

Solar Project

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1. Abstract

The Solar Project Gambia (SPG) is a project that is trying to work as an example and an information centre concerning the direct use of the sun for cooking, baking or drying. It is producing solar dryers and solar cookers. It consists of three parts: the bakery, the carpentry and the restaurant. Our aim is to make solar food popular in the country and help in the fight against deforestation. We also inform about healthy nutrition and try to prevent malnutrition. The project is conceptualised to serve as a training and information centre concerning the use of direct solar power. It gives 8 local people a work and income from producing solar food or equipment.

Our slogan is:

"Solar Project Gambia,
cook with the power of the sun,
save money and firewood!"

Our services are: solar baking, solar cooking, solar drying and solar installations.

The SPG is divided into three parts:

Bakery

Solar restaurant

carpentry



The best examples of success is the bakery and the restaurant. They really make solar food popular. Through our daily presentations in the street with delicious cakes and cookies in the solar cookers we could make a lot of people interested and curious. The bakery sets an example of how it is possible to generate an income with Solar baking. Our products are to be found along the coast in different supermarkets, small shops and along the beach.

The project's restaurant serves solar baked cakes and pastries in a natural environment. The project is also visited by tourists on city tours. The tours are a great opportunity for the visitors to get unforgettable memories of their holiday in Gambia and bring a small solar gift for their friends and relatives back home from the SPG. The feedbacks is very positive. During this year we achieved a lot.

During the rainy season we face hard times. Nevertheless we have really achieved a lot during the past 2 years.

Strategies need to be devised and implemented to generate enough income during the wet season.

2. Introduction

We are proud to introduce the Solar Project Gambia (SPG) as an example for generating income through the power of our sustainable resource, the sun. We will proceed by introducing the three departments of our project and the ways in which we work. Some of our successes over the last two years are listed as well as some problems we have encountered. We close by mentioning our aims for improvement for the future.

3. Background

The Solar Project Gambia had its inception in January 2006. That is when Elena Steger Kassama brought the first two (2) Solar stoves and one (1) solar cooker (Parabolic mirror) to the Gambia. Through several solar presentations at different busy places in the Gambia, I and my business partner Amadou Kassama tried to introduce Solar cooking to the Gambians. The interest and the feedback was enormous. The newspaper, "DAILY OBSERVER" published a report about us on the front Page of their newspaper. We also had a live phone-in programme on the G.R.T.S Radio during the introduction. People made calls from from all over the country, inquiring about solar cooking and our activities.

Our first priority was to build a workshop to produce solar stoves locally. The idea was to create a working place and to reduce the cost of a solar cooker through a local production. The construction of the workshop was completed in September 2006.

The organisation responsible for developing the solar ovens we intended to construct grew interested in our project and decided to support us. An expert in building solar stoves, Mr. Rolf Behringer from ULOG in Germany, was sent to train our carpenters to build Solar stoves for cooking, baking or preserving food. Tunnel driers to dry fruits and vegetables were also constructed.

The training was successfully completed and we were able to produce products of high quality. Shortly after, WISION - a German organisation promoting solar food processing in the country - focussed on our project and together with five other projects worldwide, supported us with a 9800 € grant to popularise solar food.

Some of the money was invested in the Solar Food Restaurant. The solar food restaurant opened on the 27th of April 2007. The bakery opened 2 weeks later.

4. Project

4.1. How do we operate?

First of all we want to reach and convince as many people as possible with our way of using the sun for cooking and baking or preserving food as well inform about the importance of a healthy green environment.

We want to function as an information & training centre for any question concerning how to use the power of the sun for cooking, baking, fruit drying and electricity.

Solar cooking should get so popular that it is common to see one in a house hold.

We want to change the peoples mind about the environment and our forest, so that they can start to take care for it and see the problems arising with deforestation.

We hope to be an example for businesses, individuals, tourists, family households, associations and tour operators.

At the moment we operate mostly in Gambia. We offer solar food product services: party catering for naming ceremonies or marriages or charities. We do carpentry jobs like constructing roofs, but mainly produce solar cookers together with baking equipments and offer improved stoves for rainy days. For fruit drying we produce our own tunnel driers. We offer guided tours through our project for tourists.

We concentrate on making solar cooking, solar baking and fruit drying popular.

With solar cooking and fruit drying presentations at various places all over the country we give the local people access to information about us and to see live solar cooking. Through this we try to convince people.

Furthermore we want to be a business with standard products and a good recommendation. Therefore we all took part in various training courses like book keeping, customer care, hygiene and house keeping. We improved our main products of the workshop (solar cooker and the tunnel drier). With the help of Bernhard Ammann, a Swiss carpenter whom we invited for four months to teach our local carpenter and improve our products, we expanded our services. Now we are also able to offer roofing for houses.

We want to be aware of new products for the use of solar power so that we can inform our customers.

Amadou Kassama (responsible the solar installations) and his working college Ansur took part in a training offered by the department of renewable energy of Gambia. The aim of the course was to certify the participants to make sure solar installations are of a standard in Gambia and that companies with the certificate are recommended to install solar systems.

In fruit drying we see a great opportunity and potential in Gambia. We are trying to dry as many different things as possible to gather experience in order to answer clients' questions as well as the flexibility of a solar drier. Most of these dried products end up in our bakery. They are used as ingredients for cakes or biscuits and many other things.

When you look at the health aspect of the dried fruits it can help combat malnutrition, which is spread widely in Gambia. We hope to find a way to make the tunnel drier affordable for more local people.

4.2. How do we organise ourselves?

Our new location has proven to be very suitable in many aspects. First of all we are frequented more often and our customers find all our services under one roof.

We were lucky to have a Swiss carpenter during this time here in our project. He and our carpenter did a wonderful job.

The restaurant at Latrikunda is now a branch of the SPG but with its own management. It is using solar cookers to cook meals or steam the chicken legs for the night sales. They have their own information desk to inform about solar cooking and deforestation. Often we get an

order for a birthday cake or party catering for naming ceremonies or weddings through the restaurant at Latrikunda.

Having two restaurants in Gambia helps us to reach more people through solar cooking. The bakery and the carpentry workshop has been moved from Fajiekunda to the new location in Kanifing.



Some of our baking products

The organisation of our new location in Kanifing south is in the hand of the management team of 2 directors, 2 managers and 4 staff.

Working plans have been worked out with the exact work definition and responsibility for each worker.

Hygiene rules are placed at the food production site together with weekly cleaning plans. The person in charge of hygiene must insure that the whole staff is cleaning accordingly. We have made huge improvements hygienically.

Every first Monday of each month we have a project meeting to keep all involved in the project up to date.

It helps us to discuss the problems or difficulties which we faced during the month as well as clear misunderstandings or set new goals and share the responsibilities.

It is important for a business that the staff is well informed and aware of what is going on in between the project and is aware of outside connections and standard. Our guests are pleased about a well informed and organised staff. And guest who return often are always glad to meet an improved SPG.

We have a good understanding amongst ourselves and have improved our work as well our services and supply. To ensure good customer care, which is very rare in Gambia and to ensure hygienic conditions whilst producing food, my staff took part in a hygienic course and a customer care course for two weeks respectively. We want to have a high standard of hygiene especially because we serve food to Europeans as well.

Through these courses the staff has understood the cause of food poisoning and the importance of avoiding food contamination. Storing food is done properly now. Therefore we can now present a clean production site and a clean project environment. Waist is still a problem though as Gambia does not have a proper waist disposal infrastructure. Flies tend to linger and their role in spreading pathogens are known to us. We were able to organise a company that comes twice a week to collect our waist.

Apart from that some of my staff attended a book keeping course supported by Reliance bank, that made a special offer to ASSET (see next subsection) members.

I am glad to report that these three courses have really helped to improve the functioning of the SPG.

Included our organisation is our working hours: We are open 24 hours a day.

We have the morning baker (Lisa Sidibeh) who is responsible the solar baking together with the service (Isatou Toure) for the restaurant. They help each other in the bakery. It is their responsibility to bake as much as possible with the solar cookers. Mostly the cakes and the amount of fish, meat & Mbahal pie which is still required for the evening and night will be baked by the solar ovens. The coconut icing biscuits, the local snacks with beans called Ole le, peanut biscuits, ginger biscuits and many more things are in their hands. Drying of baking

ingredients like ginger, orange peels, Mangos, bread crumbs is done by Lisa Sidibeh and Isatou Toure.

For the fruit drying in bigger quantities and for the supply of the industry side we got a family who do all the fruit drying for us under the name Solar Project Gambia.

We also have different persons working in turns to supply to the different supermarkets and local breakfast sellers.

In the evening we have Moussa selling take-aways from six pm to two am. He is replaced by the baker Lamin Mass who works till 8am when the morning shift arrives.

Lamin Mass and Moussa bake breads for the morning and the party orders in case they must be delivered early in the morning. They also bake meat and fish pies for breakfast sales.

Lamin Mass also sells solar baking produce in the street 4 pm to 9 pm. The daily street selling is very important for us. In this way we go to the people and get more customers for orders and more people who hear about us. It also happened that trough this we got new places for the morning supply. By being open 24 hours a day our premises is secured and we do not need security at night. Unfortunately burglary and muggings have heavily increased in Gambia.

4.3. We are members of

The Solar Project Gambia is member of two Associations.

In August 06 we became members of ASSET (Association for Small Scale Enterprises in Tourism). Through this membership we were able to build up important business connections, for example with the tour operators and other enterprises who are working in similar sectors.

ASSET organised a trade fare in Dakar (Senegal) in October 2007 where we took part and won the first prize in responsible tourism!



Our 1st prize cup for responsible tourism

ASSET functions as a small information centre for tourism with their own shop called “cultural encounter” in the house called Timbooktoo. There you can find all kind of products from their members and information about their services.

We have our information flyers presented there together with different packages of dried fruits and a variety of fresh solar cakes. Tourists used to visit them often and find information about the SPG. We do have visitors at the SPG through the “cultural encounter” of ASSET.

Through ASSET we made contact to the Tourist guides at the beaches all along the Gambian coast. In a big action we once spread our flyer to all the different Tourist Information Centres and receptions along the beach. Through this advertising we have had several visits from individuals or small groups. The biggest group we ever had consisted of 15 people. We have planned a new tour to our new site and it promises to be successful as the next stop of interest

is a project promoting paper recycling skills. In combination the tour will be most interesting for visiting tourists with a interest in social upliftment in the area.
Through the planning we realised that our new location is a far more attractive place to visit.

4.4. Description of The new project location at Kanifing south

The new location is behind Gambia electrical at Kairaba Avenue opposite the Latrikunda upper Basic school in Kanifing south.

We are renting the premises for a yearly fee of 90`000 Dalasi. (4737 SFR). All three departments of the SPG are contributing to cover the rental fee. We have been able to pay the rent in advance until July 2009. Nevertheless the SPG needs further support for a year or two as we are still in a developing phase and we still need to make further investments.

It was a very important and strategic move for the Project to transfer to Kanifing south and bring all the different business under one roof.

The area is better as the people living there earn higher salaries and we thus have more orders in the bakery. We have twice as many visitors and orders as before.

4.5. Our successes

- In this 1 ½ year we could set up a whole functioning Solar Project which is a registered taxpaying business. The project includes a restaurant, a bakery and carpentry. We are employing 8 people.
- Our products are to be found in the shelves of some super- and mini-markets along the beach and on the highway.
- Through a lot of solar presentations and activities we are quite well known on the coast.
- We could more than double our sales.
- The SPG is a well known project presenting tourist tours for groups of 15 people max.
- We created the solar day which includes a solar cooking contest. It takes place every year around the 12th of April. The last solar day caused a lot of attraction and we appeared in two newspapers.
- For our delicious cakes with reasonable prices we receive recommendations and happy customers.
- Our monthly meetings are helping us to see the problems we encounter during work and find solutions for them. New ideas and complaints from our co-worker get chance to be heard.
- We could improve our work with the help of a Swiss carpenter. Now we have a new designed Tunnel drier that has a longer guarantee and a stronger solar cooker. We are able to do roofing for houses.
- We won a prize for “Tourisme responsible” at the international trade fair in Dakar.
- With the financial help of Wision we printed a label for our bakery products and dried fruits. Presented like this in the supermarket shelves, our products look even more attractive.



Bernhard improved our Tunnel-dryer, happy celebration under our self made “Bantaba”

4.6. Some difficulties

In Gambia almost everything depends on the tourist season. The tourist season is after the rainy season when the climate is dry and nearly constantly sunny again. That is the time when people have an income through the open tourist sector and thus money to spend. The tourist season starts in November and ends in April. During these 6 months you have to generate your whole year's profit. During the off season and the raining season it is not possible for us to generate enough income to cover our costs, especially in the three months with the heavy rains: July, August and September. During that time the roads are so bad, full of water, it is really unpleasant to walk to our site, where you might have to take off your shoes to cross the water lakes or jump onto stones to the other side of the road. Our outdoor restaurant is also closed when there is rain. Our other services are hardly required during this time either. Gambia seems to be out of flowing money during this time.

Poverty and the illiteracy in Gambia reaches up to 60%. The fact that many people never get the chance to educate themselves is a really big handicap for the development of the whole country and we are directly involved. The Solar Project Gambia is trying to change very old cooking traditions, sensitise people about their environment and is employing local workers to prepare food to sell. It affects us in the way that it is difficult to reach and keep a high standard of our products. To find workers who can read and write well is also not an easy task. Convincing the local people of the importance of a solar cooker and then to buy one is difficult considering that the price of a locally made solar cooker is more than a monthly salary. The solar cooker costs 4500 Dalasi where as the income of a normal labourer lies between 1500 and 3000 Dalasi. Many might agree to our way of cooking but something stops them investing their money in something new like this. They would rather buy a mobile phone.

Unfortunately we have not been able to work intensively further inland. We tried to build up a base with a simple warm kitchen that serves a meal per day and has some cookers for display at Farafenni, near the Trans-Gambia highway. It was financially too high a burden to travel there to control the base. We still hope it will work out one day. Due to this we also don't have many good connections or support of women groups yet. In future this will be one of our targets.

It would need a special program and financial support to realise a base inland and a well trained staff representing us. One or two people would be enough. The training could be held in Kanifing.

Gambia is becoming a very expensive country. The prices are increasing rapidly and uncontrolled. Some of the things like fuel are more expensive than in Switzerland. The flour and rice bag prices have increased by 60 %. We thus have to buy our raw materials at ever increasing prices, but since the income of the people is not increasing, we can hardly lift our prices, or at least only with a lot of difficulties and complaints from our customers.

We are drying all kind of fruits. They are mostly for own use in the bakery as ingredients. We dry Mangos, orange peels, ginger, Bananas and bread crumbs. If we want to dry for commercial use and export we face problems with the conservation and high standard of hygiene and packaging. The professional packaging makes the products unaffordable to the local people. We want to concentrate more on selling the tunnel drier in order to reach the families or people who have their own farm. We would like to convince them to dry and store their fruits or vegetables for the times when they are not available. This would help a lot against malnutrition.

We had to find out that in Gambia good craftsmen are few and far between. We went to the best school in training students in carpentry but none of the presented workers were able to read a plan. Furthermore their skills were like those of a novice at best. It is obvious that the

carpentry will need more support. At the moment we have one carpenter there, but he alone is not able to do a precise job. We had a lot of complaints of unhappy customers. Complaints were mostly the cause of an imprecise done job. We tried solve the problem by having another intensive training with the Swiss carpenter Bernhard Amann. With him we could make big improvements, like making the dryer and cooker more robust. Still the problems are not yet fully solved. Our carpenter still needs an experienced professional carpenter by his side.

5. Conclusion

5.1. Plans for the future

- We want to improve our carpentry jobs. We need someone from over see again who could find a better qualified carpenter. Right now we are checking all the options that are available.
- We want to reach more schools to promote solar cooking, learn about deforestation and healthy food. We have developed a system that works as follows. One school receives two sponsored solar cookers and have to generate money by selling solar baked products in the brake time. The school could then sponsor the next solar cookers for the next school with the generated income. This project will require a lot of time in terms of support and training.
- Together with ASSET we have set up a plan to get seeds to do a tree planting exercise together with the local communities. The idea is that the communities have to take care of their forest and start to profit from it.
- A next goal is to improve our tourist tours and we are thinking to create a program where tourist could actively work with us as a new experience for them, just for two or three weeks.
- We need to get more products for our small craft shop.
- A legal beach-side-stall to sell our products apart from the mini-markets has to be set up. At the moment we are picking up some trouble from the army that is employed by Gambia Tourist Authority (GTA) when we are selling in the street.
- We need to secure a year-round income or find sponsors to cover our rental costs. This will be done in Switzerland. We might want to create an own Solar Project Gambia club in Switzerland to find a way to make solar cookers and tunnel driers affordable for the local people in Gambia.
- Maybe this project could only work if a certain percentage of a cooker is subsidised.