



PHD FELLOWSHIP: CALL FOR APPLICATIONS

Project Title: “Food Security in the Face of Climate Change: Resilient Enset Production with Less Resource Use (Future-Enset)” DFC File No. 25-12-AU

Project Brief Description

The project (Future-Enset) will involve three higher learning institutions from Ethiopia (Arba Minch University, Jimma University, and the Federal Technical and Vocational Training Institute), private companies, and Aarhus University from Denmark. It is a five-year project (2025 to 2029) supported by the Ministry of Foreign Affairs of Denmark and administered by the Danida Fellowship Centre (DFC). The project aims to improve climate change resilience in the local Enset value chain systems in Ethiopia, using a holistic approach that focuses not only on farming and production but also on post-harvest practices related to food loss reduction, food safety, nutritional and processing properties, as well as the development of economically valuable value chain solutions.

The project is designed in five work packages (WPs) to achieve its objectives. One of the work packages is on local capacity building of Ethiopian institutions through North-South collaboration on research activities and supervision of PhD students. Professors from Ethiopia and Aarhus Universities will closely supervise the PhD students during the research phase of their study to meet project outcomes through holistic collaboration and partnership.

Nature of the Call:

Arba Minch University, in collaboration with Aarhus University of Denmark, will coordinate work packages one and two (WP1 and WP2) of the project for the two PhD opportunities. PhD applicants for topics 1 and 2 indicated below will be hosted by the Department of Horticulture at Arba Minch University.

Jimma University, in collaboration with Aarhus University in Denmark, will coordinate work package three (WP3) of the project for the two PhD opportunities. PhD applicants for topics 3 and 4 indicated below will be hosted by the Department Postharvest Management at Jimma University.

Planned activities of WP 2 and WP3 are aligned with the activities of other WPs (WP1, WP4 and WP5) to achieve the expected outcomes of the project. Due to the interlinked nature of the WPs, selected PhD students are expected to address relevant activities in other WPs in addition to the main activities of WP2 and WP3.



Topic 1: Phenotyping Enset Landraces Against Abiotic Stress: Screening for Climate-Resilient Farming

Brief Description

The applicant in this topic is expected to address activities in WP2. It will focus on developing simple screening tools and working to understand and optimize the physiological response of Enset genotypes by assessing the climate-resilient potential of selected varieties and clones, through integrating local preferences and yield performance for sustainable and climate-robust farming. The aim of this study is to understand and optimize the physiological responses of Enset genotypes when they are subjected to combined abiotic stresses, such as heat and drought.

Topic 2: Integrating Agronomic, Nutritional, and Functional Characterization of Enset Landraces for Climate Resilience and Food Security in Ethiopia

Brief Description

The applicant for this topic is expected to bridge traditional knowledge and modern science to optimize Enset production for dietary health, economic value, and environmental sustainability on a wider scale. To this end, the applicant will investigate how agro-ecological conditions and farm management practices influence the nutritional quality, consumer acceptability, and industrial potential of Enset landraces. The study will identify high-performing Enset landraces and provide evidence-based recommendations for climate-resilient cultivation, enhanced nutrition security, and value-added applications in food and non-food industries. This provides data-driven solutions for climate-smart agriculture, improved nutrition security, and viable commercial applications supported by consumer preference studies and economic feasibility analyses.

Topic 3: Co-Creating and Designing Post-Harvest Processing Technologies to Improve Safety, Extraction Capacity (Loss Reduction), and Processing Efficiency of Enset in a Gender-Based Approach

Brief Description

The applicant in this topic is expected to address activities in WP1, WP3 and WP4 from baseline data collection to achieve WP3 outputs. This phase of the work will address post-harvest processing technologies that will assist activities from harvesting to the production of Enset-based products, excluding the fermentation stage, which will be addressed in another topic. Prototypes will be developed based on identified practical gaps in WP1 and with the consultation of stakeholders. The applicant for this topic is expected to publish at least two scientific articles in peer-reviewed, indexed, high-quality journals. Based on the study findings, the applicant is also expected to develop user and operation manuals (print version and short videos) for developed prototypes/ technologies.



Topic 4: Co-Creating in the Designing and Production of Value-Added Nutrient-Dense Products from Enset

Brief Description

The applicant for this topic is expected to address fermentation and drying technologies for Enset products, characterize the product in terms of techno-functional properties and nutrient content, and develop Enset based nutrient dense value-added products. The activities in this topic are geared toward achieving the outcomes of WP3 and WP4. In the co-creating approach, the applicant is expected to thoroughly investigate fermentation related limitations identified from WP1 and provide gender based solutions to ensure the production of safe and shelf-stable quality fermented products. Solar-based improved drying conditions will be optimized to stabilize the fermented product. The characterized dried product will be used to develop nutrient dense Enset based products to address malnutrition problems identified in WP1.

As part of the public engagement framework for co-creation, workshops will be developed, including training of trainers on the technology package developed from the research work and entrepreneurial skills. Product development and public engagement will be conducted in collaboration with private companies partnering in the project. Women and youth groups are points of intervention to promote and popularize technology packages in selected major Enset production and utilization regions.

Eligibility criteria:

Applicant for Topic 1 to 4

- **Registered or qualified to be registered** at Arba Minch or Jimma University after fulfilling the admission requirements of the PhD program according to the universities' admission criteria.
- National Graduate Admission Test Certificate (NGAT)
- **Applicants for Topic 1 or 2:** Hold a Master's degree in Horticulture, Crop Sciences, Plant Science, Genetics, Plant Breeding, Postharvest Management, Plant Biotechnology from a recognized university.
- **Applicant for topic 3 or 4:** Hold a Master's degree in Postharvest Management, Food Engineering, Food Science and Technology, Postharvest Technology, Industrial/ Food Chemistry from a recognized university.
- Be prepared to start the research work immediately after completing course works / applicant who completed coursework are also invited to apply for the opportunity.
- Good publication record in peer-reviewed indexed journals.
- Able to present a short concept note (max. 3 pages) related to the topic of interest.
- Experience in field and laboratory research.
- Able to conduct field and laboratory work with extensive travel.
- Ethiopian citizens must not be enrolled in any other national university or international PhD program aside from those offered by Arbamich or Jimma universities.
- Agreed to enter and sign the project agreement and abide by the agreement until the completion of the study.
- With commendable English language skills.
- Female applicants are highly encouraged to apply for all positions.
- Applicant age at the time of application should be ≤ 45 .



የኢ.ፌ.ዲ.ሪ የቴክኒክና ሙያ
ስልጠና አገልግሎት
FORE TECHNICAL & VOCATIONAL
TRAINING INSTITUTE



AARHUS
UNIVERSITY

Benefits of the fellowship opportunity

The selected candidates will receive a monthly student stipend and research budget support for approved research objectives for field and laboratory work. The project will also cover travel-related expenses abroad upon approval for the research and short-term training activities.

How to apply?

Interested applicants should submit the following documents in one PDF file to the following email addresses:

Applicants to Topic 1 or 2:

To: Dr. Sabura Shara

Email: sabura.shara@amu.edu.et, saburashara2015@gmail.com,

Make cc to: bhaile93@gmail.com, belay.hailekebede@amu.edu.et,

Applicants to Topic 3 or 4:

To: Dr. Yetenayet Bekele

Email: yetenayet.bekele@ju.edu.et, yetenayet@gmail.com,

Make cc to: fanta.tasfaye@gmail.com

Documents to be submitted are (non returnable):

- Scanned copies of BSc and MSc degrees with their corresponding transcripts
- National Graduate Admission Test Certificate (NGAT)
- Concept note for a specific topic of interest – maximum of 3 pages
- Updated Curriculum Vitae
- Two letters of recommendation (one from the current employer and the other from the previous MSc supervisor)
- Birth certificate copy or copy of passport page with bio-data
- A letter from the respective college that indicates the academic/ research status of the applicant
- Publication history of the applicant as shown in the CV
- Any additional documents that would support the candidate during the selection process.

Date of announcement: July 7, 2025

Deadline for application: The application deadline for this call is 15 working days, starting from the date of the announcement of the call.

Remark: Only shortlisted applicants will be contacted for an interview.