

Deepening aquatic monitoring knowledge through Germany - Southern Africa Summer School 2019

May 2019

The German- SA Summer School was made possible by the collaboration of experts from Germany and Africa initiated by Dr Dirk Jungman from the Technische Universität Dresden (TUD) and Marinda Avenant from the University of the Free State (UFS). The German-SA Summer School was the first of its kind in South Africa which aims at exposing post graduate students from various institutions to aquatic bio-monitoring, chemical monitoring and hydrology. The future of the Summer School is not clear at present, but the organisers would like in future to present a summer school every second or third year. All topics were presented by both German and African experts gave students a deeper understanding of aquatic monitoring. This summer school was made up of theoretical classroom learning, based on the local case studies, and practical work during the field excursion, where participants went to Riet River (Mokala National Park) for practical sampling. During field trip German and local experts demonstrated not only water quality monitoring, but also macro-invertebrate, and riparian vegetation monitoring techniques.

This summer school was successfully funded by Volkswagenstiftung (in Germany), and was hosted at the Center for Environmental Management, University of Free State in Bloemfontein from 25th – 29th March 2019. It was attended by students from 11 universities, and 20 national and international presenters involved in water quality issues, most of them from academia, authorities/agencies and industry/agriculture. All participants had an equal opportunity to meet and learn from the reputable experts during a Braaivleis evening event at Free State Botanical Garden. Kick starting the first day, Dr Jens Grundmann (TUD) gave a good lecture on hydrology outlining hydrological processes and modelling, followed by Dr Stefan Julich (TUD) who presented on impacts of land uses on water quality in watersheds, along with Dr Shola Ololade (UFS) who presented a good case study of influence of land use change on the quality and quantity of the Modder River.

Dr Dirk Jungman (TUD) kick started the second day with a good lecture on bio-monitoring, followed by Marinda Avenant (UFS) who presented an interesting



Presenters from different institutions

“Thousands have lived without love, not one without water.”

W.H. Auden



“Water is everything for me”

Prof Danie Vermeulen

The delegates introducing themselves during the first day.

lecture on the bio-monitoring on non-perennial rivers, outlining the challenges and considerations. An informative lecture on chemical monitoring was done by Dr Hilmar Bornick (TUD) and Prof Beatrice Opeolu (CPUT), followed by local case studies presented by Drs Leana Esterhuizen (CUT) and Tascha Vos (UFS). Furthermore, there were also presentations on case studies from other African countries. Aquatic monitoring in Zambia which was presented by Frank Nyoni (WARMA), Aquatic sampling in arid areas presented by Shirley Bethune (NUST), Aquatic monitoring in Lesotho presented by Ntiea Letsapo (DWA), and Aquatic monitoring in Swaziland presented by Sindy Mthimkhulu (DWA). In closing Jessica Rosolowski (TUD) facilitated a business game, specially developed for the Summer School. The participants enjoyed as they learned while playing the game. "Thousands Have Lived Without Love, Not One Without Water." Prof Danie Vermeulen (Dean of the faculty of Natural & Agricultural Sciences) quoted W.H. Auden when he was welcoming the participants, he further emphasised the importance of perception when interpreting data after collection, making an example of a rock which can be seen as a rock by geologists, a building material by engineers, however geohydrologists can see the same rock as an aquifer.

Participants did not only learn about aquatic monitoring in the classroom, they also had time to relax - they were taken to the Planetarium on Naval Hill which provided the opportunity to build new friendships and to get to know each other better. Attending the Germany- SA Summer School has given the participants a deep knowledge on aquatic monitoring which will help them with their research projects. It was a memorable experience. A sincere gratitude goes to Dr Dirk (who initiated the Germany-SA Summer School), the Volkswagenstiftung for funding the idea, prof Danie Vermeulen for the warm welcome and brief words of wisdom, Marinda, Donne, Charissa and Tascha for all their hard work during this event and for making this opportunity exceptional and a success. The participants extend thanks to all the presenters from the different institutions for tirelessly sharing knowledge and their experiences with them, and many thanks to the University of Free State and Technische University Dresden for their collaboration. ♦



Participants during field trip at Mokala National Park

**“Water is The Driving Force of all Nature.”
Leonardo da Vinci**



All participants and presenters

**“When the well is dry, we’ll know the worth
of water.” Benjamin Franklin**



Tascha briefing participants during practical sampling



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