Crescendo Afforestation Foundation RC 174956 Block
AA Plot 5 GRA Layout
Pankshin - Plateau State
Nigeria

Crescendo Safe Water Supply Project

I. Presentation of Project Design

- Objectives of the project and location

Crescendo is implementing Safe Water Supply Project in Pankshin LGA. Pilot project: 9 boreholes in Gilling, Takkas (2), Kumbul, Fier, Bunman, Ballang Kalep, Ballang Shippang and Angwan Sarki.
Main objective of the project is to improve the livelihoods of people living in this District by providing sufficient, affordable and clean drinking water to targeted communities within reasonable proximity (less than 1km from the end-users) and using technologies that are safe for the environment thus reducing the carbon emissions.

Around the world, inequalities in access to water between people living in urban and rural areas have decreased but remain significant. Eight out of ten people without access to safe drinking water live in rural areas, nearly half of them in sub-Saharan Africa. The poorest populations continue to use untreated surface water from lakes or rivers. Many of these disadvantaged communities are in remote areas that are difficult to access. This is particularly the case in Nigeria, where only 29.21% of the population has access to safe drinking water, 153.4 million people who lack access to safe water in the country ranked third-worst in water quality in Africa.[1]

The main reasons for the limited access of rural households to safe water are related either to low availability of boreholes, or to the low efficiency of the existing boreholes due to lack of maintenance. These communities therefore either drink the unsafe water exposing themselves to water borne diseases or boil water. Limited access to safe drinking water contributes to childhood illness, malnutrition, and elevated school dropout rates for adolescent girls, amongst other issues. Those who boil the water uses firewood and charcoal which accelerates deforestation problems and cause greenhouse gas emissions. In order to overcome those challenges, Crescendo Safe Water Supply Project will establish new solar pumped boreholes. The project will deploy zero-emission technology to treat and supply safe drinking water in accordance with the technologies available on the ground and indicated by the Government. The project will positively impact on the environment since the greenhouse gas emissions derived from boiling unsafe drinking water will be avoided by making safe water accessible for free to local population.

[1] https://epi.yale.edu/epi-results/2020/component/h2o

- Implementation plan

Stakeholders meeting: 17th April
Data collection for baseline survey : April/May
Project Start: July
Operation Start: September.

- Description of technology

The solar photovoltaic panels convert the sun's energy into electricity. The electricity powers a submersible pump, which pumps water from a borehole up to a water point. Photovoltaic (PV) panels are required to convert the sun's energy into electricity. A group of panels is referred to as an array. Solar arrays are mounted on frames or poles, and positioned to receive maximum sunlight.
The PV panels generate direct current (DC). In our solar-powered systems, electricity generated by the panels is used to run the pump directly.
Solar panels are vulnerable to theft, so appropriate measures will be taken to protect them and replacement panels will be readily available for purchase locally to ensure sustainability.
Groundwater is often of high quality because it is protected from surface pollution by a layer of soil and rock.
However, we will test the water quality of each borehole before it is commissioned and every year (especially after the first heavy rainfall) to ensure that the water quality is good. Boreholes will be protected by sealing the top section of the borehole.

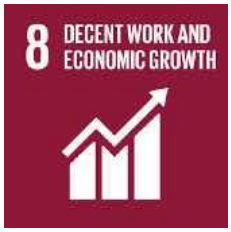
- Benefits and safeguards

Our solar-powered boreholes offer a long-term solution to water scarcity and provide water to thousands of people. The water is pumped from the ground, using electricity generated from solar panels, making it a reliable clean and sustainable solution.

After the borehole is drilled and fully set-up, the local population will have a safe supply of water for drinking and irrigation. This will not only eradicate the risk of contracting water-borne disease but also enhance food-security within these local communities.

When we build a water system, we ensure communities have a sustainable source of clean water for years to come.
Crescendo undertakes to cover the costs of maintenance and repair of the boreholes.
In return, the communities agree to transfer their ownership of the carbon credits to Crescendo so that financing through carbon finance can be put in place. The communities also agree to take care of the equipment and not to trade the water, which should remain free and accessible to all. The location of the borehole will be defined by a geological study but also in consultation with the communities to choose the best location in the village. The land where the borehole and the solar panels will be installed will have to be transferred to Crescendo through an emphyteutic lease to ensure the sustainability of the project.

II. Summary of economic, social and environmental impacts of the Project

Environmental impacts		**Access to clean water and sanitation:** Less than 18% of people in the rural area in Nigeria have access to safe drinking water. Families who live in isolated villages do not have access to clean drinking water. Also, 78% of rural population lack access to basic sanitation services. Through establishment of new solar pumped boreholes, safe and free drinking water will be made accessible to local population.
		**Reduction of CO2 emissions:** Through establishment of new solar pumped boreholes, safe water will be made accessible to local population. This will reduce GHGs emissions from boiling unsafe water. Also, the project will deploy zero- emission technology (solar panels) to treat and supply safe drinking water in accordance with the technologies available on the ground and indicated by the Government.
Social impacts		**Increased access to basic services (water):** Population in the project region do not have access to water within reasonable reach and the water quality does comply with drinking water quality standards.
		**Empowerment of women:** With less time spent on fuel wood collection, the risk of gender-based violence will also reduce. Furthermore, women will have more time available for leisure, education or opportunities for market employment that can raise their household status.
		**Creating jobs:** Establishment of new solar pumped boreholes, and maintenance activities will create temporary and permanent job opportunities for local people. The employees will acquire new skills and knowledge through trainings provided as well.

III. Contact details to get further technical detail and project information

Organization	**Role**	**Responsible Person**	**Contact Details**
Crescendo	Project Developer	Frederic	frederic@crescendo-africa.org
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