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



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GENES II Project:

Mobility for Plant Genomics Scholars to Accelerate Climate-Smart Adaptation Options and Food Security in Africa II

1- Context

Extreme weather variability experienced in many parts of sub-Saharan Africa due to the adverse impact of climate change has caused a rapid decline in food production. The lack of a critical mass of trained graduates with knowledge in relevant areas such as genomics and digital technologies to mitigate the effects of climate change has further worsened the situation. To address these emerging issues, there is a need to develop knowledge and capacity to use genomic and digital technologies to develop climate-smart crops. Therefore, Higher Education Institutions (HEIs) across sub-Saharan Africa need to work together through the mobility scheme for plant genomics scholars to accelerate climate-smart adaptation options and food security. GENES II project is funded by the Education, Audiovisual and Culture Executive Agency (EACEA) of the European Commission. It brings together six universities across three African regions, namely, Western, Eastern and Southern Africa and one technical partner from the European region to address knowledge in genomics technologies to develop climate smart crops. This Project is coordinated by Ebonyi State University in Nigeria. The different partners include University of Abomey-Calavi, Republic of Benin (West Africa); Jimma University, Ethiopia; Egerton University, Kenya (Eastern Africa); North-West University, University of Zimbabwe (Southern Africa), and Wageningen University of Research, The Netherlands (Technical partner).

The objectives of GENESII project are to:

- ① train 64 African scientists comprising 12 PhDs, 32 masters, 10 trainees and 10 staff in genomics, digital and advanced technologies such as measuring photosynthesis, to accelerate crop improvement for climate change adaptation and mitigation;
- ① enhance the entrepreneurial skills of beneficiaries in agribusiness and enterprise management to enhance graduate employability;
- ① harmonize academic programmes and research agenda to enhance research collaboration among African Higher Education Institutions (HEIs).

2-Priority species per country and related topics

Selected crops per country 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
Nigeria	Taro	Breeding for quality traits; Application of genomics; digital and advanced technologies to enhance taro breeding; Photosynthesis measurement and impact on yield; Genotype x environment interaction, stability and adaptability; Marker-assisted selection;	Agro-morphological diversity, phenotyping, multi-environmental analysis for yield and quality traits; Photosynthesis; Selection of breeding lines and cultivars
	Fonio	Breeding for quality traits; Application of genomics, digital and advanced technologies to enhance fonio breeding; Photosynthesis measurement and impact on yield; Marker-assisted selection; Genotype x environment interaction, stability and adaptability;	Agro-morphological diversity, phenotyping, multi-environmental analysis for yield and quality traits; Photosynthesis; Selection of breeding lines and cultivars
	Bambara groundnut		Germplasm collection and phenotyping; Genetic diversity assessment; Photosynthesis; Selection of breeding lines and cultivars
	Sesame		Germplasm collection and phenotyping; Genetic diversity assessment; multi-environmental analysis for yield and quality traits; Photosynthesis; Selection of breeding lines and cultivars

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Republic of Benin	Fonio	Genetic diversity studies, Genome Wide Association Studies, Transcriptome profiling, phenotyping, photosynthesis	Agro-morphological diversity, phenotyping, photosynthesis, root quality analysis, Breeding for less anti-nutritional factor
	Taro	Breeding for quality traits; Application of genomics; digital and advanced technologies to enhance taro breeding, e.g., measurement of photosynthetic parameters and impact on yield;	Agro-morphological diversity, phenotyping, photosynthesis, root quality analysis, Breeding for less anti-nutritional factor
	Sesame		<i>Phenotyping, photosynthesis, grain quality analysis</i>
	Bambara groundnut		<i>Agro-morphological diversity, phenotyping, photosynthesis, quality analysis</i>
Ethiopia	Finger millet	Genetic diversity studies, Genome Wide Association Studies, Drought tolerance, Transcriptome profiling, phenotyping, photosynthesis,	Agro-morphological diversity, phenotyping, photosynthesis, grain quality analysis
	Taro	Breeding for less anti-nutritional factor, transcriptome profiling, GWAS, phenotyping, photosynthesis,	Agro-morphological diversity, phenotyping, photosynthesis, root quality analysis, Breeding for less anti-nutritional factor,
	Amaranth		Agro-morphological diversity, phenotyping, photosynthesis, grain quality analysis
	Bambara Groundnut		Agro-morphological diversity, phenotyping, photosynthesis, quality analysis

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Kenya	Finger millet	Genomic selection, genome editing, drought tolerance, yield-related traits, digital technologies and advanced phenotyping, photosynthesis, climate smart cultivars	Genetic gain, climate change, digital and advanced technologies, drought tolerance, fortification, genetic diversity
	Green gram/ Mung bean	Genomic selection, genome editing, drought tolerance, yield-related traits, digital technologies and advanced phenotyping, photosynthesis, climate smart cultivars	Digital and advanced technologies, drought tolerance, marker-trait associations, grain quality, population structure
	Amaranth		Climate smart cultivar, machine learning, diversity, yield, digital and advanced phenotyping, marker-trait-associations
	Bambara groundnut		Breeding, genetic diversity, phenotypic, climate change, population structure
South Africa	<i>Bambara groundnut</i>	<i>Mutation induction with gamma irradiation; Genomic selection; Nutraceutical analysis</i>	Morpho-agronomic characterization; Multi-environment trials; Selection of breeding lines and cultivars; Marker assisted selection
	<i>Finger millet</i>	<i>Morpho-agronomic characterization; multi-environment trials; Selection of breeding lines and cultivars; Marker assisted selection</i>	Morpho-agronomic characterization; multi-environment trials; Selection of upland cultivars; Marker assisted selection
	<i>Taro</i>		Morpho-agronomic characterization; multi-environment trials; Marker assisted selection
	<i>Amaranth</i>		Flow cytometry analysis; Evaluation of breeding lines. Marker assisted selection
Zimbabwe	Bambara groundnut	Marker assisted selection for aphid and Alectra resistance	Marker assisted selection for aphid resistance
	Finger millet	Genomic prediction and genomic associations. Nutrition analysis for suitability in feed, food and beverages	Characterization, Genotype x environment interaction analysis for yield and quality traits
	Amaranth		Genetic diversity assessment, stability and adaptability
	Taro		Genotype x environment interaction analysis for yield and quality traits.

Students are invited to develop their research proposal on a selected crop listed in Table 1. We will develop cross-country and cross region collaboration with these five focal areas: grains (Fonio and Finger millet), Legumes (Bambara groundnut and Mung bean/green gram, roots and tubers (Taro), Leafy greens (Amaranth) and oil crops (sesame).

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 and 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 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 training has to be approved by the supervision team in the host institution.

4- Eligibility

To apply to this call, students should have proficiency in **Plant breeding, Biotechnology, Biology or any related fields. Students showing interest of applying digital technologies to above mentioned field are encouraged to apply.** In addition, to be eligible for a scholarship “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 GENES II consortium (**Target group 1**). This target group includes students from all partner universities as follows:*

- ◆ Ebonyi State University, Nigeria
- ◆ University of Abomey-Calavi, Republic of Benin
- ◆ Jimma University, Ethiopia
- ◆ Egerton University, Kenya
- ◆ North-West University, South of Africa
- ◆ University of Zimbabwe, Zimbabwe

*b-2) HEI not included in the GENES II 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 Ebonyi State University, University of Abomey-Calavi, Jimma University, Egerton University, North-West University, University of Zimbabwe, but established in Africa.*

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

d) Should also meet the enrolment criteria of the university he/she would want to apply to

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.

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 GENES II project is opened 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.**

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 are listed in the application form and 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 Plant breeding, Biotechnology, Biology or related fields in his home country. It is obligatory that the students have their first year MSc recognition and academic transcripts and **a proof that he/she has completed the course work of the MSc before proceeding on the scholarship.**

For PhD degree, applicants should hold an MSc degree in Plant breeding, Biotechnology, Biology or related fields.

For the choice of the host university, the students are allowed to only apply for the Ebonyi State University (Nigeria), University of Abomey-Calavi (Republic of Benin), Jimma University (Ethiopia), Egerton University (Kenya), North-West University (South of Africa), University of Zimbabwe (Zimbabwe).

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, please contact

Table2. Contact of the local coordinators

Countries	Universities	Contact Person
Nigeria	Ebonyi State University	Prof Happiness Oselebe, h.oselebe@ebsu.edu.ng
Republic of Benin	University of Abomey-Calavi	Prof. Enoch Achigan-Dako, e.adako@gmail.com Dr Nicodème Fassinou Hotegni, nicodemef@gmail.com
Ethiopia	Jimma University	Prof Wosene Abtew, wosish@yahoo.com
Kenya	Egerton University	Dr Pascal Ojwang, pascal.okwiri@egerton.ac.ke
South of Africa	North-West University	Prof Sydney Mavengahama, sydney.Mavengahama@nwu.ac.za
Zimbabwe	University of Zimbabwe	Prof Edmore Gasura, gasurae@yahoo.com
Netherlands	Wageningen University	Prof Eric Schranz, eric.schranz@wur.nl

8- Deadline

Applications should be submitted to: genes2intra@gmail.com and copied Mr. Christel Azon, christelazon@gmail.com, Prof Happiness Oselebe h.oselebe@ebsu.edu.ng and Dr Godwin Nwonumara, ngnkwuda@gmail.com, not later than **July 3rd , 2024**. Shortlisted candidates will be contacted and invited for interviews.

GENES II fosters diversity and gender equity at the work place. Therefore, female candidates and persons from socio-economic vulnerable groups are strongly encouraged to apply.

Academic programmes within each HEI are presented below:

LIST OF ACADEMIC PROGRAMMES* Project Acronym: GENES II				
Beneficiary name	Country**	Type of programme**	Name of the programme	Thematic field of study
Ebonyi State University	Nigeria	Master	MSc in Plant Breeding & Genetics	Agricultural science and Food security
Ebonyi State University	Nigeria	Doctorate	PhD in Plant Breeding & Genetics	Agricultural science and Food security
Ebonyi State University	Nigeria	Master	MSc in Food and Agricultural Biotechnology	Agricultural science and Food security
Ebonyi State University	Nigeria	Doctorate	PhD in Food and Agricultural Biotechnology	Agricultural science and Food security
Ebonyi State University	Nigeria	Master	MSc in Plant Systematics and Natural Resources Management	Agricultural science and Food security
Ebonyi State University	Nigeria	Doctorate	PhD in Plant Systematics and Natural Resources Management	Agricultural science and Food security
Ebonyi State University	Nigeria	Master	MSc in Genetics and Molecular Biology	Agricultural science and Food security
Ebonyi State University	Nigeria	Doctorate	PhD in Genetics and Molecular Biology	Agricultural science and Food security
University of Abomey-Calavi	Benin	Master	MSc in Biotechnology and Plant Breeding	Agricultural science and Food security
University of Abomey-Calavi	Benin	Master	MSc in Agricultural and Food Sciences and Technologies	Agricultural science and Food security
University of Abomey-Calavi	Benin	Doctorate	PhD in Plant Genetic Resources and Crop Protection	Agricultural science and Food security
Jimma University	Ethiopia	Doctorate	PhD in Plant Breeding	Agriculture, Food security, biodiversity conservation
Jimma University	Ethiopia	Master	Msc in Plant Breeding	Agriculture, Food security, biodiversity conservation
Jimma University	Ethiopia	Master	Msc in Plant Biotechnology	Agriculture, Food security, biodiversity conservation
Jimma University	Ethiopia	Doctorate	PhD in Agronomy	Agriculture, Food security, sustainable agricultural intensification
Jimma University	Ethiopia	Master	Msc in Agronomy	Agriculture, Food security, sustainable agricultural intensification
Egerton University	Kenya	Doctorate	PhD in Plant Breeding	Agricultural science and Food security
Egerton University	Kenya	Master	MSc in Plant Breeding	Agricultural science and Food security
Egerton University	Kenya	Doctorate	PhD in Plant Biotechnology	Agricultural science and Food security
Egerton University	Kenya	Master	MSc in Plant Biotechnology	Agricultural science and Food security
Egerton University	Kenya	Doctorate	PhD Environmental Scince	Environmental Sustainability and Climate Change
Egerton University	Kenya	Master	MSc in Environmental Scince	Environmental Sustainability and Climate Change
North-West University	South Africa	Master	MSc in Crop Science	Agriculture and Food Security
North-West University	South Africa	Doctorate	PhD in Agriculture with Agronomy	Agriculture and Food Security
North-West University	South Africa	Master	MSc in Biology	Agriculture and Food Security
North-West University	South Africa	Doctorate	PhD in Biology	Agriculture and Food Security
University of Zimbabwe	Zimbabwe	Master	MSc. in Plant Breeding and Biotechnology	Agricultural science and Food security
University of Zimbabwe	Zimbabwe	Master	MSc. In Plant Production Design and Agronomy	Agricultural science and Food security
University of Zimbabwe	Zimbabwe	Master	MSc. In Horticulture	Agricultural science and Food security
University of Zimbabwe	Zimbabwe	Master	MSc. In Crop Protection and Post-Harverst Technology	Agricultural science and Food security
University of Zimbabwe	Zimbabwe	Doctorate	PhD. In Plant Breeding	Agricultural science and Food security
University of Zimbabwe	Zimbabwe	Doctorate	PhD. in Agronomy	Agricultural science and Food security