

# **The Global Livingston Institute Summer 2018**

## **HIV and Nutrition Internship Report**

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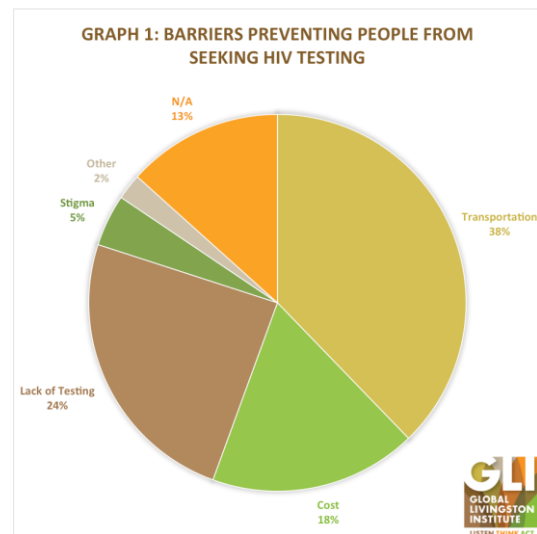
June 26, 2018

Colorado School of Public Health and Rollins College

**Public Health Action Plan to Reach Rural Lake Bunyonyi Communities  
with Free Health Services**

The Global Livingston Institute partners with local organizations in Uganda and Rwanda to provide free health services such as Human Immunodeficiency Virus (HIV) testing, cancer screening, and family planning counseling to residents during the iKnow Concert Series and the Tour du Rwanda Concert Series. The music festivals are now set in five separate locations, including Kabale Town, and have provided 15,500 people with free HIV testing over the past four years (iKnow Concert Series, 2018). Unfortunately, the rural villages surrounding Lake Bunyonyi, in Kabale District, are not able to attend the music festival in Kabale Town. The

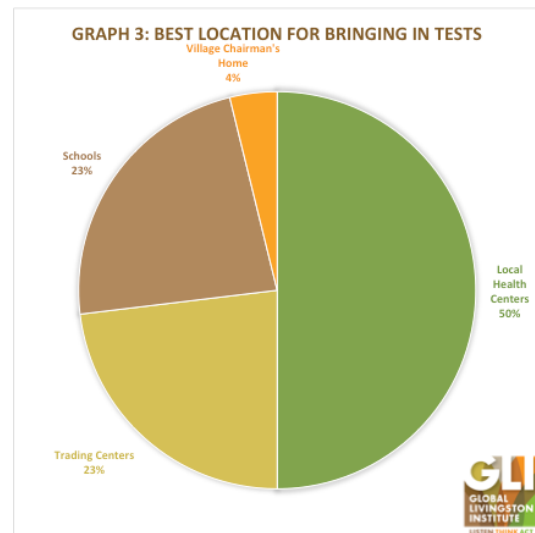
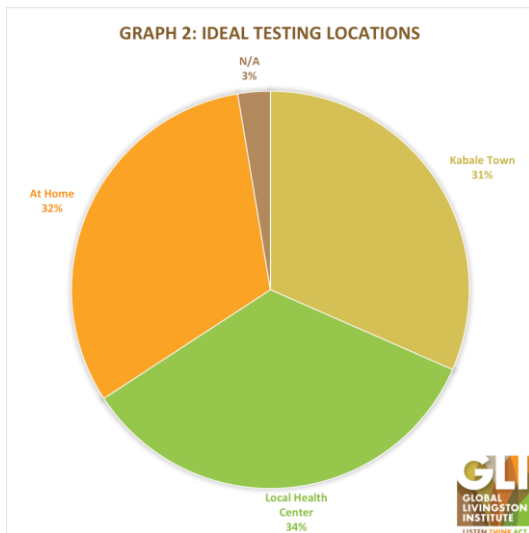
evaluation of twenty-one different villages on Lake Bunyonyi showed a high need for HIV testing in the area. Through community engagement efforts, the top three barriers preventing community members from seeking HIV testing were identified. As seen in Graph 1, these barriers were transportation (38%), lack of testing (24%), and cost (18%). In



addition, 95% of community members would be willing to attend the music festival in Kabale Town if transportation were provided.

Community members expressed that they would ideally want to be tested at their local health centers (34%) or at home (32%), for privacy and convenience reasons, Graph 2. When taking these observations into account, it has been determined that providing health services in the local communities would be the most effective way to reach these communities around the time of the music festival. According to our observational data displayed in Graph 3, the best locations to bring HIV tests and other health services

would be to the local health centers (50%), trading centers (23%), and secondary schools (23%).



Through collaborative meetings with Bright Kiboneire, a local community and Entusi staff member, six locations have been identified as initial bases for public health outreach in the Lake Bunyonyi region. The six locations and estimated number of people that will be reached at each location are as follows: Rutindo Market (400 people), Habuhinga Health Center and Trading Center (600 people), Mikiewamba Trading Center (400 people), Mugyera Primary and Secondary School (600 people), Kyevu Market (200 people), and Bulinba (200 people). A sketched map of the lake area with targeted locations marked can be found in Appendix A.

In order to reach the maximum amount of people at the market locations, it is recommended that services being provided at the Rutindo and Kyevu be scheduled for market days, Mondays and Fridays. Likewise, public health services would ideally be provided at Mugyera Primary and Secondary School during the school day, in order to reach the students in addition to the community members. It should be noted that the lack of HIV tests available at health centers' when sought by community members has

discouraged community members from seeking testing in the future. Therefore, it is propitious to ensure that an adequate amount of tests are brought to the communities on testing days to prevent a shortage. Advertisement efforts should be made through radio broadcasting, announcements at churches and schools, as well as through fliers placed in the markets and trading centers.

After conducting collaborative meetings with Hope Ntawika, the Branch Manager of Reproductive Health Uganda, it was determined that two health workers for HIV testing, two health workers for cancer screening and family planning counseling, four pre/post testing counselors, and two health workers for triage before services begin will be needed at each location.

**Table 1: Testing Locations and Information<sup>1</sup>**

Testing Location	Location Type	Estimated Number of People Reached	Estimated Number of Testing Days for Location (10 hour/day)	Health Workers Needed for HIV Tests	Health Workers Needed for Cancer Screening and Family Planning Counseling	Pre and Post Testing Counselors Needed	Triage Health Workers	Local Contact Name and Number	VHT Name and Number
<b>Rutinda</b>	Market	400	5	2	2	4	2	Niafire God 0752207815	Epaphras Maribu 0777183768
<b>Habuhinga</b>	Health Center II and Trading Center	600	7.5	2	2	4	2	Kasigeire Patric 0783125585	Hope Kittunu
<b>Mikicwamba</b>	Trading Center	400	5	2	2	4	2	Karuhize 0777848510	Kate 0787244606
<b>Mugyera</b>	Primary and Secondary School	600	7.5	2	2	4	2	Secondary School Head Master 0782971211	Miliya 0758810133
<b>Kyevu</b>	Market	200	2.5	2	2	4	2	Dr. Alex 0772070692 Other 0770996597	0782524642
<b>Bulimba</b>	Trading Center	200	2.5	2	2	4	2	Gordon 0784335594	0787011988

Based on this data and Bright Kiboneire's estimate of the number of people expected to be reached at each location, the number of days health workers will need to

<sup>1</sup> Each negative HIV test takes 10 minutes, each positive HIV test takes 20-30 minutes. A cancer screening and family planning counseling session takes 20-30 minutes. Numbers are based on 50% of people seeking each service.

be at each location was calculated, with the assumption that all health workers will be working on sight for ten hours each day. See Table 1 for a summary of these estimates.

The locations may have specific structural needs that will be provided by the Global Livingston Institute or its local partners. The local health centers will have beds and rooms provided; therefore, only medical equipment such as HIV tests will need to be carried to the location. Hospital beds, privacy tents for testing and screening, and any medical equipment required will need to be carried to the trading center and market locations. Buildings can be rented at the trading centers as an additional option to substitute the privacy tents. These arrangements will need to be made ahead of time by contacting the local officials. Mugyera Primary and Secondary School has a large lawn where privacy tents can be set up for testing and screening when the classrooms are being used for school instruction. When school is not in session, classrooms can be used in place of the privacy tents; however, fewer people may be reached during this time because a large percentage of anticipated community members seeking health services are the secondary school students. Beds will need to be provided at the school for either situation.

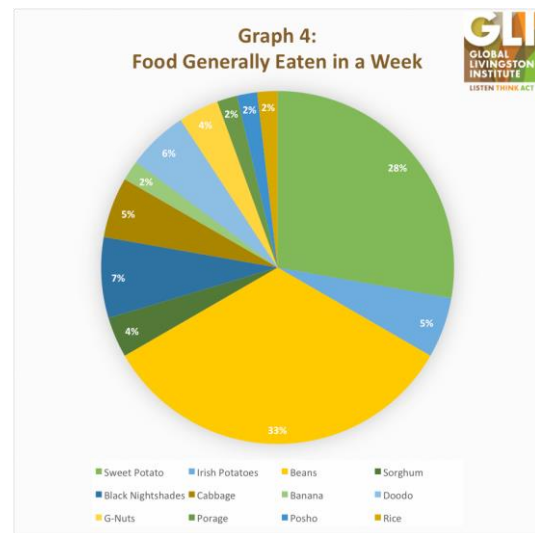
### **Biofortification of Staple Foods on Lake Bunyonyi**

Biofortified staple foods can provide an added amount of micronutrients to diets, preventing micronutrient deficiency related diseases in an affordable and sustainable

manner. Biofortified crops are a suitable tool for combating micronutrient malnutrition in poor, rural communities, such as those surrounding Lake Bunyonyi. HarvestPlus and its partner organizations work to develop more nutritious varieties of staple food crops and disseminate them in populations with high levels of malnutrition. They focus on developing crops that will have higher levels of vitamin A, iron, and zinc, as many populations are found to be deficient in these key nutrients. Vitamin A deficiency can cause blindness and even be fatal in extreme cases. Furthermore, iron deficiency can cause fatigue, mental impairment, and potentially fatal complications during childbirth. About half of the children in Uganda under the age of 5 are found to be iron deficient and according to the World Bank, there is a net loss of \$145 million each year due to micronutrient deficiencies in Uganda (HarvestPlus, 2018).

As of 2017, 58% of the land in Uganda is used for agricultural practices and 82.3% of the population lives in rural areas (Nutrition and Consumer Protection, 2010). According to the Food and Agriculture Organization of the United Nations, most Ugandans primarily consume: bananas, starchy roots, and cereals. The micronutrient composition of their diet is poor, particularly in rural farming communities where poverty levels are high. Our observations made of seven rural villages in the Lake Bunyonyi area showed that the weekly dietary profile of residents primarily consisted of beans and sweet potatoes (Graph 4).

Sweet potatoes are the most popular root crop consumed in the developing world.



They are not only less labor intensive to produce, but they are also more resilient to severe weather and soil conditions than comparable crops (International Potato Center, 2018). A study conducted by Howarth Bouis and colleagues showed that in 2007 HarvestPlus released sweet potatoes biofortified with pro-vitamin A in Uganda (Bouis, 2011). According to Bouis et al., as of 2007/2008, the biofortified sweet potatoes expressed 100% of the target levels of pro-vitamin A, at 30 µg per gram (Bouis, 2007).

The model farm at the Entusi Resort and Retreat Center is an ideal location to introduce biofortified sweet potatoes and beans in the Lake Bunyonyi communities. The established relationship between Entusi and the Bunyonyi communities will strengthen the potential for successfully implementing biofortified sweet potatoes and beans in this area. Unlike the typical white sweet potatoes produced in this area, biofortified sweet potatoes will have an orange or yellow coloring, which may cause community members to be apprehensive to adopting the new crop. However, the model farm can be used as a bridge between organizational implementation and community acceptance, helping to normalize the production and consumption of biofortified sweet potatoes.

The manager of the model farm, Thomas Byonanebye, is looking to expand the diversity of the crops currently grown on the farm with the aim of increasing the nutritional status of the communities. Therefore, the will of the farmers is present and the space is available for biofortified crops to be introduced. The production of biofortified sweet potatoes and beans in the lake area can be initiated at the model farm and later disseminated throughout the region as acceptance of the new crops grows. The model farm is currently working with thirty local farmers who make up the Entusi Women's Association to teach better agricultural practices and increase economic development. This relationship will be key in ensuring the success of biofortified foods in this

community as the model farm can spread the use of biofortified crops to the Women's Association farmers. The association can then be a bridge to spreading the crops into the rest of the lake communities. It is recommend that an educational program focusing on incorporating biofortified crops into the current agricultural patterns and diets be developed and implemented alongside the introduction of the crops. Community members that will initially be working with these crops, such as the Entusi staff and the Women's Association members should conduct the educational program to ensure assimilation.

The Global Livingston Institute should make contact with HarvestPlus to begin efforts towards biofortification of staple foods on Lake Bunyonyi. HarvestPlus Uganda partners with Makerere University, Department of Food Science and Technology and is currently working on partner implementation in the Kabale District. The address and contact information for HarvestPlus Uganda can be found below, provided by the HarvestPlus website.

Sylvia Magezi, HarvestPlus Country Manager-Uganda

c/o IFPRI 15 East Naguru Road, Upper Naguru, P.O. Box 28565, KampalaThe  
Country Contact: Sylvia Magezi.

Phone: +256 (0) 414287107, email: s.magezi@cgiar.org.



## Appendix A: Sketch of Lake Bunyonyi with Public Health Target Locations

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