



SNV

Policy Brief

The Effects of Poor Sanitation on Public Health, the Environment and Well-being: Summary of Research Findings from Homa Bay, Kericho and Elgeyo Marakwet counties



In Kenya, an estimated 19,500 people die every year because of diarrhoea (WSP 2012). This includes 17,100 children. In nearly all of these cases, the diarrhoea is attributed to poor sanitation and hygiene practices.

In early 2018, SNV Netherlands Development Organisation (SNV) commissioned a research study to gain more insights into the effects of poor sanitation on public health, the environment and well-being in three counties (Homa Bay, Kericho and Elgeyo Marakwet). This study was part of the Voices for Change Partnership (V4CP) programme, which advocates for county governments to address water, sanitation and hygiene (WASH) issues affecting their communities. This brief highlights the key findings from this study and makes recommendations for consideration by the national and county governments towards improving sanitation in the country.

The V4CP programme is implemented by SNV in collaboration with the Institute of Economic Affairs (IEA). The research was conducted by the Centre for Population Health Research and Management (CPHRM).

“Unprotected water sources, especially nearby dams and rivers, may also be causing suffering due to poor disposal of faecal matter by the emptier.”
(FGD participant, Homa Bay)

Key recommendations

- Strengthen public awareness and education about sanitation and hygiene
- Address the high incidence of mixed feeding for children younger than six months and encourage exclusive breastfeeding
- Adopt social accountability approaches for WASH, to strengthen community participation, social responsibility and participatory governance
- Improve the quality of water through water testing and monitoring of public water sources and household water
- Increase the budget allocated to sanitation, to support the implementation of appropriate measures in the communities.
- Include Geographic Information System (GIS) mapping as a public health tool to monitor coverage and epidemiological indicators over time
- Include water testing and monitoring as a key component for Community Led Total Sanitation (CLTS), and provide access to low-cost testing kits or county based laboratories

Key Findings 1: Effects of poor sanitation on public health and nutrition for the different groups in the county population

The research study examined a range of factors related to the health of the children in the sample, to draw conclusions regarding their well-being. Key findings were:

A. High diarrhoeal disease burden

- Analysis shows that households across the three counties suffer a significant level of general ill health. Eighty-four percent of the households had a sick family member in the six months before the survey. Homa Bay had experienced a higher burden of sanitation-related illnesses in the previous six months than the other two counties. On the other hand, Elgeyo Marakwet had the lowest incidence of typhoid.
- In all the counties, data drawn for this study from the Ministry of Health (MoH) DHIS database and facilities for 2017 confirms that in Elgeyo Marakwet and Kericho, diarrhoea is the second most common illness for children aged five and under, after upper respiratory tract infections (URTI). In Homa Bay, malaria, URIs and diarrhoea are the leading causes of illness in children.
- In focus group discussions (FGDs), the communities in the research areas associated diarrhoea with ill health and death in children. *"A lot of children suffer from diarrhoeal cases and some die in the process."* (FGD participant, Homa Bay)

B. Recurrent infections

- Study findings show that on the whole, children in the case group were significantly more likely to have suffered recurrent diarrhoea.
- They were also significantly more likely to have been treated with oral rehydration salts (ORS) and Zinc in their previous episode of diarrhoea, indicating high likelihood of it having been severe.

C. Infant feeding practices

- Household survey respondents were questioned regarding the feeding practices for all children who were aged under six months in both control and case households. The results show that nearly half of the children in the sample (45.9%) were receiving mixed feeding (42% in the control and 49% in the cases group).

D. Household nutrition practices

- Across all three counties, most households in the survey either produced their own food or purchased. The majority were eating at least three meals a day. The households were grouped by the variety of the foods they consumed into highly food insecure (if consumed three or less food groups), moderately food insecure (if consumed four or five food groups), and highly food secure (if consumed six or more food groups). The analysis showed that majority (approximately 97%) were highly food secure.
- The study also sought to estimate food diversity for the children in the cases and control groups. Using the household dietary diversity score (HDDS) to measure food consumption patterns in the household, the study found that majority of the children suffering diarrhoea were more likely to be malnourished as compared to the controls because of the lower food diversity. Malnourishment has been associated with increased episodes of diarrhoea. Anthropometric measures taken during the screening process also show that those in the control group were significantly heavier than those in the case group, suggesting better nutrition or recurrent infections for cases leading to failure to thrive.

E. Type of sanitation facilities used by the households

- The results show that overall, the majority of the households (90.5% control and 88.5% cases) in the study use improved sanitation facilities. There is no significant difference between the two groups, meaning that the likelihood of a child having diarrhoea is not necessarily associated with the type of toilet facilities the family uses.

F. Caregivers' hygiene habits: hand washing and toilet use

- Hand washing after using toilets can determine whether a child gets diarrhoea. The results show significant associations between washing hands after using the toilet, washing hands with soap, and the incidence of diarrhoea. More caregivers of controls (90.9%) compared to caregivers of cases (87.3%, p-value 0.048¹) reported washing hands after using a toilet. In addition, more caregivers of the children in the control group (70.94%) compared to caregivers of cases (64.93% p-value 0.028) reported washing hands with soap.

G. Household exposure to sanitation messages and information

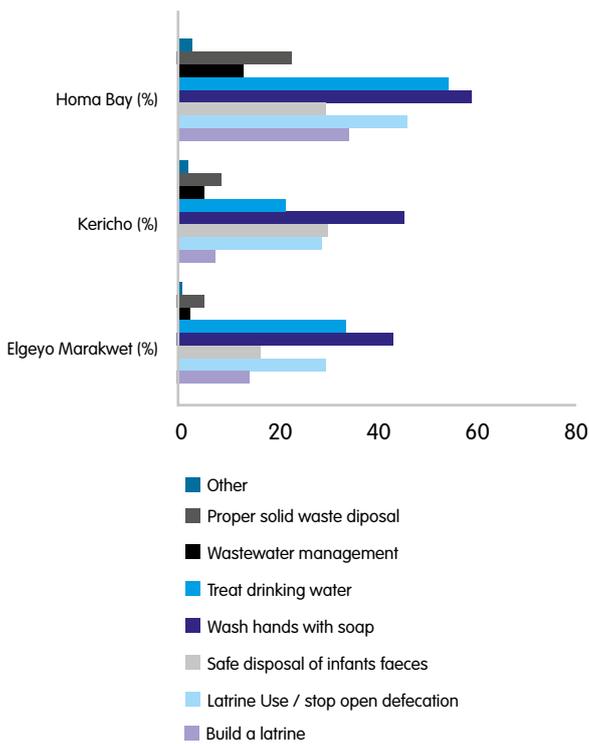
- Household respondents were also asked questions to gauge their exposure to common sanitation and hygiene messages. The results show that overall,

1 p-value is a statistical test for significance of association. The smaller the figure in relation to 1, the stronger the association

64% of the sample had heard sanitation messages while 36% had not. The most commonly heard messages were about washing hands with soap, as shown in Figure 1.

- On all types of messages, more respondents in the control group had heard the message than those in the case group.

Figure 1: Exposure to sanitation messages and information



Key Findings 2: Social effects of poor sanitation on different groups (age, gender, ability) in the county population

- Overall, the results show that there exists some measure of social exclusion or discrimination in terms of toilet use, mainly for the elderly, children, young married women and those living with disability. This is evident in all three counties. In Homa Bay County, for instance, culturally-sanctioned social distance between in-laws means that unmarried women and their in-laws cannot share toilet facilities based on cultural norms. For people living with disability, lack of toilet models to suit their abilities means that they are unable to use the conventional pit latrine common in the study areas.
- Poverty was reported as a key barrier to owning a latrine in the three counties.

Reason for open defecation

- Lack of toilets in the fields, working areas and along roads
- Rains and floods wash latrines away
- Distance to latrines in some homes, especially problematic at night
- Poorly constructed and stinking latrines
- Lack of latrines in market centers and social areas such as churches
- Lack of money to pay for latrines in towns e.g. hawkers



Improved handwashing facility

Key Findings 3: Effects of poor sanitation on the environment in the four counties

A. Quality of household water

- The study classified common water sources into improved and unimproved. Under improved sources are piped water, public tap and tube well, borehole with pump, protected wells and springs. Unimproved water sources include unprotected wells and springs, water provided by small vendors and all surface water (rivers and ponds). The results show that diarrhoea in a child is more likely in households that use unimproved sources of water that is likely to be contaminated through poor sanitation. Slightly more households in the case category in the total sample used unimproved water sources (37.7%) compared to controls (35.7%).
- More households with a child with diarrhoea did not treat drinking water. Treatment of the water at home before drinking is important in preventing water-borne diseases. When respondents were asked what their families did with the water at home before drinking, over 40% said they did nothing, while about a third said they used chlorine. Slightly more families in the case category (44.7%) do nothing to the water before drinking, compared to the controls (41.7%).
- More households with a child suffering diarrhoea had poor water quality at point of consumption compared to controls. The water test indicated that in 63.6%, 65.6% and 80% case households in Homa Bay, Elgeyo Marakwet and Kericho respectively, the water tested positive to Colilert tests, indicating possible presence of faecal waste contamination. In addition, 58.2% of the households with a child suffering diarrhoea used water which was either turbid, had a smell or was coloured.

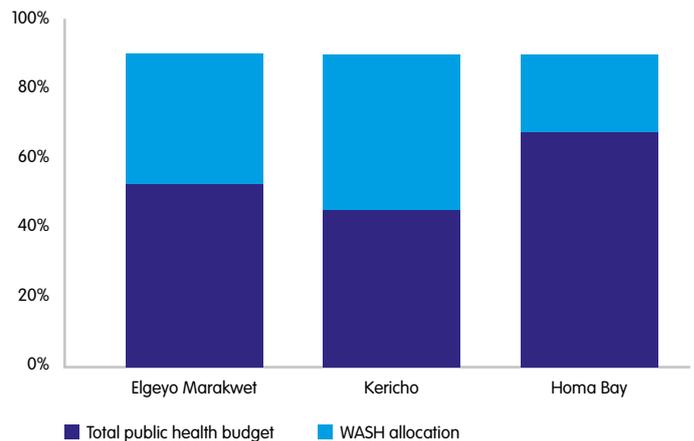
B. Quality of water at source

- Samples were collected of the water in some of the rivers and other public water sources in the three counties. The results reveal that the public water points tested were contaminated with a high presence of *E. coli*, and thus are unfit for human consumption if untreated.
- Faecal sludge management (FSM): Poor disposal of human waste or excreta was reported mainly as open defecation in all counties.
- Shit flow diagrams for each county were developed that provides the FSM situation in each county.

Key Findings 4: Examining the political economy and implementation during devolution years

- The study examined the sanitation related budget for each county. Kericho and Elgeyo Marakwet have the highest WASH allocation from the overall public health budget, as illustrated in Figure 2.

Figure 2: WASH budget allocation



- Qualitative findings demonstrate disruption in household and economic activities, especially of the mother, following a sanitation related illness. Women specifically reported not being able to do household chores as they sought health care or nursed a sick baby. As one mother described, *"I am not able to work when my child has diarrhoea. I do not tend to my farm as I seek care for my child. Sometimes we get admitted to hospital and my mother in law takes care of my other children"*.
- Children's care and feeding were reported by women to face massive disruption. During incidences when a mother has to be in and out of hospital or admitted to hospital, children feeding was shifted to the next close kin, including the husband or grandmothers.
- Results also show that more cases paid money for healthcare, spent more money on treatment and services and specifically cases spent more money on the treatment of diarrhoea. Across the three counties, households spent at least KSh 100 on treatment and services received during the most recent visit to a health facility and at least KSh 50 for treatment of diarrhoea.
- The CLTS reporting is poor and therefore does not provide any monitoring for CLTS implementation.

Conclusions

The results indicate that factors associated with poor sanitation outcomes such as diarrhoea were recurrent infections, infant feeding, household nutrition, unimproved sanitation, caregivers' habits of hand washing, caregivers' exposure to sanitation and information, quality of household and drinking water and quality of water at source.

After further multivariate logistic regression the significant factors were:

- improved sanitation facilities
- washing hands with soap or detergent
- water quality both at household and source level.

Therefore, our results suggest that:

- in the three counties, the use of improved sanitation facilities may lead to a substantial reduction in diarrhoea
- children living in families who use good quality water supplies experience 40% less diarrhoea
- hand washing with soap and detergents are associated with considerable reduction in diarrhoea morbidity.

Key recommendations

The national and county governments should take the following steps to reduce sanitation-related ill health:

- Strengthen public awareness and education about sanitation and hygiene
- Address the high incidence of mixed feeding for children younger than six months and encourage exclusive breastfeeding
- Adopt World Bank social accountability approaches for WASH to strengthen community participation, social responsibility and participatory governance
- Improve the quality of water through water testing and monitoring of public water sources and household water
- Increase the budget allocated to sanitation, to support the implementation of appropriate measures in the communities
- Include GIS mapping as a public health tool to monitor coverage and epidemiological indicators over time
- Include water testing and monitoring as a key component for CLTS, and provide access to low-cost testing kits or county based laboratories.



Community members taking lead in social mapping during a CLTS triggering session in Marakwet East sub-county

For more information on these findings, see research report: *Understanding the Effects of Poor Sanitation on Public Health, the Environment and Well-being - Homa Bay, Elgeyo Marakwet and Kericho Counties, 2018*. Report of research findings published by the V4CP programme.

Further information

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