



# SAFAD Projects 2020

## Introduction

SAFAD is a UK-registered charity run by Cranfield students. Every year, SAFAD sends graduates from the University for a Volunteer Placement within one of our local partners, NGOs or local organisations.

Volunteers are supported by SAFAD during their placement, and their expenses (air tickets, accommodation, visa, food, vaccinations, insurance ...) are covered. This is a good opportunity to gain valuable professional experience while supporting local community's development.

## I. Application

Any Cranfield Student is welcome to apply. For this, you need to send a copy of your CV and the Application Form completed to: [safad@cranfield.ac.uk](mailto:safad@cranfield.ac.uk). Applications are open until **April 13th**. Interview will be conducted by lecturers of the University.

**Please note that some projects are dependent on our fundraising results and so we cannot guarantee at this stage that all projects advertised will go ahead.**

If you have any questions, please feel free to look at our website (<http://www.safadcharity.org>) or contact us ([safad@cranfield.ac.uk](mailto:safad@cranfield.ac.uk)). SAFAD members will also be available to answer questions at the CSA on April 2nd (lunchtime) and April 6th (lunchtime).

The project durations vary between 6 months to one year, this depends on the budget, preferences of the partner and availability of the volunteer. Most of the projects are likely to start after the end of the MSC in September/October 2020 but can also start later if necessary.

## II. Project Overview

- **Caminos de Agua, Mexico:** Development of a groundwater treatment system and a surface water treatment system.
- **GOAL, Sierra Leone:** Development and implementation of a faecal sludge management system and sanitation marketing interventions.
- **Livebridge Foundation, Nigeria:** Human resource development and agribusiness projects
- **Pumping is life, Ghana:** Scaling up a small irrigation farm.
- **Pure Water for the World, Honduras:** Research for different water treatment solutions.
- **Wide Rescue Initiative Organization (WIRIO), Kenya:** Environmental conservation, hygiene and sanitation, women empowerment through micro-finance, and agriculture and agroforestry projects.
- **Zamzam Foundation, Rwanda:** Design of water filtration systems and rainwater harvesting systems.





### III. Project Description

#### a) Caminos de Agua

##### The organization

Caminos de Agua is a registered non-profit organization addressing locally acute - but globally distributed - water quality and access issues in Central Mexico. They work in partnership with local communities and other diverse actors to innovate and implement open-source solutions for their local region in the Independence Watershed but that can also be adapted throughout the world without restriction or license.

The Independence Aquifer in Central Mexico is in a permanent state of decline due to over-extraction of groundwater resources by commercial agriculture. This has led to dangerously high levels of naturally occurring arsenic and fluoride - as much as 9 and 15 times the World Health Organization recommended limits, respectively.

Their current programs include: certified ceramic water filters to eliminate water-borne pathogens; community-based installations of rainwater harvesting systems; ongoing water quality monitoring at well sites throughout the Independence Aquifer, specifically engineered biochar-based filtration medias for the removal of arsenic and fluoride, and new technologies to complement and enhance existing solutions.

**Work Location:** San Miguel de Allende, Central Mexico.

##### Purpose of the Position

Caminos de Agua regularly works with foreign volunteers. They are looking for a volunteer to work on:

- their low-cost groundwater treatment system to remove fluoride and arsenic (development/piloting/implementation)
- their low cost surface water treatment to remove biopathogens and persistent environmental toxins (development)

The volunteer will be asked to:

- Develop/test novel sorbents for fluoride and arsenic removal;
- Design/ implement / monitor field prototypes of the groundwater treatment system
- Design components of the surface water treatment system
- Design relevant deployment strategies in the communities
- Communicate with community/outsourcing partners
- Analyze data from existing community projects
- Design/code project management tools and interactive web tools

##### Qualifications

###### Necessary

- Bachelor's in science or engineering (preference to students from chemistry, water science, chemical/environmental/mechanical engineering)
- Fluent in either Spanish or English, proficient in the other
- Basic experimental design and statistical data analysis
- Ability to take an abstract task and work independently

###### Appreciated

- Experience working in a laboratory and/or in the field with rural communities
- Knowledge of and experience in designing various drinking water treatment technologies



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- Proficiency in solid 3D modeling, Fusion360 preferred
- Web development or Programming
- Mathematical modeling
- Databases, SQL, data management
- Cost estimation and budgeting

### Project duration

This is a 12 months placement starting in fall 2020 (no specific month requested)

### Opportunities

SAFAD would provide flight tickets, visa and vaccinations fees, and monthly stipend to cover food, transport and accommodation

Caminos De Agua would provide:

- First month of housing
- Up to \$400 USD for one “visa run” out of Mexico to refresh the volunteer’s visa during the 12-month placement period if the volunteer is on a tourist visa (6 month time period for EU citizens)
- Food and transportation to organization-sponsored events including conferences and training courses



## b) GOAL Sierra Leone – WASH programme

### The organization

Founded in 1977, GOAL works to promote the realization of the fundamental rights of the poor, the vulnerable, and those affected by humanitarian crisis. GOAL currently works in 16 countries; Ethiopia, Haiti, Honduras, India, Kenya, Malawi, Niger, Sierra Leone, Sudan, South Sudan, Syria, Uganda, Iraq, Philippines, Liberia and Zimbabwe. GOAL's head office is in Dublin, Ireland with support offices in London and New York.

### Work Locations

Based in Freetown with occasional trips to Kenema City

### General description of the country programme

GOAL has been working in Sierra Leone since 1998. The Water, Sanitation and Hygiene Program (WASH) aim is to ensure that people have access to, and use, appropriate and safe water sources, acceptable improved sanitation and practise healthy hygiene behaviours with the overall goal of improving people's health. GOAL is looking for sustainable and scalable solutions to long entrenched challenges in the WASH sector by working with the permanent actors in the sector, which includes the private sector, government and the local communities. By working with the key actors that will remain in the communities after GOAL has left, we are hoping to find solutions that do not depend on the presence of NGOs. GOAL is using this approach to address challenges with the Operation and Maintenance of water points in Kenema rural areas, and Sanitation Marketing and Faecal Sludge Management (FSM) in the urban areas of Kenema and Freetown.

GOAL SL is also working in the areas of Health, which is primarily focused on adolescent health and reducing maternal mortality, and inclusion which is focused on child labour and child protection.

### Internship description

GOAL Sierra Leone is looking for the support some of the ongoing projects in the WASH programme which are primarily focused on using a systems-based approach. The WASH team is currently in the process of implementing an innovative FSM system strengthening programme in Freetown and has developed pilot interventions for Sanitation Marketing in Kenema City. Construction of a new interim treatment facility (the first in Freetown) at Kingtom dump site will start in March 2020. The treatment process will use an innovative treatment process that utilizes Geotubes for de-watering faecal sludge. The team is also in the process of importing a number of plastic sanitation products into the country to test demand by offering the products to established and vetted suppliers and dealers.

This will be an exciting time to be part of the team as we will be piloting new ideas and technologies. There will be a need to constantly collect and analyse data, to learn from our experiences and make timely changes to strategies. Although the exact role of the intern will depend to some extent on their own skills, experience and areas of interest, we expect the intern to be able to contribute and support our work in the following areas:

- Support the WASH team in Freetown by following up with the FSM interventions which have been designed to introduce new equipment and technology (for Sierra Leone) which is managed by private entities through a service level agreement (SLA) for the operation and maintenance of new vacuum trucks and pit emptying devices (e-Vac and Gulper III). This could include conducting surveys, collection of data, customer feedback and broader



stakeholder opinion. This information will be used to help the team adaptively manage the project.

- Support the GOAL Team – working closely with the Kingtom site Manager, to ensure the effective operation of the interim treatment plant at Kingtom. This may include making small design modifications and ensuring the changes are carried out on site as well as general monitoring of each process performance and effluent quality to ensure effective treatment is achieved.
- Support the WASH team in Kenema with the sanitation marketing project. This may also include field work to help monitor the project, researching the most appropriate types of products and developing a scalable approach to facilitate lasting access to sanitation in Kenema and its surrounding communities.
- There may also be opportunities to work with private sector to develop products and product supply chains – depending on the final design of the pilot.
- Contribute to the completion of a water quality research project aimed at looking into the water quality of shallow wells in the Kenema district, throughout the year. This study which started in April 2018 is an ongoing check to ensure the suitability of hand dug wells as a safe water technology and is aimed at demonstrating to the donor that the approach is valid. The intern will support the Kenema team to analyse the results and draw out conclusions and recommendations to be shared with the donor funding our work on rehabilitation of shallow wells.

### Project duration

This is a 6-9 months placement starting in September/October 2020

### Opportunities

SAFAD would provide both ways tickets to the destination, visa fees and vaccination fees and monthly stipend to cover food.

GOAL will provide accommodation, phone and travel insurance for the duration of the placement and within limits, provision or reimbursement for in country travel to and from field work locations.



## c) Livebridge Charity Foundation

### The organization

Livebridge Foundation was established to help alleviate poverty and social exclusion by facilitating empowerment of underprivileged communities. It primarily exists to:

- Give a voice to the underprivileged through a range of empowerment programs aimed at helping them to reach their full potentials.
- Deliver innovative ways of building capacity by serving as a bridge between Nigeria's voluntary community and the social enterprise sector.
- Facilitate the provision of structured support and advice to the deprived in the society through specialist programs, leveraging on technology.

They offer a range of specialized programs: education, empowerment and health care (including therapy, psychological counselling).

### Work location

The organization's main office is based in Abuja, Nigeria's capital, but the projects are located in Nasarawa State (centre of Nigeria), so the volunteer will work between the two States.

### Project 1 - Human Resources and organizational development

**Purpose of the position:** The volunteer will focus on Livebridge Foundation's Human Resource and organizational development. Specifically, he/she will seek to reposition the Human Resource team for more efficiency.

Tasks will include:

- Assessing the current HR status capacity and capability of the organization
- Support in HR assessment with possible expansion of existing rules and extension to future capacities
- Support in development of organizational policies

**Skills necessary:** Knowledge in human resources, policy and strategy development

**Project duration:** 12 months placement starting September 2020

### Project 2 - Agribusiness

**Purpose of the position:** This project seeks to drive the linkage between the organization's farm and the Foundation's related activities.

Tasks will include:

- Availing Livebridge Foundation team of relevant knowhow needed for the optimization of its agricultural initiatives
- Supporting the business operations of the farm by providing leadership and organization during the production process

**Qualifications:** Agribusiness proficiency

**Project duration:** 12 months placement starting December 2020

### Opportunities

SAFAD would provide both ways flight tickets, visa fees, vaccination fees and monthly stipend to cover food.

Livebridge Foundation would provide accommodation, transportation locally, health insurance and securities.



## d) Pumping is Life Ghana

### The Organisation

Pumping is Life GH is an organisation based in Ghana that majorly focuses on Household Water, Sanitation and Hygiene Promotion. Currently the organisation has initiated several projects in rural and urban communities of West Mamprusi Municipal, Talensi District, Mamprugu Moaduri District and Savelugu Municipal. These projects include small farms irrigation, water and sanitation centers maintenance. Moreover, Pumping is Life GH has some experience with foreign volunteers mostly from the Netherlands and collaborated with the US Peace Corps Volunteers indirectly to assist them achieve their objectives in their respective communities.

### Work Location

Based in Ghana and works in both rural and urban communities of West Mamprusi Municipal, Talensi District, Mamprugu Moaduri District and Savelugu Municipal.

### Purpose of the position

Pumping is Life GH regularly works with foreign volunteers. They are looking for volunteers to further develop their work on scaling up small scale irrigation farm. SAFAD in partnership with Pumping is Life GH will support three volunteers to carry out this project. These volunteering positions involve the following tasks:

#### Volunteer 1

The volunteer would participate in the following;

- Facilitation of geophysics survey using EM 343
- Data entry and analysis
- Collection of GPS coordinates of drilling sites
- Any other roles within the capacity of the volunteer by Supervisor

#### Qualifications / Skills required

- Knowledge in geophysics and water wells sitting
- Skills in data collection
- Skills in computer using Excel and Word
- Communication and presentation skills
- Good group dynamics and Team work

#### Volunteer 2

The volunteer will undertake the following responsibilities;

- Drip and sprinkler irrigation installations
- Training of local farmers on how to operate and maintain irrigation kits
- Data collection on water usage
- Any other roles within the capacity of the volunteer by Supervisor

#### Qualifications / Skills required

- Knowledge in drip and sprinkler irrigation application
- Skills in data collection
- Skills in computer using Excel and Word
- Communication and presentation skills
- Good group dynamics and teamwork



### Volunteer 3

The volunteer would participate in the following;

- Identify microcredit needs of participating local farmers through Agribusiness marketing planning.
- Administer the microcredit component of three Small Irrigation Farm (3SIF) projects.
- Work between the local farmer, microcredit institution and Pumping is Life GH.
- Any other roles within the capacity of the volunteer by Supervisor

### Qualifications / Skills required

- Knowledge in agribusiness management and financing
- Skills in data collection
- Skills in computer using Excel and Word
- Communication and presentation skills
- Good group dynamics and teamwork

### Project duration

Preferably, volunteers should start in October-2020 and all the four projects are for 12 months.

### Opportunities

SAFAD would provide return flight, vaccinations, visa, and travel and health insurance.

Pumping is Life GH would provide accommodation, travel within the country, laptop computers and project equipment, office space and stationery, telephone, internet and will organise local tours to some beautiful places around the country.

Monthly stipends would be provided by both SAFAD and Pumping is Life to cover food, transport and accommodation.



## e) Pure Water for the World

### The Organization

Pure Water for the World works in remote and underserved regions of developing countries that lack sustainable, safe drinking water. Our projects provide safe water, hygiene education and sanitation to children, families and communities. The organisation works with local governments and community partners to select and analyse the appropriate technology for the community, and to implement cost effective projects. They are continually evolving to be more effective and efficient at seeking behavioural change in the communities we serve. Their objective is to improve the lives of those in need, especially the lives of the children who are especially vulnerable to water borne diseases.

### Work Locations

PWW has WASH projects in Trojes (small rural town of 10 000 people in the South East of Honduras) and Maraita (9 000 people, located in a mountainous department just over an hour's drive southeast of Honduras' capital city of Tegucigalpa).

The breakdown of time would be 60% in the field and 40% in the office (but this might vary with preferences and focus of the individual).

### Purpose of the Position

PWW believes that volunteer opportunities should be win-win for both the volunteer and the organization. While there are suggestions as to areas the volunteers could focus on, it ultimately depends upon their interests. It can be beneficial for volunteers to spend some time learning about the project and field work before launching a study. This not only allows them to adapt, but also allows them to see the needs firsthand and see what opportunity they might want to take on a study.

PWW would like to ensure that the volunteer can assist the organization in strengthening its capacity to carry interventions adequately. Depending on the focus to be taken, volunteers can assist with:

- Researching issues related to WASH implementation,
- Researching the use of silver as a disinfection solution for both point of use filters and community systems,
- Researching water source analysis to determine proper filtration methods to address issues,
- Leading other potential pilot projects and/or studies,
- Providing technical advice on water, hygiene and sanitation.

### Responsibilities and Duties

Pure Water will oversee project work and the volunteer will be working directly with the Honduras Country Director, Deputy Director and Project Coordinator. The volunteer will be considered an independent contractor of PWW. Duties include, but are not limited to:

#### Research and monitoring:

- Conduct attainable research projects, potentially leading to pilot projects,
- Analyze and interpret baseline surveys and follow-up surveys,
- Measure the impact of the study related to health, economic, social impacts,
- Provide recommendations for program improvements based upon research.



**Data management:** Assist staff with management and analysis of baseline and monitoring data.

**General:**

- Provide technical and logistical assistance to the project staff,
- Write monthly blogs to be submitted to U.S. office,
- Assist with visitors during hands on visits,
- Such other items as Pure Water may request and you agree to undertake.

### Qualifications

**Language:** fluent in Spanish AND English an absolute must. Volunteer should be prepared to be the only foreign language speaker in Trojes and Maraita.

**Education:** it is preferred that candidate holds a degree in engineering, water and sanitation, microbiology, or any health related field.

A CAWST biosand filter course or similar training would be advantageous

**Adaptability:** Trojes and Maraita are extremely rural thus the volunteer will need to be able to conduct their work in area where there is limited internet and few luxuries.

**People skills:** Our local staff members work very closely together and thus a team player with a friendly and open personality is desired to maintain an engaging and friendly working environment at any given time.

### Project duration

This volunteer position is open as of early 2021. A minimum of 1-year commitment is very much preferred.

### Opportunities

SAFAD would provide both ways tickets to the destination, visa fees and vaccination fees.

PWW would provide:

- Monthly stipend to cover food, accommodation and transport. The actual cost of all in-country travel related to the project should be covered by this stipend. You will be responsible for all taxes, international trip expenses if any, occasioned by these payments.
- Local staff will provide position-specific training for this assignment. PWW might also consider other training necessary dependent upon the volunteer qualifications.



## f) Wide Rescue Initiative Organisation (WIRIO)

### The Organisation

Wide Rescue Initiative Organisation (WIRIO) is an organisation based in Kenya that majorly focuses on Environmental Conservation, Sanitation, Women Empowerment, and Community engagement. Currently the Organisation has initiated several projects in Maasai, Kisii, and Luo Communities. These projects include Agroforestry, tree planting and women empowerment. WIRIO has also initiated education centres for the needy children. Moreover, the organisation arranges Safari trips since it's not far from the famous 8<sup>th</sup> wonder of the world (the Maasai Mara Game Reserve).

### Work Location

Based in Kenya and works in both rural and urban communities of Masai, Kisii and Luo

### Purpose of the position

WIRIO regularly works with foreign volunteers. They are looking for volunteers to further develop their work on environmental conservation programs, sanitation and hygiene, women empowerment through microfinance and agroforestry and tree planting. SAFAD in partnership with WIRIO will support four volunteers to carry out the aforementioned projects. These positions involve the following tasks:

#### Project 1 – Environmental Conservation

The volunteer would participate in the following;

- Community capacity building on the benefits of environmental conservation, waste management, spring/wetland protection, invertebrate conservation
- Promotion and protection of the environment through encouraging the locals to use of alternative sources of fuel for energy production
- Undertake development projects with emphasis on renewable energy production.

#### Project 2 – Sanitation

The volunteer will undertake the following responsibilities;

- Educate school children on proper hygiene and sanitation with key emphasis on hand washing after latrine use, and general public cleanliness

#### Project 3 – Microfinance

The volunteer would participate in the following;

- Empower women with micro finance skills and knowledge for example table banking, book-keeping, agribusiness among others and give them long-life ideas
- Encourage and mobilize women as individuals or in groups to engage in small sector enterprises and Jua Kali in both rural and urban centres.

#### Project 4 – Agriculture and Agroforestry program

This volunteer will undertake the following activities;

- Educate farmers about sustainable agroforestry including agroforestry techniques such as alley cropping planted with different types of multi-purpose fast growing trees i.e. Calliandra, Leucaena leucocephala, Sesbania sesban, Moringa oleifera and other fruit trees
- Promote sustainable agriculture through encouraging famers to control soil erosion through organic farming, training farmers about sustainable agriculture.



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### Qualifications / Skills required

WIRIO is very flexible to any volunteer who is willing to join whether with specific skills or not.

### Project duration

Preferably, volunteers should start in September-October 2020 and all the four projects are for 6-12months.

### Opportunities

SAFAD would provide return flight, vaccinations, visa and monthly stipends to cover food and transport.

WIRIO would provide accommodation and travel within the country. Moreover, WIRIO would teach volunteers the local language (Kiswahili) and would also organise local tours to some beautiful places around the country.



## g) Zamzam Water

### The Organisation

Zamzam is a humanitarian organisation devoted to playing a vital role in eradicating poverty by providing clean, sustainable water and access to quality education to villages across the globe. In recent years, Zamzam has carried out several projects across the globe particularly in Uganda, Rwanda, Palestine, Afghanistan and Malawi. These projects include rainwater harvesting, cisterns, water wells, horticulture, vertical farming, water filtration and underground water irrigation, and sanitation. Over the last 5 years, this organisation has served 234, 303 people and has raised approximately US\$2.5 million to help fund these projects. In 2020, Zamzam has expanded its reach and it is now serving 10 countries including Nigeria, India, Pakistan, Ethiopia and Kenya.

### Work Location

Based in Bugesera District, Rwanda

### Purpose of the position

This internship presents an exciting opportunity to gain first-hand experience with an up and coming organisation, develop tangible skills for a career in the WASH / NGO sector based in a fascinating country in Africa. Zamzam is looking for volunteers that will help develop their ideas of designing canopies with green roofs that will improve rainwater harvesting in rural areas of Bugesera and also volunteers that will help design and implement filtration systems that will filter water from wells to a standard suitable for consumption for the local people in that region. These volunteering positions involve the following tasks:

#### Project 1

The volunteer would participate in the following;

- Design of the filtration unit including technical drawing and implementation
- Working with local communities to test the prototype, designing and implementing surveys.
- Providing technical advice on water, hygiene and sanitation.

#### Qualifications / Skills required

Preferably, the candidate holds a degree in engineering, water and sanitation, microbiology, or any health-related field and has water treatment experience.

#### Project 2

The volunteer will undertake the following responsibilities;

- Design of canopies using sustainable materials to harvest rainwater
- Design of green roofs with storage boxes that has capacity to collect rainwater
- Implement and test prototypes to monitor performance

#### Qualifications / Skills required

Preferably, the candidate holds a degree in civil engineering, environmental engineering, agricultural engineering or other related courses.

#### Project duration



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Preferably, volunteers should start in October 2020 and both projects are for 6 months

### Opportunities

SAFAD would provide return flight, vaccinations, visa, and travel and health insurance and monthly stipend to cover food.

Zamzam would provide accommodation and travel within the country.