

## AGRICULTURE

# ILRI vacancy: Post-Doctoral Scientist in Eddy Covariance Flux Measurements Across Rangelands in East Africa (open until filled)

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The International Livestock Research Institute (ILRI) seeks to recruit a Post-doctoral Scientist with expertise in the setup and maintenance of eddy covariance towers to measure ecosystem CO<sub>2</sub>, CH<sub>4</sub>, and H<sub>2</sub>O exchange, and to manage, process and interpret the resulting GHG flux data jointly with other environmental sensing data.

ILRI works to improve food and nutritional security and reduce poverty in developing countries through research on efficient, safe, and sustainable use of livestock. It is the only research centre within the wider network of CGIAR institutions dedicated entirely to research on animal agriculture in developing countries. Co-hosted by Kenya and Ethiopia, ILRI has regional or country offices and projects in East, South and Southeast Asia as well as Central, East, Southern and West Africa. [www.ilri.org](http://www.ilri.org) (<http://www.ilri.org>)

### **Background**

The study is part of a network of experimental sites across a gradient of land degradation related to agropastoral livestock production in semi-arid landscapes in East Africa within the ESSA project (Earth Observation and Environmental Sensing For Climate-Smart Sustainable Agropastoral Ecosystem Transformation In East Africa; <https://www2.helsinki.fi/en/projects/climate-smart-agropastoral-ecosystem-transformation-in-east-africa/partners> (<https://www2.helsinki.fi/en/projects/climate-smart-agropastoral-ecosystem-transformation-in-east-africa/partners>)). This position will be part of ILRI's scientific staff and located within the Mazingira Centre in Nairobi, Kenya (<https://mazingira.ilri.org/> (<https://mazingira.ilri.org/>)).

The ESSA project aims to contribute to the pastoralist households' transition towards climate-smart agropastoral systems in sub-Saharan Africa (Kenya and Ethiopia) by understanding the dynamics of and interlinkages between tropical upland forest cover and semi-arid lowland landscapes, and the

multifunctionality of agropastoral landscapes, through a system-wide view of food and nutrition security, diversified livelihoods, and ecosystem sustainability leading to improvements. In detail, the selected postdoctoral researcher will quantify system-scale CO<sub>2</sub> and CH<sub>4</sub> exchange from rangeland systems in East Africa in Kenya and Ethiopia using the state-of-the-art eddy covariance technique. Ecosystem GHG flux measurements will be accompanied by measurements of soil-atmosphere GHG exchange as well as meteorological, soil, and vegetation measurements.

## Responsibilities

- Set up and supervise three experimental sites with eddy covariance flux towers and other environmental sensors in two semi-arid areas in Kenya and one in Ethiopia; one at ILRI's Kapiti Research Station in Machakos County, KE (<https://www.ilri.org/facilities/kapiti-plains-ranch-farmhouse-and-research-centre> (<https://www.ilri.org/facilities/kapiti-plains-ranch-farmhouse-and-research-centre>)), one at Taita Research Station in Taita Taveta County, KE (managed by University of Helsinki, <https://www2.helsinki.fi/en/research-stations/taita-research-station> (<https://www2.helsinki.fi/en/research-stations/taita-research-station>)), and one at Yabalo Pastoral & Dry land Agricultural Research Center in Borena, Oromia Region, ET (<https://iqqo.org/?q=Yabalo>) (<https://iqqo.org/?q=Yabalo>));
- Conduct visualization, analysis, and synthesis of the newly derived data from eddy covariance sites, also in relation to other environmental variables and remote sensing data;
- Establish standard operating procedures to ensure data quality assurance and control (QA/QC);
- Publish scientific papers in peer-reviewed journals with ESSA colleagues and prepare conference/workshop presentations describing results and their implications for agricultural and rangeland productivity, GHG emissions, and nutrient management;
- Communicate findings to stakeholders, including researchers, press, ministries, livestock extension officers, farmers, donors, etc.;
- Develop innovative concepts and ideas for future research projects (including assistance in proposal writing) to address spatial and temporal variability of eddy covariance fluxes and upscaling;
- Co-supervise PhD and MSc students and guide research technicians.

## Requirements

- PhD in the discipline of micrometeorology, (atmospheric) physics, environmental sciences, eddy covariance flux or related fields
- Experience with eddy covariance flux measurements (setup, maintenance, data evaluation and processing) as demonstrated either by your Ph.D. thesis subject, by two publications in peer-reviewed journals on GHG fluxes, or by at least three years of field experience with eddy covariance towers
- Demonstrated ability to integrate eddy covariance flux data with ancillary environmental for synthesis studies on flux budgets, control parameters and processes;
- Ability to handle large datasets, data processing, and strong familiarity with statistical software such as R, SPSS, Matlab and/or python;
- Willingness to coordinate and participate in regular field work campaigns across a range of experimental sites in East Africa;
- Knowledge on agricultural production systems in developing and/or developed countries is preferred;
- Ability to supervise and train research assistants and students, and provide necessary data quality control and assurance;
- Capacity to contribute to research mobilization efforts, such as grant and proposal writing, etc.;

- A background in remote sensing or modeling of nutrient and water cycles is an asset;
- Working experience in developing countries desirable;
- Enjoying working as part of an international and intercultural team;
- Excellent written and spoken English;
- Ph.D. students who are completing their thesis on eddy covariance measurements and who will obtain their degree in the near future, are encouraged to apply as well.

**Post location:** The position will be based in Nairobi, Kenya with travel to field sites in Southern Kenya and Ethiopia.

### Terms of Appointment

This position is at job level **HG 16** and it is open to both national and international applicants. The position is a two-year contract, renewable subject to satisfactory performance and availability of funding. ILRI offers a competitive salary and benefits package which includes medical and other insurances.

### How to apply

Applicants should send a cover letter and CV expressing their interest in the position and what they can bring to the job, as well as the names and addresses (including telephone and email) of three referees who are knowledgeable about the candidate's professional qualifications and experience. These documents should be sent to the Director, People and Organizational Development at ILRI through our recruitment portal <http://ilri.simplicant.com> (<https://ilri.simplicant.com/jobs/38754-post-doctoral-scientist-in-eddy-covariance-flux-measurements-across-rangelands-in-east-africa/detail/>). Screening of applications will start on 5 July 2021 and continues until the position is filled.

The position title and reference number **SLS/06/2021** should be clearly marked on the subject line of the online application.

We thank all applicants for their interest in working with ILRI. Due to the volume of applications, only shortlisted candidates will be contacted.

ILRI does not charge a fee at any stage of the recruitment process (application, interview meeting, processing, or training). ILRI also does not concern itself with information on applicants' bank accounts.

To find out more about ILRI visit our website at <http://www.ilri.org> (<http://www.ilri.org/>)

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