



INSPIRING THE NEXT GENERATION OF WOMEN SCIENTISTS IN KENYA

**REPORT ON THE IVVN- KeAWARD AFRICAN SCHOOL SCIENCE OUTREACH
ACTIVITIES HELD IN KENYA IN NOVEMBER 2021**



Dr. Esther Maina showing Loresho Secondary students how to use a micropipette during one of the sessions of the mock COVID19 vaccination experiment carried out as part of the science outreach activities

**KeAWARD
NOVEMBER 2021**



International Veterinary
Vaccinology Network



Acknowledgements



The IVVN African School Outreach activities carried out in November 2021 at Canon Kituri and Mwakitawa Girls Secondary Schools in Taita County and Loresho Secondary School in Nairobi County were facilitated by IVVN and locally coordinated by the Kenyan Chapter of the African Women in Agricultural Research and Development (KeAWARD). KeAWARD generously acknowledges financial support from IVVN towards these activities.

We also acknowledge the logistical support provided by the Principals and Teachers in Canon Kituri Secondary School and Mwakitawa Girls in Taita County and Loresho Secondary School in Nairobi.

Six women scientists drawn from University of Nairobi (UoN), Kenya Agricultural & Livestock Research Organization (KARLO), and the National Museums of Kenya (NMK) facilitated the interactive hands-on vaccinology experiment in both Counties sharing inspiring stories on their successful career journeys. We wish to greatly appreciate the support and partnership of our host organizations which have continued to facilitate, encourage and offer in-kind support to the women researchers who volunteer to facilitate the outreach. KeAWARD greatly appreciates the commitment and dedication of the women scientists who coordinated, prepared and delivered the interactive mock laboratory experiment in the three schools.



Ladies, you are so inspiring. Keep up the great work. Ahsanteni sana!



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Background

The IVVN-KeAWARD Outreach team in Kenya has continued to sustain Science mentorship and role modelling activities to grow the number of high school girls pursuing science courses and future STEM careers. In November 2021, the team visited two schools in Taita Taveta County and one school in Nairobi County engaging 195 students comprising of 143 girls and 52 boys.

On November 4th, 52 students of Canon Kituri Secondary School and another 80 were engaged at Mwakitawa Girls Secondary School on 6th November in Taita County. While in Taita, the scientists leveraged on the opportunity to train more than 100 poultry farmers on feed formulation and control of poultry diseases. Taita Taveta County which is not food-sufficient has a high poverty rate of about 57%. An average 40% of pupils' majority being girls fail to join secondary schools every year due to poverty, early marriages and lack of interest in schooling. The County KCSE mean score is below 4.0. Nearly over 2000 teenage pregnancies have been reported in the County between Jan-August 2021.

At the invitation of a KeAWARD fellow from Taita Taveta County and a community development officer working to empower communities at the County, the KeAWARD women scientists organized a science outreach at the county to empower and inspire high school girls as well as empower poultry farmers capacity in high quality animal nutrition and on-farm feed formulation to improve quality of birds, egg production as well as control poultry diseases to reduce disease burden to enhance incomes ultimately improving their livelihoods.



Canon Kituri students listening to the motivational talks before the start of the mock experiment

On 27th November, 63 students of Loresho Secondary School, Nairobi were taken through the interactive mock vaccinology experiment by six facilitators. The school which serves needy students from informal settlement has a number of teenage mothers, all attributed to COVID19 disruptions. KeAWARD had marked IWD 2021 in the school. The chapter has sustained mentorship activities in the school to inspire and motivate the learners to help them cope with COVID19 challenges while remaining focussed on good performance and a successful future in science careers.

Delivery of the interactive vaccination screening experiment

A pre-planning session to prepare reagents and plasticware at the Biotechnology Centre, KARLO. For safe deliveries of the engagement activities, facilitators were tested and confirmed to be COVID19 negative.

In Taita, the hands-on interactive COVID-19 mock vaccination testing experiment was delivered by women scientists from three partnering institutions. They included Dr. Esther Kanduma (UoN/KeAWARD), Dr. Virginia Wangonde (UoN/KeAWARD), Dr. Felister Nzube (UoN/KeAWARD), Dr. Dora Kilalo (UoN/KeAWARD) Ms. Susan Njuguni (National Museums of Kenya/ KeAWARD) and Ms. Celestine Makokha, KALRO).



At Canon Kituri Secondary School, the afternoon mentorship started with motivational and career guidance talks to the entire school of 805 students consisting of 354 girls and 451 boys. A total of 52 students (29 boys, 23 girls) from the school were engaged in a one 3hr afternoon session. Most were aged between 15-19 yrs. Here, the facilitators took turn to lead the different sessions.

Dr. Dora Kilalo engaging Canon Kituri students during the mock experiment



At Mwakitawa Girls, 80 girls between 15-18 years were taken through the interactive COVID-19 mock vaccination experiment in two back-to-back sessions. Facilitators took turns to lead the different sessions.

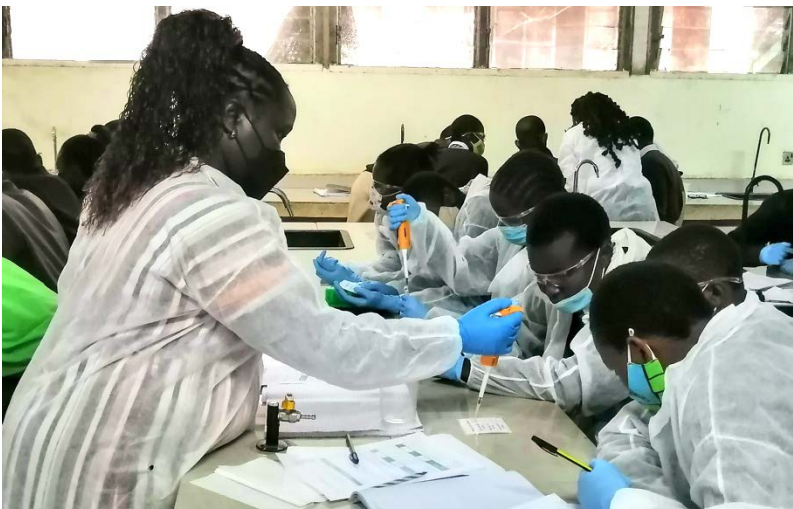
Ms. Susan Njuguni assisting Mwakitawa Girls students during one of the sessions



Dr. Virginia Wangonde facilitating a session at Loresho secondary School

A total of 63 students consisting of 40 girls (15-20 years) and 23 (17-21 years) boys from Loresho day school were engaged during the two sessions carried out. Dr. Esther Maina (UoN), Dr. Virginia Wangonde (UoN/KeAWARD), Dr. Esther Kanduma (UoN/KeAWARD), Dr. Felister Nzuve (UoN/KeAWARD), Ms. Susan Njuguini (National Museums of Kenya/ KeAWARD) and Ms. Celestine Makokha, KALRO) facilitated the different sessions.

Summary of pupils evaluation and feedback



Dr. Felister Nzuve assisting some students at Canon Kituri secondary School in Taita

Feedback collected from the Canon Kituri students indicated that they found the interaction to be rewarding, enjoyable, fun, inspiring, interesting, informative and exciting. A quarter found the exercise challenging. The favourite parts of the workshop included using pipettes, testing and analyzing the samples. About half of the enjoyed all the sections of the experiment. All the students agreed that women can be scientists, reported learning that vaccines are used to prevent animal and human diseases from spreading and that they would

tell their families about the experience they had during the workshop. All of them indicated they could become scientists in future. A teacher reported that the workshop enlightened the students on the importance of science subjects in life.


Feedback from two teachers at Canon Kituri about what they liked about the workshop was that the facilitators are very informed, they have the knowledge, they are very organized and approachable. Two science teachers suggested that the workshop should consider integrating more ICT and more time to allow more students to benefit.

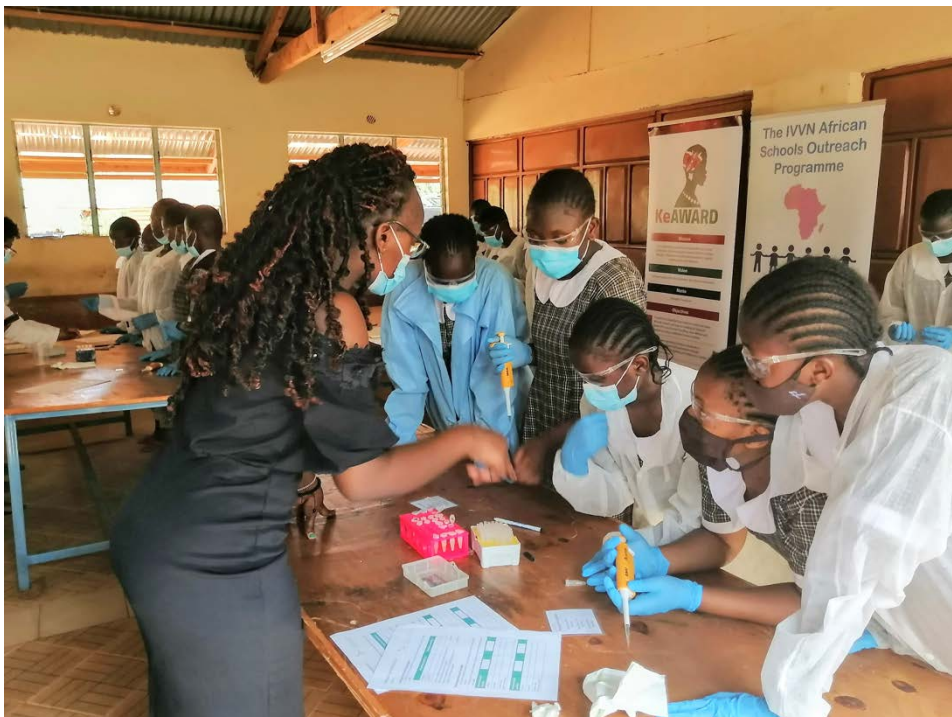
Some quoted feedback from Canon Kituri students below: -

“The experiment was very interesting, and I would like to thank you for the good time that you have spent with us. I have learnt a lot about the science. Thank you!!!”

“I would like to thank the scientists and acknowledge the efforts of my school for bringing us scientists. I have really thought myself a lot of things and I now know that anybody can become a scientist. This section was really exciting. I know that YES I CAN.”

The feedback below has been received from the Canon Kituri;

	<p>CANON KITURI SECONDARY SCHOOL</p> <p>P.O. Box 1009 -80304 - Wundanyi. Phone NO: 0715 812 377. Email address:canonkituri@gmail.com</p>
<p>Our Ref: CSSK/UONBI/VOL.1/1</p>	<p>Date: 8/11/2021</p>
<p>Your Ref: _____</p>	
<p>On behalf of Canon Kituri Secondary School fraternity, I would like to express our sincere gratitude for your visit, talk and practicals which have indeed impacted well on our students and the entire school. The talk in the school is now scientific and the fear of handling science subjects is minimal. Tomorrow the boys and the girls whom you handled will share their experiences with their fellow students on parade to enlighten them further. It is our hope that you will remain in partnership with us. We love to be associated with you.</p>	



Ms. Celestine Makokha taking some students of Mwakitawa girls through one of the sessions

Mwakitawa students the interactive experiment to be interesting, enjoyable, fun, inspiring, exciting while a third of the students found the experience to be surprising and another quarter, rewarding. Most of the students found all the sections to be exciting with majority reporting that pipetting, mixing and analyzing the samples were most favourite. A few found drawing a scientist challenging. All the students agreed that women can be scientists, and except one, they

indicated they could become scientists in future. Ninety-nine (99%) reported learning that vaccines are used to prevent animal and human diseases from spreading and that they would tell their families about the experience they had during the workshop. The science teacher liked the fact that the workshop has



practical aspects such as sample testing, making observations and analyzing the data. He proposed we have more workshops to reach more students.

Some quoted feedback from some Mwakitawa girls include: -

“I had an amazing experience. I had so much fun learning. I wish that you will becoming more often. Thank you very much. You are really inspiring women”.

“My favourite part of the workshop is that I have to change my attitude that from today I will be an Agricultural Scientist. You have inspired me and i like to join Nairobi University to improve my skills”.

“I really appreciate the doctors for their good job. It is inspiring and it has made me change my career to a Vaccinologist. THANK YOU ALL!!

“Am so excited and may Gob bless you since you made me realise myself and challenged me to be like you”



Loresho girls practicing pipetting using the micropipette during the interactive mock vaccine testing experiment

Loresho students indicated that they all found the experience to be enjoyable, fun, inspiring, interesting, informative and exciting. Most enjoyed using the micropipette and analyzing the samples while most

reported that drawing the scientist was the least favourite. A number of them enjoyed interacting with the scientists. While majority of the students agreed that women can be scientists, 8 girls and 6 boys indicated that they are not sure or could not become scientists. Ninety-five (95%) percent reported learning that vaccines are used to prevent animal and human diseases from spreading and that they would tell their families about the experience they had during the workshop. Some quoted feedbacks from the Loresho students: -

“It was good, because i got inspired that I can be someone great in the society”

“The scientists were good. I have been encouraged. When I grow up, I will be an animal scientist”

“The scientists are amazing” “I liked how the scientists advised us to become a good scientists”

“It was the best and I got inspired and motivated by the scientists, Exciting!!”

Tree planting

At the end of the engagement, we donated fruit trees at Canon Kituri and participated in a tree planting exercise at Mwakitawa girls to encourage the students to engage in environmental conservation and fruit farming for supplementing food sources.



Tree planting at Mwakitawa Gilrs School

Award of certificates to the participant

