A VIRTUAL WORKSHOP ON THE USEFULNESS OF AgMOOCs FOR CAPACITY BUILDING OF SUB-SAHARAN AFRICA AGRICULTURE

Virtual Meeting REPORT

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1. Background

Several efforts have been made to build the capacity of Sub-Saharan Africa (SSA) agriculture by different actors over time. However, these are yet to meet the projected number and caliber of trained graduates. SSA is weak and uncompetitive for lack of capacity in terms of infrastructure, skills, and policy environment, among others. One of the approaches being pursued by the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) is to adopt the use of Information and Communication Technology (ICT) by universities in the delivery of agricultural teaching and learning in the form of Agricultural Massive Open Online Courses (AgMOOCs).

To tap into the potential usefulness of AgMOOCs, RUFORUM in collaboration with the Commonwealth of Learning (COL), is organizing a capacity building virtual workshop on capacity building on AgMOOCs for sub-Saharan Africa agriculture. This will be a 2 hour virtual workshop targeting important groups of RUFORUM stakeholders to discuss the development and implementation of AgMOOCs. The output from the workshop is expected to be **a report containing a proposal for the process of developing and delivering AgMOOCs in SSA region**

This capacity building workshop is organized by RUFORUM meant to supplement the efforts made by COL, which jointly with its partners, has been implementing the AgMOOCs project since 2015. Significant experiences and lessons have been generated from deployment of ideas and practices. More than thirty (30) AgMOOCs have been offered to 150,000 learners at the level of advanced undergraduate students, incumbent faculty, extension practitioners, and researchers under the umbrella of AgMOOCs. Through its programme of Lifelong Learning for Farmers (L3F) COL used the experiences to keep the doors of learning open during the first phase of the COVID-19 lockdown (April-June, 2020). During that period, COL's three AgMOOCs attracted nearly 32,000 learners, the majority from poor social and economic backgrounds. An independent evaluation of the AgMOOCs project in 2019 showed that diverse topics can meaningfully be covered offering reasonably good rates of success to learners. COL is partnering with RUFORUM to address the problem.

2. Justification for development of AgMOOCs for SSA

The joint initiative between RUFORUM and COL will include holding a virtual workshop, targeting development of AgMOOCs for SSA agriculture. This is necessitated by the challenges of conventional teaching and learning given the magnitude of disruptions caused by emergencies such as COVID-19. There are a number of opportunities provided by AgMOOCs, which makes it a suitable approach for today's education.

2.1 Challenges of conventional teaching and learning

African universities have been discussing the challenges of conventional teaching and learning while proposing much greater uptake of online learning more than two decades ago, when the first on-line university in Africa was founded. Even as the quality, accessibility and affordability have improved in the past decade, there was still reluctance to adopt online learning. Perceived

threats to jobs, lack of skills and exposure and traditional perceptions of the role of a lecturer as the best mechanism for knowledge sharing and facilitating learning were some of the factors discouraging uptake. This was compounded by the lack of investment by universities in providing the infrastructure, policies and the training necessary to support online learning.

The COVID-19, has changed these perceptions. It has revolutionized thinking on the higher education space in SSA and indeed worldwide. Universities across the continent have been finding ways to keep their students learning despite the closure of campuses. This has, of course, been made very difficult by lack of access to equipment and reliable internet, especially in remote areas. Few universities have established Learning Management Systems, but with the newly available tools (e.g. Microsoft Teams, Zoom, and improved Skype, Google Classroom and Google Hangouts, among others), proving that it is possible for any university lecturer to reach students who have access to a computer and to internet; the paradigm is shifting in favor of more online teaching and learning while still maintaining some opportunities for physical contact. Where computers are scarce, much can even be achieved with smart phones and WhatsApp. But there remains the issue of the "last mile"; majority of students have no access to internet signal, or no computer or smart phone. With this threat of COVID-19, these students require more traditional support of distance learning in the face of measures to combat COVID-19.

COVID-19 has underlined the limitation of conventional teaching and learning whilst highlighting the importance of online teaching and learning. Most Universities in SSA have had to go to extraordinary lengths to ensure that their students, especially those living in remote areas, are able to access materials online which would not otherwise be done through conventional teaching and learning. Many institutions in SSA are still in partial close-down and the normal pre-COVID-19 state of affairs is likely to take a long time to be realised. This has further worsened the situation affecting rapid skilling of students, employed professionals as well as aspiring farmers. According the IMF World Economic Outlook (October 2020), easing the lockdowns can lead to partial recovery but economic activity is likely to remain subdued until health risks abate. With the pertaining situation, the limitation of the conventional teaching and learning approach becomes clear and the need for online teaching and learning is crucial. Moreover, it has emerged that partnership and sharing of resources is important for success since no university is self-sufficient in view of the COVID-19 generated challenges.

2.2 Opportunities provided by AgMOOCs

Online teaching and learning provides great opportunities for education in terms of access and quality. To meet the projected target of graduates and postgraduates in agriculture, the use of technology is critical. AgMOOCs could provide excellent opportunity to obtain knowledge in very different ways, while extending agricultural education to masses in a self-directed learning manner. AgMOOCs have the potential for; increased university visibility, increased access to lifelong learning, international trend, free education to all, improved learning outcomes for students, development of new teaching strategies, and development of new technologies for

learning. The collaboration between RUFORUM and COL on AgMOOCs will offer a number of opportunities to the beneficiaries including the following:

- Ease of access to learning platform, providing free or low-cost content of scalable Agricultural courses;
- Access to high-quality agricultural education to students, even in the most underserved regions of the continent;
- Expertise in online agricultural course development management including assessment and certification system (microcredentials including those issued using the Blockchain);
- Pedagogical expertise for staff training and to provide executive level engagement on sensitisation; and
- Collaborative learning and experiences sharing.

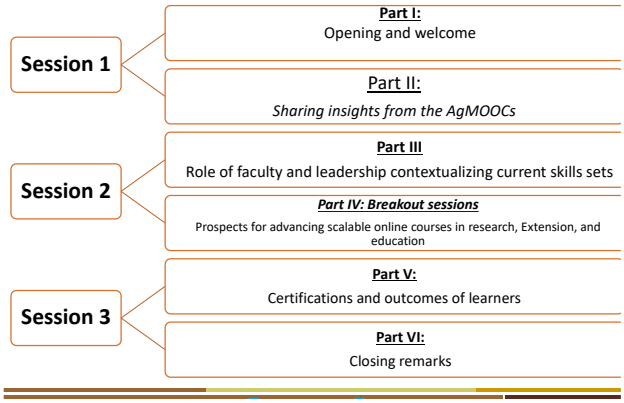
The COVID-19 pandemic and associated lockdown has negatively impacted food and agriculture in SSA which has had some weaknesses in recent times. This work is planned to help University experts and partners to appreciate the opportunities AgMOOCs can potentially change the way agricultural education is delivered and how university can be mobilized to effectively adopt AgMOOCs and Lifelong Learning for Farmers in general.

3. About the Virtual workshop

On May 13, 2021 a 2-hour virtual workshop was convened on to discuss the development and implementation of AgMOOCs in SSA. Bringing together different stakeholders, the platform was used to raise awareness and facilitate joint learning of opportunities and challenges of AgMOOCs based multi-level capacity building.

The outcome of the meeting will provide input into the detailed planning for delivery of courses for capacity building of SSA agriculture. More importantly, enable participants to provide input into the next phase of the programme, focusing on skills enhancement for staff and students.

Workshop sessions: The workshop was organised along three session with 5 parts altogether as indicated below.



SESSION 1: Part 1 was meant for the opening and welcome and ***Part II*** provided insights from implementing AgMOOCs over the last six years while comparing other relevant online learning technologies and to evolve a delivery strategy that includes online with offline mentoring. The session also considered how the marginalized can be reached without internet and/or with a basic phone.

SESSION 2: ***Part III*** focused on the role of faculty and leadership of academia in contextualizing current skill sets towards advancing scalable AgMOOCs**.** ***Part IV*** was meant to give the participants an opportunity to engage further on the prospects for advancing scalable online courses in research, extension and education. The discussion also included identifying capacity building and training needs of academic staff to offer online learning.

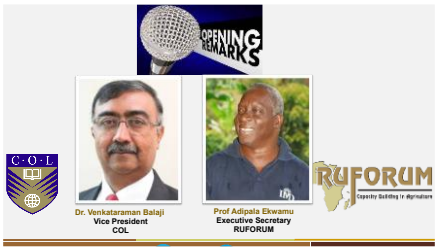
SESSION 3: ***Part V*** was dedicated on exploring the ongoing shift towards cross-border certification. Participants were taken through the issue of micro qualifications and how aggregation of certificates can lead to crossing national borders micro-qualifications and other related issues. ***Part VI*** was on closing remarks.

The coalition of partners will provide inputs in developing solutions to the challenges of conventional teaching and learning while exploring the Opportunities provided by AgMOOCs. As an output of the workshop, a proposal for the process of developing and delivering AgMOOCs in SSA region will be developed.

4. Some major highlights and outcomes of the Virtual meeting

This report provides some major highlights and outcomes from the meeting. The full recording of the meeting can be accessed through this link (Click here)

SESSION 1, Part I: Setting the scene and welcome



Dr. Venkataraman Balaji (Vice President, COL) and Prof Adipala Ekwamu (Executive Secretary, RUFORUM) gave their officially opened the meeting and gave their opening remarks.

In his opening remarks **Dr Balaji** shared the origin of the Commonwealth of Learning (COL) as founded by the Intergovernmental organisation and hosted by British Columbia in Canada as a UN organisation. It is operating in 18 countries in Sub-Saharan Africa and has interest in Agriculture since 1999. COL is building online learning that are open for Continuous Professional Development (CPD), thus the MOOCs. The MOOCs works started in India as a consortium and it is still Anchored there but with an interest to move the experience into Sub-Saharan Africa.

He indicated that less than 1 % of global MOOCs are on agriculture and food security. There is still a long way to go. The expectation is to be the prime mover of the MOOCs in SSA to help overcome the challenges of food security.

Setting the scene by Prof Adipala Ekwamu, RUFORUM Executive Secretary, during the virtual workshop on capacity building of Sub-Saharan Africa agriculture in the education context

1. *Thank you, our facilitator, Dr. Hlami Ngwenya, from the University of the Free State in South Africa; Thank you our distinguished Panelists; and Thank you Participants: I well come you to this virtual workshop on capacity building of sub-Saharan Africa agriculture which will focus on the usefulness of Agricultural Massive Open Online Courses (AgMOOCs). This virtual workshop has been made possible by the support of the Commonwealth of Learning (COL) and I Thank the Management of COL, represented by Dr Venkataraman Balaji, who is the Vice President of COL. We deeply appreciate the work you are doing to support SSA agriculture.*
2. *We know that several efforts have been made to build the capacity of Sub-Saharan Africa agriculture by different actors over time. However, we have not yet met the needed critical number and caliber of trained graduates. SSA is weak and uncompetitive for lack of capacity in terms of infrastructure, skills, and policy environment, among others. One of the approaches being pursued by RUFORUM and its partners is to adopt the use of Information and Communication Technology (ICT) by universities in the delivery of agricultural teaching and learning in the form of Online Courses. This virtual workshop, which came as a result of collaboration between COL and RUFORUM, is very important and is targeting leaders within African Higher Agricultural Educational institutions in order to rally support for development and uptake of Agricultural Massive Open Online Courses (AgMOOCs).*
3. *Being a network of 129 Universities in 38 African countries with a focus on developing responsive capacities and interventions to improve livelihoods in Africa, we have been holding several convenings that reflect on various facets of higher education, agriculture, and food security. This virtual workshop is certainly one of these convenings which will allow us engage with various stakeholders to discuss the development and implementation of AgMOOCs. The various partners attending this workshop will provide useful inputs in developing solutions to the challenges of conventional teaching and learning while exploring the Opportunities provided by AgMOOCs.*
4. *It is our expectation that as an output of the workshop, a proposal for the process of developing and delivering AgMOOCs in SSA region will be developed and agreed upon with guidance by the facilitator, Dr. Hlami Ngwenya from the University of the Free State in South Africa. I know that the two-and-a-half-hour practice- oriented workshop has three sessions to provide a platform for raising awareness and facilitating joint learning of opportunities and challenges of AgMOOCs based multi-level capacity building*
5. *Let me end by thanking our Facilitator and Panelists for today, and also you participants: We greatly appreciate your participation. I hope that you will be able to agree on the best way forward in advancing the implementation of AgMOOCs as means of building capacity in our African universities. Thank you*

SESSION 1, part II: Insight from COL's AgMOOCs implementation

Dr. Moses M. Tenywa (Education Specialist for Agriculture & Livelihoods, COL) provided insights from implementing AgMOOCs over the last six years while comparing other relevant online learning technologies and to evolve a delivery strategy that includes online with offline mentoring. In his presentation, he touched on the following:

What is AgMOOCs?

- It is designed for, in theory, an unlimited number of participants and as such is related to the scalability of the education service provider
- It requires no entry qualifications.
- It is accessible at no charge
- All elements of the course provision are provided fully online.

*"It is called **Ag**MOOC because it is the Massive Open Online Courses that focuses on **Ag**riculture and Food security content"*

Food & Ag Sector in MOOC space

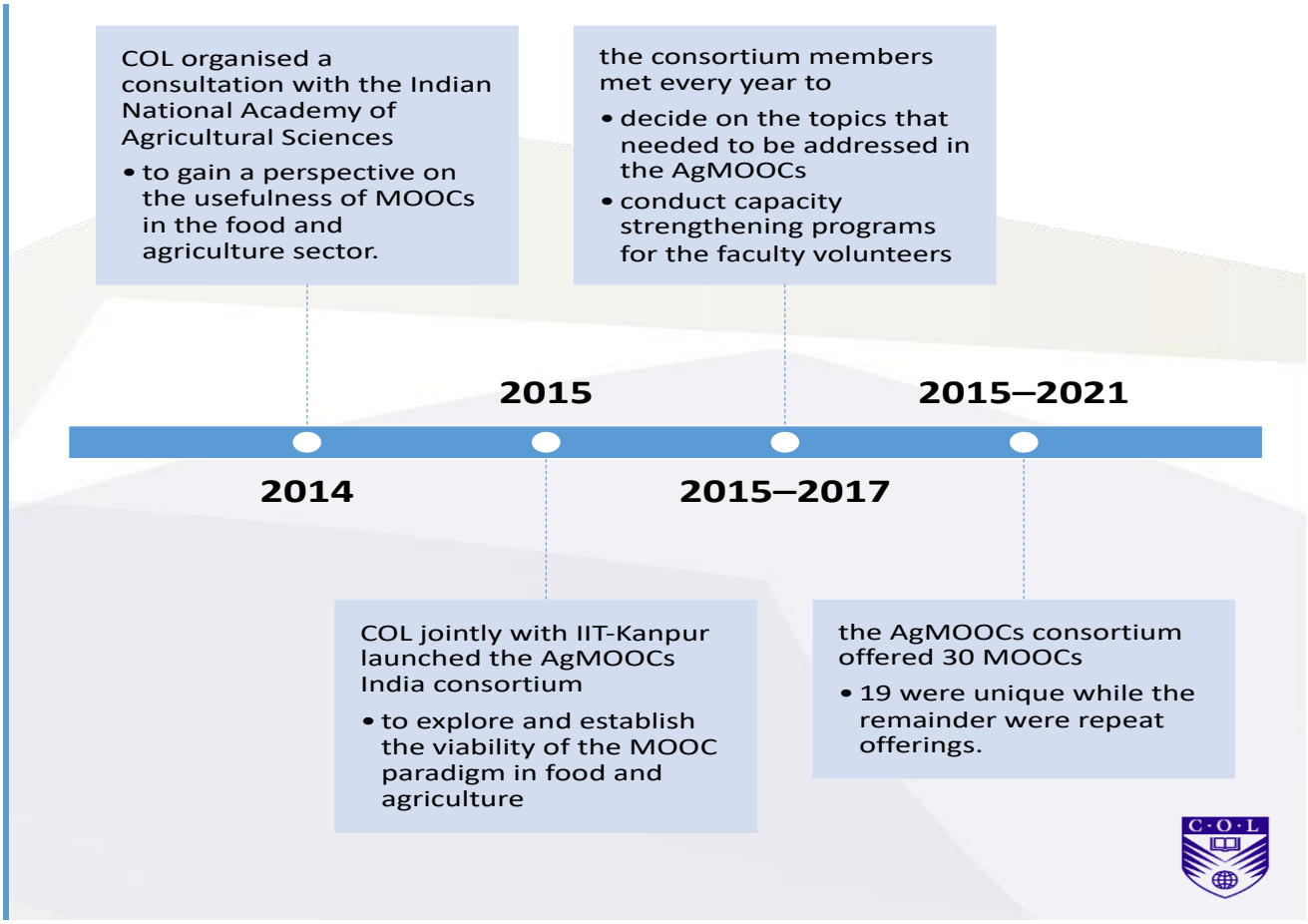
- In the global space, the presence of Ag related MOOCs is STILL limited
- According to the Class Central Portal (as of May 2021); only 276 out of 30,000 MOOCs catalogued relate to Ag topics (less than 1%).
- COL pioneered MOOCs
- COL organised a workshop with India National Academy of Ag Sciences in 2014 on MOOCs.
- Launched AgMOOCS Consortium in early 2015. See more MOOCs Policy Paper

The human capacities gap identified

- Training
  - research professionals in emerging topics
  - extension personnel to solve new problems in the field quickly
  - personnel in agro-industry and in agri-businesses
  - farmers in emerging techniques in agricultural production, protection, and processing

Evolution of AgMOOCs

The image below summarizes COL's perspective on the evolution of AgMOOCs.



Examples of existing MOOCS

www.agmoocs.in

AgMOOCs- key data

- Years active: 2015-current
- Number of unique courses: 19
- Number of offerings: 30
- Number of registrations: 120,000 (about)
- Certification percentage: ~23%
- Course under development: "Treatment of infertility in cattle"
- One of less than 10 MOOCs globally on veterinary topics
- Platform: MooKIT, Open Source designed and developed by Indian Institute of Technology, Kanpur (www.iitk.ac.in)

Certificates

- The courses and certification were offered free of cost, with the certificates carrying high credibility as they were issued by the Centre for Development of Technical Education, IIT Kanpur and COL

Promotion of AgMOOCs

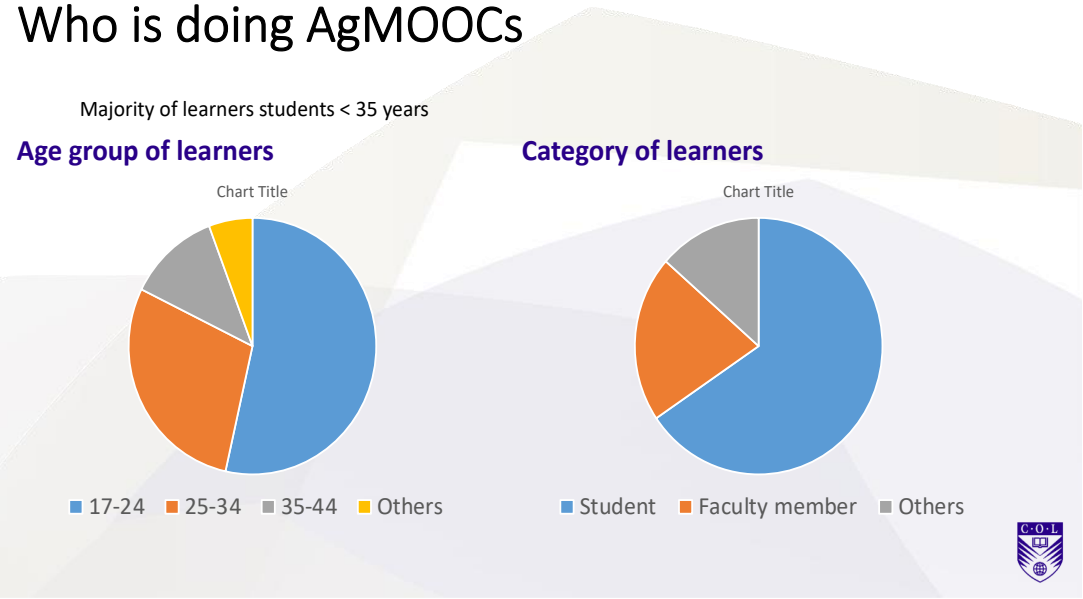
- A key activity in the consortium was to **promote the courses through the multiple channels**.
- **Standard digital media channels were used extensively**, including email and social media campaigns.
- Team members at IITK would also **main out announcements and posters to hundreds of campuses**, especially those located in the northern regions of India which were mostly rural.
  - Additionally, IITK personnel occasionally visited some of the campuses to conduct special orientation sessions.
  - Example: IPM MOOC in April 2020 had 11,978 registrations in a single course

Experiences of COL so far with MOOCs

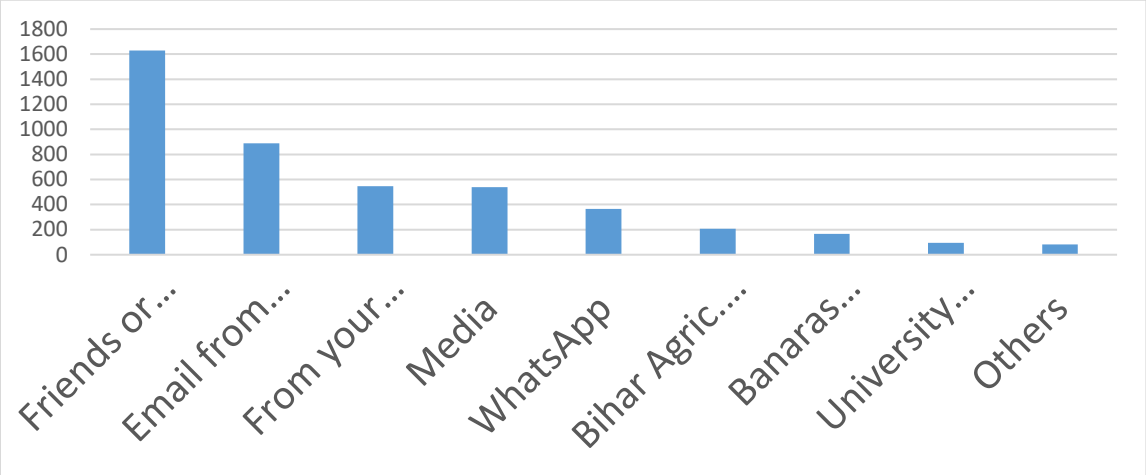
- COL has been a pioneer in offering MOOCs to learners in developing countries
    - www.mooc4dev.org
- Highlighting the policy implications of MOOCs in developing countries back when the MOOC was an emerging practice.
- Our AgMOOCs activity remains a global pioneer as well, as there are fewer than 300 MOOCs in Agriculture out of nearly 30000 catalogued in Class Central.
- Our work with Coursera, Google and Udemy is aligned with our own mission to increase access to high quality learning materials.
  - We are thus offering multiple ways for learners in member countries to increase access to quality learning.

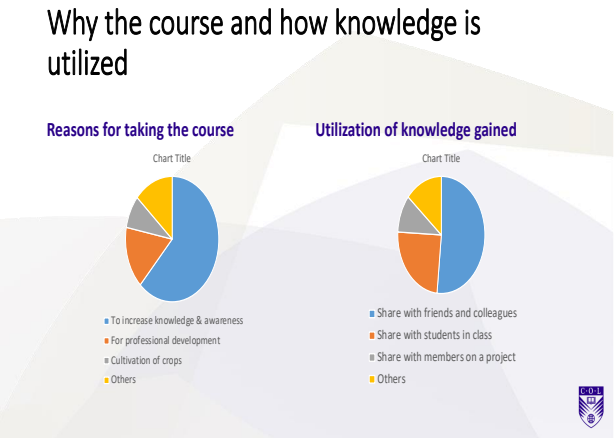
Feedback of AgMOOC Learners (PHASE 10)

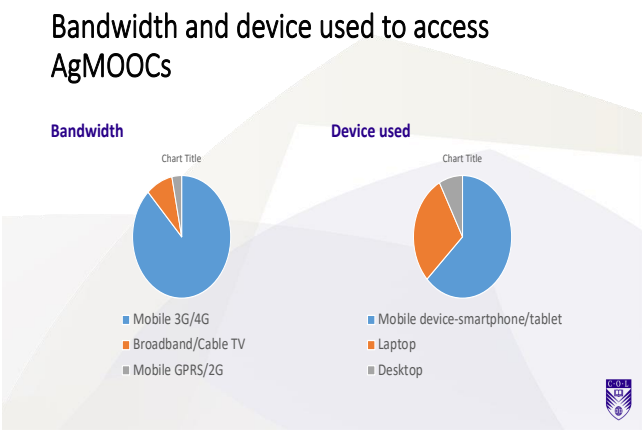
- Who is doing AgMOOCs?
  - Majority of learner students < 35 years

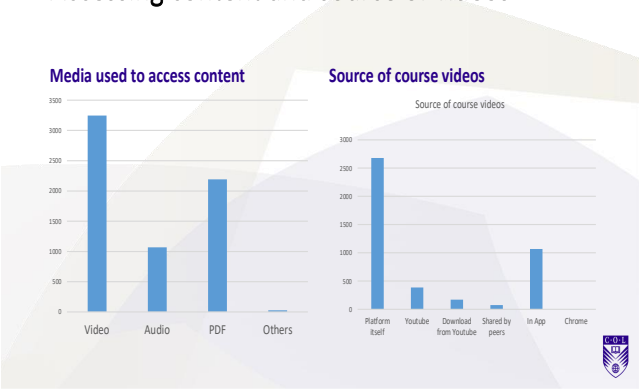


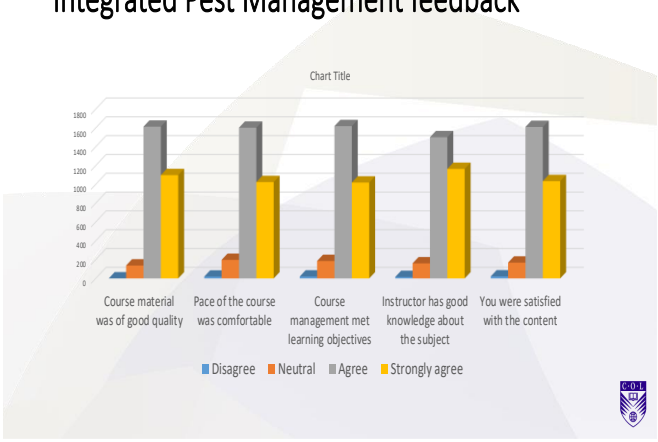
- What is the source of information-awareness of the course?











SESSION 2, part III: The Role of faculty and Leadership

Prof. Paul Birevu Muyinda (Makerere University, Uganda) made an input presentation on the role of faculty and leadership of academia in contextualizing current skill sets towards advancing scalable AgMOOCs**.**

He started his presentation by citing some quotes

Some Quotes from Mak ODeL Evaluation

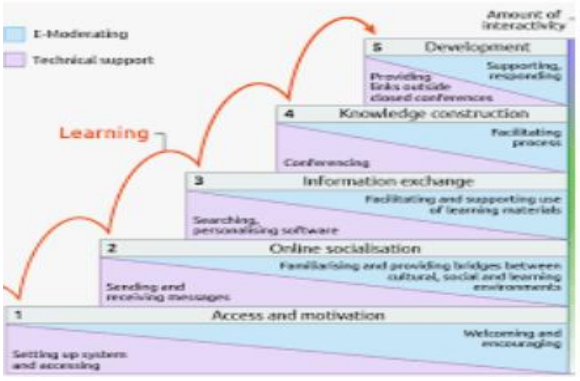
"I did what my lecturers told me to do. When they asked us to meet in class, we went. When they asked us to do online activities, we did"
(Student A– Student of Bachelor of Commerce)

"It is costly and tiresome to sit behind Zoom lectures from 8am to 5pm five days in a week. This online learning thing is impossible".
(Student B – Student of Education)

"It was my first time to learn online. I didn't know what to do"
(Student C – student of B.Ed.)

"My course cannot be taught online. It requires real-life field experience. So I did not bother undertaking your training"
(Teacher A – A faculty from CAES)

"Online teaching freed my time. I uploaded content for the learners to serve themselves as I went to do my other academic engagements"
(Teacher B – A faculty from CEES)



Interpretations from the quotes

Quote	Meaning
"*I did what my lecturers told me to do. When they asked us to meet in class, we went. When they asked us to do online activities, we did*".	Teachers still play a very important role even in online teaching and learning Success of online teaching and learning depends on the teacher's acceptance and adoption of the same Once teachers adopt online learning, learners follow suite
"*It is costly and tiresome to sit behind Zoom lectures from 8:00am to 5pm, five days in a week. This online learning thing is impossible*".	Teachers find it less demanding to mimic classroom teaching practices in online learning environments When classroom practices go to online classes, dividends of online pedagogy are not attained There was limited capacity for asynchronous online facilitation There were no instructionally sound courses on the LMSs The cost of Internet will make online learning unaffordable
"My course cannot be taught online. It requires real-life field experience. So I did not bother to undertaking your training"	This teacher lacks capacity of harnessing the affordances of different online teaching and learning technologies This teacher is not aware of the concept of authentic learning This teacher is immersed in the convention teaching methodologies. He needs to be 'cajoled' to partake of training on online pedagogy
"Online teaching freed my time. I uploaded content for the learners to serve themselves as I went to do my other academic engagements"	This teacher denied learners of the badly needed learner – teacher interaction. Without this interaction learning is not meaningful and learners can resent online learning This teacher was not mindful of the pedagogy of online facilitation
"It was my first time to learn online. I didn't know what to do. Besides I didn't have necessary gadgets"	Fear of the unknown Such a learner will resist change Such a learner needs to be scaffolded for online learning as per Gilly Salmon's guidance Favorable policies needed

Capacity building and training needs

Soft/People Needs

- Mindset change/motivation to adopt transformative pedagogies
- Teaching and learning technology proficiency
- Online facilitation pedagogy
- Online instructional design and content development
- Learner scaffolding for online learning

Hard/Institutional Needs

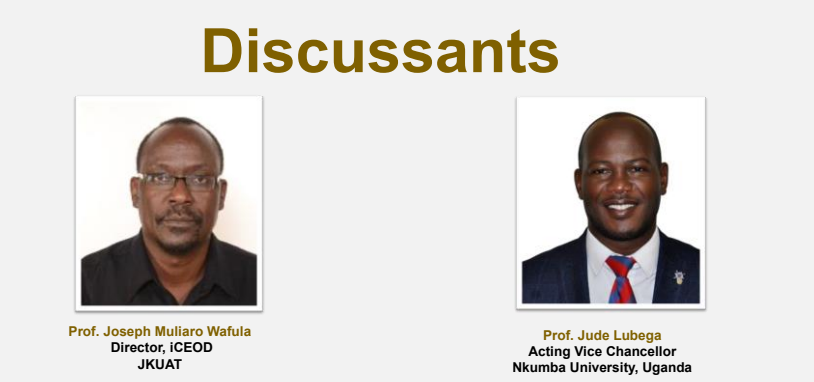
- Favorable policies – teaching policies, assessment, technology acquisition and use, etc.
- Infrastructure – multi-media production, access devices, LMSs, wire-less and wire-full network
- Connectivity – Internet presence and strength, data

Feasibility of AgMOOCs

- My Definition of MOOCs: Self-service online learning resources
- Are AgMOOCs feasible – No/Yes
- No, if they are not contextualized and put in media forms that are for the 'last mile' farmer
- No, if the 'last mile' farmer has no facilitating conditions to access and utilize the AgMOOCs
- Yes, if they are not contextualized and put in media forms that are for the 'last mile' farmer
- Yes, if the 'last mile' farmer has facilitating conditions to access and utilize the AgMOOCs
- Increased demand for agriculture extension services
- Decentralization has brought extension workers closer to the 'last mile' farmer
- However extension worker services are rare and expensive to the 'last mile' farmer
- 'Last mile' farmers need education on:
    - Right quality of planting materials; Right way of planting
    - Rejuvenating soil fertility through fertilizer application
    - Weed and pest control
    - Post-harvest handling, Marketing
- Well-developed and accessible on and offline multimedia-based MOOCs on these come in handy

Discussants' input

After the presentation by Prof Muyinda, two discussants were invited to respond and share their own experiences in relation to the role of faculty and leadership in scaling online courses.



Prof Mafula's Observations from

- MOOCs are very good way of opening knowledge and increasing knowledge products
- It gives opportunity to explore other ways
- To encourage people who might be doubtful to try and harness the knowledge
- What remains a concern is the big question "***Who owns the content***"? That is a deterrent for many people to openly share their knowledge on these platforms.
- The most important thing is the value of the content that is passed on through these platforms
- Are we getting the best of the content and as timely? When we deal with anything called open, there is some scepticism on the value of it. People associate value with something they can pay for.
- We want to encourage the knowledge providers to share the

The role of academic staff in promoting online training

- They are the ultimate trusted conveyer of this information to the public.
- They need to experiment with the new way, and not become the stumbling box for people to migrate into these technologies

Prof Lubega's observation

In his observation and his experience, Prof Lubega explained what MOOCs are and the different types.

- **What are MOOCs?**
  - MOOC is a type of teaching that is different from the
  - It is dynamic in nature and easily accessible. They are open and can be taken at any time by the learners.

- **There are two types of MOOCs**

  C-MOOCs - Connective Massive Open Online Courses are based on the learning theory of connection. Here students can connect with each other using digital technologies. E.g. the wikis, the blogs etc.

  X-MOOC - Extended Massive Open Online Course- they are based in the traditional classroom structure, including the content, the quizzes etc. They are common today

The best practices and what is required

MOOC are good for building capacities across the different disciplines

- You need to have appropriate policies
- Culture change within the institutions- staff members need to understand that these can supplement the traditional way of teaching.
- Appropriate Infrastructure
- The production of the MOOCs
  - Different types of professionals that develop quality MOOCs
  - E-pedagogy and quality assurance
  - The financial and workload
  - The delivery platform
  - Copy right issues and intellectual Property rights
- Understand the motivation and purpose
  - It is for a purpose of life lone learning or commercial
- AgMOOC are specifically targetting the agriculture community.
- Institutions need to be innovative to address the issues of infrastructure

What tools exist for practical oriented learning?

SESSION 2, part IV: The prospect for advancing Online Courses

In this session, the participants were asked to engage on the prospects for advancing scalable online courses in research, extension and education. The discussion also included identifying:

Competencies required by different practitioners beyond what was learnt at University and relevant to scaling

Competencies required by Research practioners

What competencies would be required by research practitioners to leverage on MOOCs to improve research efforts?

- Instructional design
- Data management
- Consider the target group
- Being pro-change
- Need to have data management plan development skills
- Improvements on power supply
- Statistical tools
- Online facilitation
- Collaborative tools usage
- Internet knowledge
- Use of Google forms for online survey
- Modelling and GIS
- Packaging their outputs in simplified manner for use by a varied audience
- creative commons laws
- Artificial intelligence
- 3D simulation
- Passion, motivation and commitment
- Collaborations
- Being innovative and accommodative
- Simulation skills
- Assessment skills
- Data analysis and capture
- Be well skilled in ICT especially GIS and data collection tools and analysis

Competencies required by Extension practioners

What competencies would be required by Extension practitioners to leverage of MOOCs to improve extension service delivery?

- Telephone conversation with farmers
- Communication and demonstration skills
- Communication skills and etiquette
- Both audio and video conversations can be deployed.

- Digital fluency
- Video manipulation
- Be able to effectively communicate with technicians on the field and able to delegate tasks
- IT Competencies particularly modelling and GIS
- The use of platforms such as survey monkey for data collection
- Digital literacy to enable them to access and use available resources
- Participatory research strategies
- Use smart phones to get to the farmers
- Capacity in video production
- Using participant networks for distributed data collection.
- Need to be flexible in the ways of extending their services such as use of programmed drones to collect and disseminate data
- Use of drones can also help
- Understand production environment
- They need to be trained by experts in this area and they need to believe in positive change

Competencies required education practioners or academia

What competencies would be required by education practitioners /academia for advancing scalable online courses in education?

- Soft skills (Teaching and learning proficiency and be able to use the
  - Online facilitation pedagogy is very important to be able to design online learning
- Hard capacities include favorable policies to (technology acquisitions)
  - Infrastructure for multimedia production
  - Internet connectivity
- Development of appropriate online teaching materials
- Course design and suitable instructional strategies to engage learners online.
- IT skills should be initiated to them very well.
- Course design and suitable instructional strategies to engage learners online.
- Communication with different communication tools - social media, email
- Training on different online tools and technologies to meet specific needs of the learners
- Creativity, attitude and flexibility
- Creativity in preparing the course materials and in delivering the course
- Learning by doing: more videos to demonstrate what they are talking in course,
- Access to strong and stable Internet connections
- Cybergogy and heutagogy are new terms and important to implementing online learning. Otherwise, the face-to-face mode of learning has left us stuck in pedagogy and andragogy
- Competence in student-centered pedagogy is a pre-requisite for successful online teaching.
- In addition to computer skills, one has to creative /have the right sense of imagination
- Learning-centred pedagogy, too

SESSION 3, part V: The Certification

Dr. David Porter (Senior Advisor Higher Education, COL) gave a presentation about ongoing shift towards cross-border certification. He presented about micro qualifications and how aggregation of certificates can lead to crossing national borders micro-qualifications and other related issues.

Micro-credential is "*a representation of learning. Awarded for completion of a short program that is focused on a discrete set of competencies (i.e skills, knowledge, attributes), and is sometimes related to other credentials*" Source" Pichette et al (2021) Making sense of micro credentials

He challenged the participants to think of Old school and New school

Signature features of Micro- credentials system

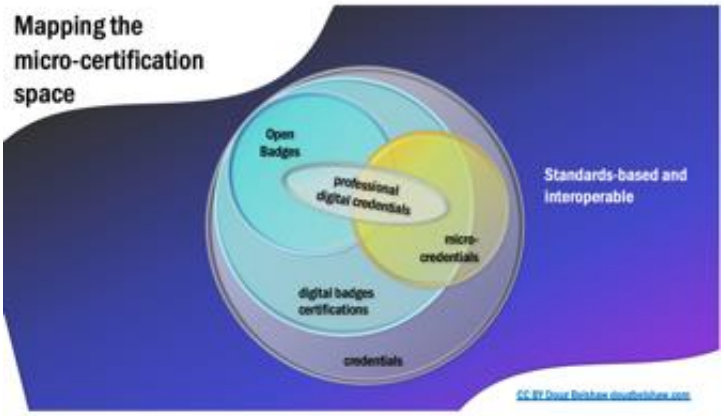
- Narrow scope
- Short completion time

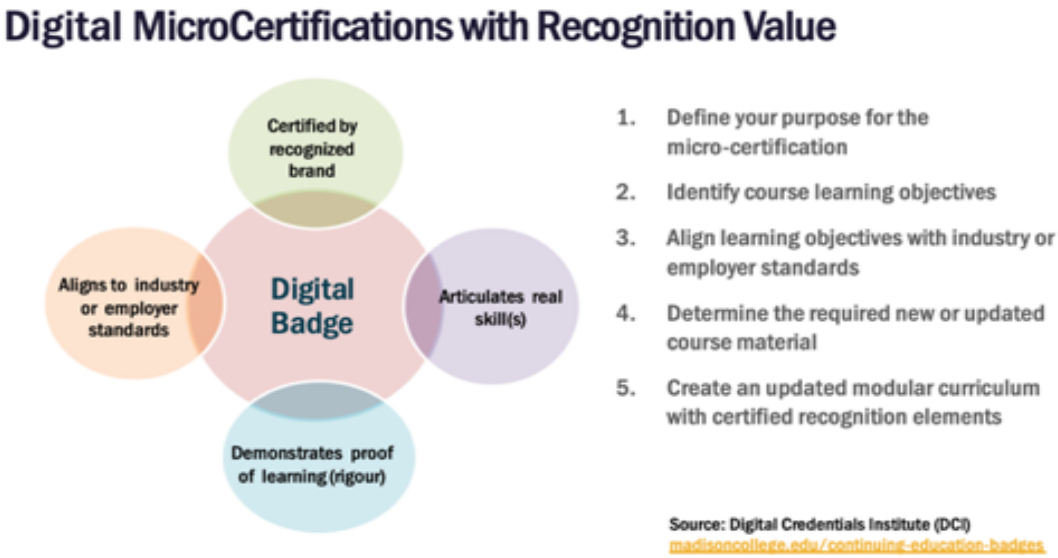
There is a need to recognize the signals of change and become more responsive and open to modular design for learning and recognition.

He also shared examples of micro credentials in different contexts including:

- University students
- Building skills for job readiness
- Validation of skills
- Workplace learning
- Workplace qualifications
- Life -long learning

Rethinking the dimensions of learning recognition There is a need to rethink the recognition of dimension of learning





- Agree commonly accepted principles and specifications for the micro-certification space
- Examples of existing micro-credential systems for gardening, farming and agriculture from the USA and France
- Plan for a modernized credentialing infrastructure
  - The Digital Credential Revolution in Higher Education
  - Blockchain based digital credential award and verification systems

Discussant for micro- learning and certification

As a discussant **Dr. Precious M. Gawanani** (Director of Open and Distance Learning, LUANAR, Malawi) responded to the presentation on certification. He shared his observations and his own experiences.

Micro-credentials in Malawi

- This is new in Malawi and the institution of higher learning is lobbying the National Body to look at the implications for the qualification framework.
- There are more programs that are on distance learning since Covid
- There a course on Designing and facilitating e-learning that was developed to help build capacity of the faculty members.
- The certification remains an issue. There are efforts to engage the authorities to recognise online learning as authentic
- Assessment was big when moving all the courses online. The academic rules and regulation had to be reviewed, to accommodate online assessments.
- Administering examination online also comes with some challenges. For example, how do you ensure that the one who is taking the exam is the authentical learner.

SESSION 3, part VI: The closing remarks

Dr Moses Tenywa gave the closing remarks on behalf of COL

- He thanked:
  - RUFORUM under the leadership of Prof Adipala.
  - The Moderator, the presenters, the discussants and all participants for their enthusiasm and rich contributions.
  - all those working in the background to make this event a success
- He expressed appreciation for the partnership with RUFORUM
- The next stage will be to produce a report and proposal on how the AgMOOCs should be delivered.

Dr. Florence Nakayiwa, Deputy Executive Secretary RUFORUM, Uganda gave the closing remarks on behalf of RUFORUM.

She thanked:

- The participants, the panelists for their contributions to the success of this excellent event.
- COL for this important partnership
- The RUFORUM Knowledge hub that is at the back end
- Dr Ngwenya for the brilliant facilitation.

She reiterated that:

- Going forward, there is a need to discuss further and come up with a proposal on how the MOOCs could be scaled and implemented in the context of Sub-Saharan Africa.
- The issues of credentialing is important
- There is new language that is being generated

5. Some emerging questions

Throughout the session, there were a number of questions and comments that were raised. These include:

Question: Are micro-credentials the same as the short professional courses?

Response: The Micro-credential courses are competence based from the design.

Question: We already talking about xMOOC and cMOOC but what is the difference between MOOC and AgMoocs. What is the difference between MOOCs and AgMOOC

Response: MOOC and AgMOOCs means the same thing but what AgMOOCs is one specialised on Agriculture. Let's take an example of a MOOC in Physics which could be names as PhyMOOCs. That is the difference but all of these falls under xMOOCs.

They can be the same, but micro-credentials are design as competency-based learning models, and not all short courses conform to this approach.

Micro-credentials certify identifiable skills and competencies that learner can demonstrate. It is not about course completion.

Comment: Conducive and enabling environment is very important both for the learner and the teacher- Occasionally during online delivery and learning, and even assessment or tests lots of background noise, disturbances, hostilities and disturbances of working from home

Comment: There is a need to be clear about the licencing regime (e.g. whether it is a creative common)

Comment: Policies – there is a need to move at par with the regulatory agencies so that they are not left behind.

Comment: There is an opportunity of use of the micro credentials arrangement to deal with the unemployability of university graduates due to lack of skills needed in industry.

6. Picture Gallery

Below are some of the pictures taken during the virtual workshop

7. Annex 1: Virtual meeting Programme

VIRTUAL WORKSHOP ON CAPACITY BUILDING OF SUB-SAHARAN AFRICA AGRICULTURE IN THE EDUCATION CONTEXT ***ZOOM SESSION (DATE 13TH MAY 2021) to be facilitated by* Dr. Hlami Ngwenya, University of Free State, South Africa** (2 hours 30 min)**		
Time (GMT)	***Activity***	***Responsible person***
	Session 1	
14:00-14:15 (15')	***PART 1: Introduction to the workshop (15')*** *This session will cover the background to this joint initiative started by COL and RUFORUM and serve as an invitation to the network members and partners to join the initiative*	
	1. Welcoming remarks by COL 2. Setting the scene by RUFORUM 3. Self-introduction of participants on Chat	1. Dr Venkataraman Balaji, Vice President, COL 2. Prof. Adipala Ekwamu, Executive Secretary, RUFORUM
14:15-14:30 (15')	***PART 2: Sharing insights from the AgMOOCs by COL (15')*** *This session will focus on presenting insights from implementing AgMOOCs over the last six years while comparing relevant other online learning technologies and to evolve a delivery strategy that includes online with offline mentoring.*	
	Presentation by COL using the document "Making Sense of MOOCs: a guide on policy options for developing countries" as the reference 1. Definition of MOOCs 2. Policy take-aways from the document (usually at the start of each chapter) 3. Experiences of COL so far with AgMOOCs ***4.*** How COVID 19 has accentuated the situation	Dr. Moses M. Tenywa Education Specialist for Agriculture & Livelihoods, COL
14:30-14:40 (10')	**Reactions (10')** Q&A session **Expected outcome**: Reflections on feasibility of MOOCs; Seeking documentation of experiences as evidence	

<table>
<tr><th colspan="4">Session 2</th></tr>
<tr><td rowspan="4">14:40-15:15 (35’)</td><td colspan="3">PART 3: Role of faculty and leadership contextualizing current skills sets (35’)
The focus is on ensuring skills amongst faculty. Some need to be further trained while initial capacity building is necessary. What are the good practices in achieving these under the current development context in SSA?</td></tr>
<tr><td colspan="2">Presentation by an online learning expert on
capacity building and training needs of academic staff to offer online learning and feasibility of AgMOOCs for capacity building of SSA agriculture (15’)</td><td>Prof. Paul Birevu Muyinda. Professor of Open, Distance and eLearning, Makerere University, Uganda</td></tr>
<tr><td colspan="2">Discussant 1: The role of academic staff in promoting online learning (10’)</td><td>Prof. Joseph Wafula, Professor and Director, ICT Centre of Excellence and Open Data iCEOD at Jomo Kenyatta University of Agriculture and Technology, Kenya</td></tr>
<tr><td colspan="2">Discussant 2: Best practices, common skills required and needed support systems for education, research and extension with regards to development and implementation of AgMOOCs (10’)</td><td>Prof. Jude Lubega
Acting Vice Chancellor, Nkumba University, Uganda</td></tr>
<tr><td rowspan="5">15:15-15:50

(40’)</td><td colspan="3">PART 4: Discussion session on prospects for advancing scalable online courses in education, research and extension (40’)</td></tr>
<tr><td colspan="3">Parallel breakout session
Competencies required by different practitioners beyond what was learnt at University relevant to scaling</td></tr>
<tr><td>Breakout session 1 (25’)
What competencies would be required by research practitioners to leverage on MOOCS to improve research efforts</td><td>Breakout session 2 (25’)
What competencies would be required extension practitioners to leverage of MOOCs to improve extension service delivery</td><td>Breakout session 3 (25’)
What competencies would be required by education practitioners /academia for advancing scalable online courses in education</td></tr>
<tr><td colspan="3">Plenary presentation from the three groups (10 min)

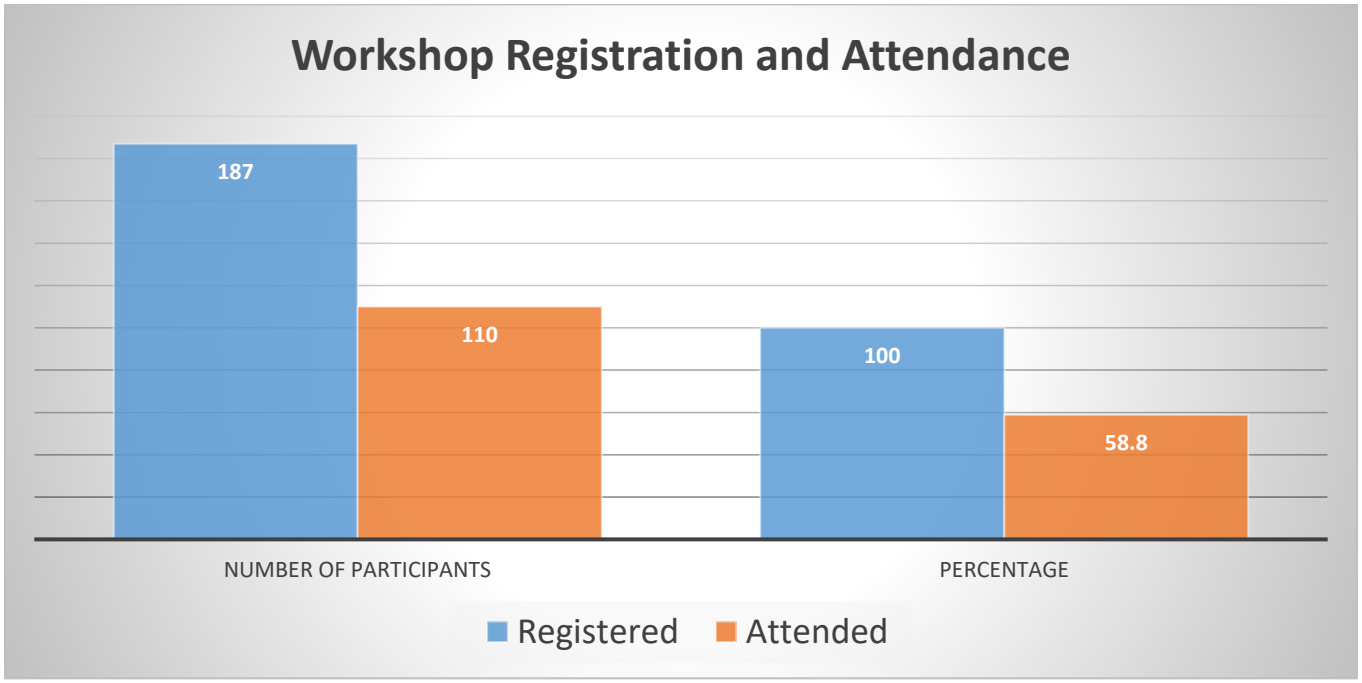
Breakout session 1 (3’)
Breakout session 2 (3’)
Breakout session 3 (3’)</td></tr>
</table>

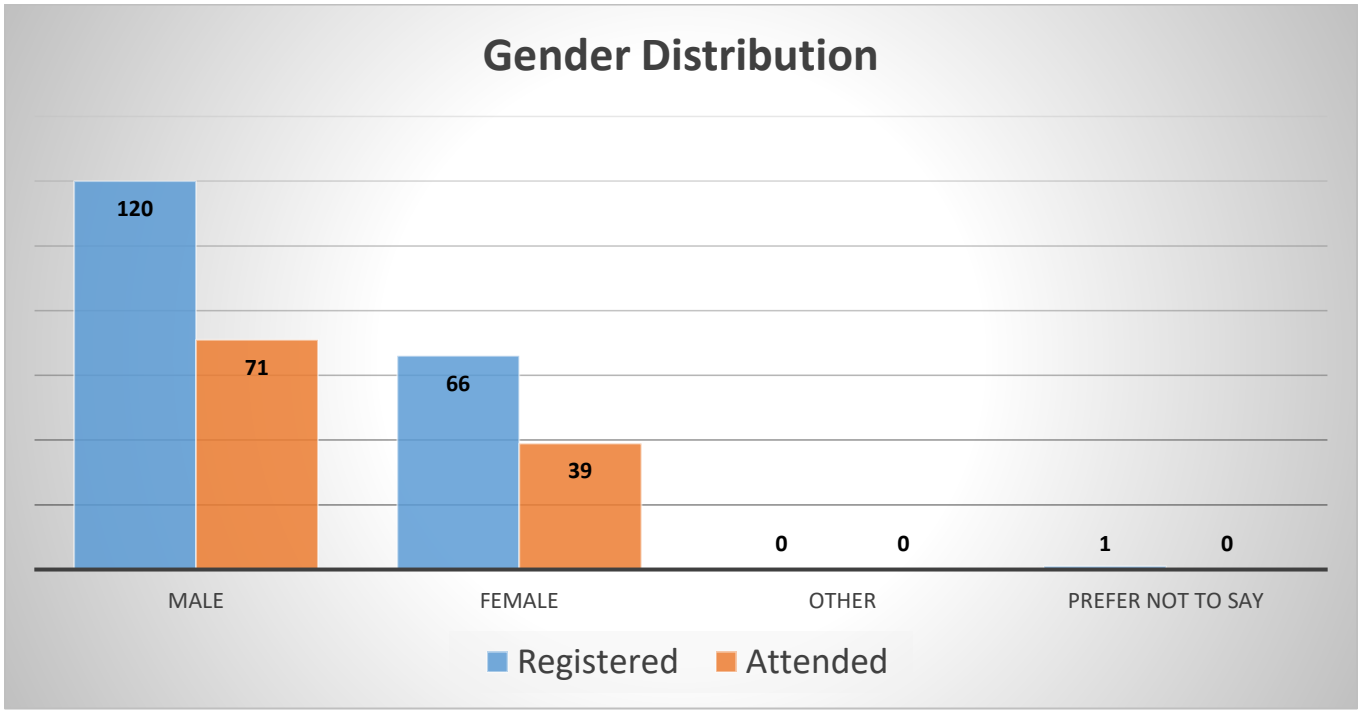
Session 3		
15:50-16:20 ***(30')***	***PART 5 Experiences on certification and outcome for learners (30 minutes)*** *In these online course-based learning processes, how can assessments be planned effectively? What support systems including certification are meaningful to learners? Can micro-learning be a solution to the modular approach, while also satisfying the 'right on time' approach to acquiring knowledge and skills? Experiences in aggregation of certificates lead to micro-qualifications across national borders?*	
	Presentation on "Current practices in micro-qualifications" **(12' minutes)**	Dr David Porter Senior Adviser: Higher Education, COL
	Discussant 1: Experience on online learning assessment and certification **(8' minutes)**	Dr Precious Muni-Wathu Gawanani, Director of Open and Distance Learning, Lilongwe University of Agriculture & Natural Resources, Malawi
	Discussant 2: Feasibility and acceptability of micro-learning in SSA **(8' minutes)**	Dr. Max Olupot Partnership, Planning and Learning Officer, African Forum for Agricultural Advisory Services (AFAAS)
16:20-16:30 (10')	***PART 6: Concluding remarks (10 minutes)*** *By COL – appreciation of the process which has been started, and expectations of RUFORUM leadership on the follow-up*	1. Dr Moses Tenywa, COL 2. Dr Florence Nakayiwa, Deputy Executive Secretary, RUFORUM

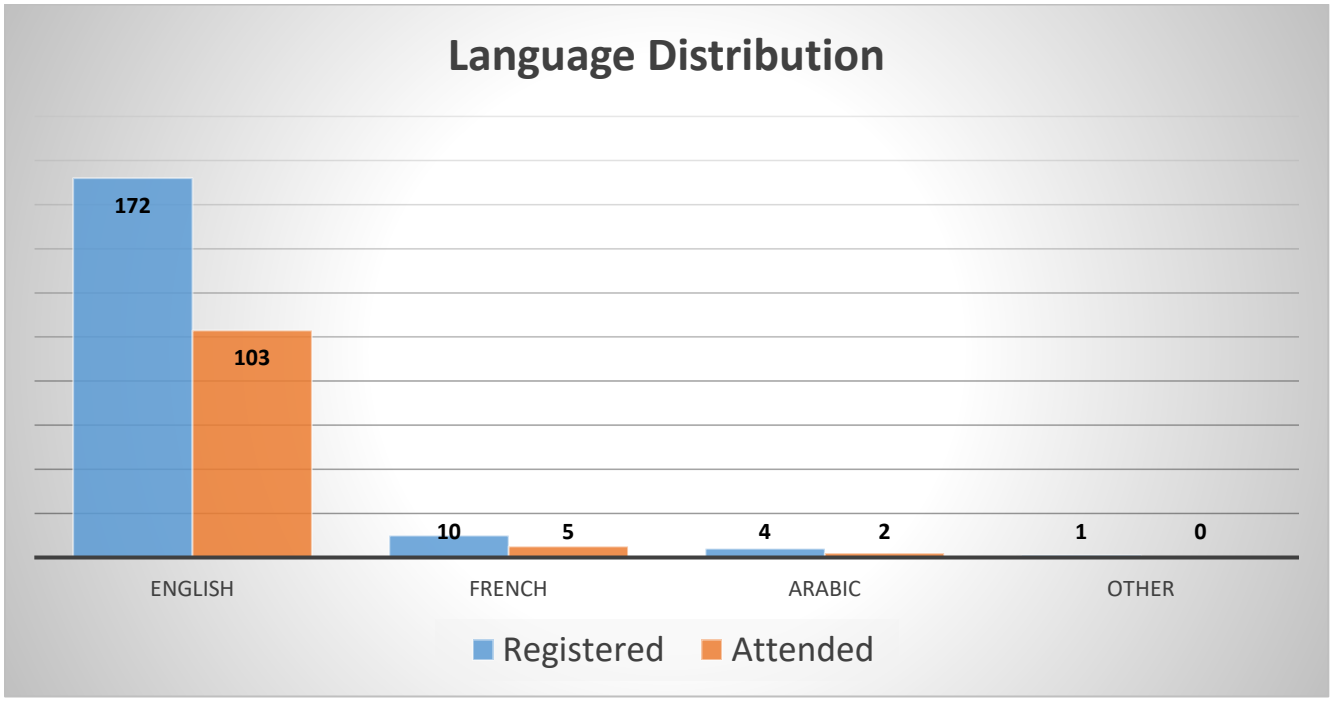
8. Annex 2: Analytical Report for the Virtual Workshop

A VIRTUAL WORKSHOP ON THE USEFULNESS OF AgMOOCs FOR CAPACITY BUILDING OF SUB-SAHARAN AFRICA AGRICULTURE

Total participants registered: **187 from 28 countries**
Number of attendees: **110 from 24 countries (Target was 40 participants)**



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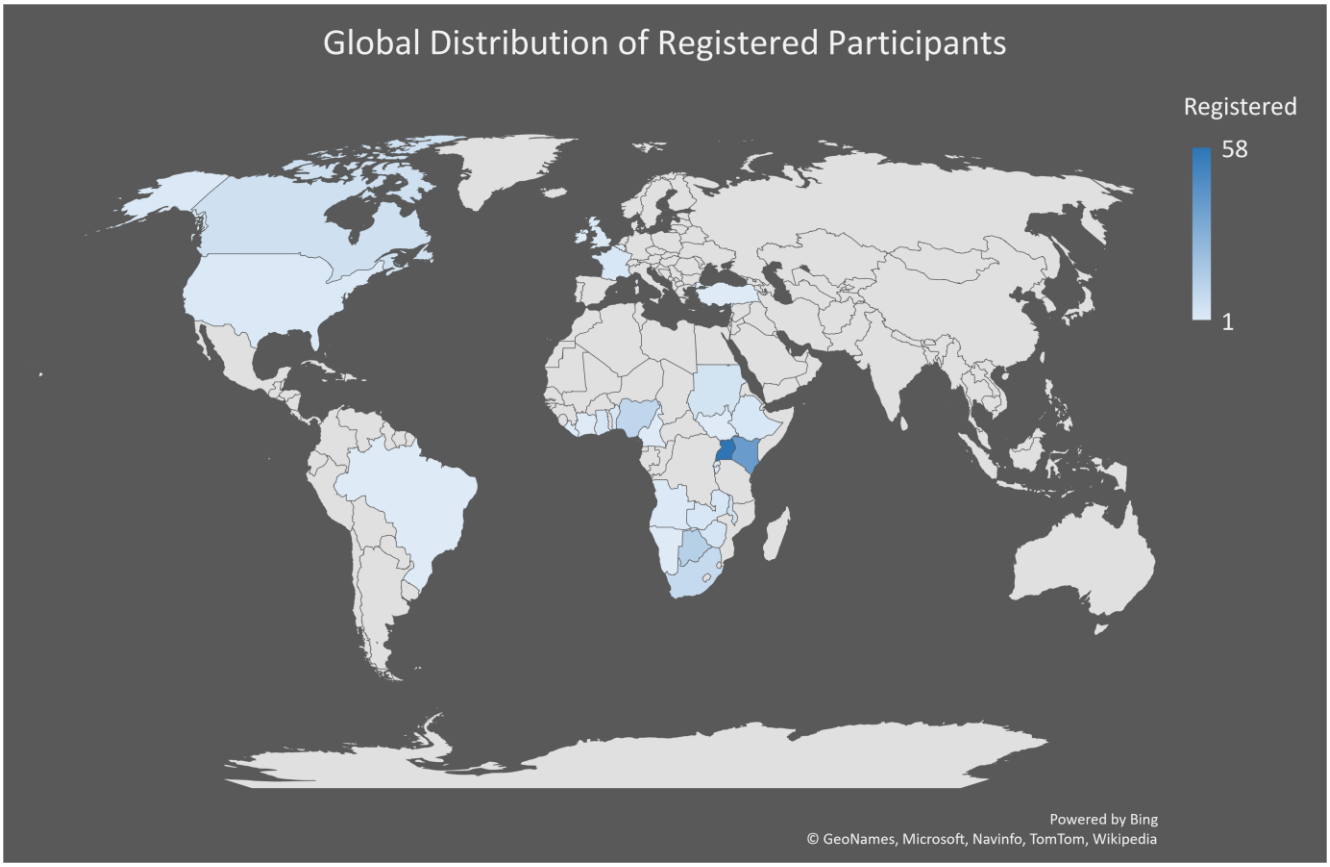
10
5
4
2
1
0
ENGLISH
FRENCH
ARABIC
OTHER
Registered
Attended


Global Distribution of Registered Participants
Registered
58
1
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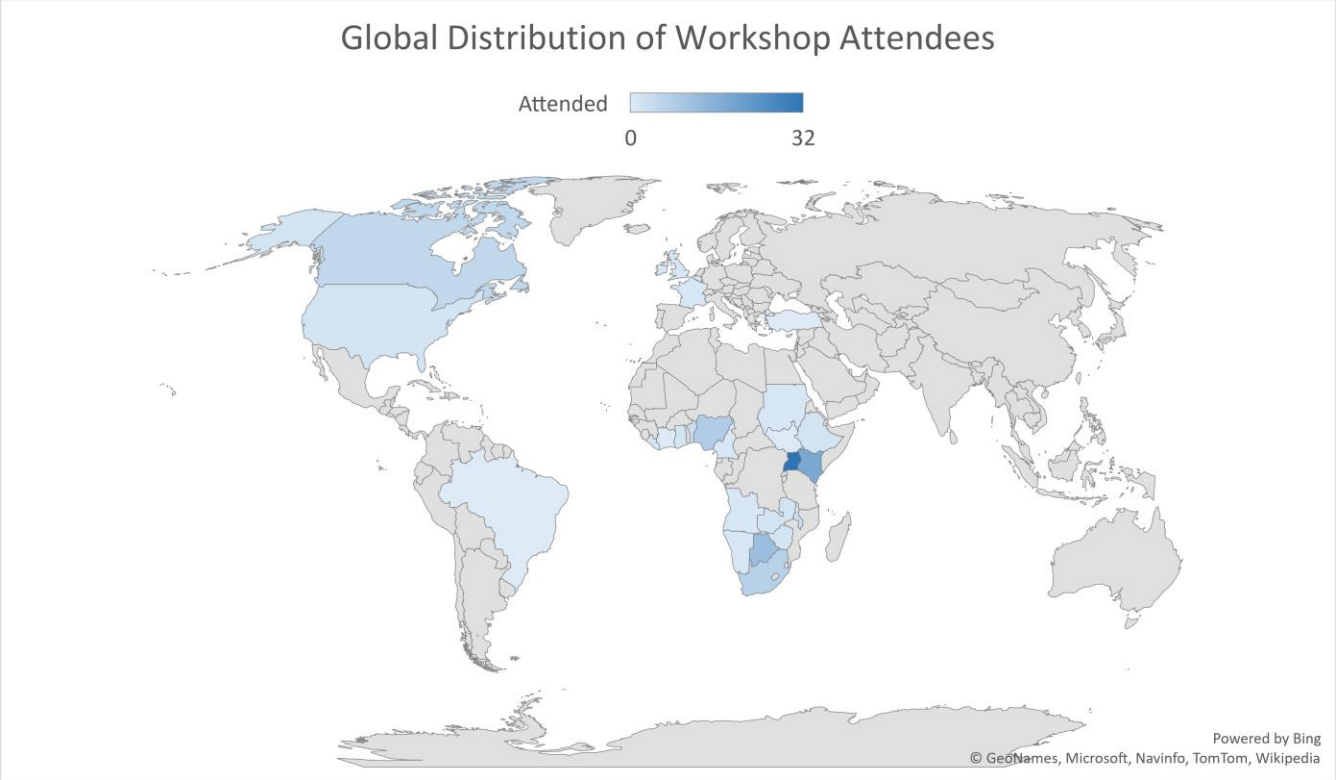
Global Distribution of Workshop Attendees
Attended
0
32
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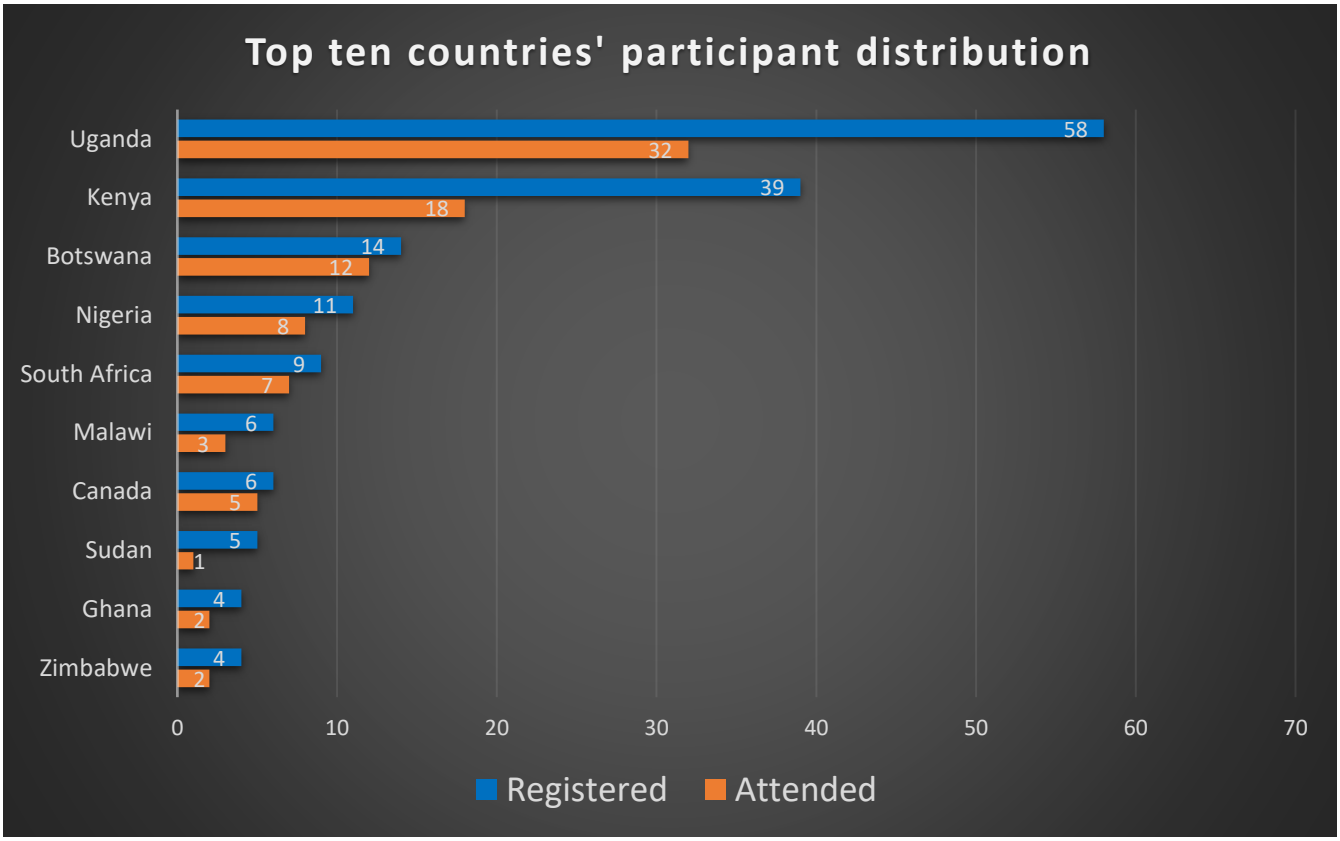
Top ten countries' participant distribution
Uganda
58
32
Kenya
39
18
Botswana
14
12
Nigeria
11
8
South Africa
9
7
Malawi
6
3
Canada
6
5
Sudan
5
1
Ghana
4
2
Zimbabwe
4
2
0
10
20
30
40
50
60
70
Registered
Attended

ANNEX

No.	Country/Region Name	Registered	Attended
1	Uganda	58	32
2	Kenya	39	18
3	Botswana	14	12
4	Nigeria	11	8
5	South Africa	9	7
6	Canada	6	5
7	Malawi	6	3
8	Sudan	5	1
9	Ghana	4	2
10	Zimbabwe	4	2
11	Benin	3	3
12	Ethiopia	3	2
13	France	3	1
14	Rwanda	3	2
15	Zambia	3	2
16	Angola	2	1
17	United Kingdom	2	1
18	United States	2	2
19	Belgium	1	1
20	Brazil	1	0
21	Burundi	1	1
22	Cameroon	1	1
23	Côte d'Ivoire	1	0
24	Ireland	1	1
25	Liberia	1	1
26	Namibia	1	1
27	South Sudan	1	0
28	Turkey	1	0