



THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF AGRICULTURE

TANZANIA AGRICULTURAL RESEARCH INSTITUTE

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24 August, 2026

TO ALL TARI STAFF

RE: ADVERTISEMENT OF MASTERS DEGREE SCHOLARSHIPS UNDER TANZANIA FOOD SYSTEMS RESILIENCE PROGRAM (TFSRP).

Tanzania Agricultural Research Institute (TARI) is one of the implementing partners of the World Bank-funded program called Tanzania Food Systems Resilience Program (TFSRP). The overall objective of the TFSRP program is to support food systems resilience by strengthening agricultural service delivery, the adoption of climate-resilient technologies, and fiscal performance in the agricultural sector. The TFSRP result areas (RA) are RA1—improving service delivery in research, extension, and seed; RA2—developing resilient rural infrastructure; and RA3—strengthening fiscal performance to enable delivery on priority investment areas. One of the deliverables of the program is to build the capacity of TARI employees at national universities.

In FY 2026/2027, TARI, through TFSRP, has 40 scholarships for postgraduate studies (Master's degree programs) for applicants interested in undertaking studies in domestic higher learning institutions. Therefore, the Institute hereby invites TARI staff to apply for scholarships to undertake master's studies in the study areas highlighted hereunder.

1. STUDY AREAS OF INTEREST FOR MASTERS DEGREE STUDIES

1.1 Applied Biological statistics and Data science

Description and focus for research topics: The research topics should relate to testing experimental designs, data analysis methods, and testing theories in agricultural statistics. We will give high priority to researchers interested in developing models.

Number of scholarships: 2 MSc.

1.2 Molecular Entomology

Description and focus for research topics: insects have continued to cause significant yield losses in all crops. Emerging insects can be difficult to identify and control due to genetic variations or limitations related to morphological identification. With advent of molecular sequencing, both sanger and next generation sequencing, it is possible to identify and establish genetic variations between insects and hence classify. Consequently, management tools can be developed based on genomic information generated by sequencing and analyzing sequences. Therefore, selected candidates are expected to focus on such topics as genome structure of insects, gene expression and their function analysis, molecular evolution, molecular ecology, molecular genetics, insect physiology and biochemistry. Studies can be on either friendly or unfriendly insects or both.

Number of scholarships: 3 MSc

1.3 Molecular Pathology (Bacteria and Fungi)

Description and focus for research topics: Climate change and variability have led to unprecedented surges and outbreaks of diseases. Moreover, rapid identification, diagnosis, and detection of pathogens remain challenging tasks in agriculture. Applicants should express their interest in conducting research genomics, gene expression, molecular ecology, molecular evolution (comparative genomics), and in methods for molecular detection of fungal and bacterial pathogens.

Number of scholarships: 3 MSc

1.4 Application of Artificial Intelligence and ICT in Agriculture

Description and focus for research topics: TARI is keen to capitalize on the use of artificial intelligence and ICT in advancing agricultural research in Tanzania. AI has many uses in agriculture, including but not limited to detection of diseases, aiding in collection of data for plant breeding, yield prediction and planning, and automated farming tasks. Expression of interest is invited for any topic that aims at application of artificial intelligence in agriculture, including for precision agriculture, pathology, entomology, soil health, and crop breeding. Applicants demonstrating use of data science in their studies will be given high priority.

Number of scholarships: 2 MSc

1.5 Management of Invasive Weeds in Tanzania

Description and focus research topics: Noxious weeds such as *striga* spp. and invasive species, namely Kongwa weed (*Atripomoea hyoscyamoides*) and Parthenium (*Parthenium hysterophorus*), are significant threats to agriculture, pastoralism, and biodiversity because they reduce crop yields, limit grazing land, and displace native vegetation. The applicants are expected to demonstrate their readiness to develop management strategies for any of these weeds.

Number of scholarships: 1 MSc

1.6 Studies in Plant Nutrition and Crop Physiology

Description and focus research topics: The candidate will select a crop of his/her interest and relate nutrient uptake in different soils and different varieties. Plant-microbe interactions relevant to nitrogen fixation as well as plant-environment interactions necessary for nutrient uptake are areas suggested for postgraduate studies. Crop physiology can be studied with the aim of generating information necessary for crop adaptation to biotic and abiotic stressors/climate change. A candidate interested in crop physiology will be required to show that he/she will attend crop physiology courses during postgraduate studies; that is, it cannot be by research only.

Number of scholarships: 2 MSc (1 Nutrition and 1 Physiology)

1.7 Molecular, Conventional, and Mutational Plant Breeding in Tea

Description and focus research topics: The applicants should demonstrate their readiness to undertake studies in tea plant breeding with the aim of improving yields or improving tea crop to adapt to climate change. The study could focus on genetic diversity studies for generation of information critical for tobacco plant breeding

Number of scholarships: 2 MSc

1.8 Molecular, Conventional, and Mutational Plant Breeding in Coffee

Description and focus research topics: The applicants should demonstrate their readiness to undertake studies in tea plant breeding with the aim of improving yields or improving coffee crop to adapt to climate change. The study could focus on genetic diversity studies for generation of information critical for coffee plant breeding

Number of scholarships: 2 MSc

1.9 Molecular, Conventional, and Mutational Plant Breeding in Tobacco

Description and focus research topics: The applicants should demonstrate their readiness to undertake studies in tea plant breeding with the aim of improving yields or improving tobacco crop to adapt to climate change. The study could focus on genetic diversity studies for generation of information critical for tobacco plant breeding

Number of scholarships: 2 MSc

1.10 Development and Evaluation of Efficacy for Biopesticides/Botanicals for Management of Pest

Description and focus research topics: The candidate should aim to discover biopesticide from plants species in Tanzania. The candidate may revisit and evaluate commonly stated or farmers used biopesticides (botanicals) but whose efficacies have never been rigorously tested; outputs will include patenting at least one biopesticide.

Number of scholarships: 2 MSc

1.11 Agricultural and Bioprocessing Engineering and Technologies

Description and focus research topics: In developing countries, post-harvest losses are estimated at about 30%. Therefore, there is a need to come up with technologies that can reduce post-harvest losses. The applicants under this category may as well develop topics on irrigation engineering and labor-saving technologies. Studies to indicate constraints and solutions for agro-mechanization are admissible.

Number of scholarships: 2 MSc

1.12 Dynamics of Gender in Agricultural Research and Development

Description and focus research topics: The rapid changes in the agricultural sector present opportunities for women, youth, and men. At the same time, the composition of households is also rapidly changing, with youth migrating to other non-farm activities. In some regions, men more than women are likely to abandon agricultural activities at home and migrate elsewhere to seek income in other sectors. Therefore, it is important to clearly understand the gender dynamics for enhancing optimal policy and planning for agricultural development. The candidate will thus focus his/her study on approaches in gender and economic development practices in agriculture perspective.

Number of scholarships: 1 MSc

1.13 Science Communication (Mass Communication Major)

Effective communication of research and innovations is essential for ensuring that scientific knowledge reaches policymakers, stakeholders, and the public in a clear and actionable way. This field focuses on translating complex scientific concepts into engaging messages using media, journalism, education, and marketing. Staff applying for this scholarship are expected to have or develop skills in simplifying complex scientific information, designing communication strategies, using media and digital platforms, and producing content that promotes awareness and adoption of

TARI's researched technologies. They are also expected to develop materials such as articles, policy briefs, press releases, videos, and social media content that enhance understanding and application of TARI innovations.

Number of scholarships: 1 MA

1.14 Information, Knowledge Management, and Communication

Efficient management and sharing of research information are essential for ensuring that innovations are accessible, well-documented, and effectively communicated to stakeholders. This field focuses on managing information and facilitating effective knowledge sharing within organizations and among stakeholders. It enhances how research outputs and innovations are stored, accessed, and communicated. TARI is looking for candidates with strong skills in information management, knowledge dissemination, organizational communication, and the use of digital tools to support collaboration and informed decision-making.

Number of scholarships: 1 MA

1.15 Natural Resource and Agricultural Engineering

Description and focus for research topics:

Sustainable agricultural production requires improved management of soil, water and other natural resources, together with appropriate engineering, digital and climate-smart technologies. TARI therefore seeks to strengthen research capacity in natural resource management and agricultural engineering to support sustainable intensification, climate resilience, decarbonization, efficient resource use, mechanization and reduction of post-harvest losses. Applicants are expected to undertake research addressing practical climate change challenges in agricultural production and natural resource management.

Priority areas include:

Soil science and management: soil fertility, soil health, nutrient-use efficiency, soil degradation, salinity, organic matter management and sustainable soil fertility technologies.

Water resources and irrigation: irrigation efficiency, water productivity, irrigation scheduling, water conservation, drainage and climate-resilient agricultural water management.

Natural resource and land management: sustainable land management, soil and water conservation, watershed management, restoration of degraded landscapes, agroforestry and nature-based solutions.

Agricultural engineering and mechanization: farm machinery, agricultural mechanization, irrigation technologies, labour-saving technologies, renewable energy and precision agriculture.

Post-harvest technology: reduction of post-harvest losses, drying, storage, processing, value addition and energy-efficient technologies.

Digital agriculture and geospatial technologies: GIS, remote sensing, artificial intelligence, machine learning, digital soil mapping, crop monitoring, yield prediction and decision-support systems.

Decarbonization: captures carbon sequestration, carbon credits, and carbon financing into one unified goal of removing and funding the reduction of greenhouse gases. Specifically, capturing and storing carbon dioxide from the air, certified permit representing the removal or reduction of one ton of carbon dioxide and the flow of money and investments into projects that cut emissions or capture carbon.

Climate-smart agriculture: climate-risk assessment, adaptation and mitigation, resilient production systems, carbon management and technologies for sustainable agricultural production.

Number of scholarships: 8

- i. MSc Agricultural Engineering / Biosystems Engineering (1)
- ii. MSc Agricultural Data Science / Data Science & AI (1)
- iii. MSc GIS, Remote Sensing / Geospatial Science (1)
- iv. MSc Post-harvest Technology and Management (1)
- v. MSc Agricultural Mechanization (1)
- vi. Master of Science in Environmental Sciences, Management and Technology (1)
- vii. Master of Engineering in Clean Energy Technology (1)
- viii. Master of Science in Sustainable Energy Science and Engineering (1)

1.16 Agricultural Economics and related studies

- Seed demand foresights and marketing research (1)
- Seed system specialist (1)
- Econometrics (1)
- Agriculture policy analysis and international trade (1)

1.17 Studies for other staff cadres (Administration, Human Resource Management, Accounts, Procurements, ICT, Economics, Statistics etc.)

Courses: to be agreed upon after submission of applications

Number of Scholarships: 10 MSc

2. SUGGESTED DEGREE PROGRAMMES

The applicants are reminded to have already been admitted for degree programs at higher learning institutions in Tanzania prior to applying for the scholarships. The applicants for scholarships can be enrolled in any of the degree programs shown below but may also enroll in other degree programs because what matters is the development of a topic or committing to do research in research areas listed above. However, the degree programs pursued must be those that are acceptable under TARI Schemes of Service. Therefore, no study leave will be granted to applicants who pursue degree programs not contained in the Schemes of Service.

- MSc. in Molecular Biology and Biotechnology
- MSc. in Crop Science
- MSc. in Life Science
- MSc. in Sustainable Agriculture
- MSc. in Botany
- MSc. in Bioinformatics
- MSc. in Agriculture Engineering
- MSc. in Agricultural Data Science
- MSc. in Agricultural and Applied economics.
- Master in Information and Knowledge Management
- Masters in Vertical Farming and Controlled Environment Agriculture (CEA)
- Masters in Agricultural Robotics and Automation
- Masters of Public Relation and Mass Communication
- Master's Degree of Management Information System
- Master's Degree in Cybersecurity

- Master's Degree of Accounting and Finance
- Masters of Laws (L,LM)
- Master's Degree in Materials Management, Procurement, Supplies.
- Master in Human Resource Management
- Master of data Science and Artificial Intelligence
- Master of information and communication Engineering
- Post harvest technology and management
- MSc Soil Science / Soil and Water Management
- MSc Agricultural Engineering / Biosystems Engineering
- MSc Water Resources / Irrigation Engineering
- MSc GIS, Remote Sensing / Geospatial Science
- MSc Natural Resource Management / Environmental Management
- MSc Climate Change / Climate-Smart Agriculture
- MSc Agricultural Mechanization

3. GENERAL CONDITIONS

- All candidates must be TARI employees;
- Not more than 50 years old;
- All candidates must attach a letter of motivation and Concept Note research;
- Candidates must attach an up-to-date Curriculum Vitae (CV);
- Candidates must attach their certified copies of academic qualifications;
- All applicants must attach College/University admission documents;
- Women are highly encouraged to apply;
- Deadline For application is fourteen days (14) from the date of this announcement.

Please apply to the following address:

Director General,
Tanzania Agricultural Research Institute,
Makutupora, Arusha Road,
P. O. Box 1571,
DODOMA.
E-Mail: application@tari.go.tz

Dr. Thomas N. Bwana
DIRECTOR GENERAL