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Wetskills-Romania 2013

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Wetskills-Romania 2013

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Abstract. Wetskills is an international student exchange program, focused on a challenge between mixed teamsof international students to find integral, creative and multidisciplinary solutions for water issues.

Keywords: *international, exchange program, mixed teamsof, multidisciplinary solutions*

1. Introduction

The Wetskills Water Challenge is a two-week event for students from all over the world. The Challenges are organized during formal water sector related events where the Dutch water sector shows itself. The participating students develop their own innovative and creative concepts for broad water issues in a changing world, sponsored by organizations within the water sector. In multidisciplinary and intercultural teams, theparticipantsgain more in-depth knowledge on the challenge topic by workshops of renowned water experts and field trips. Moreover there will be attention for development of presentation skills and collaboration in intercultural and multidisciplinary teams.The Wetskills Water Challenge already took place in China, Morocco, The Netherlands, Indonesia, Oman, South Africa and Egypt. The eighth Wetskills Water Challenge is currently being held in Romania.

Twelve selected students from the University Politehnica of Bucharest and Technical University of Civil Engineering worked together with students from Dutch universities and organizations on water related issues, in mixed teams.

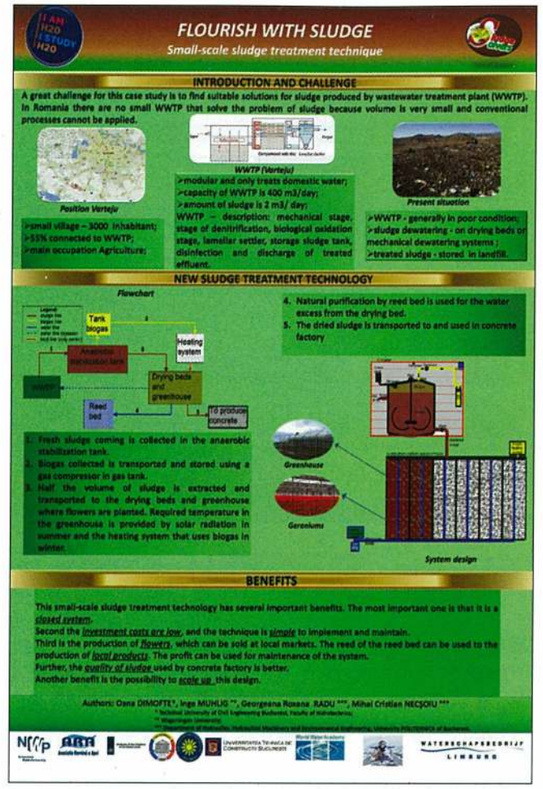
2. What is Wetskills about?

Each team of students had to focuson one specific case study, on which they work during an extensive two-week program in Bucharest (29th May- 13th June). The case studies were formulated by organizations of the Dutch water sector with projects or interests in the Romanian water sector (Berson UV, Waterschapsbedrijf Limburg, HoogheemraadschapRijnland, MARS and UTES consortium, consisting of Dutch and Romanian organizations). At the end of the two-week pressure cooker, each team must present their concept with an attractive Poster and a catching 'Elevator Pitch'.

3. Study cases

3.1.Small-scale sludge treatment techniques

Investigation of the possibilities of (modular) decentralized small-scale sludge treatment techniques like incineration at WWTP scale, gasification, torrefaction, pyrolysis, etc. to implement it in the research area. It can also be a chain of techniques. The students were asked to pay attention to aspects like: robustness, durability (consumption of energy and resources and production of waste), minimal operator intervention, feasibility (payback time, NPV), scalability, modularity/transportability, etc.



3.2. Management of Aquifer Recharge and Storage (MARS)

To combat droughts and floods and to improve water supply, buffering techniques are needed. The technique of ManagedAquifer Recharge and Storage (MARS) is recognized worldwide as an important tool for the solution of this problem. The Netherlands is a leading country with respect to application of MARS and its governance issues. The case study requested the students to identify solutions for applying MARS in Romania

3.3. Macro algae in the Black Sea

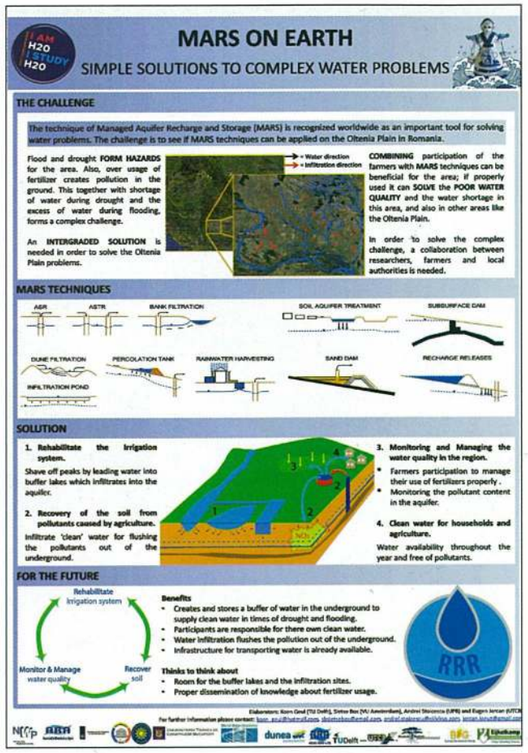
The amounts of macro algae ending up on the Black Sea coast of Romania seems to have increased over the last years. Especially on the recreational beaches this has caused a high discomfort to tourists as the dying and rotting of these algae results in bad smell, and therefore in a decrease of the recreational value of the beaches. The project team was requested to consult the client on the impact of geological and polluter factors on integrated management.

3.4. Satellite treatment of drinking water

Upgrading drinking water quality to meet the evolving standards requires huge investments. Traditionally, large scale centralized water treatment is applied, followed by an expansive distribution network. To improve water quality at the consumer's tap both the water treatment as well as the distribution network need to be addressed. The students had to develop a vision/concept that is a basis for a framework approach to improve water quality at the consumer's tap in both urban and rural areas to meet the current European standards, using satellite treatment as primary solution.

3.5. Underground Thermal Energy and Storage (UTES)

Reducing and recycling the use of sustainable energy is a hot topic worldwide. To improve and increase the contribution of sustainable energy the use of soil energy is promoted. The advantage of the underground is that large amounts of energy can be buffered either by open systems for heat exchange or by closed systems. In warm periods excess heat of buildings, other constructions, industrial processes or from the air can be stored in the soil and in cold periods it is used for heating. Energy neutral buildings can be constructed as the low underground temperature at



the beginning of the summer is used for cooling purposes.

4. Overview of the program

The Romanian students never had an experience like this before and, in the beginning, they were curious and impatient. Some of the Dutch Students had already participated in similar competitions, and a part of them don't know what to expect.

The teams were formed based on an application form and preferences that made possible obtaining the optimal personnel for each case study.

The program started with the essential social part-a study trip/team-building weekend to Campulung-Bran-Brasov. That was the timeframe where the students teamsstarted bonding, making the after-coming working time flow easily.

The first working days took place in the Laboratory of Multiphase fluids flow and wastewater treatment (University Politehnica of Bucharest), under the close supervision of Prof.Mrs. Diana Robescu, Vice-dean of the Power engineering Faculty. The first morning was about introducing the students of what was the expected outcome. The participants got a training of making an attractive Poster and presenting an inspiring so-called elevator Pitch by Mr.Johan Oost. Afterwards the teams started exploring their assignments with the help of the supervising team, containing of Mr. Johan Oost (coordinator of the Wetskills program and project leader of this Wetskills event), Mrs. Janneke Diels (Dutch supervisor within the Wetskills organisation) and Dr.ing. Elena Manea (Romanian supervisor). After just two days of work, the students presented their Plans of Actions in one to two pages, each well justified and researched. The team of experts and the supervisors advised each team on their future work in order to help them develop an innovative solution for the case-study. During this period they also visited University Politehnica of Bucharest and found out about the new and innovative research topics that are developing there.

The future days were spent at The Technical University of Constructions, where Prof.Ioan Bica invited the Wetskills participants to stay, or working at the Apartments where the Dutch participants stayed. A few days before the final presentation in EXPOAPA, pre-presentations were held. The teams worked together in this case, advising each-other on ways that could improve the posters. This is how having five extraordinary posters was possible. The final evaluation took place during EXPOAPA.

5. EXPOAPA

The final product was an inspiring elevator pitch and poster, presented within EXPOAPA. The posters were presented through a poster market, and each team presented their solution on 12 June in Balcescu Hall, to an international oriented jury, their clients and the public of EXPOAPA. This presentation event was led by Prof.dr.ing.Vladimir Rojanschi.

The Wetskills jury consisted of:

•Chair: Mr. William Allis (Bannet Fleming);

•Governance expert: Mr. Dennis van Peppen (AgencyNL / Partners for Water);

•Scientific expert: Prof. SergiuCallos (Technical University of Chisinau);

•Technical expert: Mr. NicoloePitu (RAJA Consultanta);

•Business expert: Mr. Richard Tromp (Hubert Stavoren BV).

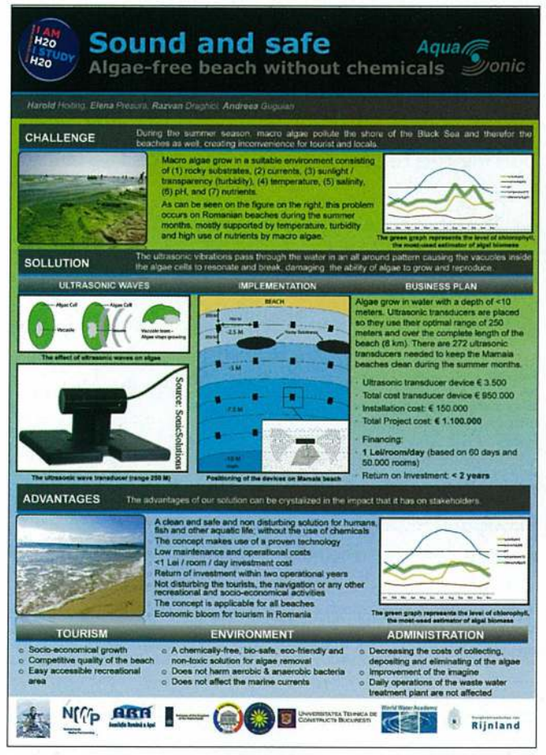
Thejury focused on the following criteria: creativity, technical feasibility, social, economic& environmental aspects, exportability and Pitch & Poster presentation. Based on the public opinion and the set criteria, the jury decided upon the winning team. The winning team was announced at the plenary closing ceremony of the EXPOAPA.

The winning team "AquaSonic" proposed a solution for eliminating the Algaes in the Black Sea, a known problem for the Romanianseaside. The award and participation diplomas were handed by His Excellency, Mr. Ambassador Matthijsvan Bonzel from the Dutch Embassy in Romania. The prize was, from the students point of view, worth to fight for - participation in the Wetskills Water Challenge in the Nederlands part of the YWP program of the International Water Week in Amsterdam (4-8 November 2013).

6. Wrap-up

After the presentations, that took place in the final Conference Day each team got positive feedback, and the possibility to better explain their work to the jury and the audience. The competition was high, and making a difference between the teams was almost impossible. Each case solution had its importance and up points.Those days, seeing the People's Palace, the Technical exposition and being a part of the Technical Conference, was another new experience to all the students. Few of them were a part of something similar before.

The program also represented an opportunity for the students to meet the ambassador of Nederland His Excellency, Mr. Ambassador Matthijsvan Bonzel, Mr.Vasile Ciomos president of ARA (Romanian Water Association) and Dr. Daigger



president of IWA (International Water Association).

The Embassy of the Netherlands in Romania representative, Mrs. Violeta Cozianu, was supporting the teams and the supervisors the entire time.

The students also participated in a meeting-with the IWA President Dr.Daigger, that was scheduled at Politechnica University in order to discuss the influence and impact of young engineers in the water sector together with BSc, MSc and PhD students from the Politechnica University.

Each student had to write a blog for a day of the Wetskills adventure. Each of them was very enthusiastic and expressed it in each of the articles that can be read here

(http://wetskillsromania.blogspot.ro).

None of that wouldn't have been possible without the support of the Netherlands Water partnership, the Embassy of the Netherlands in Romania, the Romanian Water Association, Politehnica University of Bucharest,Technical University of Constructions of Bucharest and the World Water Academy (The Netherlands). The steering committee, formed to prepare the Wetskills event in Romania are already planning to develop more events intercultural events between Dutch and Romanian students and a Wetskills in 2014.

"The Wetskills project has brought new friends and new extraordinary experiences. We met as strangers but I hope we will part as friends."

(Adrian Aldea, participant Wetskills-Romania, 2013)

Auditors:

Elena Manea (University Politchnica of Bucharest), Johan Oost (World Water Academy and Coordinator Wetskills Program) and Janneke Diels (Waterschap Groot-Salland and Project Officer Wetskills Program)