

FS REPORT	Name	Year and term for exchange
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Country for the project

Kenya

Degree programme

Industrial Engineering and Management

Clean Cooking in Makueni County - A Multi Stakeholder Approach

Before departure

Doing our final degree project as a field study seemed like a great opportunity to challenge ourselves in a new environment, have fun and gain unique experiences. When we started talking about doing a project abroad, we were not sure of which country we wanted to go to. Through Erika working at KTH FS, we got in contact with Sarah Odera from Strathmore University, who was in Stockholm and was able to meet us regarding a project on Clean Cooking in Kenya. This seemed very interesting and aligned with our energy specialization. We decided that we would develop a project plan on Clean Cooking in Kenya, as a part of KTH Global Development Hub which Strathmore University is a part of.

We did not do any language courses before arrival, since English is a language that works well in Kenya, and we relied on having interpreters during the parts of our project when we needed to speak Swahili or any other local languages. We did multiple vaccinations according to Swedish vaccination centers' recommendations of vaccinations. These were Hepatit A + B, Cholera, Typhoid, Yellow Fever and Meningococcal Disease. Additionally, we took malaria pills every day, since we were planning to visit the countryside and coastal areas where malaria is prevalent. The malaria pills did cause some side effects such as nightmares in the beginning, but this disappeared after a few weeks.

We applied for a normal tourist visa which was very simple and took only a few days. We also applied for a NACOSTI research license, which was a quite complicated process with many different signatures needed from both KTH and Strathmore University, as well as a quite detailed research proposal, but once we sent the application we got approved within a week.

In December we met with other students within the Global Development Hub, both students from the African partner universities and students from KTH going on exchange in the upcoming spring. This was a great opportunity to talk with people who study at Strathmore University, as well as get to know people who were going to be there at the same time as us.

Upon arrival

Upon the day of arriving, we met with our contact person at Strathmore University. We were warmly welcomed, given a tour of the university campus as well as given access to facilities at the campus such as the library. A few days later we also had a meeting with our contact person discussing people of interest to interview. We had discussed this previous to arriving as well, but given that we were now in Kenya, the process was more streamlined.

We had planned to conduct the main phase of our project, end users focus group discussions, in Makueni county approximately four weeks after our arrival in Kenya. This so that we would have time to arrange the logistics of our visit to Makueni county, but also so that we would have time to conduct other interviews before engaging with the focus groups to gain a better understanding of the context that we were operating in. It was good that we had plenty of time both before and after conducting these focus group discussions as it took some time to negotiate a realistic budget with Makueni Development Trust (MADET), the organization that was helping us organize the focus groups. When we finally agreed on a budget, our visit to Makueni was pushed forward a week to accommodate the

capacity of MADET. However, once we arrived in Makueni and met up with MADET, we were warmly welcomed. They had organized the focus groups in accordance to our wishes and were very accommodating and eager to make our stay pleasant.

Our stay in Makueni lasted short of a week, however our full stay spanned over two months. Most of our time was spent in Nairobi, conducting interviews with stakeholders other than end users active in the clean cooking value chain. Nairobi was a good base for this as most large private sector entities, research institutions and others organization are active there.

Financials

Generally, Kenya is less expensive than Sweden. If you ate at local restaurants you could get a meal for around 10-20 kr. The restaurants that serve more "westernized" food are also less expensive than those in Sweden, however they are relatively expensive in the Kenyan context. Shopping at a supermarket, prices can vary. Buying locally produced foods such as fruits and vegetables is very inexpensive compared to Sweden, however, the price level of non-local foods such as pasta might be the same as in Sweden, if not even higher. Buying fruits and vegetables from vendors on the street is very affordable.

A common way to get around in Kenya is through the local buses called matatus which are very inexpensive. However, it is not recommended to travel in these, especially not when covering longer distances on large roads as the matatus are very crowded and frequently in accidents. Using taxi services such as Uber in Nairobi is a good alternative to the matatus as they are also quite inexpensive and, in our experience, safe.

As in Sweden, you have to pay to enter museums or amusement parks, but you also have to pay to enter local parks as well as national parks and national reserves. The price you pay depends on the resident status that you have, that is citizen, resident or non-resident. Being a non-resident, the prices you will pay are much higher than if you are a citizen or resident. When visiting museums or local parks this does perhaps not matter that much as the general price level is low. However, when visiting national parks, the price difference suddenly becomes several hundred SEK. A tip for saving money on these leisure activities is therefore to apply for a student visa if you have the possibility. Then you will count as a resident. We did not do this as we were told it was quite complicated. If you are not planning to visit many national parks and only staying for a short amount of time then perhaps the burden of going through the application process for this is not worth it.

As we mentioned above, we were negotiating our budget with MADET for quite a long time. It can sometimes be hard to know what prices are reasonable, but we were assisted by our contact person to understand what prices could be expected. Although our contact person was very helpful in regards to this, they also thought that we should apply for the NACOSTI research license. Technically it is required to conduct research in Kenya, but no other international students that we met had applied for this. The license is very expensive, at around 3 800 kr per license, and to save some money you might therefore want to skip it (if you like to live on the wild side).

Lastly, do not expect to be able to pay by card everywhere. In Nairobi and bigger cities most larger restaurants accept cards as payment methods. However, most people prefer cash or Kenyas digital payment system MPESA. It is connected to the Safaricom sim cards and your telephone number but you still have to go to a Safaricom provider to verify your identity before you can start using it. It is similar to swish, but it has an even more widespread use and you are able to use it to make payments to regular citizens as well as at restaurants, in the grocery store etc.

Accommodation

Most of our time we spent in Nairobi, and here we booked our accommodation via AirBnB. Before booking we spoke with our contact person in order to understand which area of the city is best to live in, and we heard great things about Kilimiani and Kileleshwa and chose to live here while in Nairobi. The area was calmer than the central business district, but still very close to everything. In times we left the capital to do interviews or visit Mombasa for instance, we booked our accommodation via Booking.com, but also asked for guidance from our contact person as well as googled on which areas to live in, and which to avoid. While in Kenya and especially Nairobi, it is important to learn about which area of the city to stay in.

The housing conditions of our accommodations were mostly very good, with high standards to an affordable price. We paid approximately 250 SEK per person per night for most of our accommodations, and this gives you a high standard apartment. We also met several exchange students who were staying in the local student apartments called Qwetus. The standards of these varied, as well as the standards of the areas in which they were located. However, they were very affordable.

Project

Our project regards Clean Cooking in Rural Kenya, with a specific focus on Makueni County. Clean Cooking means access to clean and modern cooking solutions, which is a part of the SDG 7 in UN's sustainable development goals. The aim of this goal is to move away from using traditional fuels such as firewood, charcoal and kerosene, which is bad for human health and the climate. The aim of our project was to evaluate the stakeholders active in Makueni County working on increasing access to clean cooking, as well as get deeper understanding of which challenges the end users face when adopting clean cooking technologies.

Most of the interviews we held with non end users, such as people working at the government and at research institutions, were held online. However, during one week we were in Makueni County and did interviews with local people. MADET helped us organize four focus groups with 10-11 people each, and helped with translation from swahili to english. We received a lot of support from our contact person when organizing the focus group interviews as well, since she was the one who first put us in contact with MADET and also helped with reviewing their budget proposals. She was also great at putting us in contact with various stakeholders working with clean cooking in Kenya, and it would definitely have been harder to get as many interviews as we did without her. We were not able to present the results locally, but we will share the finished report with all stakeholders that we have interviewed.

Country

As none of us had ever been to sub-Saharan Africa, we were all very unaware of what to expect. But after arriving in Kenya, we liked it instantly. Nairobi is a big city with a lot to offer, including art museums, markets, nightlife or even national parks and safaris right by the city. The food is also great, and we especially liked chapati. The people are also very welcoming and talkative, and every uber-ride includes new friendly and fun discussions that make it hard to leave the car.

One culture shock that we experienced first hand was "Kenyan time", which means that people show up very late compared to what we are used to. This was a bit hard and frustrating for us in the beginning, since we did a qualitative study including a lot of interviews, but we soon got the hang of it. Another culture shock is how you need to be more alert in Kenya and Nairobi compared to what we are used to in Sweden. You need to be mindful where to walk, especially at night, and we almost always took an uber. There are also guards and metal detectors to get into almost every store or supermarket, as the safety concern is of high priority in the country.

Leisure and social activities

Kenya has so much to offer when it comes to activities. While in Nairobi, we tried various restaurants, went to art galleries, museums and the cinema. We also went to Karura Forest, which is a big park in the city that takes away the city pulse and lets you experience nature right in the city. We also went to the giraffe center, being a reserve for giraffes where you can get very close and also feed giraffes. The nightlife is also very fun, and we tried various bars and clubs during weekends, and our favorite was the Alchemist. But the highlight of Nairobi was Nairobi National Park safari, located just by the city, where we got to see rhinos, lions, giraffes, zebras, hippos and many more animals.

For one week we also visited the coastline and Mombasa. The train from Nairobi to Mombasa works very well and is the best way to get there. We stayed in a small town south of Mombasa called Diani, being a calm community offering nice beaches. However the weather is very different here compared to Nairobi, as it is on sea level the temperatures were much higher as well as the humidity. This area is also a high risk area of Malaria, so malaria prevention medication is essential here.

We also went to Naivasha, a small town north of Nairobi. Here we bicycled in Naivasha National Park seeing various animals, and climbed Mount Longonot which is a non-active volcano. However the most impactful experience was going to Maasai Mara, which is a huge national park on the border to Tanzania. We stayed in tents and did two full day safaris, seeing all of the big five.

The locals are very friendly, and it is easy to make contact. Throughout our journey we met new friends, which helped us learn about where to go and what to do. One in particular was our driver, Robert, who we stuck with throughout our travels in the country, and also our contact person Sarah whom we went to diners with, and also karaoke.

Sustainability

Kenya is very far away from Sweden and it would not have been reasonable to take any other means of transport than flight, which is not that sustainable. It was also quite hard to travel sustainably once in the country. Due to safety reasons, it was not recommended to walk anywhere, not even for short distances, and the public transportation was quite complicated and not recommended to use. Because of this we always took uber when transporting ourselves in Nairobi. We did take the train from Nairobi to Mombasa, which was a very high standard and punctual train that we recommend, but other than this train ride we did most of our trips by car.

Increasing Clean Cooking access is an explicit part of SDG 7 "Affordable and Clean Cooking for All", which our project definitely is connected to. However, increasing clean cooking access has the opportunity to positively impact other goals as well. Increased adoption of clean cooking technologies lessens the need for collecting firewood, mitigating deforestation which is a part of SDG 15 "Life on Land". The burning of traditional fuels releases greenhouse gas emissions, which can be lowered with a switch to clean cooking, connected to SDG 13 "Climate Action". Additionally, our project is connected to SDG 3 "Good Health and Well-being", since clean and modern cooking technologies significantly mitigate the dangerous indoor air pollution created when burning traditional fuels. Lastly, women are often responsible for both cooking and collecting firewood, and the adoption of clean cooking has the opportunity to improve SDG 5 "Gender Equality".

Other recommendations and observations

- Use Uber instead of other taxi-services as we heard that there had been incidents with other companies
- Learn about the different areas in Nairobi before booking accommodation, as they are very different. As mentioned we recommend Kilimani and Kileleshwa.
- $\circ\quad$ M-Pesa is needed for making payments, but it is very easy to use
- ECitizen is needed for most activities, including museums and entrances to parks etc.
- o In many places, especially parks, you are not allowed to take plastic bottles so bring a reusable water bottle.
- The nature is very beautiful in Kenya, visit many national parks and enjoy the country