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**Call for scholarship application for PhDs
and MSc positions in the framework of the
Intra Africa PATH project**

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PATH Project:

Capacity Building of African Young Scientists in Precision Agriculture Through Cross-Regional Academic Mobility for Enhanced Climate-Smart Agri-Food System

1- Background

Climate change is one of the main problems affecting food and nutrition globally, particularly in sub-Saharan Africa. Adapting to and mitigating climate change in the agri-food sector requires merging information technologies, genetic innovations, and sustainable farming practices to empower the agricultural youth sector to create effective and locally adapted solutions. Precision Agriculture applied to crops (PAAC), has been advocated as a strategic solution to mitigate/adapt agriculture at a smallholder and global scales to climate change effects and enhance the digital skills of the younger generations, whilst increasing their interest in agriculture. PATH project, funded by the Intra-Africa Program of the Education, Audiovisual and Culture Executive Agency (EACEA) of the European Commission, is an initiative of four highly qualified public universities from three African regions and one university in Europe to advance knowledge in precision/digital agriculture. The Project is coordinated by the University of Abomey-Calavi (UAC), Republic of Benin. Partner universities include the University of Cape Coast in Ghana (West Africa), the University of Rwanda (Eastern Africa), the University of Eswatini (Southern Africa) and Institut Agro Montpellier in France (Technical partner). The University of UM6P in Morocco is also member of the consortium as associate partner.

The objectives of PATH project are to:

- ① train 12 PhD and 32 MSc African scholars in precision agriculture applied to crops (PAAC) to upgrade the continent's capability;
- ① build capacity of 10 young African staff and 10 trainees in PAAC; and
- ① improve PAAC and ICT4Ag (Information and Communication Technology for Agriculture) curricula and research at the participating African Higher Education Institutions (HEIs) to address more efficiently the current challenges of agriculture and climate change.

2-Priority species per country and related topics

Selected crops per country as well as key words for PhDs and MSc subjects can be found in the Table below:

Table 1. Selected crop per country along with key words for PhDs and MSc subjects

Countries	Crops	Key words for PhD candidates	Key words for MSc candidates
Benin	Pineapple	<i>Artificial intelligence + Crop biophysical models+ Precision farming + Satellite</i>	<i>Artificial intelligence + Crop biophysical models OR Precision farming + Satellite</i>
	Maize	<i>Image processing, Internet of things + Pest management + Precision farming</i>	<i>Pest Management + Precision farming</i>
	Groundnut	<i>Precision nutrients, precision water management and high throughput phenotyping + artificial intelligence</i>	<i>Precision nutrient and water management + remote sensing OR High throughput phenotyping + artificial intelligence OR Precision pest management + artificial intelligence</i>
	African eggplants	-	<i>Genomics and Precision Agriculture</i>
Ghana	Pineapple	<i>Artificial intelligence + Crop biophysical models+ Precision farming + Satellite</i>	<i>Artificial intelligence + Crop biophysical models OR Precision farming + Satellite</i>
	Sorghum	<i>Artificial intelligence + Crop biophysical models+ Precision farming + Satellite + Remote Sensing of Soils</i>	<i>Geospatial Data and mapping + precision farming OR Remote Sensing of Soils + Precision farming</i>
	Cassava	<i>Artificial intelligence + Crop biophysical models+ Precision farming + Satellite + Remote Sensing of Soils</i>	<i>Geospatial Data, mapping+ Precision agriculture OR Remote Sensing of Soils and Crops (including Phenotyping) + Precision Agriculture</i>
	Maize	-	<i>Climate-smart pest protection strategies for selected Maize varieties in Ghana +Artificial intelligence</i>
Eswatini	Maize	<i>Application of models to predict crop growth and yield (Artificial intelligence + Decision support + Precision nutrient)</i>	<i>Machine learning models + pest management + yield OR Detection of pest infestation and spot application of pesticides</i>
	Sweet Potatoes	<i>Screening of planting material through use of biotechnology techniques (On farm experimentation + Genomics and Precision agriculture)</i>	<i>Screening of planting material through use of biotechnology techniques (On farm experimentation + Precision agriculture) OR Pest and disease management + Precision farming</i>

	Potato	Screening of planting material through use of biotechnology techniques (On farm experimentation + Genomics and Precision agriculture)	Screening of planting material through use of biotechnology techniques (On farm experimentation + Precision agriculture) OR Pest and disease management + Precision farming
	Tomato	-	Machine learning models + disease + prediction of tomatoes
Rwanda	Potato	Site specific nutrient + modeling + artificial intelligence + climate smart agriculture OR Field Pest Management and remote sensing + Artificial intelligence + climate smart agriculture	Site specific nutrient + modeling + artificial intelligence + climate smart agriculture OR Field Pest Management and remote sensing + Artificial intelligence + climate smart agriculture
	Beans	Site specific nutrient + modeling + artificial intelligence + climate smart agriculture	Site specific nutrient + modeling + artificial intelligence + climate smart agriculture OR Bacterial blight, anthracnose and rust diseases management + Precision farming
	Cassava	Artificial intelligence + Crop biophysical models+ Precision farming + Satellite + Remote Sensing of Soils + Internet of Things + Site specific nutrients	Detection, identification and mapping of cassava brown streak and cassava mosaic virus diseases in Rwanda using different remote sensing technologies OR Artificial intelligence and climate smart agriculture practices for cassava growth and yield parameters
	Sorghum	-	Geospatial Data and mapping + precision farming OR Remote Sensing of Soils + Site specific nutrients
Total		12	16

Students are invited to develop their research proposal on a selected crop with focus on the key words listed in Table 1.

P.S. The hosting university reserves the right to change the crop and/or modify the subject depending on the gap in the literature.

3- Scholarship: duration and financial support

- ❖ For PhD students, the maximum duration of a scholarship is 36 months for **degree seeking mobility**,
- ❖ For MSc students, the maximum duration of a scholarship is 12 months for **credit seeking mobility**,

The scholarship includes subsistence allowances (including the return ticket of the students during his mobility, settling-in allowances), participation costs, contribution to research costs and insurance in line with EACEA procedures.

- PhD students will receive a monthly stipend of 1230 Euros. This also includes (1) travels cost to and from the host institution and (2) settling allowance.
- MSc students will receive a monthly stipend of 890 Euros. This also includes (1) travels cost to and from the host institution and (2) settling allowance.

Research costs, tuitions fees, costs related to training, participation to conferences and insurance costs are covered by the host institution following EACEA guidelines. Note that participation to conferences and special trainings has to be approved by the supervision team in the host institution.

4- Eligibility

4.1. Eligibility for PhD and MSc students

To apply to this call, students should be either (1) proficient in agronomy/agricultural sciences (or related fields) with a willingness to learn ICT/computer sciences (or related fields) or (2) proficient in ICT with a willingness to learn agricultural sciences. Therefore, **students holding degrees in agronomy/agricultural sciences (or related fields) or ICT/computer sciences (or related fields) are eligible**. In addition, eligible "students" must comply with the below criteria at the time of the application for a scholarship:

a) at the time they apply for a scholarship, candidates must be national of and resident in an African country.

b) be registered/admitted in or having obtained a degree in a HEI from:

b-1) one of the HEIs included in the PATH consortium (Target group 1). This target group includes students from all partner universities as follows:

- ❖ University of Abomey-Calavi, Republic of Benin
- ❖ University of Cape Coast, Ghana
- ❖ University of Rwanda, Rwanda
- ❖ University of Eswatini, Eswatini

b-2) HEI not included in the PATH consortium but established in an EACEA eligible country (Target group 2). This target group includes students registered/admitted in or having obtained a degree from another HEI other than University of Abomey-Calavi, University of Cape Coast, University of Rwanda, University of Eswatini, but established in Africa.

and

c) have sufficient knowledge of the language of the courses in the host countries.

The consortium involves Francophone and Anglophone countries and will promote bilingual aptitude in students throughout the implementation of the project. Language courses will be offered to help students improve their skills.

In each HEI involved in the consortium, two main faculties/departments will be involved in the students training: the faculty/department of agricultural sciences and the faculty/department of ICT (Computer Science).

Students having benefited from scholarship(s) under the previous intra-Africa Academic Mobility Scheme are eligible to receive scholarship under this current call.

5- Number of available scholarships for this first call

The PATH project is open to all students from the partner universities (Target Group 1) and those from other African universities (Target Group 2). **Currently, twelve (12) PhDs, and sixteen (16) MSc are available (see Table 1).**

6- Submission

The [Scholarship application form](#) ([here](#)) together with other required documents should be sent as a unique PDF attachment to emails indicated below. Other required documents include:

- 1.** Cover letter
- 2.** Student research proposal or detailed research concept note (for PhD and MSc)
- 3.** National ID or Copy of Passport Data page
- 4.** Certificate of previous degree(s) /or a Proof that the degree(s) has been completed
- 5.** All Transcripts/academic records (Please note that all selected candidates will receive final admission after they have provided suitable transcripts)
- 6.** Proof of enrolment or eligibility for enrolment for MSc degree (that is research component of MSc) from home institution (for MSc applicants)
- 7.** A support letter from home HEIs (from an authority of the University, Vice chancellor or Dean or Vice Dean or Head of Department/School)

8. Two recommendation letters
9. Curriculum Vitae.
10. Certificate of English or French language skills if any
11. Proof of socio-economic vulnerability (if relevant) attested by an authority of the home HEI. The letter should be on the HEI letterhead with Email and contact of the signatory person.
12. Any other supporting documents

In order to meet the general selection requirements for MSc Mobility Grant (maximum 12 months' scholarship mainly for research), the applicant must have completed the first two semesters of a Master of Science course in Agronomy or in ICT (or related fields), in his home country. It is obligatory that the students have their first year MSc recognition and academic transcripts or **a proof that he/she has completed the course work of the MSc. If not completed at the time of the application, applicants, if pre-selected, have to provide suitable transcripts before being admitted into the programme.**

For PhD degree, applicants should hold an MSc degree in Agronomy or ICT or related fields.

For the choice of the host university, the students are allowed to only apply for the University of Abomey-Calavi (Benin), University of Cape Coast (Ghana), University of Rwanda (Rwanda) and, University of Eswatini (Eswatini).

7- Contact

Due to difference in the partners higher education system, specific academic arrangements will be performed to assure that scholars are admitted in the right program and can make benefit of the mobility. These arrangements will be fixed on a case-by-case basis between the host HEI and Coordinating Institution.

For more information you can contact the following local coordinators (table 2):

Table2. Contact of the local coordinators

Countries	Universities	Contact Person
Republic of Benin	University of Abomey-Calavi	Prof. Enoch Achigan-Dako (Email: e.adako@gmail.com) Dr Nicodème Fassinou Hotegni (Email: nicodemef@gmail.com)
Ghana	University of Cape Coast	Prof. Kwame Agyei Frimpong (Email: kfrimpong@ucc.edu.gh)
Eswatini	University of Eswatini	Prof. Absalom Manyatsi (Email: manyatsi@uniswa.sz)
Rwanda	University of Rwanda	Prof. Antoine Karangwa (Email: karangwant@gmail.com)

8- Deadline

Applications should be submitted to: mobilitypathb@gmail.com. Please put on Cc to your submission Email: Prof Kwame Agyei: kfrimpong@ucc.edu.gh and Dr Dompreeh Kwadwo: kwadwo.dompreeh@ucc.edu.gh. While submitting your application put in the subject line: **PATH_ YOUR SURNAME _MSC OR PHD** depending on whether you are applying for a credit seeking MSc or degree seeking PhD.

The deadline for submission is June 20th, 2024. Shortlisted candidates will be contacted and invited for interviews.

Female and socio-economic vulnerable applicants are strongly encouraged to apply. The list of academic programmes offered by different host institutions can be found below.

LIST OF ACADEMIC PROGRAMMES*				
Project Acronym: PATH				
Beneficiary name	Country**	Type of programme**	Name of the programme	Thematic field of study
University of Abomey-Calavi	Benin	Master	MSc in Biotechnology and Plant Breeding	Agricultural sciences
University of Abomey-Calavi	Benin	Master	MSc in Sustainable Management of Tropical Soil Fertility	Agricultural sciences
University of Abomey-Calavi	Benin	Master	MSc in Sustainable Pest Management and Biopesticide Development	Agricultural sciences
University of Abomey-Calavi	Benin	Doctorate	PhD in Plant Genetic Resources and Crop Protection	Agricultural sciences
University of Abomey-Calavi	Benin	Master	MSc in Information System and Computer Networks	Computer Science
University of Abomey-Calavi	Benin	Master	MSc in IT Security	Computer Science
University of Abomey-Calavi	Benin	Doctorate	PhD in Computer Science	Computer Science
University of Abomey-Calavi	Benin	Master	MSc in Software Engineering	Computer Science
University of Cape Coast	Ghana	Master	Land Use and Environmental Science	Land Use, Precision Agriculture, climate Change, climate Change
University of Cape Coast	Ghana	Doctorate	PhD in Crop Science	Agricultural Sciences
University of Cape Coast	Ghana	Master	Master Crop Science	Agricultural Sciences
University of Cape Coast	Ghana	Doctorate	PhD Soil Science	Agricultural Sciences
University of Cape Coast	Ghana	Master	MSc Soil Science	Agricultural Sciences
University of Cape Coast	Ghana	Doctorate	Land Use and Environmental Science	Land Use , Precision Agriculture
University of Cape Coast	Ghana	Master	Land Policy and Administration	Land Policy and Administration
University of Cape Coast	Ghana	Doctorate	Computer Science	Embedded systems
University of Cape Coast	Ghana	Master	Computer Science	Embedded systems
University of Eswatini	Eswatini	Master	MSc in crop Science	Agricultural Sciences
University of Eswatini	Eswatini	Master	MSc in Horticulture	Agricultural Sciences
University of Eswatini	Eswatini	Master	MSc in Environmental Resource Management	Agricultural Sciences
University of Eswatini	Eswatini	Doctorate	PhD by Research (Horticulture)	Agricultural Sciences
University of Eswatini	Eswatini	Doctorate	PhD by Research (Computer Science)	Applied Computer Science
University of Eswatini	Eswatini	Doctorate	PhD by Research (Crop Production)	Agricultural Sciences
University of Eswatini	Eswatini	Doctorate	PhD by Research (Biosystems Engineering)	Agricultural and Biosystems Engineering
University of Eswatini	Eswatini	Master	Computer Science	Applied Computer Science
University of Rwanda	Rwanda	Master	MSc, Crop Science	Agricultural Sciences
University of Rwanda	Rwanda	Master	MSc, Agroforestry and Soil Management	Agricultural Sciences
University of Rwanda	Rwanda	Master	MSc, Agribusiness	Agricultural Sciences
University of Rwanda	Rwanda	Doctorate	Crop Science	Agricultural Sciences
University of Rwanda	Rwanda	Doctorate	Agroforestry and Soil Management	Agricultural Sciences
University of Rwanda	Rwanda	Master	Africa Centre of Excellence in Internet of Things	Computer Science