Water is life

On World Water Day, March 22nd, 2021 the SRH Heidelberg UAS offered several events to promote the value of our water. Water is the basis for life on earth. In general, the world has a lot of water at its disposal: in fact, over 70% of the Earth's surface is covered with water. But salt water has the largest share of it. Fresh drinking water is extremely unevenly distributed around the world and while some people flee floods, others struggle for a few drops of this resource.

World Water Day 2021 hosted a wide spectrum of interesting presentations and activities to promote valuing water as a resource, including discussions of international water issues and opportunities to share research results. SRH Heidelberg UAS invited international experts and colleagues as well students from the Water Technology, M.Eng. Programme to present at the first World Water Day Conference of the university.

Together the president of SRH Heidelberg UAS, Prof. Dr Carsten Diener, and colleagues of the School of Engineering & Architecture, Prof. Dr Aksel, Prof. Dr Gayh and Dr Bedu-Addo, organized the event and opened the digital conference for experts and students. Additionally, Stephanie Farrar from the International Office guided participants brilliantly through the event as moderator.

Prof. Dr Sandor Szalai (University of Agriculture and Life Sciences, Hungary) discussed how water scarcity results in increasing land degradation and vice versa. Further, a case study of Ghana's 'galamsey' (gather and sell) industry by Dr Kenneth Bedu-Addo, pointed out negative impacts of water pollution from gold mines on the ecosystem. Then, trout farming's severe impact on natural water bodies was discussed by Professor Dr Mohammed Ghomi of Islamic Azad University, Iran. He demonstrated how the adoption of intensive cultivation patterns by the aquaculture industry causes excessive production of nitrogen and phosphorus during the metabolism of aquatic animals, leading to decomposition of intensified feed residue, thus resulting in polluted water discharge in rivers and lakes. Emphasizing the importance of water conservation, Mohnish Pujari (SRH Heidelberg UAS, student Water Technology, M.Eng.) gave a detailed introduction on the value of water -"Water Conservation – A Single Drop is Equal to a Diamond" and explained various saving techniques of water resources.

Following these presentations, several innovative methods of conserving water were presented, such as Lifestraw, which can filter up to 4000 litres of water without usage of purifiers or iodine tablets; Warka Tower that harvests water from the atmosphere; Cloudfisher, which is similar to Warka tower, but functions well in mountainous regions in presence of clouds. Additionally, participants learned about Managed Aquifer Recharge (MAR), a groundwater engineering tool to tackle water

scarcity in arid and semi-arid regions.

However, the persisting problems of water shortage and untreated sewage resulting in wastage and pollution of water resources was yet to be addressed. Therefore, Prof. Nikolay Makischa (Moscow State University of Civil Engineering, Russia) introduced reconstruction of water treatment plants to conserve water resources. In addition, areas with deficit water flow, who aim at finding new water sources and effectively allocating existing water resources was presented by Louis Okofo Boansi (Brandenburg University of Technology) in his speech on 'Managed Aquifer Recharge as a Tool for Tackling Water Scarcity and Drought in Arid and Semi-arid Regions: the case of Ghana'. As an environmental protection measure, membrane process was emphasized by Prof. Alexei Pervov (Moscow State University of Civil Engineering, Russia), who discussed treating high concentration wastewater effectively through reverse osmosis.

As for water treatment, several regions lack adequate funds to provide a suitable equipment serving each family. Thus, Pauline Priyanka (SRH Heidelberg UAS, student Water Technology, M.Eng.) introduced a simple but innovative technology of waste treatment, banana stems, which provides simple water purification function at a reduced cost, which can suit poor areas with serious water pollution.

Moreover, infectious diseases have become an important problem since numerous viruses are transmitted through wastewater. To reduce infection and effectively detect viruses, Prof. Dr Shane Rogers (Clarkson University, USA) described wastewater-based epidemiology and Sars-Cov-2 applications and challenges in New York and explained the current situation and future development plan.

To round up the conference, participants joined a digital water exploration rally through Heidelberg so international guests could discover Heidelberg and learn new facts about water and architectural highlights in the city.

On World Water Day, the organizers also planned actions for children to raise awareness for importance of water. In a painting competition, children submitted their drawings describing what water means to them (See the online gallery https://democratia-aqua.org/world-water-day). These pictures were presented along with posters from students (See the Map Water2Me) and will remain active to collect pictures, posters, and sentences about the topic Water2Me until the next World Water Day in 2022.

Due to the current situation, experimental packages were sent to children to do at home. Students of Water Technology, Architecture, and Media and Communication Management at SRH Heidelberg UAS created a booklet with Do-It-Yourself water experiments for the children. The overall goal was to create an event not only for students and experts but also for the next generation.

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A big thanks to the sponsors, who made the children smile with gifts for the winners of the painting competition and material for the packages. A special thanks to the German Association for Water, Wastewater and Waste (DWA), the Stadtwerke Heidelberg and the company ProMinent GmbH for their contributions as well.

Also, students, lecturers, and friends of the Water Technology, M.Eng. Programme supported Viva Con Agua and joined the Run4Water. From March 22nd to March 28th, participants ran on their own but were virtually connected through this event. The objective here was the same: to raise awareness for the global drinking water situation and collecting donations for drinking

water projects in South Africa. The School of Engineering and Architecture sponsored each kilometre run by the team.

Further information about World Water Day

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Film on the World Water Day 2021

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