Powering Potential®

Energizing Learners in Developing Countries

Since 2006

NDC/NHS/SC/05
NDC/NHS/SC/07
NDC/NHS/SC/08
NDC/NHS/SC/02
NDC/NHS/SC/03
FOCUS
COUNTER BOOK

1. Powering Potential

2. Tanzania

3. Where Next

4. The Technology

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1. Powering Potential

How it all began

Energy Globe National Award

- **Our Raspberry Pi Computer Lab program received the 2017 Energy Globe National Award for Best Project in the United Republic of Tanzania in its category!**

Energy Globe National Award

- **Energy Globe's official assessment of Powering Potential's Raspberry Pi program was as follows:**
  - **"Education is essential for a good life standard. The lack of learning material leads to a high NEET rate. This project helps to increase the opportunities for economic progression, it has improved students' learning outcomes and provided communities with a more optimistic set of expectations for their children's future."**

Our Mission

Use technology to enhance education and stimulate imaginations for learners in developing countries while respecting and incorporating values of the local culture.

Our Vision

Our vision is all learners in developing countries

Program

Powering Potential's award-winning programs were designed in pursuit of three primary goals:

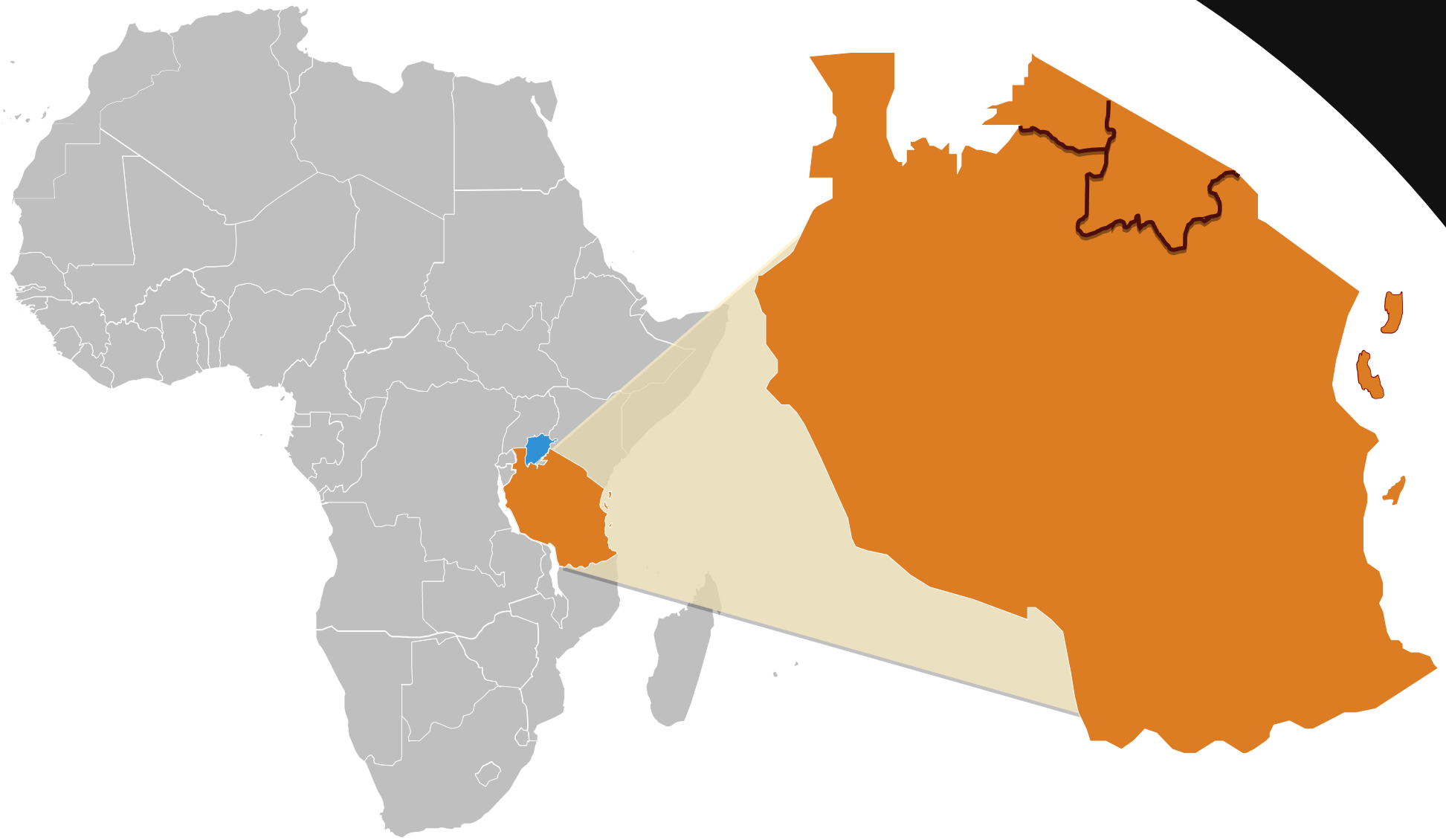
1. **Provide Technological Infrastructure** so rural schools are able to teach the national Information and Computer Studies (ICS) curriculum

2. **Provide Access** to digital educational resources

3. **Provide Training** for select school staff so they are able to effectively facilitate use

2. Tanzania

Tanzania



Mainland Program Regions

Arusha

Mara

Mainland Program Regions

Ngorongoro Crater
Olduvai Gorges

Serengeti
Lake Victoria

Zanzibar Archipelago Program Regions

Unguja

Pemba

3. Where Next?

Peru

- **Peruvian Amazon pilot launch**
- **Led by Fulbrighter, Dana Rensi**
- **25 Raspberry Pis, solar energy system, training**
- **Learning Equality hardware grant**
- **Completed summer 2019**

Peru

Dana Rensi and Ena Haines on the Nauta River with local teachers

Belen District of Iquitos

4. The Technology

Raspberry Pi

- 5 watts, 5 volts
- A 900MHz quad-core ARM Cortex-A7 CPU
- 1 GB RAM
- 4 USB Ports
- 40 GPIO pins
- Full HDMI port; Ethernet port
- Combined 3.5mm audio jack and composite video
- Camera interface (CSI)
- Display interface (DSI)
- Micro SD Card slot
- VideoCore IV 3D Graphics core

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SPARC and SPARC+

SPARC	SPARC+
5	**20**
Raspberry Pi computer systems	Raspberry Pi computer systems
Low watt monitors	Low watt monitors
Mice & Keyboards	Mice & Keyboards
RACHEL Offline Digital library	RACHEL Offline Digital library
1	**Upgraded**
Solar power system including solar panels and batteries	solar power system, including solar panels & batteries
System Operations and Maintenance Training for Teachers and Students	Schools can teach the Tanzanian Information and Computer Sciences (ICS) curriculum

Companion Pi-oneer projection system

- **The Pi-oneer is an affordable and innovative teaching resource that combines a single Raspberry Pi computer with a solar-powered mobile projector.**
- **With a Pi-oneer system, teachers can utilize educational videos and other audiovisual teaching aids to improve student learning outcomes.**
- **The Pi-oneer is included in every SPARC installation. We also distribute Pi-oneer systems to schools that might not have the resources to accommodate a full SPARC install.**

SPARC installation

Sazira School in Bunda District (Mara Region)

SPARC+ installation

Endallah School in Karatu District (Arusha Region)

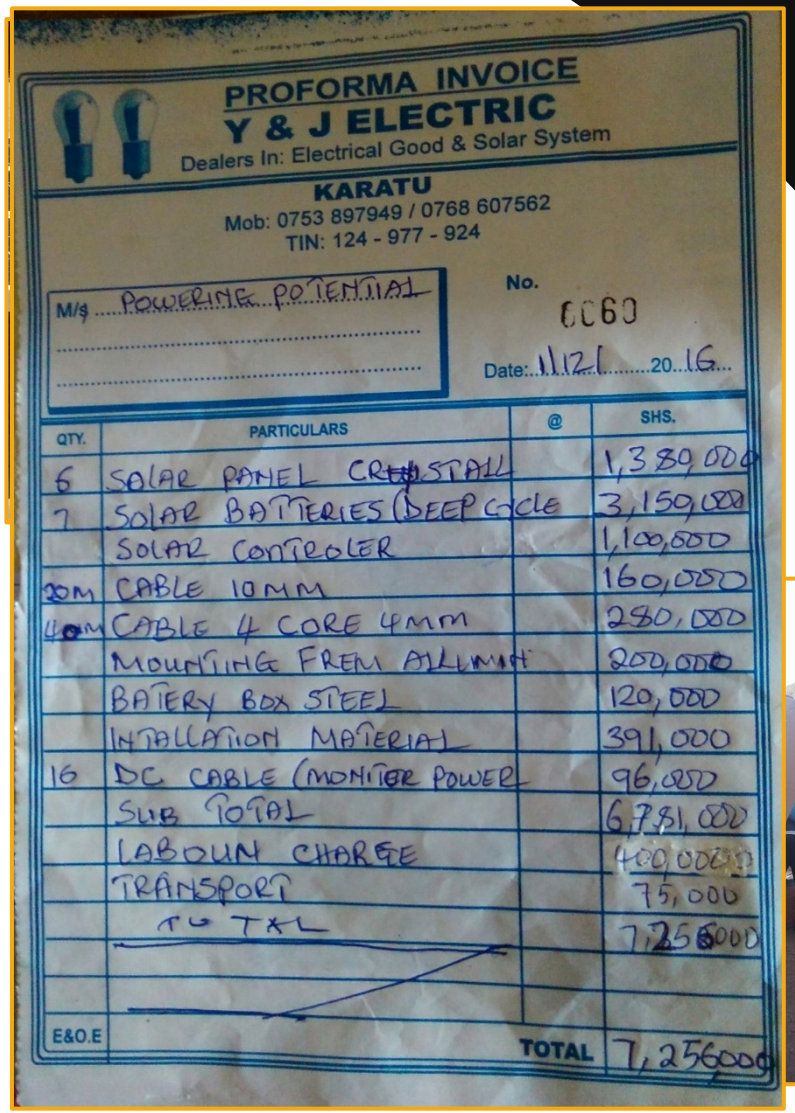
Solar Specs

SPARC

- **Solar panels – 2: 100 watt crystalline**
- **Batteries – 3: 110Ah battery 12v DC**
- **Inverter: 180 watt 12v**
- **Solar regulator: PS-30M, 30A/24v**

SPARC+

- **Solar panels – 5: 85 watt**
- **Batteries – 6: 108 Ah 12v DC**
- **Solar regulator: TS-45M, 4512v**



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Y & J ELECTRIC
Dealers In: Electrical Good & Solar System
KARATU
Mob: 0753 897949 / 0768 607562
TIN: 124 - 977 - 924

M/s POWERING POTENTIAL

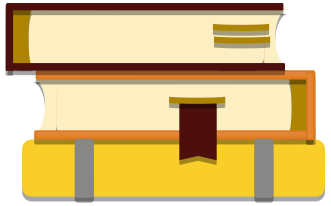
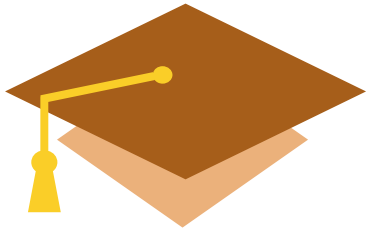
No. 0060

Date: 11/2/ 20.16

QTY.	PARTICULARS	@	SHS.
6	SOLAR PANEL CRYSTALL		1,380,000
7	SOLAR BATTERIES (DEEP CYCLE		3,150,000
	SOLAR CONTROLER		1,100,000
20M	CABLE 10MM		160,000
40M	CABLE 4 CORE 4MM		280,000
	MOUNTING FREM ALUMIN		200,000
	BATERY BOX STEEL		120,000
	INTALLATION MATERIAL		391,000
16	DC CABLE (MONITOR POWER		96,000
	SUB TOTAL		6,781,000
	LABOUR CHARGE		400,000
	TRANSPORT		75,000
	TOTAL		7,256000
E&O.E		TOTAL	7,256000

5. Impact

Impact

- **97** programs implemented
- **34,000+** teachers and students have had a world of knowledge at their fingertips
- **60%** of respondents report continuing their education
- **57%** of respondents report securing employment because of their technology skills
- **3,000+** students enrolled in Tanzanian national ICT curriculum for secondary schools

Impact

“I was really impressed with the good work you exhibited in Dodoma. I therefore encourage you to continue with your efforts to enable people in rural areas to enjoy the benefits of information and communication technology.”

- H.E. Dr. Jakaya Kikwete

President of the United Republic of Tanzania (2005-2015)

“I trust what Janice and the Powering Potential team are doing. They’re doing it the right way with local support, community engagement, and b learning.”

- Jeremy Schwartz

Executive Director of World Possible

6. Program Feedback

From a student

“If one day we meet in person, I would be much overjoyed and might shed tears because of your heart of helping since you have brought us from a dark environment and now we are going to be like shining stars. I thank you a lot."

--- Mahando T. Mahando, Sazira Secondary School

Kama unataka kwenda haraka, nenda mwenyewe.
Kama unataka kwenda mbali, nenda pamoja.

If you want to go fast, go alone.
If you want to go far, go together.

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Karatu District Council Tanzania

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