Brief

Soil Spatial Information Analyst: *Optimising Fertilizer Recommendations in Africa (OFRA)*

CABI – Nairobi, Kenya

December 2013

The Optimising Fertilizer Recommendations in Africa (OFRA) aims to develop and fine-tune fertiliser recommendations within an integrated soil fertility management framework to help improve the productivity and profitability of smallholder farmers.

OFRA operates in 13 sub-Saharan countries - Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Niger, Nigeria, Mozambique, Rwanda, Tanzania, Uganda and Zambia. National agriculture research and extension systems will be working with CABI and UNL to conduct field research to obtain information needed to optimize on-farm profitability of fertilizer use and enabling advisors to assist farmers in applying this information.

The fertilizer optimization recommendations will cover the main cereal-legume cropping systems. The cereal crops will include maize, sorghum, pearl and finger millet, teff and rice. The legumes covered will include beans, groundnuts, soybean, pigeonpea, chickpea, and cowpea.

The Soil Spatial and Information Analyst will foster close working relationships between OFRA and AfSIS to co-create products and services that will allow spatial modelling to contribute to optimising fertilizer recommendations.

OFRA is funded by AGRA Soil Health Programme and will be coordinated by CABI, through the ASHC in collaboration with the project partner the University of Nebraska – Lincoln.

CABI (www.cabi.org) is a not-for-profit development-led organization. Our mission is to improve people's lives worldwide by providing information and applying scientific expertise to solve problems in agriculture and the environment. Our work increases food security and protects biodiversity.

We use science, information and communication tools to help solve issues of global concern. Our development and research work is arranged around four themes:

- **Commodities** – we work to enable smallholder commodity farmers to compete in global markets, improving their productivity, processing and profitability
- **Invasive species** – we help reduce the spread and impact of invasive species that affect agricultural, the environment and trade.
- **Knowledge for development** – we work with multiple stakeholders and systems to support the sharing and application of knowledge in agriculture and the environment
- **Knowledge management** – we develop and implement communication strategies that use information and communication technologies to provide farmers, researchers, policy makers and others with the information they need to make informed decisions

We have over 350 staff based in 16 countries worldwide. The Regional Centre for Africa is in Nairobi, Kenya (where this post will be based) with a West African centre in Accra. Ghana.

CABI is an intergovernmental organization, and our mission and direction are influenced by government representatives from our 46 member countries who help guide the activities we undertake. These include scientific publishing, development projects and research, and microbial services.

CABI Africa is recruiting a Soil Spatial Information Analyst to work in the intersection of key leading R&D initiatives on digital soil mapping and development of fertilizer recommendations for key crops in Africa.

The position is co-funded by AfSIS, the African Soil Information Service and a new project on Optimizing Fertilizer Recommendations for Africa (OFRA) that is funded by the Alliance for a Green Revolution in Africa (AGRA) through its Soil Health Program. The incumbent will be part of a setup that includes the CABI led Africa Soil Health Consortium (ASHC).

ASHC (Africa Soil Health Consortium) [www.cabi.org/ashc] is funded by the Bill & Melinda Gates Foundation. It works to synthesise and disseminate down-to-earth messages on integrated soil fertility management (ISFM) thereby driving increased productivity in smallholder farms in sub-Saharan Africa.

AfSIS (The Africa Soils Information Service), funded by the Bill & Melinda Gates Foundation, is a leader in digital soil mapping using advanced soil analytics and geo-statistical modelling. In addition, AfSIS is defining and characterizing information extrapolation zones, climate and cropping system properties, and developing tools for easy use of this information by a range of stakeholders.

THE ROLE

Job title:	Soil Spatial Information Analyst – Two-year Fixed Term Appointment initially
Project:	The Optimizing Fertilizer Recommendations for Africa project funded by AGRA
Salary:	T.B.A – commensurate with experience and skills – working to CABI employment contract
Reporting to:	ASHC Project Manager, Nairobi with technical reporting to the OFRA Science Coordinator and AfSIS Science Manager
Direct reports:	Data Manager
Location:	Nairobi, Kenya
Project duration:	For 3 years from date of recruitment

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Purpose of the role

You will be working with some of the leading practitioners in the most innovative agencies working in soil science in Africa. You will participate in developing tools for use of this information by stakeholders in the field, in industry, in regional planning and in development. This will include working with the **Grameen Foundation** in Uganda as they develop mobile phone applications on fertilizer use to be piloted by a network of Community Knowledge Workers.

There will be significant international travel to work with delivery partners from national extension services and other stakeholders in the 13 countries that AGRA's Soil Health Program covers. You will offer training and advisory support. You will be responsible for assisting the research teams in the nations to participate in the data management and analysis system, to apply the results and to enable their stakeholders in the use of tools.

You will help standardize field data collection, develop and use a system of data storage, management, and sharing that integrates the field data with the spatial data and tools developed by AfSIS. This will ensure compatibility between OFRA and AfSIS data.

You will conduct statistical analysis of the multi-environment field research data to develop nutrient response functions and then link these to the AfSIS spatial information for extrapolation across major crop production areas of Africa.

You will work closely with the OFRA Science Coordinator from the University of Nebraska-Lincoln; the science leader of AfSIS, NARES in Ghana, Burkina Faso, Mali, Niger, Nigeria, Kenya, Uganda, Rwanda, Tanzania, Mozambique, Zambia, Ethiopia and Malawi, two contracted Regional Soil Research Specialists based in East and West Africa who will be key in backstopping NARES in countries, as well as other members of the OFRA and ASHC teams.

Key Accountabilities

- To lead an OFRA:AfSIS working group to co-create innovative solutions to:
  - use of spatial data to inform planning of agronomic trials and allow more efficient use of data through extrapolation to other areas with similar characteristics
  - development of tools to contribute to improved fertilizer recommendations
- Linkage with AfSIS on all technical aspects of the project to ensure compatibility between systems, effective data sharing and collaboration in development of tools and models
- To facilitate interactions between NARES partners and other international organizations including: Wageningen University; The International Institute of Tropical Agriculture (IITA); International Fertilizer Development Centre (IFDC); AfricaRice; International Plant Nutrition Institute (IPNI) and; International Centre for Tropical Agriculture (CIAT). Also initiatives such as Global Yield Gap Atlas (GYGA) and N2Africa working in this area;
- Line management of the Data Manager
- Technical backstopping to sub-grantees, in statistical analysis and other technical areas as required
- Participate and lead some sessions in OFRA annual and regional meetings
- Oversee data capture and management, working with the database manager and AfSIS staff working on databases to ensure all of the trial data is available as open source information.

Candidate Profile

Education
Essential
- A BSc in agronomy or related area
- A post-graduate degree (MSc or above) where advanced techniques in data management and analysis were applied

Desirable
- Advanced skills in GIS and spatial analysis,

Knowledge and skills
Essential:
- Ability to synthesize large amounts of complex, and sometimes contradictory data, into easily understood and actionable recommendations for farmers and policy makers
- At least three years of work experience applying advanced data management and analysis techniques
- A quantitative/analytical mindset with good understanding of databases and analysis
- Detailed knowledge of fertilizer use and Integrated Soil Fertility Management in the context of agricultural research and development in Africa
- Advanced computing skills primarily in managing dBases, statistical analyses
- Able to write for and present to a variety of audiences in English

Desirable:
- Strong awareness and understanding of gender issues in agriculture
- Understanding of how to communicate with non-scientific audiences
- Excellent written and verbal communications skills including facilitation of meetings
- Working knowledge of French and Portuguese
- Experience in development of information management and/or decision tools

Experience preferred
- At least 10 years in agricultural development and research in Africa
- Innovative data collection, management and analysis including use of ICT and web-based tools
- Extensive and demonstrable experience in working with different agricultural sector stakeholders in the public, private and civil society sectors (especially NARES and IARCs)
- Development and use of decision support and information management tools
- Project management
- Facilitation of groups for information sharing and problem solving

Personal characteristics

- High degree of innovation, originality and creativity
- Strong analytical mind and ability to handle a complex and diverse workload
- Ability and confidence to relate to a wide range of stakeholders
- Ability to communicate effectively and facilitate groups to work in a cohesive manner
- Ability to participate in teams from different cultural and professional backgrounds and lead small teams with focused activities and task
- Self-motivated, adaptable and well organised
- Willingness to travel frequently
- Good sense of humour

EQUAL OPPORTUNITIES

CABI is an equal opportunities employer and welcomes applications from candidates irrespective of age, gender, race, colour, nationality, ethnic or national origin, disability, religion, sexual orientation or marital status. No applicant will be disadvantaged by conditions which cannot be shown to be justified and selection will be based on merit.

By taking the **CABI Equal Opportunities Survey** you will be helping us to follow best practice recommendations that employers should monitor selection decisions to assess whether equality of opportunity is being achieved. Please follow the link to take the survey.

HOW TO APPLY

To apply please send the following to **recruitment@cabi.org** quoting **Job Reference 128/2013** and stating where you saw this post advertised:

1. a covering letter describing in full how you meet the candidate profile, and to include details of your current remuneration;
2. a full Curriculum Vitae;
3. the names and contact details of three referees, one of whom must be your current or most recent employer – referees will not be contacted without your prior permission

Please note that the closing date for the receipt of applications is Midnight GMT Friday 31st January 2014