By Joseph Mudingu

On Thursday last week, Oxfam joined the rest of Rwanda and the World to mark the World Water Day celebrated every year on March 22.

The celebrations took place at Mahama playing field in Mahama refugee camp that is located in the Eastern Province.

The event was organized by OXFAM together with UNHCR and was attended by staff representatives from partner organizations, MIDMAR, GHDf, representatives from the District of Kirehe, security officials and Burundian refugee community of Mahama camp.

While giving her speech, Mariam the head of programs at OXFAM welcomed all that managed to attend the celebrations and gave a brief background of OXFAM's involvement in delivering humanitarian response in Rwanda.

Oxfam has been engaged in Rwanda since the 1960's and physically present since 1982 involved in water and sanitation, conflict management and sustainable livelihoods projects.

"While we celebrate the World Water Day 2018 with the theme of Nature for Water, we should be aware that environmental damage, together with climate change is driving water-related crises we see around the world. The theme should help us focus and explore how we can use nature to overcome the water challenges of the 21st century" said Mariam.

While addressing the visitors during the celebrations, the sematic manager of OXFAM Rwanda Safari Kayinamura talked of the importance of water to communities pointing out that as the water sources we use become polluted or degraded, it makes it even harder to get fresh water to people who desperately need it.

"We need to raise awareness and teach the youth about water-related crisis. You are lucky to have access to clean water and you should be guarding the water infrastructure that has been constructed here" said Kayinamura.

Visitors were treated to traditional cultural dances and drama from a Burundian

dancing troop, and the day was crowned with a football cup final which saw OXFAM staff team defeat UNHCR staff in 1-0 fight for the Water Cup tournament trophy.


Oxfam staff members with different partners take a group photo after the celebrations

While talking to *The New Times,* J.Rene Nsengiyukuri the public health engineer officer at Oxfam Kirehe Field Office said that since August 2015, Oxfam in Rwanda has been at the forefront of the water and sanitation response in the Mahama camp through providing support to World Vision the then implementing partner in Mahama camp.

“We worked to increase the production capacity of the temporary/emergency water treatment plant by installing higher capacity raw water pumps and construction of bigger size water treatment” said Nsengiyukuri. He however says that from January 2016, Oxfam took over from World Vision the operation of running the entire water supply system in Mahama camp.

“The optimum production capacity of 900 m^3 per day was not enough to meet the water demand of the targeted 60,000 beneficiaries including refugees, the host community and to maintain the UNHCR standard of 20 liters per person per day” he said.

What OXFAM has done

The management at OXFAM was running the temporary plant for 22 to 23 hours a day to reduce the water deficit and this was increasing the tear and shear of water pumps and electric generator for power production leading to serious challenges of frequent breakdowns.

Therefore, there was an obvious need to develop a higher capacity permanent water treatment plant using the Akagera River since the temporary treatment plant was no longer able to cope with the increased water demand.

The Mahama Permanent Water Treatment Plant

The permanent water treatment plant is located in Munini Cell, Mahama Sector and the construction of the plant was fully funded by DFID, in partnership with MIDIMAR, UNHCR, and UNICEF.

The permanent water treatment plant is a conventional plant using a combination of floating intake, pre-sedimentation, coagulation, flocculation, sedimentation, rapid sand filtration and disinfection" to provide clean, safe water to beneficiaries.

It has the capacity to produce 1,200 m^3 per day with enough quantity of clean water for a maximum of 60,000 people per day, running for about 16 hours a day. The plant was commissioned on 30th November 2016.

The water treatment

Raw water is drawn from the perennial Akagera River through the submersible pump installed on the floating intake and pumped to the settling tank at a rate of 76m3/hour.

Calcium Hypochlorite is added to the raw water through the inlet pipe from the river just before it enters the settling tank resulting in free chlorine residual.

The purpose of pre-chlorination is to kill microorganisms such as bacteria, protozoa, and viruses that may cause illness in humans.

Water treatment tank

After the water is pumped into a steel rapid sand filter tank in which water from the sedimentation tank is fed under pressure through coarse sand has been provided to remove small particles that escape the sedimentation process.

From installed outlet pipe of the rapid sand filter, water is supplied to the clean water storage tank, the pre-chlorination done during the whole treatment process leaves a free residual chlorine (FRC) in the treated water before pumping it to the distribution/header tank in the camp and host community.

Water Storage and distribution

The permanent water treatment plant has water storage capacity of 2 storage reinforced concrete tanks of 75m3 each totaling 150 m3 plus a header tank in Mahama refugee camp and a steel tank of 250 m3

Water storage tanks in the community

There are 47 roto distribution tanks of 10m3 each in Mahama 1 and 2 totaling 470m3.

The host community has water storage capacity for 2 masonry tanks of 50m3 each, 1 masonry tank of 10 m3 and 1 storage tank of 60m3 totaling 170 m3.

The total number of installed and connected water distribution points in the camp is 110 with 6 taps each meaning there are 660 distribution taps in total giving an average of 81 users per tap for a population of 58,709 refugees.

The daily water quality monitoring on water disinfection continues with an average of free residual chlorine (FRC) of 0.67mg/l at household’s level.