



## The Harvard/MGH OLPC Initiative in Southern Sudan

### Introduction

The people of Southern Sudan have been plagued by civil war and instability for over fifty years. Today, rates of hunger, illiteracy, and poor child health are the highest in the world. However, peace has tenuously held since January of 2005 and opportunity for independent statehood is only a short 2 years away.<sup>1</sup> We believe that it is within this fragile window of time that the greatest opportunities lie to support and stabilize peace through improved healthcare and education of children and their mothers.

We have partnered with the Division of Global Health and Human Rights at Massachusetts General Hospital, the faculty and staff of the Malakal Teaching Hospital, the Ministry of Health of the Government of Southern Sudan (GoSS), the leadership of the state of Upper Nile, and several local NGOs (UNICEF, UNFPA, and IMA World Health: through MGH) in an initiative to impact the health and education of women and children through the XO laptop. The Malakal Teaching Hospital is located in the state of Upper Nile, the poorest in all of Sudan, and is the second largest hospital in Southern Sudan.

### The XO to Educate and Fight Starvation

Approximately 45% of Southern Sudanese children suffer from stunted growth and slowed intellectual development due to lack of calories and essential nutrients.<sup>2</sup> In general, children who are affected by starvation have been shown to perform more poorly in school and ultimately become less productive adults who are often saddled with permanent cognitive disabilities.<sup>3</sup> Not surprising, it has been shown that there is a close bi-directional relationship between malnourishment of children, and education of the mother and her family.<sup>4</sup>

The malnutrition ward of the Malakal Teaching Hospital cares for 90 to 100 children at any one time. These children usually spend weeks on end recovering from the effects of starvation. ***We propose a pilot program that distributes 100 educational laptops to consecutive mothers and their children (where eligibility is defined as children's ages, 6 - 12).*** Staff in the malnutrition ward will be trained on the XOs, and they will subsequently train eligible mothers and their children as they near graduation from the

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<sup>1</sup> "UNHCR | South Sudan Operation." UNHCR Welcome. 2009. UNHCR. 20 Mar. 2009 <<http://www.unhcr.org/southsudan.html>>.

<sup>2</sup> "Agency Work in South Sudan." Save the Children. 2009. 20 Mar. 2009 <<http://www.savethechildren.org/countries/africa/south-sudan.html>>.

<sup>3</sup> Marlene Lee, ed. "Nutrition" World Population Highlights Key Findings from PRB's 2008 World Population Data Sheet. "Population Bulletin" September 2008 Vol. 62 No 3 p 7.

<sup>4</sup> Christiaensen, Luc. "Child Malnutrition in Ethiopia." African Region Working Paper 22nd ser. (2001).



malnutrition ward. The hospital will serve as a home base for the program, thereby allowing for continued program development and follow-up measurement and evaluation.

Our trainings will be geared toward the mother, child and staff as a learning team. In addition to covering basic computer skills and functions, we will develop a module for the XO which includes games and activities relating to basic nutritional information.

### **Impact and Outcomes**

Following graduation from the malnutrition ward and our program, the home location of these 100 children will be recorded. We (and our partners) will visit homes at subsequent intervals in order to collect data that captures quantitative and qualitative information on:

- malnutrition recidivism rates
- literacy versus their peers
- social effect with their peers
- family social ripple effect
- mortality rate
- school performance

These data sets will enable us to assess the impact on hunger and malnutrition subsequent to deploying the educational XO laptop. After the initial pilot, we envision expanding the program to include more participants and a more structured learning center based out of the hospital. (IRB approval will be obtained prior to any efforts).

### **Harvard University Student Team Members**

**Elizabeth Nowak** has worked on education and health related projects throughout Africa. Last year, she was part of a team that created a youth center in Sierra Leone, where she taught computer classes throughout the summer.

**Sarah Nam** directs the Harvard Hunger Initiative. She leads projects relating to malnutrition, education, and development.

### **Project Advisor**

**Thomas Burke, MD, FACEP** is Director of the MGH Division of Global Health and Human Rights within the Department of Emergency Medicine, and faculty at Harvard Medical School. Dr. Burke has extensive experience in the public health arena as a senior emergency physician, a faculty member and researcher, and as a leader in the nonprofit sector directing medical education work overseas since 1994.



## **Preliminary Budget**

### **Phase 1: \$10,000 and 100 laptops**

- Prepare 100 laptops as educational tools: in kind
- Principal Investigators training the trainers (2 sets of flights and housing): \$10,000

### **Phase 1 Budget Description**

<b>Expense</b>	<b>Description</b>	<b>Cost</b>
<b>Transportation</b>	Boston to Kigali, Kigali to Malakal, Malakal to Boston (1 team member)	\$2,400
	Boston to Malakal (round trip) (1 team member)	\$1,900
	Ground transportation in Sudan (2 team members, 8 weeks)	\$700
<b>Housing</b>	Accommodations for 2 team members in the Greater Malakal area for 8 weeks	\$800
<b>Food</b>	Two meals (\$10) and bottled water (\$3) per day for 8 weeks (for 2 team members)	\$1456
<b>Visa and Immunization Fees</b>	Visas (\$140); Yellow Fever vaccine (\$60), Malaria prophylaxis (\$220) (for 2 team members)	\$840
<b>Operational</b>	Transport and storage for laptops	\$450
	USB flash drives with nutrition information (100 at \$9)	\$900
	Training stipends for hospital staff	\$300
	Training materials	\$250
	<b>Total</b>	<b>\$9,996</b>

### **Phase 2: \$100,000 and 10 laptops**

- Build a wireless children's learning center (with 10 laptops) attached to the malnutrition ward: \$30,000
- Internet dish, 2 years of internet broad band for the children's learning center and malnutrition ward, and repair service: \$35,000
- Monitoring and evaluation: \$35,000

### **Phase 3: \$100,000**

- Monitoring and evaluation and program improvement: \$100,000

### **Phase 4: TBA**

- Scale