

# Education Support Project through Solar-Powered Internet School

**Min KIM**

Senior Researcher, Center for Policy Research & Global Cooperation



**KERIS**

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# C O N T E N T S

**I** Theme and Issue

**II** Contribution of ICTs

**III** Lessons and  
Future Directions





# Issue and Theme

## Issue

- Lack of **sustainable physical infrastructure** (Electricity, Internet, Tools, Training, etc.)  
→ Result: **Lack of access and opportunities to quality learning & teaching**
- Why **ICT in education?**  
→ Key to fostering **core competencies of the "knowledge-based society" of the 21<sup>st</sup> century**

## Theme

- Need for a **sustainable, usable, and affordable infrastructure** that can facilitate ICT in education efforts for teachers and students
- Collaborative project based on a **Public-Private Partnership Model:**  
→ **"Each doing what each does best!"**



# Solar Powered Internet School (SPIS)

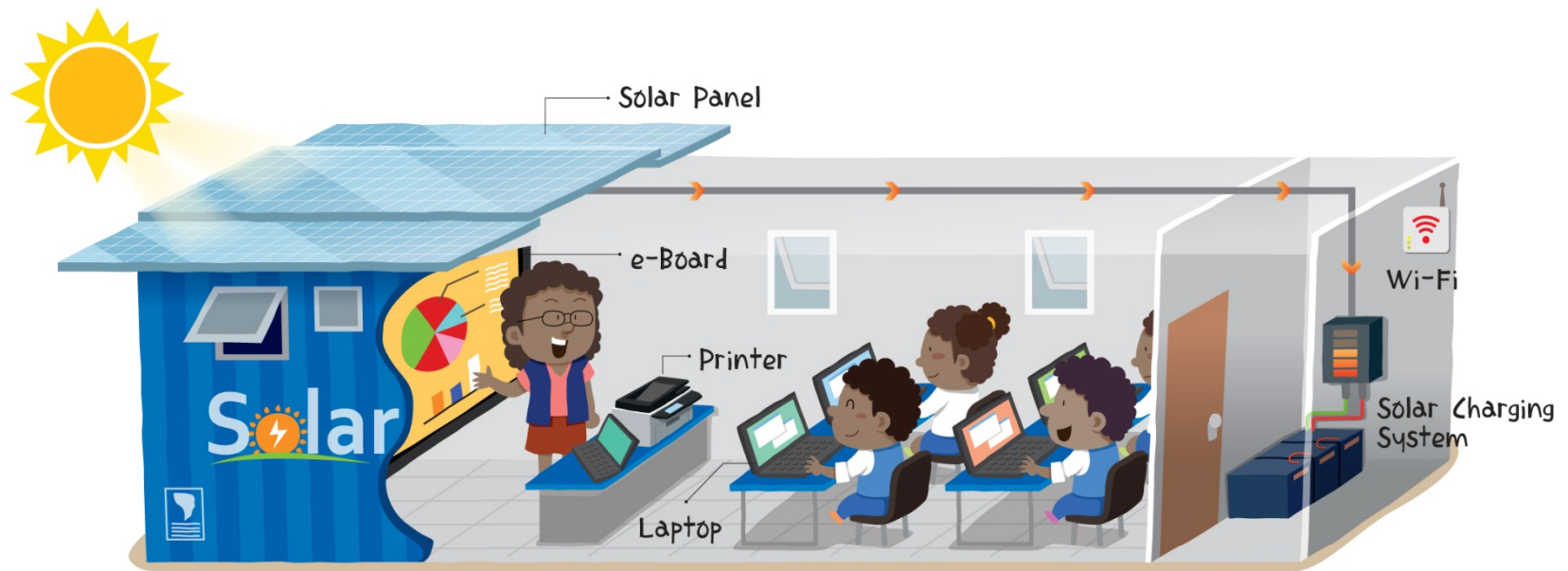
- A **mobile classroom** remodeled from a 40ft container with **ICT devices, wireless internet,** and **solar charging system** installed
- Is **self-powered, easy to construct** and **convenient to mobilize**
- Can be immediately used **as long as there is sunlight**
- Can accommodate a teacher and **24 students**



- ※ Built-in Wi-Fi offers students Internet access.
- ※ Solar charging system operates in bad weather conditions.
- ※ Fully charged Solar powered system enables 3 days of use.



# Conceptual Image of SPIS





# Project Background & Purpose

## Background

- February 2012: Korean delegation's participation in the **Association for Development of Education in Africa (ADEA) Conference**, Burkina Faso.  
→ **Sharing of experiences on ICT in Education** in 'ADEA Korea-Africa Day'
- Proposal of the **Solar School Project** for development cooperation



## Purpose

- To bridge the **Digital Divide**
- To enhance the **education capability** of African teachers
- To provide teachers & students with **ICT education opportunities**
- To **share successful cases** of Korea's education advancement





# Strategy

01

Provision of **support for implementation of ICT in Education policies** in African settings

02

Design of a **socio-culturally flexible model** for the Solar School's operation  
(Ex. Applicable model despite inadequate electrical infrastructure & possible educational gaps)

03

Establishment of **Public-Private Partnership (PPP) model** with content providers & equipment manufacturers

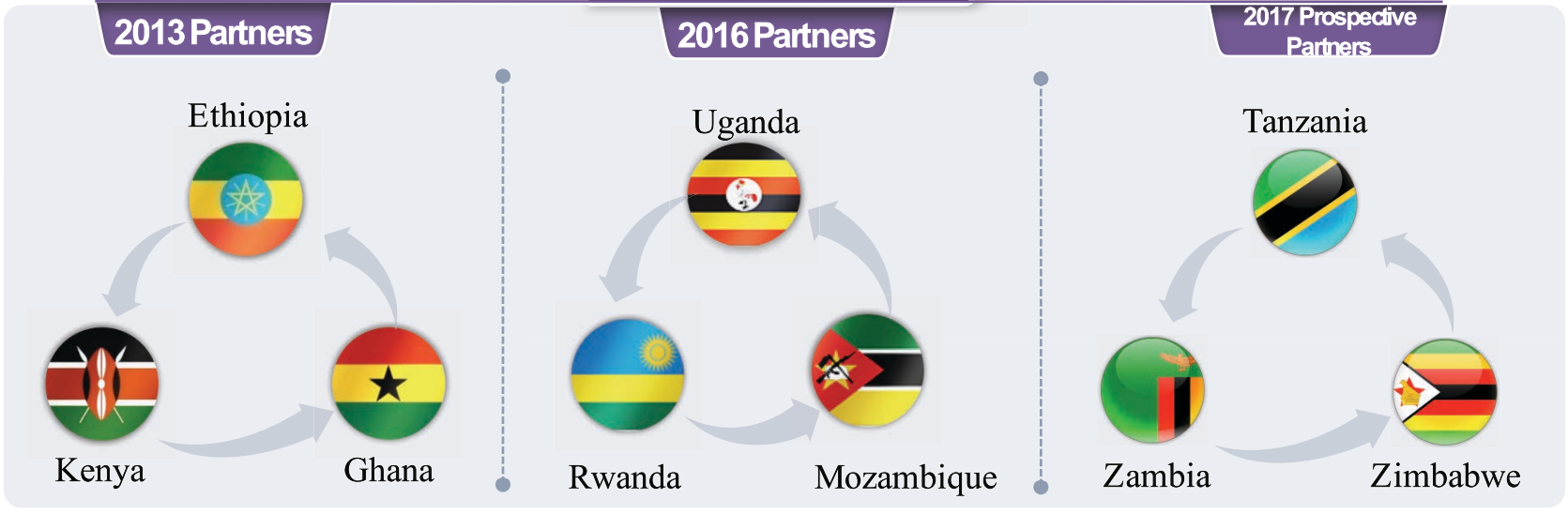
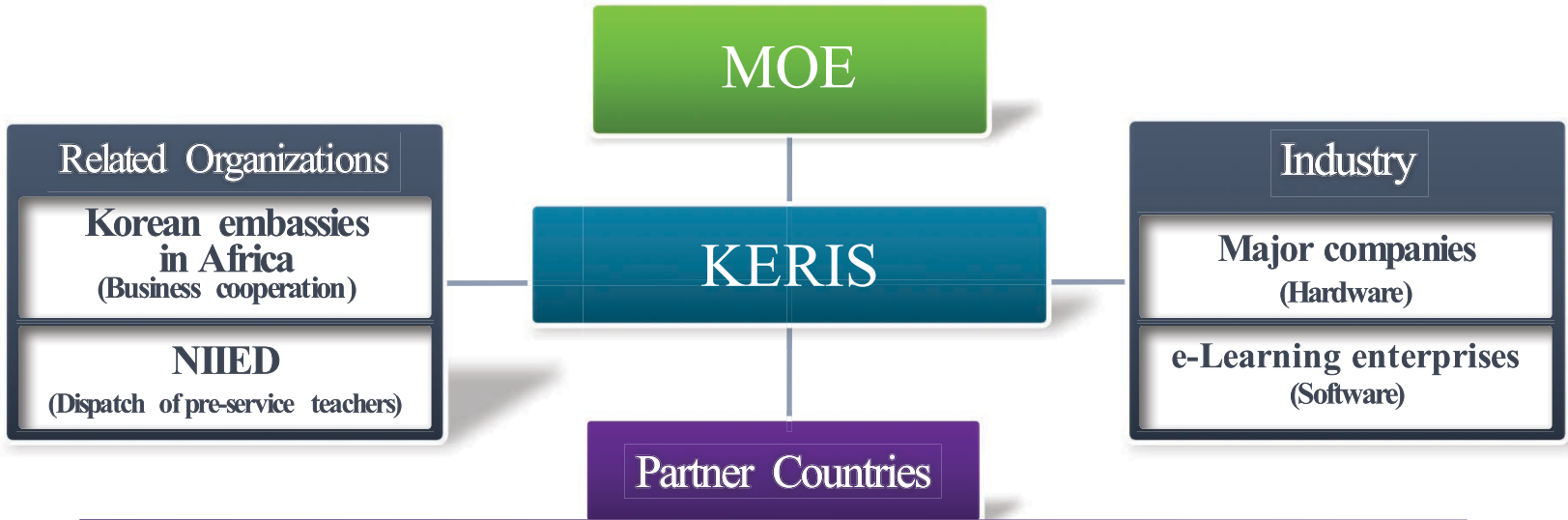
04

Organization of **Master Teacher Training Programme** to support efficient & sustainable learning/teaching activities





# Participating Agencies







# Project Procedure

## Phase 1

**Selection of partner countries, review of feasibility & establishment of partnership between public/private sectors**

→ Consultation on educational environment, ICT status & operation methods

## Phase 2

**(1) Manufacture, delivery & installation of Solar School**

**(2) Organization of 1<sup>st</sup> round of teacher training (Installation & utilization)**

## Phase 3

**Organization of 2<sup>nd</sup> round of teacher training (ICT-enhanced teaching methods)**

## Phase 4

**Organization of 3<sup>rd</sup> round of teacher training (Advanced instructional/learning methods)**

## Phase 5

**Monitoring & feedback**

Frequency of use, screening case study & effectiveness study, observing excellent practices in African countries





# The 1<sup>st</sup> Master Teacher Training

▼ Opening ceremony



▼ Group activity



▲ Presentation on education informatization status



▲ Classroom with e-learning content



▲ Site visit & observation, Itawon Elementary School



▲ Closing ceremony

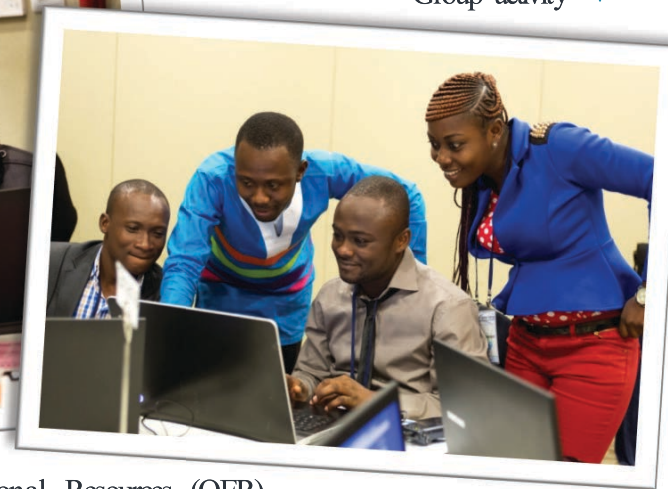


# The 2<sup>nd</sup> Master Teacher Training

▼ Opening ceremony



Group activity ▼



▲ Introduction on Open Educational Resources (OER)



▲ Presentation



▲ Closing Ceremony



▲ Site visit, SK Ti-Um



# SPIS in Kenya

## SPIS Opening Ceremony (May 20, 2014)





# SPIS Utilization





# SPIS Utilization



# C O N T E N T S



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# Immediate Results

## ○ Capability of resolving issues regarding buildings, electricity & IT equipment



Increase **accessibility to education**  
in remote rural areas without electricity

Africa Regional newspaper homepage (March 24, 2013)



Overcome **lack of infrastructure**  
& offer **IT-based learning solutions**

E-learning Africa Group Facebook (March 20, 2013)



Extend time for evening study  
by installing **solar powered panels**

E-learning Africa Group Facebook (May 1, 2014)





# Economic & Educational Effectiveness

## Economic Aspect

- **Budget : Saving up to \$140,000 compared with the cost of computer lab construction**
- ▼ \$340,000 for building e-learning center for Adama University in Ethiopia
- ▼ \$240,000 for building a classroom in Nigeria

## Teachers Capacity

- **Increase in the number of students transferring to Solar School in Kenya**
- ▼ Approximately 400 transferees (35% increase) from May 2014
- **Solar School user status in Kenya and Ghana**
- ▼ 10,000 students from 9 local schools in Kenya and 636 students from 14 local schools in Ghana use a Solar School jointly.

## Students Improvement

- **Improved academic achievement of SPIS users**
- ▼ (Kenya) 9% increase in English subject (57.83→62.50)
- ▼ (Ghana) Increase in final examination (14%→92%)
- ▼ Completion of team-based assignments, to be completed using the Solar School during weekends

# C O N T E N T S



Theme and Issue



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# Lessons Learned

- ICT-enhanced education can **increase** and **sustain learning/teaching motivation...**

It has enabled students to be IT literate, since they are able to search information and acquire knowledge in the guided areas. It has made learning real and interesting. Learners are always eager to visit the SPIS. It has enabled learners to be global.↵

-on Teachers and pupils side: before they don't have any knowledge on computer but now they are enjoying using computers↵  
-when teachers teach theory, they do practice with pupils on the computers.↵  
-before teachers and staff demand support for typing something for them and have to pay, but now they do it themselves. ↵

The positive impact of using spis in my school is that the student's shows interest in every subject that the spis is used to teach them.↵

(excerpts from Solar School Monitoring Report, 2016Q1)

...because it can bring more opportunities for "**learning by doing**"



# Lessons Learned

○ A PPP-based "doing what I do best" model for cooperation programmes...

## MOE & KERIS

- Build a network among intergovernmental organizations & plan to bridge educational gaps
- Verify operational feasibility
- Develop teacher training courses to improve teachers' ICT competencies
- Organize invitational training program to partner African countries
- Share feedback, outcomes & achievements



## Partner Countries

- Selection of location for Solar School
- Monitoring of ripple effects of the training
- Handle customs clearance
- Sharing of results & receive feedback
- Plan for Solar School operation & utilization

## Private Sector

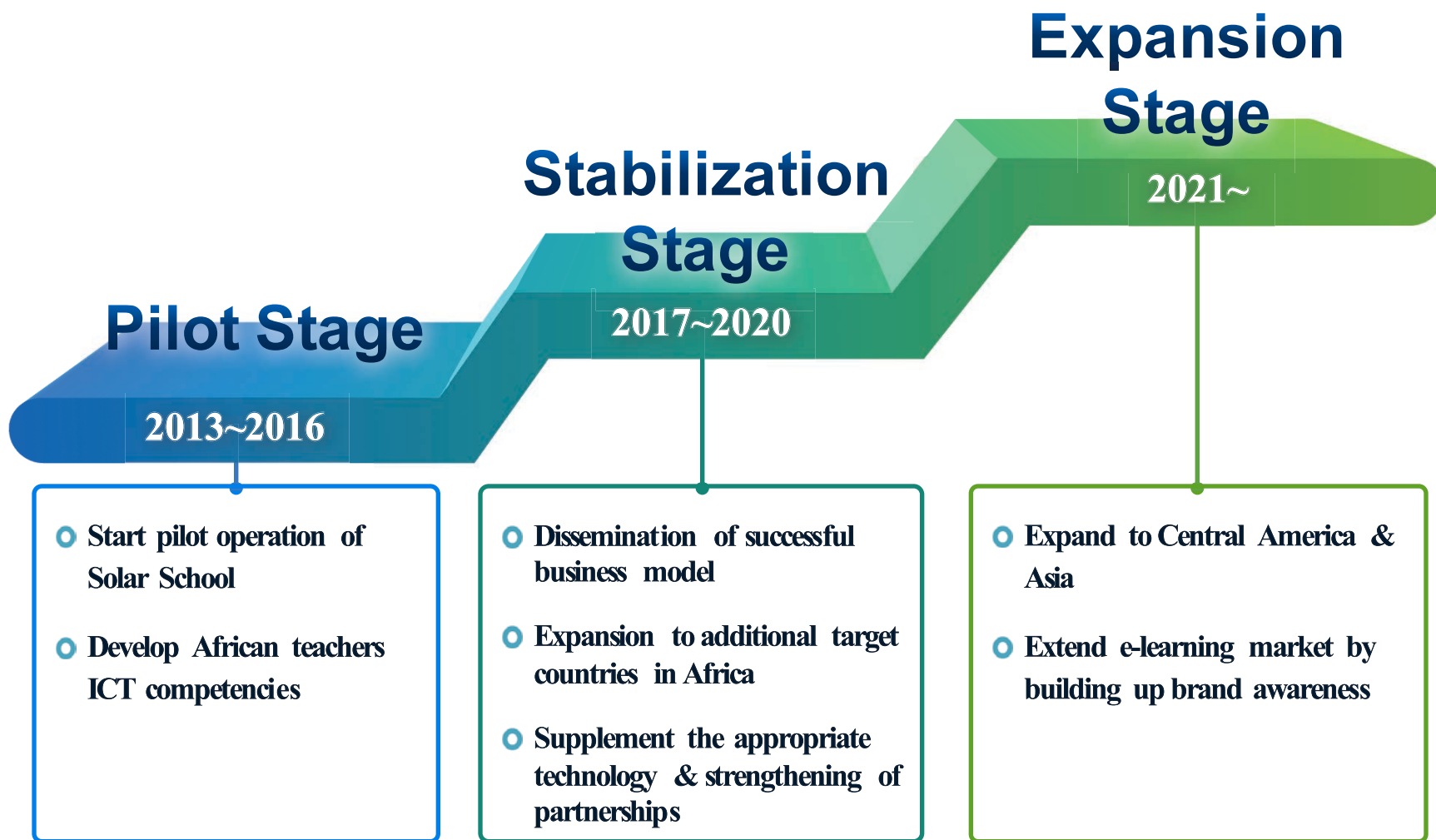
- Manufacture & install Solar School
- Provide educational content
- Monitor the projects & communicate results



...may be an effective approach to deal **ODA projects**



# Future Directions





# Future Directions



## Before concluding,

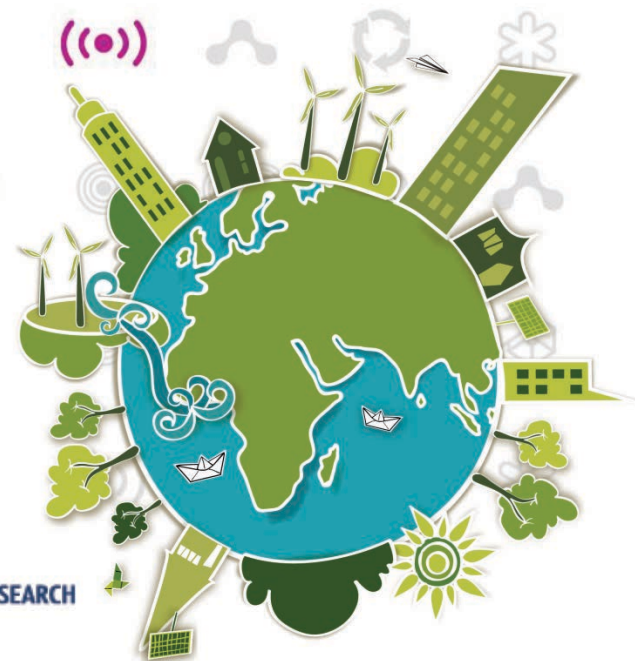
- KERIS is currently conducting reviews for **prospective partner countries** of the Solar School Project for **2018**.
- Please kindly contact the presenters if your country is interested.



# Thank you

**Min KIM** [minkim@keris.or.kr](mailto:minkim@keris.or.kr)

**Taehun KWON** [lufu95@keris.or.kr](mailto:lufu95@keris.or.kr)



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