

MSc. vacancy: Understanding water and sediment flows during extreme storm events in Tamamayn - Ethiopian highlands

MSc in hydrology or other relevant specialization – fieldwork in the 15 May – 15 August 2010 period

Context of the research: the Blue Nile programme

This project will be part of the Blue Nile programme. This programme is a collaboration between UNESCO-IHE Institute for Water Education (the Netherlands), University of Khartoum, Addis Ababa University, VU Amsterdam and IWMI. One postdoc and seven full time PhD researchers work on the programme. See www.unesco-ihe.org/bluenile The aim of the programme is to increase our understanding of how people in the Blue Nile Basin are linked to each other, through an in-depth analysis of farming practices, hydrology, sediment flows, land use, the gender dimension of land and water use, the economic and social value of land and water use, and an analysis of how the increased knowledge on these topics can be institutionalised. The objective of one of the PhD projects is to investigate whether and how specific configurations of social actors and material artefacts can be related to and explain persistent soil erosion and siltation in the basin. **A key case study of this PhD project is to create a socio-material understanding of the formation of one gully in the Ethiopian highlands over the past 20 years.**

MSc thesis research vacancy

For the understanding water and sediment flows during extreme storm events we would like to work with an MSc thesis student from Hydrology or another relevant specialization.

Sediment studies suggest that that 80% of the annual soil erosion in the Blue Nile basin takes place during the first 6 weeks of heavy storm events in the rainy season (HRS 2008). The idea of this research is to understand the processes during these events i.e.:

- the amount and origin of water draining to the gully
- the amount and origin of the sediment passing through the gully

Hands on and innovative methods will have to be employed (e.g. DNA tracing techniques, salt dilution gauging (Moore 2003), turbidity measurement, and/or sediment tracing and trapping). *We encourage the thesis student to bring in his/her own ideas to the formulation of the exact research questions and methods during their thesis study.*

The focus for the project will be generating an in depth understanding of a few rain events rather than to come up with general statistics about soil erosion in the Ethiopian highlands. The studies will contribute to an integrated (socio-biophysical) understanding of the degradation of the land draining to one gully in the Ethiopian highlands (catchment = 30 ha., 20 families live on the land draining to the gully).

Whom we are looking for:

- a highly motivated and bright student who is willing to do field work in the Ethiopian highlands scheme for 10-12 week. Preferred time period for field work: May – August 2010 (different timing can be discussed).
- interest/ affinity/ clear ideas about how to do this research
- good spoken and written English

What we have to offer:

- Exciting research setting: erosion is a hot issue in the village we are working. Life in the village is basic, but has been a great experience for the two researchers already working here under the Blue Nile programme.
- Unique knowledge sharing environment and good Ethiopian contacts (in universities, ministries and labs but also in the village we are conducting the research): the idea is that we learn from you and you learn from us. The research team at the field site during this period

will include 1 or 2 more MSc students from Dutch Universities, and 2 more MSc/PhD students from Ethiopian Universities.

- Besides your main supervisor at your department, you will be co-supervised by Jochen Wenninger (UNESCO-IHE) and supported on the site by Hermen Smit (UNESCO-IHE).
- Budget available (research costs + transport etc.): 600 euro.

For further information please contact before 8 March

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