

SENTINEL PhD Research Orientation Workshop at RUFORUM AGM, 2-6 December 2019, Cape Coast, Ghana

Workshop Report

David Ekepu (RUFORUM)



Facilitators:

1. Dr. Geoffrey Griffiths (University of Reading, UK)
2. Dr. Adam Devenish (Imperial College London, UK)
3. Prof. Majaliwa Mwanjalolo (Makerere University, Uganda)

Partners:



Funded by:



UK Research
and Innovation

Background

The SENTINEL project works to address the challenge of achieving Sustainable Development Goal (SDG) 2 (zero hunger), SDG 10 (reduced inequalities), and SDG 15 (ecosystem conservation) in Sub-Saharan Africa by conducting high quality interdisciplinary research while engaging research users in the process. RUFORUM is co-leading the capacity-building component of the project that forms an integral part of the Sentinel project with a particular emphasis on developing individual and organisational capacity of the core team (partner institutions from the UK and Africa) including staff and students within the RUFORUM network.

One of the key activities for RUFORUM is to provide and manage research scholarships for 27 PhD students to conduct research inline with SENTINEL thematic focus areas. This is supported by a focused training and mentoring programme for these students and additional researchers, to help them gain these ‘new’ (for them) skills and knowledge they need to tackle sustainable development challenges. The first call for proposals awarded 7 research scholarships, whereas the second call awarded 20 additional research scholarships. It was noted with some concern during the first call for proposals that the GTA students selected had topics that weren’t aligned closely enough to the Sentinel project, which made them irrelevant to addressing the relevant core project research objectives. Following the meeting of Sentinel Co-PIs and the Work package (3) team on capacity building in the UK, they agreed that RUFORUM organise a research orientation week for the second cohort of students to sharpen their proposals. To this note, a short questionnaire was sent out to Sentinel PhD students to ascertain, among other things, their research capacity needs.

Feedback from the student needs questionnaire indicated that PhD students have capacity needs in key skills areas including proposal writing, biodiversity assessment, ecosystem evaluation models, GIS and Remote Sensing. It is against this background that a research orientation workshop was organised during the RUFORUM Annual General Meeting in Cape Coast, Ghana on 2-6 December 2019 to address student research needs relevant to the SENTINEL project.

The specific objectives of the research orientation week were;

1. To develop student competencies in proposal writing.
2. To develop student’ research capacity in applying key research approaches/methodologies relevant to SENTINEL thematic areas.
3. To create a community of practice to strengthen networking and sharing of best practices in Sentinel thematic areas and interdisciplinary research.

Approach:

The research orientation week was held at the University of Cape Coast from 2-6 December 2019 alongside the 15th RUFORUM Annual General Meeting (AGM). The training was highly interactive by using case studies from research encompassing various research needs. The workshop focused on proposal writing and general research methodology, biodiversity assessment, geospatial techniques including GIS software and analysis, science communication and scenario building. Prof. Majaliwa Mwanjalolo (Makerere University), Dr. Geoffrey Griffiths (University of Reading) and Dr. Adam Devenish (Imperial College London) facilitated the training with support from Mr. David Ekepu (RUFORUM). The full list of participants is indicated in annex 1. The students also got an opportunity to participate in mentorship and additional research support was provided by sessions supported by Forum for Women Vice Chancellors in Africa (FAWoVC) and Global Open Data for Agriculture and Nutrition (GODAN).

Key highlights of the SENTINEL PhD Research Orientation Week

a) **Sentinel Proposal Writing:** The major activity was presentation of student proposals (“flash talks”). The following are the key observations:

- There was an improvement in student presentation skills over the course of the week;
- Some students still had issues with clearly linking their proposal titles to their research objectives;
- More details still need to be provided concerning materials and methods;
- Clear work plans needed to be developed;
- The focus is land-use/cover change, drivers and ecosystem services. There is need for the students to identify their personal contribution to the body of knowledge as they work together.



Student presents their proposal progress in a plenary session

b) **Scenario building**

- The students were introduced to the scenario building exercise which aims at projecting future land use based on past land cover transitions;
- Scenarios building is performed using both quantitative and qualitative approaches;
- After the introductory lecture, students were arranged in groups to discuss the various drivers of land cover change and in sub-Saharan Africa.



Dr. Geoffrey Griffiths delivers a scenarios building lecture



Students in a group session to identify drivers of agric. development

c) **Introduction to biodiversity assessment**

- Students were introduced to biodiversity assessment. They were taken through some of the core background literature relating to biodiversity and ecosystem services;
- More literature and support (in terms of accessing resources) to be provided to students on the “Slack” online platform. This platform has been suggested as an equitable tool for fostering interdisciplinary engagement and peer support.

d) Using R-Software

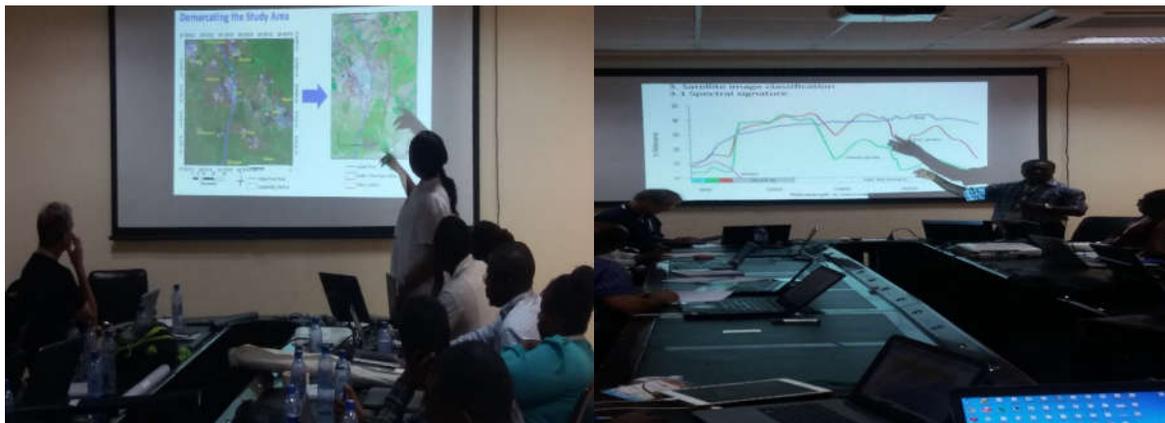
- Students were also introduced to the basics of R-Software using R-studio for data analysis;
- The session included a practical on the use of R-syntax and plotting charts;
- The facilitators encouraged students to visit R online communities for more tutorials and support, as well as using the “Slack” platform to ask questions and to trouble shoot.

e) Introduction to ILWIS, Image analysis; and Introduction to QGIS

Two presentation were made on 4th December 2019. The first presentation was on ILWIS and use of ILWIS for image analysis. The second presentation was on use of QGIS.

Students were:

- Introduced to the fundamentals of remote sensing and GIS;
- Shown how to download and install QGIS and ILWIS;
- Classify land cover (using unsupervised classification techniques) a provided Landsat image;
- The students were also demonstrated the potential of QGIS for the display and processing of digital map data in QGIS.

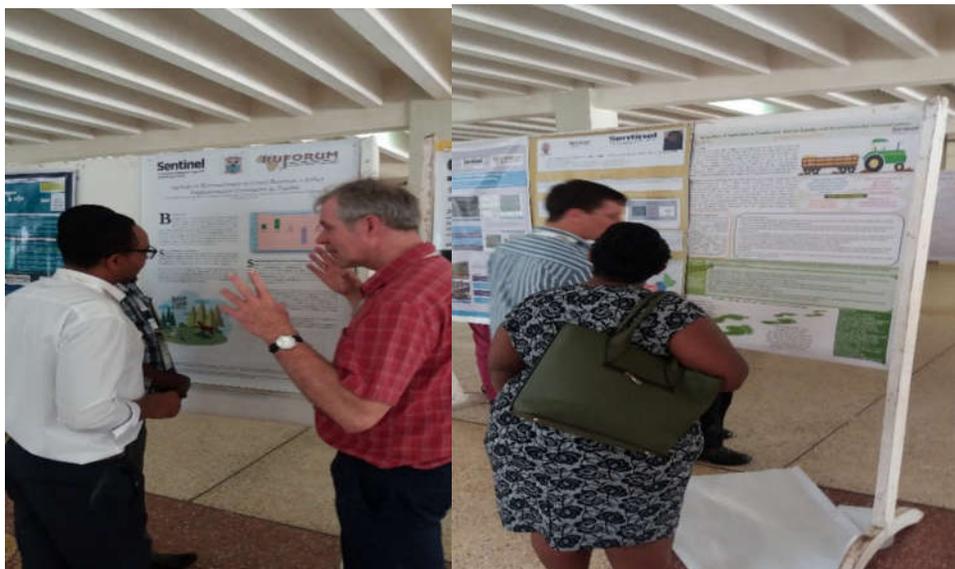


Student presentation on demarcating the study area

Majaliwa presents a lecture on image classification

f) Posters

- The facilitators and AGM delegates provided feedback to the student posters;
- Student were encouraged to reduce text and ensure systematic flow of the poster sections in order to improve clarity;
- One Sentinel PhD student (Loh Seyram) was awarded for presenting one of the best posters of the AGM. He emerged third after overall evaluation of posters displayed at the AGM.



Adam Devenish and Geoffrey Griffiths provide feedback to student posters at the AGM

g) Participating in scientific sessions of the AGM

- Some of the PhD students were selected to present their research topics in the scientific sessions of the AGM.
- They received feedback on their oral presentations. This builds student confidence in communicating scientific knowledge.

h) FAWoVC Mentoring session

Sentinel PhD students also participated in a separate mentoring session that was delivered by FAWoVC. FAWoVC is a Forum Women Vice Chancellors in Africa that supports professional and leadership development among early career scientists. Group mentoring was used in this session, where multiple experts (mentors) and multiple learners (mentees) worked in a group setting. Although structured as a group, learning is individual and each mentee worked on his or her own unique learning needs and development goals. The mentorship sessions helped to build and support effective relationships, provided objective guidance and feedback based on personal experiences, facilitated reflective thinking and learners were encouraged to take ownership of their own personal growth and learning.

i) Access to Open Research Resources for food and nutrition security

Sentinel PhD students were also provided research support in terms of Open Source Geospatial tool kits that were distributed to them by GODAN during the AGM.

Specific outcomes of the SENTINEL Workshop at the AGM

- Students refined their proposals based on feedback from the facilitators
- Students were provided links to free software (QGIS, R-studio and ILWIS) for practice.
- The students were added to a platform called “slack” where they can receive more relevant literature from facilitators and receive peer support. (see www.slack.com)

- A whatsapp group was created for SENTINEL PhD students and their mentors called SENTINEL-AFRICA to provide more opportunities for networking, knowledge and information sharing as well as peer support.
- An evaluation form was completed by the SENTINEL PhD students after the training. This contributes to tracking capacity development of the SENTINEL core team including PhD students.

Way forward

- Students need more mentorship support in qualitative research methods to triangulate their research work as all the three facilitators came from the natural science background.
- More training support is needed to build capacity of students to apply specific research methodologies as they develop their research topics. Geoffrey Griffiths to explore possibility of supporting a follow-up workshop on specific methodologies that will include PhD students.
- The SENTINEL project team should always invite PhD students to participate in knowledge exchange webinars.

List of participants who attended the Sentinel Side Event at the AGM in Cape Coast, Ghana

No	Name	Gender	Institution	Country
1	Hailu Gebremedhin Haftay	Male	Haramaya University	Ethiopia
2	Biratu Assefa Abera	Male	Haramaya University	Ethiopia
3	Loh Seyram	Male	University of Ghana	Ghana
4	Andargie Amsalu Abich	Male	Hawassa University	Ethiopia
5	Tassew M Biedemariam	Male	Mekelle University	Ethiopia
6	Argado Zenebe Shuite	Male	Hawassa University	Ethiopia
7	Jiru Dereje Bekele	Male	Jimma University	Ethiopia
8	Kabwata Kelly	Male	Copperbelt University, Zambia	Zambia
9	Basiru Adeniyi Okanlawon	Male	Jomo Kenyatta University of Agriculture and Technology	Kenya
10	Osei Paul	Male	Copperbelt University, Zambia	Zambia
11	Tafere Mulu Solomon	Male	University of Gondar	Ethiopia
12	Kusiima Kaheesi Samuel	Male	Makerere University	Uganda
13	Baidoo Jacqueline	Female	University of Ghana	Ghana
14	Nsemiwe Nsama	Female	University of Reading	UK
15	Denga Rudo Violet	Female	Copperbelt University	Zambia
16	Munyaka Justin	Male	Copperbelt University	Zambia
17	Mashandi Fridah	Female	University of Zambia	Zambia
18	Petan Hamazakaza	Male	Copperbelt University	Zambia
19	Adam Devenish	Male	Imperial College London	UK
20	Geoffrey Griffiths	Male	University of Reading	UK
21	Majaliwa Mwanjalolo	Male	Makerere University	Uganda
22	Anthony Egeru	Male	RUFORUM	Uganda
23	David Ekepu	Male	RUFORUM	Uganda
24	Evelyn Aguti	Female	RUFORUM	Uganda