

## OPERATION NOAH

Delivering water purification training to members of Freetown City Council



**TRAINING PROVIDED TO**  
**13**  
**INDIVIDUALS WITH**  
**DISASTER RESPONSE**  
**RESPONSIBILITIES**

A two person team from RE:ACT Disaster Response were in Freetown in February 2022 delivering water purification training to members of Freetown City Council. Prior to the Covid 19 pandemic, RE:ACT had gifted eight water purification units to Concern Worldwide who had placed them in storage and as soon as international travel to Sierra Leone was once again permitted, the team were able to complete the training.

In August 2019, flash flooding hit the capital of Sierra Leone, Freetown. Six people were reported dead and thousands had their homes washed away.

The informal settlement of Kroo Bay in Freetown, thought to be home to between 9000 - 11000 people, was hardest hit and it rapidly faced disease outbreak due to poor sanitation and lack of access to clean water. Since late May 2019, Freetown had experienced persistent torrential rains, prompting strong concerns it would trigger mudslides reminiscent of those its citizens suffered in August 2017, when over 1000 people lost their lives.

Whilst flooding is endemic in Sierra Leone's capital city, the combination of its coastal position surrounded by hills and the highest annual rainfall in Africa, ensure that there is always a risk – and this only increases during the rainy season. It is also being exacerbated by climate change. Sierra Leone is ranked as the third most vulnerable country in the world to the adverse effects of climate change and has experienced shifts in weather patterns and intensified rains during its wettest period from July to September.

The poorest and most vulnerable are the most at risk to flooding and landslides, because the majority live in urban informal settlements. In Sierra Leone it is estimated that roughly 19% (around 300,000) live in informal settlement areas without access to social infrastructure and services facing risks such as poor health caused by waterborne diseases (malaria, cholera, typhoid etc). Disasters (tropical storms, floods and landslides) intensify the impact of these risks by spreading diseases rapidly among larger portions of the population, transforming informal settlements into waterborne epidemic zones.

## OPERATION NOAH

### Delivering water purification training to members of Freetown City Council

Following the flash flooding in August 2019, many affected areas in Freetown became reliant on trucked in potable water provided by a local NGO, funding for which quickly dried up. Trucking in water is resource intensive and an expensive temporary solution. The provision of water purification equipment that is portable and can be mobilised into the worst affected areas post flooding will provide an immediate emergency supply of clean water for the affected population. Allowing for the purification of these existing water sources, buys the time required to disinfect key water points and support community cleaning of public spaces once rains stop to prevent water borne disease.



The training was delivered over a period of three days to thirteen individuals with disaster response responsibilities across the city and focussed on developing a water purification capability to sit within the nascent Freetown City Council Disaster Risk Management Unit.

Instruction was delivered on two devices, both from Noah Water Systems in Detroit, USA. The first is the 'Trekker' of which seven units were provided. This unit weighs only 12kg and is thus portable and can be powered from a 12v battery, solar (via panels donated by RE:ACT) or from the ubiquitous motorbikes, 'Okadas' that are a common mode of transport around Freetown. One unit can produce 3.8 litres of safe drinking water per minute.



The second unit (of which one was provided) is the 'Nomad'. This is a larger system that comes in two custom built flight cases which have a combined weight of 250kg. It can be transported in the back of a pick-up truck and carried into position by the team once in closer proximity to a water source. The Nomad can produce 95 litres of safe drinking water per minute.

## OPERATION NOAH

### Delivering water purification training to members of Freetown City Council

After two days of training in and around the council offices, the third day was spent putting the theory into practice. The students were split down into three teams and tasked with identifying a suitable location from which to then produce clean drinking water from the Alligator River in Kroo Bay. This had to be demonstrated using both the Trekker and Nomad units.

Freetown City Council now has an effective capability to provide clean drinking water to the people of the city when local sources are compromised. This will be of particular pertinence during the rains which are increasingly longer and of greater intensity than in previous years. RE:ACT are establishing a relationship with Noah Water Systems for the provision of spare parts and have set up a joint communications group to facilitate information sharing and ongoing advice



**THIS DEPLOYMENT WOULD NOT HAVE BEEN POSSIBLE WITHOUT THE GOOD WILL AND GENEROSITY OF THE FOLLOWING:**

Her Worship The Mayor of Freetown:  
Yvonne Aki-Sawyer OBE

Martin Travers  
Strategic Advisor

All staff of Freetown City Council and in particular  
the Disaster Risk Management Team

AirLink for provision of flights in and out of Freetown.

Concern Worldwide for storage of equipment

The Waterloo Foundation who kindly provided the  
funding to allow this to take place.

