



LEAD POLLUTION IN THE DOMINICAN PARADISE

Situated in the Caribbean region and surrounded by an idyllic blue ocean, lies the 'Hispaniola' island consisting of Dominican Republic and Haiti. Three quarters of the eastern portion is occupied by the Dominican Republic, the second largest country in this region, after Cuba, with 48,442 square kilometers and with an estimated population of 10 million people. The Dominican Republic is a tropical country with an average annual temperature of 25 °C. This nation has the second largest economy in the Central American and Caribbean zone, which depends basically on agricultural goods, remittances and lately, on Free Trade Zone (exports) and tourism.

Many industries have settled in this country due to the low taxes costs, close proximity to important ports and markets, and available cheap labor. Among these industries are the metal and mining sectors, which in most cases do not follow environmental laws or pollution limits, thus, provoking serious environmental and social hazards in population. This is the case in the community "Paraiso de Dios (God's paradise)", located seven kilometers west of the capital, Santo Domingo, in the municipality of Haina which is the main industrial zone of the country and the 'Hispaniola' island. This community is located near of an abandoned lead smelter, thus is highly affected by the accumulation of lead in the soil, waterways and in the air.

The former Metaloxsa (Metales y Óxidos, S.A.), a lead-acid battery recycling plant, occupied 45 ha on a top hill near to the River Haina which drains straight into the Bay of the same name. Due to a very ineffective environmental safety plan, this plant has polluted the entire zone with lead.

According to studies of the Blacksmith Institute, lead levels in the soil exceeded US EPA limits by over 10,000 times. In average, lead levels in the soil were between 5,000 ppm and 463,970 ppm. In 2000, Haina was cataloged as high national concern by the Dominican Secretary of Environmental and Natural Resources, due to this environmental disaster in combination with the fact that the zone is listed among the Top 10 most polluted places in the world. The same study showed that more than 90% of inhabitants of this community presented high concentration of lead in their blood.



Source: Blacksmith Institute

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EDITORIAL CORRECTION

The article "All you need is love or SOCCER" in the WASTE Newsletter No.8 was written by Roman GINIYATULLIN from generation 2010 not by Jesus RIVAS GONZALEZ. So we want to make a correction here and say sorry to Roman.



PROMOTION IN SOUTH AMERICA -- EUROPOSGRADOS 2011

Since the year 2005 the University of Stuttgart attended education fairs in Latin America. Since then, the number of applications and finally the number of students from Latin American countries increased at the University of Stuttgart. Europosgrados (in Brasil it is called Europos) is one of the biggest and most important higher education fair in Latin America. These fairs aim at promoting European Universities and informing interested people at all levels - students, lecturers and researchers - for academic exchange. Students, pupils and staff from international centers of Universities expect information about the different possibilities to study abroad (exchange programs, national and international study programs), possibilities of financial support for studying abroad (e.g. scholarships) and the study conditions (e.g. study fees, living costs, etc.). Lecturers and researchers are interested in establishing or intensifying the academic exchange (e.g. how to become a guest lecturer or how to apply for joint research projects). There is a great variety of que-

stions which occur during a day at an educational fair.

This year the University of Stuttgart participated in the Europos fair held in Sao Paulo / Brasil and in the Europosgrados in Bogotá and Medellín / Colombia. The University of Stuttgart was represented by the Course Director of the WASTE Master Program, Dr. Ulrich Vogt, Ms. Michelle Fischer from Brasil, WASTE alumna generation 2008, Ms. Sandra Palacio from Colombia, WASTE alumna generation 2008 as well as from Mr. Nicolás Escalante from Colombia, WASTE alumnus generation 2003.

Many interested people attended the fairs. In Sao Paulo approx. 6,000 people were registered, in Medellín more than 2,000 and in Bogotá more than 10,000 (!). The onrush of people in Bogotá was that much, that most of the exhibitors were run out of information material long before the fair ended. All in all, the participation in the fair was once again a great success for the University of Stuttgart.

■Dr.-Ing. Ulrich VOGT, Course Director



>>> LEAD POLLUTION IN THE DOMINICAN PARADISE

Lead is the 82nd element of the periodic table. It is a heavy metal not found in its elemental condition in nature, but as Sulphide ore (galena). Lead is a bluish-white radiant metal, very malleable and a poor conductor of electricity. This is a toxic heavy metal that already affects the health of more than 18 million people in the world. In most developing countries the leading pollution sources include: mining, metal smelting, steel and iron production, pigment production and car battery recycling. Of all annually utilized lead in the industry, 76% is used for producing lead-acid batteries.

Lead acid batteries are made of lead plates within a liquid concentration of sulfuric acid in the interior of a plastic container. These batteries can be recharged, but after many times, lead plates get ruined, thus, the battery does not store energy, then, it is considered as a used lead acid battery which is then dumped on the ground, waste pile or into water bodies. It is deemed as a hazardous waste according to the Basel Convention.

In most of developing countries recovery of car batteries has become a profitable business, however, this is done informally and with inappropriate techniques. People open batteries by hand and then, pour the battery acid into the soil, which afterwards contaminates the groundwater and surrounding zones. Also, broken batteries and plastic containers are left in open areas which emit lead dust.

Precipitation brings back to Earth the lead that is released into the air, and in other forms as particulate matter falling to land or on open water sources. In the soil, lead attaches to particles that can be blown as dust or brought into places where people live and pollute their environment. Once in the soil lead can last many years in upper layers, it can also reach surface water sources through storm water run off, but also, it can be transported through groundwater that later is used as drinking water and for irrigation in agriculture.

The most common way of lead can enter the body is through ingestion, inhalation, and also via in uterus or breast milk (from mother to child), however, it is also possible to acquire it via contact with skin. Once lead is inside the body, it is transported through the blood to soft tissues, organs, and finally to the bones and teeth where it can be stored for more than 30 years. Some health problems due to lead toxicification include: impaired physical growth, kidney damage, retardation, reduced I.Q., anemia, nerve disorders, loss of memory and concentration, tiredness, headaches,

increased blood pressure, aching bones and muscles, forgetfulness, loss of appetite and sleep disturbance, followed by constipation and attacks of intense pain in the abdomen, (called lead-colic). Some cases of lead poisoning may cause convulsions, coma, delirium and eventually death. The most susceptible population is children who suffer permanent neurological problems, also pregnant women exposed to lead pollution can produce fetal deformations and birth defects.

In Haina, potentially 85,000 people are affected by lead, and in a study developed by the Blacksmith Institute in 2006, more than 28% of the children in this zone required immediate medical treatment. Studies have shown that lead levels in Haina inhabitants reach values over 100 parts per million (ppm) whereas EPA limits are 10 ppm for children and 20 ppm for adults.

Some efforts in this zone are being directed towards reducing threats of a potential disaster. The Blacksmith Institute in partnership with Terragraphics Environmental Engineering, and the Inter-American Development Bank, already undertook basic affordable remediation initiatives through the following steps: lead monitoring in blood, partnering with local leaders (government, NGO's, and local communities). Among the stakeholders are the Ministry of the Environment and Natural Resources, the Autonomous University of Santo Domingo, MetalXsa, and community leaders. Together they are developing educational programs about lead hazards, controlled recycling of batteries: excavating and removing contaminated soil, removing lead dust in the surrounding settlements, and also, making battery recycling and accessible process and/or provi-

ding alternative sources of income to those that depended on this activity.

It was the first time that the Dominican Republic performed hazardous waste removal operations. The sanitization of the contaminated site was performed by the Ministry of Environment and Natural Resources, Terragraphics Environmental Engineering and local contractors. In 2009 the place became a public park.

Unfortunately, the lack of environmental education and control in low and middle income countries are the causes of the improper treatment and disposal of hazardous wastes around the globe.

These actions lead to irreversible impacts not only in the environmental sector but also in the social and economic sectors of a Country. One example is the need of a social program to support the families of children in Haina, whose health damages may be permanent.

There must be dramatically increase of global consciousness of the environmental problems associated with lead contamination. The support of programs to educate the people about this hazardous substance and its proper disposal, as well as recycling of materials, and saving of energy should be impulse by the Governments and International Organizations.

We do not need to have another case such as the one in the community of Haina in the Dominican Republic to be alert. We can prevent those events to happen by increasing the awareness of the people, and by being ourselves the example and the leaders for a cleaner environment.

• Johanny PEREZ SIERRA, *generation 2011* & Natalia MANTILLA VIANCHA, *generation 2010*



News and announcements

COURSE DIRECTOR ULRICH VOGT RECEIVED THE AWARD OF BOYSEN STIFTUNG

In October 2011 Dr.-Ing. Ulrich Vogt received the Boysen-Preis in the event Avete Academici at the University of Stuttgart, for his doctoral thesis at the Institute of Combustion and Power Plant Technology (Institut für Feuerungs- und Kraftwerkstechnik, IFK). The thesis with the title "Method of balancing of air pollutants by using vertical and horizontal profile measurements - Methode zur Bilanzierung von Luftverunreinigungen anhand von Vertikal- und Horizontalprofilmessungen " was supervised by Prof. Dr.-Ing. Günter Baumbach, who also developed the idea of measuring the vertical distribution of air pollutants in the atmosphere with the help of tethered balloons. Mr Vogt was the project manager during different projects where the system was applied.

On behalf of Prof. Ernst Messerschmidt, the Chairman of the Boysen-Foundation, Prof Ulf Essers emphasized the excellent performance of Mr Vogt in his laudatory speech. "It was sensational that in one of these joint-projects, the distribution of the emissions of the city of Augsburg was measured. The great achievement Mr Vogt has made was that he developed the method for measuring the vertical and horizontal distribution of the air pollutants systematically. In this way emission factors and emission inventories could be evaluated, which are very important for the environmental policy.

Related parts of the original speech in German are as follows: "Sensationell war das Gemeinschaftsprojekt, bei dem die Emissionsfahnen der Stadt Augsburg vermessen wurden... Die große Leistung von Ulrich Vogt war, dass er im Rahmen seiner Dok-

torarbeit die Methode entwickelt hat, mit der die in dieser Weise gemessenen Luftverunreinigungen systematisch erfasst werden können... Damit konnten die für die Umweltpolitik so wichtigen Emissionsfaktoren und Emissionskataster evaluiert werden."

▪ Prof. Dr.-Ing. Günter Baumbach, on behalf of IFK



From left to right: Prof. Ressel (rector), Prof. Baumbach (PhD supervisor), Dr. Vogt, Prof. Essers (laudator).

Source: IFK, University of Stuttgart

MESSAGE OF THE STUDY DEAN PROF. GÜNTER BAUMBACH AT WASTE GRADUATION CEREMONY



Dear Waste students, dear parents, friends and guests,
Dear deans of the two faculties Prof. Schmidt and Prof. Kranert,
Dear colleagues,
Especially dear students of WASTE generation 2009,

In a marathon run the persons who master the distance and reach the destination are named Finishers. So, you have mastered the distance of the Master program or you are shortly before reaching the destination. Therefore let me name you Finishers.

Dear Finishers!

This ceremony is made for you! You are now becoming Master engineers. You learned theoretical knowledge but hopefully you learned also to apply it practically.

When we founded this WASTE study program 9 years ago we had in mind the environmental problems all over the world and it was our intention to educate students to help in mastering these great environmental challenges in their home countries. We hope that we succeeded in this intention and you got the basic knowledge and the willingness to help in saving the environment. A main attribute of good environmental engineers is to

- recognize environmental problems
- to analyze them
- to find specific and proper solutions for solving or mastering the problems

To conclude: well educated but independent thinking and acting engineers are required.

You will be often confronted with problems, with which you did not be directly involved during your studies here but you have to find solutions. The environmental tasks are not only to be handled technically. Often, you have to consider also social, economic, political and other issues. I think you cannot learn theoretically all such aspects. What you need is a feeling for the problems - you have to identify yourself with the affected people. Try to get a feeling that this could your own problems and then help with enthusiasm!

I think this should be the main attribute of an environmental engineer: to help with enthusiasm based on your education. If you see our engineering newspapers there is written:

- build up your career!
- be the best!

Please, forget such slogans!

>>>continue



>>> MESSAGE OF THE STUDY DEAN PROF. GÜNTER BAUMBACH AT WASTE GRADUATION CEREMONY

Be willing to help solving the environmental problems with your full capacity. I promise you, you will be a well respected engineer. You are needed and you will not have employment problems. Your work presumes also a personal ideal behavior. You cannot postulate a clean air and pollute by yourself the air without reservations. You know what I mean, e.g. smoking. I hoped that those students among you who came here as smokers stopped this behavior during the progress of their studies. If not, it is never too late to stop it. Another pollution problem, we did not outline in our study program is the noise pollution. If you are exposed to high traffic or industrial noise, you will become sick sooner or later, you cannot concentrate yourself and you will become hard of hearing. So, if you try to save the environment of this noise pollution, you yourself should give a good example. So, please consider this during partys and don not create a very noisy disco music. Your environmental efforts will be much more authentic and believable!

I have another concern:

If you listen to the news especially to the economic news then it is always positively weighted when the value of the shares is increasing. Everybody, even our green party is postulating permanently the growth of our economy as basics for employment ect..

Please, try o ask, why we always do need growth. Our environment and all the nature are living in cycles. Nature does not have the resources for permanent growing. How long should we have this growth? There are limits. Sustainability and growth - does this fit together? I think for sustainability we need a stable steady state. Don't believe the economists' growing theories! This demand for growing is partially caused by the financial systems. If there is the position that money is producing money (financial industries) then no real values are produced and to supply these financial industries we need a growth in producing real values such as engineers are doing. So, you can be proud of becoming an engineer now and helping to produce (or to dispose or to recycle goods as real values) instead of only shifting money. You may know my definitin of growth: Growth is the acceleration from raw material to waste.

So, I hope as environmental engineers you are open for discussions about a sustainable world. And I hope and wish your to help with enthusiasm to improve the environmental conditions wherever you are working.

Congratulation for your degree and good luck for this great task!

• Prof. Dr.-Ing. Günter BAUMBACH, *Study Dean*

PHOTOS GALARIE -- GRADUATION CEREMOMNY 2011



Studying WASTE

IPSWAT SCHOLARSHIP - INTERNATIONAL POSTGRADUATE STUDIES IN WATER TECHNOLOGIES

IPSWaT aims to support students in acquiring Master and PhD degrees with "water background" which the applicant got during the bachelor study or during work experience. Since 2001, the program is funded by BMBF – Federal Ministry of Education and Research. Currently there are 20 German universities members of IPSWaT that are eligible for this scholarship. WASTE program got included in the list in the year 2009. WAREM (Water Resource Engineering and Management) and ENWAT (International Doctoral Program Environment Water) are other programs from the University of Stuttgart that are qualified for the scholarship. From the beginning the students of the WASTE program were very successful in the application process. In the year 2009 five students were supported by IPSWaT. In 2010 addi-

tional five students got support and in the year 2011 the number increased to seven. The selection process for the scholarship starts at the University. Individual universities nominate students based on various criteria. The nominated candidates are further scrutinized by the IPSWaT selection committee and suitable candidates are selected and supported with the scholarship. It is an excellent scholarship as it covers all your monthly expenses, travel and health insurance. The scholarship also facilitates interaction with other fraternity related to the water field through annual meetings. Even participation in related international conferences and workshops are supported financially, as well as research stays abroad in context with the Master's or PhD Thesis. The latest extension of the support was given since 2010. Since that time applications

for a three months internship additionally to the 24 months grant for the Master study program or the 36 months grant for the PhD studies are considered.

The application for this scholarship can only be done before the start of the studies of the candidate. Once the candidate started studying in the WASTE program he or she cannot apply anymore for the scholarship during the Master study. A very positive aspect is that after being supported through IPSWaT for the Master program a further application for a PhD study is possible. All those interested in getting more information, please visit the WASTE website or directly: www.ipswat.de.

• Dr.-Ing. Ulrich Vogt, *Course Director*

THE IPSWaT SCHOLARSHIP MEETING IN BONN, JULY 18 TO 20, 2011

IPSWaT annual meeting took place, this year, in Bonn. This is an annual meeting for all IPSWaT scholarship holders. Joining with students from Tübingen, the group from Stuttgart (WASTE, WAREM and ENWAT) was the biggest group, so that we had a comfortable bus to pick us up. The bus departed at around 7 am on Monday 18 July. During the trip we had nice conversations with other students from Tübingen and other programmes. Even though the trip took 5 hours, we felt that it went by quickly without any tiredness. The meeting was held in GIS (Gustav - Stresemann - Institut), which is a small but very nice place. At first we were welcomed by Ms. Cornelia Parisius – IPSWaT officer, then some nice receptionists of GIS handed out our room keys. Each of us enjoyed very much the private and comfortable room here.

After a lunch in GIS restaurant, opening session started with "Welcome and Introduction to the Seminar" of Ms. Parisius. Then an interesting panel about water issue in the German federal ministries was reported by Prof. Janos Bogardi, ZEF Bonn and Mr Reinhold Ollig, BMBF – Division 724. The panel gave us some information about water issues in Germany. Followed by a panel about water issue in UN programs. Late afternoon, one of the most interesting panel took place "Going back home: challenges and opportunities". Officers presented data about the percentage of students going back home after finishing their study. The data exposed that one third of them do go back. And

we heard some nice speeches from some former award holders. They shared their own mind about this topic. "Going back or staying here?" seems a difficult question. Each person has their own idea and reason. I cannot judge which is right. I presume to share my idea. For me I will choose where I feel warm and happy and regard it as "home". In the evening we were free, and we enjoyed a pretty warm environment in Rheinaue Biergarten with live music and wonderful German beer.



Tuesday morning, there were some parallel sessions which were held in different rooms for some different topics. In which some scholarship holder presented their works during their studies. Some of us took part the session "climate change and adaptation". The others were in the room "Water resources management", etc. Thanks to their sharing, we knew many interesting works done or to be done by

our colleagues in universities, institutes all over Germany. In the afternoon we were also separated into some groups. My friend Burcin and I took part in a Boat Tour to Linz. Linz is a small and old city but it is really beautiful with typical houses. It is also famous for crystal craft. There is a crystal museum which exhibits a lot of beautiful skillful items which vary from jewellery such as rings and necklaces but also items for the household, e.g.: jars, pots, etc. After the excursions we – WASTE students and Mr Vogt - met again by a round table with a warm dinner (see picture). Then a fantastic day ended. Wednesday was the last day in Bonn. In the morning we enjoyed a mini water fair in which some companies and organizations advertised their offers. We did find some useful information here. Hopefully next annual meeting will receive even more offers from companies and organizations. After all the closing plenary was held. The IPSWaT officers suggested the next meeting point is in Hamburg – a northern city and biggest harbor of Germany.

We really enjoyed the meeting. For me I felt very comfortable and found that it was not only an annual meeting but also a great chance to meet and know other students coming from various universities, to make more friends and to exchange interesting cultural experiences. I am looking forward to the next annual meeting in 2011.

• Phuong VU THI, *IPSWaT scholarship holder and WASTE student generation 2010*

WELCOME MEETING AND EXCURSION FOR GENERATION 2011

Loaded with a lot of hopes and enthusiasm, most of the new student of WASTE generation 2011 finally met for the first time. Arriving in Germany, and after a week full of issues and paperwork, we received an invitation from Dr. Vogt, WASTE Course Director for a meeting, for the purpose of giving us a warm welcome, providing an overview of the program and also, to provide an opportunity for us to get to know each other while enjoying a visit to Castle Solitude, and for later on, enjoying a delicious barbecue with beer, as is typical in Germany.

During the welcome meeting, Dr. Vogt introduced the WASTE Team, presented the structure of the program, and through a vote, the Class chose Mr Alam from India and Mrs Mendizabal from Venezuela as the class speakers for the first semester of our studies. This generation 2011 is the largest in the history of the WASTE Program, and for the first time is receiving students from the Dominican Republic and Jamaica, adding to the program some Caribbean flow... generation 2011 is composed of 66 students, reason why in our lectures, winter will be just history with

so many students heating the classroom up... At the conclusion of the presentation, each student received as a gift a reusable shopping bag with the logo of WASTE program, as a way to avoid the consumption of plastic bags that pollute our environment.

Subsequently, the Course Director addressed whole class during a walk to the Castle Solitude, through the forest in the western zone of Stuttgart. This castle belonged to Duke Carl Eugen, who preferred to stay away from the crowds, and was ideally suited for

hunting trips. This castle was built between 1764 and 1775 by the architects Frederick Weyhing, Philippe de la Guèpière Ferdinand and Reinhold Heinrich Fischer.

Inside, the Castle has gold-plated accessories and various objects that belonged to the royal class at that time. In 1983 the castle was completely renovated and is now recognized by the Akademie Schloss Solitude, and garners attention from art students from all over the world. After this tour, we returned to the IFK to enjoy a delicious barbecue, however, someone had taken a different path from the one we initially came, because it was closer ... when suddenly, we found ourselves at a dead end, while we heard our guide saying: "I can't see anything", while one student was showing him a map on his Blackberry. Then, with great momentum, we were once again heading down the path that thankfully led us to the very front of our dear IFK.

Upon our return, a yummy barbecue, pleasant desserts and many students from other semesters were waiting for us, moreover, there was delicious German beer to help relax

our muscles after a rather strenuous voyage of 12 km through the forest. The party lasted until night, and candles were lighting our tables. We ate delicious food, some danced Caribbean rhythms, others exchanged ideas. All in all, we had a very special time together getting to know the whole WASTE family, each of whom will now be important parts of our lives for the next three years.

▪ Johanny PEREZ SIERRA, generation 2011



WALDKLETTERGARTEN STUTTGART -- 26TH WASTE INTERCULTURAL MEETING



On August 21st under WASTE sponsorship, we had 26th of Waste Intercultural Meeting (WIM). Everything started with Alina Ceres' email, a WIM-activity in order to balance your "sitting at home studying time" with some physical exercise in the "Waldklettergarten Stuttgart" (Stuttgart climbing garden). We were 14 people who wanted to cycle for approx. 30 minutes with a lot of fun and hoped 14 people also survived until there. Fortunately we were still 14 when we arrived at the garden! More people joining us in the garden, because they went there by bus.

After all safety issues, we looked each

other and started to smile already standing with ropes, metal hooks, sliding metals and of course helmets. Men had some small problems with the belt covered through their hips and legs. Another introduction was for how to use those personal protection equipment with their connections and etc. we were impatient and waiting for the climbing and walking on the ropes and jumping from one tree to another.

Finally we started the tour after 20 min explanation and some of us started with climbing on the wooden wall and some of us took little bit easier and go up with the stairs. There were small tours and one big round tour in the garden you can take. Most of us took both rounds, feeling that we were all safe and no chance to make mistakes with very well thought metal connections, jumping at the top of the trees from one rope to another.

At the end, we were tired but felt relaxed and very happy with our minds. It was a very smart idea for a one day change and with the strength of environment to charge again our brains. But it wasn't finished; we had to cycle back home. Fortunately

ly without any problem we met again with everybody at our environmental friendly building IFK. Barbeque which was also financed by WASTE Club was on fire and we celebrated our day after physically tiring but mentally relaxing with drinks and food.

I believe these kinds of short escapes are very useful for us, especially during the dense studying terms of our life. We wished everybody good luck with the exams and went home for very deep and nice sleep.

▪ Arif KARAHALIOGLU, generation 2010



MY SHORT TIME DAAD SCHOLARSHIP IMPRESSION IN STUTTGART WASTE PROGRAM



My name is Yared Getaneh, I am from Ethiopia. I got short term DAAD exchange scholarship for 3 months to attend the WASTE program in summer semester at University of Stuttgart. By profession I am Environmentalist working as researcher in Addis Ababa University in mega city project so call IGNIS (Income generation and climate protection by valorizing municipal solid wastes in a sustainable way in emerging mega cities), it is funded by German Government. The project is implemented in collaboration with the Institute for Sanitary Engineering, Water Quality and Waste Management of University of Stuttgart.

When I received a scholarship award confirmation letter from DAAD, I looked at the web site of Stuttgart Waste program and I planned to take only one or two courses which are related to my current career, the very reason was Europe is my first lifetime experience so there could be language barrier, I was suspicious that I will be busy and would take time to adapt to the environment. However, all my worries were unrealistic. In short time I was able to adapt with the environment and integrate myself with the culture. Truly speaking the hospitality of the people and the welcoming face of the waste program community helped me a lot. After my arrival, I was advised to see all the module courses and to choose the best courses I would fit into. The existing situation, pedagogical methods, the laboratory facilities and the waste program community fascinated me a lot and rendered me to attend all the waste

courses by avoiding overlapping of time schedule. My intuition also persuaded me that, it is one of my life opportunities to use the accesses to utilize the knowledge about waste management in order to upgrade my professional career. The courses and the outlines convinced me to change my mind that waste management is a broad and multidisciplinary field. I also realized the impact of waste is immense and affects our daily life. Hence, the study helped me to reach on a decision to continue in this field in my future life career to add value to my country and the world.

The integration of the courses with the excursion and the waste program communities had made the education system viable. During my stay I had been starting to realize the potential of the waste to be a resource if it handles properly and a treat if it misses use.

• Getaneh YARED, exchange student in 2011

27TH WIM -- TIME TO TASTE ASIA

Although there were many interesting WIM in the past, I would say that the 27th WIM, which took place on 20th Oct., must be the best one, at least the most attractive indoor event.

Daniel Wehner, WIM-coordinator from gen. 2010 spent lots of time on it, so that on two weekends I had to give him the key of the lecture room, where he could have meetings with other WIM-Coordinators for the preparation.

This WIM consisted three parts, the first was to introduce what kind of activities could be done in the cold German winter, such as visiting Christmas market, going skiing, spending Christmas holiday with a German family etc.. The information is really useful not only for the new students but also for students who have been in Germany for a "long time", but do not know yet what could be done during the cold German winter, like me!

After this introduction, we had a tea break, in which we had the chance to try the Indian Chai-Tea, served by the new WASTE students from India. It was really sweet, drinking a cup of tea at a cold night. We all go warmed, so was the WIM.

The second part was getting to know, how to use the Chinese chopsticks. I felt really ashamed, because as a 100% "made in China", I did not know how to use them correctly, so one student from Iran got the chance to show me her skill, impressive! Some students also provided two presentations about chopsticks and how to use it, in order that students from other countries may get to know how to use them. After that was the time to practice, it seemed that no one had problems by using the chopsticks when eating the spring rolls.

One surprise came after another. Ms Gamardo, another new student from gen. 2011, showed us her talent in making

cakes. Actually they are more than cakes; I would even call them artistic.

The most exciting part was the time that Ms Gamardo showed us her "WASTE-Cake", and the group who won the competition by using chopsticks to transport some small objects could eat that beautiful cake. After 15 minutes hard effort we won the game. Time to eat the cake? Of course not, desert should be only served after meals, because another Chinese traditional food was waiting for us, dumplings. Several kinds of dumplings, with chicken, with lamb and with vegetables for the vegetarians.

After reading my article, you must regret that you did not attend such an interesting meet-ing? No problem, I am pretty sure that there will be similar WIM-meetings in the future! But do not miss it again!

• Zhuguo ZHANG, Member of the WASTE-Office



VISIT SOLID WASTE FACILITIES AROUND STUTTGART

Learning about solid waste management and treatment has become more meaningful and significant for me when I was able to take part in the excursion to visit some of the waste treatment facilities of Stuttgart. I guess it is true what they say that learning should not only be confined to the four walls of the classroom. Seeing them in practice has reinforced the theory I learned in the lecture rooms.

July 1st, 2011. It was a cold summer day when Dr. Fischer's class for Solid Waste Treatment consisting primarily of WASTE students from generation 2010 and Umweltschutztechnik went on an excursion to visit the different waste treatment facilities around Stuttgart.

Our itinerary for that day included a visit to a composting plant and waste collection center in landfill site Schorndorf, a new state-of-the-art anaerobic treatment plant in Backnang-Neuschöntal and an ALBA recycling facility in Eppingen Heilbronn.



The first stop was at the Landfill site in Schorndorf, which is an old landfill site and is now used as a collection center for big and small electronic appliances, bulky waste, old fluorescent lamps, clothing, metals and paper among others. The site is also used as a composting site for the green and bio-wastes from the surrounding community of Rems-Murr-Kreis in Schorndorf.



After the visit to the landfill site Schorndorf, we proceeded to the new bio-waste fermentation plant in Backnang-Neuschöntal. This plant has a capacity of 36,000 tons of bio-waste per year and produces its own heat for heating and electricity as well as fine and liquid compost. There we learned how bio-waste can be returned to the cycle without diverse environmental effects using anaerobic treatment or fermentation. It was not yet in operation when we visited since it would take some time to build up the biomass in the fermenter but they recently opened to the public last 25th of November in terms of accepting green and bio-waste. It was a

very insightful (and smelly) visit.

Our last stop for the day was at the recycling facility of ALBA which is a private corporation whose business focus is on waste management, recyclables management and facilities management. The recycling facility in Eppingen recovers valuable metals such as copper, aluminum and stainless steel, and recycling and processing of refrigerators and other bulky waste among others. It also serves as a depository of other recyclable wastes which are then transported to other facilities. Being a recycling facility mainly for metals, big machineries and heavy equipment were all over the place.



One could just imagine the investment it cost to have these facilities running. Truly, solid waste management is an expensive undertaking. But the price is worth it, if it meant being able to preserve and protect the environment for many generations to come.

• Ana Karenina PERA, generation 2010

INTERNATIONAL FOOTBALL TOURNAMENT 2011 – WON BY THE WASTE TEAM



On the August 13th 2011, the WASTE students from gen. 2009 and 2010 decided to change the history of the international football tournament by winning the championship. With a tough start after losing the first two matches against IAHR and INFOTECH 2 in the group phase, WASTE was obligated to win against WAREM, to dream on achieving the qualification as the best third place to the next phase. With a little bit of luck, and a great match against WAREM, which we won 3-0, the WASTE

team took the second place in the group.

A new challenge arrived, only 20 minutes to rest, we needed to get ready to play against PHYSICS, the first place from group 3 in the Quarterfinals. But WASTE showed a solid defense in the match, and a great goal from Roman was enough to take us to the semifinals.

In the semifinal, we had to face one of the favorite teams, who might win the championship, the 1st place from group 2, the team of the lecturers. Still, by playing good counterattack, and thanks to Ivan Candia's great skill, we scored the only goal, and into the finals.

In the last match, we found ourselves against INFOTECH, the second place of group 2, a team that won against the strongest team of this tournament, IAHR in the semifinal by penalty shoot-out. The WASTE team managed to open the score board with a goal from Ivan and started dreaming with the championship, but IN-

FOTECH succeeded in drawing the game after a few minutes. In the second half, both teams were eager for the championship, but there could be only one winner. A winning goal scored by Roman made the dream of the WASTE team come true. The WASTE team did it, although it might be thought „mission impossible“ before the tournament.

Congradulations!

• Jesus RIVAS GONZALEZ, generation 2010



WELCOMING SERVICE

My name is Hamidreza Sharifan. After having two reports of the excursions I decided to write my memories as being a buddy for 19 new students.

Working as a buddy for the University has always been a matter of controversies which I cannot completely confess I have been contented with. Though I have always admired such a social job which is considered generally by the common to be fun but actually within the deep layers one may observe that it would bring a lot of stress and responsibilities. You can therefore imagine the burden of holding 19 keys and you have a risk of losing 3,800 Euro as each key costs 200 Euro if it gets lost.

Working as a buddy is a great experience when it's looked upon objectively. At least you get popular among newcomers and you can show off and exaggerate whatever you are not but you dream to be; you could go on with the benefit of the doubt that maybe, under some lucky conditions, they would believe you. Then again, we are not in a perfect world are we?

It also has other rewarding advantages. Since you are the only one that those newcomers could trust, you are easily

accepted and followed, so you should be trustworthy and just to them.



Of course having the chance to know different people from different countries, different cultures with different characters and personalities also provides you with a great social experience but when you stay in the airport for at least 3 hours due to flight delay, luggage, passport checking, you get tense and irritated but you have to keep your smile to the newcomer and shouldn't put any bad impression on them, but you just want to escape and disappear and go back home and take a rest and think about next coming exam. It's a

hard job but when you see that you are a person who makes a nice image for a new comer forever. You feel great while you are carrying such a heavy luggage with your hands getting all blistered up for something that doesn't even belong to you.

Most of my students already know me by Facebook and like my comments and status; they would meet me in a red cap and a yellow T shirt with logo of Stuttgart University. Out of my 19 students the first and last were from my home country of Iran, I had some WASTE students as well, those who didn't know they are going to sign in for a great environmental program in the world and great horizons would eventually open its caressing arms to them. Now more important than all, I have to think more international and more understanding and considerate when it comes to people, so I can say that it was worth the experience for me going down that road and who knows maybe hopefully, under some other circumstances I would have-a-ago again, put on my shoes with the laces tightly tied, dressed colorful again and go for it.

• Hamid Reza SHARIFAN, *generation 2010*

GREAT WAREM EXCURSION

Last summer, some of my classmates and I had the chance for joining the 'great WAREM excursion'. We visited so many technical places related to water engineering.

We started our travel on June 13th by bus. We visited Loreley and had lunch beside the beautiful view of Rhine river. Then we drove to Cologne (Köln) and had a guided tour in the impressive Cologne Cathedral.

Construction of Cologne Cathedral began in 1248 and took, with interruptions, until 1880 to complete. It is 144.5 meters long, 86.5 m wide and its towers are approximately 157 m tall. The cathedral is one of the world's largest churches and the largest Gothic church in Northern Europe.

The next morning, June 14th, we had



a visit of waste water treatment plant in Düren. It was interesting to see the application what we learnt before in lectures. Afterwards, we gain some information about a successful renaturation project of a small river Inde. Then we were in the bus till we arrived at Rotterdam. The first part of the plan for June, 15th was a bus guided tour through Rotterdam, which is the largest harbor in Europe and the second largest of the world. The next interesting part of the plan was having a boat tour through the harbor, visiting the beautiful city of Rotterdam with its exceptional architecture and moving among the huge boats loading or unloading. In the afternoon we visited the "CO₂ neutral Pavillion", which is a small special plant for CO₂ production and usage. The next day, June 16th, we started our day with visiting Maeslantkering storm barrage. Afterwards, we rode on a boat bus and went to Alblasterdam to start our guided bicycle tour in Kinde rdijk, a small village built for flooding periods of the year.

Then we had a very nice bike trip through the windmills area and at the end we visited one of the open windmills.

The next day, 17th, we had a visit of Osterschededam, then we drove to Ghent in Belgium and on the way to Ghent, we visited a fish pumping station and a fish migration monitoring facility in Boekhote

and Asper, Belgium. We spent almost the whole time of the last day of our trip, 18th of June, on the bus. The last part of this excursion was visiting the pumped storage power plant in Vianden, Luxemburg.

This trip made us so tired. We were long time on the bus and we did not have enough time to rest but on the other hand it was a very interesting trip because we visited so many technical plants with different aims and we became familiar with the scope of environmental engineering field. Also, visiting different European cities in four different countries with different languages and cultures was a unique experiment that maybe will not be repeated in this way in our lives.

• Sepideh NEMATI SHAHAB, *generation 2010*



Recent events

WELCOME PARTY FOR WASTE GENERATION 2011



It was celebration time at Pfaffenwäldering 23, the address of Environment connoisseurs' watering hole as WASTEIES shed their work blues and partied in style.

The Course Director Mr. Vogt welcomed all generation 2011 to view his ideas of all new stress free start of an international masters program on the dance floor.

Heading over to one of the most popular nocturnal destinations in the university, the girls made sure they owned the night with their vivacious personas and their quest for perpetual merrymaking. Of course, they were also looking out to make an impression with their gorgeous evening ensembles.

Marcela earned quite a few deserving nods of appreciation for her costume while Ana Maria and Gisela Tejada played the cute duo, dressed in co-ordinated Mexican printed and black outfits. Ana Maria, Clio, Naema and Natazha also stole hearts as they sashayed in, dressed to kill. With great friendly environment Sinda was spotted to motivate her colleague Tabish to dance. With great cocktails and munchies to pass around, the crowd hollered in unison with the Black Eyed Peas that this was a good,

good night.

Bringing down the roof and setting the house on fire, the European lads tore down all barriers representing sanity and indulged in a display of true rock spirit. Loud, cheerful and in your face, this was a performance that had no plans to go down silently into the night.



The audiences couldn't ask for more as they headbanged like there was no tomorrow. With great cocktails of Spanish, Turkish, Arabic, Hindi & of course English songs, the crowd was quite content on all fronts.

The men were no less as they were in full attendance as well. The partygoers left no stone unturned in their quest to make it a night to remember. As the DJ upped the tempo with some groovy music, the crowd went wild - dancing, conversing and gene-

rally making merry.

Carlos, Devansh and Johanny were spotted viewing the dance on floor.

As the night wore on, Vogt stepped in for a while and happily joined for the dance with WASTEIES.

Waste Club thought to introduce some games to catalyze the spirit of WASTEIES Generation 2011 but that goes in vain because the Generation 2011 already arrived with enriched radioactive spirit.

We can just imagine the spirit of Generation 2009, 2010 and 2011 after seeing the double decor fridge and tables that went empty which were actually full with lots of drinks and different types of pizza.

Hope to have these types of results in our studies also.

•Mohammed Tabish ALAM, *generation 2011*



30TH BÄRENMINIMARATHON

The minimarathon from Bärenseen to Bärenschlößle took place on August 27. Although it was a cold rainy day, more than 80 people met in the forest near Universität Stuttgart. It was a relay race and runners formed 22 teams of 3 people each one. Every contestant had to run about 5 km around the 3 lakes. My team was composed of three waste students: Ivan Candia, Jiexia Zheng and me. We decide that I was the first runner of our team.

It was possible to feel the excitement and adrenaline of all runners in the start line. When I heard the whistle, I started running as fast as I could. I remembered

the previous training and tried to go slower. If not, I could not finish the race.



It was my first time in a competition and the feeling was amazing. I heard people supporting me and screaming "go, go". When I arrived to the finishing line I was exhausted. Even if I was not running, I was still excited and I could feel my heart beating. When the race finished we were really happy and proud of our effort and having finished the race.

I believe that the Bärenminimarathon is an excellent opportunity to meet people, play sports, enjoy nature and strengthen ties with friends. I invite people to participate next year.

•Jose FORERO SUANCHA, *generation 2010*

DATES TO NOTE

- Waste Intercultural Meetings "WIM" in upcoming winter semester every 3-4 weeks
- 23 Dec. 2011 - 07 Jan. 2012: Christmas Holidays
- 15 Jan. 2012: Registration deadline for exams (1st semester)

- 15 Feb. 2012: Application deadline for winter semester 2012/2013
- 27 Feb. - 23 Mar. 2012: Exams period
- 26 Mar. - 5 Apr. 2012: Re-exams period
- 10 Apr.- 21 Jul. 2012: Lecture period of summer semester 2012

- 15 May 2012: Returning deadline for individual study plan (2nd semester)
- July 2012: summer party

Life after WASTE

SCHOLARSHIP HOLDER OF AVH ABOUT HER PHD IN ISWA



My name is Kristy and I'm originally from Mexico but adopted Germany as my second "Home Zone". As many other international students I came to Germany with different ideas on how to shape my professional career and I can say I found it! After graduating from the WASTE program in 2007 and working as Environmental Engineer for Daimler AG during 2 years, in Mexico and Germany, I had an occupational accident and this situation made me re-think on my future. Therefore I decided to try my luck as Occupational Safety and Health (OSH) Engineer in North Mexico.

Due to my "special physical condition" I realized I needed a brake and have a second chance in Germany. So I decided to apply for a research position, a summer school or a PhD position at any University in Germany. I just wanted to go back to my second Home Zone. I decided to try first Uni Stuttgart through the ENWAT program and ISWA. Both told me that to get "on board" I needed a scholarship, a project and a supervisor. I was at that moment 10,000 km away from Vaihingen and with not so much time in between, it was already November 2009!!! I made a very intensive internet search during night after work. I was exhausted after 12 hours of work, but I wanted to do it, so I collected all my energy and I did it during 10 days. I started by using my old contacts from DAAD, KAAD, CONYCT, etc. First, I found a OSH Summer School at the LMU Munich for the Summer 2010, I applied, and then I found something very interesting: "International Climate Protection Fellowship" from Alexander von Humboldt (AvH). I knew that AvH gives scholarship to very high level scientific, but I read the program information and the target group, convinced myself I could do it.

At the end of February I received the

e-mail from AvH inviting me at the end of May for an interview. Then the day came and I went to Bonn by plane. My only conviction was to get the one-year research scholarship from AvH. We spent one week in Bonn, we were 30 people from at least 17 different countries. We had 15 minutes to present our project and convince the committee that our project would give feasible solutions to climate change issues. All colleagues were very "strong" and well prepared, definitely a very high level competition. Then we had a personal interview. I was inside a room with 6 professors from different fields and an "observer" from AvH. I didn't know what to expect from that interview, but somehow I said to myself "no one knows more about your idea and yourself than you, so relax!". I had different questions specially focused on my professional life and personality. After 30 minutes I went out of the room, with no idea of "the result". That evening AvH invited us for a ship-party and after having a great time, we were sent to our rooms because an envelope was waiting for us, the answer was waiting for us!



On my way to my room many colleagues were already celebrating, I was super nervous, I didn't want to go inside my room. For 15 minutes I was just going around, and then a colleague from Chile came to my room to ask for my result. I told her that I hadn't opened the envelope, so she went inside my room with me and she said "oh! Kris, your envelope is very big, I'm sure you got it, my envelope was a very thin letter. Congratulations!"... I open the envelope and she was right! I just started to cry, because at least for one year I will be researching in Germany, with a possibility of a PhD position

at the end of the term. Only 15 of us got the scholarship that term. All was worthy, and now I was heading to Munich for my Summer School.

I went back to Mexico at the end of July, just to say bye to my little kids at the language school and to pack my books. In August I flew to Bonn for a language course and a study trip part of the AvH fellowship. Finally at the end of September 2010 I went down to my second "Home Zone". The first of October marked the beginning of a new chapter in my life at Uni Stuttgart.

Now is almost the end of 2011. I finished my activities with AvH, but if I look back into the last 12 months I can see many things: a year full of trips for meeting different people involved on climate change issues, ranking from Ms Angela Merkel to EU parliament delegates, 14 great AvH fellows with whom I shared great moments and many scientific discussions, I belong now to the AvH family, I proved myself that you set the limits and that you can fly as high as you want, I developed a stronger concept of my idea and now there is a Mexican company that is willing to implement the results of my research in Mexico city, I got a formal PhD position at ISWA through the ENWAT program and now I have a Mexican scholarship to cover the following years of my studies.

The day I had my accident I was supposed to die, but I just remember one thing "God I don't want to die now is to early, please give me a second chance". I do believe that God has plans of good above the evil, I just trust HIM with all my heart and until today he has been good and blessing me double. I'm sure I will discover why he allowed me to have a second chance! In addition I thank all people that have been on my way, contributing to what I am today: Kristy Peña Muñoz.

• Kristy PENA MUNOZ
WASTE Alumna generation 2006



Where to go in Europe?

LET YOUR SOUL SING

Every landscape has got identified characteristics, which would surprise you and bring you something special. Sometimes, it is giant and splendid, sometimes, it is peaceful and elegant.

Switzerland is the paradise for enjoying lakes, while there is a differently attractive lake in Germany, which is breathtakingly beautiful and leaves us deeply memories of 2011: Königssee.

Königssee is located in the southeast corner of Germany. It is just like a cherished colorful necklace, embraced by the surrounding steeply-rising flanks of mountains up to 2700m. With this huge height difference, the water feels extremely dignified, deep, and quiet. Besides, it creates the echo, which offers the possibility of interaction between human and nature, which also makes the peaceful water lively.



18 electric ships carry passengers along the length of lake and are the only means of transport of lake area, aside from hiking from the surrounding mountains. There are two main stations for ships: St. Bartholomä and Saletalm. The name of St. Bartholomä comes from the famous red-roof church St. Bartholomä, which is the symbol of the lake. Saletalm is the farthest station, from which people can walk to another smaller lake Obersee and can access to the highest waterfall Röthbach of Germany.

Königssee leaves me amazing memory not only because of the picturesque landscape, but also because of the unforgettable hiking experience from St. Bartholomä to Saletalm. Since there is no lakeside path on the steep shore between these two stations, 20 min ship trip will take 8 h for hiking in the surrounding mountains, via Kärlingerhaus at Lake Funtensee. There are four levels of hiking routes which are represented with four colors: yellow (easiest), blue, red and black (the most difficult).

Hiking route from St. Bartholomä to Kärlingerhaus is labeled "red": we climbed a little bit at lakeside, encountered the beautiful water fall which flows into the lake, walked aside the forest and stream in

the valley, climbed plenty of zigzag mountain routes and reached the small lofty lake Funtensee. This lake is the coldest place in Germany: the temperature in winter could even reach -40°C .



Hiking route from Kärlingerhaus to Saletalm is labeled "black". Though we have less water and energy, challenging ourselves and experience more leads us to "black". It feels more natural: just like the path of the downing stream after storm, only with slight supports to help hikers pass the impossible steps. Sometimes the ongoing route is so natural that it is hard to recognize and differentiate from surroundings. Old roots on the ground are our friends since we often grab them for stable steps. We walked around Lake Grünsee, which is another beautiful lofty lake, and through another valley. We saw Königssee (Height: 600m) from the mountain up to 1200m high. Hiking is not an easy job but I swear it is worthwhile for this amazing perspective. With full use of hands and feet, we climbed (also jumped, and slipped) down from the mountain to the lake shore and Saletalm. We left no energy, but also no regret for it.



It will bring you identified feelings at different time of a day, in different season of a year. With light fog in the mountain, with rainy mood, with sunshines, with falling leaves, with white snows, this paradise is waiting for you!

If you come to Königssee, never be satisfied with the ship tour for 2 hours, but also enjoy it from different perspectives.

Let your soul sing and explore your special Königssee!

• Lu LIU, MIP Alumna generation 2009



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Ulrich Vogt

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Michael Waldbauer, Keng Been Ang, Christine dos Santos Costa, Student task force 2006 and 2007 of the WASTE program

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Zhuguo Zhang, Tobias Bunk, Julius Ranghieri

AUTHORS
see articles

PICTURES
respective authors of the articles, Wikipedia and WASTE Office

Master of Science Program „Air Quality Control, Solid Waste and Waste Water Process Engineering“ (WASTE), of the Universität Stuttgart and WASTE Club Stuttgart e.V.

PROGRAM COORDINATOR
Prof. Dr.-Ing. habil. Günter Baumbach

CONTACT
Dr.-Ing. Ulrich Vogt
WASTE - Universität Stuttgart
Pfaffenwaldring 23
70569 Stuttgart
Germany

info@waste.uni-stuttgart.de
www.waste.uni-stuttgart.de
Tel: +49 (0) 711 685 68291
Fax: +49 (0) 711 685 68277