



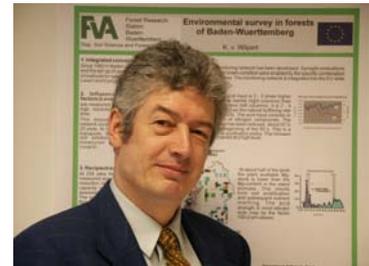
Kolloquium Boden und Wasser



07. Februar 2013, 16 ct – 18 Uhr
Hörsaal Fahnenbergplatz (Rektoratsgebäude)

PD Dr. Klaus von Wilpert
Forstliche Versuchsanstalt (FVA)

Ernestine Lieder
Institut für Bodenkunde, Universität Freiburg



Alina Baranova
Institut für Physische Geographie, Universität Hamburg

Development of water protection forests in the Qilian Shan Mountain, NW China

The contribution will comprise three parts:

I myself will introduce into a project funded by Robert Bosch Stiftung. This project aims at the exchange and collaboration of scientists among China and Germany besides its substantial goal to enhance the water yield from the Qilian Shan mountains. The project aims at developing a concept on integrated land use management in the source regions of the HeiHe River, optimizing and stabilizing water yield by extending the current forest cover, but at the same time, develops pasture quality in order to mitigate potential conflicts between forest re-establishment and the demands of herdsman. Landscape-related hydrological processes are key processes for the optimization of forest areas and its distribution in the landscape as well as for the development of the grassland. The project applied for here will focus on process-oriented evaluations of hydrological data and modeling in an intensively investigated experimental catchment and on the validation of the modeling approaches in the less intensively monitored areas. The results will be extrapolated to the entire HeiHe source region. Since the project is running since mid of 2011 and some administrative barriers had to be coped the project is somehow in an initial stage. Nevertheless we are able to present first results from two theses, the master thesis of **Ernestine Lieder**, Institute of Soil Ecology, Univ. Freiburg and the PhD thesis of Alina Baranova, Institute of Physical Geography Univ. Hamburg.

The working title of the Master thesis of Ernestine Lieder is: " Direction dependence of soil-water conductivity in high-altitude mountains environment in NW China ". She will present the results of a 3 months measuring campaign in summer 2012 where

soil samples and soil descriptions were taken at 15 intensive plots of the Pailogou catchment in the Qilian mountains, research area of the "Academy of Water Resource Conservation Forest in Qilian Mountains of Gansu Province". These soil profiles cover representatively the geomorphological and vegetation variability of the catchment. The profiles have been extensively assessed by the Academy personel with most data already available. During the new measurement campaign in mineral topsoil between 5 and 20 depth below the forest floor 5 soil rings respectively for the three directions vertical, parallel to the surface downhill, parallel to the contour lines were sampled. For the in total 225 samples saturated water conductivity, bulk density, and porosity (with estimated SOC content) have been measured. To improve communicability of the results all 15 profiles have been classified according to WRB 2006.

Alina Baranova, Institute of physical geography Univ. Hamburg, has in 2011 finished her master thesis with the title "Vegetation pattern analysis in the HeiHe River basin within the framework of long-term optimization project of the mountain river flow, province of Gansu". In that work she derived broad scaled vegetation patterns from Landsat satellite scenes for the Qilian mountains and verified them by data from a field campaign. In this work she developed potential extrapolation keys for the transfer of detailed field surveys on species composition and degradation status of the vegetation cover to the whole area of the HeiHe river basin. In a second field campaign in summer 2012 she collected more detailed vegetation parameters in the experimental Pailogou catchment as basis for her PhD which will focus on the evaluation of the variation in pasture quality and its dependence from environmental and landscape-related factors as well as from management characteristics. Empirical, predictive models will also allow for estimates of grazing capacities and future effects of changes in land use, hydrology and soil erosion.

Additionally Eleonora Rauch and Tobias Kawohl, Institute of physical geography Univ. Hamburg, will give a short overview on climate data downscaling in the project region in order to provide spatially discrete climate data for running water models.