



## SAFAD Projects 2021

### Introduction

SAFAD is a UK-registered charity run by Cranfield University students. Every year, SAFAD opens an opportunity for graduates to volunteer on placements with local partners, NGOs or local organisations across the world.

SAFAD supports volunteers during their placement with operational and financial support. We aim to cover expenses such as air tickets, accommodation, visa, food, vaccinations, insurance and more. These placements offer an excellent opportunity to gain valuable professional, hands-on experience whilst supporting social and environmental development in the local communities where we work.

### Application

All Cranfield Student and Alumni are welcome to apply. If you are interested in applying for a volunteer placement through SAFAD, please send a copy of your CV and the completed SAFAD application form to [projects.safad@cranfield.ac.uk](mailto:projects.safad@cranfield.ac.uk). Applications are open until **May 31<sup>st</sup>, 2021**. If your application is successful, you will be invited for an online interview.

**Please note, SAFAD is a charity that depends on public and charitable donations; therefore, some projects are dependent on the charity fundraising outcomes. We hope to but cannot guarantee at this stage that all projects advertised for the placements will proceed. If you have any questions, please refer to the [FAQs on the SAFAD website](#) or send an email to [safad@cranfield.ac.uk](mailto:safad@cranfield.ac.uk).**

The project durations vary between 6 months to one year, depending 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 2021 but can also begin at a later date, if necessary, and is subject to the unanimous decision of the host organisation and the volunteer.

### Projects Overview



**Caminos de Agua, Mexico:** Water Quality projects- development of a groundwater treatment system and development of a novel method for Arsenic quantification (2 volunteers required for each project).

**Abundant Water, Laos:** Water Quality and WaSH project- production and installation of ceramic water filters (1 volunteer needed).

**Water Access Consulting, Uganda:** Water Supply project- pump insurance scheme and grant resource mobilisation (1 volunteers required for each project).



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**NGO JEVEV:** Web Design and Environment Conservation projects- website design for JEVEV association; sustainable land management and deforestation prevention; collect information on aquatic species and habitat in Dangbo African Manatee Sanctuary and inventory of bird species in Oueme Biosphere (1 volunteers required for each project).

**Pure Water for the World:** Water Quality project- study on silver Disinfection of Water (1 volunteer needed).



## Organisation and Projects

### 1. Caminos de Agua

#### The Organisation

Caminos de Agua is a registered non-profit organisation addressing locally acute - though globally distributed - water quality and access issues in Central Mexico for about a decade. They provide open-source water solutions for communities in our watershed in Central Mexico and beyond. Its mission is to improve human health and community well-being through adequate and affordable access to clean water. The organisation collaborates with local communities, grassroots organizations, government (municipal, state, and federal), international NGOs, and leading research institutions to innovate and implement water solutions that create adequate access to safe and healthy drinking water supplies. While train aspiring, socially responsible engineers, scientists, and other young professionals who are aiming to make social and environmental impacts in their work.

The Independence Aquifer, Alto Río Laja, in Central Mexico, which stretches across seven municipalities and serves thousands of distinct communities and over 680,000 residents, is at a dire state of decline. The rapid dwindling groundwater levels, of about 4 meters per year, is due to over-exploration and has led to dangerously high arsenic and fluoride pollution levels- up to 22 times the World Health Organization recommended limits. These contaminants have been closely linked to some worrying health conditions such as dental fluorosis, developmental disabilities in children, crippling skeletal fluorosis, organ failure, chronic kidney disease, and various cancers.

#### Projects

Current projects are a combination of technical and social elements, which include:

- The production and distribution of our certified ceramic water filters for eliminating water-borne pathogens
- Community-based installations of rainwater harvesting systems
- Ongoing water quality monitoring at well sites throughout the Alto Río Laja watershed
- Research and development of specifically engineered solutions for the removal of Arsenic and Fluoride from drinking water
- Grassroots community development, education, and training regarding regional water quality issues, solutions, and national water politics
- Public policy work at the municipal, state, and federal levels.

Volunteers are specifically required to support with the development of groundwater treatment system and develop methods of novel quantification of Arsenic in the aquifer.

- **Groundwater Treatment System (1 volunteer)**

Supplementing the rainwater harvesting system, the organisation is developing a low-cost, easily replicable and community-based groundwater treatment system (GTS) to remove Arsenic and Fluoride contaminants. Besides operating a full-scale pilot system in one of the communities, they have commenced implementation models relevant to the specific localities.



## Responsibilities and Interaction

The volunteer will be integrated into Caminos' Research and Development team ("Tech Team") to identify/adapt promising technologies. Besides from leading a pilot system project, the volunteer will be responsible for the ongoing monitoring of the system, optimisation of specific treatment steps, and interactions with the community members for implementation (alongside our community outreach team).

This position involves and is not limited to the following task:

- Maintenance, monitoring and troubleshooting of the fully functional pilot water treatment system so that it meets with all the relevant Mexican regulations
- Development and implementation of experimental procedures and protocols
- Design and implementing a study to understand the impact of background water composition on the performances of the system
- Performing basic laboratory analysis in-house
- Coordination with external laboratories
- Analysis of water quality results
- Multidisciplinary communication to facilitate operation and testing of the pilot within the Caminos team and with the supervisor
- Performing basic laboratory analysis in-house
- Coordination with external laboratories
- Analysis of water quality results
- Meetings with community organisers and users to assist implementation success
- Communicating information and techniques to community volunteers/assistants
- Problem-solving and design optimisation alongside the team as issues arise
- Documentation and schematic creation
- Adapting the existing system to a domestic scale.

## Qualifications

### Necessary

- Bachelor's (or Masters) in science or engineering (preference to students with backgrounds in water science, Water and Wastewater Engineering, Water and Sanitation for Development)
- Fluent in either Spanish or English, proficient in the other
- Experimental design and basic statistical data analysis
- Dedication to technological development for social justice
- Demonstrated problem solving skills
- Ability to take an abstract task and work independently

### Additional Preferred Qualifications

- Experience in working in the field with rural communities and in a chemistry laboratory; must be familiar with standard lab
- Comprehensive understanding of chemistry
- Knowledge of and/or experience designing gravity-driven water treatment systems
- Experience in developing and/or working with novel sorbents for water treatment
- Proficiency in solid 3D modelling and/or CAD design, Fusion360



- Hands-on construction and testing experience
- Experience in R&D settings

- **Novel Method for Arsenic Quantification (1 volunteer)**

Arsenic is a tasteless, odourless and invisible contaminant with severe health consequences even at very low doses. Current options (field test kit) used for measuring Arsenic in localities is proven to be widely unreliable and often complex and expensive. Hence, being able to reliably detect and measure Arsenic is critical for the organisation and other NGOs, local government around the world. Presently, Caminos has been developing an arsenic quantification method based on electrochemistry, which is extremely cheap in comparison to other existing laboratory method in terms of its performance. This development has the potential to impact various organisations around the world.

### **Responsibilities and Interaction**

The volunteer will be responsible for designing and implementing a large-scale validation study of the method, optimising the method, conducting user-surveys and participating in transferring the method to other individuals.

This position involves and is not limited to the following task:

- Learning how to use the novel Arsenic quantification method
- Performing water analysis using the identified method
- Design a large validation study, including various type of samples
- Coordinating with various partners (communities, external laboratories, academic partners), the implementation of the study
- Participate alongside academic partners in further studies, which might include optimisation methods, adaptation for continuous in-situ monitoring conducting user surveys to understand the training required to have non-expert using the method.
- Creating and disseminating documentation and training materials.

### **Qualifications**

Necessary

- Bachelor's (or Masters) in science or engineering (preference to students from chemistry, water science, chemical engineering, Water and Wastewater Engineering, Water and Sanitation for Development)
- Fluent in either Spanish or English, proficient in the other
- Experimental design and basic statistical data analysis
- Dedication to technological development for social justice
- Demonstrate problem-solving skills
- Data management
- Comprehensive understanding of chemistry
- Ability to take an abstract task and work independently

Additional Preferred Qualifications

- Experience in working in the field with rural communities and in a chemistry laboratory; must be familiar with standard lab
- Experience in working with electrochemical systems
- Comprehensive understanding of chemistry



## Placement Location & Schedule

San Miguel de Allende, Guanajuato, central Mexico. This is a UNESCO world heritage site and a town of approximately 80,000 population. The placement is expected to start in Autumn 2021 for a 12-month duration (no required particular starting date).

## Opportunities

SAFAD will provide flight tickets, visa and vaccinations fees, Covid-19 test and a monthly stipend of £150-250 to cover food and accommodation.

Camino 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.
- Office supply, internet for work, but volunteers are advised to come with a laptop.



## 2. Abundant Water

### The Organisation

Abundant Water is an NGO working in Laos, Nepal, Timor-Leste and in Canberra, Australia. They function in remote communities to engender improved health and hygiene, enhance livelihoods and alleviate disease infection by providing affordable access to clean potable water through their innovative ceramic water filters.

Abundant Water Laos has been producing candle-shaped ceramic water filters in their Vientiane workshop and installing them in schools, health clinics, village meeting rooms, and poor households around Laos. They also train local businesspeople on the sale, installation and maintenance of the filters; hence, sustainable and clean drinking water would be widely available to native communities. The organisation has distributed over 10,500 ceramic water filters to communities in 14 of the 18 provinces in Laos, impacting about 100,000 lives with noticeable health improvement in 92% of households.

The utilisation of the filters has shown demonstrable impact such as social benefits, reducing gender inequalities related to the significant burden placed upon women and girls for water collection, reducing missed school days for students, and reducing the daily costs of accessing clean drinking water. Using the ceramic water filters has also contributed to lowering Laos' carbon emissions by significantly reducing the reliance on collecting and burning wood from neighbouring forests used to boil untreated water sources.

### Project

Abundant Water's most recent projects are in Xiengkhouang and the Savannakhet province, in the northeast and southern Laos, respectively. They are developing sustainable access to clean drinking water through the provision of ceramic water filters and organising community training, thereby increasing access to clean drinking water in these communities.

The volunteer will work partly at the NGO's office, the filter production workshop in Vientiane, and in target communities. This placement in South East Asia presents an exciting opportunity to gain first-hand experience in the WaSH sector while developing real tangible skills, including prospects of learning basic Lao for all-round development.

### Responsibilities and Interaction (1 volunteer)

The primary role of the volunteer is to support the Programme Manager with daily tasks. The volunteer will also undertake a subordinate role depending on the volunteer learning interest during the placement. The organization has a strong emphasis on the volunteers personal and professional development; therefore, the secondary role, which is to be discussed with the volunteer will help focus on specific skills that will be prioritized.

This position involves and is not limited to:

- Water filter testing
- Collecting coffee grounds used in the filter production process and transporting to filter production location, the Abundant Water workshop in Vientiane
- Support in the filter set preparation and participate in field filter training and installation activities
- Daily administrative tasks



- Report editing
- Monitoring and Evaluation development

## Qualifications

An interest in the WaSH sector would be an asset, but it is not required, as Abundant Water's work is also linked to livelihood improvement, gender, social issues, carbon emission reduction, and local business development. Abundant Water is looking for a volunteer who has the ability to adapt to a new and uncertain environment or circumstances and has willingness to learn and support the development of the NGO.

## Placement Location & Schedule

Vientiane, capital of Lao People's Democratic Republic. Although this placement is expected to start between September/October 2021 for a 6-month duration, the organisation is flexible about an alternative start date.

## Opportunities

SAFAD would provide flight tickets, visa and vaccinations fees, Covid-19 test and a monthly stipend of £150-250 to cover feeding expenses.

Abundant Water will provide:

- Accommodation for the entire duration of the placement
- Transportation for project-related travels (most likely using a bike)
- Airport pick up and other support needed by the volunteer to get settled in Vientiane

The organisation will also support volunteers to learn about Lao culture, for example, visit a local temple or participate in a local holiday with Lao staff members.

The organisation will provide a workspace with Wi-Fi connection, but the volunteer would need to come with a laptop.



### 3. Water Access Consulting

#### The Organisation

Water Access Consulting (WAC) is a registered social impact organization in the Gulu and Kitgum districts of Northern Uganda. WAC provides safe water, and sanitation and environmental conservation services, and they specialize in the following:

- Hygiene promotion
- Sanitation marketing
- Low-cost groundwater exploration
- Borehole development including drilling supervision
- Test-pumping
- Mobile water quality analysis and testing
- WaSH programmes, Monitoring, Evaluation and Learning
- Sanitation facility design
- Construction and management
- Water point functionality, mappings and maintenance
- And more recently, COVID-19 response.

The organization aims to maintain and replicate locally adopted sustainable solutions in deprived communities experiencing water crisis, hygiene, sanitation, and environmental burdens, they aim to improved health, particularly for people with disabilities, and generally, women and children. In retrospect, the organization has impacted the lives of 45,325 people in the country and is still counting.

#### Projects

Water Access Consulting currently run projects in the Kitgum district with a focus on the technical and management fields. Volunteers are specifically required to develop the pump insurance scheme and to carry out grant and resource mobilisation.

- **Pump iNsurance Scheme (1 volunteer)**

This project is set to support the provision of safe water supply through operation and maintenance of village boreholes for deprived communities using pump iNsurance schemes. This position involves and is not limited to the following task:

- Selection of communities/schools and health facilities for PiN scheme
- Market-based assessment and hydrogeological investigations
- Mobilisation of target communities
- Community borehole PiN contracting
- Training of hand pump caretakers
- Formation and training of water and sanitation management teams
- Preventive maintenance monitoring visits



## Qualifications

- Relevant professional qualifications and training in Water, Sanitation and Environmental Engineering
- Solid computer skills, including full proficiency in various MS Office application (excel, word, PowerPoint) and other IT applications and office technology equipment
- Have affinity with or interest in development project
- Training and facilitation skill
- Fluent in English

### • Grant and Resource Mobilisation (1 volunteer)

This project will support the organisation in the continuous implementations of programs and activities to help attain the desired impact and outcomes and to become sustainable, self-sustaining to achieve its mission.

This position involves and is not limited to the following task:

- Regularly search, track donor, potential donor, and umbrella websites for Requests for Applications (RFAs) and proposal submission opportunities for both WAC core competency areas
- Conduct background research on proposal opportunities to determine WAC competitiveness and strategic positioning
- Assist in collection of CV's for RFAs
- Producing competitive proposals for submission to potential donor agencies and foundations
- Provide consultation services on workable plans
- Offer support and commitment engender in house capacity Building
- Encourage the involvement of others in the organisation's activities/projects
- Create and Support community fundraising efforts

## Qualifications

- Relevant Professional qualifications and training in Project planning and management
- Financial and grant management skills
- Knowledge of various donor requirements
- Ability to develop and write winning grant proposals
- Must be fluent in English

## Placement Location & Schedule

Kitgum, municipality in Kitgum district of Northern Uganda. This placement is expected to be between September/October 2021 for a 6-month duration.



## Opportunities

SAFAD would provide flight tickets, visa and vaccinations fees, Covid-19 test and a monthly stipend between £200-300 to cover accommodation and other minor expenses.

Water Access Consulting will provide:

- Feeding for the entire duration of the placement (**volunteer must be willing to explore local meals**)
- Transportation for project-related travels
- Office space and internet connection for work

Also, the organisation will support with finding a secure accommodation and arrangements for volunteers to learn and understand Luo, the indigenous language.



## 4. NGO JEVEV

### The Organisation

NGO JEVEV (Jeunesse Et Emplois Verts Pour Une Economie Verte) is a registered non-profit organisation in the town of Danbgo, Porto Novo, Benin. They aim to increase human capital and promote sustainable social and environmental development while focusing on the following areas.

- Women and Health
- Youth development
- Innovation, technology for sustainable development
- Empowerment of girls and women
- Green economy
- Environmental and general education
- Integrated Water Resource Management
- Social, human and gender rights
- Poverty alleviation
- Agriculture
- Tourism
- Technological development
- Biodiversity

The organisation has been leading innovative development in 10 of the 12 department in Benin and has extended operations in Brazil and France.

### Projects

Current projects, which require technical, data collection and management skills, will be implemented in (the department of) Ouémé, South of Benin.

- **Website for JEVEV Association (1 volunteer)**

The organisation needs a volunteer with specific expertise in web development to support the creation and maintenance of a website. The website will fulfil the following objective:

- Offer facilitated functions to supporting organisations (such as online donation, sponsorship and online membership)
- Provide the latest news and information on activities, placement and projects to the public
- Promote the work of the organisation, increasing support from patrons, members of the community and volunteers thus engendering development activities and projects.
- Simple and can be modified by current staff, and easy for users to navigate

### Responsibilities and Interaction

The volunteer will work closely with another member of the staff, together they will identify the needs for the development of the website and subsequently, the volunteer will implement them during the creation of the site.

This position involves and is not limited to the following task:

- Support with the creation and design of a website
- Provide advice on the design adapted to the interventions



- Support with updating of the Facebook pages corresponding to the new website
- Referencing the website and training current staff on how to update and monitor it.
- Support the launching of the site

## Qualifications

Necessary

- Bachelor's (or Masters) in any related field
- Ability to work with minimal supervision
- Fluency in French is not essential, but the volunteer **MUST** be willing to learn the language

### • Sustainable Land Management and Deforestation Prevention (1 volunteer)

This project is aimed at providing technical support required to restore the forest ecosystem and water resources in Hozin and Docomé village and the surrounding communities.

## Responsibilities and Interaction

The volunteer will be directly involved in providing technical solutions to challenges associated with the poor application policies governing land use, supporting key players in conserving natural resources and deforestation prevention in the region.

This position involves and is not limited to the following task:

- Training participant on profitable agronomic methods that focuses on improving
  - the quality of soil
  - strategies of combating vegetation fires
  - methods of restoring degraded wooded areas
  - rehabilitating sources of water and forest galleries with to combat drying up and pollution of watercourses
  - providing information and training on ecologically and economically profitable activities
- Rehabilitating sources of water and forest galleries with a view to combating the drying up and pollution of watercourses
- Providing information and training on ecologically and economically profitable activities
- Visit project site to perform studies
- Analyse collected data
- Centralize data and document records.

## Qualifications

Necessary

- Bachelor's (or Masters) in any related field
- Ability to work with minimal supervision
- Fluency in French is not essential, but the volunteer **MUST** be willing to learn the language



- **Collecting Information on Aquatic Species and Habitat in Dangbo African Manatee Sanctuary (1 volunteer)**

This project is aimed at keeping records of aquatic species in the Dangbo African Manatee Sanctuary.

### **Responsibilities and Interaction**

The volunteer will work with other experts, local interns and the JEVV team to implement the project and be actively involved in learning the technology and transferring the skill.

### **Qualifications**

Necessary

- Bachelor's (or Masters) in any related field
- Ability to work with minimal supervision
- Fluency in French is not essential, but the volunteer **MUST** be willing to learn the language

- **Inventory of bird species in Oueme Biosphere (1 volunteer)**

The organisation has taken the responsibility of performing ecological monitoring of the Oueme valley's natural reserves as an obligation.

Through the inventory, the project will achieve the following aims:

- Include the bird species in a global initiative to protect them and prevent their extinction
- Establish a photo database to identify all the species in the Reserve elements of educational tools dedicated to environmental
- Provide a database to serve as an educational tool for environmental education dedicated to environmental protection of local biodiversity
- Also, understand the diversity of butterflies in the reserve.

### **Responsibilities and Interaction**

The volunteer will work closely with the Biodiversity monitoring team consisting of two members to strengthen the team.

This position involves and is not limited to the following task:

- Embarking on two capture trips per day in predefined sites
- Participate in a regular recording of the field sheets, processing of the photos and identification of bird species that will be presented to the organisation during the training
- Ensure proper data collection in provided datasheet and uploading to a database, thus engendering an understanding of bird populations distribution in the Oueme biosphere.
- Volunteer must be fully involved in ensuring set objectives for the projects are met
- Early morning data recording will involve long walks in the Oueme biosphere, at the centre of the biosphere reserve in the sun.

### **Qualifications**

Necessary

- Bachelor's (or Masters) in any related field



- Ability to work with minimal supervision
- Demonstrate commitment to achieving daily targets
- Fluency in French is not essential, but the volunteer **MUST** be willing to learn the language

## Placement Location & Schedule

Department of Ouémé, South of Benin. The placement is expected to start in Autumn 2021 for a 6-month duration (no required particular starting date).

## Opportunities

SAFAD will provide flight tickets, visa and vaccinations fees, Covid-19 test and a monthly stipend between £850-1,000 to cover feed (including the cost of potable water) and other minor expenses.

NGO JEVEV would provide:

- A secure accommodation with a host family
- Office space and internet connection for work
- Provide transport for all project-related activities



## 5. PURE WATER FOR THE WORLD

### The Organisation

Pure Water for the World (PWW) is a registered and recently accredited charity organisation based in Rutland, Vermont and has extended operations to Honduras and Haiti. PWW collaborates with local governments and community associations to implement appropriate and cost-effective projects in underserved and vulnerable communities with the prevailing occurrence of water-borne diseases to provide lasting, safe water solutions and sanitation. The organisation aims to improve lives and enable ease of access to safe water and sanitation. Through their life-changing, sustainable WaSH programmes and projects, they have impacted the lives of over 750 000 children and families in more than 700 communities in Central America and Haiti.

### Project

Pure Water for the World is currently running WaSH projects in South-eastern Honduras. They are carrying out extensive research on utilising silver as a disinfectant for water systems in rural parts of the country. Upon completing this study, the organisation seeks to develop a large-scale silver disk for treating water systems in municipalities and communities. However, before this milestone can be achieved, experimental studies must be conducted to analyse the efficiency of this large-scale silver disk.

### Responsibilities and Interaction (1 volunteer)

The primary role of the volunteer will be to support the organisation in performing experimental studies in their Trojes office in Honduras.

This position involves and is not limited to:

- Preparation of ceramic/silver disk or tablet
- Preparation of the water storage tanks required for the study of silver
- Preparation of the water system to use in the silver study
- Preparation of the study structure and piping system
- Analysis and measurement of Escherichia coli, Total Coliforms, Turbidity and residual silver levels in the laboratory

### Qualifications

Interested volunteers must be fluent in Spanish, strong research skills, water analysis, lab experience for creation of silver tablets, ability to work in remote Honduras

Necessary

- Bachelor's (or Masters) in any related field
- Fluent speaker of Spanish
- Strong research skills
- Able to conduct water analysis
- Able to conduct lab experiments which is a requirement for the development of silver tablets
- Ability to work in remote Honduras



## Placement Location & Schedule

Municipality of Maraita and Trojes South-eastern Honduras. This placement is expected to start in January 2022, and a minimum of 11-12 months commitment is advised.

## Opportunities

SAFAD would provide flight tickets, visa and vaccinations fees, the Covid-19 test and the volunteer may be considered for a monthly stipend.

Pure Water for the World will provide:

- Recommendations for volunteer accommodation
- Transportation for project-related travels
- A monthly stipend of \$375.00 to support volunteer expenses (such as accommodation, feeding and other minor expenses)
- Assist and financially support the volunteer on legal processes necessary for visa renewal