



## Sustainable energy consumption in suburban Kathmandu, Nepal

### Before departure

Ever since I heard of the opportunity to write your bachelor thesis abroad, I knew I wanted to apply. It seemed like a great opportunity to meet people, learn about a new culture, and get more practical experience included in my studies. When my friend and I started to look for a project, we emailed the embassies and NGO federations of almost every country we could find, but I felt a pull towards Nepal because I had heard it was a beautiful country with a welcoming culture. The NGO federation of Nepal put us in contact with the organisation we ended up working with, and after discussing the local conditions with them we understood that it would be possible to conduct a suitable project there.

When we received the travel grant, we started to plan more in depth, got all necessary vaccinations and took the KTH course Intercultural Competence to further prepare us to live in a completely different country. We also read about Nepali history and culture, and talked to our contact person about how we should prepare. In Nepal, you apply for visa on arrival and you do not need permission to do this kind of study, so there were not a lot of mandatory preparations.

### Upon arrival

When arriving in Nepal, we first stayed in central Kathmandu to get everything sorted regarding SIM-cards, money and similar necessities. After that was settled, we travelled to our place of stay about 40 minutes south of the inner city, where we lived for eight weeks. Our plan was to get started with the interviews our field study was based on almost immediately. However, different projects and holidays meant we had to wait for about two weeks before actually starting, and in the meantime we worked on other parts of our report. Neither us nor the organisation we worked with had done anything similar before, and in the beginning there were lots of unanswered questions that made us a bit stressed out, but we figured everything out as time went on. We learnt that in Nepal, plans and timeframes change regularly, and after a while we got used to this new way of organising things.

### Financials

In general, Nepal is by far cheaper than Sweden. The costs of food and transportation are low, especially if you stick to local products and take the local bus. Imported goods such as foods from European brands can be very expensive, often even more so than at home. Our cost of accommodation was quite high as we were staying with the charity foundation we worked with. It would probably have been possible to find a cheaper place to stay, but as we were working with said foundation it was very convenient for us to live on site.

### Accommodation

We lived at the foundation in the village where we conducted our study. As our contact person was also the CEO of the foundation, it was natural for us to choose to stay there. We paid 30\$ per night, and the cost included accommodation, three meals a day, other necessities such as clothes washing, and a few tours to local sights in our spare time. The house we lived in was big and airy, with most of the common areas being partially outside.



The house hosted our contact person, his family and many volunteers. It had several bedrooms, a small kitchen, western bathrooms, and a big garden where they grew crops, had a biogas plant and kept their cows and chickens. They also had three cuddly cats and a very happy dog keeping us company when we studied <3



## Project

The purpose of our project was to map the residential energy use in the village we lived in, to investigate if and how the energy sources could be changed to become more sustainable. We did this by interviewing residents about their homes and energy sources, and based on the results we calculated the energy need. We faced some difficulties as the locals did not have all the technical information we needed and there were no relevant sources online, so we had to make a lot of assumptions. The project had several different phases, and the most important one was the interviews, but the longest one was after the interviews, when we calculated the energy need and did some modelling in HOMER.

Our contact person helped us find people to interview as well as an interpreter. We also got the chance to do an in-depth interview with one of the employees on the local conditions, since the information we needed was not documented online. We continuously spoke to our contact person about the progress of our study, but did not present the final result to the local community as it was not completely finished when we left. However, the final report was shared with the organisation when it was done.



## Country

Nepal is a colourful country with a rich culture and nature. As we stayed in the biggest city, we didn't really experience the mountains Nepal is famous for, but we did see many beautiful historical sites. People were generally friendly and curious, especially the children who came up to us to say hi. The streets of Kathmandu are very busy: crowded with people and small shops, power lines hanging everywhere and cars honking for dear life, but the city also hosts lush areas with peaceful Hindu and Buddhist temples.

In general, the culture shock was not as big as I had expected. Of course there were differences from our lives at home, like the food, how you greet people and the rhythm of everyday life, but there was nothing that really came as a shock. Both the family we stayed with and the volunteers shared their knowledge of Nepali culture, so we got the chance to learn bit by bit.

One thing I was not prepared for was all the pollution. Kathmandu is located in a valley that retains the emissions from the city, and I didn't really understand how that impacted the area until we actually got there. Even though we lived in the outskirts of the city where it was cleaner, everyone was coughing and sneezing, and most of the time we could not see the mountains surrounding our place of stay. I was also surprised by how loud everything was. There was the constant buzzing from the big road a few blocks away, dogs barking all hours of the day, neighbours yelling to each other, and noise from the construction of houses and the industries close by. In the beginning it made me very tired, but I got used to it.



## Leisure and social activities

The only day off in Nepal is Saturday, so we usually did a day trip to some famous attraction to make the most of it. We went hiking, visited many different temples, rode a cable car up one of the mountains, and celebrated the Nepali New Year and other holidays that took place while we were there. We also tried a wide range of delicious foods from the Nepali kitchen; dal bhat, momos, yomari, wo, potato curries and matka tea, to name a few.



During our free time on the weekdays, we sometimes had tea at the local lake, made jewellery in the foundation's jewellery workshop, took cooking and meditation classes and hung out with the other volunteers. It was very easy and natural to get to know the internationals, as we all lived together. We also got to know the locals that worked at the foundation, but we rarely had any longer interactions with other locals as most of our time was spent at the foundation.

### **Sustainability**

On site we learned that the local buses - although available and cheap - were extremely crowded and not guaranteed to take you where they said they would. Because of this, we opted for taxis when the trip was too long to walk, and sometimes the school bus offered to drive us. I would say that the lifestyle at the foundation was pretty sustainable; they only served vegetarian food made from their own organically grown crops, and the rice was bought from a village in the mountains, which supported a poor community of female farmers. The stone house had no heating and when cold we resorted to blankets, which saved energy, and most of the leftover food was eaten by either the cats or the cows.

Our project was connected to several of the SDGs, but mainly to number 7 about sustainable energy for all. The project investigated how the residential energy use in the village could be made more sustainable, thus connecting directly to SDG 7. Using more sustainable energy was also shown to have positive health effects and lower impact on the environment, which touches some of the other SDGs as well.

### **Other recommendations and observations**

I would recommend trying to investigate how easily available information is in the country you want to go to. In Nepal, government employees, committees and companies generally do not answer emails at all, which meant it was much more difficult to find experts to interview than expected. Apart from this, much of the information we needed for our thesis was not available online, either not in English or not at all. Asking you contact person about this beforehand can give you the opportunity to plan for what to do in case a similar thing happens, or plan a project that does not rely on official data.

It was a great experience to put together our own project and meet so many people volunteering with different things. But, for the sake of the project, I think it would have been easier to work with an organisation with a background more similar to the topic of our project and a bigger understanding of engineering in general. The organisation was of great help since they knew many people in the village

and could help us set up the interviews, but at times it was difficult to do the rest of the project completely by ourselves. I think it would have helped to be in contact with a local expert or to be part of an already existing project, and I would recommend people who want to do a similar trip to try to collaborate with a person or an organisation that knows your thesis topic well.

My last and biggest recommendation is to apply for KTH Field Studies. It has been a very unique and rewarding experience, and if you are the least bit curious you should definitely look in to it!