**Community Engagement Grant Proposal for Water Solution in Nigeria**

**Executive Summary**

This proposal is a request for a Community Engagement Grant of equipment and

expertise to build a sustainable water solution for the Local community in Lagos.

Partners in this sustainable water solution:

**Project Funding Approach**

The project team acknowledges the preference for establishing a minimum viable

water solution and then expanding incrementally to the complete sustainable

community water solution. An outline for the phased implementation of this

project is suggested below. Detailed equipment, construction and maintenance

budgets will be developed by Local engineering/sales team members. Detailed

plans and budgets for Local community preparations will be developed by tribal

leaders in concert with Chiefs Governing Council and municipal and governmental

leaders. Detailed plans and budgets for Moringa MOSP supply and best practices

for water filtration will be developed by MEI team members. Medium range

plans for new employment and business opportunities in cottage industries

associated with Moringa and the Waterworks will be developed by Local tribal

and community leaders in concert with MEI team members.

**Project Constraints**

Electric grid and Internet access in this area is extremely unstable. speak of near

daily “lights out”. Therefore, all the equipment in this water solution must be

solar powered. Battery back-up is desired for all solar systems, and back-up

petrol powered generators are necessary at the central processing center. A

number (estimated 5) portable generators are required for back-up processing at

satellite water dispensing stations.

**Project Site and Community Needs**

Local township is a fast-growing community located in north central Lagos on a

peninsula surrounded on three sides by the Daka Rier, near the Oti River. Its

12,000 (2020) growing to 20,000 (2023) citizens have no access to safe,

affordable, drinking water. Two families have dug bore holes and sell the non-

potable water as “general” or “household water” to neighbors who pay cash and

carry their own 25-liter jerrycans home. Each household makes approximately

five round trips of 30 to 45 minutes per day and pays approximately USD0.08

(eight cents’ US) for each 25-liter jerrycan or (USD0.003 / liter) one third of one

cent per liter. For drinking water, each household makes 1-2 round trips of 40 to

90 minutes each day to the Daka river. Families would rather risk their health

with the pathogen laden, cloudy river water than drink the unpalatable bore hole

water. Wet season crops are grown 3-6 months per year. Crops are not irrigated,

they sunrise on rainfall. This year the January rains only arrived in June. Tribal

leaders fear hungry months ahead unless our plan to pipe river water .5 km up to

the ECO Waterworks and gravity flow drip irrigation across the 10 acres of rich

bottom land near the river is successful.

**Phased Implementation Plan:**

Phase One: Minimum viable proof of concept water solution for Local.

The purpose of this phase is to test each part of the Local water

solution for a small number of citizens at limited volumes within a

budget of USD$100,000. The system will be complete but limited. This

phase includes one screened river water inlet pipe connected to the

receiving tanks (40,000-liter capacity) at the Central ECO Waterworks

Processing Center. Surface water is pumped slightly uphill using solar

powered pumps. Untreated (but gross and fine debris screened)

surface water from 10,000-liter, irrigation only tank, is then allowed to

flow back downhill through drip irrigation to water 2 acres of

community gardens and farms. Only 2 of the planned 6 satellite

drinking water dispensing points will be operational in phase one. No

new bore holes will be dug in phase one.

We plan to launch a Meruwa cart network to deliver 25-liter jerrycans of non-potable water to

citizens within a .5 km radius of the current bore holes.

**Phase one** includes piping of surface water from the river to the processing center,

and through the 2-stage filtration process (1 st stage: Moringa pre-

treatment tanks and settling tanks, dosing tubes, clean-out ales testing

tubes, and solar powered re-circulating pumps for re-treating

substandard quality water. 2 nd stage: UC bulb treatment tanks equipped

with appropriate number and type of bulbs to disinfect water to log 6

cleanliness as described separately, post UC testing station, and end of

life bulb alarm and shut off.) Piping from the central processing station

extends only to solar powered cashless satellite drinking water

dispensing stations 1 and 2 on the accompanying diagram. During

phase one the entire community will be engaged with WASH training,

establishment of Water Management Committee, and site selections

for remaining satellite dispensing stations, remaining bore holes and

sanitary latrines.

**Phase Two**: Safe, affordable, drinking water for all plus irrigation for 10

acres of community gardens and farms near the riverside. Rough cost

estimate for phase two is USD$150,000-250,000. Detailed cost

estimates and plans will be prepared by the Project Team at the

conclusion of phase one.

**Phase Three**: Safe, affordable, non-potable “general” water for all from

bore holes. Rough cost estimate for phase three is USD$150,000-

200,000. Detailed cost estimates and plans will be prepared by the

Project Team at the conclusion of phase two.