



## Doctoral student in Environmental Science

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### Lunds universitet, Centrum för miljö- och klimatforskning

Lund University was founded in 1666 and is repeatedly ranked among the world's top 100 universities. The University has 40 000 students and 7 600 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

The Faculty of Science conducts research and education within Biology, Astronomy, Physics, Geosciences, Chemistry, Mathematics and Environmental Sciences. The Faculty is organized into nine departments, gathered in the northern campus area. The Faculty has approximately 1500 students, 330 PhD students and 700 employees.

The Centre for Environmental and Climate Research, CEC (<http://www.cec.lu.se>) conducts research, education and communication on environmental science and climate research at Lund University.

#### **What constrains the expansion of organic farming in Sweden?**

This a four-year PhD project in Environmental Science within a FORMAS-funded project aiming to investigate factors that constrain the expansion of organic farming in Sweden. The PhD project will be conducted in close collaboration with a concurrent PhD project at the Swedish University of Agricultural Sciences (SLU), Uppsala, with two joint aims. One is to identify the main factors driving yield differentials attributed to organic farming, how these are modified by time since transition to organic farming and how they can be mitigated. The second aim is to identify and evaluate means to upscale organic farming in areas where uptake currently is low. Examples of such upscaling can be novel crops and crop rotations, promotion of yield-enhancing ecosystem services for weed and pest control, and sustaining nutrient management through collaboration between arable and mixed farms and/or arable farms and other actors integral to a bio-based and circular economy. The project will include field work in Skåne and Västra Götaland. The PhD student will be situated in an attractive interdisciplinary research environment at the Centre for Environmental and Climate Research, Lund University.

#### **Job assignments**

A key issue for the expansion of organic farming is the development of practices that allow farmers to produce stable yields in the absence of chemical input. This requires a strong understanding of the ecological processes (e.g. pests and pathogens, weed competition, soil biota) that interact within an arable landscape, and how these enhance and/or reduce crop yields. The PhD student will design and carry out field studies to determine the importance of different ecological factors that might constrain yields in organic compared to conventional farming, and further investigate the underlying mechanisms of the most influential factors. The student will explore how the surrounding landscape affects the provision of ecosystem services that are central for yield stability in organic agriculture, and explore methods for facilitating ecological intensification in crop production. Another key issue for the expansion of organic farming is the existence of positive examples of successful organic farms, as this can influence the likelihood of other farmers converting to organic agriculture. The student will therefore take part in planning and carrying out farmer questionnaires and surveys that aim to identify and incorporate innovative and successful organic farming practices in the project. The field studies and farmer surveys will be planned and executed in close collaboration with the concurrent PhD project at SLU.

## Qualifications

We are looking for a person with a Master's degree (including a degree project of 30 credits or more) in environmental science, ecology, agronomy or similar areas. Documented knowledge of agro-ecology, landscape ecology and biodiversity are merits, as is experience with ecological field survey approaches and experimental design. We also value courses in or experience of using remote sensing and analysis of spatial data including GIS. We value experience in statistical analysis, including skills in using R and/or Matlab. Students with basic eligibility for third-cycle studies are those who - have completed a second cycle degree - have completed courses of at least 240 credits, of which at least 60 credits are from second-cycle courses, or - have acquired largely equivalent knowledge in some other way, in Sweden or abroad. A driving license is a requirement. Proficiency in Swedish is meriting.

## Eligibility

Students with basic eligibility for third-cycle studies are those who- have completed a second-cycle degree- have completed courses of at least 240 credits, of which at least 60 credits are from second-cycle courses, or- have acquired largely equivalent knowledge in some other way, in Sweden or abroad.

The employment of doctoral students is regulated in the Swedish Code of Statutes 1998: 80. Only those who are or have been admitted to PhD-studies may be appointed to doctoral studentships. When an appointment to a doctoral studentship is made, the ability of the student to benefit from PhD-studies shall primarily be taken into account. In addition to devoting themselves to their studies, those appointed to doctoral studentships may be required to work with educational tasks, research and administration, in accordance with specific regulations in the ordinance.

## Type of employment

Limit of tenure, four years according to HF 5 kap 7§.

Lund University welcomes applicants with diverse backgrounds and experiences. We regard gender equality and diversity as a strength and an asset. We kindly decline all sales and marketing contacts.

**Type of employment** Temporary position longer than 6 months

## First day of employment

According to agreement

## Salary

Monthly salary

**Number of positions** 1

## Working hours

100

## City

Lund

## County

Skåne län

## Country

Sweden

## Reference number

PA2019/2374

## Contact

Henrik Smith, Professor, +46 46 222 93 79, henrik.smith@biol.lu.se  
Johan Ekroos, Researcher, +46 46 222 86 30, johan.ekroos@cec.lu.se  
Irene Bergstrand, HR Administrator, +46 46 222 20 00,  
irene.bergstrand@cec.lu.se

**Union representative** OFR/ST:Fackförbundet ST:s kansli, 046-222 93 62

SACO:Saco-s-rådet vid Lunds universitet, 046-222 93 64  
SEKO: Seko Civil, 046-222 93 66

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