



Graduate Student Research Fellowship

“Capacity Building for Mitigation of GHG Emissions and Improved Ruminant Productivity through Efficient Feeding and Manure Management Strategies in Agro-Pastoral Systems” is a two-year project implemented by Maseno University with funding from the Global Research Alliance on Agricultural Greenhouse Gases through The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) graduate research competitive grants system.

The Global Research Alliance Graduate Research Grants (GRA-GRG) aims at building the capability of graduate and post-graduate level students in Africa to conduct applied research on agricultural greenhouse gases. The common goal is to support the development of capability in RUFORUM member universities to support Africa respond to the goals established by the Paris Agreement on Climate Change, the 2030 Agenda for Sustainable Development, as well as national and regional priorities of African States. The funds will support participatory action research and training on topics related to the measurement and management of greenhouse gas emissions and removals in pastoral and agro-pastoral ruminant livestock farming systems in Sub-Saharan Africa.

Project thematic areas

The project is conceptualized into three thematic areas namely:

- i) Animal-scale observations to better characterise feeding systems and practices, to assess animal behaviour and responses to feed variation in terms of quantity and quality.
- ii) Improving national estimates of available fodder, integrating all feed resources available for livestock, including crop residues, their spatio-temporal variability, protein and energy requirements of livestock, taking mobility into account.
- iii) Testing management strategies for crop residues and livestock effluents (e.g. harvesting and storage, sale, common pasture, composting, manure conservation, etc.) in order to assess the potential impacts on production and animal feeding, as well as the impact on greenhouse gas emissions and removals.

The fellowship call

The project therefore wishes to recruit three graduate students (two in Animal Sciences and one in Environmental Science) for a period of one year to undertake action research leading to the award of a **Master of Science degree** in any of the three project thematic areas. The students will be required to develop concepts that answer to the following research needs:

Graduate student 1: the student research should focus to a) determine the current feeding practices used in intensive and agro pastoral ruminant systems in peri-urban intensive and rural areas, b) evaluate the effect of qualitative and quantitative feed variation on animal behavior and responses and c) determine the effect of seasonal variation in feed intake on production and emission of enteric methane.

Graduate student 2: the student research should focus to: a) determine spatial and temporal availability of feed resources, b) to evaluate the nutritional composition of available feed resources and c) to determine the effect of livestock mobility on the protein and energy requirements.

Graduate student 3: the student research should focus to: a) to determine status of crop residue utilization practices and manure management strategies at farm level, b) to determine GHG emissions and removal based on selected manure management strategies and, c) evaluate calorific value of crop residue substrate and effluent produced by animals fed on various crop residue substrates for biogas production.



Fellowship costs

The fellowship will cater for tuition, stipend and research costs during period of the study.

Eligibility

Interested candidates should meet the following criteria;

- a) Be bonafide students of Maseno university having registered not earlier than 2017
- b) Have successfully completed course work (attach transcript)
- c) Have no other commitments/engagements and is willing to undertake the research for the duration of the project period on full time basis
- d) Have an interest in climate smart agriculture

NB: Female candidates are highly encouraged to apply.

Application process

Interested candidates are required to:

- a) Submit an application clearly marked as “*graduate student 1 or 2 or 3*” to the undersigned
- b) Attach a motivation letter (1000 words) on why you are suitable for the project, areas of interest and what you will bring on board to ensure project success
- c) The deadline for application is **8th February 2021.**

All applications should be sent to:

Principal Investigator GRA-GRG,
Department of Animal Science,
School of Agriculture and Food Security
Maseno University
P.O. Private Bag
40105 Maseno