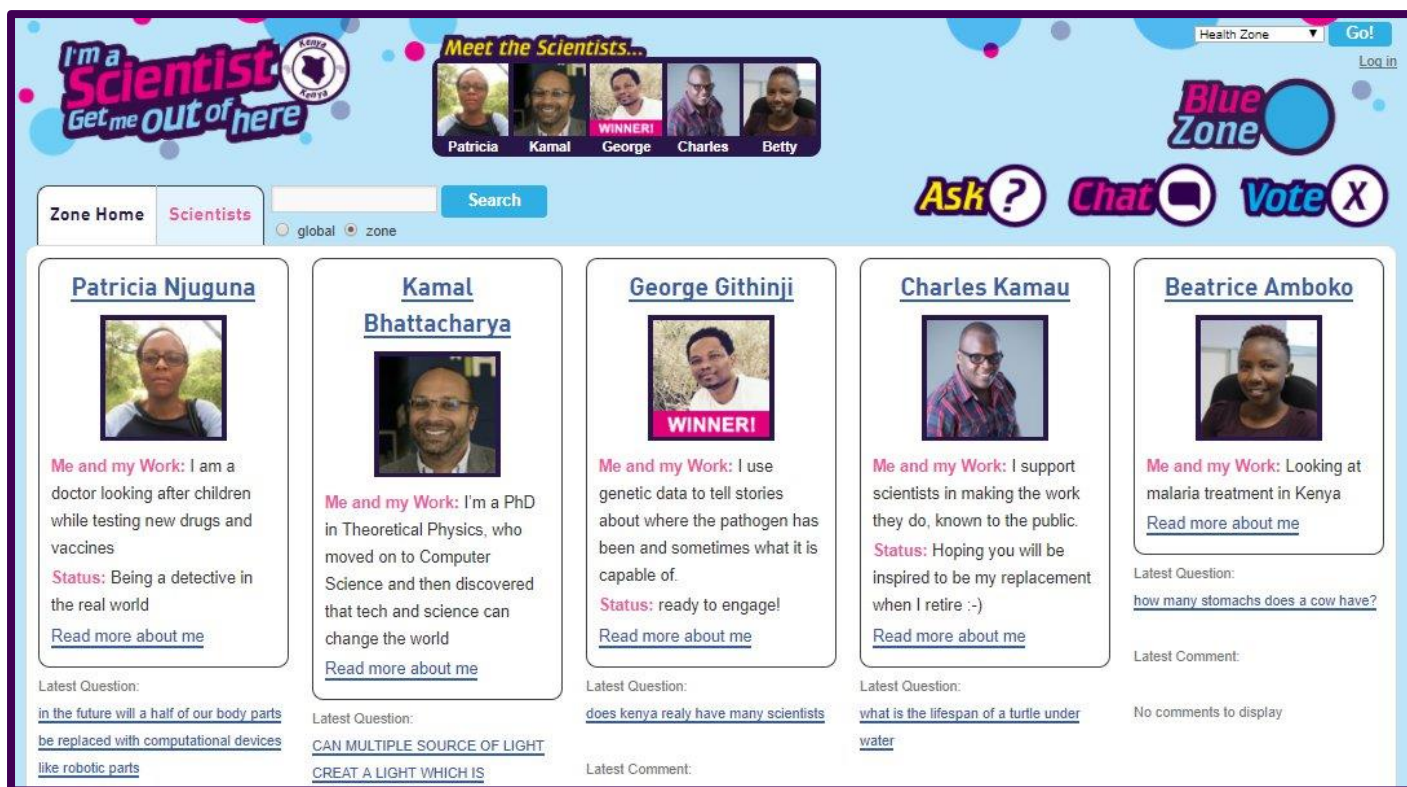




I'm a Scientist Kenya Final Evaluation Report

September 2017

Shane McCracken, *Gallomanor Comms. Ltd.*; Josh Doyle, *Gallomanor Comms. Ltd.*;
Alun Davies, *KEMRI Wellcome Trust*; Grace Mwango, *KEMRI Wellcome Trust*



In 2014 Wellcome funded Gallomanor and the KEMRI-Wellcome Trust Research Programme (KWTRP) to pilot and roll out I'm a Scientist, Get me out of here in Kenya.

This report summarises the work done and the impact on students, teachers and scientists. The intended audience is Wellcome, the Kenyan Ministry of Education, Science and Technology, County Directors of Education and potential partners in other countries looking to develop digital science engagement programmes.

Executive Summary

We had two questions to answer with this project: Would it work? Can it be made sustainable?

Yes and yes.

The fundamental question was would students ask questions and would scientists answer them. Very quickly we discovered an appetite from students; 487 questions were asked by 136 students in the initial pilot phase. Scientists did their best to keep up but were sometimes challenged by the questions, in particular the number of questions about sexual health.

Another key question we asked ourselves was what changes were needed to make the project successful. The answer was not many. We optimised the site to make it appropriate for Kenya and more efficient and continue to do so for all territories.

Sustainability is key. Our funding was to run 4 zones and to make the site available for others to use afterwards. A major positive outcome has been the willingness of the KEMRI Wellcome Trust Research Programme to run the project themselves. However, we did underestimate the time and energy it would take to learn to run the project with minimal support from the UK. That the project is continuing is down to the commitment shown by Dr Alun Davies and his Schools' Engagement team, to go beyond the scope and budget of the original project.

The success of the project is clear from web metrics, and the feedback from participants. Teachers and scientists report that they see the impact on their students. Data from focus groups with students suggest that the project **“demystified scientists and offered role models”**.

This success however, did not come without challenges.

Internet connectivity was sometimes patchy and students were disappointed if they were not able to connect directly with participating scientists. Some schools' IT provision is limited to a single teacher's laptop connected via a mobile phone dongle, while others have IT suites with a decent permanent internet connection. Location and resourcing of the school makes a big difference.

Gaining permission from the Ministry of Education was time-consuming and caused significant delay to the roll out. It also constrained the project to after-school and lunchtime clubs, reducing the connection between it and science lessons.

Finally, we had excellent take up from schools in Kilifi and Nairobi, where the team had a local presence; but less good in Nakuru and Kisumu, where we relied on phone calls and emails.

In conclusion, we are proud of what we have achieved in launching I'm a Scientist in Kenya. There is a legacy of 1,000 students and 20 scientists who've participated and benefited. There is a local team willing and able to drive the project forward in Kenya and beyond.

A handwritten signature in black ink, appearing to read 'Shane', followed by a long, horizontal, slightly wavy line that extends to the right.

Shane McCracken

Director, Gallomanor Communications Ltd

September 2017

Contents

Background	6
Purpose of project	6
Description of I'm a Scientist	9
Partners	10
What happened?	11
Pilot	11
Roll out	13
Challenges	19
Permissions	19
Technical	20
School recruitment	21
Scientist recruitment	22
Impact	23
Data collection methodology	23
Students	24
Teachers	25
Scientists	26
Prize winner projects	27
Next Steps	28
Contact	29
Appendix I: Permission Letters	30
Appendix II: Qualitative exploration Summary Report	36

Background

Purpose of project

I'm a Scientist, Get me out of here (IAS — imascientist.or.ke) is an online schools science engagement project that aims to increase school students aspirations to study science, better understand how science works, and perhaps become scientists themselves. In Kenya we particularly wanted to connect the students with Kenyan scientists to shatter the stereotypical perception of scientists being 'dead white men'.

The KEMRI-WT Research Programme were already running a Schools' Engagement Programme in Kilifi County with support from the County Education Office. They wanted to test if IAS could complement that set of activities and improve the links between the scientists and schools.

In the original aim of the project was to:

"...research, adapt, pilot, evaluate and roll out a version of the UK event for Kenya. It will also share the learning and train a local project manager so that the event can be run autonomously in subsequent years."

The key elements we wished to test with the project were:

1. **Does this form of online engagement deliver a benefit to students, teachers and scientists in Kenya?**
 - a. Does the technology work?
 - b. Is the project right for the culture within schools?
2. **Can the project be made locally sustainable?**
 - a. Can we train someone in Kenya to run the project?
 - b. Can we recruit schools from other areas of Kenya where we don't have an existing relationship?

Our objectives, promised outputs, and expected outcomes are explained on the following pages.

Objectives

Our objectives were explained as:

- **Research and implement changes to the IAS format and website which will allow the event to be used throughout Africa.**
- **Get over 1,000 secondary school students aged 14 – 19 from Kilifi and across Kenya to better understand the research process and the opportunities that science can provide them.**
 - During the project only 421 student accounts were registered. It was difficult to estimate the true number of engaged students as many students shared a computer; we would estimate that around 1,000 students took part.
- **Build capacity in Kenya to run the event autonomously.**
 - The Wellcome KEMRI team now have the experience and knowledge to run the event with minimal technical support from the UK.

Outputs

The outputs we promised were:

- **Low-bandwidth version of IAS event that can be used time and time again and translated into other languages**
 - In the end we made some changes to the site but not as much as we thought might be necessary. The site was already efficient and schools were generally able to access the site at an acceptable speed.
- **Evaluation and learning of how the event can and should be implemented in developing countries**
 - Our combined knowledge of the implementation of the project has greatly increased, yet we still recognise that each country will have it's own unique challenges.

- 4 zones of IAS run involving 20 Kenyan scientists and **over 1,000 Kenyan students**
- Revised teacher packs specifically adjusted for Kenyan education system
- Promotional film, provided online and DVD, showing how the event benefits students and scientists
- **Template for rolling out in other African countries**
 - The intention is to purchase imascientist.africa when available and to make that available for any sub-saharan partners to use.
- **KES200,000 distributed for further spending on science education in Kenyan schools**
 - In progress
- **Kenyan moderator trained and briefed on how to run the event**

Outcomes

The expected outcomes were:

- **Over 1,000 Kenyan students**
 - with a better appreciation of the relevance of science and locally conducted research more likely to see science as a potential career
 - being enthused about science
- **20 schools — in fact, 26 took part over the 4 zones.**
 - building a relationship with KEMRI-Wellcome Centre
 - experiencing online engagement and eager for more
- **An increase in Kenyan capacity to run online engagement events**

Description of I'm a Scientist

I'm a Scientist, Get me out of here is an online science outreach project that gets Kenyan secondary school students connected with Kenyan scientists. It takes place at imascientist.or.ke.

The students read the scientists' profiles, ask them questions, have conversations in real-time text chats and vote for the scientist they want to win. The scientist who wins is given a prize to spend on more science communication in schools.



Students are brought to the site by their teachers who are supported by teaching resources that get the students using their critical thinking skills about scientists.

The aims of the project are to:

- Motivate students to study science by correcting stereotypes and myths they have about scientists.
- Help students understand that science could be a career choice for them.
- Help scientists become better communicators of science.

Partners

Gallomanor Communications Ltd



Gallomanor created the *I'm a Scientist* format in 2008 in the UK. Since then it has grown to connect 20,000 students and 250 scientists and engineers every year in the UK and Ireland. It has also expanded to Australia, Malaysia, Vietnam, Spain and the USA in addition to this Kenyan project.

Gallomanor is a private company with a mission to connect organisations and communities for social good.

The KEMRI Wellcome Trust Research Programme



The KEMRI Wellcome Trust Research Programme is based within the KEMRI Centre for Geographic Medical Research, with core activities funded by Wellcome. It conducts integrated epidemiological, social, laboratory and clinical research in parallel, with results feeding into local and international health policy. Research platforms include state-of-the-art laboratories, a demographic surveillance system covering a quarter of a million residents, partnership with Kilifi County Hospital in health care and hospital surveillance, a clinical trials facility, a vibrant community engagement programme and a dedicated training facility.

Wellcome

Wellcome is a global charitable foundation, both politically and financially independent. They support scientists and researchers, take on big problems, fuel imaginations, and spark debate.



In 2014 they provided Gallomanor with £30,000 of funds to develop and run 4 zones of *I'm a Scientist* in Kenya as part of their International Public Engagement programme.

What happened?

Pilot

Timeline

- **April–May 2014** — Formative research and recruitment with teachers in Kilifi
- **June–August 2014** — Prepare website and recruit scientists for Pilot
- **September–October 2014** — Pilot event with schools in Kilifi
- **November–December 2014** — Evaluation

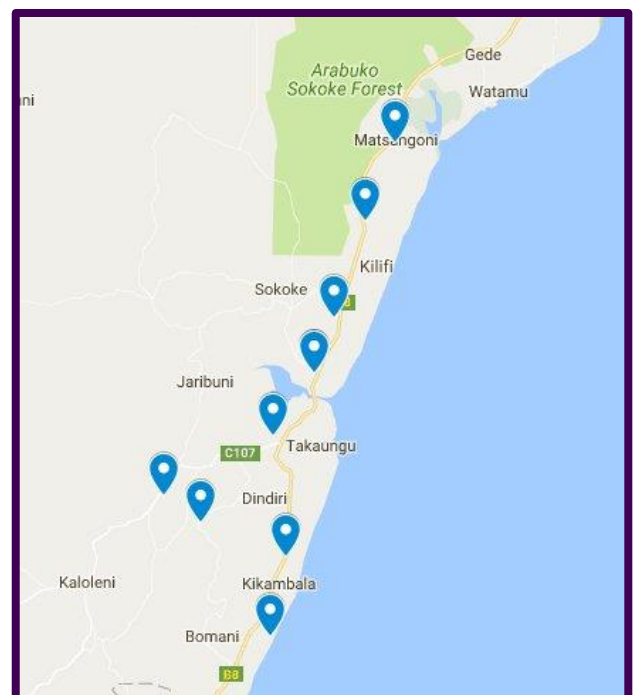
Permissions

Permission was obtained from the Kilifi County Director of Education.

Schools

10 schools in Kilifi were invited to participate, and all 10 took part. 136 student accounts were used, representing over 300 students as most accounts were shared. 487 questions were asked. 298 votes were cast.

- Chumani School
- Bahari Girls' School
- Lutsangani School
- Majaoni School
- Msumarini School
- Shariani School
- St Teresa School
- Chasimba School
- Katana Ngala Secondary School
- Kilifi Township School



ABOVE: MAP OF SCHOOLS THAT PARTICIPATED IN THE 2014 I'M A SCIENTIST KENYA EVENT.

[MAP DATA © 2017 GOOGLE]

Scientists



5 scientists took part in the Health Zone:

- **Priscilla Ngotho** — KEMRI Wellcome Trust, Kilifi
- **Melissa Kapulu** — KEMRI Wellcome Trust, Kilifi
- **James Otieno** — KEMRI Wellcome Trust, Kilifi
- **Dorcas Kamuya** — KEMRI Wellcome Trust, Kilifi
- **Moses Kiti** — KEMRI Wellcome Trust, Kilifi



Activity and zone report

In the first event, **136 students registered**¹, **86% of whom were active** (asked a question, joined in a live chat, posted a comment, or cast a vote). **487 questions were asked** by the students, and **203 answers given** by the scientists. There were **1,051 lines of live chat**.

Popular topics of discussion included infectious diseases — particularly Melissa's and Priscilla's research on the malaria parasite — there were also questions about the body, differences between males and females, sexually transmitted diseases, birth control, and sexual health in general.

The Health Zone report contains details of everything that happened in the zone. Read the report at:

imascientist.or.ke/2014/10/31/health-zone-report/

¹ "Registered students" is the number of student login accounts used. This is likely lower than the actual number of students who took part, as many students shared accounts and computers.

Roll out

Timeline

- **October 2014** — Complete Pilot zone in Kilifi.
- **December 2014** — Formal application to Ministry of Education for permission to run event across Kenya.
- **February 2016** — Permission granted by Ministry of Education.
- **May 2016** — Permissions for all voluntary visits to schools revoked.
- **July 2016** — Permission re-granted for Nakuru, Kisumu, Nairobi, and Kilifi counties.
- **January 2017** — 3 zones run with schools from Kilifi, Nairobi, Kisumu and Nakuru counties.

Permissions

Letter describing the project and report of previous IAS activity was sent to KEMRI Headquarters. KEMRI HQ issued a letter to Ministry of Education to consider conducting similar activity in Nairobi. Permissions were obtained from the Ministry of Education office of the Principal Secretary.

Additional letter for approval and support were obtained from the Nairobi City County Education Department, County Directors of Education from Kilifi, Kisumu and Nakuru.

Permission from Kilifi was sought through a regular meeting between the KEMRI team and the Kilifi County Director of education.

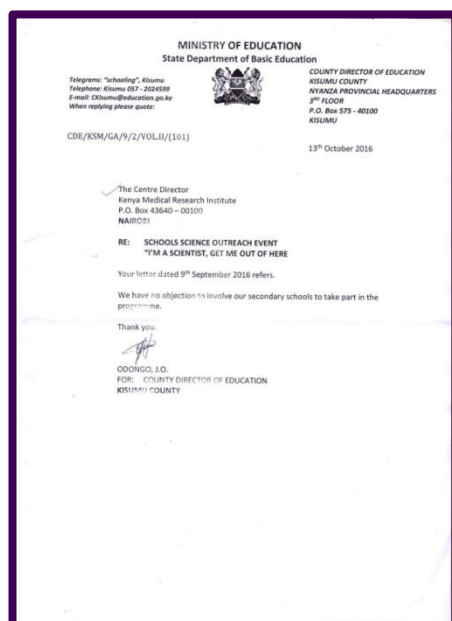
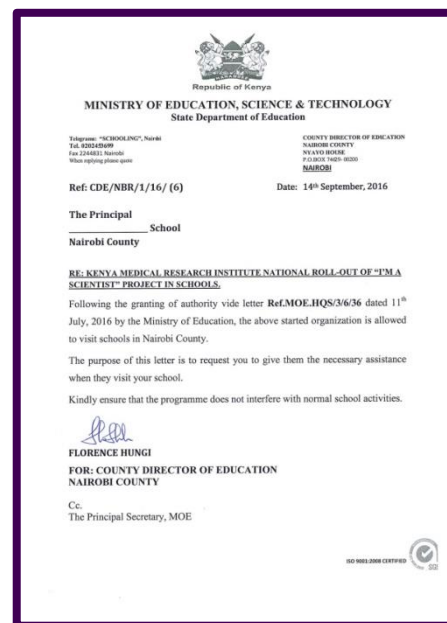
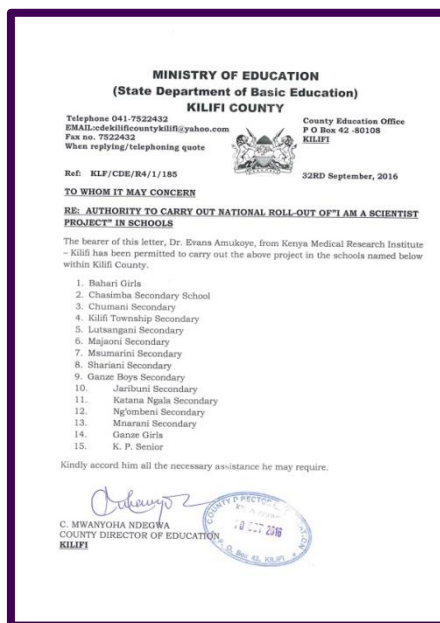
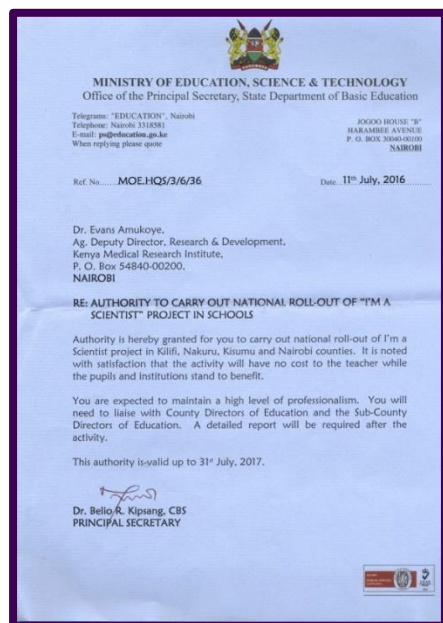
Steve Adala, a representative of KWTRP, met with the Director of Standards (Quality

Assurance) for Education in Nairobi to gain permission to carry out the event with schools.

The project consultant Mackinlay Mutsembi spent a week travelling to Kisumu and Nakuru to meet with Country Directors to gain permission to run the project. Procedural changes at the MoEST related to extracurricular activities, delayed the granting of permission, however on 11 July 2016 final MoEST approval was granted (see Appendix I).

Permission Letters:

Larger copies of these letters are reproduced in Appendix I.



ABOVE: PERMISSION LETTER OBTAINED FROM THE MINISTRY OF EDUCATION OFFICE OF THE PRINCIPAL SECRETARY, AND ADDITIONAL LETTERS FOR APPROVAL AND SUPPORT FROM THE NAIROBI CITY COUNTY EDUCATION DEPARTMENT, COUNTY DIRECTORS OF EDUCATION FROM KILIFI, KISUMU AND NAKURU.

Schools

At each of the schools, the principals granted permission for participation. Permission to take part in the January 2017 event was received from the head teachers at 36 schools.

A total of 22 of these schools participated; 11 in Kilifi, 9 in Nairobi, 1 in Kisumu, and 1 in Nakuru.

Blue Zone

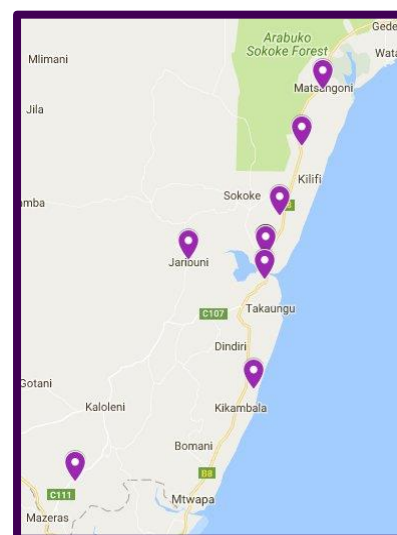
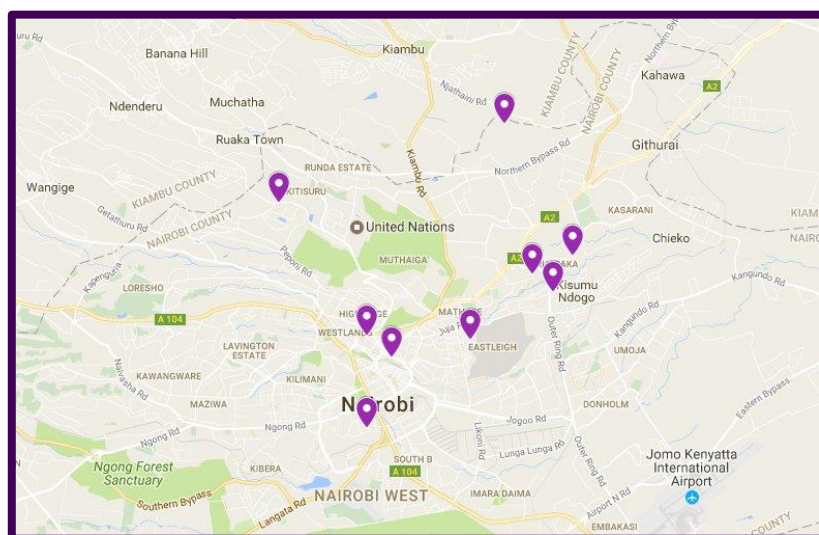
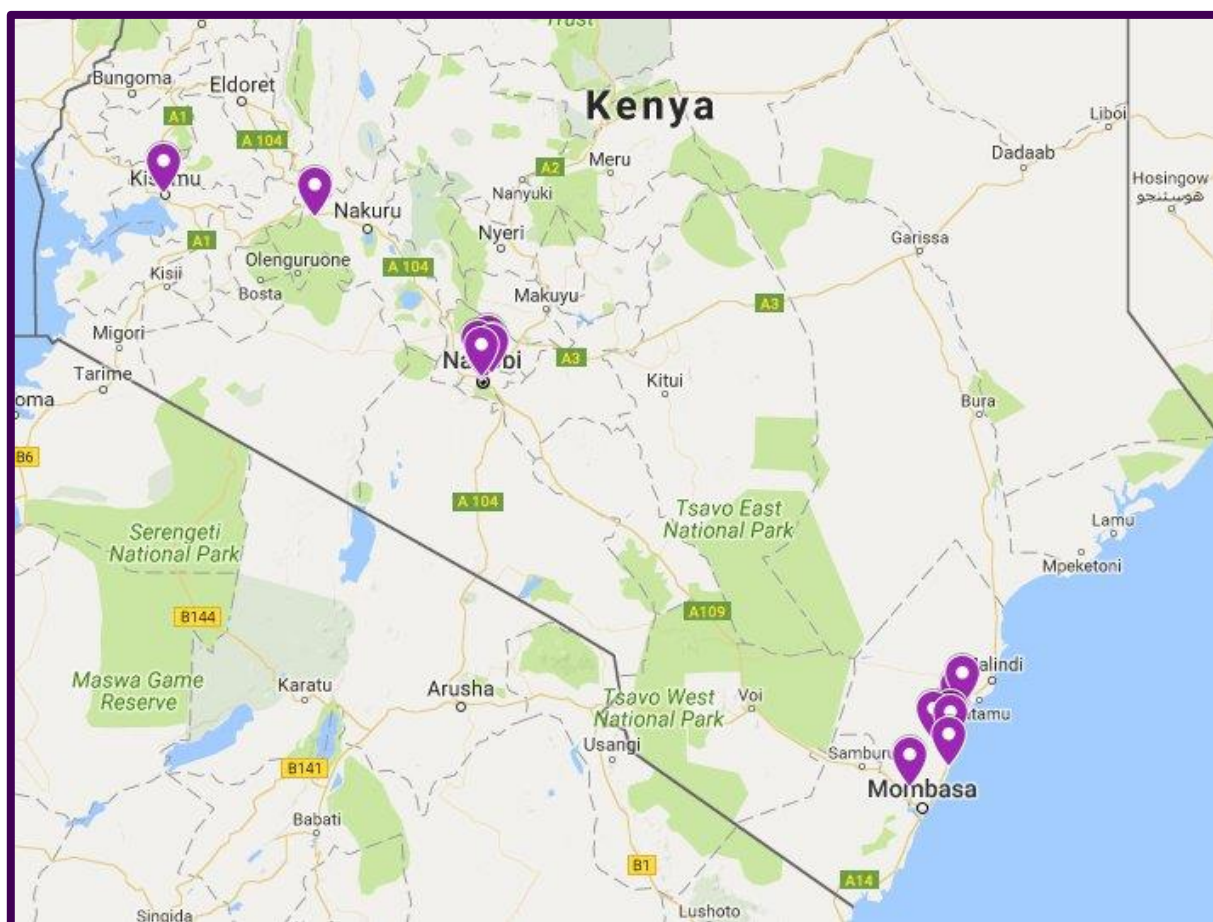
- **Kilifi**
 - Majaoni Secondary School
 - Kilifi Township Secondary School
 - Chasimba Secondary School
 - Ganze Girls' Secondary school
- **Nairobi**
 - Ngara Girls' High school
 - Ruaraka High School
 - Starehe Girls' Centre and School
 - Baba Dogo Secondary School

Green Zone

- **Kilifi**
 - Chumani Secondary School
 - Jaribuni Secondary School
 - Katana Ngala Secondary School
 - Mnarani Secondary School
 - Ganze Boys' Secondary School
- **Nairobi**
 - Upper Hill School
 - Hospital Hill High School
 - Maina Wanjigi Secondary School

Health Zone

- **Kilifi**
 - Shariani Secondary School
 - Ng'ombeni Girls' Secondary School
- **Nairobi**
 - Kariobangi North Girls' Secondary School
 - Dr. Ribeiro Parklands School
- **Kisumu**
 - St. Teresa Girls' School
- **Nakuru**
 - Molo Academy Boys' School



TOP: MAP OF SCHOOLS WHICH TOOK PART IN THE 2017 I'M A SCIENTIST KENYA EVENT.

BOTTOM: DETAILED MAPS OF PARTICIPATING SCHOOLS IN NAIROBI AND KILIFI.

[MAP DATA © 2017 GOOGLE]

Scientists

15 scientists took part across the 3 zones.

Blue Zone

- **Patricia Njuguna** — KEMRI Wellcome Trust, Kilifi
- **Kamal Bhattacharya** — Ihub, Nairobi
- **George Githinji** — KEMRI Wellcome Trust, Kilifi
- **Charles Kamau** — KEMRI Wellcome Trust, Kilifi
- **Beatrice Amboko** — KEMRI Wellcome Trust, Nairobi



Green Zone

- **Susan Gachau** — KEMRI Wellcome Trust, Nairobi
- **Steven Adala** — KEMRI Wellcome Trust, Nairobi
- **Rose Kigathi** — Pwani University, Kilifi
- **Rita Mudza** — KEMRI Wellcome Trust, Kilifi
- **Alex Hinga** — KEMRI Wellcome Trust, Kilifi



Health Zone

- **Ivy Kombe** — KEMRI Wellcome Trust, Kilifi
- **George Mochamah** — KEMRI Wellcome Trust, Kilifi
- **Daniel Mbutia** — KEMRI Wellcome Trust, Kilifi
- **Christina Obiero** — KEMRI Wellcome Trust, Kilifi
- **Cheryl Andisi** — Pwani University, Kilifi



Activity and zone reports

Across the three zones **285 students logged in**, **85% of whom were active** on the site (asked a question, joined in a live chat, posted a comment, or cast a vote). The **students asked 1,185 questions**, and **438 answers were given**. There were **2,958 lines of live chat**.

Health research was a popular topic of discussion in all three zones; students asked questions about the body, cancer, HIV and AIDS, and medicines, as well as questions reflecting the work of the scientists taking part, such as Patricia's work as a paediatrician. There were also questions about physics, and more general areas of science. Similar to the pilot event, there were also a lot of questions around personal health, sex, and relationships.

The zone reports have details of everything that happened in the zones.

Read the zone reports at the links below:

- **Blue Zone Report:**
imascientist.or.ke/2017/07/19/blue-zone-report-january-2017/
- **Green Zone Report:**
imascientist.or.ke/2017/07/19/green-zone-report-january-2017/
- **Health Zone Report:**
imascientist.or.ke/2017/07/19/health-zone-report-january-2017/



ABOVE: WORD CLOUD OF KEYWORDS FROM LIVE CHATS IN THE JANUARY 2017 HEALTH ZONE. MORE DETAIL IN THE ZONE REPORTS DETAILED ABOVE.

Challenges

Permissions

The Kenyan government is understandably cautious about who is permitted to engage with school students. Changes in the MoEST's requirements for permissions to work in schools in 2016 resulted in project delays, however, ultimately this did delay did not adversely impact on the project deliverables.

We were fortunate in that we were able to meet with the Director for Quality Assurance and Standards in September 2014 and gain his informal permission to run the event, but the time and effort it took to get formal permission was considerable. Acquisition of permissions was supported by Steve Adala and Alun Davies.

MoEST approval granted access to the County Directors in Kilifi, Nairobi, Kisumu and Nakuru. The lists of selected schools were

shared with the County Directors and their support enabled us to work in each of the named schools. KWTRP's long-standing relationship with the Kilifi education office made this stage relatively easy in Kilifi.

Gaining permission in Kisumu and Nakuru was less simple because of a lack of any existing relationship. It required a visit in person from our project consultant who needed to stay for a couple of days in each location in order to obtain the documentation.

Within a few weeks of getting all the permission in place, the Ministry of Education revoked permissions to all education partners working within Kenyan schools, delaying the intended 2016 roll out and requiring us to re-seek permission. This has cost time and additional money and delayed the project to 2017.

Technical



Technical challenges were expected throughout the project. It was expected that schools' IT infrastructure and connectivity would generally be challenging, and in reality, it was very inconsistent. Some schools such as Baba Dogo Secondary School and Starehe Girls' Centre have excellent connectivity and sufficient PCs for plenty of interaction.

Other schools had only one PC to be shared around 15 pupils operating off a mobile dongle.

In general the site operated well even on old PCs and poor connections. However between the pilot and rollout Gallomanor updated the chat software on the site and this potentially

reduced access for some schools. It is difficult to be precise because some schools had trouble with bandwidth that prevented any chat from working.



LEFT: STUDENTS TAKE PART AT STAREHE GIRLS' CENTRE, NAIROBI.

RIGHT: STUDENTS TAKING PART AT NG'OMBENI GIRL'S SECONDARY SCHOOL, KILIFI (TOP); AND JARIBUNI SECONDARY SCHOOL, KILIFI (BELOW).

School recruitment

Recruitment in Kilifi was quite easy due to KWTRP's existing long-standing relationship with the Kilifi County Education Office; Grace Mwango visited 15 schools to invite them to participate in project, and 11 participated.

In Nairobi, recruitment was more challenging as this was a new activity for the schools and students. Grace Mwango reached out to the schools by phone to explain the project, and later visited the schools. Out of the 25 schools which were approached, only 9 participated. Reasons given for not taking part included lack of internet, and the headteachers not being interested in their participating. We were assigned a contact teacher in all the schools that were interested in the project.

The recruitment for Nakuru and Kisumu schools was done through telephone calls. Grace Mwango contacted the principals of 10 schools from Nakuru of which only Molo Academy was interested in participating. Approval documents were sent through the school's e-mail address. Of 10 schools contacted in Kisumu only St.Teresa's Girl's Secondary school participated in the event.

The Gallomanor team reached out to the British Council in Kenya for assistance reaching schools and teachers. This partnership however, was not successful as the British Council had their own commitments at the time.

Scientist recruitment

Out of the 15 scientists, 12 were from KWTRP and 1 other worked in medical research. Whilst this is not inappropriate considering the funder, it is less than ideal from a diversity of science point of view. Perhaps more importantly it makes it slightly more difficult to recruit a diverse range of scientists for future events and could discourage other non-KEMRI organisations to get involved.

The bias is not exactly surprising. During the early stages of any new launch of I'm a Scientist the scientists are recruited through personal recommendation and word of mouth. It takes time for awareness of the success of the project to spread to scientists not linked to the organisers.

Secondly, though we don't have statistics to back this up, it appears that health research forms a disproportionately large part of Kenyan science compared with other countries.

To make the project more useful to a wider section of science teachers it is recommended that we involve more scientist networks and organisations.

Impact

Data collection methodology

Web metrics

Data were collected through web analytics including numbers of page hits, and when and from where the site was accessed. The I'm a Scientist site also collects data on numbers of questions asked and answered, lines of live chats, and votes. We are able to identify which users are posting questions,

and use this to determine activity levels for each school or scientist.

Key activity data is included in previous sections, and in the zone reports which can be found at:

imascientist.or.ke/category/evaluation/

Focus groups and interviews

Telephone interviews with teachers and face-to-face interviews with scientists who took part in the roll out were carried out by Grace Mwango in March 2017.

A series of focus groups took place in summer 2017 to help understand the mid-term impact on the students

These focus groups were carried out by Jing Xu, as part of her Master's dissertation with Oxford University.

A summary report can be found in *Appendix II*; key findings and excerpts are included in the following sections. A more detailed account of the qualitative component will be published elsewhere, at a later date.

"In this qualitative study: focus group discussions were conducted with 54 students across 6 schools; informal discussions were held with 6 teachers, the Kilifi school engagement programme team (SEP team) and the IAS R&D team, Bath UK; and in-depth interviews were conducted with 6 participating researchers."

JING XU, QUALITATIVE EXPLORATION OF I'M A SCIENTIST GET ME OUT OF HERE KENYA, SUMMARY REPORT

Students

Jing Xu's evaluation (see Appendix II) found that taking part in I'm a Scientist plays a role in demystifying scientists and offering role models for the students.

“Despite the limited interaction in a virtual space, for students the experience of using the website demystified scientists and offered students a role model. This influence was likely to occur when students perceived commonalities with the scientists.”

JING XU, QUALITATIVE EXPLORATION OF I'M A SCIENTIST GET ME OUT OF HERE KENYA, SUMMARY REPORT

Indeed, comments from two students featured in the pilot phase film reflect this:

“I used to think scientist people were only white people, and I used to think that scientist people are only people from the olden days; but I came to know that scientist people can come from any part of the world.”

MERCY, STUDENT, BAHARI GIRLS' SCHOOL

“I'm a Scientist has actually changed my perspective towards science, and now I'm proud that I am going to take a science course as part of my career.”

LINAH, STUDENT, BAHARI GIRLS' SCHOOL

Jing notes that the study was limited in its ability to determine the explicit contribution of the influence of taking part in I'm a Scientist on students' career aspirations, though the data suggested that participation provided further encouragement to students who already had an interest in being a scientist to pursue a career in STEM.



ABOVE: I'M A SCIENTIST FILM — STUDENTS AT BAHARI GIRLS' SCHOOL TAKING PART.

Watch the I'm a Scientist student film:
imascientist.or.ke/13284-2/

Teachers

We interviewed 22 teachers following the event; some feedback is included below.

“The students enjoyed going online and finding someone already waiting to talk to them, the students loved the part where they asked questions and instant answers, this created a lot of curiosity and students opened up and asked questions they could not share with their teachers and colleagues.”

MR MAINGI, TEACHER, MOLO ACADEMY

“The students mostly enjoyed the opportunity to chat with prominent scientists. After reading their profiles the students were really amused that the scientists were well educated people and they had a lot of information in regards to all matters affecting them.”

MR CHAI, TEACHER, GANZE BOYS SCHOOL

“The event encouraged them in their studies, boosted attitude towards science and saw the real world of scientists. It boosted their confidence through talking to PHD scientists, and their morale to become scientists. It was possible for them to become scientists and they also got the requirements to become scientists.”

MADAM SAIDA, TEACHER, JARIBU SECONDARY SCHOOL

“They got an opportunity to use the computers and interact with scientists, [and] gained a lot of knowledge learned on their biological development as they grow up.e changes in their bodies.”

MR MUNIKO, TEACHER NG'OMBENI GIRLS SECONDARY

Scientists

Jing Xu's evaluation (see Appendix II) looked at the effects of taking part on researchers and scientists, noting the effect of taking part on participants communication skills, as well as their gaining insight into the interests of school students, and broader communities.

“Generally researchers enjoyed participation and reported that it benefited their communication skills. Most scientists enjoyed being able to deliver science knowledge to students, and the design of IAS’ ‘students-led enquiry’ helped them to develop an understanding of students and the broader community.”

JING XU, QUALITATIVE EXPLORATION OF I'M A SCIENTIST GET ME OUT OF HERE KENYA, SUMMARY REPORT

Indeed, scientists filmed during the pilot event commented that taking part has been rewarding, and has helped improve their communication skills:

“I can connect to the students because that was me a few years ago. I've also learnt to explain things in much clearer details and in simpler language. ... You also interact and learn that the things you're doing and working on are important, and someone wants to know why.”

PRISCILLA NGOTHO, SCIENTIST

“It's really self-rewarding to participate in this programme.”

JAMES OTIENO, SCIENTIST

Watch the I'm a Scientist scientist film:
imascientist.or.ke/scientists-video/

Jing Xu's evaluation did note however, that scientists sometimes felt uncomfortable or unable to answer certain types of questions from students, and that additional support and resources could be made available:

“Often, some researchers felt uncomfortable and unequipped to provide accurate, non-judgemental and useful advice in the area of sexual and reproductive health. This points to a need for providing researchers with resources to support communication.”

JING XU, QUALITATIVE EXPLORATION OF I'M A SCIENTIST GET ME OUT OF HERE KENYA, SUMMARY REPORT

Prize winner projects

Each of the winning scientists were given **50,000 KSh** prize money, to be spent on projects with schools, further extending the reach of the I'm a Scientist project.

George Githinji, winner in the Blue zone, plans to spend the prize money working with Raspberry Pis and schools:

“I planned to create or support one of the school science club and issue them with a DIY science kits or robotic kits. A raspberry Pi, and a full micro-controller set. I would work with a science or maths teacher to mentor. We could then evaluate the students' attitude towards science and hopefully ignite projects for the National science fair.”

GEORGE GITHINJI, SCIENTIST

Cheryl Andisi, the Health Zone winner held a life sciences open day and career fair, where first to third year university students prepared scientific posters with awards for the best three.

Steven Adala, winner in the Green Zone plans to buy books for students for the science symposium.



ABOVE: POSTER COMPETITION ORGANISED BY CHERYL ANDISI WITH HER PRIZE MONEY.

Next Steps

We have demonstrated that online schools engagement works in Kenya. Technical challenges are real but surmountable by most of the participating schools and easily done so by some well-resourced school like Starehe Girls Center.

Teachers value it, students value it, scientists value it.

Teacher and scientist recruitment is more time intensive than in the UK. Acquisition of MoEST permission delayed the project and increased the cost, but with the evidence we have gathered this barrier will hopefully reduce.

Within the KWTRP team in Kilifi and Nairobi there is now significant experience in running the project. The next steps for the project in Kenya lie in their hands.

We hope that they are able to continue to run the project. We would recommend that they partner with other organisations to broaden the scope wider than health research and perhaps to combine internationally with other African countries on imascientist.africa and gradually build on the solid foundations that this Wellcome grant has provided.

Since the roll out in January, the KWTRP team has run a further event in June 2017, with more planned.

Contact

Shane McCracken

Director, **Gallomanor Communications Ltd**

7–9 North Parade Buildings, Bath, BA1 1NS, United Kingdom

shane@gallomanor.com

+44 (0) 1225 326 892

Dr Alun Davies

Schools Engagement Lead, **KEMRI-Wellcome Trust Research Programme**

CGMRC, PO Box 230-80108, Kilifi, Kenya

adavies@kemri-wellcome.org

+254 (0) 709 983000

Appendix I

Permission Letters

Permissions from the Ministry of Education office of the Principal Secretary



MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY
Office of the Principal Secretary, State Department of Basic Education

Telegrams: "EDUCATION", Nairobi
Telephone: Nairobi 3318581
E-mail: ps@education.go.ke
When replying please quote

JOGOO HOUSE "B"
HARAMBEE AVENUE
P. O. BOX 30040-00100
NAIROBI

Ref. No.....**MOE.HQS/3/6/36**

Date.....**11th July, 2016**

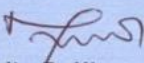
Dr. Evans Amukoye,
Ag. Deputy Director, Research & Development,
Kenya Medical Research Institute,
P. O. Box 54840-00200,
NAIROBI

**RE: AUTHORITY TO CARRY OUT NATIONAL ROLL-OUT OF "I'M A
SCIENTIST" PROJECT IN SCHOOLS**

Authority is hereby granted for you to carry out national roll-out of I'm a Scientist project in Kilifi, Nakuru, Kisumu and Nairobi counties. It is noted with satisfaction that the activity will have no cost to the teacher while the pupils and institutions stand to benefit.

You are expected to maintain a high level of professionalism. You will need to liaise with County Directors of Education and the Sub-County Directors of Education. A detailed report will be required after the activity.

This authority is valid up to 31st July, 2017.


Dr. Belio R. Kipsang, CBS
PRINCIPAL SECRETARY



Additional letter for approval and support from the Kilifi County Director of Education

**MINISTRY OF EDUCATION
(State Department of Basic Education)
KILIFI COUNTY**

Telephone 041-7522432
EMAIL: cdekilifcountykilifi@yahoo.com
Fax no. 7522432
When replying/telephoning quote



County Education Office
P O Box 42 -80108
KILIFI

Ref: KLF/CDE/R4/1/185

32RD September, 2016


TO WHOM IT MAY CONCERN

RE: AUTHORITY TO CARRY OUT NATIONAL ROLL-OUT OF "I AM A SCIENTIST PROJECT" IN SCHOOLS

The bearer of this letter, Dr. Evans Amukoye, from Kenya Medical Research Institute – Kilifi has been permitted to carry out the above project in the schools named below within Kilifi County.

1. Bahari Girls
2. Chasimba Secondary School
3. Chumani Secondary
4. Kilifi Township Secondary
5. Lutsangani Secondary
6. Majaoni Secondary
7. Msumarini Secondary
8. Shariani Secondary
9. Ganze Boys Secondary
10. Jaribuni Secondary
11. Katana Ngala Secondary
12. Ng'ombeni Secondary
13. Mnarani Secondary
14. Ganze Girls
15. K. P. Senior

Kindly accord him all the necessary assistance he may require.


C. MWANYOHA NDEGWA
COUNTY DIRECTOR OF EDUCATION
KILIFI



Additional letter for approval and support from the Nairobi City County Education Department



Republic of Kenya

MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY State Department of Education

Telegrams: "SCHOOLING", Nairobi
Tel. 0202453699
Fax 2244831 Nairobi
When replying please quote

COUNTY DIRECTOR OF EDUCATION
NAIROBI COUNTY
NYAYO HOUSE
P.O.BOX 74629- 00200
NAIROBI

Ref: CDE/NBR/1/16/ (6)

Date: 14th September, 2016

The Principal
_____ School
Nairobi County

RE: KENYA MEDICAL RESEARCH INSTITUTE NATIONAL ROLL-OUT OF "I'M A SCIENTIST" PROJECT IN SCHOOLS.

Following the granting of authority vide letter **Ref.MOE.HQS/3/6/36** dated 11th July, 2016 by the Ministry of Education, the above started organization is allowed to visit schools in Nairobi County.

The purpose of this letter is to request you to give them the necessary assistance when they visit your school.

Kindly ensure that the programme does not interfere with normal school activities.

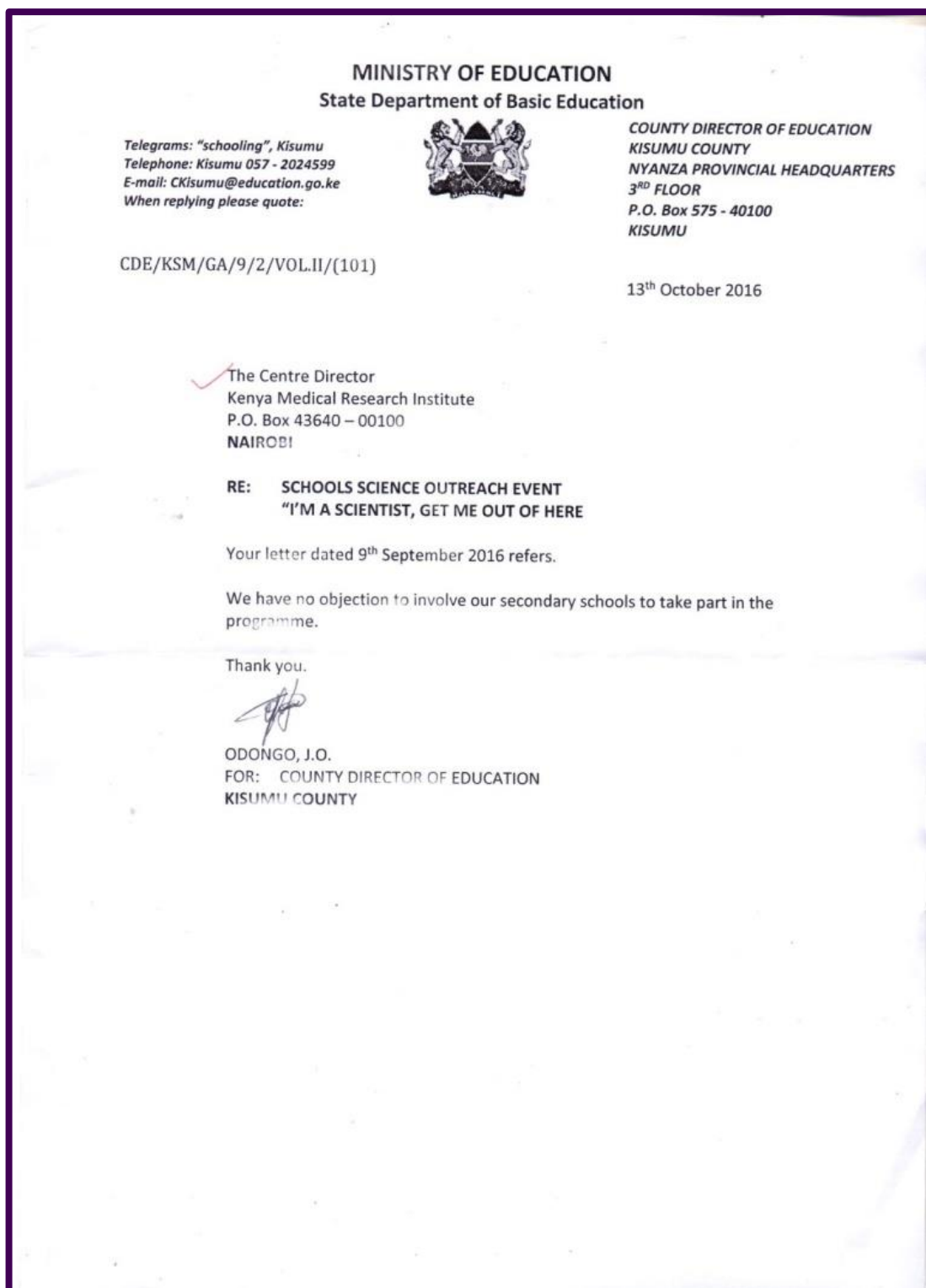
FLORENCE HUNGI

**FOR: COUNTY DIRECTOR OF EDUCATION
NAIROBI COUNTY**

Cc.
The Principal Secretary, MOE



Additional letter for approval and support from the Kisumu County Director of Education



Additional letter for approval and support from the Nakuru County Director of Education

MINISTRY OF EDUCATION
State Department of Basic Education

Telegrams: "EDUCATION",
Telephone: 051-2216917
Fax: 051-2217308
Email: cdenakurucounty@yahoo.com
When replying please quote
Ref. NO.
CDE/NKU/GEN/4/1/21 VOL.IV/135



COUNTY DIRECTOR OF EDUCATION
NAKURU COUNTY
P. O. BOX 259,
NAKURU.

6th October, 2016

To all
Sub-County Directors of Education
NAKURU COUNTY

**RE: NATIONAL ROLL-OUT OF "I'M A SCIENTIST" PROJECT IN SCHOOLS
KENYA MEDICAL RESEARCH INSTITUTE**

Reference is made to letter ref. MOE.HQS/3/6/36 dated 11th July, 2016.

The above organization has been authorized by MOE as per the above referenced letter, to carry out a national roll out of "*I'm a Scientist*" in Nakuru County for a period starting **January 2017** and ending **31st July, 2017**.

Kindly accord them the necessary assistance.

COUNTY DIRECTOR OF EDUCATION
NAKURU COUNTY

MOSES KIARIE
FOR: COUNTY DIRECTOR OF EDUCATION
NAKURU COUNTY

Copy to:

Principal Secretary
State Department of Basic Education
Ministry of Education
NAIROBI

Appendix II

Qualitative exploration of I'm a Scientist Get me out of here Kenya

Evaluation conducted by Jing Xu as part of her Master's dissertation with Oxford University

Fieldwork costs covered through WT 100602/Z/12/Z

Internship costs covered through Oxford University

Supervision: Vicki Marsh (1,2); Proochista Ariana (1); Alun Davies (1,2)

Fieldwork and tool development support: Nancy Mwangome (2); Grace Mwango (2); Betty Yeri (2); and Steve Adala (2).

1. Nuffield Department of Medicine, Oxford University, UK
2. KEMRI-Wellcome Trust Research Programme, Kilifi, Kenya

Summary report

Purpose of the qualitative exploration

Web analytics and teacher telephone surveys provided an understanding of teacher perspectives and on-line usage of I'm a Scientist Get me out of here Kenya (IAS). To support and add value to this, a qualitative study was conducted to gather a deeper understanding of participant experiences, impacts and perceptions of engagement through the online platform: "I'm a scientist, get me out of here." This study was conducted May-June 2017, three months after the implementation of IAS.

Methods

In this qualitative study: focus group discussions were conducted with 54 students across 6 schools; informal discussions were held with 6 teachers, the Kilifi school engagement programme team (SEP team) and the IAS R&D team, Bath UK; and in-depth interviews were conducted with 6 participating researchers. A framework approach was used to analyse the data. Ethical approval for the study was granted by the Scientific and Ethics Review Unit (SERU) at The Kenya Medical Research Institute (KEMRI), Nairobi, Kenya SSC2672.

Summary Findings

A full description of the qualitative component of the evaluation will be published in a peer review journal in 2018, but the findings are summarised below.

Structural challenges

Internet access, and access to up-to-date software and hardware severely restricted school and individual access to IAS. Students adapted to this through working in large groups and sharing computers.

Demystifying science and promoting science role-models

Despite the limited interaction in a virtual space, for students the experience of using the website demystified scientists and offered students a role model. This influence was likely to occur when students perceived commonalities with the scientists. While student career choices are likely to be influenced by a range of factors including family background, teachers, socio-economic factors, and the availability of jobs, this study was limited in its' ability to determine the explicit contribution of the influence of IAS on career aspirations. However, the data suggests that participation in IAS provided further encouragement to students who already had an interest in being a scientist to pursue such career path.

Researcher experiences

Generally researchers enjoyed participation and reported that it benefited their communication skills. Most scientists enjoyed being able to deliver science knowledge to students, and the design of IAS' 'students-led enquiry' helped them to develop an understanding of students and the broader community.

Often, some researchers felt uncomfortable and unequipped to provide accurate, non-judgemental and useful advice in the area of sexual and reproductive health. This points to a need for providing researchers with resources to support communication.

Suggestions for improving IAS

In the Kenyan context, the preparation of students is an important factor influencing students' experience of IAS, which leads to the substantial role of contact teachers in IAS. The activity could be improved through stronger collaboration/communication with facilitating contact teachers. This could be done through: facilitating initial teacher meetings/workshops; sharing the findings of this study with contact teachers; and supporting teachers to mobilise existing resources within the school (e.g. create private spaces for students to engage with scientists and encourage students to type down the questions themselves.) An important aim for strengthening communication with contact teachers is to help students understand the purpose of IAS. The SEP team could perhaps help teachers better understand IAS by being explicit about the benefits of each component in the programme. Especially for “reading profile” and “voting”, which were more likely to be missed out in some schools. Moving these sessions offline could be a potential solution. Whole school awareness of IAS could also be strengthened to gain the support from other teachers.

Provide support to scientists

As mentioned above providing more support for researchers in the area of sexual and reproductive help would provide them with confidence to respond responsively and in a non-judgemental way.

Suggestions to IAS development and Research team

The findings of the evaluation suggest that students have a substantial demand for engagement in the area of sexual and reproductive health (SRH) education. Though it could be argued that scientists in general may not be the most suited to provide young people with SRH information/advice, health researchers and participating clinicians/nurses on the other hand, in comparison to unequipped teachers, may be well suited for this role. Alternatively, collaborating with SRH education experts or organisations in holding special SRH events might be able to fulfil such needs.