

Work Related Ill Health among Farm Workers at Ahero Irrigation Scheme, Kenya

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Abstract: *The Kenya government has identified agriculture as one of the drivers to its vision of becoming a middle income country by the year 2030 since it is one of the key drivers of the economy. To achieve the vision, it intends to increase the land under irrigation and facilitate provision of inputs and value addition of the crops that will be produced. The aim of this research was to evaluate the work related ailments that affect the farm workers at Ahero irrigation scheme that may make it difficult for the government to achieve its vision. Data was collected from 4 health care providers located within the rice growing section of Ahero by use of a questionnaire. The HCP was required to fill in ten endemic ailments attended to on a daily basis at their facility which included both public and private facilities. The study identified malaria to be the most prevalent ailment in the irrigation scheme at 39.3% which was higher than the national data of 18.7%. All the HCPs recorded treating cases of malaria and wounds while private HCPs recorded higher cases of STI than the public ones. Other ailments reported in the scheme includes gastrointestinal ailments (11.1%), skin ailments (10.7%), Pneumonia (8.6%) and wounds (10.4) among others. The study concluded that farm workers at Ahero irrigation scheme were at a greater risk to work related diseases than the rest of the population. The study recommends development of malaria prevention strategy and education on hygiene and safe system of work in addition to provision of clean drinking water and good sanitation in the farms.*

Keywords: farm workers, irrigation scheme, work related ailments, occupational hazards

1. Introduction

Agriculture is the mainstay of the Kenyan economy directly contributing 26 per cent of the Gross Domestic Product (GDP) annually, and another 25 per cent indirectly. The sector accounts for 65 per cent of Kenya's total exports and provides more than 70 per cent of informal employment in the rural areas (Government Of Kenya [GOK], 2010) (GOK, 2015). Therefore, the agricultural sector is not only the driver of Kenya's economy but also the means of livelihood for the majority of Kenyan people. The Kenyan Vision 2030 identifies agriculture as a key sector in the strategy that will drive the country in to realizing the targeted average GDP growth rate of 10% annually in the next 25 years. The sector will therefore be expected to open new frontiers and provide opportunities for growth (GOK, 2007).

In achieving the vision, the Government of Kenya plans to increase productivity through provision of widely accessible farm inputs and services by increasing the land under cultivation through irrigation of idle land in the arid and semi-arid lands. Value addition of the crops produced is another area that the Government has identified as a driver to the improved economic performance (GOK, 2015). The envisaged increased land use combined with the increase in productivity by use of fertilizers and chemicals and investment in machinery and technology for value addition has the effect of increasing the occupational safety and health risks within the agricultural sector. The aim of this study is to evaluate work

related diseases among farm workers in public irrigation schemes in Kenya.

The Ahero Irrigation Scheme is located in the Kano plains between Nandi Escarpment and Nyabondo Plateau within Muhoroni Sub County of Kisumu County (figure 1). The scheme was started as a pilot project to explore the feasibility of irrigation in the Kano Plains. Construction of the scheme started in 1966 and operations started in 1969 (National Irrigation Board [NIB], 2017). The main crop grown at Ahero irrigation scheme is rice. Other crops include Soybeans (seed and commercial), watermelon, maize, tomatoes, sorghum and cowpeas. In the year 2014, Ahero irrigation scheme had 946 plot holders cultivating 1,215 hectares of land that yielded 8,326 tons of rice (Kenya National Bureau of Statistics [KNBS], 2014). Ahero, like other public irrigation schemes in Kenya, is managed by the National Irrigation Board (NIB). The board was established and incorporated in 1966 as a state corporation through the Irrigation Act, Cap 347 of the laws of Kenya. Among the mandates of the board are: - Coordination of construction and rehabilitation of major irrigation and drainage infrastructure; operation and maintenance of major irrigation and drainage infrastructure; administering land in the public schemes and providing technical advice to farmers. NIB undertakes the development, operation and maintenance of irrigation infrastructure through which it conveys irrigation water to the crop land (Mburu, Kinyua, Karani & Kiiyukia, 2018).

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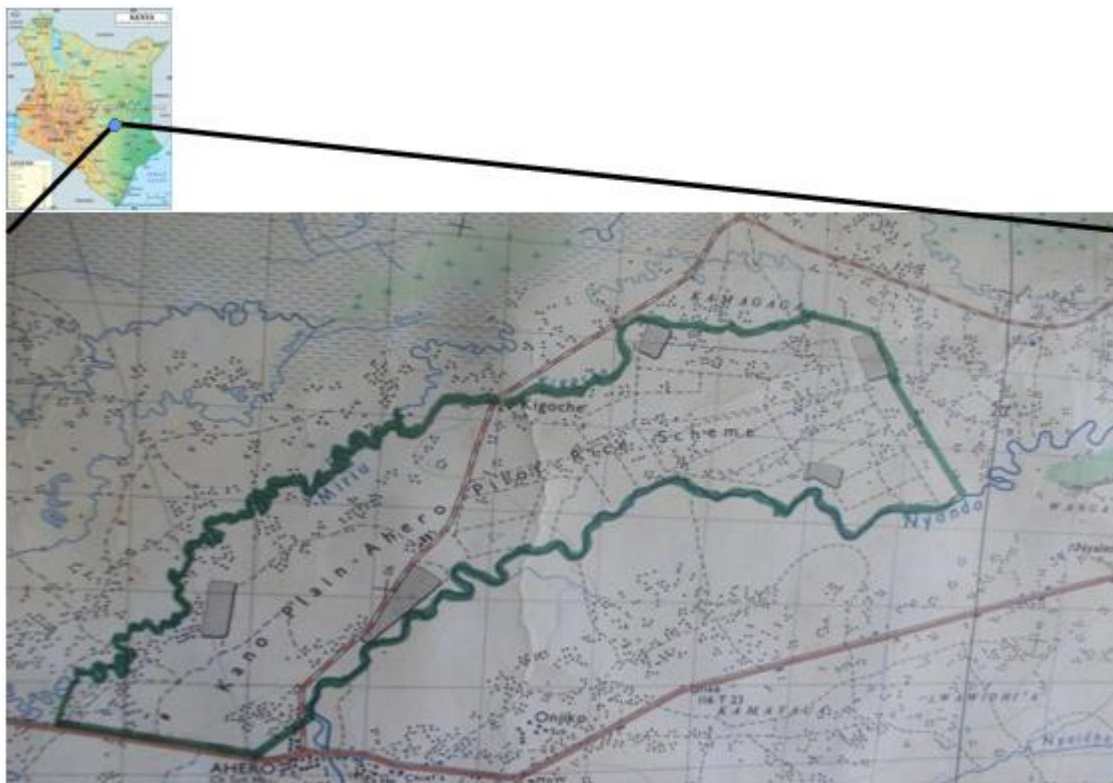


Figure 1: Locational map of Ahero irrigation scheme. Source NIB

The objective of this study was to evaluate the ill health cases at Ahero irrigation scheme as recorded by the health care providers. Previous studies in different parts of the world have recorded a variety of ailments among them Okereke&Okereke, 2015 in Nigeria; Lee K and Lim H, 2008 in Korea; Von Essen and McCurdy, 1998; Gerrard, 1998; KuyeR. et al, 2006 in Gambia; Mburu, 2006 in Kenya Finnegan, 2007 in Ireland; and Cakmur, 2014 in Turkey.

2. Methods

Data was collated from 4 health care providers (HCP) operating from the Ahero irrigation scheme. The HCP were purposefully selected based on the presumed attendance by the farm workers as guided by the Irrigation Water Users Association (IWUA) officials and the National Irrigation Board (NIB) officials. The following HCP were selected and all of them accepted to fill the questionnaire: -Ramula Dispensary, Ogra medical Centre, Mama Pilista Health Centre and Ahero County Hospital.

A structured questionnaire was prepared and administered to HCP to collect data on recorded cases of injuries and ill-health. The requirement was for the HCP in charge to provide data on the ten endemic diseases in the irrigation scheme. The study involved collection of statistical data on ailments suffered by farm workers and residents of the irrigation schemes without disclosing patient names. Confidentiality was therefore observed in all levels of the research. Ethical approval was sought and granted by Kenyatta University ethics review committee before commencement of the research process. The data collected was sorted and analyzed using excel 2013. The results have been resented using charts and tables.

3. Results and Discussion

Results from Ramula HCP indicated that on a daily basis, about 20 malaria cases were treated, 10 cases of Typhoid, 10 cases of gastrointestinal ailments and 10 cases of Upper Respiratory Tract Infection (URTI).

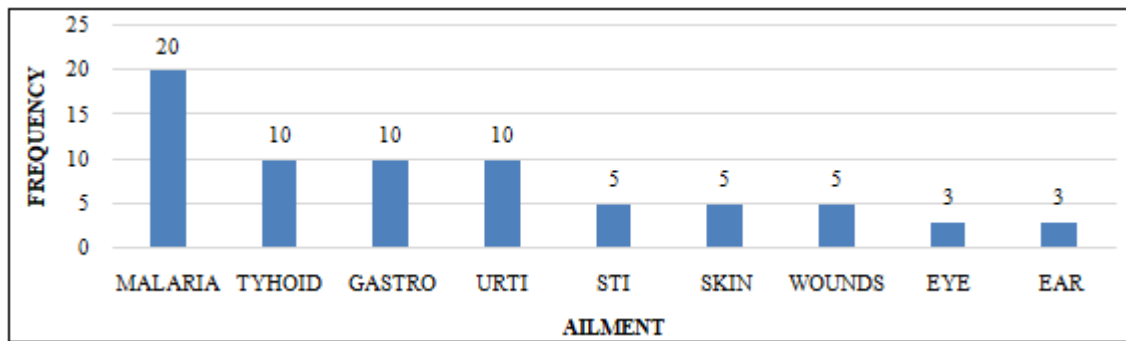


Figure 3: Daily cases of ill health at Ramula HCP

About 5 other patients are treated for Sexually Transmitted Infection (STI), skin ailments and wounds each while 3 cases each for ear and eye ailments were also treated as shown in figure 3 above. Malaria is therefore the most prevalent of all the ailments in this area of the scheme. The living quarters are within proximity of the farms hence the mosquitoes breeding in the stagnant rice irrigation water finds their prey at home at night. Typhoid is a bacterial infection that leads to high fever, diarrhoea and vomiting and is often passed on through contaminated food and drinking water (Healthline Media UK Ltd, 2018). At Ahero irrigation scheme, drinking water was likely to be contaminated as the researcher observed that farm workers drink irrigation water from the canals without boiling

hence the high probability of contamination. Also observed was the absence of toilet/latrine facilities within the farm area. The two observations were likely to contribute to high incidences of Typhoid and gastrointestinal ailments.

At the Ogra HCP, sexually transmitted infections were the highest reported cases. It shows that most STI cases are treated at private HCP. Other cases treated here as given in figure 4 include Typhoid, URTI, Wounds and Pneumonia each with an average of 7 cases per day. Malaria cases were treated for free at public facilities hence the low numbers reported in this HCP.

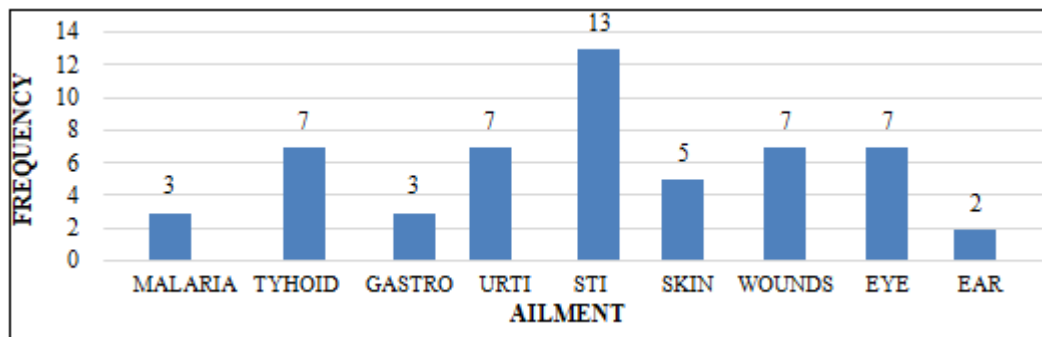


Figure 4: Daily cases of ill health at Ogra HCP

The results from Mama Pilista HCP (figure 5) were similar to those of Ogra HCP in that both were private facilities and STI was the highest reported cases at 8 cases out of a total of 23 patients attended in a day (35%). Other ailments include

Malaria and Pneumonia at 5 cases each, wounds 3 and typhoid 2 cases per day.

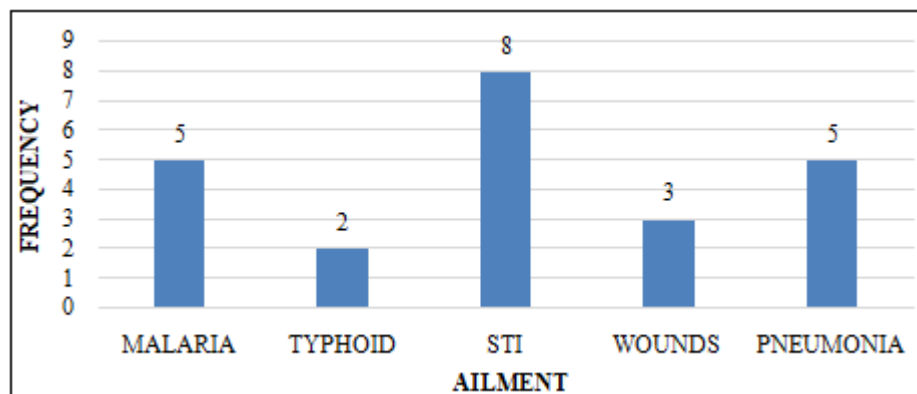


Figure 5: Daily cases of ill health at Mama Pilista HCP

Data collected from the Ahero county hospital showed that Malaria was the most prevalent ailment at 82 cases out of 220 cases of patients treated daily. This represents 56% of all the ailments recorded at the hospital as seen in figure 6 below.

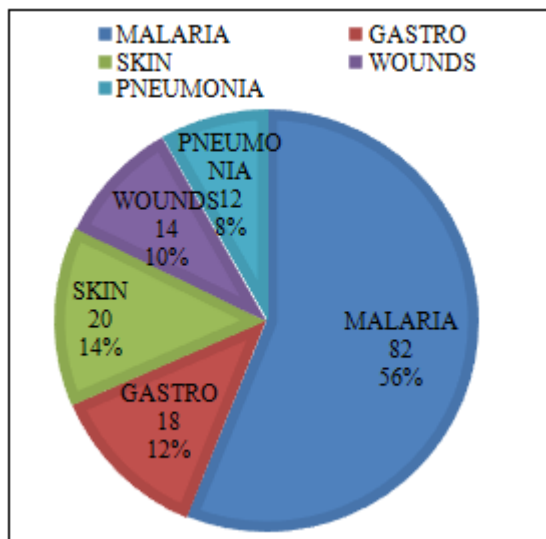


Figure 6: Daily cases of ill health at AHERO COUNTY HCP

Skin diseases comes second at a distant 14% followed by gastro ailments at 12%, wounds 10%, and pneumonia at 8%. Malaria as reported earlier is transmitted by mosquitoes which breeds in stagnant water and the rice fields are good grounds for the breeding. Skin diseases are likely to come from the use of chemicals while gastro ailments are likely due to drinking raw irrigation water while at work in the farms, wounds will arise from the farm work use of tools and machinery and rearing of livestock (Mburu, Kinyua, Karani & Kiiyukia, 2018)

In Ahero irrigation scheme, the overall picture was that Malaria cases accounted for 39.3% of all the cases of treatment in the scheme. Gastro cases followed at 11.1%, skin ailments at 10.7% and cuts and wounds at 10.4%. The economic survey report for 2017 (KNBS, 2018) reported that Pneumonia, Malaria and Cancer continued to be the leading causes of registered death while diseases of the respiratory system followed by Malaria continued to be the leading cause of morbidity in Kenya.

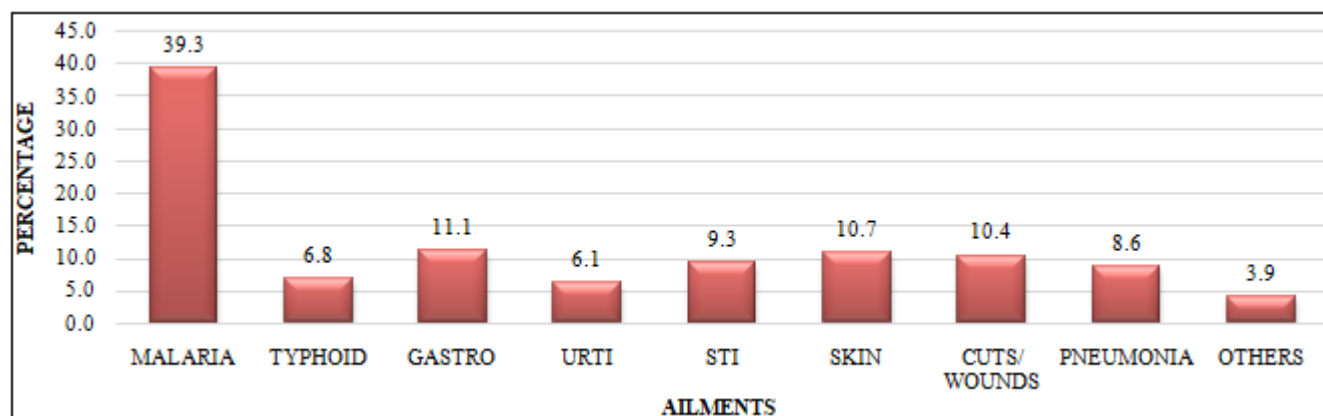


Figure 7: Daily disease incidents at Ahero irrigation scheme as reported by HCP

Incidence of respiratory system diseases and malaria accounted for 34.0 per cent and 18.7 per cent, respectively of all incidences nationally in 2017. Malaria cases at Ahero were well above the national average given in the report while URTI was way below. URTI includes infection to the nose, sinuses, and pharynx. It includes nasal obstruction, sore throat and common colds among others. Figure 8 below shows the comparison of the ailments with the national statistics. Lack of

clean drinking water and poor sanitation was a contributor to the high incidences of typhoid and gastro ailments leading to diarrhea. Drinking of contaminated irrigation water from the canals in a place that is deficient of good sanitation as happens in Ahero irrigation scheme was bound to increase the prevalence of the said ailments.

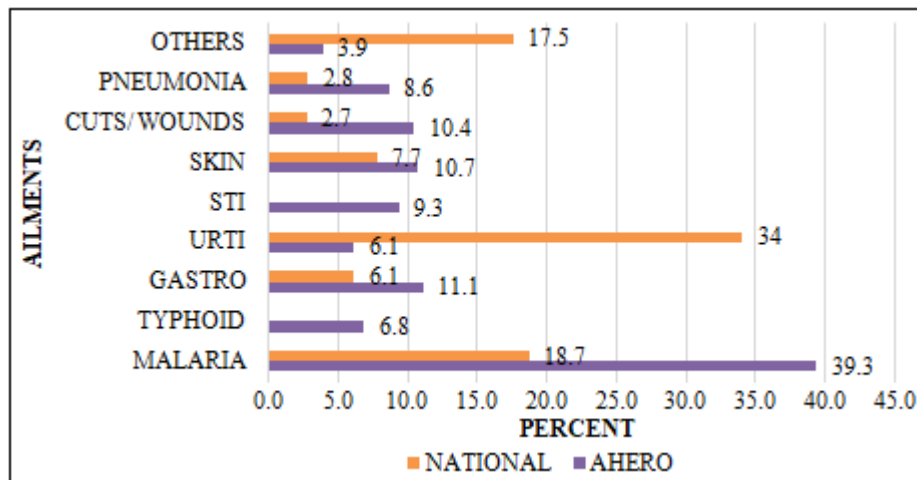


Figure 8: Comparison of ailments at Ahero irrigation scheme to the national statistics

4. Conclusions

Results from the study lead to the conclusion that farm workers at Ahero irrigation scheme were more vulnerable to work related ailments than the rest of the population due to the conditions of the work environment in which they live and work. The study recommends the farm workers to be trained on preventive measures in hygiene and safe work methods to reduce the impact of the prevailing occupational hazards. The county government should ensure provision of clean drinking water and good sanitation in the farms and develop a malaria prevention strategy for the scheme.

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