

# **Research Fellowship on Earth Observation for Agriculture**

## **Directorate of Earth Observation Programmes**

**ESRIN, Frascati, Italy**

**ESA/RF-ESRIN(2015)001**

### **Overview of the Division's mission**

The Exploitation and Services Division, of the Science Applications & Future Technologies Department, in ESA's Earth Observation Programmes Directorate, stimulates the use of EO data for science and applications development by the widest possible range of users. The primary goal is to develop innovative methods and new applications that can ultimately be transferred into sustainable operational services. The division cooperates with researchers, public sector users, and value-adding companies worldwide.

In the coming year activities will focus particularly on early evaluation and exploitation of data from the Sentinel missions.

### **Overview of the field of activity proposed**

Global food production must double by 2050 to meet the increasing nutritional demand of the growing world population. In parallel agriculture is one of the biggest consumers of freshwater from rainfall and irrigation. The geographical and temporal variability of water availability is increasingly becoming a limiting factor for agricultural productivity. Earth Observation at moderate scale (10-30 meters) can provide dynamic information on water use and productivity at field scales relevant for agricultural management.

The successful candidate will, in this context, conduct research in the following domains:

- Developing and validating evapotranspiration EO products at moderate resolution
- Demonstrating the use of Sentinel-2 and Sentinel-3 observations for agricultural monitoring, in particular for irrigation management
- Investigating requirements for thermal EO observations at moderate resolution for agricultural monitoring
- Participating in the development of products and applications related to EO for food security and water productivity in developing countries

(S)he will also:

- Liaise with project teams and end-users of relevant ESA R&D projects
- Contribute to the technical definition of new EO data products, services and projects
- Contribute to preparation of training materials, training events, and workshops, some of which may be held in Africa.

- Publish results in relevant scientific journals and present at relevant ESA conferences and workshops

### **Who can apply**

The Programme is open to suitably qualified women and men. Preference will be given to applications submitted by candidates within five years of receiving their PhD.

The Research Fellow Programme is open to nationals of the following states: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and the UK, or Canada as a Cooperating State, Estonia, Hungary, Latvia and Slovenia as European Cooperating States (ECS).

### **Required qualifications**

The position requires state-of-art expertise on analysis and processing methods for data from missions such as Sentinel-2 and Sentinel-3. This should include detailed knowledge of evapotranspiration estimation, modeling of water use and productivity, and of vegetation monitoring, based on moderate resolution optical and thermal EO data. The candidate should have proven scientific programming skills, in addition to expertise with relevant off-the-shelf EO data analysis packages.

Applicants should be early career researchers and must have completed their PhD (or equivalent studies) in a relevant field, i.e. remote sensing and natural or environmental sciences. A background in physics, engineering or computer science is an asset.

Applicants should have good analytical and communication skills and should be able to work autonomously in a multicultural team environment.

Applicants must be fluent in either English and/or French, the working languages of the Agency. A good proficiency in English is required.

### **How to Apply**

Please fill in the [online](#) application form attaching to it, **in one document only**, your CV, your motivation letter and your research proposal.

Candidates must also arrange for up to **three letters of reference** to be sent by e-mail, before the deadline, to the **temp.htr@esa.int**. The letters must be sent by the referees themselves. The candidate's name must be mentioned in the subject of the email.

Applications satisfying the general conditions for eligibility, to be submitted **by 3 June 2015**, will be evaluated and successful applicants will be invited for an interview.

Interested candidates are highly encouraged to visit the ESA website: [www.esa.int](http://www.esa.int)