resources. Poor state of rural access roads during rainy season, long waiting time at health facilities were mentioned as community health and development barriers. The public health officers and civil engineers should also come up with a cost effective but lasting solution to collapsing of pit latrines during rainy seasons in Nyando Sub County.

In the words of participants...

"The black cotton in soil Nyando Sub County is not good for sinking a pit latrine. Most pit latrines collapse during rainy session due to floods. Public health officers should work with civil engineers to come up with a cost effective but long lasting solution". --Participant no.79 (Male, 51 years).

### **Community health and development assessment Logical linkages**

Logical linkage emerged during the summary of FGD data and analysis as shown in figure 2 below. The logical linkages explain how the series of information gathered from the community members lead to the common threads from the themes and FGD questions.

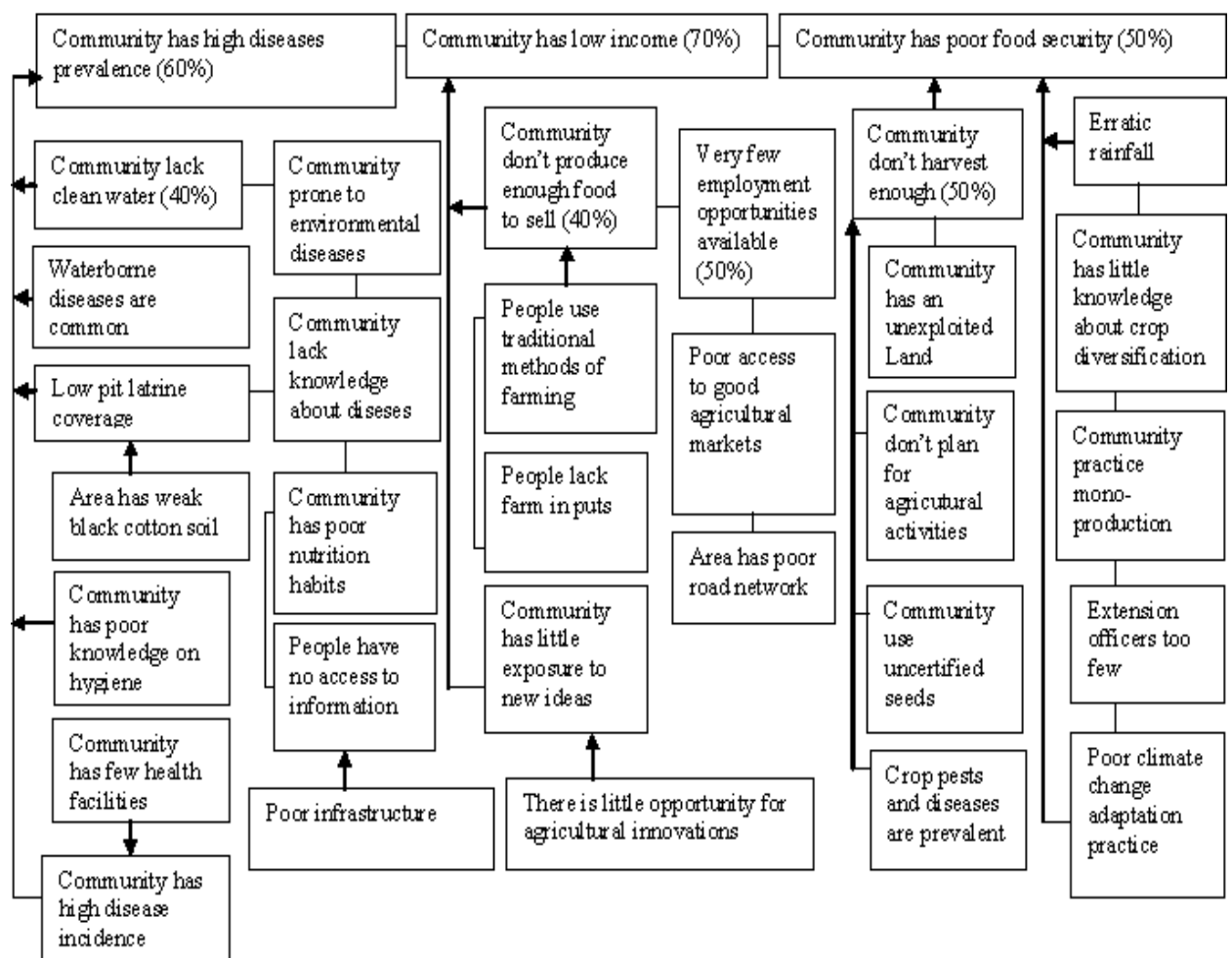


Figure 2: Community health and development assessment logical linkages

### Community health Prevention Strategies for the residents of Nyando Sub County

Participants identified a number of ways that they use as community health strategies. Activities mentioned included: draining stagnant water around their houses, sleeping under mosquito nets, taking children for vaccination and going to church to get spiritual nourishment. They have also formed self-help groups to support each other through table banking.

### Participants' Suggestions for Improvement

Participants offered several suggestions for the promotion of community health and development in Nyando Sub County. Participants desired improved access to safe water, construction of more health facilities, employment of more nurses and clinicians, improvement of primary schools' infrastructure, improvement of rural road infrastructure, creation of income generation activities, support of local agricultural activities, and improvement of security. Additionally, participants desired employment of agricultural extension officers, and provision of farm inputs. Participants felt that more trained community health workers are needed to help address the issue of high prevalence of environmental diseases in Nyando Sub County. Overall improvement to flood water channels were requested and establishment of emergency shelters for flood victims. They also asked that buildings e.g. schools and hospitals be made more accessible for wheelchairs and for persons with other physical impairments.

### Conclusion

The overall objective of this study was to understand community health and development needs of the flood prone Nyando Sub-County, Kisumu, Kenya. The main issues from the selected thematic areas were linked to lack of safe water, high disease prevalence, low income, poor food security, insecurity, poor infrastructure, poor road



network and few health workers among others. The qualitative assessment of community health and development needs thus, proved that residents of the flood prone Nyando Sub-County fully understand their needs and have suggestions on how to address the prevailing challenges.

### **Ethics approval and consent to participate**

This study was approved by the Maseno University Ethical Review Committee. Written informed consent was obtained from all participants prior to data collection. The study observed the Declaration of Helsinki guidelines and regulations.

### **Competing interests**

The authors declare that there are no competing interests.

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