



**Trinity College Dublin**

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

## **Youth-Led Nature-Based Solutions for Groundwater Security in Madagascar**

### **Trinity Research Doctorate Award 2026-2030**

We invite applications for a fully funded PhD studentship on adolescent-led nature-based solutions (NBS) for groundwater security and child and adolescent health in southern Madagascar. This PhD is part of a larger interdisciplinary project, *Implementing and Evaluating Nature-Based Solutions for Health in Children and Adolescents*, funded through the AIB Trinity Climate Hub Trinity Research Doctorate Award (TRDA) scheme.

#### **The Project**

Nature-based solutions are increasingly used to manage drought, flooding, overheating, and environmental degradation, with potential health benefits. However, evidence for the health benefits of NBS remains limited, particularly for children and adolescents. Childhood and adolescence are sensitive developmental periods when diet and activity patterns consolidate, and around one-third of lifetime mental disorders begin by age 14. NBS may offer a preventive lever for child and adolescent health, but health benefits cannot be assumed from implementation alone.

This project will generate policy- and practice-relevant evidence by treating NBS as a measurable exposure intervention and linking environmental change to changes in child and adolescent mental health, physical health, and health-related behaviours across three climate-sensitive settings: Madagascar, Ireland, and the Netherlands.

The successful applicant will be fully funded (see below) and will join a team of three other PhD researchers and supervisors at Trinity College Dublin spanning multiple disciplines.

#### **This PhD**

This PhD (PhD1 within the wider project) will co-develop and pilot a groundwater-focused NBS in the Grand Sud, Madagascar, where climate-change induced drought and water insecurity place severe ongoing strain on children and adolescents. The student will collaborate with academic and NGO-based colleagues in Madagascar, as well as with local community groups.

Employing participatory approaches, the student will: 1) train Madagascan adolescent researchers to co-define the problem and develop a context-specific theory of change. 2) Work with 6–8 diverse adolescent co-researchers to co-develop the intervention and plan for its implementation. 3) Implement a feasibility and pilot evaluation of the co-designed intervention. We expect to collect indicators of water reliability and quality, as well as participant reports of food and water insecurity and of health.

## **Supervision**

**Primary supervisor:** Dr Kristin Hadfield (Trinity Centre for Global Health School of Psychology).

**Co-supervisors:** Dr Patrick Morrissey (School of Engineering) & Prof Cathal Walsh (School of Medicine)

## **Essential criteria:**

- An undergraduate degree (2.1 or equivalent) in psychology, public health, global health, international development, social sciences, or a related discipline **OR** in civil engineering, environmental science, environmental engineering, biology, earth sciences, hydrology, or a related discipline
- Fluent in English (spoken and written)
- Fluent in Malagasy and/or French (spoken and written). Fluency in Malagasy is not required but would be a substantial asset
- Willingness to spend extended periods in Madagascar for fieldwork (approximately 4-10 months across the programme)
- Strong interpersonal and cross-cultural communication skills
- An interest in working across disciplinary boundaries and willingness to engage in interdisciplinary dialogue

## **Desirable criteria:**

- A master's degree in a relevant subject area
- Prior experience living, working, or conducting research in Madagascar or comparable low-resource settings
- Experience working with children and/or adolescents in a research or practice context
- Knowledge of hydrogeology, geology, hydrology, nature-based solutions, water security, groundwater management, or climate adaptation
- Familiarity with theory of change development or logic models
- Some prior experience in either groundwater or hydrological field studies

## **Details of the Award**

The student's tuition will be fully paid, and they will receive a €25k per annum tax-free stipend for 4 years. The successful applicant must be registered and ready to commence in autumn 2026.

## **Details of Application**

Please send a CV, cover letter, and a one-page research proposal to Dr Kristin Hadfield ([Kristin.hadfield@tcd.ie](mailto:Kristin.hadfield@tcd.ie)), Dr Patrick Morrissey ([Patrick.Morrissey@tcd.ie](mailto:Patrick.Morrissey@tcd.ie)), and Prof Cathal Walsh ([Cathal.Walsh@tcd.ie](mailto:Cathal.Walsh@tcd.ie)) by **17 June 2026**. Your proposal should work within the framework of the project as described above; we are not looking for an entirely new study design. Rather, we want to understand how you would approach this work: what questions or methods interest you most, what relevant experience you would draw on, and what ideas you might bring to the work.

Applicants will be shortlisted for interview soon thereafter, with interviews expected in late June. The successful applicant will then have to apply directly to the relevant School following the Trinity College PhD application process.