

## **Before departure**

I knew from the start at KTH that I wanted to study abroad, and applying my knowledge within sustainable engineering in a low- or middle-income country instantly caught my interest. During my second year of bachelor's studies, I asked my classmate if he wanted to join me on the MFS (Minor Field Study) - to which he said yes. We were eager to secure a project, so we set up early meetings with the international coordinators at KTH to explore available projects at universities abroad. By the beginning of June, Professor Senoro and her team at Mapua University in Manila, Philippines, invited us to conduct research in environmental toxicology related to metals and metalloids on the island of Marinduque. While we had other options, we both found the Philippines project the most intriguing.

In my third year, I chose to study courses such as Geoscience, Environment and Soil Chemistry, as well as Hydrology. Based on my choice of education, I felt that the toxicology project was perfectly tailored to my interests.

The next step was to apply for the SIDA scholarship, which involved submitting necessary documents, such as a project description and proof of admission to Mapua University. Once we were informed that we would receive the SIDA scholarship, we focused on preparing for the trip. Our vaccinations included Hepatitis A and B, Cholera, Typhoid, and Japanese Encephalitis. Since Filipinos are generally fluent in English, we didn't have to take any language courses.

## **Upon arrival**

We arrived in the Philippines on March 29th, expecting to start our project right away. However, the entire country was on Eastern holiday, which led to delaying the start of our project until April 10th. We decided to make the best of it and traveled to the beautiful island of El Nido. While there was supposed to be an organized reception at the university, it didn't happen. Nevertheless, we were fortunate to connect with a group of international students who warmly welcomed us and showed us around the city. I strongly advise anyone undertaking MFS to reach out to experienced students who have previously done MFS. Through this approach, we received invaluable help, information, and were introduced to amazing people in the Philippines. Shout out to Dina Faraj, Saad Shihab and David Fredriksson!

Visa application was necessary and we applied for one when we had already been in Manila for approximately 20 days. We went to the Bureau of Immigration and they helped us out with the visa needed. Since we decided to squeeze in a vacation in Bali for a couple of weeks, it meant we were having less days on a streak in the PH and could therefore choose a cheaper waiver/VISA.

## **Financials**

Accommodation rental in Manila was around 200-250 kr/night. Initially, we stayed at the more affordable hostel called White Knight in Intramuros, which was also close to the university. However, due to limited plant-based food options in Intramuros and considering that I am vegan and my friend is vegetarian, we decided to move to the business district called Makati where there was a broader supply of vegan food. There, we stayed at Prince Plaza Condotel II and ate mostly at the nearby Greenbelt Malls, where food costs ranged from 70-120 kr. To save on food expenses, we also found some great vegan options on the Grab app. Transportation costs varied, with Grab motorcycle rides being more affordable. Living close to the university helped reduce rides and, consequently, travel expenses. Rides from Makati amounted to 60 kr per ride.

The flights to and from the Philippines were pricier than we expected, as were the flights within the Philippines and Southeast Asia. The round trip to and from the Philippines cost approximately 9000-10,000 kr, round trips within the Philippines ranged from 1500-3000 kr, and our round trip between Manila and Bali was 3500 kr.

## Accommodation

Our professor recommended that we stay at Zen Towers in Manila. However, the rental fee was a little outside of our budget for a two-bedroom unit with shared dining, kitchen, and bathroom. As mentioned earlier, we opted to stay at the more affordable White Knight in Intramuros and later at Prince Plaza Condotel II in Makati. We found our accommodations through Booking.com and Agoda.com. We got the impression that Agoda was a better site to book from because they had better canceling options.

White Knight is situated in the heart of Spanish-influenced Intramuros, and the room we stayed in was more practical than beautiful; equipped with AC, and conveniently located. During the evenings, there was live music in the backyard, where one can order food from White Knight's restaurant. The hotel features a tranquil backyard connected to Casa Manila - a reconstruction of a historic and beautiful Spanish colonial home. The nearby restaurants, cafes, and souvenir shops connected to Casa Manila added to the overall charm of the place.



Moving to Prince Plaza Condotel II was a change of scenery. Our room had two beds, a bathroom, and a kitchenette. The kitchenette wasn't top quality, likely due to us choosing the most affordable room option. We often referred to Makati as the "Östermalm's correspondent" due to the higher prices in the area. The district is bustling with high skyscrapers, and our accommodation was no exception. We stayed on the 17th floor, which took some getting used to as it made me feel a bit uneasy at first. I was concerned about earthquakes and typhoons, thinking that staying so high up could be riskier. However, two things helped put my mind at ease. Firstly, we were informed that buildings in Makati are designed to withstand such natural events, and secondly, KCDW (Keep Calm and Drink Wine).

There's a rooftop swimming pool that we highly recommend. It's a great spot to work on projects and take a dip in between. The hotel also has a gym, though we didn't use it. Instead, we enjoyed jogging in the nearby and picturesque Triangle Ayala Park.

In my opinion, the price of this accommodation in Makati (approximately 250 kr per night) was very reasonable, considering its proximity to Greenbelt. Greenbelt is connected to a

chain of malls, such as Landmark and Glorietta, and features a beautiful, lush courtyard and numerous restaurants. On the downside, it was quite far from Mapua University, and the trips there were often expensive (30 kr each for a one-way ride by car) and delayed due to the heavy traffic in Manila.



If you are willing to pay more, the quality improves significantly. During my husband's and my stay in Makati, we chose an Airbnb at around 350 kr each per night. We were on the 20th level, enjoying a beautiful balcony, a well-decorated space, cleanliness and a spacious bathroom.



## Project

Marinduque is a beautiful island in the Philippines that has experienced mining disasters, leading to elevated concentrations of heavy metals in the area. Our project involved a comprehensive analysis to investigate the correlation between soil color and the presence of heavy metals in Marinduque.

The project can be divided into three main categories: writing the report, conducting laboratory work, and visiting the site. The amount of time spent gradually decreased in that order. In the laboratory, we analyzed approximately 150 soil samples from Marinduque, which were already collected by the research team. To identify the colors, we used a small apparatus called The Nix Color Sensor 2 Tool, provided by our supervisor, Prosun Bhattachayra. Our work in the lab included measuring and recording various parameters,



such as color IDs, pre- and post-moisturizing weight of the soil samples, performing XRF analysis on all samples, and noting down the concentrations of heavy metals



Our professor took us on a three-day field excursion in Marinduque with the research team. During this time, they showed us around the island, and we had the opportunity to visit a local school where we engaged in conversations with the affected community members. This experience added a human touch to our research. On the school grounds, we were able to use the XRF-device, Hannah multimeter, and the Nix Tool on site. Surprisingly, we discovered concentrations of heavy metals exceeding the health guidelines on an outdoor volleyball court.

The three-day journey culminated in a series of presentations, during which we and our fellow researchers in the team shared our respective reports on the island's toxicology. The setting for these presentations was nothing short of breathtaking, with a mesmerizing view of the ocean.



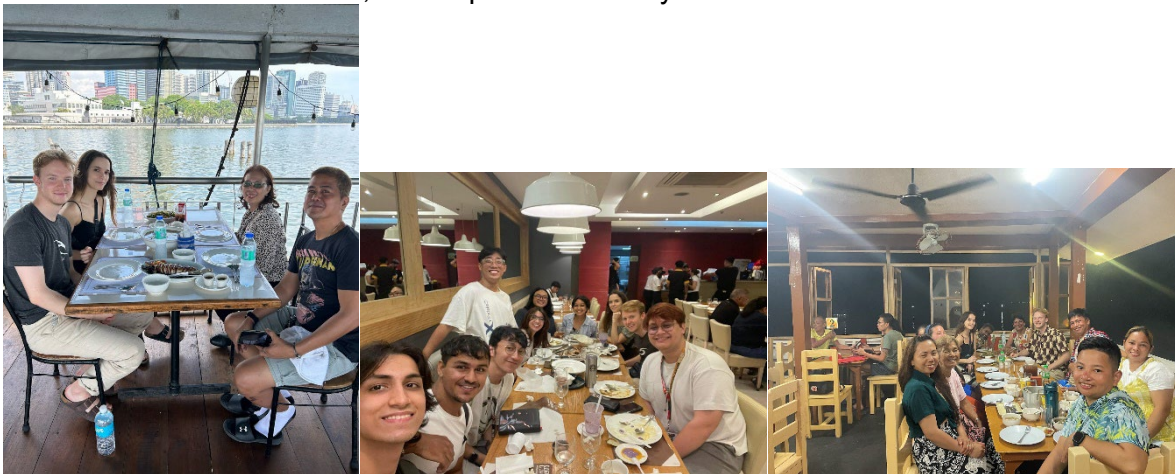
Most of our time was dedicated to extensive literature review and coding correlation analyses using MatLab. We held numerous meetings with the team to discuss and interpret the correlations we obtained. Our results ended up being of great interest to our professor and her team, resulting in us being listed as contributing authors of an article that is currently awaiting publication acceptance via Elsevier

## Country

During our visit to the Philippines, I was immediately struck by the warmth and generosity of the people. Upon arriving in Manila, our professor went above and beyond to make us feel welcome, treating us to a delicious shared meal at a pier-side restaurant and arranging transportation to our accommodations and the school. The hospitality I experienced in the Philippines was truly remarkable. Gift-giving was also an integral part of Filipino culture. I feel like it was important to accept gifts with gratitude, as it is not considered proper etiquette to refuse a gift in the Philippines. The people we met were humble, and their generosity extended beyond just material offerings to genuine assistance and helpfulness, making sure we had a memorable time in their country.

Social interactions were vibrant and inclusive. People were quick to make connections and invite us to various activities, such as going to a shooting range or a club, after only brief encounters. The Filipinos were open-hearted, and gestures of friendship, such as hugging and holding hands, were common even among men.

Eating in the Philippines was a unique experience as well. It was customary to share food across the table, rather than ordering individual dishes. Offering to pay for each other's meals in restaurants was common, as our professor kindly did for us.



Another aspect of Filipino culture that stood out to me was the strong presence of respect and hierarchy. I observed how attentively other members of the research team listened to the professor, refraining from interrupting her during discussions. People are addressed by their titles, such as ma'am, sir, professor, or doctor, reflecting a deep sense of respect for authority and elders. Our professor was not called by her first name, Delia, as she would have been in Sweden. Instead, we called her Professor Senoro, using her last name to show respect. Politeness is ingrained in daily interactions, as evidenced by the use of the term "po" in every sentence when speaking to elders or strangers. Additionally, it was important to adhere to dress codes, covering shoulders and knees when visiting official places like the Bureau of Immigration, schools, or the church.

Structure is less prevalent in the Philippines, so it's essential to be open and spontaneous, as scheduled events often undergo changes. For example, on one occasion, we were notified in

the middle of the night that a meeting, previously agreed upon for a different date, would be held the next morning. Moreover, communication in the Philippines tends to be more indirect, which is something Swedes should be mindful of. Filipinos sometimes speak between the lines and think out loud, leading to uncertainty about decisions and plans. To navigate this, one could politely ask about the exact agenda at the end of meetings and be prepared for potential changes. In Sweden, projects typically involve lengthy planning phases and brief implementations. In contrast, in the Philippines, less time is spent on planning, as there is more focus on trying out different implementations until you find something that works. Additionally, given the indirect communication style, it's essential to exercise caution when being direct, as it may come across as harsh or rude. Taking a more tactful and considerate approach to communication is generally appreciated in the Filipino culture.

These, however, are my own experiences, which might differ from how other people view the culture in the Philippines.

### **Leisure and social activities**

In our leisure time in Manila, we explored the vibrant city by visiting malls, restaurants, parks, and museums. We also had some nights out with international students, experiencing Manila's dynamic nightlife with visits to wine bars, rooftop bars, karaoke huts, and clubs in Poblacion. While we enjoyed these activities, our primary focus was on our studies, which allowed us to plan occasional excursions to other provinces and islands in the Philippines. Our daily routines often involved jogging and strolling through places like Ayala Park in Makati and Rizal Park in Intramuros, as well as trying out various restaurants and enjoying live music at local clubs.

Our trips from Manila were truly eventful as we embraced a backpacker's lifestyle whenever we ventured outside the city. Despite getting stomach sickness in Palawan, I could still appreciate the island's beauty; its stunning white sandy beaches and crystal-clear turquoise waters. It was an unexpected twist when I experienced an intense fever while sitting under the radiant sun at 30 degrees, shivering like never before. Thankfully, the hostel staff I stayed with in Palawan showed incredible hospitality, providing me with medicine and a soothing massage. Their home remedies worked wonders, significantly reducing my 40-degree fever. However, even upon returning to Manila, I continued to struggle with stomach issues. Later, my thesis partner also suffered from a stomach illness. Hence, I have a hot tip to share: only drink bottled water, never use tap water to rinse your toothbrush, and avoid eating food that might have been washed with tap water, as it often contains harmful bacteria. Although we didn't get to do the famous island hopping, we managed to go kayaking with a bunch of cool people we met at the hostel.

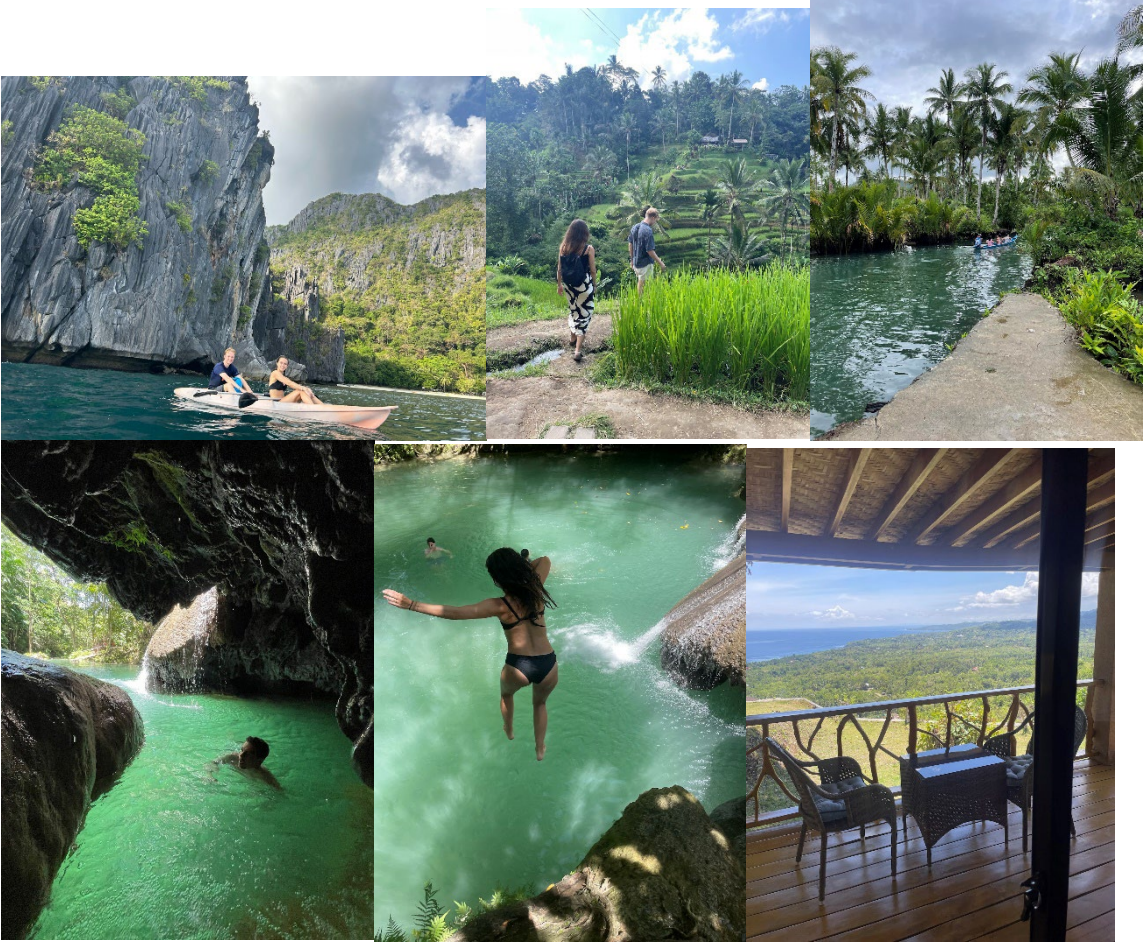
Besides Marinduque, our next adventure led us to Bali, offering a refreshing change of scenery and culture. You could smell the scent of spices and chai, as ritualistic incense filled the air everywhere we went. Bali impressed us with its incredible array of delicious vegan food available throughout the island. I had the pleasure of meeting many amazing people in Bali, indulging in surfing, yoga, bathing in picturesque spots, and embarking on an unforgettable early morning hike to witness the mesmerizing sunrise. Bali is simply a paradise on Earth.

Towards the end of my trip in Asia, my husband joined me, and we explored Moalboal, Siquijor, and Siargao. These places were nothing short of magical. In Moalboal, we engaged in diving, snorkeling, mountain hiking, and an intense ride with two carefree Filipino brothers through the mountains. We stayed near a beach where we could wade into the water and witness majestic sea turtles. One of the highlights of my entire overseas journey was canyoneering in Kawasan Falls – a natural adventure park where we glided along a natural stream, slid down natural water slides, and jumped from cliffs.

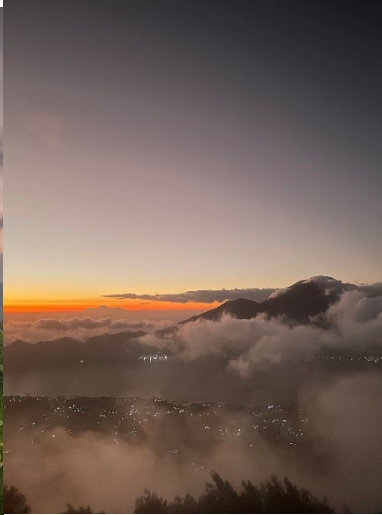


In Siquijor, my husband and I were fortunate to stay at a stunning resort high in the mountains. From there, we enjoyed breathtaking views of lush palm tree-covered mountains and the mesmerizing ocean. On the island we enjoyed swimming in waterfalls, exploring an underground river and snorkeling with sharks. We also went on a day trip to APO Island, where we had the opportunity to go diving. APO Island left a forever lasting impression, standing as the most breathtaking island we had ever visited. For those planning a visit, I highly recommend booking the day trip with Coco Grove Resort, as they own a stunning portion of the island.

Lastly, we visited Siargao, where we linked up with my thesis partner and his girlfriend before their departure the following day. In Siargao, we stayed at vibrant hostels and connected with a lot of fun people. We enjoyed island hopping, surfing, diving, and swimming in rock pools.







## Sustainability

We aimed to adopt sustainable practices to the best of our abilities. As the Philippines is located in Asia, flying was unavoidable for us. The traffic in the Philippines was chaotic and packed, which made it impractical for us to use bicycles for transportation. Instead, we opted for shared rides in cars and motorcycles to take us from place to place. While motorcycles



possibly produced fewer emissions than cars, we also acknowledged the safety risks associated with this mode of transport.

I mostly followed a vegan diet throughout the trip, with a few exceptions. In some places, it was pretty challenging to find vegan options, and in Manila, vegan food at restaurants was relatively expensive. However, by choosing plant-based meals as much as possible, it has been a way for me to live more sustainably.

In Sweden, I am used to recycling. Unfortunately, in the Philippines, we found limited opportunities for proper waste segregation. With just one container for general waste, it was a struggle with disposing of PET bottles responsibly. Despite the lack of outdoor public trash bins, we refrained from littering and carried our waste until we found garbage bins.

Regarding our project's connection to the Global Sustainable Development Goals (SDGs), if a correlation between soil color and heavy metal concentrations could be established, it could lead to cost-effective methods for determining heavy metal levels, freeing up financial resources that could be allocated towards mitigating the further spread of heavy metals in affected areas. This allocation of resources aligns with SDG 3 (Good Health and Well-being) and SDG 6 (Clean Water and Sanitation).

### **Other recommendations and observations**

- Apply for a minor field study! Not every university or program can offer this opportunity, and once you enter the working life, chances to study or work abroad may be limited. The financial support provided is a practical factor that makes applying to study abroad even more appealing. Doing a MFS makes your KTH-experience unique.
- Ensure you have a passport that is valid for at least six months ahead of your trip. Apply for the necessary visa, and visit the vaccinations center in advance to get essential vaccinations and health recommendations for your trip. Additionally, consider carrying essentials like rehydration solutions, malaria tablets, sunscreen, insect repellent, wet wipes, hand sanitizer, and appropriate clothing, including formals for school and attire covering shoulders and knees for visits to religious places or interactions with authorities.
- Get a local SIM card upon arrival, which you can easily find at the airport and conveniently load at various 7-Elevens throughout the country. Remember to turn off roaming before your departure to avoid unexpected charges.
- Familiarize yourself with previous research related to your project before your trip. This will save time on literature reading and impress your team with your preparedness. You will also have more time to spend on fun activities and exploring the country.
- Respect local customs by showing respect when interacting with people. Use appropriate titles when talking to individuals of higher hierarchy. Gifting Swedish snacks and goods as a thank-you gesture can be a great way of showing gratitude for their hospitality.

- Watch out for sugar and oil in food in the Philippines. Snacks and drinks often contain a lot of sugar, and the food can be high in oil. If you like your morning beverage at cafes, you can request to reduce the sugar content.
- Make sure to bring a converter outlet from Sweden so your electrical devices do not get harmed. While in the PH, make sure that the sockets are suitable for three-pinned plugs to avoid damaging your computer. Some areas, like Ermita, may have limited three-pinned sockets suitable for European devices.
- Don't do what we did and wait until the very last moment to visit Mapuas library, where you can find plenty of three-pinned sockets for charging your devices. Besides the dietary reasons we had for not living in Intramuros, finding cafes with sockets suitable for three-pinned plugs was hard. We might have stayed longer in Intramuros if we had known the library had those.
- Save money for your trip and make the most of your time in Southeast Asia. There are countless adventurous activities to explore, and traveling around neighboring countries can be a great addition to your experience.
- Consider taking an intercultural competence course like LS1600. I did this and it helped me a great deal, equipping me with valuable tools to understand different cultural perspectives, fostering effective communication and good relationships with people.
- Reach out to former students who have undertaken similar projects in the Philippines. Their insights can help you live more qualitatively while effectively managing your budget, and also connect you to amazing people that will make your stay a thousand times better. If you have any questions about our work or the Philippines, feel free to contact me at [isaric.kth@gmail.com](mailto:isaric.kth@gmail.com)

As a final thought: embrace the journey with an open mind, learn from the differences, and make the most of every opportunity. Cheers!