THE GREEN ACADEMY PROJECT
MAKING WASH+ SCHOOLS THE MOTOR OF THE CIRCULAR ECONOMY

LESSONS LEARNED
BACKGROUND

OBJECTIVES

Ghana, the Gold Coast of West Africa, boasts terrific biodiversity from tropical high forests and savannas to varied marine systems. Rich in natural resources such as gold, timber, rubber, manganese and bauxite, Ghana is a multi-billion dollar bio-dome…deteriorating at a rapid rate. Home to an estimated 30 million people, Ghana suffers from uncoordinated implementation of development policies, overpopulated informal settlements with little to no infrastructure, and perhaps most importantly, a general malaise regarding gross human impact on the environment.

Though Ghana was the first African nation to sign the World Economic Forum’s Global Plastic Action Partnership, it is haunted by alarming waste statistics. In 2019, United Nations COMTRADE noted that Ghana imported $499.85 million dollars in plastic, of which 73% ends up as waste. The World Health Organization estimates Ghana produces 4.8 million tons of waste annually. Out of this, only 2-5% is recycled, 38% is dumped in landfills, 28% is scattered on land, 23% floats out to sea and roughly 11% is burned. Compounding the waste management crisis, is a lack of water, sanitation and hygiene interventions.

A recent United Nation’s report recommended, the “deep awareness and sensitisation of [Ghana’s] general populace regarding the critical role of adaptation in national development efforts.” Sensitisation is an effective tool to spread knowledge and change behavior. Children have long been recognized as powerful change makers. Their unique capacity to receive information, contextually interpret it, and then propagate it within their communities make them strategic ambassadors. Government of Ghana has made several attempts to educate the public about the importance of sustainable waste habits. In the 2010-2015 National Environmental Sanitation and Action Plan (NESSAP), government identified the need to create a school based curriculum to help children learn to segregate from source during their early stages of development. They also reiterated the importance of creating a school curriculum, with the creation and review of the National Plastics Action Policy, which seeks to reduce the amount of plastics being landfilled and littered within communities.

The Green Schools Academy Project: Making WASH+ Schools the Motors of the Circular Economy (the Green Academy) was designed to capture and harness the influence of youth. Geared for school-aged children 8-13, the Green Academy curriculum contains four main objectives: (1) improve school campuses’ health and cleanliness through integrated awareness strategies; (2) encourage inventive upcycling concepts; (3) create a digital platform for training materials; (4) transform schools into living labs of student researchers through data collection.
Green Academy Curriculum

Teachers

Students

Community
Environment360 (E360) engaged Ghana Education Services (GES), Accra District Office, for jurisdictional implementation and support within the public schools’ system. E360 has been a recognized organization within the GES system since 2015. A “Selection Criteria” based on school eligibility and teacher interest scored prospective applicants. Twenty-five schools were originally selected, (two teachers resigned leaving twenty-three schools) and each school had one teacher that served as the ambassador of the Green Schools Academy. Teachers represented both urban and coastal communities, 66% of teachers were female and school populations ranged from 204 students to 1066 students. 50% of the selected schools participated in a previous E360 educational program offering them a foundation of environmental awareness.
In **February 2020**, E360 sent a letter with a Project proposal to GES, Accra District, seeking permission to carry out the Green Academy in their jurisdiction. After receipt and review of the documents, GES granted permission to implement the Project. Registration was open to all teachers, from various District schools, who were interested in the Project’s mission. Prospective teachers were informed that participation was limited to the best fitting applicants. At close of registration, 33 teachers from different schools registered for the Project through GES. Twenty-five teachers were originally selected to participate in the Green Academy Project. Two teachers dropped out, leaving a total of 23 participating schools. The 8 schools, which were not selected, together with 15 more schools from the Accra District with similar characteristics with the participating schools served as control schools. One teacher from the control schools expressed zero further interest in the Project after registration.

In **April 2020**, United Nations University – MERIT, based at the University of Maastricht, initiated a baseline study to capture teachers’ opinions including those regarding school facility functionality and cleanliness, waste segregation, hygiene behavior, and litter on school campuses. Due to COVID-19, baseline studies were distributed online.

In **July 2020**, E360 organised online trainings for all participating teachers. Teachers completed questionnaires to gauge their current knowledge on the environment and express feedback on the curriculum. During the sessions, teachers reviewed modules and presented their initial reactions to the curriculum. On the 27th and 28th of July, a two-day training was held for 3 GES administrators. During the training, administrators provided final feedback on the curriculum and were sensitized on how to conduct their own training sessions. This *train the trainer model* prepared GES administrators to deliver the curriculum with little support from E360 and Project partners.

In **October 2020**, teachers participated in a two-day training. Facilitated by GES administrators at the Ministry of Health Basic School, Korle Bu, teachers were introduced to the Green Academy Curriculum, a 30-page document consisting of four modules, including basic environmental knowledge, games, quizzes, exercises and songs. Additionally, teachers were briefed on classroom recycling, segregation, and composting activities to be implemented.
In January 2021, 5 recycling bags were distributed to each participating teacher’s classroom and teachers were refreshed on all proposed activities. Curriculum guides and games were distributed to the teachers to ensure adequate resources for the Project.

In February 2021, following an 11-month COVID school closure, schools resumed and teachers initiated the Green Academy. United Nations University – MERIT conducted a baseline student survey to measure knowledge and behavior. The survey was distributed to all participating students as well as to a similar number of students in the control schools. The

From February till June 2021, teachers delivered weekly Green Academy curriculum to students. Classes were monitored throughout the program to understand student reactions to program material, the ability of classes to properly segregate their waste, and the teachers’ ability to execute the curriculum. Teachers were encouraged to share pictures and videos of their students’ activities. DOW chemicals sponsored a teacher award of 2,500 GHC for the most successful recycling program.

In June 2021, United Nations University – MERIT conducted a midline student survey. The midline survey indicated an average increase of knowledge for those participating in the Green Academy. Behavioral changes were more prevalent in male students verses female students. The midline survey revealed a large portion of students found the program “amazing” and that the majority of students taking part in the Green Academy were passing their learned knowledge to family and community members.
The graph depicts links in the chain of Project actors, activities, and their components.
The Green Academy was implemented during the height of the COVID pandemic. Objectives, and activities, including internal and external monitoring and evaluation mechanism were taxed by the pandemic’s oppressive and unchartered landscape. Many of the Project’s perceived challenges were directly related to the fragility of the school system, limited public and private resources, and local communities as a whole. UNICEF Ghana reported, “children experienced reduced access to essential goods and services, increased poverty, food insecurities and exposure to violence, abuse and exploitation, as well as declines in physical and mental health.” These impacts attribute to primary challenges and long-term impacts of the Project.

4.5% Ghana school dropout rate (poorest quintile)
ACTIVITIES

The Green Academy was not designed in the context of a crisis, yet was implemented during one. WASH+ principles directly correlate with the mitigation of COVID-19. Low or no access to water increases community health risks exponentially. Though the Green Academy curriculum is critical in developing long term- resilience practices for children, against the Pandemic backdrop its value may have depreciated.

Feedback from teachers suggested that a single curriculum for Basic Schools and Junior High Schools combined was too difficult for the younger students to grasp. The learning disparity between Basic Schools and Junior High Schools was too great to make a unified curriculum accessible.

Low school attendance challenged many of the teachers, who noted several of their students had not returned at the reopening of school. Teachers also expressed concern on time limitations to fully deliver the curriculum. At the end of the a negligible amount of the Basic School teachers had completed two of the four modules.

RECOMMENDATIONS

- Develop separate age-appropriate curriculums; games and songs are more appropriate for Basic Schools, while Junior High School curriculum should focus on fun, practical, hands-on lessons

- Find synergy between existing lesson plans and curriculum to limit additional time needed for Green Schools Academy lessons

- Incorporate Green health measures into the curriculum to support resilience techniques for children (i.e. healthy environment means healthy bodies, protect the environment to protect your health)
GREEN ACADEMY TEACHERS

Teacher Selection

As its namesake suggests, the Green Schools Academy is an education Project dependent on its curriculum, delivery, and consistency. Teachers were critical to the success of the program as they are the primary ambassadors. For this program 23 teachers were registered; however only 13 actively participated in sharing lessons, videos, and pictures of their classrooms. Even with the motivation of a cash prize, many of the teachers remained inactive in the program and/or the established platforms. Offline conversations with teachers revealed, that GES administrators requested applications from certain teachers, rather than voluntarily application. Teachers who were active, were those who applied out of personal interest.

RECOMMENDATIONS

• Generate passionate interest through alignment with the Ghana National Association of Teachers and the Coalition of Concerned Teachers

• Conduct a geographically diversified open call for impassioned teachers

Teacher Technology Ownership and Adaption

The Project developed and utilized online platforms to engage teachers and provide free access to resources, such as quizzes, graphics, and lessons. Virtual platforms mitigate challenges associated with the Pandemic and alleviate transportation inconvenience and cost. These resources included Zoom, Facebook, and a dedicated Green Academy portal. Zoom Meetings proved challenging as most teachers phones were not able to continuously support the Zoom application or have access to computers. Unfamiliarity with online platforms resulted in low retention of shared information. Network instability and data costs compounded the challenges.

RECOMMENDATIONS

• Budget schools for shared technology devices

• Introduce teachers to virtual platforms to maximise the technology’s utility
**Teacher Motivation**

Generally, teachers in Ghana earn 800 to 2,500 GHC per month. Degreed teachers and GES teachers may potentially earn more. As a traditionally low-paid sector, a “teacher motivation allowance” has been implemented to boost loyalty, patriotism, and job satisfaction. These allowances do ”motivate” but they are sparse. The increased responsibilities of teachers post-pandemic to recover lost educational hours was systemic and palpable. Basic school and Junior high School students were overwhelmed by new schedules, accelerated testing, and low student attendance, in addition to their own personal struggles. Classroom observations found teachers to be poorly motivated to fully implement the curriculum as instructed. Scheduling conflicts due to new curriculum recovery schemes pushed extracurricular activities, such as the Green Academy to the fringes.

**E360 maintains strict policies regarding transactional motivational remuneration. The Project offered modest awards including T-shirts and Appreciation Certificates for winners of social media activity and recycling volume. However, there was no consistency in teacher’s participation on social media and interactive platforms such as whatsapp, even with awards offered.**

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### RECOMMENDATIONS

- Develop motivational schemes tied to existing teacher awards, such as Teacher of the Year, Ghana Teacher Prize, and Ghana’s Most Outstanding Teacher Award

- Certify the Green Academy through the Ministry of Education and the National Teachers Council to be calculated into such award metrics

- Collaborate with Sabre Education, a partnership between two independent charities registered in the UK with the Charity Commission and in Ghana with the Department of Social Welfare

- Assess teacher award eligibility with fluidity and compassion during Project implementation
RECYCLING ACTIVITIES

Participating classes each received five bags for waste segregation of paper and plastic materials. An integrated recycling company in Ga Mashie and a low-capacity AMA contractor facilitated monthly collection from the schools. Unfortunately, participating classrooms did not generate enough recyclable volume to balance collection costs of petrol and labor. Low volume may also be attributed to informal waste pickers with existing relationships with schools. Additionally, teachers and contracted collectors failed to report requested data on volume and type of material, despite Project instruction.

RECOMMENDATIONS

• Encourage school-wide recycling to increase volume and balance collection endeavors
• Track Green Academy classrooms against a control group to determine Program impact
• Conduct initial assessment of generated waste
• Build and strengthen the capacity of local waste pickers associated with schools
CONCLUSION

FORWARD THINKING

The Green Academy Project has exceptional potential to increase critical environmental awareness and fuel holistic social behavioral change. Children as change agents is a demonstrated ideology. Their psychology and curiosity make them intrinsic activators. The development and delivery of an accessible and inclusive curriculum, which targets the learning processes of youth is vital to the health, healing and growth of Ghana.

E360 implemented the Green Academy during tumultuous times. The Green Academy experienced challenges with teacher selection, motivation, technology ownership and adaption, and the recycling volume. Baseline and midline surveys conducted by researchers with United Nations University- MERIIT suggest social behavioral change amongst teachers, and students. The Social Ecological Model, recognizes “four levels of influence that interact to affect behavior: individual, family and peer networks, community and social/structure.” The situational context of community change relies on leadership, access to information, service provision, social capital and collective efficacy. Due to State mandated pandemic lockdown, community members suffered increased poverty, decreased living standards, and importantly, social isolation. When members of the community are isolated change is slowed. Thus, the Green Academy’s macro impact will require patience and diligence.

The direct beneficiaries of teachers, administrators, and students are estimated near 1200 persons. However, the indirect beneficiaries of the Project potentially stretch into the thousands throughout the urban and coastal communities of Greater Accra. E360’s experience with school-age children coupled with deft lessons learned primes the Green Academy Project for great future success.

E360 extends appreciation and gratitude to all partners, including GES Accra District, Friends in Need India and Prof Shyama V. Ramanai for development of the curriculum, Maria Tomai, who undertook the impact evaluation research through the University of Maastricht., DOW Chemicals, and Vivo Energy for providing funds to support program coordination and teacher and students prizes.
Graphs illustrate responses to notable baseline teacher survey questions. Responses overwhelmingly suggest deficiency in water access and poor hygiene and sanitation practices.
CLEAN FUNCTIONING TOILETS

- Flush system repairs: 37%
- No running water: 16%
- New toilet facilities: 16%
- Regular cleaning: 15%

WASTE MANAGEMENT

- Education: 15%
- Regular collection: 26%
- More bins needed: 65%

SEPERATE BINS FOR WET / DRY WASTE

- Yes - DRY only: 38%
- Yes - BOTH: 12%
- No: 18%

WET/ DRY SEGREGATION

- Yes, always: 32%
- No: 18%
- Yes, sometimes: 12%
- We segregate, but have no bins: 38%