

WATENV Newsletter

No. 7 January 2016



Have a
wonderful and
**HAPPY
NEW YEAR!**



WATENV NEWS

22 WATENV graduates received their M.Sc. in autumn 2015 (see alumni news), and we were happy to welcome 32 new WATENV students from 22 different countries.



Newly arrived WATENV students in front of Hannover University (left), this year's DAAD EPOS scholars together with WATENV tutor Luisa

RECENT STUDENT ACTIVITIES

An inspiring interaction with Mr. Rajendra Singh

(by Vishwas Vidyaranya)

Mr. Rajendra Singh, winner of the prestigious 2015 Stockholm Water Prize, visited WATENV on Oct 1, 2015 and interacted with students and faculty. This discussion was one of his main agenda for the visit to Germany and was excited about it.

Mr. Rajendra Singh was welcomed to the department by Prof. Haberlandt, Dr. Dietrich and Eva Starke and the conversation started with a narration of his story from Owens Lake in California, where Mr. Singh had just participated in a water walk with the local communities to raise awareness about water conservation. The story of California which is an apt example of a man-made water crisis had left deep impressions on him.

The initial discussion was followed by a presentation from Prof. Haberlandt and Dr. Dietrich about the Institute of Water Resources Management, Hydrology and Agricultural Hydraulic Engineering, the study curriculum and the research carried out by all groups in the department. Mr. Singh was impressed with the work and suggested the department to take up leadership and promote 'water rights' for the rivers in Germany, so that the natural flow and ecology of the rivers don't get further exploited. His main goal in life is to achieve exactly this and the movement of 'World Water Walk for Peace' has gained momentum across the globe.

We then headed to the seminar room where the students and researchers were waiting to listen to Mr. Singh. For many of the new students of WATENV, it was their first day at the university and it couldn't have been a better start. His work in the Rajasthan, India which is one of the most arid regions in the world has been an inspiration to thousands of experts across the world. He has managed to create over 11,000 water bodies, rejuvenate seven rivers and bring back wildlife to the region using traditional integrated water resource management techniques. He spoke about how the villagers forced him to give up his profession of medicine and work on resolving the water crisis. His teacher in the village taught him the ancient techniques of identifying the sub surface fractures by literally going down the dried wells and relating the soil structure to the vegetation on the surface to identify appropriate locations for creating 'Johads', structures to infiltrate water into the ground. It was a hard toil for the first four years, but after three decades, several thousands of wells had been rejuvenated and women didn't have to walk kilometres to fetch water anymore. All these work has been done without a single penny from any private or government funding. The villagers have learnt from the success and have been able to create structures on their own. No wonder 'The Guardian' put him on the list of '50 people who could save the planet'. His work was awe-inspiring for all of us and Karthik Shenoy, a first year WATENV student from India said – "It was really an eye opener as well as a heart touching experience. I hope to actually follow the path shown by this great man".

He stressed the need for decentralised approach to solve global problems and urged the audience to involve local communities and stay connected with the ground reality while developing solutions for water management and Prof. Haberlandt mentioned this as a key message from the talk. His persistence and dedication for changing people's lives was commendable. The discussions extended for over three hours and he was excited to see such passionate young engineers here. In fact, he suggested starting the water walk movement for Germany from WATENV and motivated us to start a student club for spreading water literacy.



Pictures: Prof. Haberlandt and Rajendra Singh (left), group picture together with WATENV students and staff

Here are some more comments from the audience:

"Mr. Singh reminded me about E.F Schumacher's proverb: Small is beautiful! You don't need big things in life to be happy! You just need to give a bit more importance to those small things which will help you to get a Nobel Prize"

– Lina Saenz, Colombia, Second year WATENV student

"It is amazing to see how a person who is not a civil engineer could lead during the decades, such complicated process of construction of new source of life - the river. In addition, if we could take into consideration the resistance from different sides he had faced, there will be no need to explain why Rajendra Singh won the Stockholm Water Prize this year"

– Iuliia Avetisian, Ukraine, First year WATENV student

"The talk was really inspirational and one important message which I get from him is that the solution of every big problem is really simple but you have to be passionate about your work and have patience. Time will definitely be in your favour if you are consistent". - Bhumika Uniyal, India, Research scholar at the Institute of Water Resources Management

..more RECENT STUDENT ACTIVITIES

Internship in Colombia

(by Diana C. Cordoba V.)

During last summer holidays, I had the opportunity to go back to my home country, Colombia, for an internship with the Antonio Nariño University. I was part of the project: "Rural biorefineries: a sustainable alternative for the development of the Colombian regions". The objective of the project was to evaluate the potential use of wastewater as feedstock in a biorefinery, to produce polyhydroxyalkanoates (PHAs) in rural areas of the country. In this way, wastewater can be treated using anaerobic digestion and producing biodegradable plastics (PHAs) as raw material for the rural companies.

During my internship I had two main tasks: First, it was the validation of the methodology for quantification and characterization of Volatile Fatty Acids (VFAs) using High Performance Liquid Chromatography. The VFAs are important intermediate products in the PHAs production and their appropriate identification is a key factor for the project. My second task was to perform a factorial experimental design including the most important parameters that can affect the VFAs production. 8 parameters were included in the analysis: inoculum, substrate, substrate concentration, temperature and hydraulic retention time. A full factorial design was done with 32 experimental set up and 3 runs for each experimental set up for a total of 96 experiments performed.

I consider the internship as an enriching experience for my academic, professional and personal life. It helped me to relate the knowledge I acquired during my studies in Germany with the context in my country and to upgrade my professional network. Additionally, I had a great time in Colombia. I spent a great time with my friends and family, and I even had time to travel and discover new amazing places, the photo in the Magdalena River proves how much I enjoy my free time :)

Thanks to DAAD, WATENV and Antonio Nariño University for making possible this experience.



Trip to Chile

(by Prajna Kasaragodu Anebagilu)

Our trip to Chile consisted of two parts. The first was a workshop on HYDROLOGICAL AND WATER MANAGEMENT PROBLEMS OF SEMI ARID CATCHMNET: FLOOD IRRIGATION AND WATER QUALITY, and the second was a visit to the irrigation fields in Chile. The International Workshop was organized by Dr. Jörg Dietrich, Leibniz University of Hannover, with support of the BMBF (Germany) and the Conicyt (Chile), and is part of long-time collaboration between the Hannover University and the University of Concepcion. Leibniz University has carried out many Phd, Master and Bachelor thesis with the University of Concepcion for more than 25 years now. This has resulted in providing opportunity for students from both institutions to have a joint collaboration and exchange in the technological front.

The workshop was mainly focused on issues of the irrigation in semi-arid catchments and the measures (being) adopted to overcome them. The workshop had participants from both governmental and institutional backgrounds from different countries like Germany, Chile, Greece, Vietnam, India, Brazil, Colombia with more than 30 participants. Experts presented their work in the field of water resource management, different models & softwares being used, the issues faced from their respective countries and the measures being adopted to overcome the same were discussed. Site visit was also made to the Laja Lake, Salto de la Laja (waterfalls), different springs in the area, the water distribution system, for the better understanding of water issues of Chillian, Chile.

Subsequently, meetings for future projects and opportunities for students were also held with the Faculty from University of Concepcion.

In the second part of the trip, visit was made to the irrigational fields of San Fernando area in Chile. Different types of irrigation system like multi-lateral jet sprinkling system, centralised irrigation system etc were witnessed. The opportunity to visit hydroelectric station, Convento Viejo, and Center of Water for Agriculture, University of Concepcion was also one of the main highlights of this trip. We were able to take a close look at the laboratory where practical training is provided to the farmers for improving the efficiency of the irrigation depending on the crop requirement.



Pictures (from left to right): Prof. Arumi explaining the water distribution of Laja to the participants at Tucapel, Chile, Prof. Holzapfel explaining the "micro-jet" irrigation system used in one of farms of San Fernando for producing avocado, the picturesque Laja Lake. (Picture courtesy: Dr. J. Dietrich)

Graduates 2015

In autumn 2015, 22 students graduated as M.Sc. in Water Resources and Environmental Management. Jesus Casado (Spain) received the award for the best student of his batch.

Congratulations to you all!

WATENV graduates 2015 and their Master Thesis topic:

Erika Marcela Alvarez Cubillos, Colombia: "Groundwater Dynamics in the Kanem and Bahr el Ghazal Regions, Chad"

George Otieno Andiego, Kenya: "The influence of rain gauge network density on the performance of a hydrological model"

Marcos Antonio Carvajalino Fernandez, Kolumbien: „Hydro-numerical modelling of nutrients and oxygen in Ciénaga Grande de Santa Marta, Colombia"

Jesus Casado Rodriguez, Spain: "Analysis of relationships between hydrological model parameters, flow indices and catchment descriptors to improve regionalization strategies"

Christos Charisiadis, Greece: "Nitrogen recovery from nitrogen rich waste waters and slurries by thermal treatment processes"

Ulfi Perdanawati Dasril, Indonesia: "Simulation of wastewater treatment alternatives and comparative evaluation of the simulation results regarding energy efficiency"

Jannatul Fardous, Bangladesh: "Influence of long term changes in crop patterns on the hydrological response of a rural catchment: simulations for the Ilmenau in Lower Saxony"

Ahmad Hamed Fariwar, Afghanistan: "Comparison of different rain gauge and radar data merging methods regarding their potential to provide rainfall data for urban hydrological modelling"

Feri Kustano, Indonesia: "Simulation of sludge treatment alternatives and comparative evaluation of the simulation results regarding energy efficiency"

Nithish Mani, India: "Straw fermentation with rumen biocenosis in high load reactor for hydrolysis and acidification"

Yara Montenegro Pinto, Bolivia: "Co-digestion of sewage sludge with the organic waste and its ammonia recovery potential by thermal evaporation"

Thi Bich Tram Nguyen, Vietnam: "Study on the inhibitory effects of reject waters and vapour condensates on deammonification processes"

Robert Ouko Ojwang, Kenya: "Water demand and supply assessment using WEAP: potential of roof rainwater harvesting as an alternative source of domestic water for Mombasa City, Kenya"

Sandesh Prajapati, Nepal: "Potentials in biotechnology for recovery of phosphorus from wastewater"

Claudia Quiroga Tamayo, Bolivia: „Simulation of sediment yield at the Comarapa catchment (Santa Cruz, Bolivia) using SWAT model"

Mahmoud Rabah, Palestine: "Numerical study on effects of the hydrogeologic heterogeneity on the vulnerability of coastal aquifers to seawater overwash"

Malte Schilling, Germany: "Indirect groundwater recharge in the Cuvelai-Etoshia-Basin, Namibia"

Fernanda Elise Scholz, Brazil: „Influence of Reservoirs and Transmission Losses on the Hydrological Modelling of the Semi-arid Jaguaribe River Basin, Brazil"

Larissa Tarasova, Russia: "Hydrological modeling in the data-scarce glaciated catchment of the Gunt River, Tajik Pamirs"

Raul Villanueva, Honduras: "Direct groundwater recharge in the Cuvelai-Etoshia-Basin (CEB), Namibia"

Ngoc Quynh Vu, Vietnam: "Hydrological simulation of a tropical catchment in Vietnam"

Muhammad Waseem, Pakistan: "Ground water contamination due to unhealthy sanitary conditions in Pakistan"



WATENV graduates at the New Town Hall in Hannover

Best wishes for 2016!

Contact:

WATENV - Master of Science in Water Resources and Environmental Management
Leibniz Universität Hannover, Institute for Water Resources Management, Hydrology and Agricultural Hydraulic Engineering
Appelstr. 9A, 30167 Hannover
Germany

<http://www.watenv.de>, mail to: watenv@iww.uni-hannover.de

WATENV on Facebook: www.facebook.com/WATENV