Recruitment of post-graduate researchers in irrigation, ecosystems services and environmental flows

For the research project "Co-management of wetland ecosystems and irrigation for enhancing livelihoods in the Lake Victoria Basin" the Egerton University (Kenya) and UNESCO-IHE (Netherlands) are looking for three motivated and highly qualified Post Doctoral fellows.

Background to the project

Home to some 30 million people, the Lake Victoria basin is densely populated, but also rich in natural wetlands, some of them Ramsar sites, and all of which provide important livelihood opportunities and ecosystem services. With growing population pressure, many wetlands are being converted to more intensive agricultural uses. On one hand, the development of irrigation & drainage increases local food production and enhances rural incomes. On the other hand, it threatens vulnerable wetlands and the ecosystems services that they provide to local inhabitants (such as fresh water, fish and wood).

UNESCO-IHE (the Netherlands) and the Egerton University (Kenya) are initiating a two year research project (2013-2014) with the objective to develop mechanisms and policy protocols that optimize the co-existence of wetlands and irrigation schemes in a sustainable manner. Key outputs include increased knowledge and insights on the co-existence of wetlands and irrigation, its synergies and problems, contributions to the policy debate concerning agricultural intensification in wetlands and strengthened partnerships.

Three Post doctoral level research positions are available working in the themes: 1) ecosystems services of wetlands; 2) environmental flows; and 3) sustainable irrigation development. It is expected that researchers on each theme will work closely to together, so as to provide a string interaction of the project and its outputs.

Applications

The Post Doctoral fellows will be based at the Egerton University, Kenya, with two extended visits to UNESCO-IHE at Delft, the Netherlands. Fieldwork takes place in the Nyando and/or Mara River Basin in Kenya, jointly supervised by academic staff from Egerton University and UNESCO-IHE. Detailed descriptions of the Terms of Reference and requirements for each position are given below.

Please send your applications (a CV and letter of motivation which includes your interest in one of the three themes) before 25th of March 2013 to:
Prof. Charlotte de Fraiture
c.defraiture@unesco-ihe.org

Position descriptions

1. Ecosystems services of wetlands

For the ecosystems services of wetlands theme we are looking for an early to mid-stage Research Fellows, preferably with a Ph D. The position will be fulltime for a period of 18 months, to be hosted by the Egerton University, Kenya. The proposed study site is the Nyando and/or Mara River Basin within the Lake Victoria basin in Kenya. Outputs of the project theme are expected to contribute to a better understanding of the link between livelihoods and ecological integrity of wetlands to inform and support policy development and implementation for the sustainable use of wetlands

Responsibilities

1) Build on previous work on ecosystem services in wetlands, including the study site, to assess the link between ecological provisioning and regulating services, in order to develop and test the link between ecological integrity and metrics of livelihood.
2) Conduct field research and apply modeling in one or more of the following:
   - Develop metrics that link ecology and socioeconomics of East Africa wetlands
   - Quantify livelihood and ecological benefits, impacts of river and lake, and river hydrological regimes and wetland management
   - Assess ecological and economic trade offs of wetland conversion and management.
   - Build on previous stakeholder analysis to assess networks of stakeholders and their influence on measures of wetland integrity.
3) Presenting and discussing research results in stakeholder fora
   - Joint field activities with relevant stakeholders
   - Presenting and discussing research results in stakeholder forums
   - Active participation in project meetings, stakeholder discussions and workshops
4) Develop integrated policy briefs and scientific contributions to the peer reviewed literature.

Requirements

- PhD in an environmental or social science discipline
- Interest and experience of wetland habitats and related policies
- Previous experience in development of ecological and/or ecological metrics to assess environmental pressures and impacts.
- Fluency in English (written and spoken)
- Proven ability to write policy and/or scientific texts in English
- Ability to work both innovatively, independently and as part of a small team
- Willingness to spend time in the field, flexibility to meet stakeholders even in weekends, if needed.
- Ability to communicate effectively with a range of stakeholders (peers, policy makers, farmers M/F etc)
- Knowledge of the Lake Victoria basin is an advantage.

2. Environmental flows

For the position under the Hydrology and Environmental Flows theme, we are looking for an early to mid-stage Research Fellow. The position will be fulltime for a period of 18 months and hosted by Egerton University, Kenya. The proposed study sites for hydrological work are the Nyando and Mara river basins in Kenya.

Responsibilities

1) Collaborate with water authorities to establish the hydrological basis for the project, investigating the natural and anthropogenic controls on the water balance at the sites, quantifying ecologically relevant components of the flow regime, and assessing the potential hydrological impacts of future management decisions.
2) Conduct field research and apply modeling to:
   - Describe and simulate hydrological processes in study areas, including runoff processes, annual flooding patterns, surface-subsurface exchange, and extreme events such as large floods or extended drought.
   - Determine, in cooperation with ecosystem services researcher, ecologically relevant indices of flow that become the basis for environmental flow recommendations.
   - Assess, in collaboration with sustainable irrigation researcher, the hydrological impacts of current and planned agricultural interventions.
   - Provide hydrological input to the development of scenarios (through modeling) to assess tradeoffs and synergies between irrigation development and wetland ecosystem services.
3) Involve relevant stakeholders in the research through
   - Joint field activities with relevant stakeholders
   - Presenting and discussing research results in stakeholder forums
   - Active participation in project meetings, stakeholder discussions and workshops
4) Develop integrated policy briefs and scientific contributions to the peer reviewed literature.

Requirements

- PhD in hydrology, civil engineering, or a closely affiliated field
- Experience in field and modelling aspects of hydrology
- Fluency in English (written and spoken)
- Proven ability to write scientific texts in English
- Ability to work innovatively, independently and as a member of a team
- Willingness to spend time in the field, flexibility to meet stakeholders even in weekends, if needed.
- Ability to communicate effectively with a range of stakeholders (peers, policy makers, farmers M/F etc)
- Knowledge of the Lake Victoria basin is an advantage.

3. Sustainable irrigation development

For the Sustainable Irrigation Development theme under this project we are looking for an early to mid-stage Research Fellow. The position will be fulltime for a period of 18 months and hosted by Egerton University, Kenya. The proposed study site for the irrigation development work is the Nyando and/or Mara River Basin in Kenya. Outputs of the project theme are expected to contribute to the co-management of irrigation systems and sustainable wetlands, to optimize agricultural use of wetlands while sustaining other wetland services for local stakeholders.

Responsibilities

1) Develop workplan and design a methodology to collect and analyze data
2) Conduct field research and apply modeling to:
    - Describe actual and planned irrigation & drainage developments and their value for people's livelihoods compared to other livelihood strategies
    - Assess quantitatively and qualitatively the (potential) impacts of these developments to ecosystems services and their underlying physical processes.
    - Analyze (through modeling) possible measures in water management and system's design to minimize adverse impacts
    - Develop scenarios (through modeling) to assess tradeoffs and synergies between irrigation development and wetland ecosystem services
3) Involve relevant stakeholders in the research through
    - Joint field activities with relevant stakeholders
    - Presenting and discussing research results in stakeholder forums
    - Active participation in project meetings, stakeholder discussions and workshops
4) Develop integrated policy briefs and scientific contributions to the peer reviewed literature.

Requirements

- PhD in agricultural engineering or economics, or affiliated field
- Experience in the field of irrigation and drainage in wetland areas
- Fluency in English (written and spoken)
- Proven ability to write scientific texts in English
- Ability to work innovatively, independently and as a member of a team
- Willingness to spend time in the field, flexibility to meet stakeholders even in weekends, if needed.
- Ability to communicate effectively with a range of stakeholders (peers, policy makers, farmers M/F etc)
- Knowledge of the Lake Victoria basin is an advantage.