



## A Field Study on Sargassum seaweed storage for biogas production in Grenada

### Before arrival

We first heard about the KTH Field Studies program through some older students in our program who had previously participated. It seemed like an amazing opportunity to travel during our studies and experience a new country and culture, while working on a project that could have a positive impact in the host country. After reading several travel reports and considering various destinations, we came across a project in Grenada, which had been visited by KTH students in previous years. The project seemed both exciting and relevant to our studies, so we decided early on that we wanted to contact the host organization to learn more.

We got in touch with the company, a start-up run by two KTH alumni, through some students that visited Grenada the year before us and began preparing for the project in the fall. Since English is the official language in Grenada, no language preparation was necessary, and no visa was required. We got vaccinated against Hepatitis A and B, Typhoid, and E. coli. We also considered getting the Dengue vaccine but ultimately decided not to take it. However, our supervisor contracted Dengue during our stay, so it might be a vaccine worth considering. We also took the course LS1600 Intercultural Competence to prepare for our Field Study.

### Upon arrival

We arrived in Grenada in the beginning of February and stayed for a total of 9,5 weeks. Upon arrival, our local supervisor, one of the KTH alumni, greeted us at the airport and drove us to our accommodation. We landed on a Friday and spent the first weekend settling in and exploring the neighborhood before starting our project. Our supervisor showed us around, shared many useful tips and recommendations, and provided a thorough introduction to the company and the project we were about to undertake. There were also three other students working on parallel projects for the same company, two of whom had already arrived by the time we got there, so they were also very helpful in helping us adjust to our new daily life and the new culture.

### Financials

The overall price level and cost of living in Grenada are generally higher than in Sweden, primarily due to the country's heavy dependence on imported goods from the US and South America. For example, groceries were significantly more expensive than in Sweden, and eating out at restaurants cost about the same.

To keep food costs down, we made sure to cook most of our meals ourselves. Local fruits and vegetables, as well as beans and lentils, were generally the most affordable, so we tended to buy those. A useful tip is to check daily what's available at the grocery store and at what price, as this varies quite a bit. For example, at the beginning of our stay, we could only find imported cucumbers costing 60 SEK, while later on, local cucumbers were available for only 5 SEK.

The cost of flight tickets and vaccinations alone exceeded the KTH Field Studies scholarship. However, thanks to affordable accommodation, we were able to cover all our expenses with the scholarship and CSN loan.

### **Accommodation**

We arranged our accommodation through students who had been to Grenada in previous years, as well as our local supervisor, both of whom recommended that we contact a Swedish woman who owned a small hotel in Grenada. She ensured that all five students who were there received accommodation at a very reasonable price compared to other options in Grenada - around 25 USD per person per night. The hotel was of good quality, and we had access to an outdoor kitchen where we could cook our own meals. It was also in a great location, close to Grand Anse Beach, buses, grocery stores, and ATMs.

We had to change rooms a few times during our stay due to other bookings, and during the final weeks, we moved into an apartment just behind the hotel, where we stayed with two of the other students.



*One of the hotel rooms we stayed in, and the view from the pool.*

### **Project**

Since 2011, Grenada, along with other Caribbean islands, Mexico, and other regions, has faced significant challenges with large amounts of Sargassum seaweed washing up on the beaches during certain times of the year. This causes major problems for tourism, local communities, and ecosystems, and there is currently no sustainable solution to the problem. In recent years, the company we worked with has explored the possibility of producing biogas from Sargassum on a small scale, turning a waste problem into a valuable resource. They are now planning to scale up the operation, and our project focused on investigating the potential for large-scale storage of Sargassum to enable year-round, consistent biogas production despite variations in the seaweed influx.

The first part of our project involved gaining a better understanding of the project and the local context in Grenada, as many aspects of doing business there differ significantly from Sweden. This included conducting interviews with stakeholders, and visiting the planned biogas production site and two small-scale digesters currently operated by the company. In parallel, we continued our literature review, which we had already started before traveling to Grenada. The second part of the project

involved developing a decision support system to help the company plan its future Sargassum storage, calculating when and how much Sargassum should be stored throughout the year. Since many aspects of the upscaled operation were still uncertain, the model needed to be highly flexible and allow for the comparison of different scenarios.



*Sargassum seaweed on the east coast of Grenada, one of the small-scale digesters we visited, and a picture of the site where the new, upscaled plant will be located.*

## **Country**

None of us had heard of Grenada before our Field Study, so we didn't have many expectations. However, we quickly discovered that it is an incredible country with stunning beaches, mountains and jungles, beautiful waterfalls, great snorkeling spots, and much more to explore.

Grenada is a small island nation in the Caribbean with a population of around 100,000, and it gives you the sense that everyone knows everyone. The temperature stays consistently around 28–30°C, both day and night. We visited during the dry season, but we experienced many more rainy days than is typical for that time of the year.

Grenada is called the "Spice Island," known for its spices, rum, and chocolate. Nutmeg, in particular, is a major export and can be seen depicted everywhere - from roadside paintings to souvenirs, and even on the national flag. The pace of life is generally much slower and more relaxed compared to Sweden, yet the island is also very lively with colorful houses, constant car honking, and loud music playing from cars and restaurants. We quickly realized that "island time" is a real concept, and things tended to take much longer than we were used to.

People were incredibly friendly and helpful, showing a great interest in our project and our time in Grenada. Overall, we felt very safe during our stay, as there was little crime, both among locals and toward tourists. However, the difference in views on gender roles was unfortunately quite noticeable, which made us extra cautious in certain areas and led us to avoid walking alone, especially after dark.

The cheapest and most convenient way to get around the island was by using the local buses, which cost around 10 SEK per ride. These are privately owned minibuses that drive very fast, without a fixed schedule or designated stops. Instead, you simply wave down a bus when you want to get on, and knock on the roof or window when you want to get off. This felt very unusual at first, but we quickly got used to it, and every bus ride became an adventure.





*A typical roadside painting, the hike to Seven Sisters Waterfalls, and BBC Beach.*

### **Leisure and social activities**

We stayed close to the beach and spent a lot of time there, which was a great break from our studies. Besides that, we also dedicated a lot of time to exploring Grenada's stunning nature. We visited a chocolate factory and a rum distillery, explored the food market in the capital, St. George's, and tried local dishes at restaurants. We also went snorkeling and traveled to the northern part of the island to see the leatherback turtles, which was an incredible experience. In addition, we took a ferry to the island of Carriacou, north of Grenada, where we visited the beautiful Sandy Island and attended a local festival. Every Saturday, we joined in on "Hashes", a type of trail run held at different locations on the island each week. It was a lot of fun and a great way to explore new parts of Grenada.





## **Sustainability**

We found it quite challenging to live sustainably in Grenada. While we did notice some small sustainability efforts, such as the use of solar panels on some houses, the country is still heavily dependent on fossil fuels, with around 98% of its electricity generated from fossil sources. Similarly, buses and cars are almost entirely powered by fossil fuels. During our stay, we relied heavily on local buses, but they didn't cover all areas, and were particularly infrequent on Sundays. As a result, we also traveled by car with our supervisor to reach various interviews and activities.

We cooked a lot of vegetarian and vegan food, partly because it was the most affordable option. However, aside from this, there were few opportunities to make sustainable choices compared to what we are used to in Sweden. For instance, most of the food - except for some fruits, vegetables, beans, and lentils - was imported, and no organic options were available. Grenada also lacks a recycling system. Unfortunately, this meant that all waste ended up in the same bag and was sent directly to the landfill.

Our project was related to several Sustainable Development Goals, as it contributed to the company's efforts to scale up their biogas production from Sargassum, and thereby providing a sustainable solution to the Sargassum problem while also reducing the country's dependence on fossil fuels. The connection was particularly strong with *SDG 7: Affordable and Clean Energy*, *SDG 12: Responsible Consumption and Production*, and *SDG 13: Climate Action*.

## **Other recommendations and observations**

Our strongest recommendation is definitely to apply for Field Studies if you get the chance! We had so much fun and it is an incredible opportunity to travel during your studies, experience a new country and culture, and learn a lot along the way.

Here are a few specific tips if you are planning to visit Grenada:

- Start reaching out to people for interviews early on. Establishing good contacts and setting up meetings could take quite a long time, much longer than you would expect.
- Take the university buses whenever you can. They are free, much more comfortable (they have AC), and follow a schedule, which makes it easier to plan your trips. Anyone who looks like a student is welcome to ride :)
- Always carry cash with you. Most places accept cards, and we managed almost everywhere with Apple Pay, but buses, fruit stands, and some restaurants only take cash, especially in more rural areas.
- Make sure to explore the entire island, not just the more touristy areas in the south. The country is very small, so it is relatively easy to get around.

If you have any questions about our stay in Grenada or about KTH Field Studies in general, feel free to contact us at: [thelundq@kth.se](mailto:thelundq@kth.se) [alvaas@kth.se](mailto:alvaas@kth.se)

