

Editorial

Dear members, dear friends and dear facilitators of **Technology without Borders**,

another successful year lies behind us and we look back on two important events. On the one hand we have started 3 projects to compensate our carbon (CO₂) footprint, which is caused by the flights to our operational areas (TeoG Newsletter III/2019). Please note the date for planting 3000 trees on 10 October 2020 in North Hesse, Germany. On the other hand, we have defined the topic of Agroforestry as a new area of competence, since Agroforestry not only helps poor farmers to generate new, stable income, but also allows fertile soil to develop again from karstified soils through natural mechanisms that are millions of years old. (TeoG Newsletter III 2017)

♪ Every year again ... ♪ the year 2019 is drawing to a close and also this year we have all helped people to improve their living conditions. This creates a good and correct feeling for the end of the year. On behalf of the Executive Board we would like to use this feeling to wish you and your families a healthy Christmas and a happy New Year, combined with a big thank you for your dedicated support in 2019.

Your board of directors

F. Neumann	F. Regler	R. Schullan	N. Nguyen	M. Stephan	J. Schlund	D. Schaffert
			Ch. Zeidler		A. Fenn	J. Fassnacht

Project leader workshop in Ndejje, Uganda

This year the first regional group in Uganda was founded in Ndejje University just about two hours north of Kampala. On the 5th and 6th October this year, their integrations process into the global TwB structures was finished with their first project leader workshop.

In the two days all participants, twelve engineering students and one alumni, learnt the theoretical and practical fundamentals of project management as well as the internal structures of TwB to ensure quality and success of projects all around the world. Working on their own projects, for example topics from Initiation, planning, execution & controlling and completion of projects were covered and essential skills in the management of project costs, personnel and risks taught.



Due to the high amount of (plastic) waste in Ndejje and on the campus, two out of the three projects aim to create a cleaner environment. A waste separation and disposal system is going to be established on the campus so that, for example, organic waste (e.g. banana peels from the school canteen) can be collected separately and

used, for example, in a biogas plant for energy generation or as a basis for the production of nutrient-rich compost soil. The collected, pure plastic waste will also be melted down and the viscous material used as a cement substitute to produce paving stones. The third project deals with the question of how to achieve a safe water supply by means of bio sand filters (BSF) at the university and in the surrounding villages and schools.

At the end of the second ten hour day Frank Neumann of the TwB-Board joined in via Teleconference to give additional input and take questions from the students. The workshop was concluded with a traditional local dinner and a multitude of inquisitive and sharp questions about project leadership, TwB-structures and anecdotes of former projects of Arne Bruns (RG Erlangen) who had traveled to Ndejje for this Workshop.

Special thanks to Julia Güntherodt (RG Rottenburg) and the Ndejje University for organizing the workshop during her two month educational program in Uganda.

Julia Güntherodt, RG Rottenburg

WASH Workshops & Training of Trainees

Not only a cooperation was accomplished in between Uganda and Germany with the Project Leader Workshop, but also on other fields.



The village of Ndejje Hill, located in Luweero District is a region comprising of a number of schools and a University (Ndejje University Main Campus), located about 40km north of the country's capital, Kampala. The project region is situated in a rural area. Besides Ndejje University with a population of about 2000 students, the area is also home to other numerous primary and secondary schools.

Due to unavailability of public water supply, the people of the region obtain most of their drinking water from cisterns (by rainwater harvesting), wells with hand pumps or boreholes from which groundwater and surface water are collected. The sources of

drinking water are at times shared by humans and animals, exposing the water sources to a significant risk of contamination.

A preliminary survey in spring 2019 (UGA03) showed that the wells of schools are particularly contaminated with faecal bacteria (E-coli). However, the danger posed by the consumption of such polluted water is highly underestimated and necessary measures (e.g. boiling the water) are not taken. Owing to this, children in particular often suffer from water-borne diseases such as typhoid fever or diarrhoea.

As part of the BWS-plus project "Challenges in water supply: Problem areas and solutions for a sustainable and safe drinking water supply in Uganda" of the University of Applied Forest Sciences in Rottenburg (HFR), a new RG was founded at the Ndejje University (NDU) in Uganda. Through active participation of students, a positive development of the project and an improvement of the current situation will be ensured.

As a reaction to the results from the preliminary investigation, the Rottenburg regional group has setup a goal of improving the quality of drinking water in the schools. However, it would not have been reasonable to start directly with the implementation of a technical project. The framework conditions for a well project for example, were unfavourable; there was not only insufficient time for execution, but also above inadequate funds, unavailability of land and no competent personnel in charge, who would take over supervision of the well after completion of the project. In addition, there would be risk of recontamination of the source since there is little or no knowledge amongst the beneficiaries regarding possible drinking water contamination and how their own misconduct would affect the quality of the water.

It was therefore a fundamental concern of ours to create awareness about hygienic deficiencies through education and raising awareness campaigns as well as providing teachers, students and pupils with essential knowledge for the active prevention of potential diseases. In cooperation with the RG in Uganda, interactive workshops on WASH (Water, Sanitation & Hygiene) were held at the schools within the project area. This was done in the form of games, discussions and group work which involved a total number of 4 schools (1 primary school, 2 secondary schools and 1 school of nursing and midwifery) and we taught more than 120 children and young people aged 8-20 years.

The teachers are important role models for the children and are also responsible for identifying hygienic problems in their respective schools together with possible symptoms of illness in the children and for taking appropriate measures to curb these problems. For this reason it was not only essential to educate the pupils, but also to train the teachers on how to teach the relevant topics in a correct and pedagogically meaningful way. This was achieved during a four-day WASH Promoter Workshop, after which the teachers were equipped with a free tool kit containing all necessary training materials and a training guide. The teachers were thus given the opportunity to integrate the workshop contents independently into their lessons at their respective schools.

The project team consisted of two members of the RG Rottenburg (Nina Schäfer and Julia Güntherodt) and two members of the newly founded regional group in Uganda (Ssentongo Francis Xavier and Kakobya Peter).

In addition, some cooperation with local stakeholders and organisations have been established. The training of the WASH promoters for example, was conducted in cooperation with the Ndejje University Community Sports Education Programme (NUCSEP), which utilizes sports as a channel to educate the community. A partnership with a local NGO known as Community Health Initiative & Livelihood Development Uganda (CHILD Uganda) specialized in the production of bio- sand filters for household drinking water was also established.

After the Uganda Regional Group was established in February 2019, the UGA04 project created the necessary framework conditions for the actual capacity of the university regional group to act. This included the elaboration of initial project ideas and the participation of the members in a project leader workshop.

Nina Schäfer and Julia Güntherodt, RG Rottenburg

News from Eritrea

Visiting our project in Begu Valley in Eritrea is without doubt our personal highlight of the year, although the yearly construction activities at the dam are usually completed by the time of the journey. However, this means that we are able to get on-site a first-hand impression of the fruits of our collective efforts; furthermore we always look forward to meet our project partners and the villagers again.

Approximately three weeks ago, our team returned from this year's project journey, during which we evaluated the construction progress, assessed necessary measures, planned jointly with our Eritrean project partners upcoming steps for the future course of the project, and fostered our friendships with the villagers in Begu Valley. With each journey to Eritrea, we develop a closer relationship to the people and improve our understanding of the local structures and processes so that Technology without Borders and our project gain in visibility. This opens up new opportunities to spread the idea of our innovative, sustainable dam construction method. During this year's journey, we presented the technical aspects of our project to different departments of the local administration and initiated further presentations for next year. Thus, the awareness on alternative solutions is passed on beyond our direct project partners, and our project becomes step by step a flagship project.



In order to achieve this, the construction of the sand storage dam has to be completed first and foremost. This year, we made great progress on the way to our goal: After two construction phases during the previous two years, we were able to efficiently use this year's rainy season also thanks to an increased amount of precipitation. Currently, the dam stands nearly at the final height of 7 meters with the spillway in the centre reaching almost 4 meters height. During future rainy seasons, the spillway will continue to be raised according to the innovative stepwise construction.

Already with the reached height as of now, the dam is able to store water for the use by the villagers. However, the majority of the water storage volume will only be created by the final stages of the dam wall. Therefore, the provided water volume does not suffice throughout the entire dry season yet, nonetheless it already relieves other water sources in the region. Moreover, this year's water probing reconfirmed the high quality of the water from our dam in comparison to other open water sources in the area, which motivates us to tackle the final phases of construction.

Until construction continues with the start of next year's rainy season, we are collecting donations for the completion of the final stages of the sand storage dam and the concomitant project journeys in order to finalize the icing on the cake of our work.

Thank you very much for your longstanding support – together we can go the last mile!

Jan-Marc Schwidtal, RG Hamburg

Short messages

Save the Date – TwB CO2 project

Our planting event will take place on **10th of October 2020** in Schwarzenborn.

The project planning for our TwB CO2 project next year is in full flight now. To balance the CO2 emissions caused by flights during TwB projects in foreign countries, we will plant several thousand trees in cooperation with the Kuratorium für Waldarbeit und Forsttechnik. We will need lots of helping hands! So save the date for our planting event on 10th of October and help to improve our climate! The official invitation will reach you next year.

Currently running and completed projects:

www.teog.ngo

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