

PhD student in Sustainability Science

Ref. No. SU FV-0881-16

at the Stockholm Resilience Centre. Closing date: 2 May 2016.

The mission of the Stockholm Resilience Centre (SRC) is to advance research for biosphere stewardship and innovation. Research at the SRC applies a social-ecological systems perspective and resilience thinking to generate knowledge and understanding to enable social-ecological transformations towards sustainable futures. Research is advanced through transdisciplinary collaboration with international leading researchers, research environments worldwide, and environmental actors.

The SRC aims to foster new generations of researchers and academic leaders through our Resilience Research School. The school equips students with a theoretical and practical foundation in Sustainability Science with a focus on resilience in social-ecological systems. Students are encouraged to develop new approaches that integrate methods and concepts from the social, natural and applied sciences. Emphasis is placed on developing student ability to define a problem, develop research methods, and communicate research findings within international scientific and science-policy discussions.

Project description

We are seeking a self-motivated and ambitious PhD student to study consumption of freshwater worldwide from a hydrological perspective. Freshwater consumption is the water amount that is taken directly from water resources or precipitation, used by human activities and not returned to runoff. This water is instead mostly sent back to the atmosphere as evapotranspiration after being used in any human sector. Although freshwater consumption implies in itself a service to humans, it reduces the amount of water available for ecosystems and human populations on the surface of the Earth. Recent studies have shown that freshwater consumption has possibly reached unsustainable levels and may have already transgressed its planetary boundary. Furthermore, the human water footprint is now 20% higher than expected. In contrast to these recent findings, current global freshwater consumption is still highly uncertain, especially regarding the lack of knowledge on consumption from land use activities like the extensive non-irrigated agriculture and forestry.

The student will use climatic observations of runoff, precipitation, temperature and other climatic parameters to calculate evapotranspiration by water balance and determine freshwater consumption from land- and water-uses from human sectors such as that of non-irrigated agriculture. The student will also use the Dynamic Global Vegetation Model LPJmL ("Lund-Potsdam-Jena managed Land") for comparisons of research outputs of freshwater consumption. The study will be carried in different basins around the world, focusing specially in basins with good data availability, high agricultural activity and location in the tropics. Taking profit of the inter-disciplinary nature of Stockholm's Resilience Centre, the student will collaborate with other experts in climatic, social and ecological areas to determine how sustainable water consumption is in these basins. Although the position requires hydrological knowledge and skills, the student should also be prepared and motivated to explore other related fields such as ecology and Earth system studies.

Qualification requirements

To be admitted as a PhD student at the Stockholm Resilience Centre one must be eligible to be admitted to a PhD Programme in Natural Science at Stockholm University. In order to meet *the general entry requirements*, the applicant must have completed a second-cycle degree, completed courses equivalent to at least 240 higher education credits, of which 60 credits must be in the second cycle, or have otherwise acquired equivalent knowledge in Sweden or elsewhere.

Specific entry requirements for admission to postgraduate studies in Sustainability Science are that the applicant has a total of at least 30 credits, or equivalent, at advanced level in Natural Science, Civil or Environmental Engineering, Physical Geography, Sustainability Science or Environmental Studies as well as a thesis of at least 30 credits at advanced level in any of these areas.

Only a person who will be or has already been admitted to a third-cycle programme may be appointed to a doctoral studentship. The primary assessment criteria in appointing a doctoral student should be the capacity to benefit from the training.

Selection

The selection among the eligible candidates will be based on all/some of the following:

- First, academic/working experience with focus in hydrology/water resources.
- Analytical ability as demonstrated by a scientific report, paper or degree project thesis.
- Programming skills (e.g., Matlab, R, Python) for handling large volumes of hydrological data.
- Knowledge of Geographical Information Systems (GIS).
- Basic knowledge of the Budyko framework (Budyko, 1948) for water and energy availability. This framework will be used as a tool for the hydroclimatic analysis required to estimate water consumption.
- Creativity, the desire to do research, self-motivation and willingness to collaborate with professionals in other disciplines.
- The applicant's personal references.

Admission Regulations for Doctoral Studies at Stockholm University are available at: www.regelboken.su.se.

Terms of employment

The term of the initial contract may not exceed one year. The employment may be extended for a maximum of two years at a time. However, the total period of employment may not exceed the equivalent of four years of full-time study.

Doctoral students should primarily devote themselves to their own education, but may engage in teaching, research, and administration corresponding to a maximum of 20 % of a full-time position.

Please note that admission decisions cannot be appealed.

Stockholm University strives to be a workplace free from discrimination and with equal opportunities for all.

Contact

For more information about the Resilience Research School or sustainability science at the Stockholm Resilience Centre, please contact Head of Subject, Prof. Garry Peterson, telephone: +46 73 707 85 92, garry.peterson@su.se. For more information on the PhD research, please contact the supervisor Fernando Jaramillo, telephone: +46 704 529773, fernando.jaramillo@natgeo.su.se

Union representatives

Anqi Lindblom-Ahlm (Saco-S) and Lisbeth Häggberg (Fackförbundet ST), telephone: +46 8 16 20 00 (operator), Gunnar Stenberg (SEKO), telephone: +46 70 316 43 41, and PhD student representative: fredrik.c.l@sus.su.se.

Application

Apply for the position at Stockholm University's recruitment system by clicking the "Apply" button. It is the responsibility of the applicant to ensure that the application is complete in accordance with the instructions in the job advertisement, and that it is submitted before the deadline.

Please include the following information with your application

- Your contact details and personal data
- Your highest degree
- Your language skills
- Contact details for 2–3 references

and, in addition, please include the following documents

- Cover letter
- CV – degrees and other completed courses, work experience and a list of degree projects/theses/publications
- Research proposal (no more than 3 pages) describing:
 - why you are interested in the field/project described in the advertisement
 - why and how you wish to complete the project
 - what makes you suitable for the project in question
- Degree certificates and grades confirming that you meet the general and specific entry requirements (no more than 6 files)
- Letters of recommendation (no more than 3 files)
- Include electronic copies of 3 most relevant works (degree projects or published articles) (no more than 3 files).

The instructions for applicants are available at: [Instructions – Applicants](#).

You are welcome to apply!

Stockholm University – our education and research produce results.