Evaluation

Malawi Secondary Education Expansion for Development (SEED) Impact Evaluation

Midline Report

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Cover photo: SEED Rural Form 1 class.
Photo credit: Tobias Maunde, CSR.

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Abstract

The Malawi Secondary Education Expansion for Development (SEED) activity is a $90 million commitment from the United States Agency for International Development (USAID) and the President's Emergency Plan for AIDS Relief (PEPFAR) for urban expansion and rural construction of Community Day Secondary Schools (CDSSs). Data for Impact (D4I) is conducting an evaluation of the SEED activity to understand whether there is an impact on SEED communities. This mixed methods impact evaluation covers a range of development outcomes, including the impact of SEED on children who are enrolled in Standard 7 in primary schools at baseline in rural SEED CDSS catchment areas. The outcomes evaluated include educational outcomes; sexual behaviors; water, sanitation, and hygiene behaviors; and child safety. At baseline, we recruited Standard 7 students (n=761) from 32 rural primary treatment schools that will feed into new rural CDSSs, as well as from 32 rural comparison primary schools outside new CDSS catchment areas. To measure the pre-intervention primary to secondary school transition rate, we surveyed a retrospective cohort[1] of students (n=599) enrolled in Standard 8. At midline, we followed students in the prospective cohort.[2] However, the construction of SEED schools in the Northern region was incomplete, and the Northern region was excluded. At both timepoints, the qualitative component consisted of focus group discussions (FGDs) with students and caregivers, key informant interviews (KIIs) with community leaders and teachers, and in-depth interviews (IDIs) with students. Rural findings showed positive impacts of the SEED activity, including reduced absenteeism among girls due to menstrual hygiene management and reduced child marriage. Urban qualitative findings also showed perceived positive outcomes, including a conducive learning environment and reduced absenteeism among girls.

[1] Children in Standard 8 during the academic year prior to baseline (September 2019–December 2020).
[2] Children in Standard 7 at baseline (2021) who were revisited at midline.

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Cover

Rural SEED Form 1 class. Photo credit: Tobias Maunde, CSR.

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Abbreviations

AY	academic year
CDC	Centers for Disease Control
CDSS	Community Day Secondary School
CSR	Centre for Social Research
DID	difference-in-differences
D4I	Data for Impact
ECFM	early, child, and forced marriage
EQ	evaluation question
FGD	focus group discussion
GBV	gender-based violence
GNAS	Gender Norms and Attitudes Scale
GoM	Government of Malawi
IDI	in-depth interview
KII	key informant interview
MHM	menstrual hygiene management
MKW	average annual amount
MoE	Ministry of Education
PTA	Parent Teacher Association
PEPFAR	President's Emergency Plan for AIDS Relief
PSLCE	Primary School Leaving Certificate of Education
PSU	primary sampling unit
SEED	Secondary Education Expansion for Development
SR-GBV	school-related gender-based violence
SRH	sexual and reproductive health
SMC	School Management Committee
UNC	University of North Carolina
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WASH	water, sanitation, and hygiene
WHO	World Health Organization

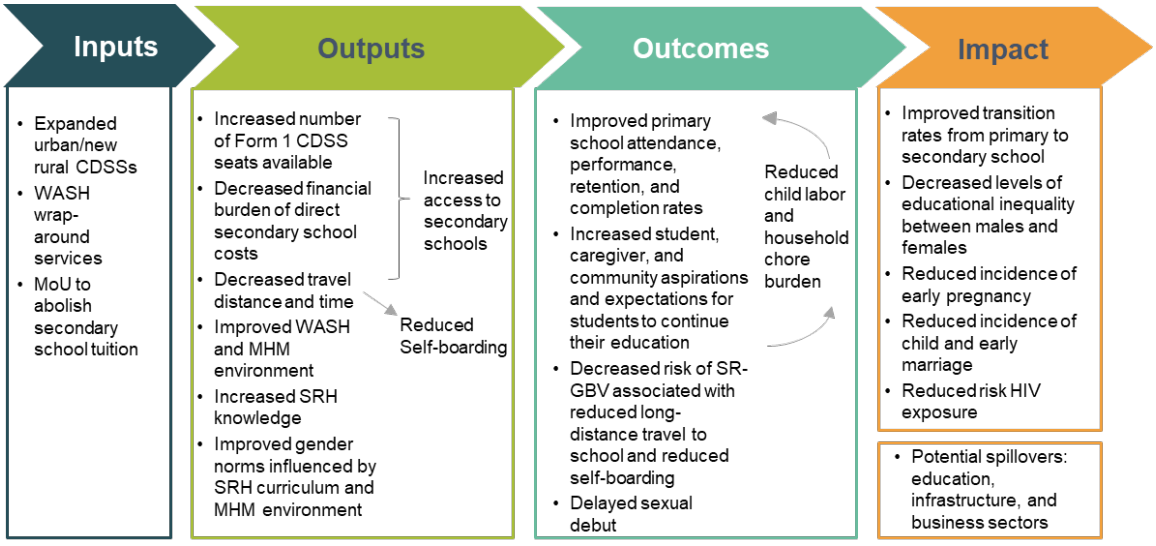
Executive Summary

The Malawi Secondary Education Expansion for Development (SEED) activity is a $90 million commitment from the United States Agency for International Development (USAID) and the President's Emergency Plan for AIDS Relief (PEPFAR) for urban expansion and rural construction of Community Day Secondary Schools (CDSSs). In urban areas, SEED constructed prefabricated classroom blocks, new girl latrine blocks, which include a changing room, and new boy latrine blocks in 30 existing CDSSs in the cities of Blantyre, Lilongwe, Mzuzu, and Zomba. These classroom blocks aimed to reduce overcrowding and improve sanitation and hygiene, reducing absenteeism due to the lack of a clean latrine and changing rooms for girls for menstrual hygiene management (MHM). In rural areas, SEED is constructing new "greenfield" CDSS facilities in areas where secondary school access has historically been limited. The first group of 30 new CDSSs in the Central and Southern regions of Malawi opened in January 2023.

SEED's main development hypothesis is that by providing increased access to CDSSs, young Malawians will attend school rather than move into the "out-of-school" population that impedes the country's future development. With a lack of secondary school opportunities, there is a growing population of youth that is uneducated. Furthermore, young girls who do not have access to education and secondary school often end up getting married and engaging in early sexual activities, increasing their risk of HIV infection. Through the proper design of classroom learning spaces and school facility infrastructure that decreases distance to schools and increases access to secondary education, young Malawians will be provided the opportunity to learn, which will improve economic growth and personal attainment. Furthermore, by providing a proper learning environment (sanitary conditions, decongested classrooms, and closer access to schools), young girls will remain in school longer, reducing the risk of early pregnancy, early marriage, and HIV exposure.

Figure E1 illustrates the activity's theory of change (with a focus on SEED Rural) and provides a visual representation of causal linkages within the SEED project.

Figure E1. Malawi SEED theory of change



Source: Adapted from Statement of Work: Socio-Economic Impact Evaluation of the SEED CDSS Construction in Malawi Activity.

Malawi SEED Impact Evaluation

Data for Impact (D4I) is conducting an impact evaluation of the SEED activity to help understand whether there is a change or impact on communities where SEED is carrying out the expansion and construction of CDSSs. The Malawi SEED impact evaluation is a high-profile evaluation of a historic USAID undertaking in school construction in Malawi, and the findings of the evaluation are expected to receive wide readership. The main audiences for this evaluation comprise USAID, PEPFAR, and the United States Congress. Other important audiences are the Ministry of Education (MoE) and other development partners committed to building or supporting schools in Malawi.

The evaluation covers a broad range of development outcomes, including the impact of SEED on children enrolled in Standard 7 at baseline (2021) in rural SEED CDSS catchment areas on educational outcomes and aspirations; school-related gender-based violence (SR-GBV); early, child, and forced marriage (ECFM); sexual and reproductive health (SRH); water, sanitation, and hygiene (WASH) behaviors, and child safety.

The impact evaluation will answer the following evaluation questions (EQs):

1.1 Key outcome impacts: What is the impact of **SEED Rural** on children enrolled in Standard 7 at baseline in the SEED CDSS catchment areas? Key outcomes of interest include:

- Transition rates from primary to secondary school
- Student performance (Primary School Leaving Certificate of Education [PSLCE] examination) and selection for secondary school
- SR-GBV, including on the way to school and within self-boarding settings
- ECFM

1.2 General attitudinal/behavioral impacts: To what extent does the **construction of new SEED CDSSs in rural Malawi** change the perceptions, attitudes, aspirations, or behaviors related to education and future outlooks among children enrolled in Standard 7 at baseline, their parents or caregivers, local leaders, and educators? To what extent does the **expansion of urban SEED CDSSs in Malawi** change the perceptions, attitudes, aspirations, roles, or behaviors related to education and future outlooks among children enrolled in Form 1 at baseline, their parents or caregivers, local leaders, and educators?

1.3 Healthy behavioral impacts: To what extent does the construction of a new or expanded SEED CDSS positively or negatively affect sexual behaviors, WASH behaviors, and child safety?

1.4 Schooling and business environment spillovers: To what extent have there been changes in the education environment (e.g., teachers leaving primary school to teach in new SEED CDSSs) and the business environment (e.g., infrastructure development, business booms) because of new rural SEED CDSS construction or urban SEED CDSS expansion?

A better understanding of these impacts will help USAID and its multiple partners understand how integrated outcomes can result from secondary school construction in Malawi, fine-tune current investments, and prioritize future investments. The information generated through this impact evaluation

will also contribute toward building the growing body of evidence on the socio-economic and learning impacts (both intended and unintended) of the SEED activity in Malawi.

Methods

This evaluation is a mixed methods impact evaluation that synthesizes both quantitative and qualitative data to address the EQs. The quantitative component focuses on rural communities, while the qualitative component covers both urban and rural areas. There were two rounds of data collection:

- Baseline survey conducted in October–November 2021.
- Midline survey conducted in June–July 2023 (just seven months after the new CDSSs opened in January 2023 due to construction delays, resulting in short-term exposure to the intervention).

The quantitative and qualitative components both focused on education, attitudes and perceptions, SRH, WASH, and child safety outcomes. The evaluation is based on a prospective, quasi-experimental research design using a difference-in-differences (DID) approach to evaluate the quantitative impact of SEED interventions in rural areas (only) on outcomes of interest.

Quantitative

Baseline quantitative data were collected from a panel of students selected from 32 treatment and 32 comparison primary schools in the Northern, Central, and Southern regions of Malawi. Treatment primary schools were designated by the MoE as feeders to the new SEED CDSS being built. We surveyed the head teacher (or a designee) at the 64 public primary schools the students were selected from, and at 58[3] existing CDSSs that were the main CDSSs to which the primary schools fed, according to the primary school respondent. At midline, quantitative data were collected from students who participated in the baseline survey drawn from 26 treatment and 26 comparison primary schools in the Central and Southern regions of Malawi. As the SEED schools in the north were not complete, 12 treatment and comparison schools (six each) were excluded. Additionally, six schools among the 26 sampled primary treatment schools were no longer designated SEED feeder schools at midline by the MoE. As a result, these six schools and their matched comparison schools were excluded from the analysis at midline. Primary school aggregate data were collected from the remaining panel of primary schools (40) as well as from the panel of 46 Central and Southern CDSSs surveyed at baseline. The 46 panel secondary schools were classified as belonging to the "non-SEED treatment" group (21) or comparison group (25) based on the study arm of the primary feeder school(s). Aggregate data were also collected from the 30 new SEED schools.

The DID design estimates the impact of SEED interventions in rural areas by comparing changes in the treatment group between baseline and midline to changes in the matched comparison group over the same period. Due to the quasi-experimental nature of the SEED impact evaluation, household, community, and primary school-level baseline characteristics not expected to be affected by the program are included in the impact estimation models to control for observed differences between the treatment and comparison groups that persisted even after the matching process. Impact estimation was only conducted for those outcomes hypothesized to be on the SEED Rural causal pathway. We present treatment and comparison indicator summary statistics and significance tests by study round for key contextual variables

[3] As some primary schools fed to the same CDSS, there were only 58 CDSSs interviewed at baseline, rather than 64.

of interest. Chi-square significance tests were conducted for categorical variables, and basic regressions were used to conduct significance testing for continuous variables.

The baseline response rates for the retrospective and prospective cohorts were 98.1% and 99.6%, respectively. The midline response rates were 99.4% in the prospective comparison group and 98.7% in the treatment group. The percentage retained in the panel was just over 75% in both groups after excluding respondents from the treatment and comparison of non-SEED feeder schools.

Qualitative

The qualitative component focused on the SEED Rural treatment schools. The evaluation team implemented the baseline urban qualitative component at two newly expanded CDSSs in each of three urban areas: Blantyre, Lilongwe, and Mzuzu. Focus group discussions (FGDs) were held with Form 1 girls and boys and with caregivers of Form 1 youth. In-depth interviews (IDIs) were held with Form 1 girls and boys, and key informant interviews (KIIs) were held with Form 1 teachers and community leaders. At midline, the FGDs, IDIs, and KIIs were implemented at one of the newly expanded CDSSs interviewed at baseline in each of the three urban areas. As the Form 1 students were now in Form 3, data collection focused on Form 3 youth, their caregivers, and Form 3 teachers in addition to community leaders. While the IDIs were held with the same students interviewed at baseline, the midline FGDs and KIIs did not necessarily include the same baseline respondents. A total of 280 respondents participated in the baseline (190) and midline (90) urban qualitative components.

The baseline rural qualitative component was implemented at two primary schools that were expected to feed into the new CDSSs in each of three regions—Northern, Central, and Southern. FGDs were held with Standard 7 girls and boys and caregivers of Standard 7 youth, and KIIs were held with community leaders. At midline, the rural qualitative component was only implemented in the Central and Southern regions, as the construction of SEED schools in the north was not completed. In each of the two regions, two primary SEED feeder schools were interviewed along with two newly opened SEED CDSSs. At each primary school, data collection consisted of FGDs with Standard 7 youth and caregivers of Standard 7 youth. At each SEED school, data collection consisted of FGDs with Form 1 youth and caregivers of Form 1 youth, and IDIs with Form 1 youth. KIIs were conducted with Form 1 teachers and community leaders. A total of 449 respondents participated in the baseline (188) and midline (261) rural qualitative components.

The evaluation team audio recorded, translated, and transcribed all interviews into English. Researchers developed a codebook with deductive and inductive codes. Initially, the codebook developed was based on the categories of topics in the guides. The team used Dedoose software to code the interviews. Inductive codes were added during the coding process as needed. Findings were summarized by topic area, and differences or similarities by type of respondent were noted.

Key Findings

Tables E1 and E2 highlight key SEED impacts related to SEED's theory of change with regard to program input, outputs, and outcomes. Table E3 provides information on education and business spillovers resulting from SEED.

Impacts, such as "positive program impact on student-report of nearby secondary school availability (+ 20 percentage points, $p<0.001$)," can be interpreted as follows: Treatment group respondents were 20

percentage points more likely over time to report that there was a secondary school nearby than comparison group respondents.

Table E1. SEED impacts on program inputs and outputs

SEED impact on program inputs
Beneficiary awareness of new rural CDSSs Positive program impact on student-report of nearby secondary school availability (+ 20 percentage points, p<0.001). Positive program impact on community reports that a CDSS served most community youth (+ 30 percentage points, p<0.05).
Infrastructure improvements, including WASH wraparound services SEED schools had significantly improved MHM facilities and provisions. While 66.7% of SEED schools had water and soap available in a private space, only 23.8% of non-SEED treatment schools had this provision (p<.01), as did 36.0% of comparison schools (p<.05). Similarly, 44.3% of SEED schools had covered bins for the disposal of menstrual hygiene materials, while only 14.3% of non-SEED treatment schools had this provision (p<.05) and 8.0% of comparison schools (p<.01). SEED schools were also more likely to have a girls changing room (96.7%)* compared to non-SEED treatment schools (28.6%) and comparison schools (40.0%) (p<.001). Bathing areas were more common in SEED schools (80.0%) compared to non-SEED treatment schools (33.3%) and comparison schools (36.0%) (p<.001). Rural qualitative study Form 1 youth discussed challenges related to MHM for female students attending secondary schools with no female teachers, as they were reluctant to ask male teachers for the key to the changing room. *One SEED school reported not having a changing room; qualitative findings suggest it may be used for another purpose.
SEED impact on program outputs
Improved WASH and MHM behaviors Significant protective program impact on reported secondary school absenteeism during menstruation (- 20 percentage points, p<0.01).
Improved student optimism and agency No quantitative program impact on measures of student optimism and agency over the future; however, rural qualitative student respondents reported the new SEED schools increased their optimism for the future.
Decreased SR-GBV incidence and decreased concern about SR-GBV and general safety Marginally significant protective program impact on SR-GBV-related school absenteeism among girls in secondary school (-20 percentage points, p<0.10). Marginally significant program impact on a primary school respondent's perception that school travel safety concerns are a serious barrier for girls to join secondary school (-30 percentage points, p<0.10).
Delayed sexual debut and decreased risky sexual behavior There was no program impact on sexual debut before age 15, condom use at first sex, or, in the past 12 months, having multiple sexual partnerships, concurrent sexual partnerships, condom use at last sex, transactional sex with current/most recent partner, or use of family planning.
Improved norms, expectations, and perceived barriers for ECFM Significant program impact on primary school report of marriage as a barrier to girls joining secondary school (40 percentage

points, p<0.05) and boys joining secondary school (30 percentage points, p<0.001).
Improved norms, expectations, and perceived barriers for pregnancy Significant program impact on primary school report that fathering a child is a serious barrier to boys joining secondary school (30 percentage points, p<0.05).
No program impact on: Improved primary school performance or increased primary school participation.

Table E2. SEED impacts on program outcomes

SEED impact on program short term outcomes
Increased availability of Form 1 admission spaces Beneficial rural program impact on perception that a lack of Form 1 admissions spaces is a serious barrier to educational attainment reported by students (-20 percentage points, p<0.05) and primary school respondents (-40 percentage points, p<0.05). Although SEED Urban was planned to reduce overcrowding, not increase the availability of Form 1 admission spaces, there were reports of additional students enrolling in SEED Urban schools due to the expanded facilities.
Decreased travel distance and time Marginal protective program impact on the likelihood that students report travel/distance to secondary school to be a serious barrier to achieving their educational goals (-10 percentage points, p<0.10). On average, SEED schools were 3 km closer to the farthest village that sends students than comparison secondary schools (p<0.05).
Decreased boarding and self-boarding SEED Rural schools significantly less likely to report any students self-boarding than comparison group secondary schools (p<0.05).
Decreased financial burden of direct secondary education costs There was no program impact on household education expenditures for students in secondary school; however, SEED Rural qualitative parents reported that having local CDSS made secondary school more affordable.
Improved education, sexual behavior, and menstruation gender norms Positive program impact on girls' report of supportive community norms around girls attending school during menstruation (+30 percentage points, p<0.01).
Improved HIV knowledge and awareness Negative program impact on student awareness of where to be tested for HIV (-10 percentage points, p<0.05); however, nearly 90% of students at baseline and over 90% at midline in both study groups knew where to be tested for HIV. Some youth and teachers in the rural qualitative component reported noticing a decline in HIV/AIDS campaigns and education.
SEED impact on program distal outcomes
Increased public Form 1 transition rate No program impact on Form 1 transition rates. However, at midline, students in the treatment group were significantly more likely to be selected for Form 1 during second selection than students in the comparison group (42.2% treatment vs. 0.9% comparison,

p<0.001). There was no difference in the likelihood of first selection Form 1 assignment between the study groups.
Decreased incidence of early pregnancy/fatherhood Marginally significant protective program impacts on the percent of female youth who had ever been pregnant or became pregnant before age 18 (-10 percentage points, p<0.10)
Decreased incidence of ECFM Significant protective program impact on incidence of child marriage (-10 percentage points, p<0.05)
No program impact on: Decreased risk of HIV exposure.

Table E3. SEED program education and business environment spillovers at evaluation midline

SEED spillovers
Education spillovers There were no significant differences between treatment and comparison primary schools or secondary schools in the likelihood of having a teacher transfer to a secondary school in any study year. Non-SEED treatment panel schools, however, were marginally significantly more likely to report that a teacher transferred to a newly constructed secondary school during the midline AY than comparison area secondary schools (19.1% vs. 4.0%, p<0.10). Urban SEED qualitative participants reported perceived improvements in teacher-student ratios.
Business environment Urban qualitative results found that community members were hired during the construction/expansion phase, and local businesses benefited from selling goods to construction workers. Also, some community members had gotten jobs at new SEED schools as security guards or cleaners, and local businesses were benefiting from an increased number of new students.
General community infrastructure Some rural qualitative respondents reported that boreholes constructed as part of the SEED school had a positive effect on the surrounding community as it allowed access to clean, safe water.

Table E4 presents summary answers to the four EQs.

Table E4. Midline summary answers to EQs

EQ 1) What is the impact of SEED Rural at midline (less than one year after SEED schools opened) on children who were in Standard 7 at baseline in the SEED CDSS catchment areas?	
Education	**SEED Rural** There were no midline impacts of SEED Rural on school performance, progression, or transition. However, students in the treatment group were over 40 percentage points more likely than comparison group students to be selected for Form 1 during second selection in December 2022 (p<0.001).
SR-GBV	**SEED Rural** No program impact was found on the incidence of student-reported SR-GBV among secondary school girls, but SEED Rural was associated with reduced a likelihood of SR-GBV-related

	absenteeism among girls in secondary school (p<0.10). However, rural qualitative respondents reported a perception that the new SEED schools had a positive impact on child safety.
ECFM	**SEED Rural** SEED Rural had no impact on student or caregiver attitudes towards ECFM, which was viewed highly unfavorably among all study groups at evaluation baseline and midline. However, the program had a significant protective program impact on the incidence of child marriage, with treatment group youth 10 percentage points less likely to marry before age 18 than comparison group youth (p<0.05).
EQ 2) To what extent does the construction of new rural SEED CDSSs and the expansion of existing urban SEED CDSSs change the perceptions, attitudes, aspirations, or behaviors related to education and future outlooks among youth, their parents/caregivers, local leaders, and educators?	
Attitudinal/behavioral impacts	**SEED Rural** – Youth enrolled in Standard 7 at baseline There were no quantitative program impacts at evaluation midline on student optimism and a sense of agency over their future or students' education ideals or expectations. However, rural qualitative student respondents reported the new SEED schools increased their optimism for the future.
	SEED Urban – Youth enrolled in Form 1 at baseline Parents were reportedly optimistic about their children's future due to expanded schools and more motivated to send their children to the expanded schools. Youth reported that primary students were more motivated to do well in school so they could be selected to the expanded schools. Participants also reported perceived reduced absenteeism due to new facilities.
EQ 3) To what extent does the construction of a new or expanded SEED CDSS positively or negatively affect sexual behaviors, WASH behaviors, and child safety?	
Sexual behavior	**SEED Rural** There were no program impacts on incidence of early sexual debut, risky sexual behaviors, or family planning use at midline. Few youth qualitative respondents reported being sexually active, citing a desire to focus on their educational goals and avoid pregnancy.
	SEED Urban Most students reported that they were not sexually active because they feared getting pregnant or making someone pregnant, which would affect their ability to continue their schooling.
WASH and MHM behaviors	**SEED Rural** SEED Rural had a significant protective program impact on reported secondary school absenteeism during menstruation, with female students in the treatment group 20 percentage points less likely than those in the comparison group to report missing school due to their last menstrual period for a reason other than menstrual pain or discomfort (p<0.01). Qualitative respondents indicated that washroom and borehole availability had improved the hygiene of students and their families.
	SEED Urban

	Respondents perceived that students were now better able to maintain social distance to reduce the spread of disease due to new spacious classrooms and smaller class sizes.
Safety	**SEED Rural** There were no quantitative program impacts on perceptions that school travel, boarding, or self-boarding safety are barriers to education. Some qualitative respondents reported perceptions that the newly constructed SEED schools had positive impacts on child safety since children were attending school near their homes.
	SEED Urban Reports of violence were rare across sites.
EQ 4) To what extent have there been changes in the education environment and the business environment because of new rural SEED CDSS construction or urban SEED CDSS expansion?	
Education-related spillovers	**SEED Rural** We did not find evidence that teachers were leaving SEED Rural catchment area primary or secondary schools to take jobs at the new SEED schools. There were no program impacts on report of a shortage of qualified teachers among primary school students, secondary school students, or primary school respondents, and no difference among comparison, non-SEED treatment, or SEED schools at midline.
	SEED Urban Participants reported improved teacher-student ratios and smaller class sizes; however, some teachers noted their workload had increased with the number of classes.
Business environment spillovers	**SEED Urban** Community members were hired during the construction/expansion phase, and local businesses benefited from selling goods to construction workers. Also, some community members had gotten jobs at new SEED schools as security guards or cleaners, and local businesses benefited from an increased number of new students.

Recommendations

1. **We recommend a follow-up survey to assess the longer-term impact of the program given the delay in SEED Rural school openings and the timing of Form 1 selection to SEED schools (two months after the start of the academic year [AY]).** The SEED Rural intervention is essentially an increase in the CDSS supply environment. There was extremely limited exposure time at evaluation midline; however, there is emerging evidence at midline that results are improving, as hypothesized in the SEED Rural theory of change. In addition, qualitative rural caregivers and youth reported that school closures (due to COVID-19, Cyclone Freddy, and cholera) disrupted the school calendar and resulted in poor performance on exams after schools reopened, as students had forgotten some of what they had learned and the full syllabus could not be completed.
2. **Future urban expansions may want to consider building new teachers' latrine blocks in addition to girls' and boys' latrine blocks** to prevent teachers from restricting the new toilets for staff use.

3. **Create and promote clear school guidance on the use of toilets and changing rooms**. Female students (qualitative) reported challenges accessing changing rooms at SEED schools for girls in both rural and urban areas. At one rural SEED school, there were only male teachers who were custodians of the changing room keys, and this was reported to be a barrier to using the changing rooms as female students were embarrassed to request the key.
4. **Explore the possibility of providing special scholarships after natural disasters.** Cyclone Freddy increased/exacerbated the barrier of school-related costs. Qualitative respondents noted that the loss of crops and homes affected household income and the ability to pay school fees and associated costs.
5. **Performance on junior secondary examinations should be monitored going forward to assess the need for catch-up learning and the feasibility of remedial schooling and exam preparation.** This would benefit all students given the learning losses sustained from closures due to Cyclone Freddy and cholera, and would especially benefit students who transitioned to SEED schools given that they had to condense the AY into two terms rather than three.
6. **Schools and their stakeholders (e.g., Parent Teacher Associations [PTAs], mother groups, civil society partners) should ensure continuous availability of soap for handwashing and MHM materials for girls.** These items were lacking at most schools.
7. **Monitor teacher workloads.** While class management has improved with smaller class sizes at urban expanded schools, some teachers noted that their workload had increased with the increased number of classes.
8. **Further investigation into why cost is a persistent and pervasive barrier to secondary education is needed.** While secondary school tuition has been abolished, there was no evidence that schools were increasing other fees or adding new fees in response to the loss of tuition revenue. However, school-related costs continued to be reported as a serious barrier to education at midline in rural areas by both quantitative and qualitative rural students and families.
9. **Encourage increased community, caregiver, and student involvement to support and sustain local secondary schools.**
    9.1. PTAs or School Management Committees (SMCs) should be informed of recent national regulations requiring MoE clearance for school fees exceeding MWK 1,000. This awareness can improve oversight of secondary school fee structures and empower students and caregivers to be aware of their financial obligations and rights.
    9.2. PTAs and SMCs can organize volunteer-based income-generating activities at the school to offset school development costs and/or replenish consumables such as soap and chalk. Examples of such activities include school gardens or handicrafts for sale.
10. **Improve awareness of second selection if future SEED Rural school handover timelines necessitate pupil selection during the second selection phase.** Only about half of the students indicated they were aware of second selection. Qualitative findings were similar, with only about half of the students and caregivers aware of second selection. There is a need to promote awareness and

understanding among students and caregivers of second selection. Given the time lag between first and second selection, it is important that students and caregivers are aware of second selection.

If future SEED Rural handover to the MoE is after the start of the AY and students are not selected until second selection, it will be important to inform affected primary schools and communities so students and caregivers can adjust expectations/reassess their likelihood of second selection given an increased secondary school supply environment.

Conclusion

Results indicated that the construction of new CDSSs in underserved rural areas and the expansion of existing CDSSs in overcrowded urban areas can positively affect youth education, child marriage, and SRH outcomes. Although there were limited statistically significant SEED Rural effects observed at evaluation midline, likely due to short term exposure to the intervention, key indicators were moving in the expected direction that is consistent with the SEED Rural program theory of change. Positive results from the SEED Urban school expansion suggest that additional gains are likely in SEED Rural catchment areas as the new SEED schools ease secondary school availability and access constraints in underserved areas.

1. Evaluation Purpose and Questions

The Malawi Secondary Education Expansion for Development (SEED) activity is a $90 million commitment from the United States Agency for International Development (USAID) and the President's Emergency Plan for AIDS Relief (PEPFAR) for urban expansion and rural construction of Community Day Secondary Schools (CDSSs). D4I is conducting an impact evaluation of SEED activity to help understand whether there is a change or impact on communities where SEED is carrying out expansion and construction of CDSSs. The Malawi SEED impact evaluation is a high-profile evaluation of an historic USAID undertaking in school construction in Malawi, and the findings of the evaluation expect to receive wide readership. The main audiences for this evaluation comprise USAID Operating Units (notably USAID/Malawi and the Africa Bureau), the Bureau for Economic Growth, Education, and Environment (E3)/Education Office, PEPFAR, and the United States Congress. Other important audiences are the Government of Malawi (GoM), primarily the Ministry of Education (MoE) and other development partners committed to building and or supporting schools such as the United Nations Children's Fund (UNICEF), the Japan International Cooperation Agency, the Department for International Development, the World Bank, and the European Union.

The evaluation covers a broad range of development outcomes, including the impact of SEED on children enrolled in Standard 7 at baseline (2021) in rural SEED CDSS catchment areas on educational outcomes and aspirations; school-related gender-based violence (SR-GBV); early, child, and forced marriage (ECFM); sexual and reproductive health (SRH); water, sanitation, and hygiene (WASH) behaviors; and child safety.

The impact evaluation will answer the following evaluation questions (EQs):

1.1 Key outcome impacts: What is the impact of SEED Rural on children enrolled in Standard 7 at baseline in the SEED CDSS catchment areas? Key outcomes of interest include:

- Transition rates from primary to secondary school
- Student performance (Primary School Leaving Certificate of Education [PSLCE] examination) and selection for secondary school
- SR-GBV, including on the way to school and within self-boarding settings
- ECFM

1.2 General attitudinal/behavioral impacts: To what extent does the construction of new SEED CDSSs in rural Malawi change the perceptions, attitudes, aspirations, or behaviors related to education and future outlooks among children enrolled in Standard 7 at baseline, their parents or caregivers, local leaders, and educators? To what extent does the expansion of urban SEED CDSSs in Malawi change the perceptions, attitudes, aspirations, roles, or behaviors related to education and future outlooks among children enrolled in Form 1 at baseline, their parents or caregivers, local leaders, and educators?

1.3 Healthy behavioral impacts: To what extent does the construction of a new or expanded SEED CDSS positively or negatively affect sexual behaviors, WASH behaviors, and child safety?

1.4. Schooling and business environment spillovers: To what extent have there been changes in the education environment (e.g., teachers leaving primary school to teach in new SEED CDSSs) and the business environment (e.g., infrastructure development, business booms) because of new rural SEED CDSS construction or urban SEED CDSS expansion?

A better understanding of these impacts will help USAID and its multiple partners understand how integrated outcomes can result from secondary school construction in Malawi, fine-tune current investments, and prioritize future investments. The information generated through this impact evaluation will also contribute toward building the growing body of evidence on the socio-economic and learning impacts (both intended and unintended) of the SEED activity in Malawi.

2. Background

Every year, the lack of available secondary school admission space in Malawi means that over 20,000 adolescent girls and a similar number of boys graduating from primary schools are denied access to continuing their secondary school education. According to the 2021 Malawi Education Statistics Report, only 50% of Malawian students complete primary school, and only 36.5% transition to secondary school (MoE, 2021). Most of the girls and boys that get admitted into secondary schools travel long distances to the nearest secondary school, particularly in rural areas. Such long distances to secondary school prevent and discourage both boys and girls from attending secondary school. However, this issue affects girls disproportionately, as the farther a girl must travel, the greater the concern for her safety. Parents may also be reluctant to allow their daughters to travel long distances, or the girl herself might think school is not worth the additional risk. Traveling long distances to secondary schools exposes girls to GBV and increases their risk of HIV infection and early pregnancy, and some eventually drop out of school and end up in early marriages.

Limited secondary school spaces also discourage primary school boys and girls because they sense their chances of transitioning to secondary school are limited, often resulting in declining academic performance during upper primary. It is also possible that primary school completion rates are negatively affected since some primary school students end up dropping out of school given the negative factors mentioned above. In addition, some boys and girls who do not drop out of primary school must repeat their final year of primary school to improve their grades, which will boost their chances of being selected for secondary school.

Secondary school fees present a financial challenge for many families, especially in rural areas. In September 2019, the GoM announced a plan to remove secondary school tuition, textbook fees, and general-purpose fees for secondary schools with the goal of improving transition, retention, and pass rates. The plan for the abolition of secondary school fees was announced in tandem with plans to "massively increase the number of secondary schools in the country" to ensure enough spaces "to allow every child that passes Standard 8 to transit to secondary school" (MoE, 2019). The government noted that although the fees were abolished, school administrations, Parent Teacher Associations (PTAs), and school committees may collect money from students to support small-scale projects at individual schools (MoE, 2019).

Comprehensively addressing the barriers and challenges that exist to accessing secondary education will be crucial for Malawi to improve educational attainment for its youth. SEED was designed to address the lack of space and proximity in secondary schools in partnership with the GoM.

2.1 SEED Activity

In urban areas, SEED constructed prefabricated classroom blocks, new boy and girl toilets, and changing rooms for girls in 30 existing CDSSs in the cities of Blantyre, Lilongwe, Mzuzu, and Zomba. These blocks aimed to reduce overcrowding and improve sanitation and hygiene, reducing absenteeism due to the lack of a clean latrine and changing rooms for girls for menstrual hygiene management (MHM). SEED Urban sites were handed over to the MoE between December 2020 and February 2021.

In rural areas, SEED is constructing new "greenfield" CDSS facilities in areas where secondary school access has historically been limited. SEED is a $90 million investment in new CDSSs (complete with boys' and girls'

latrine blocks and changing rooms for girls). The first group of 30 new CDSSs in the Central and Southern regions of Malawi opened in January 2023. Eight schools in the Northern region of Malawi were not yet open at the time of midline data collection (June–July 2023) and were excluded from the evaluation midline.

SEED's main development hypothesis is that by providing increased access to CDSSs, young Malawians will attend school rather than move into the "out-of-school" population that impedes the country's future development. With a lack of secondary school opportunities, there is a growing population of youth that is uneducated. Furthermore, young girls who do not have access to education and secondary school often end up getting married and engaging in early sexual activities, increasing their risk of HIV infection. Through the proper design of classroom learning spaces and school facility infrastructure that decreases distance to schools and increases access to secondary education, young Malawians will be provided the opportunity to learn, which will improve economic growth and personal attainment. Furthermore, by providing a proper learning environment (sanitary conditions, decongested classrooms, and closer access to schools), young girls will remain in school longer, reducing the risk of early pregnancy, early marriage, and HIV exposure.

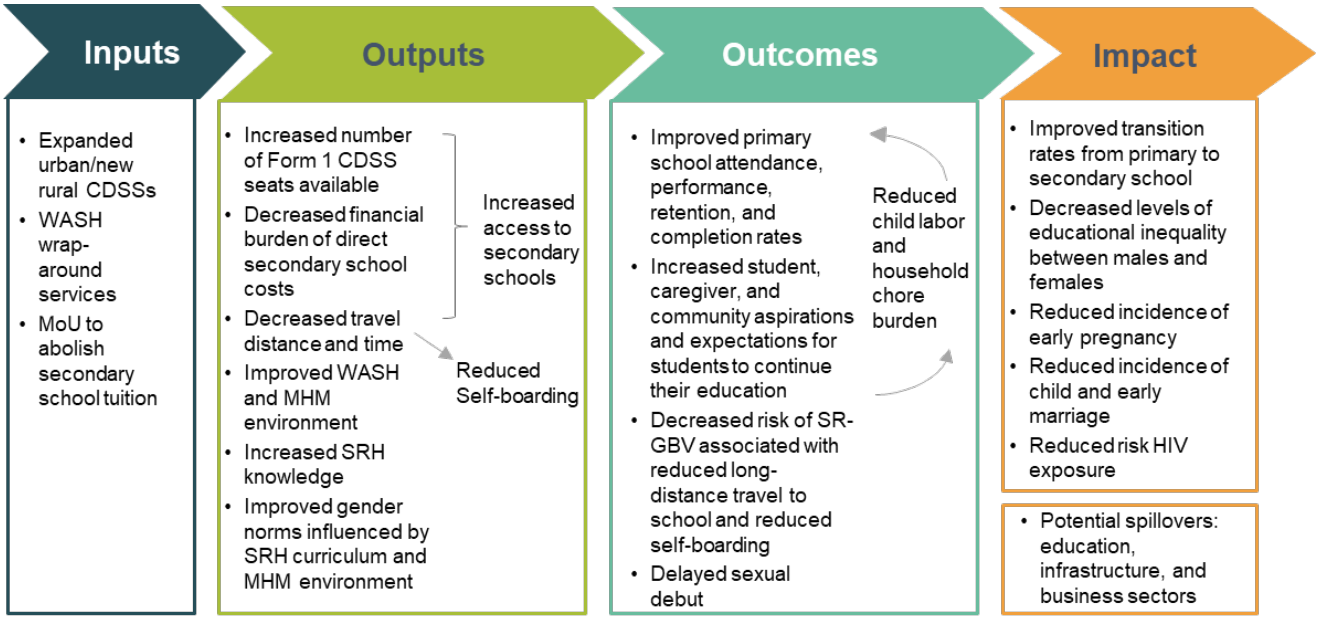
SEED is unique in that it focuses on providing schools with engineered designs appropriate to the local context, ensuring quality of the school construction, and preparing a school community management committee to maintain and operate the new schools. The new schools are being built in communities across Malawi to provide opportunities in underserved areas and improve the lives of Malawians. The integration of appropriate school design, quality construction, and community engagement is expected to result in greater sustainability for the new schools.

Figure 1 illustrates the activity's theory of change (with a focus on SEED Rural) and provides a visual representation of causal linkages within the SEED project.

Examples of important program impact pathways include:

- Embedding newly constructed CDSSs in underserved rural communities will increase the number of Form 1 seats available and decrease travel distance to secondary school, thereby increasing access to secondary school.
- Reduced distance to secondary school will lead to a reduction in SR-GBV risk associated with travel to and from school and self-boarding.
- Increased access to secondary school will result in a reduction of HIV risk, early pregnancy, and early marriage.
- Abolishment of secondary school fees and reduced costs to travel to and from school or self-board will improve access to secondary school.
- Increased access to secondary schools will improve student and caregiver interest in and expectations for educational attainment and will increase secondary school transition rates.
- Increased student and caregiver education-related interest and expectations will decrease child labor and household chore obligations.
- Gender norms may be influenced by wraparound WASH services that improve conditions for MHM at school for girls. Gender norms can influence sexual debut, risky sexual behavior, early and child marriage practices, as well as caregiver aspirations for daughters' education.

Figure 1. Malawi SEED theory of change



Source: Adapted from Statement of Work: Socio-Economic Impact Evaluation of the SEED CDSS Construction in Malawi Activity.

3. Methods and Limitations

This evaluation is a mixed methods impact evaluation that will synthesize both quantitative and qualitative data to address the EQs. The quantitative component will focus on rural communities, while the qualitative component will cover both urban and rural areas. Two rounds of data collection were completed: 1) a baseline survey conducted in October–November 2021, and 2) a midline survey conducted in June–July 2023, just seven months after the new CDSSs opened in January 2023 due to construction delays, resulting in short term exposure to the intervention.

3.1 Quantitative Sampling Design

The baseline and midline quantitative components focused on education, attitudes and perceptions, SRH, WASH, and child safety outcomes in rural areas. The evaluation is based on a prospective, quasi-experimental research design using a difference-in-differences (DID) approach to evaluate the quantitative impact of SEED interventions in rural areas on outcomes of interest.

The target population for the rural quantitative component included male and female students enrolled in primary school Standard 7 during the 2021 academic year (AY) (January 4, 2021–November 19, 2021) in treatment and comparison areas. These students were surveyed as a prospective cohort at baseline because they were expected to benefit from the new schools built by SEED. To measure the pre-intervention primary to secondary school transition rate, we also surveyed a retrospective cohort of students enrolled in Standard 8 during the AY prior to baseline data collection (the 2019–2020 AY which lasted from September 16, 2019, to December 18, 2020 due to COVID-19 closures). In addition to student interviews, the households of the sampled students were located and visited by survey teams to conduct household and primary caregiver interviews. We also implemented a brief community survey with local leaders in the communities where the sampled students resided.

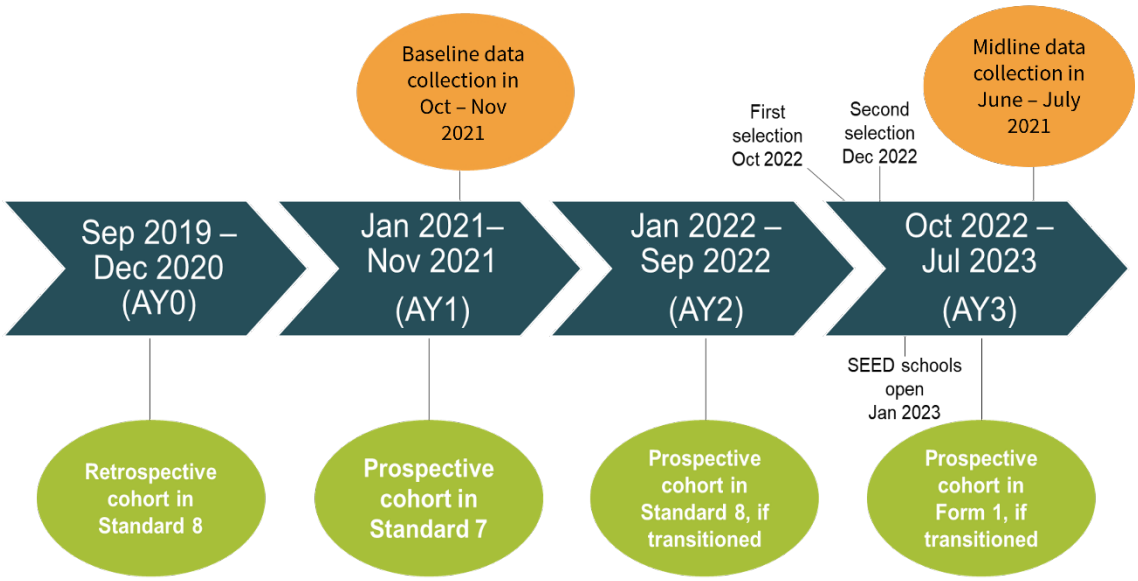
Baseline data were collected from a panel of students selected from 32 treatment and 32 comparison primary schools in the Northern, Central, and Southern regions of Malawi. Treatment primary schools were designated by the MoE as feeders for the new SEED CDSSs being built. We surveyed the head teacher (or a designee) at the 64 public primary schools the students were selected from and at 58[4] CDSSs that were the main CDSS to which the primary schools fed.

At midline, data were collected from students who participated in the baseline survey drawn from 26 treatment and 26 comparison primary schools in the Central and Southern regions of Malawi. As the SEED schools in the north were not complete, 12 treatment and comparison schools (six each) in the north were excluded. Additionally, six schools among the 26 sampled primary treatment schools were no longer designated SEED feeder schools at midline by the MoE. As a result, these six schools, and their matched comparison schools, were excluded from the analysis at midline. Therefore, **the midline analysis sample included students who participated in the baseline drawn from 20 treatment and 20 comparison schools.** Similar to baseline, we gathered students' household and community level data. Primary school aggregate data were collected from the remaining panel of primary schools (40) as well as from the panel of 46 Central and Southern CDSSs surveyed at baseline and the 30 new SEED schools. The 46 panel secondary

[4] As some primary schools fed to the same CDSS, there were only 58 CDSSs interviewed at baseline, rather than 64.

schools were classified as belonging to the "non-SEED treatment" group (21) or comparison group (25) based on the study arm of the primary feeder school(s). Aggregate data were also collected from the 30 new SEED schools. The SEED Rural timeline is presented in Figure 2 by AY, with AY0 indicating the school year before baseline data collection and AY3 indicating the school year during which midline data were collected. The expected grade progression for the prospective cohort and secondary school first selection (October 2022), second selection (December 2022), and opening of the 30 new SEED schools (January 2023) are highlighted in the timeline.

Figure 2. SEED Rural evaluation timeline



3.1.1 Study Populations

The quantitative component of the Malawi SEED impact evaluation was designed to be representative of rural SEED activity at the national level. The sampling strategy and power calculations were based on the primary to secondary school transition rate, which is the key outcome of interest in the evaluation.

At baseline, we sampled both a retrospective and prospective cohort of students in treatment and comparison areas to measure change in the primary to secondary school transition rate over time. An important consideration for the evaluation design was that rural CDSSs select most of their students from a list of assigned primary "feeder" schools, with only a small percentage of students selected from non-feeder schools. The baseline prospective cohort consisted of students in the current-at-baseline year's primary school Standard 7 roster (AY January 4,

Prospective cohort: Children in Standard 7 at baseline (2021) who were revisited at midline.

Recruited from 32 treatment and 32 comparison rural primary schools, 6 girls and 6 boys per school.

Retrospective cohort: Children in Standard 8 during the AY prior to baseline (September 2019–December 2020).

Measurement of pre-intervention information. Sampled from the same 64 schools, 5 boys and 5 girls per school.

2021–November 19, 2021), and the baseline retrospective cohort consisted of students from the Standard 8 roster in the previous AY (September 16, 2019–December 18, 2020). Only the prospective treatment and comparison samples were followed over time at evaluation midline (2023).

3.1.2 Statistical Power and Sample Size Calculations

In consultation with USAID/Malawi, we powered the evaluation study to detect a 14-percentage point change in the transition rate from primary school Standard 8 to secondary school Form 1 at 80% power among a mixed group of boys and girls. We assumed the following for our sample size calculations: a baseline transition rate of 33% (based on estimates of the 2019 primary to public secondary transition rate using the 2018 Standard 8 enrollment and 2019 Secondary School Selection Data for the rural areas of the SEED districts (GoM MoEST, 2018); a 5% non-response rate at baseline and at midline; a 10% attrition rate between baseline and midline; an intra-class correlation coefficient of 0.021 for the transition to secondary school; a correlation of 0.3 between transition rates within the same school over time; and a design effect based on the 0.021 intra-class correlation coefficient and 10 children in school per cluster based on 2016 Malawi Integrated Household Survey data.

Sample size calculations were conducted in four steps: (1) base estimate assuming zero non-response with a simple random sample; (2) adjustment for cluster sampling effects; (3) adjustment for baseline non-response in the retrospective cohort and adjustment for baseline non-response, midline non-response, and attrition in the prospective cohort; and (4) allocation of students across 32 primary schools in treatment areas and 32 primary schools in comparison areas. This resulted in a total baseline sample size of 1,408 students, implemented as a 32 cluster (primary feeder school) by 704 individual student design (320 retrospective cohort and 384 prospective cohort) in both treatment and comparison groups. In each of the 32 sampled primary feeder schools in treatment areas and 32 sampled schools in comparison areas, 10 children (5 boys and 5 girls) were randomly selected from the 2019/2020 Grade 8 roster for a total retrospective cohort of 640 students; 12 students (6 boys and 6 girls) were randomly selected from the 2021 AY's Grade 7 roster for a total prospective cohort of 768 students. Table 1 provides a summary of the baseline sample.

3.1.3 Selection of the Treatment Group

The primary sampling units (PSUs) for the treatment group were primary feeder schools assigned to the new SEED CDSSs at the time of baseline data collection; thus, the primary sampling frame for the treatment group comprises 137 primary schools assigned as "feeder schools" for the 38 new rural SEED CDSSs nationwide. A total of 32 primary schools were randomly selected from the list of feeder primary schools for the new rural SEED schools. The PSUs were stratified by region (Northern, Central, and Southern) proportional to the total number of treatment schools to ensure representativeness at the national level. In each selected school, 10 children (5 boys and 5 girls) were randomly selected from the Standard 8 roster of the 2019–2020 AY for a total retrospective treatment cohort of 320 children; 12 children (6 boys and 6 girls) were randomly selected from the 2021 AY's Standard 7 roster for a total prospective treatment cohort of 384 children (the student-level panel consists only of the prospective cohort) (Table 1).

Table 1. Quantitative component sample design by intervention arm

	Treatment	Comparison	Total
Sampled primary feeder schools	32	32	**64**
Sampled students			
Retrospective cohort (Enrolled in Grade 8 2019/2020 AY)	320	320	640
Prospective cohort (Enrolled in Grade 7 2021 AY)	384	384	768
Total	704	704	**1,408**

3.1.4 Identification and Selection of the Comparison Group

It is necessary to have data from a credible comparison group to conduct an impact analysis. In the absence of a randomly assigned control group, the best comparison group is one that does not receive the intervention and is as similar as possible to the treatment group in every factor influencing both the selective treatment assignment and the outcome of interest. For this non-experimental evaluation, the comparison group was identified at the PSU-level; 32 primary schools were randomly selected that were non-feeders to the new rural SEED schools. Within each region, the universe of potential comparison schools included primary feeder schools for non-SEED CDSS schools, excluding any feeder school that is within 5 km of a SEED school. Each of the 32 schools selected for the treatment group was matched to a comparison school in neighboring areas of the same region based on primary feeder school characteristics, as well as similar education supply (transition rates for boys and girls, student-teacher ratio, distance to the nearest public secondary school, and the ratio of students to classrooms).

3.2 Sampling Strategy for the Qualitative Component

Based on a review of relevant sampling literature, researchers set numbers of key informant interviews (KIIs), in-depth interviews (IDIs), and focus group discussions (FGDs) that were expected to yield a high level of theme saturation within a limited budget (Guest, et al., 2006 and Guest, et al, 2017).

3.2.1 Urban

The evaluation team implemented the baseline urban qualitative component at two newly expanded CDSSs in each of three urban areas: Blantyre, Lilongwe, and Mzuzu. Researchers purposively selected the CDSSs to represent one peri-urban and one urban area in each city. At each of the six sites, four FGDs were held—one with Form 1 girls, one with Form 1 boys, one with female caregivers of Form 1 youth, and one with male caregivers of Form 1 youth. In addition, IDIs were conducted at each site with one Form 1 girl and one Form 1 boy, as were KIIs with one Form 1 teacher and one community leader. Urban baseline data collection therefore consisted of a total of 12 FGDs with Form 1 youth from urban expanded schools, 12 FGDs with caregivers of targeted youth, 12 IDIs with targeted youth, 6 KIIs with Form 1 teachers, and 6 KIIs with community leaders.

At midline, the urban qualitative component was implemented at one of the newly expanded CDSSs interviewed at baseline in each of the three urban areas. As the Form 1 students were now in Form 3, data collection focused on Form 3. At each of the three sites, four FGDs were held—one with Form 3 girls, one with Form 3 boys, one with female caregivers of Form 3 youth, and one with male caregivers of Form 3

youth. In addition, IDIs were conducted at each site with one Form 3 girl and one Form 3 boy (same students interviewed at baseline) and KIIs were conducted with one Form 3 teacher and one community leader. Data collection therefore consisted of six FGDs with Form 3 youth, six FGDS with caregivers, six individual IDIs with Form 3 youth, three KIIs with Form 3 teachers, and three KIIs with community leaders.

3.2.2 Rural

The evaluation team implemented the baseline rural qualitative component at two primary schools that will feed into new CDSSs in each of three regions—Northern, Central, and Southern. The research team purposively selected the schools to achieve ethnic and geographic diversity. At each of the six sites, four FGDs were held—one with Standard 7 girls, one with Standard 7 boys, one with female caregivers of Standard 7 youth, and one with male caregivers of Standard 7 youth. In addition, a KII was held with one community leader. Rural data collection therefore consisted of a total of 12 FGDs with Standard 7 youth, 12 FGDs with caregivers of targeted youth, and 6 KIIs with community leaders.

At midline, the rural qualitative component was only implemented in the Central and Southern regions as the construction of SEED schools in the Northern region was not completed. In each of the two regions, two primary SEED feeder schools were interviewed along with two newly opened SEED CDSSs. At each primary school, data collection consisted of two focus groups with Standard 7 youth (male and female) and two focus groups with caregivers of Standard 7 youth (male and female). At each new SEED school, data collection consisted of two FGDS with Form 1 youth (male and female), two FGDs with caregivers of Form 1 youth (male and female), one KII with Form 1 teacher, and one KII with a community leader. Rural data collection therefore consisted of eight FGDs with Standard 7 youth, eight FGDs with their caregivers, eight FGDs with Form 1 youth at new SEED CDSSs, eight with their caregivers, and four KIIs each with Form 1 teachers and community leaders.

At both urban and rural sites, there was a unique FGD, IDI, or KII guide for each category of respondent, and interviewers/facilitators were sex-matched to respondents (e.g., a woman led FGDs with female students). Respondents were selected by the data collection team in collaboration with the head teacher and respective class teacher.

3.3 Survey Instruments

3.3.1 Quantitative

The prospective cohort of students, including their households, caregivers, schools, and communities, were reinterviewed at study midline. The following five questionnaires were administered at both baseline and midline:

- **Student Questionnaire:** Separate questionnaires were administered by direct interviews to male and female students (the SR-GBV module was only implemented among girls); content focused on EQs 1–3 and program implementation.
- **Caregiver Questionnaire:** Major content focused on EQ 2 and program implementation. The respondent was the household member identified as the person most responsible for the sampled student.
- **Household Questionnaire:** Major content included demographic, socio-economic, and household WASH characteristics. The respondent was the household head or the caregiver.
- **School Questionnaire:** Content focused on WASH components of EQ 3 and school conditions

related to program implementation and possible spillovers outlined in EQ 4. A module on school-level aggregate performance measures was included to collect data such as primary and secondary completion rates, enrollment numbers, and grade-specific dropout rates, subject to data availability at each school. The respondent was the head teacher or their designee.

- **Community Questionnaire:** Content focused on community infrastructure, access to schools and other public services, presence of community organizations, and other basic community characteristics.

We collected geographical coordinates, other relevant location information, and reference contacts from households and schools to facilitate revisiting them in subsequent years. At baseline, we also collected data on salient COVID-19 conditions to understand how education outcomes might have changed in response to the pandemic. At midline, we collected data on the impact of Cyclone Freddy for a similar purpose.

Table 2 provides a summary of the respondents and cohorts intended to serve as rural quantitative midline evaluation comparisons by EQ and key indicator group.

Table 2. Respondents and reference cohorts for rural quantitative EQs

EQ1. Education	• **Baseline retrospective + Midline prospective cohorts**: Form 1 transition rate, Standard 8 repetition rate, dropout rate • **Primary school instrument**: Secondary school selection rate • **Both student and primary school instruments**: PSLCE pass rate
EQ1. SR-GBV	• **Baseline retrospective + Midline prospective cohorts**: experience of SR-GBV and SR-GBV-related school absence
EQ1. ECFM	• **Prospective cohort**: all ECFM indicators
EQ2. Attitudinal/behavioral impacts	• **Baseline prospective and retrospective + Midline prospective cohorts**: aspirations, expectations, optimism, and perceived barriers to educational attainment • **Primary and secondary school instruments**: perceived barriers to educational attainment
EQ3. Sexual behavior	• **Prospective cohort**: all sexual behavior indicators
EQ3. WASH environment	• **Baseline retrospective + Midline prospective cohorts**: MHM barriers and experiences • **Secondary school instrument**: WASH and MHM environment
EQ3. Safety	• **Baseline retrospective + Midline prospective cohorts**: indicators related to secondary school travel and boarding safety
EQ4. Schooling and business environment spillovers	• **Primary school instrument**: teacher transfers to secondary schools • **Secondary school instrument**: under-qualified teachers staffing secondary schools

3.3.2 Qualitative Tools

At baseline, we developed interview guides for FGDs with students (rural Standard 7 and urban Form 1), FGDs with caregivers (rural Standard 7 and urban Form 1), and KII guides for teachers (Form 1 at urban sites

only) and community leaders (rural and urban). We also developed an IDI guide for Form 1 students at urban sites.

Midline tools included minor revisions to the baseline tools (e.g., urban tools were updated for Form 3 students), and additional tools were developed for expanded data collection in rural areas. This included interview guides for FGDs and IDIs with rural students in Form 1.

Themes explored in the FGDs were similar for students and caregivers, albeit from different perspectives. FGDs with students explored their attitudes toward school and their future, experience of the new/expanded school, the construction period, transit to school, perceived impact(s) of the new/expanded school, and knowledge of GBV amongst peers. FGDs with caregivers explored the community and household experience of the expanded/new schools and the construction period, perceived impact(s) of the new/improved schools, caregiver attitudes toward children's schooling and future, and the existence of other health, education, or related programs in the area.

For all rural FGDs, schools were not yet constructed, so the perceived impact(s) of the new schools were not addressed until midline.

IDIs with urban (baseline and midline) and rural (midline) students provided more in-depth information on the same topics addressed with students in the FGDs and explored more sensitive topics that students may not feel comfortable discussing in a group, such as GBV, sexuality, and menstruation.

KIIs with teachers addressed the perceived impact(s) of the SEED CDSSs, how teachers experienced the SEED CDSSs and construction period, and other factors potentially affecting student health and education. KIIs with community leaders addressed the perceived impact(s) of the SEED CDSSs on households and the community at urban sites (including infrastructure and business environment), how the community experienced the new/expanded school and construction period, perceived barriers to secondary education in the community, and other factors potentially affecting student health and education.

Similar to the FGDs, the perceived impact(s) of the SEED CDSSs in rural areas were not addressed in IDIs and KIIs until midterm.

3.4 Data Collection

The data collection team, at both baseline and midline, was trained by the Centre for Social Research (CSR) at the University of Malawi in collaboration with the D4I team. Training topics included an in-depth review of all data collection tools in English, Chichewa, and Tumbuka, as well as sessions on human subjects' protection, interviewing techniques, GBV, and the use of tablets (quantitative) and audio recorders (qualitative). In addition, the team role-played interviews and carried out a two-day pilot of the study tools in Zomba. Researchers piloted the translated tools to refine the translations, test the methods, and allow the data collection team to internalize the tools. Translation changes were made following the pilot. Baseline training, including the pilot, took place in Zomba from September 28, 2021, to October 8, 2021, and data collection occurred from October 11, 2021, to November 15, 2021. Midline training, including the pilot, took place in Zomba from May 22, 2023, to June 2, 2023, and data collection occurred from June 5, 2023 to July 8, 2023.

3.5 Response and Retained-in-Panel Rates

The baseline response rate for the retrospective and prospective cohorts was 98.1% and 99.6%, respectively. Students with inconsistent data[5] were removed from the analysis sample, such that the percentage of interviewed students in the baseline analysis sample was 94.2% and 99.3% in the retrospective and prospective cohorts, respectively.

As previously noted, SEED schools in the Northern region were not completed at the time of data collection, and thus the Northern region was excluded from the evaluation midline. Additionally, six treatment schools (and their six matched comparison schools) in the Central and Southern regions that were no longer SEED feeder schools at midline were excluded from the analysis. The midline analysis sample retains 20 of the 32 baseline sampled primary schools in each study arm (40 total primary schools).

The midline response rates were 99.4% in the prospective comparison group and 98.7% in the treatment group. The percentage retained in the panel was just over 75% in both groups after excluding respondents from the treatment and comparison non-SEED feeder schools. (Table 3).

Table 3. Midline response and retained-in-panel rates, sampled students

	Comparison	Treatment
Baseline – Retrospective cohort	311	318
Excluding the North	259	260
Retained % of baseline after excluding North	83.3%	81.1%
Excluding non-SEED feeder schools at midline [A]	199	201
Retained % of baseline in midline analysis	64.0%	63.2%
Baseline – Prospective cohort	382	383
Excluding the North	311	311
Retained % of baseline after excluding North	81.4%	81.2%
Excluding non-SEED feeder schools at midline [A]	239	239
Retained % of baseline in midline analysis	62.6%	62.4%
Midline – Prospective cohort panel	309	307
Retained % of prospective baseline in midline panel	99.4%	98.7%
Excluding non-SEED feeder schools at midline [A]	236	233
Retained % of panel in midline analysis	76.4%	76.9%

Notes: (A) Excluding 6 primary treatment schools (and their 6 matched comparison schools) that were no longer SEED feeder schools at midline.

[5] Retrospective cohort respondents who indicated they were not attending school or Standard 8 in 2019–2020 AY and prospective cohort respondents who indicated they were not attending school in 2021 AY or being in a grade different than Standard 7.

3.6 Analysis

3.6.1 Quantitative Component

The objective of the analysis presented in this midline report is twofold: first, to present midline estimates of the rural SEED program impact for the different topics of interest of the evaluation, and second, to examine differences in the key factors that provide context and insight for interpreting and understanding program effects.

In general, midline analyses were conducted as follows:

- Among the panel of prospective cohort youth for student, caregiver, and household-level outcomes of interest.
- Among the panel of sampled primary schools for primary school-level outcomes of interest.
- Among the panel of government secondary schools (baseline and midline) and the 30 SEED schools (midline).

Alternate reference groups were used for particular outcome groups and are specified in the results tables. For example, school dropout, repetition, and transition rates are examined using baseline data from all retrospective cohort students and midline data from prospective cohort students who were in Standard 8 during the January–September 2022 AY.

Quantitative data processing and analysis were conducted using Stata18 (StataCorp, 2023); we present unweighted sample sizes, and the indicator values, impact estimates, and statistical tests use relevant survey design features (i.e., stratification, clustering, and sample weights). We define statistical significance as a p-value lower than 0.05; however, given the substantial reduction in sample size resulting from the exclusion of the Northern sample and the six treatment primary schools that were no longer SEED feeder schools at midline (and their corresponding six matched comparison schools), we also note p-values lower than 0.10 as marginally significant.

Impact Estimation Strategy

The DID design estimates the impact of SEED interventions in rural areas by comparing changes in the treatment group between baseline and midline to changes in the matched comparison group over the same period. Due to the quasi-experimental nature of the SEED impact evaluation, household, community, and primary school-level baseline characteristics[6] not expected to be affected by the program are included in the impact estimation models to control for observed differences between the treatment and comparison groups that persisted even after the matching process. The DID approach also removes any time-invariant, unobserved differences from both the treatment and comparison groups. We calculate average marginal effects and report estimates of program impact and the general time trend in the comparison group.

[6] Control variables for student, caregiver, and household respondent outcomes included: household characteristics (household size and demographic composition, the Innovations for Poverty Action (2018) national poverty score, student orphanhood, and household head gender, age, marital status, disability and chronic disease status, and educational attainment); community characteristics (proxy measures of rurality including population size and distance to the government primary and secondary schools that serve the majority of community youth); and characteristics of the sampled primary school (sex of head teacher, rainy season accessibility, male and female Std. 8 enrolment levels, distance to the farthest village that sends pupils to the school, and the distance to the government secondary school the primary school feeds to). Primary school outcome models also included control variables for WASH and MHM infrastructure and additional measures of school rurality (distances to the Teacher Development Center and the District Education Manager's office). Because multiple primary schools feed each secondary school, no control variables were included in secondary school outcome models.

Descriptive Analysis

Impact estimation was only conducted for those outcomes hypothesized to be on the SEED Rural causal pathway. We present treatment and comparison indicator summary statistics and significance tests by study round for key contextual variables of interest. Chi-square significance tests were conducted for categorical variables, and basic regressions were used to conduct significance testing for continuous variables.

3.6.2 Qualitative Component

The evaluation team audio recorded, translated, and transcribed all interviews into English. Researchers developed a codebook with deductive and inductive codes. Initially, the codebook that was developed was based on the categories of topics in the guides. The team used Dedoose software (https://www.dedoose.com/) to code the interviews. To improve intercoder reliability, each member initially coded the same two interviews and then met as a group to discuss the use of the codes and agree on a common understanding of each. Inductive codes were added during the coding process as needed. Findings were summarized by topic area, and differences or similarities by type of respondent were noted.

3.7 Limitations

3.7.1 Baseline Limitations

Difficulties arose in finding students or households during baseline data collection, particularly among retrospective cohort students who moved away from their household. To mitigate this, we included male and female replacement samples for both prospective and retrospective cohorts when the study samples were drawn from each primary school, enabling us to reach our target baseline sample size. Some of the primary schools sampled for the rural quantitative component had to be replaced either because there were too few students in Standard 7 or 8 and thus the minimum sample size could not be obtained, or because class registers were lost or unavailable during the fieldwork visit. The number of caregivers and/or household respondents slightly exceeded the number of sampled students in the retrospective cohort, as caregivers were interviewed if the sampled student was a household member but away at school or for another temporary reason and could not be interviewed.

Urban qualitative data collection took place after the school expansions were completed, and there was no “baseline” against which to compare outcomes for students, caregivers, or community leaders. We relied on the respondent’s retrospective reports, which may have been inaccurate. Also, reports of perceived reduced absenteeism and increased enrollment were not triangulated with official school records, as that was outside the scope of the evaluation.

3.7.2 Midline Limitations

There are two important limitations to the rural SEED midline impact evaluation: 1) the loss of nearly 40% of the evaluation sample, and 2) the late opening of the Central and Southern SEED schools.

The first limitation of the midline impact evaluation is the sample loss of the Northern region and 12 Central and Southern PSUs (six treatment primary schools that were no longer SEED feeder schools at midline and their corresponding six matched comparison primary schools), resulting in a net loss of 37.5% of the prospective student cohort. The loss of study participants resulted in a reduction of statistical power

for midline program impact estimates.[7] A decrease in statistical power results in an increase in the Type II statistical error probability (i.e., false negative), meaning that we are more likely to estimate non-significant program impacts when true significant impacts exist.

The second and most critical limitation of the midline impact evaluation was the late opening of the Central and Southern SEED schools, resulting in a delayed and reduced exposure of the treatment group to the SEED intervention. Construction for the group 1 rural SEED schools was originally scheduled to begin in June 2021, with final handover to the MoE anticipated by August 2022, well before the October start of the 2022/2023 AY. However, Central and Southern group 1 rural SEED schools were not opened until January 2023, coinciding with the start of the second term in the 2022/2023 AY. Due to the delayed opening, SEED schools were not included in the first selection list, which was published approximately three weeks before the start of the October 2022 term. SEED schools were only included on the second selection list, published in December 2022, at which time the first academic term was nearly completed. Second selection does not typically push many students into secondary schools—most government secondary school seats are filled during first selection. This means that at midline, the first selection, which is the main driver of secondary school assignment, occurred before the SEED intervention was implemented, and the program only affected the second selection Form 1 transition process. Additionally, the increase in available secondary school seats between first and second selection did not occur at baseline in either study arm or at midline in comparison areas, which could introduce bias to impact estimation for the Form 1 transition rate, Standard 8 repetition rate, school dropout rate, and related outcomes dependent on the timing of secondary school selection.

Qualitative reports of perceived reduced absenteeism and increased enrollment were not triangulated with official school records, as that was outside the scope of this evaluation.

There were inconsistencies between quantitative vs. qualitative reports on selected outcomes, like GBV. Due to social desirability bias, respondents may have underreported their own behaviors or experiences in the survey component compared to their reports of the behaviors or experiences of others in qualitative components.

3.7.3 General Evaluation Limitations

One potential problem for the SEED Rural impact evaluation design was contamination of the comparison group if comparison group youth living similar distances from their assigned secondary school to a new SEED CDSS could request to transfer into the SEED CDSS. We conducted several checks of the midline data and did not find evidence that contamination was administratively or geographically likely or that comparison group students joined SEED schools. The SEED primary school feeder list was adjusted between the baseline and midline surveys, but no comparison group primary schools became feeders for the new SEED CDSSs. Similarly, no SEED school reported a sampled comparison group primary school as a

[7] The original SEED Rural impact evaluation was powered at 80% to detect a 14-percentage point change in the transition rate from Standard 8 to Form 1 given 32 treatment and 32 comparison primary schools. At midline, after excluding primary schools in the north and that were no longer SEED Rural feeder schools, 20 primary schools were retained in each study arm for the evaluation. Based on the reduced sample size and maintaining all other assumptions from the baseline power calculations, the midline evaluation is powered at approximately 60% to detect a 14-percentage point program impact on the transition rate. This means that the midline evaluation sample size supports a 60% chance of correctly detecting a statistically significant 14-percentage point or higher program impact if a true impact exists. Conversely, if a true program impact exists, there is a 40% chance the midline evaluation will fail to detect it, which presents a considerable risk of missing significant SEED Rural program impacts.

feeder school. We conducted a geospatial examination of comparison group primary schools and prospective cohort household locations against the location of the new SEED schools and did not observe any comparison group primary schools or households that were closer to a SEED CDSS than a panel comparison area secondary school. Lastly, none of the comparison group prospective cohort students who transitioned to Form 1 at midline were attending a SEED CDSS.

An additional limitation of this evaluation relates to the amount of time between exposure to the SEED Rural intervention and the midline survey. We expect there to be a time lag between program implementation (i.e., an increase in the secondary school supply environment) and corresponding changes in expectations and behaviors, so it is possible that we could have detected greater program impacts on outcomes related to improved education expectations stemming from increased secondary school access if there was more time between when the SEED schools opened and the midline data were collected. For example, improved student and caregiver expectations for educational achievement are hypothesized to result in a decreased incidence of ECFM, risky sexual behavior, and pregnancy rates.

Lastly, it is unlikely that the program could have a detectable impact on outcomes with extreme baseline prevalences (e.g., nearly 100% or no prevalence), as these very high or very low rates leave little room for change. For example, detecting any program impact on ideal or expected education levels among youth and caregivers is unlikely given the already high findings at baseline.

3.8 Ethical Considerations

The University of Malawi Research Ethics Committee reviewed and approved the study protocol and tools (baseline: P.09/21/82; midline: P.04/23/233). The Institutional Review Board of University of North Carolina, Chapel Hill also reviewed the study and determined that it was not human subjects research. Special precautions and protections were implemented for the administration of survey questions on GBV among female students. The evaluation and data collection teams followed recommendations for the ethical and safe conduct of research on GBV and violence among children and adolescents (CDC, 2017; Fontes, 2004; Innovations for Poverty Action, 2018; WHO, 2018; WHO, 2017; WHO, 2016; WHO, 2001).

3.9 Gender Integration

Gender has been explicitly integrated throughout the evaluation design, data collection, and analysis. Data collection tools and the data collection process included attention to gender. D4I quantitative data analysis explored potential gender-related patterns. In addition, qualitative data analysis explored whether emerging themes differ by similar demographic factors when possible and examined data that specifically addressed gender, such as that about SR-GBV and attitudes towards girls' education.

We trained interviewers and supervisors to sensitize them to issues surrounding GBV and to the specific concerns regarding the collection of data on violence. We administered the GBV questions to only one eligible female student in each selected household; interviewing only one female per household for GBV questions minimizes security breaches due to other household members knowing that information on GBV was shared. Also, we did not ask males about GBV; interviewing male and female peers in the same community about GBV would alert potential male peer perpetrators to the fact that girls in the survey are being asked about GBV and pose a security risk.

We sampled males and females for FGDs, but these groups were sex segregated. In the FGD set-up, CSR determined the best times and places to hold the FGDs, considering local gender norms on where and

when it is acceptable for males vs. females to meet. Male and female key informants were interviewed to gather balanced perspectives on the outcomes. CSR data collectors also included females and males, and we sex matched interviewers, enumerators, and participants as needed based on local cultural norms.

The data analysis explored potential gender-related patterns. In addition, qualitative data analysis explored whether emerging themes differ by similar demographic factors when possible and examined data that specifically addressed gender, such as that about GBV, early and forced child marriage, and attitudes toward girls' education.

4. Baseline Balance Between Intervention Groups

As the Malawi SEED impact evaluation uses a non-experimental study design, it is important to statistically assess the similarity between the treatment and matched comparison groups at baseline to determine whether the matching process resulted in a balanced sample. We reassessed baseline balance for the midline impact evaluation report to determine whether baseline balance detected in the full sample was maintained in the restricted midline evaluation sample (excluding data from the Northern region due to incomplete school construction and 12 primary schools resulting from adjustments in SEED primary feeder school assignments). We examined baseline balance for key education outcomes, intermediate outcomes and mediating variables, and potential control variables for the sampled and matched primary schools (the PSUs), as well as among students, caregivers, and households within each retrospective and prospective cohort. We defined statistical significance as a p-value lower than 0.05, which indicates that baseline values differ significantly between treatment and comparison groups.

Table 4 presents the balance summary[8] between the comparison and treatment groups for the prospective and retrospective cohorts, primary and secondary schools, and communities by result area. At baseline, 94.9% of the over 1,200 indicators we assessed were balanced between the treatment and comparison groups across the prospective and retrospective cohort students, caregivers, household respondents, and primary school respondents. We reassessed baseline balance for the midline impact analysis in 630 indicators across the prospective and retrospective cohort respondents, primary and secondary school respondents, and community respondents and found that 95.2% of indicators were balanced between the treatment and comparison groups, indicating that overall baseline balance between study arms was maintained after excluding the Northern region and 12 Central and Southern primary schools from the rural evaluation sample. This level of overall balance is acceptable, as we expect to detect a spurious imbalance in 5% of the tested indicators given the 0.05 alpha level for significance. Overall balance results establish an acceptable level of similarity between treatment and comparison groups, and existing differences between these two groups will be controlled for during program impact estimation.

Table 4. Baseline balance in the midline evaluation sample, 0.05 significance level

	Prospective cohort, schools, and communities			Retrospective cohort		
	# Imbalanced variables	# Assessed variables	% Balanced	# Imbalanced variables	# Assessed variables	% Balanced
Sample characteristics	2	69	97.1	2	69	97.1
SEED implementation and context	4	144	97.2	3	25	88.0
Key outcomes (Education, SR-GBV, ECFM)	2	79	97.5	4	26	84.6
Attitudes and behaviors	9	89	89.9	0	3	100.0

[8] Further details on the baseline balance analysis can be found in the baseline report.

	Prospective cohort, schools, and communities			Retrospective cohort		
	# Imbalanced variables	# Assessed variables	% Balanced	# Imbalanced variables	# Assessed variables	% Balanced
Healthy behaviors	1	79	98.7	2	14	85.7
Education sector	1	29	96.6	0	4	100.0
Overall balance	**19**	**489**	**96.1**	**11**	**141**	**92.2**

4.1 Baseline Balance Implications for the Midline Impact Evaluation

Balance in four key indicator groups is particularly important to the impact evaluation: 1) characteristics used to match comparison schools to sampled treatment schools, 2) exposure to intervention components, 3) main educational outcomes, and 4) important intermediate outcomes along the SEED program theory of change.

4.1.1 Characteristics Used for Matching

We used primary school and education supply characteristics to match the sampled primary feeder schools in the treatment group with comparison primary schools in neighboring areas of the same region. Examination of these variables in the baseline primary school survey data is important because it provides insight into the validity of using Education Management Information System (EMIS) data from several years before the evaluation baseline to match study arms, and because it reveals similarity in selective treatment assignment criteria. Baseline balance for each of these criteria was maintained in the midline evaluation sample, including distance to the nearest public secondary school, Standard 7 and Standard 8 student-teacher and student-classroom ratios, and incidence of overcapacity.

4.1.2 Baseline Program Exposure

Although we collected baseline data before new secondary schools were constructed, it is possible that students, caregivers, or primary school faculty were aware that the schools were being built in their area. Awareness of the SEED program at baseline could indicate a risk of anticipation effects in which respondents in treatment areas know they will have access to new CDSSs and change their behavior and decision making based on the knowledge that these services will be available soon. Primary school respondents in treatment areas were significantly more likely to be aware of nearby CDSS construction relative to comparison schools (57.2% T vs. 20.4% C, p=0.003 in the full baseline sample; 61.8% T vs. 14.3% C, p=0.003 in the midline evaluation sample). However, this imbalance was not observed among students or caregivers in the full baseline sample or the restricted midline sample. This observed baseline balance at the individual levels suggests that anticipation effects are not a problem within the student and caregiver samples.

4.1.3 Education Progression Outcomes

We also used school-level transition rates from EMIS data to match comparison primary schools to the sampled treatment primary schools. We examined school transition, dropout, and Standard 8 repetition using household survey data for the retrospective cohort at evaluation baseline. For both the full baseline

sample and the restricted midline evaluation sample, the transition rate to Form 1 at a public secondary school was balanced using data from the primary school survey and imbalanced using data from the household survey. The public Form 1 transition rates decreased slightly in the midline evaluation sample using data from primary school respondents (24.3% C vs. 29.8% T full sample; 21.3% C vs. 28.9% T restricted sample) and retrospective cohort household respondents (23.2% C vs. 37.5% T, p=0.034 full sample; 21.0% C vs. 36.6% T, p=0.011 restricted sample). The DID approach will control for these baseline differences between groups in the midline impact estimates.

4.1.4 Intermediate and Additional Outcomes

A key barrier that the SEED program directly addresses is long distances to secondary schools. While most distance, travel, and boarding indicators remained balanced at baseline in the restricted sample, several notable imbalances persisted in the restricted sample. Primary schools in the comparison group were significantly more likely to feed to the nearest public secondary school than primary schools in the treatment group (97.3% C vs. 81.2% T, p=0.038); however, there was no significant difference in the average distance from primary schools or secondary schools to the farthest village that sends students to the school. Comparison group primary schools were significantly more likely to report distance to the secondary school as a barrier for secondary school enrolment among boys (89.9% C vs. 65.3% T), while secondary school students in the treatment retrospective cohort were more likely to self-board for secondary school than comparison group students (8.8% C vs. 31.1% T, p=0.033).

The SEED program is intended to indirectly improve youth outcomes related to early marriage, early pregnancy, HIV exposure, and SR-GBV among girls, as well as education-related aspirations and future outlooks among youth and their caregivers. Key marriage, pregnancy, and HIV exposure measures were balanced between treatment and comparison groups in the full sample and the restricted midline sample, although comparison group caregivers were more likely to report that any household girl had been selected to secondary school but did not attend due to marriage (34.5% C vs. 11.1T, p=0.045). Imbalance in school absenteeism due to SR-GBV safety concerns persisted in the restricted sample, with 7.7% of girls in the treatment group reporting missing school compared to none in the comparison group (p=0.028).

Lastly, key measures of student and caregiver education ideals and expectations are balanced at baseline, as are summary measures of student self-esteem and agency over the future. In the restricted midline sample, comparison group students were more likely to expect their life to improve in five years compared to treatment group students (89.2% C vs. 81.7% T, p=0.04).

5. Rural Findings: SEED Implementation and Associated Contextual Changes

This section examines SEED implementation and associated contextual changes such as awareness of new school construction, availability of secondary schools and Form 1 admission spaces, distance to secondary school, and educational quality and overcrowding. It also provides findings related to WASH and MHM conditions at secondary school, financial access to secondary school, and the effects of Cyclone Freddy on education.

5.1 Geographic and Infrastructure-Related Access to Secondary Education

5.1.1 New School Construction

Table 5 shows respondents' awareness of new secondary school construction, which was expected to motivate primary school students to perform well in order to attend the new school. At baseline, primary school respondents in the treatment group were significantly more likely than those in the comparison group to be aware of a new secondary school being built nearby, but there were no differences between students or caregivers in the two study arms. At midline, while only 20.8% of comparison students were aware of a new school being constructed nearby, 71.9% of treatment students were aware of new school construction (p<.001). Findings were similar for caregivers (24.3% of comparison caregivers and 76.3% of treatment caregivers; p<.001) and primary school respondents (8.5% comparison primary schools vs. 90.6% treatment primary schools; p<0.001).

Community leaders and primary school respondents in the treatment group were significantly more likely to report new government secondary school construction since January 2022 than those in the comparison group (p<.001, Table 5).

Table 5. New school construction

	Baseline					Midline				
	Comparison		Treatent		BL	Comparison		Treatment		Midline
Indicator	Value	N	Value	N	Sig. Diff.	Value	N	Value	N	Sig. Diff.
Student respondents (Prospective cohort)										
Student aware of new secondary school being built nearby	8.3	239	13.0	239		20.8	236	71.9	233	***
Caregiver respondents (Prospective cohort)										
Caregiver aware of new secondary school being built nearby	5.6	238	10.7	234		24.3	215	76.3	215	***
Community checklist respondents										
A new school constructed in community since January 2022										
Private secondary						0.0	38	0.0	38	

Government secondary						2.6	38	78.9	38	***
Primary school respondents (Primary school panel)										
Aware of new secondary school being built nearby	14.3	20.0	61.8	20.0	**	8.5	20	90.6	20	***
A new school constructed in community since January 2022										
Private secondary						5.3	20	0.0	20	
CDSS [(A)]						5.8	20	85.9	20	***

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A: includes CDSS cost centers and CDSS non-cost centers.

5.1.2 Availability of Secondary Schools and Form 1 Admission Spaces

SEED had an impact on students reporting that there was a secondary school nearby that students could join if they passed the PSLCE, with students in the treatment group 20 percentage points more likely over time to report this than students in the comparison group (p<.001). There was also a program impact on community leaders' reports of the type of secondary school that serves most students in the community, with those in the treatment group 30 percentage points more likely to report that a CDSS cost center served most students (p<.05). There were significant changes over time in which type of CDSS served most community pupils in comparison areas, with the percentage of comparison group community leaders reporting CDSS cost centers decreasing over time (p<0.001) and those reporting CDSS non-cost centers increasing over time (p<0.01). (Table 6).

Table 6. Availability of secondary schools

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatent		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
There is a secondary school nearby that students in your community could join if they pass the PSLCE	58.6	239	58.6	239	64.0	236	85.8	233	0.2***	0.0
Community checklist respondents										
Average number of government secondary schools that serve the community	1.7	38	1.8	39	1.6	38	2.1	38	0.4	-0.1
Average number of CDSSs that serve the community	1.2	38	1.5	39	1.4	38	2.0	38	0.3	0.2
Type of government secondary school that serves the majority of community pupils										

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
National boarding	0.0	38	0.0	39	0.0	38	0.0	38	.	.
Grant-aided boarding	0.0	38	0.0	39	0.0	38	0.0	38	.	.
District boarding	0.0	38	0.0	39	0.0	38	0.0	38	.	.
District day	0.0	38	0.0	39	5.3	38	0.0	38	-0.1	0.1
CDSS cost centers	78.9	38	64.1	39	31.6	38	50.0	38	0.3*	-0.5***
CDSS non-cost centers	21.1	38	35.9	39	55.3	38	44.7	38	-0.3	0.3**
Open school	0.0	38	0.0	39	0.0	38	0.0	38	.	.
Other	0.0	38	0.0	39	7.9	38	5.3	38	0.0	0.1+

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

SEED had an impact on the students who reported that a lack of Form 1 admission spaces was a barrier to achieving their educational goals. Students in the treatment group were 20 percentage points less likely to report that a lack of Form 1 spaces was a barrier than those in the comparison group (p<.05), while the percentage of comparison group youth reporting this barrier increased over time (p<0.001). The program also had an impact on the primary school respondents who reported that a lack of Form 1 spaces was a barrier to youth joining secondary school. Primary school respondents in the treatment group were 40 percentage points less likely than those in the comparison group to report that a lack of Form 1 spaces was a barrier for girls (p<.01) and boys (p<.05) joining secondary school (Table 7).

Table 7. Availability of Form 1 admission spaces

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Not enough Form 1 admission spaces is a serious barrier to achievement of student's own educational goals	23.0	239	31.4	239	42.0	236	30.4	233	-0.2*	0.2***
Caregiver respondents (Prospective cohort)										
Not enough Form 1 admission spaces is a barrier for Community youth who complete primary school to go to secondary school	1.3	238	3.9	234	1.4	215	1.1	212	0.0	0.0
Primary school respondents (Primary school panel)										
Not enough Form 1 admission spaces is a serious barrier to:										
Students completing primary school	81.8	20	70.6	20	67.1	20	40.0	20	-0.2	-0.1
Girls joining secondary school	89.9	20	70.6	20	81.4	20	18.8	20	-0.4**	-0.1
Boys joining secondary school	76.5	20	71.8	20	77.7	20	34.1	20	-0.4*	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001

5.1.3 Distance to Secondary School

There was no program impact on the amount of time students reported it took them to walk to secondary school, which was just under one hour. There was also no program impact on community leaders' reports of the average distance to the secondary school that serves most students in the community, or on the primary school report of the average distance to the public secondary school that the primary school feeds to (Table 8).

There was a significant difference at midline in the average distance to the farthest village that sends students to the secondary school between comparison schools (12.1 kms) and SEED schools (9.1 kms) (p<.05). However, SEED schools were less likely to report that they were accessible during the rainy season (53.3%) than either comparison secondary schools (76.0) or non-SEED treatment secondary schools[9] (81.0%) (Table 9).

[9] The panel of 46 secondary schools interviewed at both baseline and midline were classified as belonging to the "non-SEED treatment" group (21) or comparison group (25) based on the study arm of the primary feeder school(s). Aggregate data was also collected from the 30 new SEED schools.

Table 8. Distance to secondary school, community, and primary school panel respondents

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Baseline retrospective cohort, midline prospective cohort – students currently in secondary school)										
Most used method to get to school is by foot/walking	88.3	54	85.9	67	96.0	63	85.8	67	-0.1	0.1
Average amount of time it usually takes to get to school (walking, minutes)	53.5	45	52.1	59	58.9	59	53.2	59	-20.3	10.9
Community checklist respondents										
Average distance (km) to the government secondary school that serves most pupils in the community	7.6	38	8.6	39	7.3	38	6.2	38	-2.0	-0.4
Average distance (km) to the CDSS that serves most pupils in the community (among communities where CDSS serves most pupils) [A]	7.6	38	8.6	39	7.3	33	6.1	36	-2.2	-0.3
Primary school respondents (Primary school panel)										
The primary school feeds to the nearest public secondary school	97.3	20	81.2	20	92.0	20	81.2	20	0.1	-0.1
Average distance (km) to the public secondary school that the primary school feeds to	9.0	20	9.1	20	8.1	20	9.1	20	0.9	-0.9

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A: includes CDSS cost centers and CDSS non-cost centers.

Table 9. Distance to secondary school, secondary school panel respondents

Indicator	Baseline		Midline			Midline significance testing	
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED	Comp vs SEED	Treat vs SEED
Secondary school respondents (Secondary school panel and SEED schools)							
Average distance (km) to the farthest village that sends students to the school	11.6	11.6	12.1	11.4	9.0	*	
The school is accessible by road during the rainy season	72.0	90.5	76.0	81.0	53.3	+	*
N (Secondary schools)	25	21	25	21	30		

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001; No significant differences among secondary school respondents at baseline.

SEED had a marginally significant impact on students' reporting that distance to secondary school was a barrier to achieving their educational goals, with students in the treatment group 10 percentage points less likely to report that distance was a barrier than those in the comparison group (p<0.10).

There were no program impacts among caregivers or primary school respondents on perceptions that distance to secondary school is a barrier to joining secondary school. There was a 20-percentage point decrease over time among caregivers in the comparison group reporting that the secondary school was too far away for youth who complete primary school to attend secondary school (p<.01) and for youth who begin secondary school to complete it (p<.001). Primary school respondents in the comparison group were similarly less likely to report that distance to secondary school was a barrier for girls (p<.10) or boys (p<.05) to join secondary school at midline than baseline (Table 10).

At midline, 64.0% of comparison group secondary school respondents indicated that distance to secondary school is a barrier to school completion, compared to only 36.7% of the SEED CDSS respondents (p<0.05, results not shown) (Table 11).

Table 10. Distance as a barrier to secondary school, student, caregiver, and primary school panel report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Selected first or second selection, did not attend due to:										
Distance - did not want to move from home					0.0	11	0.0	26		
Distance - school too far for daily travel					21.1	11	26.4	26		
No transportation					0.0	11	0.0	26		
Travel/distance to secondary school too far is a serious barrier to achievement of student's own educational goals	37.0	239	41.5	239	57.9	236	50.3	233	-0.1+	0.2***
Travel/distance to secondary school too far is a main reason students from current/previous primary school who pass the PSLCE do not join secondary school	17.8	239	20.9	239	11.0	236	12.0	233	0.0	-0.1+
Caregiver respondents (Prospective cohort)										
Any household girls selected to secondary school but did not attend due to:										

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Secondary school too far away	32.5	26	31.8	27	42.1	9	10.9	15	(A)	(A)
No transportation	4.4	26	17.8	27	0.0	9	0.0	15	(A)	(A)
Any household boys selected to secondary school but did not attend due to:										
Secondary school too far away	32.3	23	41.3	32	25.7	11	15.1	15	(A)	(A)
No transportation	9.8	23	19.9	32	7.9	11	6.6	15	(A)	(A)
Secondary school too far away is a barrier for:										
Community youth who complete primary school to go to secondary school	29.9	238	24.4	234	10.8	215	6.3	212	0.0	-0.2**
Community youth who begin secondary school to complete secondary school	30.2	238	28.2	234	10.8	215	4.2	212	0.0	-0.2***
Primary school respondents (Primary school panel)										
Distance to secondary school is a serious problem/barrier to:										
Girls joining secondary school	84.1	20	60.6	20	63.8	20	39.4	20	0.0	-0.2+
Boys joining secondary school	89.9	20	65.3	20	63.4	20	14.7	20	-0.2	-0.3*

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001. (A) Impact estimates and time trends are not reported as subgroup sample sizes are less than 20 observations.

Table 11. Distance as a barrier to secondary school, secondary school panel respondents

	Baseline		Midline			DID estimation results (marginal effects)	
						Program impact	Time trend in C group
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED	Estimate	Estimate
Secondary school respondents (Secondary school panel and SEED schools)							
Distance to secondary school is a serious problem/barrier to:							
Girls completing secondary school	64.0	57.1	68.0	52.4	53.3	-0.1	0.0
Boys completing secondary school (A)	60.0	57.1	64.0	42.9	36.7	-0.2	0.0
N (Secondary schools)	25	20	25	21	30		

	Baseline		Midline			DID estimation results (marginal effects)	
						Program impact	Time trend in C group
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED	Estimate	Estimate
Any Form 1 dropouts due to long distances to school	8.0	0.0	0.0	5.0	6.9	.	.
Girls	4.0	0.0	0.0	5.6	3.6	.	.
Boys	4.0	0.0	0.0	5.6	3.5	.	.
N (Secondary schools)	25	20	23	20	29		

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001; No significant differences among secondary school respondents at baseline.

A: At midline, comparison group secondary schools were significantly more likely than SEED schools to report distance to secondary school as a serious barrier to boys completing secondary school.

5.1.4 Educational Quality and Overcrowding

There was no program impact on students in Form 1 reporting that there was a serious problem with teachers lacking adequate instructional materials and supplies, overcrowded classrooms, or a lack of desks (Table 12). However, there was a significant difference at midline among SEED schools and non-SEED treatment schools in the average Form 1 pupil-to-classroom ratio, with SEED schools reporting 48.9 pupils to 1 classroom and non-SEED treatment schools reporting 64.2 pupils to 1 classroom (p<.10). There was also a significant difference at midline among SEED and non-SEED treatment schools reporting that Form 1 was over capacity, with only 10.0% of SEED schools reporting being over capacity compared to 25.0% of non-SEED treatment schools (p<.05) (Table 13).

Table 12. Educational quality and overcrowding, student report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents										
Serious problem at school										
Students currently in Form 1 (Baseline retrospective cohort in Form 1, midline prospective cohort in Form 1)										
Teachers lack adequate instructional materials and supplies	46.4	54	46.6	67	52.1	68	61.2	73	0.1	0.0
Overcrowded classrooms	57.6	54	42.4	67	51.6	68	44.4	73	-0.0	0.1

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
No desk, sitting on floor	48.5	54	29.8	67	42.9	68	37.0	73	0.2	-0.1
Selected first or second selection, did not attend due to: (Prospective cohort)										
School/classroom is too crowded					0.0	11	0.0	26		
Poor quality					3.8	11	4.8	26		

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

Table 13. Educational quality and overcrowding, secondary school panel report

Indicator	Baseline		Midline			Midline significance testing	
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED	Comp vs SEED	Treat vs SEED
Secondary school respondents (Secondary school panel and SEED schools)							
Serious problem at the school							
Teachers lack adequate instructional materials and supplies	100.0	100.0	100.0	100.0	100.0		
Overcrowded classrooms	100.0	100.0	100.0	100.0	100.0		
Average Form 1 pupil-to-classroom ratio	61.4	70.0	58.9	64.2	48.9		+
Form 1 is over-capacity	40.0	38.1	36.0	25.0	10.0		*
N (Secondary schools)	25	21	25	21	30		

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001; No significant differences among secondary school respondents at baseline.

At midline there was a significant difference between SEED, non-SEED treatment, and comparison schools reporting they had a science lab, with 93.3%[10] of SEED schools having a science lab compared to only 28.6% of non-SEED treatment schools and 32.0% of comparison schools (p<.001) (Table 14).

[10] One SEED school responded asserted they did not have a science lab because it was not yet equipped, although the room itself existed.

Table 14. Secondary school facilities

Indicator	Baseline		Midline			Midline significance testing	
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED	Comp vs SEED	Treat vs SEED
Secondary school respondents (Secondary school panel and SEED schools)							
Available at the secondary school							
Science lab			32.0	28.6	93.3	***	***
Computers/tablets	12.0	4.8	0.0	9.5	3.3		
Internet	16.0	4.8	12.0	19.1	0.0		*
N (Secondary schools)	25	21	25	21	30		

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001; No significant differences among secondary school respondents at baseline.

5.2 WASH and MHM Conditions[11]

No significant differences in basic WASH infrastructure were observed among SEED, non-SEED treatment, and comparison secondary schools at midline. Over 95% of comparison and non-SEED treatment secondary schools had drinking water service, over 40% had basic sanitation services, and two-thirds had basic hygiene services. Nearly 90% of SEED schools had basic drinking water and hygiene services, and half had basic sanitation services (Table 15).

There were significant differences at midline among SEED, non-SEED treatment, and comparison secondary schools regarding availability of MHM provisions. While 66.0% of SEED schools had water and soap available in a private space, only 23.8% of non-SEED treatment schools had this provision (p<.01) as did 36.0% of comparison schools (p<.05). Similarly, 44.3% of SEED schools had covered bins for disposal of menstrual hygiene materials, while only 14.3% of non-SEED treatment schools had this provision (p<.05) and 8.0% of comparison schools (p<.01). SEED schools were also more likely to have a girls changing room (96.7%)[12] compared to non-SEED treatment schools (28.6%) and comparison schools (40.0%) (p<.001). Bathing areas were more common in SEED schools (80.0%) compared to non-SEED treatment schools (33.3%) and comparison schools (36.0%) (p<.001) (Table 15).

[11] WASH and MHM indicators are based on the WHO and UNICEF Joint Monitoring Programme's harmonized questions and indicators for monitoring WASH and MHM in schools (WHO and UNICEF, 2018). Schools with an improved drinking water source with water available at the time of the survey are classified as having a 'basic' drinking water service; schools with improved sanitation facilities which are single-sex and usable at the time of the survey are classified as having a 'basic' sanitation service; and schools with handwashing facilities with both water and soap available at the time of the survey are classified as having 'basic' hygiene services. One SEED school reported there was no water source for the school; three SEED schools reported that the school's tube well/borehole did not have drinking water available at the time of the survey. All 30 SEED schools reported having slab/covered pit latrines that were separate for boys and girls, however 15 SEED schools reported that at the time of the midline survey no common-use latrines were usable (available, functional, and private).

[12] One SEED school reported not having a changing room; qualitative findings suggest it may be being used for another purpose.

Table 15. WASH and MHM at secondary schools

Indicator	Baseline		Midline			Midline significance testing	
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED	Comp vs SEED	Treat vs SEED
Secondary school respondents (Secondary school panel and SEED schools)							
Basic WASH services available at school							
Drinking water	92.0	95.2	96.0	95.2	86.7		
Sanitation	48.0	42.9	44.0	42.9	50.0		
Hygiene	88.0	90.5	68.0	66.7	86.7		
MHM provisions at school							
Water and soap available in a private space for girls to manage menstrual hygiene	28.0	28.6	36.0	23.8	66.7	*	**
Covered bins for disposal of menstrual hygiene materials in girls' toilets/latrines	24.0	28.6	8.0	14.3	43.3	**	*
Disposal mechanisms for menstrual hygiene waste	24.0	38.1	4.0	4.8	10.0		
Any girls-only change room completed and in use	36.0	28.6	40.0	28.6	96.7	***	***
MHM provisions available							
Bathing areas	24.0	38.1	36.0	33.3	80.0	***	***
MHM materials (e.g., pads)	36.0	23.8	32.0	33.3	26.7		
MHM education	56.0	47.6	60.0	42.9	46.7		
None of the above	28.0	33.3	36.0	42.9	13.3	+	*
N (Secondary schools)	25	21	25	21	30		

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001; No significant differences among secondary school respondents at baseline.

No program impact or general time trend in the comparison group was found for the likelihood that menstruating girls currently in secondary school reported the presence of a female-friendly space for washing and changing at school (Table 16). Female students reported similar levels of female-friendly infrastructure at secondary schools in both study arms and survey rounds.

Table 16. Female-friendly sanitation and changing facilities at secondary schools (menstruating girls currently attending secondary school)

Indicator	Baseline					Midline				
	Comparison		Treatment		Sig. Diff.	Comparison		Treatment		Sig. Diff.
	Value	N	Value	N		Value	N	Value	N	
Student respondents (Menstruating girls currently attending secondary school, baseline retrospective cohort and midline prospective cohort)										
Toilets/latrines located on school premises (within or outside the building)	96.8	23	97.1	40		100.0	26	100.0	31	.
Toilets/latrines are separate for girls and boys	98.1	23	94.8	40		91.3	26	92.6	31	
Toilets/latrines cleaned daily	69.7	23	58.1	40		52.7	26	65	31	
Washing and changing space at school										
Clean	58.3	23	69.7	38		70.8	24	72.6	30	
Private	75.6	23	84.1	38		82.6	24	77.3	30	
Safe	63.1	23	73.7	38		85.4	24	77.3	30	
Able to be locked	70	23	58.3	38		89.9	24	68.3	30	+
Supplied with water	51.1	23	68	38		74.6	24	66	30	
Supplied with soap	38.8	23	45.6	38		74.6	24	55.5	30	+
Supplied with a mirror	5.1	23	10.2	38		6.9	24	20.9	30	
Supplied with a shelf and hook	7.4	23	12.8	38		17.8	24	27.4	30	
Well lit	64.6	23	61.5	38		67.9	24	56.3	30	
Supplied with a covered bin	50.9	23	32.8	38		52.8	24	35.1	30	
Well ventilated	70.4	23	72.9	38		85.4	24	71	30	
Secondary school has a female-friendly space for washing and changing at school	0.0	23	0.0	38	.	0.0	24	2.5	30	

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

5.3 Financial Access to Secondary Education

While the program had no impact on student report of direct cost as a barrier to achieving educational goals, over 70% of students reported cost as a serious barrier at midline. At baseline and midline, 85% of comparison and treatment students felt that cost was a main reason their school peers who pass the PSLCE do not join secondary school (Table 17), whereas less than 20% of caregivers in both groups cited direct

cost at midline as a barrier for community youth to join and complete secondary school (caregiver results not shown in the table).

Table 17. Financial barriers to educational attainment, student and primary school panel report

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Cost is a serious barrier to achievement of student's own educational goals	65.4	239	66.4	239	72.5	236	76.0	233	0.0	0.1+
Cost is a main reason students from current/previous primary school who pass the PSLCE do not join secondary school	85.7	239	84.1	239	85.0	236	85.4	233	0.0	0.0

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

The program had a marginally significant impact on secondary school respondents reporting any Form 1 dropouts due to their inability to pay financial contributions required by the school, with non-SEED treatment schools 10 percentage points more likely to report this than comparison schools (p<.10) (Table 18).

Table 18. School dropout due to financial constraints, secondary school panel report

Indicator	Baseline		Midline			DID estimation results (marginal effects)	
						Program impact	Time trend in C group
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED	Estimate	Estimate
Secondary school respondents (Secondary school panel and SEED schools)							
Any Form 1 dropouts due to inability to pay financial contributions required by the school	24.0	50.0	30.4	30.0	48.3	0.1+	0.1
Girls	16.0	30.0	9.1	21.1	28.6	-0.1	0.0
Boys	20.0	45.0	30.4	25.0	41.4	-0.1	0.0
N (Secondary schools)	25	20	23	20	29		

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

Table 19 shows secondary school report of fees incurred by more than half of Form 1 students. There were no significant differences in cost incidence between comparison and treatment area secondary schools at baseline or among comparison, non-SEED treatment, and SEED schools at midline.

At midline, approximately 33% to 40% of schools reported that more than half of Form 1 students incurred school maintenance fees, 36% to 37% reported that more than half incurred PTA/School Management Committee (SMC) fees, and 20% to 32% reported that more than half incurred fees for small-scale school projects. Approximately 36% to 60% reported more than half incurred costs for a mandatory uniform, and 24% to 43% reported more than half incurred costs for required shoes.

Table 19. Half or more Form 1 students at the secondary school incur costs

	Baseline		Midline		
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED
Tuition fees	20.0	14.3	0.0	0.0	0.0
General purpose fund	20.8	19.0	4.0	4.8	6.7
School maintenance fees	36.0	42.9	32.0	33.3	40.0
PTA/SMC dues	72.0	81.0	36.0	57.1	43.3
Fees for small-scale school projects (e.g., school development/capital fees)	52.0	38.1	32.0	23.8	20.0
Textbook revolving fund	4.0	0.0	0.0	0.0	0.0
Other textbook costs or fees	16.0	9.5	0.0	0.0	0.0
Compulsory uniforms	88.0	100.0	36.0	42.9	60.0
Required shoes	80.0	90.5	24.0	19.0	43.3
Examination fees	60.0	71.4	12.0	14.3	6.7
Transportation to/from school	0.0	4.8	0.0	0.0	0.0
General school supplies (e.g., exercise books, notebooks)	4.0	9.5	0.0	4.8	0.0
Boarding at school	0.0	9.5	0.0	4.8	0.0
Self-boarding	16.0	33.3	20.0	19.0	13.3
N (Secondary schools)	25	21	25	21	30

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.001; No significant differences between comparison and treatment area secondary schools at baseline. No significant differences among comparison area, treatment area, or SEED secondary schools at midline.

Table 20 presents secondary school report of required contributions from students as well as the average annual amount (MKW) at midline. The most commonly required fee was the school development fund,

required by 52.4% to 60.0% of schools, with an average amount ranging from MKW 38,222 (USD$23) at SEED schools to MKW 53,700 ($32) at comparison schools. The second most commonly required fee was PTA/SMC fees, required by 36.0% to 57.1% of schools, with an average amount ranging from MKW 30,500 ($18) at SEED schools to MKW 40,333 ($24) at non-SEED treatment schools.

Table 20. Secondary-school-reported required contributions from learners (%) and average annual amounts (MWK) among schools with the requirement at evaluation midline

	Comparison Panel		Treatment Panel		SEED		Midline significance testing		
	Value	N	Value	N	Value	N	C vs. T	C vs. S	T vs. S
Tuition fee*	0.0	25	0.0	21	0.0	30			
General purpose fund	4.0	25	0.0	21	6.7	30			
Average general purpose fund, annual	45,000	1	0.0	0	35,000	2	.	.	.
School development/maintenance fund	60.0	25	52.4	21	60.0	30			
Average SDF, annual	53,700	15	49,227	11	38,222	18	.	.	.
PTA/SMC dues	36.0	25	57.1	21	43.3	30			
Average PTA/SNC dues, annual	38,670	9	40,333	12	30,500	13	.	.	.
Non-MANEB exam fee	8.0	25	4.8	21	6.7	30			
Average Non-MANEB exam fee, annual	1,750	2	8,000	1	5,500	2	.	.	.
Boarding at school	16.0	25	19.0	21	0.0	30		+	*
Average boarding at school, annual	176,250	4	226,313	4	0.0	0	.	.	.
Fees for practical/laboratory sessions	0.0	25	4.8	21	0.0	30			
Average practical/laboratory fees, annual	0.0	0	5,000	1	0.0	0	.	.	.
Electricity	0.0	25	9.5	21	0.0	30	*		*
Average electricity fees, annual	0.0	0	2,000	2	0.0	0	.	.	.
Any fee required	100.0	25	100.0	21	100.0	30	.	.	.
Average total fees, annual	76,281	25	95,321	21	40,390	30	.	+	**

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.001; No significant differences between comparison and treatment area secondary schools at baseline. No secondary schools reported requiring tuition fee, general fees, small-scale school project fee, textbook revolving fund, or water fees during the 2022/2023 AY. One non-SEED Treatment and one SEED school were unable to disaggregate by fee type and reported total fees. Only one school reported requiring contributions for a school watchman, and this SEED school indicated the contribution would not be required in subsequent AYs. One SEED school required an MWK 4,200 annual contribution to acquire a center number for examination. Non-MANEB fee means any examination fees students pay to the school excluding the fees paid for national exams.

Table 21 presents household education-related expenses among households in which the sampled student

was in secondary school in the current school year (2022–2023). Nearly all households reported they had education-related expenditures for the sampled student. There was no program impact on the total amount of education-related expenditures.

Table 21. Household education-related expenditures

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Household respondents with student in secondary school during the current year (Baseline retrospective cohort, midline prospective cohort)										
Any education expenditures for the sampled student during the current AY	100.0	77	100.0	92	100.0	69	98.5	71	0.0	0.0
Average spent in total on education for sampled student during the current AY (MWK)	102,607	77	88,416	92	107,957	69	99,285	71	28,770 MWK	5,681 MWK
Sampled student received any school tuition support in the current school year	2.8	77	12.8	92	12.2	69	10.9	71	-0.1	0.1
Sampled student received any materials support or cash to buy school uniforms, shoes, or school supplies in the current school year	0.8	77	2.6	92	11.3	69	2.3	71	-0.1+	0.1*

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

5.4 Disruptive Effects of Cyclone Freddy

There were no significant differences at midline between the comparison and treatment groups with regard to damage sustained from Cyclone Freddy. Between 17.0% and 28.5% of households reported they were negatively affected by the cyclone, with 34.2% of community leaders in both groups reporting damage to community roads affecting students' ability to attend school (Table 22).

Comparison secondary schools sustained more damage to boys' latrines than SEED and non-SEED treatment schools (p<0.10). SEED schools were more likely to have people continuing to shelter at the school after it reopened (13.3%) compared to non-SEED treatment schools (0.0%, p<0.10) (Table 23).

Table 22. Damage from Cyclone Freddy, household, community leader, and primary school panel report

	Comparison		Treatment		Midline significance testing
	Value	N	Value	N	
Household respondents (Prospective cohort)					
Household was negatively affected by Cyclone Freddy during the past 12 months	17.0	237	28.5	237	
Cyclone Freddy was one of the top 3 shocks faced by the household during the last 12 months	9.6	237	19.1	237	
Community checklist respondents					
Cyclone Freddy caused damage to community roads that affected students' ability to attend school	34.2	38	34.2	38	
Primary school respondents (Primary school panel)					
School was damaged by Cyclone Freddy	24.4	20	32.9	20	
Sustained significant damage or were unusable:					
Standard 8 classrooms	0.0	6	28.6	7	
Girls latrine	30.5	6	57.1	7	
Boys latrine	55.8	6	42.9	7	
School was used as a shelter for people displaced by Cyclone Freddy	10.7	20	23.5	20	
People continued to live in the school after it reopened	50.0	2	20.0	5	
Having people live at the school after it reopened was disruptive to classes	50.0	2	20.0	5	

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

Table 23. Damage from Cyclone Freddy, secondary school panel report

Secondary school respondents (Secondary school panel and SEED schools)	Comparison Panel	Treatment Panel	SEED	Midline significance testing		
	Value	Value	Value	C vs. T	C vs. S	T vs. S
School was damaged by Cyclone Freddy	24.0	28.6	20.0			
Sustained significant damage or were unusable:						
Form 1 classrooms	4.0	0.0	3.3			
Girls latrine	4.0	4.8	0.0			

Secondary school respondents (Secondary school panel and SEED schools)	Comparison Panel	Treatment Panel	SEED	Midline significance testing		
	Value	Value	Value	C vs. T	C vs. S	T vs. S
Boys latrine	8.0	0.0	0.0	+	+	
School was used as a shelter for people displaced by Cyclone Freddy	8.0	4.8	16.7			
People continued to live in the school after it reopened	4.0	0.0	13.3			+
Having people live at the school after it reopened was disruptive to classes	4.0	0.0	3.3			
N	25	21	30			

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

Approximately 15% of students in both groups reported dropping out of school because of the cyclone. Male students in the comparison group were more likely to have returned to school when they reopened (98.6%) compared to male students in the treatment area (95.2%) (P<0.05) (Table 24). No secondary school panel respondents reported students dropping out as a result of the cyclone (Table 25).

Table 24. Cyclone Freddy effects on school dropout and attendance, student and household report

	Comparison		Treatment		Midline significance testing
	Value	N	Value	N	
Student respondents (Prospective cohort)					
Selected first or second selection, did not attend due to Cyclone Freddy	31.5	11	12.4	26	
Dropped out of school because of Cyclone Freddy	14.9	70	15.5	62	
Household respondents (Prospective cohort)					
Student dropped out of school due to Cyclone Freddy [Midline prospective cohort in Standard 8 during AY2 (2022]	0.0	23	0.0	19	
Student temporarily withdrew from school due to Cyclone Freddy (among students currently attending school)	0.0	47	1.7	33	
Average percentage of household youth attending school before Cyclone Freddy who returned to school since April 17, 2023					
Household girls (among households with girls attending school before cyclone)	98.1	174	95.6	163	
Household boys (among households with boys attending school before cyclone)	98.8	165	95.2	164	*

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

Table 25. Cyclone Freddy effects on school dropout and attendance, secondary school report

Secondary school respondents (Secondary school panel and SEED schools)	Comparison Panel	Treatment Panel	SEED	Midline significance Testing		
	Value	Value	Value	C vs. T	C vs. S	T vs. S
Any Form 1 dropouts due to Cyclone Freddy	0.0	0	0.0	.	.	.
Girls	0.0	0	0.0	.	.	.
Boys	0.0	0	0.0	.	.	.
N	17	10	23			

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

5.4.1 Qualitative Findings: Cyclone Freddy

Cyclone Freddy, the strongest tropical cyclone ever recorded, devasted the Southern region of Malawi in early March 2023 causing tremendous loss of life and property. Respondents, mainly those in the Southern region, discussed the direct and indirect impacts of the cyclone on education for youth in their community. They reported that the cyclone directly caused the destruction of school infrastructure such as classrooms, toilets, and teacher houses in some schools. Additionally, it was difficult and risky for students to attend school in most of the affected areas due to heavy rains and flooding which washed away roads and homes, and in some cases, led to cholera outbreaks.

The GoM indefinitely closed schools and many were used as shelters for families displaced by the storm. Caregivers and youth reported that the 'indefinite' closure of schools disrupted the school calendar and resulted in poor performance on examinations after schools reopened, as students had forgotten some of what they had learned and the full syllabus could not be completed. Some respondents claimed that girls suffered disproportionately from the school closures because some of them became pregnant while they were out of school.

Additionally, respondents reported that the cyclone impacted the livelihoods of many households in the affected areas. Many respondents reported that the severe flooding

"My goals have changed because of Cyclone Freddy. At home, property that I hope would have helped my education was damaged…..So I do not think I will reach university since now there is nothing at home that parents can rely on to support my education."

-Form 1 female student, IDI

"This school was closed [after the cyclone] and it was an evacuation center. This affected students in terms of education because they were not coming to school for some time. Due to the closure of the school we lost two girls not because of death but pregnancy.

-Form 1 male teacher, KII

"Cyclone Freddy destroyed much of students' materials. For instance, students left behind books as they ran away from falling houses. They found themselves remaining with only one pair of clothes they wore when escaping the falling of houses. That was a big challenge because the students could not easily recover what they lost and when examinations came, they failed."

-Form 1 male student, IDI

resulted in the loss of crops for families that depended on farming for their source of income. Consequently, many parents and caregivers in the affected areas could not afford school fees and other basic needs for their children and households. For example, a female Form 1 youth conveyed her sense of uncertainty about her future following the loss of her family's assets, which served as a potential source of income for her school fees. Other youth experienced the loss of relatives who had been supporting their education.

6. Rural Findings: Key Outcome Impacts

6.1 Educational Achievement and Progression

There was no program impact or change over time among comparison group students for PSLCE attempts or student-reported pass rates. Similarly, there was no program impact or change over time among comparison group primary school report of annual PSLCE pass rates. At midline, over 85% of students in both study groups reported they had passed the PSLCE, and primary school respondents from both groups reported an 80% PSLCE pass rate.

There was also no program impact on students' report of the importance of passing the PSLCE. There was a 20-percentage point increase among comparison group students over time ($p<0.05$) reporting that passing the PSLCE was an important goal after controlling for baseline characteristics and SEED intervention status (Table 26).

Table 26. Student and primary school panel report of PSLCE pass rates

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Baseline retrospective cohort, midline prospective cohort currently/ever attended Standard 8 or higher)										
Student ever took PSLCE	92.9	157	93.4	166	93.4	186	95.7	191	0.0	0.0
Student-reported PSLCE pass-rate (ever taken and results are available)	74.6	130	87.7	142	85.2	96	88.4	123	-0.1	0.1
Students in primary school - Passing PSLCE is an important goal (A1)	79.1	96	82.0	84	94.3	161	91.7	154	-0.1	0.2*
Primary school respondents (Baseline and midline panel of primary schools)										
Average PSLCE pass rate AY 0 (2019-2020) vs. AY 2 (2022)	76.6	20	80.5	20	79.8	20	81.9	20	-1.7	3.1

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A1: Baseline retrospective cohort and midline prospective cohort, excluding students who transitioned to Form 1.

There were no program impacts on student and primary school respondents' concerns about exam fees and related costs. In the comparison group, there was a 40 percentage point decrease over time among primary school respondents who reported exam fees were a serious barrier to girls joining secondary school, from 61.6% to 18.5% ($p<.01$) and to boys joining secondary school, from 56.3% to 11.5% ($p<.001$). There was also a 30 percentage point decrease over time among primary school respondents in the comparison group, from 88.9% to 58.5%, who reported that half or more students in Standard 8 incur examination fees ($p<.05$) (Table 27).

Table 27. PSLCE exam fees as a barrier to educational goals

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Estimate	Estimate	Value	N	Value	N	Estimate	Estimate
Student respondents (Baseline retrospective cohort, midline prospective cohort currently/ever attended Standard 8 or higher)										
Student reports exam cost is barrier to their own educational goals (A2)	60.6	239	64.2	239	65.2	236	65.3	233	0.0	0.0
Primary school respondents (Baseline and midline panel of primary schools)										
Exam fees and related costs are a serious barrier to:										
Students completing primary school	2.7	20	18.8	20	5.8	20	5.3	20	-0.2	0.0
Girls joining secondary school	61.6	20	60.6	20	18.5	20	24.7	20	0.1	-0.4**
Boys joining secondary school	56.3	20	70.0	20	11.5	20	29.4	20	0.0	-0.4***
Half or more students incur examination fees	88.9	20	76.5	20	58.5	20	66.5	20	0.2	-0.3*
Exam fee waivers or vouchers are available to students	30.0	20	20.0	20	44.6	20	24.7	20	-0.1	0.1

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A2: Prospective cohort baseline and midline.

Table 28 shows repetition, transition, and dropout rates for the baseline retrospective cohort and the midline prospective cohort based on household report. There was no program impact or change over time in the comparison group on any of these rates as reported by households. At midline, 24.4% of comparison and 35.4% of treatment group students transitioned to Form 1 in a government school, 19.4% of comparison group and 10.9% of treatment group students transitioned to Form 1 in a non-public secondary school, approximately 40% of students repeated Standard 8, 18.2% of comparison, and 12.2% of treatment group students dropped out.

There was a marginally statistically significant program impact on the Standard 8 dropout rate. Treatment group primary schools had a 3.5% lower Standard 8 average dropout rate (2.3%) than comparison group primary schools (3.7%) (p<0.10). Like the student report, there was no program impact on the transition rate based on primary school report (average percent of students selected for secondary school who sat for the PSLCE). Public secondary school transition rates increased overall during the study period, with significant increases in CDSS transition rates over time reported by comparison group primary schools (p<0.05).

Table 28. Repetition, transition, and dropout rates as reported by households and primary schools

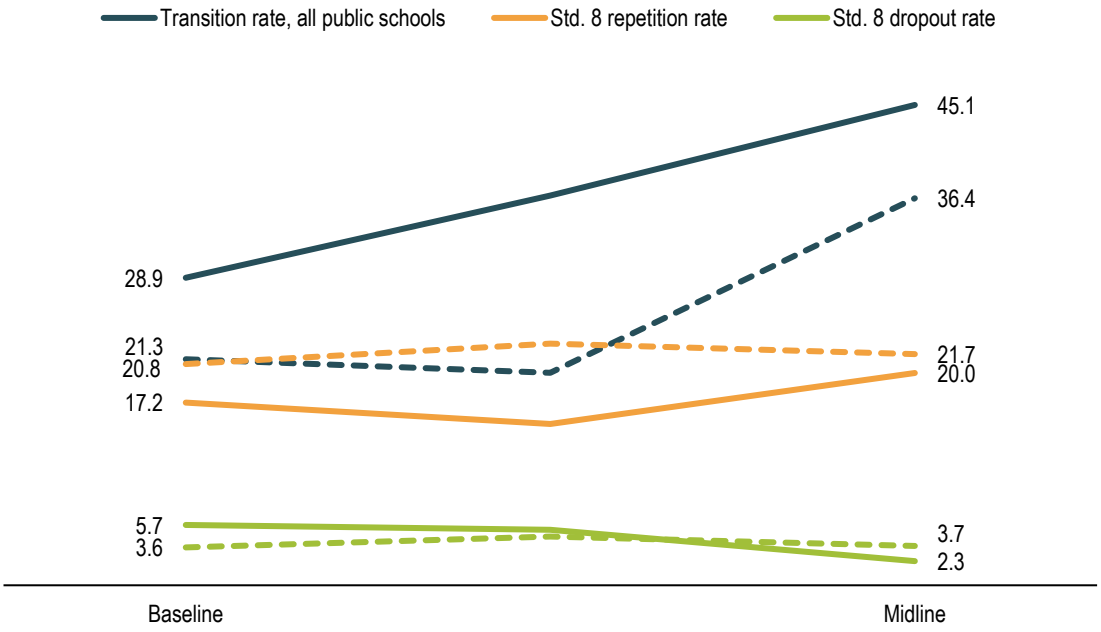
Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Household respondents [Baseline retrospective cohort, midline prospective cohort in Standard 8 during AY 2 (2022)]										
Repeated Standard 7	0.0	190	0.0	192	0.0	137	0.8	148	0.0	0.0
Repeated Standard. 8	31.0	190	24.1	192	38.1	137	40.8	148	0.1	0.1
Transitioned to Form 1 – public	21.0	190	36.6	192	24.4	137	35.4	148	0.0	0.0
Transitioned to Form 1 – other	14.4	190	12.4	192	19.4	137	10.9	148	0.0	0.0
Dropped out of school	33.6	190	26.8	192	18.2	137	12.2	148	0.0	-0.1
Primary school respondents (Primary school panel)										
Average Standard 8 repetition rate	20.8	20	17.1	20	21.7	20	20.0	20	1.8	0.9
Average Standard 8 dropout rate	3.6	20	5.7	20	3.7	20	2.3	20	-3.5+	0.1
Average percentage of enrolled Standard 8 students who were readmitted	2.0	20	1.5	20	1.8	20	1.9	20	-0.9	0.9
Average percent of students selected among those who sat for the PSLCE										
All public secondary schools	21.3	20	28.9	20	36.4	20	45.1	20	1.1	15.1*
CDSS	18.8	20	23.8	20	31.4	20	37.4	20	1.1	12.5*
Open Day SS	0.24	20	2.05	20	3.01	20	4.12	20	-1.6	10.1+
District SS	1.85	20	2.89	20	1.5	20	3.08	20	-1.6	10.1+
National SS	0.32	20	0.21	20	0.46	20	0.53	20	-1.6	10.1+

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001

Figure 3 shows the school progression pathway school averages for students in Standard 8 during the last three AYs of the evaluation study (AY1–AY3). At both study rounds, most students transitioned to secondary school, and a few dropped out. The largest rate change over time for both study groups was for the transition rate, which increased 16.2 percentage points to 45.1% for treatment primary schools at midline

and similarly increased 15.1 percentage points to 36.4% for comparison primary schools. The Standard 8 repetition rate increased slightly by 2.8 percentage points to 20.0% in treatment schools and increased 0.9 percentage points to 21.7% in comparison schools. The standard 8 dropout rate decreased in both study groups to 3.7% in comparison schools and 2.3% in treatment schools at midline.

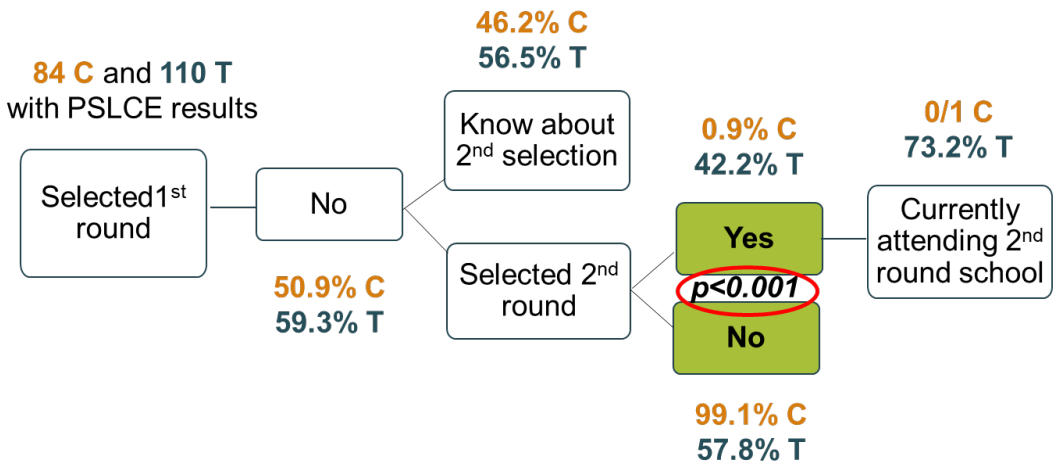
Figure 3. Form 1 transition, Standard 8 repetition, and Standard 8 dropout rates by study arm and year (primary school report, AY 1-3)



6.2 Secondary School Selection Process for AY3 (October 10, 2022–July 23, 2023)

Figure 4 shows the secondary school selection process for AY3 (October 10, 2022–July 23, 2023). First selection occurred in October 2022, just before comparison and non-SEED treatment secondary schools opened for the first term. SEED schools were not included in first selection as they did not open until the second term, beginning in January 2023. Second selection took place in late December 2022, and included selection for the SEED schools. There was a significant difference ($p<.001$) among the students selected in the second round between the comparison and treatment groups. Over 40% of treatment students not selected in the first round were selected in the second round when the SEED schools became available, compared to less than 1% of those in the comparison group.

Figure 4. Selection process for AY3 (2022-2023)



Per secondary school report, the average number of students selected for Form 1 who did not enroll decreased by 11 percentage points over time, from 19.4% to 8.8%, among comparison schools (p<0.10). At midline, significantly more SEED schools (96.7%) than comparison group schools (77.3%) had any students who were selected to Form 1 but did not enroll (p<0.05) (Table 29).

Table 29. Percent of students selected for secondary school in who did not enroll and percent of secondary schools reporting that any students selected to Form 1 did not enroll, AY3 (2022–2023)

	Baseline		Midline			DID estimation results (marginal effects; secondary school panel only)	
						Program Impact	Time Trend in C group
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel	SEED	Estimate	Estimate
Secondary school respondents (Secondary school panel and SEED schools)							
Average number of students selected to Form 1 in current year that did not enroll (A1)	19.4	13.0	8.4	8.8	12.2	6.8	-11.0+
Any students selected to Form 1 in current year did not enroll (A2)	88.0	95.2	77.3	85.0	96.7	0.0	-0.1
N	25	21	22	20	30		

Notes: p<0.10 * p<0.05 ** p<0.01 *** p<0.00; A: No significant difference overall or between panel comparison, panel treatment, or SEED secondary school groups at midline. A2: The proportion of SEED secondary schools is significantly higher than the proportion of comparison secondary schools at midline (p<0.05).

6.2.1 Qualitative Results: Secondary School Selection Process

Form 1 youth and caregivers of Form 1 youth discussed their experience of the AY3 (2022–2023) secondary school selection process. Some students and caregivers reported that they knew the process for selecting students into secondary school and were aware that selection to secondary school is done in two rounds. They explained that students who were not initially selected during the first round of selection but who had achieved a 'grade pass' on their national examinations are considered for selection during a second round. Others were unsure of the selection process and the existence of second selection.

Youth discussed their experiences, as well as those of their friends, subsequent to not being selected during the first round. Most reported that they were repeating Standard 8 when they were selected to the new SEED school during the second round, while some of their friends had started Form 1 at private schools or dropped out to find work or do business.

Caregivers and youth reported that most students were selected to the new SEED schools during second selection, which took place in December 2022 just before the start of the second academic term in January 2023. Other students joined the new schools through transfers after their selection during the first round. The main reasons for the decision to transfer were the long distance to school and the limited space at their previous schools.

"I was not selected [in first selection], so I went to repeat Standard 8…When we were about to go into term 2, it is when we heard that some names have come in selected to go and start Form 1 at [a new SEED school]. I was very happy because it is a great opportunity for someone to reach secondary level."

Form 1 female student, IDI

"I was selected through first selection… initially, I wasn't selected to this [SEED] school. I came through a transfer because I wrote my Standard 8 examinations in Kasungu. I was staying with my sister there and I was transferred here to stay with my parents."

-Form 1 male student, IDI

"I will give an example of my friend whom I was studying with at [primary school]. I visited him when I noticed that he was not coming to [the SEED] school. He told me that he wanted to go to a better school than this one. Therefore, he chose to repeat Standard 8 so that he could be selected for his dream secondary school."

-Form 1 male student, IDI

Overall, caregivers and youth stated that it was a "big" or "great" opportunity to be selected to the new SEED schools. However, not all youth who were selected enrolled in the new schools. Respondents reported that some youth were unable to enroll in the new school because they were already enrolled in another private school to which they had paid fees. Some did not enroll due to a lack of school fees and other school-related expenses. A few youth, mainly girls, were reported to have not enrolled because they were pregnant or had married, while some youth opted to repeat Standard 8 because they wanted to go to a 'better' school than a CDSS.

6.3 SR-GBV

There was no program impact on the percent of female students reporting they had experienced one or more sexual violence acts at least once. The most common types of sexual violence were verbal.

The program had a marginally significant impact on the percentage of secondary school girls who missed any days of school in the current academic school year due to SR-GBV ($p<.10$) and among those who missed any days of school in the last term due to SR-GBV ($p<.10$). In both cases, girls who transitioned to

Form 1 in the treatment group were 20 percentage points less likely to report they had missed any days of school due to SR-GBV concerns.

Students were asked why they were not attending the school they were selected to during first/second selection and enumerators selected all the reasons mentioned. None of the students mentioned SR-GBV at school or traveling to school. Similarly, caregivers were asked to name the top three reasons a household child who completed primary school did not attend secondary school. No caregivers mentioned SR-GBV as one of the top three reasons in the treatment group at baseline or in either study arm at midline (Table 30).

Table 30. Experience of sexual violence and impact of SR-GBV on school attendance

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents [Baseline retrospective cohort, midline retrospective cohort in Standard 8 during AY2 (2022)]										
Reported experiencing one or more sexual violence acts at least once										
All girls	65.7	68	79.7	78	66.9	65	72.9	73	0.53	-0.1
Girls who transitioned to Form 1	56.4	18	89.2	35	63.5	27	81.1	30	-0.1	0.0
Missed any days of school during the AY due to SR-GBV concerns										
All girls	0.0	68	7.7	78	9.1	65	8.9	73	0.97	-0.1+
Girls who transitioned to Form 1	0.0	18	3.5	35	11.0	27	5.2	30	-0.2+	0.2+
Missed any days of school during the past school term due to SR-GBV concerns (among girls currently attending school)										
All girls	0.0	32	5.2	53	7.1	48	6.8	58	0.959	-0.1
Girls who transitioned to Form 1	0.0	17	7.8	34	5.1	24	5.3	29	-0.2+	0.1
Selected first or second selection, did not attend due to SR-GBV concerns at school					0.0	11	0.0	26	.	.
Selected first or second selection, did not attend due to SR-GBV concerns while traveling to/from school					0.0	11	0.0	26	.	.
Caregivers (Prospective cohort)										
SR-GBV at school is a barrier for community youth who complete primary school to go to secondary school	0.7	238	0.0	234	0.0	215	0.0	212	.	.
SR-GBV traveling to school is a barrier for community youth who	0.7	238	0.3	234	0.0	215	0.0	212	.	.

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
complete primary school to go to secondary school										

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

6.3.1 Qualitative Findings: Experience of GBV and SR-GBV Among Girls

Caregivers, community leaders, and youth expressed their concerns about personal safety during transit to school. Youth shared instances of sexual assault that they either personally experienced or were experienced by their friends in transit to school, most of whom were female. They reported that the perpetrators included their teachers, peers, caregivers, and other community members. A male student related a scenario where girls are sometimes forced into sexual activity with their teacher in exchange for good grades. Female students reported that girls sometimes experience GBV when they refuse to engage in a romantic relationship with men in the community. An example of this was a girl who was sexually assaulted by a male community member after she refused to engage in a romantic relationship with the man. Additionally, there were accounts of girls experiencing verbal abuse in transit to school, including body shaming. A community leader described verbal sexual violence as a barrier to girls in her community attending school.

"It happened to me when I'm coming to and from school. Some men humiliate me that as old as I am, why am I going to school? Education will not benefit me; I should just get married."

Form 1 female student, FGD

"Some children experience sexual violence. For example, some girls want to perform well in class yet they fail to study at home. So, the teacher ends up exploiting this weakness by asking them to exchange sex for grades… Since you want others to be proud of you, you end up accepting the offer. As a result, she gets infected with HIV or gets pregnant."

–Form 1 male student, FGD

Some respondents reported that newly constructed SEED school had a positive impact on child safety. For example, a teacher reported that the new school has helped to reduce cases of violence experienced by female students on their transit to school as the distance to school has been reduced. Caregivers reported that the new SEED schools had increased their sense of security as they were more easily able to monitor their children's behavior as they were attending school near their home.

"The change is evident. I recall during our last meeting some parents expressed their gratitude for the construction of a school in this community. They highlighted that in the past, many girls faced insults and attacks while traveling long distances to reach secondary schools."

–Form 1 teacher

"It was very unfortunate that the long distance was like a window for our girls to be in relationships with boys while we are at home not knowing all this. So, the coming in of this school has helped us to monitor our children's behaviors."

–Female caregiver

"[The new SEED CDSS] is very close to our residential areas. We can easily monitor the behavior of our children whilst at school since the school is not very far."

–Male caregiver

6.4 ECFM

6.4.1 Marriage Ideals and Expectations

There was no program impact on students' or caregivers' view of the ideal age for marriage,

which was in the mid-20s at both baseline and midline. In the comparison group, students' view of the ideal age at which a girl should get married decreased by one year (from 22.2 to 21.0 years) from baseline to midline (p<0.01) (Table 31).

Table 31. Student and caregiver marriage ideals and expectations

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (prospective cohort)										
Ideal age when unmarried student would like to get married (average age)	25.9	231	25.3	222	25.8	198	26.1	206	0.9	-0.1
Ideal age when unmarried student expects to get married (average age)	26.2	229	25.6	220	26.2	196	26.2	200	0.6	0.0
Age at which a girl should get married (average age)	22.2	237	21.3	234	21.2	233	21.0	232	0.6	-1.0**
Age at which a boy should get married (average age)	24.1	234	23.8	230	23.4	231	23.2	230	0.1	-0.7+
Caregiver respondents (prospective cohort)										
Age at which a girl should get married (average age)	21.1	237	20.9	231	21.5	213	21.0	206	-0.2	0.3
Age at which a boy should get married (average age)	24.1	235	23.7	228	24.4	208	23.8	203	-0.1	0.2

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

6.4.2 ECFM Attitudes and Norms

SEED had no impact on student and caregiver attitudes towards EFCM, which was viewed highly unfavorably at both baseline and midline in the treatment and comparison groups (Tables 32 and 33).

Table 32. Student and caregiver attitudes toward early and child marriage

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student strongly agrees with the statement: (prospective cohort)										

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
It is acceptable for a girl to get married before she is 15 years old	2.4	239	3.3	239	2.2	236	1.7	233	0.0	0.0
It is acceptable for a boy to get married before he is 15 years old	1.7	239	3.2	239	2.0	236	0.7	233	0.0	0.0
It is acceptable for a girl to get married before she is 18 years old	5.0	239	10.4	239	9.4	236	11.7	233	0.0	0.0
It is acceptable for a boy to get married before he is 18 years old	5.5	239	9.0	239	7.7	236	7.2	233	0.0	0.0
Caregivers (prospective cohort)										
Caregiver identifies loss of education as a disadvantage of early marriage (before age 15) for girls	22.2	238	29.3	234	16.7	215	17.8	212	-0.1	-0.1
Caregiver would marry off daughter(s) before age 18	2.0	238	1.4	234	0.6	215	1.3	212	0.0	0.0
Caregiver would marry off son(s) to a girl younger than 18	1.6	238	0.7	234	0.6	215	1.3	212	0.0	0.0
Caregiver thinks it is harmful to get married before age 18	92.4	238	92.9	234	88.7	215	89.0	212	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

Table 33. Student and caregiver attitudes toward forced marriage

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student strongly agrees with the statement: (prospective cohort)										
Girls have the right to refuse an arranged marriage	88.7	239	92.3	239	89.8	236	92.2	233	0.0	0.0
Boys have the right to refuse an arranged marriage	87.3	239	91.6	239	88.7	236	91.9	233	0.0	0.0

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
In my community, GBV victims are encouraged to marry perpetrators	5.9	239	9.8	239	7.0	236	6.1	233	0.0	0.0
Caregivers strongly agrees with the statement: (prospective cohort)										
Girls have the right to refuse an arranged marriage	98.1	237	94.2	233	95.5	214	94.4	212	0.0	0.0
Boys have the right to refuse an arranged marriage	97.9	237	94.8	233	95.0	215	93.9	212	0.0	0.0
In my community, GBV victims are encouraged to marry perpetrators	3.7	237	7.3	231	4.8	213	7.3	208	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

6.4.3 Qualitative Findings: ECFM

Qualitative findings related to ECFM were consistent with quantitative findings, with respondents opposed to ECFM. Respondents discussed the reasons why ECFMs sometimes occur despite this opposition. For example, a Form 1 male student stated that some parents within their community arrange early marriages for their children to "*...run away from their responsibilities such as provision of school fees, etc.*" Another student explained that mistreatment by caregivers drives some youth into early marriages, and that youth who become pregnant are urged to marry. Long distances to school were reported to lead to girls dropping out of school and subsequently marrying.

> *"Their parents treat them violently which is painful in their hearts, so they just think of moving away from their home and get married."*
>
> –Form 1 female student, FGD

> *"We had only one school that was very far, resulting in most girls dropping out of school and getting married."*
>
> –Male caregiver

> *When her parents found out she was pregnant, her parents went to the parents of the man that got her pregnant. They accepted her, now they are living as a family."*
>
> –Form 1 female student, FGD

6.4.4 Student, Caregiver, and School Report of the Effect of Marriage on Education

There was a significant program impact on the percentage of primary schools reporting that marriage was a serious barrier to girls (p<.05) and boys (p<.001) joining secondary school. Treatment primary schools were 40 percentage points more likely than comparison schools to report that marriage was a barrier for girls joining secondary school and 30 percentage points more likely to report it was a barrier for boys (Table 34). There was also a marginally significant program impact on the percentage of secondary schools reporting that marriage was a barrier to girls completing secondary school, with treatment schools being 30 percentage points more likely to report marriage as a barrier (p<.10) (Table 35).

There was no program impact on student or caregiver attitudes toward the effect of marriage on education. The percentage of caregivers who reported marriage was a barrier for community youth to transition to secondary school decreased by 10 percentage points in the comparison group (p<0.01) over time, from 34.7% to 22.8% (Table 36).

Table 34. Primary school report of marriage as a barrier to education

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Marriage is a serious barrier to:										
Students completing primary school	33.8	20	38.8	20	13.7	20	24.1	20	0.1	-0.2
Girls joining secondary school	45.3	20	24.1	20	22.2	20	38.2	20	0.4*	-0.2
Boys joining secondary school	27.9	20	14.1	20	2.7	20	23.5	20	0.3**	-0.3**

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

Table 35. Secondary school report of marriage as a barrier to education

	Baseline		Midline			DID estimation results (marginal effects, panel of secondary schools only)	
	Comparison Panel	Treatment Panel	Comparison Panel	Treatment Panel		Program impact	Time trend in C group
	Value	Value	Value	Value	SEED	Estimate (percentage points)	Estimate (percentage points)
Marriage is a serious barrier to:							
Girls completing secondary school (C)	36.0	28.6	16.0	38.1	26.7	0.3+	-0.2
Boys completing secondary school (C)	20.0	14.3	4.0	4.8	13.3	0.1	-0.2
N	25	21	25	21	30		

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; C: No significant difference overall or between panel comparison, panel treatment, or SEED secondary school groups at midline.

Table 36. Student and caregiver attitudes related to marriage effects on education

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student strongly agreed with the statement: (prospective cohort)										
Getting married is a serious barrier to achievement of student's own educational goals	39.4	239	41.7	239	51.6	236	50.0	233	0.0	0.1
Marriage is a main reason students from current/previous primary school who pass the PSLCE do not join secondary school	19.4	239	18.0	239	21.0	236	16.8	233	0.0	0.0
Student self-report: dropped out of school due to marriage [B1]	7.1	73	10.4	51	5.7	70	11.8	62	0.0	0.0
Caregiver strongly agreed with the statement: (prospective cohort)										
Marriage is a barrier for community youth who complete primary school to go to secondary school	34.7	238	27.5	234	22.8	215	26.0	212	0.1	-0.1**
Marriage is a barrier for community youth who begin secondary school to complete secondary school	31.2	238	32.0	234	28.4	215	31.0	212	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; B1: Retrospective cohort baseline data.

6.5 Marriage and Cohabitation

SEED had a significant impact on the prevalence of first marriage before age 18. Youth in the treatment group were 10 percentage points less likely to first marry before age 18 than youth in the comparison group (p<0.05). There were 10 percentage point increases over time in the prevalence of marriage and marriage before age 18 years over time in the comparison group, consistent with an aging cohort (Table 37).

Table 37. Marriage and cohabitation among students

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents *(prospective cohort)*										
Currently married	2.0	239	2.3	239	11.4	236	8.7	233	0.0	0.1***

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Ever married	2.0	239	2.3	239	14.0	236	9.1	233	-0.1	0.1***
First married before age 15 years	0.0	239	0.0	239	0.0	236	0.0	233	.	.
First married before age 18 years	0.6	239	1.8	239	6.5	236	2.4	233	-0.1*	0.1*
Current marriage spouse chosen by someone else (A)	100.0	3	100.0	4	96.4	29	100.0	21	.	.
Current marriage due to pregnancy (A)	100.0	3	57.0	4	49.0	29	42.7	21	.	.
Current marriage was payment of a debt (females only) (A)	0.0	3	0.0	4	4.6	25	0.0	20	.	.
Forced into current marriage (females only) (A)	28.5	3	0.0	4	11.5	25	5.2	20	.	.
Current spouse has other wives (females only) (A)	0.0	3	0.0	4	0.0	25	16.8	20	.	.

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A: Estimates should be interpreted with caution given low denominator sizes (less than 20 observations). No significance testing was conducted.

7. Rural Findings: Attitudinal and Behavioral Impacts

7.1 Student Optimism

There was no program impact on student optimism about the future. In the comparison group, there was a 10 percentage point decrease over time in the percent of students expecting their lives to be better in one year (p<.10) and in five years (p<.01). There was also a 20% increase over time in the comparison group of secondary school respondents who reported that a lack of student optimism was a serious barrier to girls completing secondary school (p<.10). (Table 38 and 39).

Table 38. Student optimism, self-esteem, and agency over the future, student and primary school report

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Student happiness and optimism about the future										
Compared to this time last year, my life has improved	52.5	239	58.3	239	54.1	236	54.5	233	-0.1	0.0
In one year from now, I expect that my life will be better	81.6	239	74.0	239	74.4	236	71.3	233	0.0	-0.1+
In five years from now, I expect that my life will be better	89.2	239	81.7	239	79.9	236	77.8	233	0.1	-0.1**
Compared to this time last year, my life has improved	52.5	239	58.3	239	54.1	236	54.5	233	-0.1	0.0
Student positive beliefs about the future scale (CPYDS), mean score (range 7-35)	28.5	225	27.9	224	28.0	219	27.7	218	0.3	-0.5
Student self-efficacy and agency over the future scale, mean score (range 5-25)	18.5	232	18.4	232	18.5	225	18.5	216	0.2	0.0
Primary school respondents (Primary school panel)										
Students not optimistic about future is a serious problem/barrier to:										
Youth completing primary school	62.4	20	60.0	20	45.3	20	45.3	20	0.0	-0.2
Girls joining secondary school	39.7	20	40.6	20	49.1	20	55.3	20	0.1	0.1
Boys joining secondary school	31.0	20	39.4	20	44.2	20	54.1	20	0.0	0.1

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

Table 39. Student optimism, secondary school report

Secondary school respondents (Secondary school panel and SEED schools)						DID estimation results (margial effects)	
	Baseline		Midline			Program impact	Time trend in C group
	Comparison	Treatment	Comparison	Treatment	SEED	Estimate	Estimate
Students not optimistic about future is a serious problem/barrier to:							
Girls completing secondary school	28.0	47.6	52.0	61.9	50.0	-0.1	0.2+
Boys completing secondary school	44.0	52.4	32.0	57.1	43.3	0.2	-0.1
N	25	21	25	21	30		

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001. At midline, non-SEED treatment secondary school respondents were more likely to report lack of optimism as a barrier to boys completing secondary school than comparison group secondary schools, p<0.10.

7.1.1 Qualitative Findings: Student Optimism

Qualitative findings were consistent with quantitative results regarding student optimism. Most male and female Standard 7 youth reported they felt their future would be bright. In five years, most reported that they would have completed primary school and be in secondary school, while some said they would be working. In 10 years, most said they will either be continuing with tertiary education at a college or university, or they will be working.

> *"I feel my future is so bright because the coming of this [SEED]school has changed my life to work hard academically and become independent in future."*
>
> –Form 1 male student, FGD

> *"[My goals] have changed when I have started schooling here [at new SEED CDSS]. I had no peace of mind in my life because I was just staying at home. I have seen a change in my life because I have started school here."*
>
> –Form 1 female student, IDI

Similarly, both male and female Form 1 youth were optimistic about their future. In five years, most reported that they see themselves continuing with tertiary education, while others said they would be working. In 10 years, most of them stated that they would be working in different professions, such as health, education, security, accounting, etc. Several students reported that the new SEED schools increased their optimism for the future.

> *"I think that my future is not much bright because it's hard to find money to get basic school needs.*
>
> –Form 1 female student, FGD

> *"My parents, they struggle to pay my school fees. So that gives me worries that although I work hard at school but one day I will leave school because of that."*
>
> -Form 1 male student, FGD

> *"My future doesn't look good. My family is struggling to meet daily needs such as food among other things. Mostly I came to school on open stomach and that affects my concentration."*
>
> -Standard 7 male student, FGD

However, while youth in general expressed optimism about a bright future, many also acknowledged barriers to achieving their goals. The main challenge at both baseline and midline was a lack of money for school-related costs and other necessities (e.g., school uniforms and writing materials). Both Standard 7 and Form 1 youth reported that they also contribute money toward school expenses, such as salaries for security guards and awards for the best performing students. Youth who lacked school fees reported

missing classes, while others repeated Standard 8 or simply dropped out of school.

Some youth reported that their families were food insecure due to a poor harvest or as a result of the impact of Cyclone Freddy and that hunger negatively impacted their education as they found it difficult to concentrate.

7.2 Education as a Priority

There was no program impact on the percent of students who reported that not liking school or preferring to do something else was a serious barrier to youth joining secondary school. In the comparison group, there was a 10% decrease over time in students reporting that not liking school or preferring to do something else was a serious barrier to youth joining secondary school (p<.10). Similarly, there was no program impact on the percent of caregivers reporting that education not being a priority is a barrier for youth who complete primary to enter secondary school or for youth who enter secondary to complete secondary school (Table 40).

Table 40. Education is not a priority, student and caregiver report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Not liking school/rather do something else is a serious barrier to community youth joining secondary school	13.3	239	9.4	239	6.0	236	4.0	233	0.0	-0.1+
Selected first or second selection, did not attend because education is not a priority					0.0	29	1.3	45		
Caregiver respondents (Prospective cohort)										
Education is not a priority is a barrier for:										
Community youth who complete primary school to go to secondary school	20.7	238	23.1	234	23.5	215	26.1	212	0.0	0.0
Community youth who begin secondary school to complete secondary school	23.2	238	24.4	234	25.3	215	29.6	212	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

7.3 Educational Ideals and Aspirations

SEED had no impact on students' educational ideals or expectations, with over 90% at both baseline and midline reporting that their ideal level of education is Form 4 or higher, they will complete Form 4 or higher, and they believe it is important to attend and finish secondary school.

In the comparison group, there was a 10% decrease over time in the number of students who believe they will complete Form 4 or higher (p<.05) and a 10% decrease in the number of students who reported it is important for them to attend secondary school (p<.01). There was also a 30% decrease over time in the number of students in the comparison group who perceive they have a high chance of being selected to secondary school if they pass the PSLCE (p<.001) and who believe they will join secondary school if selected (p<.001). There was also a 20% decrease over time among students in the comparison group who believe they have a high chance of completing secondary school (p<.001).

There was no program impact on the percentage of caregivers who reported having their child complete primary or secondary school as a very important goal, which was over 95% at both baseline and endline (Table 41).

Table 41. Education ideals and expectations, student and caregiver report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Ideal level of education is Secondary Form 4 or higher	99.5	239	97.8	239	95.3	236	94.4	233	0.0	0.0
Actual level of education student believes they will complete is Secondary Form 4 or higher	96.9	239	93.7	239	91.3	236	90.4	233	0.0	-0.1*
Educational goal is very important to student										
Attend secondary school [(A)]	98.6	239	97.8	239	92.9	160	95.6	154	0.0	-0.1**
Finish secondary school	99.8	239	97.8	239	97.4	236	96.3	233	0.0	0.0
Student perceives the chances of achieving the educational goal to be high [(A)]										
Be selected for secondary school if pass PSLCE	71.8	239	71.6	239	46.4	160	51.2	154	0.1	-0.3***
Join secondary school if selected	74.4	239	71.5	239	47.7	160	53.2	154	0.1	-0.3***
Finish secondary school	71.4	239	68.8	239	51.8	236	57.5	233	0.1	-0.2***
Caregiver respondents (Prospective cohort)										
Educational goal is very important to caregiver										
Finish primary school [(B)]	99.6	237	99.5	234	95.4	133	98.4	127	0.0	0.0
Finish secondary school	99.9	235	99.8	234	98.9	207	100.0	203	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A; 'Attend secondary school', 'Be selected for secondary school if pass PSLCE', and 'Join secondary school if selected' exclude sampled students who have transitioned to Form 1; (B) 'Finish primary school' excludes caregivers whose sampled student had transitioned to Form 1.

7.4 Education-Related Gender Norms and Attitudes

Students were asked if they disagreed or agreed with nine gender-related statements adapted from the USAID SR-GBV measurement toolkit (Dexis Consulting Group, 2020), the Global Early Adolescent Study, and the Gender Norm Attitudes Scale (Nanda, 2011). Example statements include "Boys are smarter than girls" and "It is important that sons have more education than daughters." There was no program impact on gender-equitable attitudes toward education, with students showing gender-equitable attitudes for approximately two-thirds of the statements on average across cohorts and over time.

There was no program impact on the percentage of students or caregivers reporting it is important for boys and girls to complete secondary school, which was over 96% at baseline, leaving little room for improvement (Table 42).

Table 42. Education-related gender norms and attitudes, student and caregiver report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Mean percent of responses indicating gender-equitable attitudes toward education (9 items)	66.2	235	65.9	236	69.9	230	68.7	227	-0.9	3.7+
Student thinks educational milestone is very important:										
Girls to complete secondary school	98.6	239	98.2	239	98.2	236	98.5	233	0.0	0.0
Boys to complete secondary school	100.0	239	97.9	239	96.6	236	96.9	233	0.0	0.0
Caregiver respondents (Prospective cohort)										
Caregiver thinks educational milestone is very important:										
Girls to complete secondary school	100.0	238	100.0	234	99.4	215	98.3	212	0.0	0.0
Boys to complete secondary school	99.2	238	99.2	234	99.4	215	97.8	212	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; Rights and privileges of men subscale Cronbach's alpha for prospective panel = 0.8236; Equity for girls subscale Cronbach's alpha for prospective panel = 0.7772; Gender Norms and Attitudes Scale (GNAS) Cronbach's alpha for prospective panel = 0.7588.

7.5 Caregiver Support

Tables 43 and 44 present student and secondary school views of the effect of a lack of parent or caregiver support on education. There was no program impact on caregivers' lack of support as a barrier to

education. Between 26.7% and 34.0% of students reported that a lack of parent or caregiver support was a serious barrier to achieving their educational goals. Secondary school respondents who reported a lack of parent or caregiver support as a barrier to completing secondary school ranged from 40.0% to 52.2% for girls and from 20.0% to 57.1% for boys.

Table 43. Lack of parent or caregiver support as a barrier to education, student report

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Parents/caregivers not supporting or encouraging schooling is a serious problem for/barrier to:										
Achievement of student's own educational goals	26.7	239	31.6	239	29.2	236	34.0	233	0.0	0.0
Students from current/previous primary school who pass the PSLCE do not join secondary school	3.4	239	2.5	239	4.0	236	5.2	233	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

Table 44. Lack of parent or caregiver support as a barrier to education, secondary school report

Secondary school respondents (Secondary school panel and SEED schools)	Baseline		Midline			DID estimation results (marginal effects, panel of secondary schools only)	
						Program impact	Time trend in C group
	Comparison	Treatment	Comparison	Treatment	SEED	Estimate	Estimate
Parents/caregivers not supporting or encouraging schooling is a serious problem for/barrier to:							
Girls completing secondary school	40.0	52.4	40.0	52.4	43.3	0.0	0.0
Boys completing secondary school	40.0	57.1	20.0	42.9	43.3	0.1	-0.2
N	25	21	25	21	30		

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001. Marginal significant difference between SEED and comparison schools at midline, p<0.10.

7.5.1 Qualitative Findings: Caregiver Support

Somewhat in contrast to the quantitative findings, caregivers who participated in FGDs were highly supportive of their children's education and expressed gratitude for the new SEED CDSS in their community, which made secondary school more affordable. At the same time, many caregivers explained that school fees were still challenging as they relied on farming as their main source of income. One key

informant noted that orphaned youth are disproportionately affected as their relatives often struggle to feed and maintain them in school.

> *"Goals for our children changed in the last year … Our children were attending schools that are far from here and it was not easy for them to commute. For us to provide them resources for self-boarding, it was not easy because there was no food. Therefore, we are very grateful for the construction of this [SEED] school because it is very close."*
>
> -Female caregiver
>
> *"Parents do wish that their children remain in school but their inability to provide hinders that."*
>
> –Female caregiver

7.6 Student Labor, Chores, and Caregiving Responsibilities

Table 45 presents student labor force participation and the percentage of students who dropped out of school due to paid employment, chores, and caregiving responsibilities. There were no program impacts or significant time trends in the comparison group for the intensity of annual student labor force participation or the percentage of students dropping out of school due to chores or caregiving responsibilities. At midline, most students did not work (48.4% comparison and 55.4% treatment students), and just under 5% of students in both groups worked throughout the year at evaluation midline.

Table 45. Student labor, chores, and caregiving responsibilities, household report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Household respondents										
Labor force participation (Prospective cohort)										
Student works throughout the year	4.1	239	5.0	239	6.4	237	5.3	235	0.0	0.0
Student works seasonally/part of the year	12.9	239	10.8	239	15.7	237	18.6	235	0.0	0.0
Student works once in a while	25.2	239	21.3	239	29.5	237	20.6	235	0.0	0.0
Student does not work	57.8	239	62.9	239	48.4	237	55.4	235	0.0	-0.1
Reason for student dropout [Baseline retrospective cohort, midline prospective cohort in Standard 8 during AY2 (2022)]										
Got a job	0.0	64	0.0	50	0.0	23	0.0	19	.	.
Chores	2.2	64	1.0	50	4.7	23	0.0	19	0.0	0.0
Caregiving responsibilities	1.4	64	0.0	50	3.0	23	0.0	19	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

There was no program impact on the percent of student respondents that reported paid work, chores, or caregiving responsibilities being a serious barrier to achieving their educational goals. In the comparison group, there was a 10% increase over time in the number of respondents who reported paid work as a

barrier, from 13.6% to 24.2% (p<.05), and in the percent who reported caregiving responsibilities as a barrier, from 11.6% to 20.2% (p<.10).

There was a marginally significant program impact on the percent of caregivers who reported that caregiving responsibilities were among the top three reasons children who complete primary school do not attend secondary school, with caregivers in the treatment group 10 percentage points less likely to report this (p<.10). Similarly, there was a marginally significant program impact on the percent of caregivers who reported that paid work was among the top three reasons children who begin secondary school do not complete it, with caregivers in the treatment group 10 percentage points more likely to report this (p<.10) (Table 46).

There was no program impact on the percentage of primary school respondents who reported that paid work, chores, or caregiving were a serious barrier to youth completing primary school or joining secondary school. The percent of primary school respondents in the comparison group that reported that caregiving responsibilities were a problem for youth completing primary school decreased by 20% over time (p<.10). Similarly, there was no program impact on the percentage of primary school respondents who reported that paid work, chores, or caregiving were serious barriers to youth completing primary school (Table 46).

Similarly, there was no program impact on the percentage of secondary school respondents who reported that paid work, chores, or caregiving were serious barriers to youth completing secondary school (Table 47).

Table 46. Student labor, chores, and caregiving responsibilities as barriers to educational attainment: Student, caregiver, and primary school report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Serious problem/barrier for achievement of student's own educational goals:										
Paid work	13.6	239	16.3	239	24.2	236	23.5	233	0.0	0.1*
Chores at home	10.3	239	13.2	239	15.3	236	16.8	233	0.0	0.0
Caregiving responsibilities	11.6	239	10.5	239	20.2	236	24.4	233	0.1	0.1+
Caregiver respondents (Prospective cohort)										
Top three reason community youth who complete primary school do not go to secondary school										
Paid work	5.8	238	7.5	234	2.3	215	1.9	212	0.0	0.0
Chores at home	1.7	238	2.0	234	1.8	215	0.5	212	0.0	0.0
Caregiving responsibilities	7.4	238	13.5	234	12.9	215	8.8	212	-0.1+	0.1*
Top three reason community youth who begin secondary school do not complete secondary school										

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Paid work	7.9	238	3.7	234	1.4	215	7.0	212	0.1**	-0.1**
Chores at home	2.3	238	0.7	234	0.4	215	0.3	212	0.0	0.0
Caregiving responsibilities	3.5	238	5.8	234	11.8	215	9.3	212	0.0	0.0
Primary school respondents (Primary school panel)										
Serious problem/barrier to youth completing primary school										
Students getting paid work	17.3	20	28.8	20	19.5	20	30.6	20	-0.0	0.0
Students' chores at home	33.8	20	40.6	20	32.8	20	30.0	20	-0.1	0.0
Students' caregiving responsibilities	30.7	20	39.4	20	10.5	20	15.3	20	0.0	-0.2+
Serious problem/barrier to girls joining secondary school										
Students getting paid work	19.2	20	14.7	20	11.5	20	14.7	20	0.1	-0.1
Students' chores at home	42.2	20	34.1	20	30.4	20	50.6	20	0.3	-0.1
Students' caregiving responsibilities	39.5	20	24.7	20	18.9	20	30.0	20	0.3	-0.2
Serious problem/barrier to boys joining secondary school										
Students getting paid work	19.5	20	19.4	20	23.0	20	35.3	20	0.1	0.0
Students' chores at home	22.3	20	24.1	20	19.4	20	24.7	20	0.0	0.0
Students' caregiving responsibilities	16.5	20	14.7	20	11.5	20	19.4	20	0.1	-0.1

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

Table 47. Student labor, chores, and caregiving responsibilities as barriers to educational attainment, secondary school report

Secondary school respondents (Secondary school panel and SEED schools)	Baseline		Midline			DID estimation results (marginal effects)	
						Program impact	Time trend in C group
	Comparison	Treatment	Comparison	Treatment	SEED	Estimate	Estimate
Serious problem/barrier to girls completing secondary school							
Students getting paid work	28.0	23.8	12.0	9.5	13.3	0.0	-0.2
Students' chores at home	48.0	57.1	32.0	42.9	30.0	0.0	-0.2
Students' caregiving responsibilities	40.0	38.1	24.0	23.8	26.7	0.0	-0.2
Serious problem/barrier to boys completing secondary school							
Students getting paid work	28.0	38.1	8.0	23.8	23.3	0.1	-0.2+
Students' chores at home	20.0	47.6	12.0	33.3	20.0	-0.1	-0.1
Students' caregiving responsibilities	16.0	23.8	8.0	4.8	16.7	-0.1	-0.1
N	25	21	25	21	30		

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

8. Rural Findings: Healthy Behavioral Impacts

8.1 Sexual Behavior and Pregnancy

There was a marginal program impact on the percent of in-school youth reporting they had sex, with students in the treatment group 10 percentage points more likely to report they had ever had sex.[13] There was no program impact on sexual debut before age 15; condom use at first sex; or, in the past 12 months, having multiple sexual partnerships, concurrent sexual partnerships, condom use at last sex, transactional sex with current/most recent partner, or use of family planning (Table 48).

Table 48. Sexual behavior

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Ever had sex										
In-school youth	9.4	220	9.9	220	14.9	166	26.0	168	0.1+	0.1
Out-of-school youth (B)	51.9	19	46.3	18	62.8	66	57.8	60	.	.
Sexual debut before age 15	2.7	239	3.5	238	4.4	232	4.0	229	0.0	0.0
Among students who ever had sex:										
First partner age-mixing (partner 10+ years older)	0.0	30	7.6	31	0.8	73	2.9	82	0.0	0.0
Condom used at first sex	64.6	30	59.9	31	74.3	73	77.0	82	0.0	0.1
Among students who had sex during the past 12 months:										
Multiple sexual partnerships	33.7	26	27.9	27	22.6	61	23.2	68	0.1	-0.1
Concurrent sexual partnerships	14.6	26	15.4	27	6.4	61	7.0	68	0.0	-0.1
Condom used at last sex	68.8	26	64.5	27	62.9	61	74.5	68	0.1	0.0
Ever had transactional sex with current/most recent partner	18.7	26	8.6	27	16.0	61	15.3	68	0.2	-0.1
Student or partner did anything or used any method to delay/avoid pregnancy	68.5	26	64.5	27	64.8	61	69.9	68	0.0	-0.1

[13] It could be the case that the program did not have a direct effect on sexual debut, but rather youth who sexually debuted were more likely to remain in-school if they were in the treatment group compared to youth who had sexually debuted in the comparison group. This would be an indirect program impact whereby the program influences sexual debut through its influence on whether or not the youth remains in school. This is a theoretical possibility; we do not have data to confirm this.

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student or partner used modern family planning method [A]	68.5	26	64.5	27	63.8	61	69.9	68	0.0	-0.1
Among students who had sex during the past 3 months										
Condom used every time [B]	65.6	12	63.2	11	33.9	28	42.6	31	.	.
Condom never used [B]	20.7	12	36.8	11	38.6	28	38.5	31	.	.

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A: Modern methods include female sterilization, male sterilization, IUD, injectables, implants, pills, male condom, diaphragm, foam, or jelly. Traditional methods include standard days method, lactational amenorrhea method, periodic abstinence, and withdrawal; B: Estimates should be interpreted with caution given low denominator sizes (less than 20 observations). No significance testing was conducted.

SEED had no impact on adolescent sexual behavior gender norms. In the comparison group, there was a 10% decrease in the number of students who agreed or strongly agreed with the statement, 'Adolescent boys fool girls into having sex' (p<.10), and a 10% increase in those who agreed or strongly agreed with the statement 'Teenagers should not engage in touching, kissing, or sexual activity unless both partners are comfortable with it' (p<.05) (Table 49).

Table 49. Adolescent sexual behavior gender norms

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Student strongly agrees or agrees with adolescent sexual behavior gender norm statement:										
Older boys and men are wrong to make sexual comments to girls when the girls are walking to school.	81.2	226	81.4	226	74.8	222	76.9	215	0.0	-0.1
Girls who have boyfriends are irresponsible.	73.4	226	77.2	226	73.7	222	68.4	215	-0.1	0.0
When girls and boys are dating, it is important that the girl does what the boy wants her to do.	15.8	226	13.1	226	10.5	222	8.9	215	0.0	0.0
In order for a boy to be accepted by his teenage friends he should have sex with his girlfriend.	7.9	226	7.4	226	4.3	222	7.9	215	0.0	0.0

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Adolescent boys fool girls into having sex.	71.7	226	58.7	226	64.0	222	59.3	215	0.1	-0.1+
Most of the time, if an adolescent girl says "no" to sex, her boyfriend will dump her.	74.5	226	77.4	226	74.5	222	71.4	215	-0.1	0.0
Teenagers should not engage in touching, kissing, or sexual activity unless both partners are comfortable with it.	60.6	226	65.1	226	73.8	222	73.9	215	0.0	0.1*
It is acceptable for girls to take things such as a cell phone, money, or jewelry in exchange for sexual favors.	4.1	226	4.1	226	2.4	222	3.4	215	0.0	0.0
It is ok for an adolescent girl to have sex as long as she avoids getting pregnant.	7.1	226	3.9	226	3.2	222	5.2	215	0.0	0.0
It is ok for an adolescent boy to have sex as long as he avoids getting a girl pregnant.	7.9	226	6.5	226	3.7	222	5.0	215	0.0	0.0
It's the girl's responsibility to prevent pregnancy.	85.3	226	88.2	226	80.6	222	82.7	215	0.0	-0.1

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

There was a marginally significant program impact on female youth reporting they had ever been pregnant or became pregnant before age 18. Female youth in the treatment group were 10 percentage points less likely than those in the comparison group to report ever having been pregnant or having been pregnant before age 18 (p<.10).

There was no program impact on female youth reporting they had ever given birth or gave birth before age 18. In the comparison group, there was a 10% increase over time in female youth who reported they ever had a live birth (p<.001) and reported they had a live birth before age 18 (p<.01). There was a 20% increase over time among youth in the comparison group who reported that getting pregnant or fathering a child would be a serious barrier to achieving their own educational goals. There was also a 10% decrease over time among youth in the comparison group who reported that getting pregnant or fathering a child was a main reason students from their current or previous primary school who passed the PSLCE did not join secondary school.

There was a marginally statistically significant impact on household respondents who reported a child in their household had dropped out of school due to pregnancy, with respondents in the treatment group 20 percentage points more likely to report this had occurred (p<.10).

There was no program impact on caregivers reporting that a child in their household was selected to secondary school but did not attend due to becoming pregnant or fathering a child. There was a 10% increase over time among caregiver respondents in the comparison group who reported that pregnancy is a barrier for community youth who complete primary school to go to secondary school (p<.05) and a 20% decrease over time reporting that pregnancy is a barrier for community youth who begin secondary school to complete it (p<.001).

There was a significant program impact on primary school respondents reporting that fathering a child is a barrier for boys joining secondary school. Primary school respondents in the treatment group were 30% more likely to report that fathering a child is a barrier for boys joining secondary school than those in the comparison group (p<.01) (Table 50).

There was no program impact on secondary school respondents who reported that pregnancy or fathering a child is a barrier to boys or girls completing secondary school. In the comparison group, there was a 40% decrease over time in respondents reporting that pregnancy is a barrier for girls (p<.01) and a 20% decrease in those reporting it is a barrier for boys (p<.05) (Table 51).

Table 50. Parenthood and academic achievement, student, household, and caregiver report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Ever been pregnant, female youth	4.2	119	6.3	119	21.0	117	15.8	117	-0.1+	0.2***
Pregnant before age 18, female youth	2.7	119	3.4	119	13.8	117	8.3	117	-0.1+	0.1***
Ever had a live birth, female youth	2.0	119	1.8	119	15.7	117	8.8	117	-0.1	0.1***
Live birth before age 18, female youth	1.0	119	1.8	119	9.1	117	5.5	117	0.0	0.1**
Ever fathered a live birth, male youth	0.0	120	1.0	120	2.9	119	1.1	116	0.0	0.0
Fathered a live birth before age 18, male youth	0.0	120	0.0	120	0.0	119	0.0	116	.	.
Selected first or second selection, did not attend due to pregnancy					2.2	30	1.8	46		
Getting pregnant/fathering a child is a serious barrier to achievement of student's own educational goals	37.2	239	41.8	239	55.1	236	54.5	233	-0.1	0.2**

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Getting pregnant/fathering a child is a main reason students from current/previous primary school who pass the PSLCE do not join secondary school	17.5	239	20.2	239	11.5	236	16.8	233	0.0	-0.1*
Household respondents [Baseline retrospective cohort, midline prospective cohort in Standard8 during AY2 (2022]										
Student dropped out due to pregnancy	21.7	64	13.9	50	13.9	23	15.9	19	0.2+	0.0
Caregiver respondents (Prospective cohort)										
Any household girls selected to secondary school but did not attend due to pregnancy	45.3	26	49.0	27	42.5	9	35.2	15	-0.3	0.3
Any household boys selected to secondary school but did not attend due to fathering a child	32.7	23	10.4	32	5.4	11	18.7	15	0.2	0.0
Pregnancy is a barrier for:										
Community youth who complete primary school to go to secondary school	35.3	238	36.7	234	24.3	215	32.2	212	0.1	-0.1*
Community youth who begin secondary school to complete secondary school	40.8	238	46.7	234	25.0	215	30.8	212	0.0	-0.2***
Primary school respondents (Primary school panel)										
Pregnancy/fathering a child is a serious barrier to										
Students completing primary school	36.4	20	34.7	20	19.1	20	9.4	20	-0.1	-0.2
Girls joining secondary school	45.3	20	34.1	20	24.4	20	34.1	20	0.2	-0.2
Boys joining secondary school	30.7	20	19.4	20	2.7	20	18.8	20	0.3*	-0.3**

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

Table 51. Parenthood and academic achievement, secondary school report

Secondary school respondents (Secondary school panel and SEED schools)	Baseline		Midline			DID estimation results (marginal effects, panel of secondary schools only)	
						Program impact	Time trend in C group
	Comparison	Treatment	Comparison	Treatment	SEED	Estimate	Estimate
Pregnancy/fathering a child is a serious barrier to							
Girls completing secondary school	52.0	38.1	12.0	28.6	40.0	0.3	-0.4**
Boys completing secondary school	24.0	19.1	4.0	4.8	6.7	0.1	-0.2*
N	25	21	25	21	30		

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

8.1.1 Qualitative Findings: Sexual Behavior and Pregnancy

"[Getting someone pregnant] can greatly impact my life and destroy my future because she can want me to take care of her. This can make me drop out of school. So, I cannot do this."

-Form1 male student, IDI

Form 1 youth who participated in IDIs were asked if they had been sexually active during the last year preceding the study. Six of the eight youths (two boys and four girls) reported that they had not been sexually active. The main reasons for not being sexually active included focusing on future education goals and fear of pregnancy, which would lead to dropping out of school. Other youth reported that they had not been sexually active as they were afraid of getting sexually transmitted diseases such as HIV/AIDS.

Two male youths reported that they were sexually active. One of them stated that they used a condom as a preventive measure against sexually transmitted infections, while the other indicated that they only used a condom sometimes.

Being pressured to engage in sexual activity was not common among youth respondents. However, a few youth reported that either they themselves or their friends had been pressured to engage in sexual activity by peers, sexual partners, or sometimes adults. Similarly, there were reports of both male and female peers receiving food, favors, or gifts in exchange for sex.

Some caregivers reported that it was beneficial to introduce children to contraceptives to prevent pregnancy and enable them to continue their education. Others had misconceptions about contraceptives (i.e., that they will make becoming pregnant difficult later in life) and argued that it is more advantageous to advise the child of the benefits and drawbacks associated with engaging in sexual activity.

"Contraceptives are not a good option, just advise the child. When you encourage contraceptives, the child ends up having difficulty getting pregnant when they reach the stage of getting pregnant."

–Female caregiver.

Youth across the study sites shared accounts of their friends who became pregnant or got a girl pregnant. In contrast to primary and secondary school quantitative respondents, they explained that pregnancy had a

disproportionate impact on the educational attainment and overall wellbeing of girls compared to their male partners. While most girls who become pregnant drop out of school due to caregiving responsibilities, getting married, or fear of being harassed at school, most boys remain in school.

> *"The girl got pregnant and the boy continued with his education. It was very bad that the girl ended up being the victim because her education was interrupted as she stopped coming to school unlike this boy. As of now, the boy wrote his standard 8 examinations while the girl is just staying at home."*
>
> – Standard 7 male student
>
> *"It becomes difficult for many girls to go back to school after delivery. Sometimes it is because they have no one to leave the child with. Others it is because of feeling shy of being mocked of having a child and going to school. So, for many girls, getting pregnant means the end of their education."*
>
> –Form 1 female student

8.2 Fertility Ideals

There was no program impact on students' ideal number of children to have or their ideal age to have their first child. In the comparison group, the ideal number of children students would like to have increased from 2.3 to 2.8 (p<.01) (Table 52).

Table 52. Fertility ideals

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Ideal number of children you would like (mean)	2.3	234	2.5	235	2.8	235	2.8	231	-0.3	0.5**
Ideal age you would like/would have liked to have first child (mean)	25.5	226	25.5	218	25.6	223	25.6	220	0.0	0.0
Best age for a man to have children (mean)	24.5	229	24.4	228	24.2	227	24.0	226	-0.2	-0.2
Best age for a woman to have children (mean)	22.5	231	21.9	234	21.8	230	21.4	228	0.1	-0.6

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

8.3 HIV Knowledge, Testing, and Perceived Risk

Impact analyses showed that students in the treatment group were 10% less likely to know where to test for HIV (p<.05) and 20% less likely to have tested in the past 12 months (p<.05). In the comparison group, there was an increase of 10% in students demonstrating comprehensive knowledge of HIV prevention (p<.05) and having ever tested for HIV and knowing the results (p<.001). There was also a 10% decrease in students in the comparison group perceiving they have no risk of HIV (p<.05) (Table 53).

Table 53. HIV knowledge, testing and perceived risk

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Student demonstrates comprehensive knowledge about HIV prevention	40.7	239	47.1	239	48.0	236	48.0	233	-0.1	0.1*
Student demonstrates knowledge of mother-to-child transmission of HIV	53.8	239	48.0	239	52.0	236	45.4	233	0.0	0.0
Knows where to be tested for HIV	87.2	234	89.7	229	95.4	231	90.4	228	-0.1*	0.1***
Ever tested for HIV and know the results	37.7	206	37.7	207	51.4	222	47.7	211	0.0	0.1***
Tested for HIV in last 12 months	18.1	206	27.2	207	35.8	222	29.6	211	-0.2*	0.2***
Student perceives they have no risk of contracting HIV	77.1	224	74.7	220	67.1	227	64.9	220	0.0	-0.1*
Caregiver respondents (Prospective cohort)										
Caregiver perceives the chances that the student will NOT get HIV/AIDS to be high	32.5	228	35.3	224	24.9	192	29.8	194	0.0	-0.1

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

8.3.1 Qualitative Findings: HIV Knowledge and Perceived Risk

Youth respondents demonstrated knowledge and awareness of HIV/AIDS and perceived risks. Some reported they knew someone who had contracted HIV/AIDS either at birth or as a result of sexual assault. A prevailing view among both Standard 7 and Form 1 youth was that most people get HIV/AIDS from unsafe sex. Some caregivers reported that youth sometimes engage in sexual activities as a means of addressing their needs due to poverty.

> *"Some youths contract HIV while so young. In the course of life to find financial support, youths engage in sexual behaviors to find their needs. As a result, they contract the disease."*
>
> –Female caregiver

"I know someone who is HIV positive but he is not schooling…. They stopped attending school because their friends were laughing at them that they have AIDS."

–Form 1 male student, FGD

"For my friend, people know that she is HIV positive. I don't know [how] they know this. She is mostly isolated by fellow students as a result she barely goes to school."

-Form 1 female student, FGD

Some respondents felt that Cyclone Freddy contributed to the spread of HIV/AIDS in their community. A male Form 1 youth explained that there was a belief among some community members that the world was ending, and so "some youths wanted to try to have sex with a girl before they died."

Youth across the study sites discussed the experiences of someone they knew who had HIV/AIDS. They reported that youth living with HIV/AIDS often drop out of school due to stigmatization and discrimination by their peers.

8.4 WASH and MHM Behaviors

There was a program impact on students reporting that they believed other people in the community disagree or strongly disagree that girls should not go to school when menstruating, with students in the treatment group 30 percentage points more likely to report perceived favorable community views on school attendance during menstruation than students in the comparison group (Table 54).

Table 54. Menstruation norms and onset among girls

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents [Baseline retrospective cohort, midline prospective cohort in Standard 8 during AY2 (2022)]										
Disagrees/strongly disagrees that girls should not go to school when they are menstruating	89.5	75	85.3	83	94.1	89	89.7	97	0.1	0.0
Believe other people in the community disagree/strongly disagree that girls should not go to school when menstruating	96.6	75	85.4	83	78.9	89	89.6	97	0.3**	-0.2**
Among girls who are currently in school, percent who have started to have periods	98.6	36	99.3	58	92.9	71	96.2	77	n/a	n/a

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

There was a significant program impact on female students reporting that they missed school due to their last menstrual period for a reason other than menstrual pain or discomfort, with female students in the treatment group 20 percentage points less likely to report this than those in the comparison group (p<0.01) (Table 55).

Table 55. Menstrual management strategies and absenteeism among girls in secondary school

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents [Menstruating students in Form 1: Baseline retrospective cohort, midline prospective cohort in Standard 8 during AY2 (2022)]										
Students are permitted to use the toilets/latrines at all times while at school	91.5	23	97.8	40	87.1	26	80.6	31	0.1	-0.1
Worried would not be able to change menstrual materials when needed during last menstrual period when at school	12.9	21	24.2	36	33.1	26	17.6	31	0.0	-0.1
The student's usual management strategy if she begins to menstruate while at school is to leave school (A)	61.6	23	79.7	40	69.5	26	76.5	31	0.0	-0.1
Missed school due to her last menstrual period for a reason other than menstrual pain or discomfort (B)	0.0	20	9.0	39	0.0	25	0.0	31	-0.2**	0.1+

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A: Includes going home and not returning to school for the day; going home, changing, and coming back to school; and going home and not returning to school until after finished menstruating; B: Includes feeling ashamed to go while menstruating; feeling nervous that others would know she was menstruating; no private facilities for changing materials; I wasn't allowed to go; and lack of menstrual materials.

8.4.1 Qualitative Findings: WASH and MHM

Form 1 youth were asked to describe how students felt about the new toilets and changing room facilities at their SEED school. Most youth said that these facilities were "very good" and had improved the lives of students attending the school. Notably, the provision of water taps within the toilet facilities was reported to have significantly improved students' ability to practice good hygiene by offering convenient access to water for hand washing and eliminating the need to travel to a borehole. Some caregivers noted that the borehole constructed as part of the SEED school had a positive effect on the surrounding community as it allowed access to clean, safe water.

"It is a very good facility and it has also improved our lives. The toilet facility has water taps whereby after using the toilet, you wash your hands right there. We are no longer using the borehole because it was difficult to adhere to hygienic practices.

–Form 1 male student, FGD

"The establishment of this school has also brought a borehole. People living in the surrounding areas are now able to access safe water from this borehole provided by the school"

-Male caregiver, FGD

Students reported that the new changing rooms have improved MHM at SEED schools. In all but one of the SEED schools where interviews took place, the changing rooms are used by female students. However, students noted that the changing rooms lacked soap and sanitary pads.

At one of the SEED schools, there were no female teachers. At this school, both male and female students expressed concerns regarding limited access to changing rooms, as female students are reluctant to ask to use the facilities (requiring a teacher to unlock the door) when interacting with male teachers.

> *"For the changing rooms we are not using them because there is no female teacher, for us female students we feel shy to be open enough to use the facility."*
>
> -Form 1 female student, FGD

> *"Yes, we only have male teachers at this school ... Sometimes I feel like girls are more open to female teachers than male teachers, so it's a challenge for girls to talk to male teachers on sensitive issues like menstrual period."*
>
> –Form 1 male student, IDI

8.5 Child Safety

8.5.1 Travel to School

The program had no impact on students feeling unsafe traveling to and from school, with 54.9% to 66.2% reporting they felt safe traveling to and from school. There was also no impact on the percent of students reporting absenteeism due to safety concerns, which was under 7% at both baseline and midline. (Table 56).

Table 56. Travel related student safety and absenteeism

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents [Baseline retrospective cohort, midline prospective cohort in Standard 8 during AY2 (2022)]										
Student agrees/strongly agrees with statement on student safety										
I feel safe traveling to/from school	65.5	54	63.8	67	54.9	68	66.2	73	0.2	-0.1
It is safe for children to travel to/from my school	64.7	54	63.8	67	50.4	68	57.1	73	0.2	-0.2
I felt unsafe or threatened on the way to or from school	12.2	54	16.9	67	17.8	68	6.2	73	-0.1	0.0
Student self-reported ever being absent from school due to safety concerns at or traveling to/from school	5.1	54	6.9	67	6.7	68	5.3	73	0.0	0.0

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

Based on student report, the program did not have an impact on unsafe travel to school affecting their educational attainment. In the comparison group, there was a 20% increase over time in students reporting

that lack of safety traveling to and from school was a serious barrier to achieving a student's own educational goals (p<.001).

There was a marginally significant impact on primary school respondents who reported that a lack of safety was a serious barrier to girls joining secondary school, with respondents in the treatment group 30 percentage points less likely to report this barrier than those in the comparison group (p<.10) (Table 57). There was no impact on secondary school respondents reporting that a lack of safety traveling to and from school was a barrier to girls or boys joining secondary school. (Table 58).

Table 57. School travel safety and academic achievement, student, caregiver, and primary school report

	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
Indicator	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Student self-report dropped out of school because travel to school is not safe *(Baseline retrospective cohort, midline prospective cohort in Std.8 during AY2)*	0.0	73	1.2	51	0.0	29	0.0	28	0.0	0.0
Selected first or second selection, did not attend because it is unsafe to travel to/from school					0.0	29	0.0	44	.	.
Not safe traveling to/from school is a serious barrier to achievement of student's own educational goals	19.8	239	28.4	239	38.3	236	44.2	233	0.0	0.2***
Not safe traveling to/from school is a main reason students from current/previous primary school who pass the PSLCE do not join secondary school	1.1	239	2.4	239	0.4	236	1.0	233	0.0	0.0
Caregiver respondents (Prospective cohort)										
Any household girls selected to secondary school but did not attend because it is not safe traveling to/from school	0.0	26	0.0	27	0.0	9	0.0	15	.	.
Any household boys selected to secondary school but did not attend because it is not safe traveling to/from school [(A)]	0.0	23	0.0	32	7.9	11	0.0	15	.	.
Not safe traveling to/from school is a barrier for:										

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Community youth who complete primary school to go to secondary school	0.7	238	0.7	234	1.0	215	0.2	212	0.0	0.0
Community youth who begin secondary school to complete secondary school	0.8	238	0.2	234	0.9	215	0.9	212	0.0	0.0
Primary school respondents (Primary school panel)										
Not safe traveling to/from school is a serious barrier to										
Students completing primary school	22.2	20	14.1	20	14.2	20	0.0	20	-0.1	-0.1
Girls joining secondary school	35.9	20	34.7	20	56.4	20	24.7	20	-0.3+	0.0
Boys joining secondary school	27.6	20	25.3	20	25.3	20	9.4	20	-0.1	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A: Estimates should be interpreted with caution given low denominator sizes (less than 20 observations). No significance testing was conducted.

Table 58. School travel safety and academic achievement, secondary school report

Secondary school respondents (Secondary school panel and SEED schools)	Baseline		Midline			DID estimation results (marginal effects, panel of secondary schools only)	
						Program impact	Time trend in C group
	Comparison	Treatment	Comparison	Treatment	SEED	Estimate	Estimate
Not safe traveling to/from school is a serious barrier to:							
Girls completing secondary school	44.0	28.6	56.0	33.3	46.7	-0.1	0.1
Boys completing secondary school	24.0	28.6	16.0	14.3	16.7	-0.1	-0.1
N	25	21	25	21	30		

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A: No significant differences between comparison and non-SEED treatment school at baseline. No significant differences among comparison, non-SEED treatment, and SEED schools at midline.

8.5.2 Boarding

Approximately 2.2% to 8.5% of students reported they board at their secondary school. Self-boarding was reported by 8.8% to 31.1% of students (Table 59).

Table 59. Prevalence of boarding and self-boarding among secondary school students, student report

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents [Baseline retrospective cohort, midline prospective cohort in Standard 8 during AY2 (2022)]										
Student is a boarder at secondary school	2.2	54	8.5	67	8.0	68	5.8	73	0.0	0.0
Student self-boards for secondary school	8.8	54	31.1	67	11.4	68	21.0	73	-0.1	0.0

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.00.

Approximately 20% to 25% of secondary school respondents reported their school had boarding facilities; no SEED school reported the presence of boarding facilities. There was no program impact on the percent of students who self-board. However, there was a significant difference in the percentage of comparison area secondary schools versus SEED schools that reported that no students self-board. SEED schools are significantly more likely than comparison area secondary schools to report that no students self-board (p<0.05) (Table 60).

Table 60. Prevalence of boarding and self-boarding among secondary school students, secondary school report

	Baseline		Midline			DID estimation results (marginal effects)	
						Program impact	Time trend in C group
	Comparison	Treatment	Comparison	Treatment	SEED	Estimate	Estimate
Secondary school respondents *(Secondary school panel and SEED schools)*							
School has boarding facilities	20.0	23.8	20.0	23.8	0.0	.	
Percent of students who self-board:							
Many	12.0	23.8	20.0	23.8	6.7	-0.1	0.1
Half	24.0	14.3	12.0	19.1	6.7	0.2	-0.1
Few	52.0	33.3	56.0	28.6	43.3	-0.1	0.0
None	12.0	28.6	12.0	28.6	43.3	0.0	0.0
N	25	21	25	21	30		

Notes: +p<0.10 * p<0.05 ** p<0.01 *** p<0.001. At midline, SEED schools were significantly more likely to report that no students self-boarded compared to comparison secondary schools (p<0.05).

There was no program impact on perceptions of boarding safety affecting educational attainment. No students reported they did not attend secondary school at midline because boarding or self-boarding was unsafe. Similarly, no caregivers reported that children in their household did not attend secondary school because boarding or self-boarding was unsafe (Table 61).

Table 61. Boarding safety and educational attainment

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Student respondents (Prospective cohort)										
Not wanting to board/self-board is a main reason students from current/previous primary school who pass the PSLCE do not join secondary school	0.7	239	1.3	239	1.1	236	0.3	233	0.0	0.0
Selected first or second selection, did not attend because boarding at school is not safe					0.0	29	0.0	44	.	.
Selected first or second selection, did not attend because self-boarding is not safe					0.0	29	0.0	44	.	.
Caregiver respondents *(Prospective cohort)*										
Any household girls selected to secondary school but did not attend because boarding at school is not safe	0.0	26	0.0	27	0.0	9	0.0	15	.	.
Any household girls selected to secondary school but did not attend because self-boarding is not safe	0.0	26	0.0	27	0.0	9	0.0	15	.	.
Any household boys selected to secondary school but did not attend because boarding at school is not safe	0.0	23	0.0	32	0.0	11	0.0	15	.	.
Any household boys selected to secondary school but did not attend because self-boarding is not safe [A]	0.0	23	0.0	32	21.5	11	0.0	15	.	.
Top three reason community youth who complete primary school do not go to secondary school										
Boarding at school is not safe	0.0	238	0.3	234	0.0	215	0.8	212	0.0	0.0

Indicator	Baseline				Midline				DID estimation results (marginal effects)	
	Comparison		Treatment		Comparison		Treatment		Program impact	Time trend in C group
	Value	N	Value	N	Value	N	Value	N	Estimate	Estimate
Self-boarding is not safe	1.9	238	0.9	234	0.2	215	0.0	212	0.0	0.0
Top three reason community youth who begin secondary school do not complete secondary school										
Boarding at school is not safe	0.0	238	1.4	234	0.0	215	0.2	212	0.0	0.0
Self-boarding is not safe	1.4	238	0.3	234	0.3	215	0.0	212	0.0	0.0

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001; A: Estimates should be interpreted with caution given low denominator sizes (less than 20 observations). No significance testing was conducted.

8.5.3 Qualitative Findings: Travel to School and Boarding

Most caregivers, students, and teachers agreed that youth should attend the CDSS they are selected to within their community because it is a public school, nearby, and likely more affordable (e.g., no additional costs for transport, upkeep, boarding, and food) for most parents who rely on farming as a source of income. In addition, caregivers preferred their children to attend a CDSS within their community for personal safety, as they would not have to travel long distances alone to school. As discussed in Section 6.2.1, caregivers' and students' main safety concern when traveling to and from school was SR-GBV.

> *"In the past some youths were not interested in school because they had that mentality that they cannot finish school because a secondary school was far from here. The construction of this new secondary school has helped a lot of youths to be now focused with education."*
>
> -Female caregiver

> *"This [SEED] school is helping us a lot. Children were travelling long distances to school. Some were even doing self-boarding just to cut transport costs … This costed most of the parents since they had to pay rent, provide food and other upkeep for their children … As parents, we have been helped a lot financially since those expenses are not there. We are also able to monitor behavior and performance of our children because we are living together in this community."*

Additionally, caregivers stated that by attending school in the community, children could become role models for other youth in the community.

> *"When they go to a faraway school, they learn other behaviors different from the playfulness of students from the school she could have been attending from the learners she has met at that far away school. Schooling with the same people from primary to secondary you don't get to learn new things."*
>
> -Female caregiver

In contrast, some caregivers preferred that their children attend a boarding school as they felt a new school environment would provide an opportunity to learn new things, focus on studies, and be away from bad influences (e.g., friends with no interest in school).

9. Rural Findings: Education Sector Spillover

9.1 Teacher Transfers

Table 62 presents the percentage of primary and non-SEED secondary schools reporting that any teacher transferred to a secondary school during the AY and whether any teacher transferred to a new secondary school during the midline evaluation AY. There were no significant differences between treatment and comparison primary schools or secondary schools in the likelihood of having a teacher transfer to a secondary school in any study year. No study primary schools reported that any teacher had transferred to a newly opened CDSS during the midline evaluation AY (AY 3, 2022-2023). Non-SEED treatment panel schools, however, were marginally significantly more likely to report that a teacher transferred to a newly constructed secondary school during the midline AY than comparison area secondary schools (19.1% vs. 4.0%, p<0.10).

Table 62. Teacher Transfers

	Primary School Panel			Comparison & Non-SEED Treatment Secondary School Panel		
	Comparison	Treatment	Sig. Diff.	Comparison	Treatment	Sig. Diff.
Indicator	Value	Value	p-value	Value	Value	p-value
Any teacher left the school during the AY because they transferred to a secondary school						
AY0 (2019-2020)	39.0	35.3		64.0	61.9	
AY1 (2021)	73.4	54.1		32.0	33.3	
AY2 (2022)	34.6	35.3		52.0	76.2	
AY3 (2022-2023)	47.8	60.6		40.0	42.9	
Any teacher transferred to a newly opened CDSS during the current AY (AY3, 2022-2023)	0.0	0.0	.			
N (primary schools)	20	20				
Any teacher transferred to a newly constructed secondary school during the AY (AY3, 2022-2023)				4.0	19.1	+
N (secondary schools)				25	21	

Notes: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001.

9.2 Professional Opportunities

Figure 5 shows primary and secondary school report of the extent (not at all, very little, to some extent, a lot) to which teachers at the school have opportunities and support for professional development (Figure 5A) and the extent to which they have promotion or career advancement opportunities (Figure 5B).

With regard to opportunities for professional development, there were no significant differences between study arms at baseline or midline and no significant changes over time in comparison or treatment group panel schools for either primary or secondary schools.

With regard to opportunities for job upgrade or career advancement among primary schools, there was a marginally significant difference between study arms at baseline ($p<0.10$), but no difference at midline. There was a significant change over time among comparison group primary schools ($p<0.05$), with more schools reporting 'a lot' of opportunities at midline, but no change over time in treatment group. Among secondary schools, there were no significant differences between study arms at baseline or midline and no significant changes over time in comparison or treatment group panel schools.

Figure 5. Professional opportunities in primary and secondary schools

Figure 5A. Opportunities and support for professional development and training

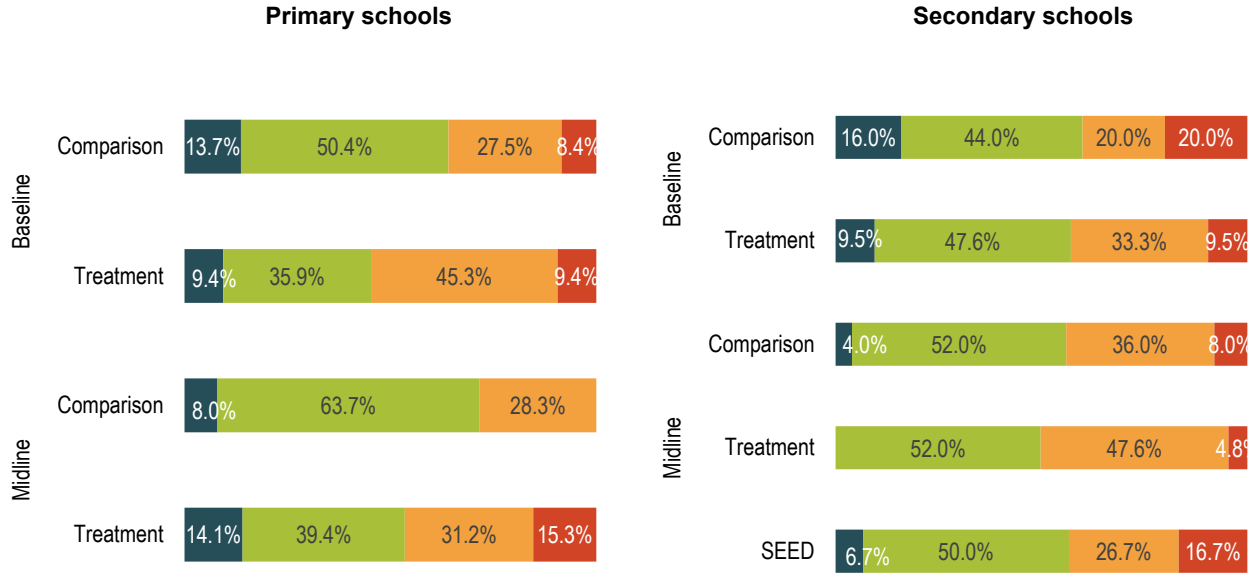
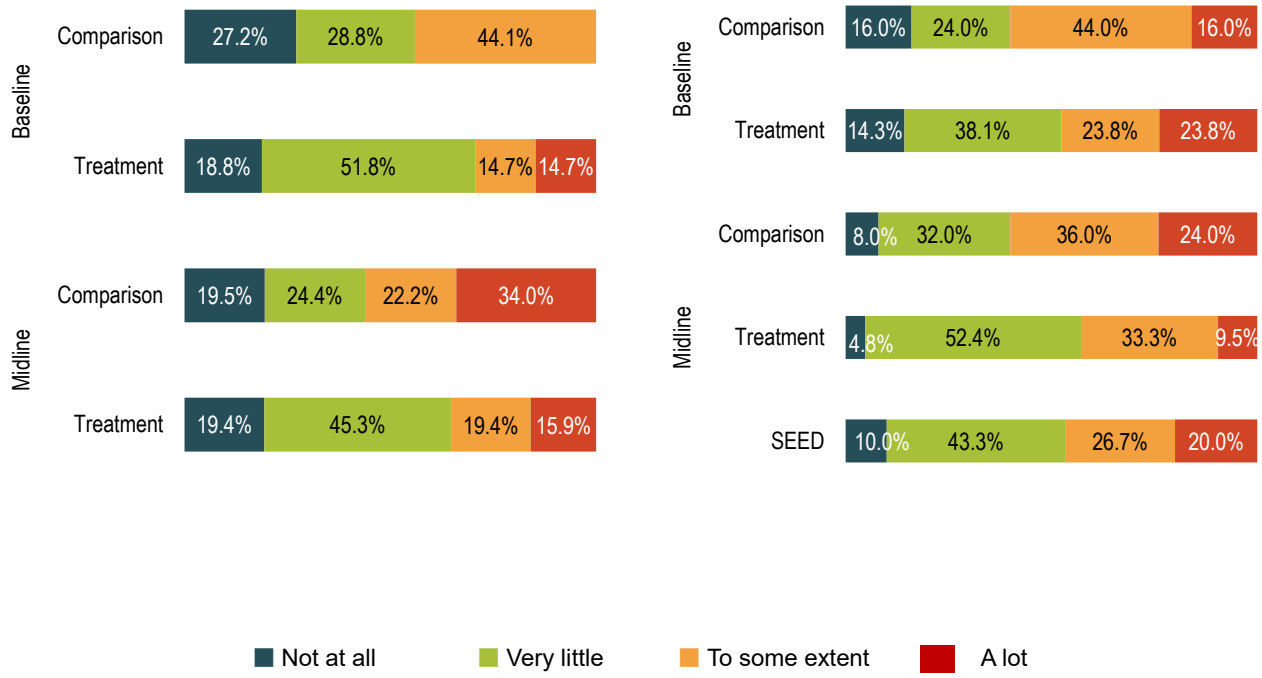


Figure 5B. Opportunities for promotion or career advancement



10. SEED Urban: Qualitative Results

10.1 Respondents

At baseline (in 2021), 190 people participated in the urban qualitative component, and the average age of female and male Form 1 students was 15.0 and 15.4, respectively. Ninety people participated in the midline urban qualitative component. The average age of Form 3 girls and boys was 17.0 and 17.2 years, respectively. Community leaders held positions such as village head, group village head, PTA chairman, Mothers' Group chairwoman, and Village Development Committee chairman (Table 63).

Table 63. Midline Urban qualitative respondents

Evaluation baseline (2021)	Number of respondents	Evaluation midline (2023)	Number of respondents
FGD: Form 1 girls	46	FGD: Form 3 girls	23
FGD: Form 1 boys	48	FGD: Form 3 boys	24
FGD: Female caregivers of Form 1 youth	38	FGD: Female caregivers of Form 3 youth	18
FGD: Male caregivers of Form 1 youth	34	FGD: Male caregivers of Form 3 youth	13
IDI: Form 1 girls	6	IDI: Form 3 girls	3
IDI: Form 1 boys	6	IDI: Form 3 boys	3
KII: Form 1 teachers	6	KII: Form 3 teachers	3
KII: Community leaders	6	KII: Community leaders	3
Total	190	Total	90

10.2 Description of School Expansion

SEED Urban involved the design-build construction of prefabricated classroom blocks, new boy and girl latrine blocks, and changing rooms for girls in 30 existing CDSSs in the cities of Blantyre, Lilongwe, Mzuzu, and Zomba. SEED Urban sites were handed over to the MoE between December 2020 and February 2021.

10.3 Reported Positive Impacts of the Expansion

10.3.1 Increased Sense of School Pride

Similar to baseline, midline respondents expressed a sense of pride in their expanded school, which many described as "beautiful."

> *"I believe that every student is proud to mention their school to others when it is very beautiful ... Unlike in the past when there were only the old blocks, this school did not give a good vibe to a student. Right now, they are proud of the new blocks and it even motivates them to work hard in class."*
>
> -Male caregiver

10.3.2 Conducive Learning Environment

Evaluation midline respondents, similar to those at baseline, praised the expansion for creating a conducive learning

> *"The school blocks are beautiful. Children were not happy to come to this school when they got selected … because of the how the school was looking. But now every child wants to be at this school because of the beautiful school blocks that have been expanded."*
>
> -Community leader

environment that they described as spacious and well-ventilated, with every student having their own desk and chair. Prior to the expansion, students and teachers reported that classrooms were congested, noisy, and extremely hot, making it difficult for students to concentrate and for the teacher to be heard. Classrooms also lacked sufficient numbers of desks and chairs, and students sat on benches and shared desks. Some students sat on the floor.

Respondents also explained that prior to the expansion, heavy rain falling on iron sheet roofs would drown out their teachers. They noted that the new school blocks have a ceiling in addition to a ventilated roof, and that this makes the rain significantly quieter and allows students to hear their teacher during the rainy season.

Students and teachers were also appreciative of the large chalkboards that were installed in the new blocks, as the old chalkboards were made of cement and were reported to consume a lot of chalk and be difficult to write on. Students further reported that classrooms not in use for certain periods during the day could be used for studying, whereas prior to the expansion, there was no available space for this purpose. Some teachers felt that this was a factor in students' improved performance.

"Students are coming in large numbers since they have good and well-ventilated classrooms. They have a conducive environment for learning which has good desks, black board, and it's a beautiful school which attracts more students."

-Form 3 teacher

"These new classrooms help us a lot during rainy season. When rain is falling, there is not much noise compared to old classes. Beside this, during cool season, these classes keep warmth so we don't see any challenge during those seasons."

-Form 3 male student, FGD

"After they expanded the classrooms it has made us to learn well. We sit very well in classrooms - there is no congestion. We are learning well and it happens that other classrooms are free and can be used for studying."

-Form 3 female student, IDI

"Everyone wants their goals to be accomplished. And the place which is the means to achieving these goals should have necessary environment for that. So, in the past … we were so congested. Right now, this is a conducive environment because the classes are nice, spacious, everyone has their own desk and a chair. So, this provides one a chance to do things comfortably."

-Form 3 male student, IDI

10.3.3 Improved Student-Teacher Ratio

"There is a good teacher to learner ratio. Of course, there are a lot of students, but when we divide the class into half, one class remains with 45 to 50 and the other class too … Since students have different ways of learning, you are able to observe the needs of everyone. You end up knowing the strengths and weaknesses of every student in the class ... You end up knowing what each student needs to understand."

-Form 3 teacher

Respondents reported that the student teacher ratio had improved. With the additional blocks, teachers explained that classes have been divided into sections (e.g., Form 1A and 1B), thus reducing class size to about 45–50 students. Teachers found this number of students to be more manageable, allowing them to focus on individual students' needs.

10.3.4 Reduced Absenteeism Among Girls

At two schools, where female students had access to the new toilets and changing rooms[14], respondents reported that the addition of changing rooms had reduced absenteeism for girls, as previously girls missed school when menstruating. Before the construction of washrooms, respondents reported there were issues with hygiene because girls did not have anywhere to go to change their sanitary pads. When asked who benefited more from the expansion (boys or girls), teachers reported that girls benefited more because of the changing rooms and also because of having a desk to sit at, rather than on the floor.

"The expanded washrooms and toilets have made girls more comfortable to attend school regularly. When in class, girls are also able to sit very comfortably …Both boys and girls are happy but still, it is the girls who are happier because of the good rooms which are addressing their natural needs ... Before the expansion, we had few toilets and students used to run away from school or asked to be excused to go home so that they could take care of themselves as girls. Now that there are expanded facilities like the toilets and washrooms, students are able to help themselves here at school."

-Form 3 teacher

"When going to the toilet, like the changing rooms, everything was found there, like soap, water, everything was there."

-Form 3 female student, IDI

"It is one student per desk which gives us the comfortability in learning regardless of how we are sitting … because [the desk] covers us properly."

-Form 3 female student, FGD

10.3.5 Increased Student Motivation to Perform Well in Primary School

"The way these new classroom blocks were built is inspiring and beautiful … For instance, my child is in Standard 6 at primary school, and she was very inspired and said, 'Mom, look at how beautiful the school is. I really want to attend this school one day.' So, you see, youths are really inspired."

-Female caregiver

"The expanded school has motivated the younger ones in primary schools to work even harder because they now know that they have higher chance of being selected to secondary school."

-Form 3 male student

Similar to baseline, midline respondents commented that students currently in primary school are inspired to work harder to be selected to the expanded CDSS. Others explained that primary students believe they have a better chance of being selected to secondary school as a result of the expansion, and this motivates them to perform better in primary school.

10.3.6 Increased Motivation for Caregivers to Send Children to School

Teachers felt that the expanded schools were also motivating parents to send their children to school, as there were reports that students were performing better. One female caregiver explained that the overcrowding and fighting over a limited number of desks negatively affected the mental health of

"Everyone should have a desk and participate alone with their books. The old blocks [were] overcrowded, people could quarrel and [my child] could tell me at home that 'people were fighting for desks, this and that' which shows that it was affecting the mental health of the students."

-Female caregiver

Performance of students at this school has greatly improved with the expansion of the school …This encourages parents to allow their children to come to this school… Parents are happy to enroll their children at this school so it's a positive change."

-Form 3 teacher

[14] At one school, the new toilets and changing room were reserved for use by staff.

students, but that this has been resolved with the school expansion.

10.3.7 Reduced Disease/ Improved Hygiene

Both baseline and midline respondents reported that the crowded classrooms contributed to the spread of infectious diseases, but this concern was mitigated with the expansion and at baseline. Respondents explained that students were now better able to maintain social distance to reduce the spread of disease due to new spacious classrooms and smaller class sizes.

Respondents at only one of the three schools reported that both boys and girls were using the new toilets (see below under *Expanded Blocks and Toilets Not Used for Intended Purposes*). At this school, a Form 3 male student noted that the new toilets "helped us to prevent diseases like the ones occurring in our communities which come due to poor disposal of human waste."

10.4 Reported Unintended Impacts

10.4.1 Increased Secondary School Enrollment

SEED Urban was not intended to increase enrollment but rather to decrease overcrowding. However, respondents noted that the expanded schools can accommodate more students and that some students were transferring to the expanded schools because they were attracted by the conducive environment.

10.4.2 Increased Teacher Workload

"We distributed the students into Form 1A&B, 2A&B, 3A&B up to Form 4. This means if you are teaching mathematics, you will have to teach it seven periods at A and seven periods at B … It reaches an extent whereby you have 30 something periods alone … The periods are too much and you end up being exhausted because of too many classes."

-Form 3 teacher

While class management has improved with smaller class sizes, some teachers noted that their workload has increased with the increased number of classes.

10.4.3 Expanded Blocks and Toilets Not Used for Intended Purposes

At one school, the new toilets and changing room were only for use by staff. At another school, the new toilets were restricted to female student use only. At this same school, one of the expanded classroom blocks was being used as a teacher staff room.

At the school where only staff were using the new toilets and changing rooms, female students emphasized the need for a changing room to avoid absenteeism during menstruation.

At one of the three schools, students and teachers reported that community members were using the toilets and dirtying them (due to a lack of fence or security guard) and that some toilet doors and classroom chairs had been stolen.

"The new toilets are being used by the teachers, as students, we are still using the old toilets. So, we don't see benefit since we are not the ones using them…even the change rooms are not accessible to us…they were built same place where the teachers toilets are, so we cannot use them."

-Form 3 female student, FGD

"Toilets for girls [were] constructed while for us boys, we use those which were in use during 2017. Which means girls have clean and beautiful toilets but for us, our toilets are so far while their toilets are close by."

-Form 3 male student, FGD

"Another [new block] acts like a staff room because the staff room we wanted to build; its blocks got stolen. The other old staff room is very small and during the COVID period, that's when we decided that the staff room should be spacious."

-Form 3 teacher

10.5 Business Environment Spillovers

At baseline, respondents reported that the school expansion had a positive effect on the local economy. During the construction/expansion phase, community members were hired to draw water, carry bricks and soil, and serve as watchmen, and local businesses benefited as they sold goods to the construction workers.

At midline, respondents noted that some community members had gotten jobs at the school as security guards or cleaners. Respondents also noted that the increased number of students meant that local businesses were benefiting from an increased number of consumers.

> *"Ever since the classes were expanded, more security guards from surrounding the school have been employed. Secondly, some women come and clean this place for us. So, some people got employed while others found a business opportunity due to the increase in enrollment. Enrollment can't be the same when we had one block to now that we have four of them."*
>
> -Form 3 teacher
>
> *"There is a change because these additional classroom blocks brought in additional learners. This has increased the number of people who buy what people sell here hence businesses make fair gains."*
>
> -Female caregiver

10.6 Hope for the Future

> *"I would like to go far with my education, being a girl, I take science subjects which a lot of people have said science subjects are difficult, but to me I saw that science subjects need hard working so I want to go far with my education and study civil engineering, yes about construction, yes that's my goal."*
>
> -Form 3 female student, IDI
>
> *"Most parents believe that educating a girl child is educating the whole family. A girl can be abused in marriage if not educated…Educated girls take care of relatives even more than boys."*
>
> -Community leader

Similar to the baseline, youth and community members (caregivers and community leaders) across sites at midline were optimistic about their own and their children's future, respectively, in part due to the expanded school. Youth expressed that they will be attending university in five to ten years, while others will be working and independent, married, or engaged in other income-generating activities.

Most caregivers and community leaders stated that they have similar hopes for both male and female children, as was reported at baseline. They contrasted this with the past when they would prioritize a boy child over a girl child because the girl child would marry and receive support from her husband. In addition, caregivers reported that gender sensitization campaigns and other initiatives have helped them have the same goals for their daughters and sons.

10.7 Challenges to a Bright Future

10.7.1 Lack of a Library and Laboratory

Although youth and community members were generally optimistic about the future and appreciative of the school expansion, they discussed circumstances that could hinder a bright future. Similar to baseline, youth, community members, and teachers across the sites felt that the lack of a library[15] and laboratory disadvantages students academically compared to students in schools that have these resources.

> *"At this school, there is a library which is very small to accommodate even one class. The library has also very few books in the syllabus. This is a problem because students are not able to get adequate information in line with what they learn in class … Another thing is that there is no laboratory where students can do their experiments. This becomes a problem during Form 4 practical examinations because such things appear strange before the students."*
>
> -Male caregiver

10.7.2 Disease Outbreaks and Natural Disasters

Some youth reported that natural disasters and outbreaks affected their future goals. For example, one male youth stated that his future was uncertain as he lost a guardian who was responsible for his school fees from COVID-19. In addition, a teacher from one of the sites reported that schools were closed for two weeks during the cholera outbreak and for three weeks during Cyclone Freddy, which was similar to the school closures due to the COVID-19 pandemic at baseline. The teacher further explained that students at their school were disproportionately affected since the national examination timetable and the academic calendar did not account for school closures in the affected areas.

> *"We have ever stayed for a long time without going to school like during the time of cholera they told us to stay home and not to go to school. The coming of cyclone Freddy made us to stay at home for a long time because our school was used as a camp for people who were affected by this problem, so this had an impact on us because we have stayed a long time without learning and also we are behind with the syllabus."*
>
> -Form 3 female student, IDI

> *"We experienced cholera here in Blantyre and we had to break for two weeks. The academic calendar never stopped. MANEB examination timetable was still the same. So, considering our syllabus, we had a gap of two weeks. When Cyclone Freddy came, we also had to break for three weeks. But still, the examination table and academic calendar was still the same … So, if we look at our syllabus, most of us didn't finish it … So, examinations classes like Form 2 were affected. Now, most Form 4 students are affected because the teachers cannot finish the syllabus."*
>
> -Form 3 teacher

10.7.3 Lack of Financial Resources

Similar to those at baseline, midline respondents identified the lack of adequate financial resources to support children's education as a barrier to the realization of future goals for youth. A community leader stated that parents fail to pay for their children's fees due to poverty. Some female caregivers explicitly stated that it was challenging to provide for their children because their "businesses [were] not doing well" as well as the "lack of job opportunities for men" (their spouses).

[15] A teacher and youth from two schools reported that they have a library with limited study space and books.

10.7.4 Lack of Teachers

Some youth described lack of teachers as a barrier to education. A community leader explained that transfers of key teachers exacerbated the existing shortage of teachers in some schools. This barrier was not mentioned by students at baseline, who instead cited lack of job opportunities as a barrier to a bright future.

> *"We have few teachers in schools, so students don't learn properly because of few teachers."*
>
> -Form 3 female student, FGD
>
> *"The main challenge is inadequate number of teachers. Sometimes we just hear that a certain teacher has been transferred yet we already have small number of teachers at this school. You find also that they have transferred a teacher who teaches very important subjects."*
>
> -Community leader

10.8 Sexual Behavior

The midline study, similar to baseline, explored issues related to students' sexual behavior. When asked if they had engaged in sexual activities during the past year preceding the study, only one of the six youth who participated in an IDI reported that she had (but had since stopped out of fear of becoming pregnant). None of these six reported being sexually active at baseline.

Youth reported various reasons for not being sexually active. The most common reasons were the fear of pregnancy or making a girl pregnant and the fear of compromising their education (as a consequence of the former). Other reasons included fear of sexually transmitted infections, religious beliefs, and not being mature enough to engage in sexual behaviors. Except for the last reason (not being mature enough), the other reasons were also reported at baseline, where the desire to focus on education was the most compelling reason for not engaging in sexual activity.

> *"I know the disadvantages of doing such things [sexual intercourse] and also considering that I am not mature yet...Another reason is that you can be infected with diseases or get your partner pregnant which then can disturb your education."*
>
> -Form 3 male student, IDI
>
> *"My friend lacked the support that everyone is entitled to have as a result she started living such a life and she got pregnant, it was not her fault."*
>
> -Form 3 female student, FGD

Most youth reported that they did not feel pressure to have sex. Among those who did, the pressure mostly came from their friends and boyfriends or girlfriends, similar to the baseline.

10.9 Pregnancy

Pregnancy at a young age is one of the main reasons girls drop out of school. Similar to baseline, none of the female IDI participants reported that they got pregnant or had a child. However, youth who participated in FGDs shared accounts of friends who became pregnant or got their girlfriends pregnant in the last year.

> *"Some girls did drop out of school due to the school breaks we had last year. During those breaks, some girls got married, and others became pregnant. So, we encourage our children to work hard, and we take those girls who dropped out of school due to pregnancy as examples to discourage our girls from engaging in such behaviors."*
>
> -Male caregiver
>
> *"Our friends who got pregnant while they were here, they feel ashamed and they don't even wish to come back here because they fear that their friends will be laughing at them."*
>
> -Form 3 male student, IDI

Six girls and two boys reportedly got pregnant or got their girlfriends pregnant while in school, respectively. One female youth reported that her friend started engaging in sexual activity due to a lack of support from her

parents and eventually became pregnant. Some caregivers blamed school closures for girls becoming pregnant.

Several potential consequences of early pregnancy were discussed. Similar to baseline, a common view among youth was that pregnancy could ruin one's future goals and life in general. For example, five of the six girls who became pregnant while in school dropped out, and one girl reportedly died during childbirth. While one of the two boys who got their girlfriends pregnant allegedly committed suicide after learning about the pregnancy, the other continued with school but subsequently dropped out due to poor performance.

Similar to baseline, youth reported that some girls who became pregnant ended up in early marriages and became victims of violence from their husbands. They also explained that pregnancy could cause stress over how or where to get support and may result in complications during childbirth because their bodies are not yet mature.

> *"Our friends who got pregnant while they were here, they feel ashamed and they don't even wish to come back here because they fear that their friends will be laughing at them."*
>
> -Form 3 male student, IDI

Girls who get pregnant while in school are now encouraged to return after childbirth. However, none of the girls reportedly went back to school as previously stated. Similar to baseline, some girls avoid going back to school after giving birth out of fear of humiliation.

10.10 Marriage

Consistent with baseline findings, youth were against marrying early before they completed their education. They stated that their focus was to continue with their education so they could support their family once they got married. Similarly, community members (caregivers and community leaders) and teachers alike stated that most parents are positive about encouraging their children to hold off marriage and focus on their education. They emphasized that parents prefer that their children get married when they are financially secure and mature enough to make sound decisions.

> *"I would like to get married after finishing my education and also when my age is at 28. I feel like marriage is not a place to rush to… you need to get married with all of your heart and also you have a purpose for going into marriage because someone cannot just wake up today and say they want to get married."*
>
> -Form 3 female student, IDI
>
> *"I have never thought or planned the time when my children should marry. I want my children to be educated and become independent in the future, and that's why I give them my full support. They will plan when to marry when they are independent."*
>
> -Male caregiver

> *"Others who lack school fees… they can just drop out of school and get married. If they cannot find fees how are they going to come here at school because if you have not paid your fees you are sent back. So to others that's the end of their future its either they get married or drop out of school."*
>
> -Form 3 female student, FGD

While respondents were generally against early marriage before one completed their education, they acknowledged that some youth, particularly girls, feel compelled to marry instead of continuing with their education. The reasons included early pregnancies and parents being unable to support their children with school fees and other necessities due to poverty.

10.11 Physical and Psychological Violence

Youth discussed physical and psychological violence they or their friends had experienced. In general, reports of violence were not widespread among respondents across the study sites, except for the instances detailed below.

10.11.1 Physical Violence

Experiencing physical violence at school was rare across the study sites, both at baseline and midline. However, unlike at baseline, where violence was reportedly perpetrated by peers, some youth said they experienced physical violence at school perpetrated by their teacher. A female youth who reported this particular incident said that their teacher slapped them as a form of punishment for making noise in the classroom.

10.11.2 Psychological Violence

Psychological violence emerged as the most prevalent form of violence experienced by youth at both baseline and midline. Some respondents described instances of psychological violence they or their friends experienced at school, in-transit, in their community. Like those at baseline, the experiences ranged from body shaming to humiliation to bullying. However, in contrast to baseline, female youth at midline disproportionately experienced psychological violence more than their male counterparts. Male peers were commonly identified as perpetrators of violence against female youth. Some male youth also reported instances of psychological violence they or their friends experienced, with one student reporting being affected psychologically by punishment doled out by a teacher.

> *"[Other students] can say a lot of things like 'Look at her, she is fat.' They say a lot of bad things … At first, I took these things for fun because I knew that if I put it to heart, it will worry me or maybe stress me, and the things will push my desire to learn backwards, and I will not be coming to school frequently."*
>
> -Form 3 female student, IDI

> *"We also experience psychological violence at this school from teachers who often give stiff punishments that compromise students' ability to attend. For example, one could be punished [with] digging a pit that might take up to days to finish and sometimes these punishments are given while fellow students are learning so it affects the students psychologically."*
>
> -Form 3 male student, FGD

10.12 Impacts of Cyclone Freddy

The urban midline qualitative component explored the impacts of Cyclone Freddy, which hit the country hard in March 2023. The cyclone caused devastating impacts in Blantyre City, which was one of the study sites. Respondents from the site described how the cyclone impacted students' education and wellbeing.

Respondents reported that the cyclone caused damage to the school infrastructure and disrupted the academic calendar. They explained that roads were destroyed and bridges were washed away in some areas due to flooding, making it challenging for students to attend school. They also explained that schools were closed in the affected areas but stayed open in unaffected areas. As a result, they reported that some students started engaging in behaviors that were detrimental to their future due to staying longer at home.

In addition, some youth expressed worry about their performance on national examinations following the school closure. They reported that they were set to take the same examinations as their peers in areas where schools stayed open, yet they were not learning. A teacher and female youth from the same site

echoed these views and described the school closure as particularly disadvantageous to students, as they had already fallen behind on the syllabus as a result of the school closure from the cholera outbreak.

Respondents explained that some students lost their parents or guardians who were responsible for their school-associated costs. They explained that the cyclone caused the destruction of houses and property, and some students lost school materials in the process. As a result, some students were pessimistic about their futures following these losses. Female youth explained that studying was practically impossible for students who had lost school materials and were living in evacuation camps. They also explained that they missed out on learning during the time their school was being used as an evacuation camp for the displaced people.

"We have ever stayed for a long time without going to school like during the time of cholera they told us to stay home and not to go to school. The coming also of Cyclone Freddy made us to stay at home for a long time because our school was used as a camp for people who have been affected by this problem … We have not finished the syllabus unlike our friends who have not been affected were learning when [we] were at home."

-Form 3 female student, IDI

"When Cyclone Freddy came, we also had to break for three weeks. But still, the examination table and academic calendar was still the same … So, if we look at our syllabus, most of us didn't finish it … because of Cyclone Freddy and cholera ... So, examinations classes like Form 2 were affected. Now, most Form 4 students are affected because the teachers cannot finish the syllabus."

-Form 3 teacher

"Most students here depend on their parents' businesses. They sell vegetables and tomatoes. That's the business … Some students couldn't come to school because their parents' business was not performing well. Roads were also destroyed, and it was very difficult for the student to come to school."

-Form 3 teacher

Female caregivers reported that it was hard for them to search for shelter and food following the destruction of their homes. In addition, a teacher explained that the cyclone affected businesses in such that there was no support for the education necessities of students, which made students fail to attend school and instead stay home for a longer period. Furthermore, the teacher explained that some students were psychologically affected and stressed upon seeing or hearing on television or radio how their peers had been affected. They explained that some students who were displaced could not concentrate in class after schools were reopened.

11. Discussion

The objectives of this study were to:

- Describe evaluation impacts and levels of key SEED indicators in rural areas approximately six months after the newly constructed SEED CDSSs opened in January 2023.
- Describe key evaluation outcomes to date in urban areas.
- Provide programmatic and evaluation recommendations to strengthen subsequent SEED implementation phases and support continued monitoring of critical outcomes.

Quantitative results are based on surveys of prospective cohort students and caregivers enrolled in Standard 7 at evaluation baseline (January–November 2021 AY), surveys of retrospective cohort students and caregivers enrolled in Standard 8 during the 2019–2020 AY, and key informants at sampled primary schools and traced secondary schools and communities. Qualitative results are based on FGDs with students and caregivers, KIIs with community leaders and teachers, and IDIs with students in rural and urban sites.

11.1 Midline Evaluation Findings: Summary and Implications

The midline evaluation report presents study results chapters by EQ. Here, we synthesize and discuss evaluation findings organized by the Malawi SEED theory of change (Figure 1) and draw summary conclusions for the four EQs at evaluation midline.

11.1.1 Inputs

The SEED Rural and Urban theories of change and development hypotheses are built upon the successful implementation of program inputs; Table 64 summarizes program input status at evaluation midline. We find at evaluation midline that program components have been implemented as intended, with one major caveat: the delay in SEED Rural school openings and the timing of Form 1 selection to SEED schools resulted in extremely limited 'exposure time' to the intervention—the rural increase in the CDSS supply environment. Education outcomes related to primary school performance, completion, and transition to a public secondary school depend upon awareness in advance of the expanded availability of Form 1 seats. Given that selection to a new SEED school was not an available option until two months after the start of the 2022–2023 AY, students not assigned to Form 1 during first selection had already made decisions about Standard 8 repetition, enrollment in private school, or school dropout by the time SEED Rural was 'implemented'. Thus, we do not expect to detect a significant midline program impact on key education outcomes. Any changes we observe to the Form 1 selection and transition rates at midline are expected to occur among youth that were not assigned to Form 1 until second selection, and these youth may not be representative of all study youth who were eligible for selection into secondary school for the 2022–2023 AY.

Our ability to detect program impacts resulting from an increase in the secondary school supply environment could be compromised if new non-SEED government secondary schools opened in comparison areas or if new private secondary schools were built in treatment or comparison areas. We do not find evidence of an increased supply of new government secondary schools in comparison areas or of an increased supply of new private secondary schools in treatment or comparison areas during the evaluation period, and thus conclude that these possible 'impact contamination' sources were not present at evaluation midline.

Table 64. SEED impacts on program inputs and outputs

SEED impact on program inputs
Implementation – Expanded urban and new rural CDSSs SEED Urban CDSS expansion completed ~ 13 months before evaluation baseline. SEED Rural CDSS construction delays resulted in rural SEED schools only being included in the December 2022 second selection process for government secondary schools, which occurred two months after the start of the 2022–2023 AY.
Beneficiary awareness of new rural CDSSs High awareness of rural SEED program implementation among students, caregivers, primary school respondents, and community respondents at evaluation midline. **Positive program impact** on student-report of nearby secondary school availability (+ 20 percentage points, p<0.001). **Positive program impact** on community reports that a CDSS served most community youth (+ 30 percentage points, p<0.05). No evidence of increased supply of new government secondary schools in comparison areas or of increased supply of new private secondary schools in treatment or comparison areas during the evaluation period.
Infrastructure improvements, including WASH wraparound services SEED schools had significantly improved MHM facilities and provisions. While 66.7% of SEED schools had water and soap available in a private space, only 23.8% of non-SEED treatment schools had this provision (p<.01) as did 36.0% of comparison schools (p<.05). Similarly, 44.3% of SEED schools had covered bins for disposal of menstrual hygiene materials, while only 14.3% of non-SEED treatment schools had this provision (p<.05) and 8.0% of comparison schools (p<.01). SEED schools were also more likely to have a girls changing room (96.7%)* compared to non-SEED treatment schools (28.6%) and comparison schools (40.0%) (p<.001). Bathing areas were more common in SEED schools (80.0%) compared to non-SEED treatment schools (33.3%) and comparison schools (36.0%) (p<.001). Rural qualitative study Form 1 youth discussed challenges related to MHM for female students attending secondary schools with no female teachers, as they were reluctant to ask male teachers for the key to the changing room. *One SEED school reported not having a changing room; qualitative findings suggest it may be used for another purpose.
MoU abolished secondary school tuition Universal abolishment of secondary school tuition.

11.1.2 Outputs

Table 65 summarizes the status of SEED Rural and Urban outputs at evaluation midline. Outputs result directly from program inputs and are the most proximate intermediate results along the development pathway to program outcomes and distal impacts.

The SEED Rural beneficiary population had high awareness of program implementation at the time of midline data collection (approximately six months after new CDSSs opened): over 85% of treatment group students reported local secondary school availability at midline, compared to 64% of youth in the comparison group (p<0.001). This awareness translated to a positive program impact on perceptions that the lack of Form 1 admissions spaces is a serious barrier to educational attainment among youth and primary school respondents. This realization of the increased Form 1 supply environment is hypothesized to influence program outcomes associated with motivations, expectations, performance, and completion

of upper primary school, as well as other determinants of school progression related to caregiver support, priorities for youth time use, sexual behavior, and norms around ECFM and pregnancy.

While not statistically significant, beneficial program impacts were observed for: student-reported travel time to secondary school; community-reported distance to the CDSS that serves local youth; and the likelihood that primary schools report feeding to the nearest government secondary school. SEED schools are significantly closer than comparison group secondary schools to the farthest village that sends pupils to the school, and students were less likely to report travel/long distance to secondary school as a barrier to their own educational goals. Qualitative rural results are consistent with quantitative findings: some caregivers reported that children were less likely to have to travel long distances to secondary school because the SEED school was close to the community, and fewer qualitative respondents reported travel distances to school as a barrier at midline than baseline. We anticipate larger reductions in secondary school distance barriers as rural SEED school assignment and attendance is normalized in subsequent AYs.

We did not find evidence that the SEED Rural program led to changes in the prevalence of students self-boarding in secondary school, but some rural qualitative study caregivers reported that children were less likely to self-board at secondary school because the SEED school is close to their community. SEED Rural schools do not have boarding facilities, and few secondary school students were boarders at comparison (8.0%) or non-SEED treatment (5.8%) secondary schools at midline. SEED Rural schools were significantly more likely than comparison secondary schools to report that no students self-board for secondary school (43.3% SEED and 12.0% comparison group secondary schools, $p<0.05$). Decreased self-boarding is hypothesized to reduce the overall cost of secondary education and reduce student exposure to SR-GBV risk. Given the lack of program impact on self-boarding prevalence, we do not anticipate a midline impact on associated perceptions of financial barriers or SR-GBV incidence and concern.

Because the abolishment of secondary school tuition fees was implemented at the national level and was therefore not unique to SEED schools, we did not expect to find program impacts related to direct costs of attending secondary school, but we do expect to find general population improvements in direct cost-related measures over time (as measured in the comparison group).[16] However, despite the abolishment of tuition fees among study secondary schools at evaluation midline, we did not detect any significant decreases over time in reports of school dropout due to financial constraints or the incidence or intensity of school-related household expenditures. At midline, over 70% of youth who dropped out cited cost as a reason, and over half of caregivers listed lack of money as one of the top three contributors to dropout. Nearly all households with students in secondary school reported spending money on education during the current AY, and there was no change in average total household expenditures on education for sampled students during the current AY. Thirty-five percent of treatment group students selected for secondary school who did not attend cited school-related fees, and some qualitative youth selected to the new SEED schools did not enroll due to a lack of school-related fees. The main challenge to accessing secondary education in the rural quantitative and qualitative samples at baseline and midline was a lack of money for school-related costs. Perceptions of continued financial barriers to secondary school may temper the

[16] These improvements may emerge over time as recent national regulations require any school fees exceeding MWK 1,000 to receive clearance from the MoE.

effects of positive program effects on schooling expectations and motivation related to an increased availability of Form 1 seats.

SEED Rural is hypothesized to reduce non-tuition secondary school cost barriers through decreased transportation costs (resulting from decreased travel distance) and decreased costs associated with self-boarding. As we did not find significant program impact on travel time or self-boarding prevalence, it follows that we do not detect program impact on non-tuition cost barriers.

Table 65. SEED impacts on program outputs at evaluation midline

SEED impact on program outputs
Increased availability of Form 1 admissions spaces
Beneficial rural program impact on perception that lack of Form 1 admissions spaces is a serious barrier to educational attainment reported by students (-20 percentage points, $p<0.05$) and primary school respondents (-40 percentage points, $p<0.05$).
Although SEED Urban was planned to reduce overcrowding, not increase availability of Form 1 admissions spaces, there was report of additional students enrolling in SEED Urban schools due to the expanded facilities.
Decreased travel distance and time
No program impact on travel distances or travel time to secondary school.
On average, SEED schools were 3 km closer to the farthest village that sends students than comparison group secondary schools ($p<0.05$).
Marginal protective program impact on the likelihood that students report travel/distance to secondary school to be a serious barrier to achieving their educational goals (-10 percentage points, $p<0.10$).
Decreased boarding and self-boarding
No program impact on prevalence of self-boarding among secondary school students.
SEED Rural schools significantly less likely to report any students self-boarding than comparison group secondary schools ($p<0.05$).
Decreased financial burden of direct secondary education costs
No program impact on household education expenditures for students in secondary school.
No program impact on student- or household-reported school dropout due to financial constraints or lack of money for school fees.
No program impacts on student, primary school, or secondary school respondents report of direct costs as a barrier to education.
No evidence that secondary schools increased required non-tuition fees in response to the government abolishment of secondary school fees.
SEED Rural qualitative parents reported that having local CDSS made secondary school more affordable.

11.1.3 Outcomes

A summary of midline program impacts on SEED Rural and Urban outcome measures is provided in Table 66.

Improvements in educational expectations and education-related optimism, motivation, caregiver support, and adolescent time use are hypothesized to be driven by increased access to secondary school and improvements in student and caregiver education-related gender norms. We did not find a significant program impact on these attitudinal and behavioral outcomes, and therefore we do not expect these intermediate outcomes to significantly influence school performance or progression, student sexual behavior, or ECFM or early pregnancy norms and expectations.

We did not find significant program impact or general time trends in the PSLCE pass-rate, Standard 8 repetition rate, or dropout rate. Student- and primary school-reported PSLCE pass rates would not have been affected by SEED Rural at midline, as the pass rate references exams that were completed well before the new CDSSs were available. As previously discussed, our ability to detect program impact on Standard 8 repetition rates and school dropout rates was impeded by the exclusion of new SEED schools in first selection.

No significant program impacts were detected for early sexual debut, risky sexual behaviors, fertility ideals, family planning use, or student and caregiver attitudes toward ECFM. Changes in these outcomes are hypothesized to occur in response to the general effects of attending school, increased secondary school accessibility, or improved schooling optimism, expectations, and motivation. While the treatment group reported significant gains in Form 1 admission spaces, changes in these behaviors, attitudes, and norms likely require more time to demonstrably change in direct or indirect response to SEED Rural program inputs.

It is unclear why treatment primary schools were significantly more likely to report that fathering a child was a significant barrier for boys to join secondary school and that marriage was significantly more likely to be a barrier for both boys and girls to join secondary school. No corresponding program impact or time trend was observed for the prevalence of fathering a live birth (fewer than 3% of all male youth at midline) or for ever having married (9.1% treatment group youth and 14.0% comparison group youth at evaluation midline).

No significant program impact was found on the incidence of SR-GBV among secondary school girls. However, we did estimate marginally significant program impacts on SR-GBV-related school absenteeism among girls in secondary school (-20 percentage points, $p<0.10$) and on primary school reports that school travel safety concerns are a serious barrier for girls to join secondary school (-30 percentage points, $p<0.10$). It is not clear why absenteeism and perceived SR-GBV risk exposure would decrease without a corresponding decrease in SR-GBV prevalence, travel distance and time, or the prevalence of boarding and self-boarding.[17]

Lastly, we find that secondary school girls in the treatment group were 20 percentage points less likely than girls in the comparison group to report school absenteeism during their most recent menstruation ($p<0.01$). This finding is consistent with significant improvements in SEED Rural MHM facilities and provisions.

Table 66. SEED impacts on program outcomes at evaluation midline

SEED impact on program outputs
Improved primary school performance No program impact on PSLCE pass rates.
Increased primary school completion No program impact on Standard 8 repetition rates. No program impact on school dropout rates.
Improved WASH and MHM Behaviors

[17] Program impacts on travel distance the and prevalence of boarding and self-boarding are reported for all students. Analyses restricted to girls in secondary school also failed to detect significant program impacts or time trends for these program output measures.

SEED impact on program outputs
Significant protective program impact on reported secondary school absenteeism during menstruation (- 20 percentage points, p<0.01). Washroom availability has improved hygiene of students and their families. Bore holes constructed under SEED Rural also improved access to clean water for surrounding communities.
Improved student optimism and agency No quantitative program impact on measures of student optimism and agency over the future. Rural qualitative student respondents reported the new SEED schools increased their optimism for the future.
Improved education ideals, expectations, motivation, and priority No program impact on students' education ideals or expectations. No program impact on reports of education not being a priority as a barrier to educational progression. Students in qualitative urban reported primary students were more motivated to do well in school so they could be selected to the expanded schools.
Increased caregiver support No program impact on perceptions that lack of caregiver support is a barrier to educational attainment.
Decreased child labor, chores, and caregiving burden No program impact on student labor force participation. No program impact on reports of school dropouts attributed to students getting a job, chore obligations, or caregiving responsibilities. No program impact on perceptions that paid work, chores, or caregiving responsibilities were serious barriers to educational progression. Significant program impact on caregiver reporting that paid work is one of the top three reasons community youth do not complete secondary school.
Decreased SR-GBV incidence and decreased concern about SR-GBV and general safety No program impact on reported incidence of SR-GBV among girls in secondary school. Marginally significant protective program impact on SR-GBV-related school absenteeism among girls in secondary school (-20 percentage points, p<0.10). No quantitative program impact on student report of feeling unsafe traveling to school or absenteeism due to general safety concerns at or traveling to school. Some rural qualitative respondents reported a perception that the new SEED schools had a positive impact on child safety. Marginally significant program impact on primary school respondents' perceptions that school travel safety concerns are a serious barrier for girls to join secondary school (-30 percentage points, p<0.10). No program impact on perceptions of boarding safety as a barrier to educational attainment.
Delayed sexual debut and decreased risky sexual behavior No program impact on early sexual debut, risky sexual behaviors, or family planning use.
Improved norms, expectations, and perceived barriers for ECFM No program impact on student or caregiver attitudes towards ECFM. Significant program impact on primary school report of marriage as a barrier to girls joining secondary school (40 percentage points, p<0.05) and boys joining secondary school (30 percentage points, p<0.001).
Improved norms, expectations, and perceived barriers for pregnancy No program impact on students' fertility ideals No program impact on student or caregiver perception that pregnancy/fathering a child is a barrier to educational attainment. Significant program impact on primary school report that fathering a child is a serious barrier to boys joining secondary school (30 percentage points, p<0.05).

11.1.4 Key Outcome Impacts

Midline impact findings are summarized for SEED Rural and Urban evaluation components in Table 67.

As discussed for Standard 8 repetition rate and school dropout findings, we are unlikely to find program impact on the Form 1 transition rate at evaluation midline given the timing of SEED CDSS MoE handover and second selection. While we do not find an impact of SEED Rural on the Form 1 transition rate at evaluation midline, we do observe strong evidence that the program was associated with a significantly higher likelihood of selection to Form 1: 42.2% of treatment group students who were eligible but not selected to Form 1 during first selection were assigned to Form 1 in second selection, compared to less than 1% of eligible students in the comparison group ($p<0.001$). SEED schools were also significantly more likely than comparison secondary schools to report that any students selected to Form 1 for the 2022–2023 AY did not enroll (96.7% SEED vs. 77.3% comparison secondary schools, $p<0.05$), although there was no significant difference in the average number of students selected to Form 1 that did not enroll (12.2 students in SEED schools and 8.4 students in comparison secondary schools). This difference is likely attributable to the delayed SEED Rural opening, as students may have already decided to repeat Standard 8, attend a private secondary school, or drop out of school after learning they were not assigned to Form 1 during first selection. The higher second selection rate among treatment students (due to increased availability of Form 1 seats) and indications that students selected to Form 1 were more likely to decline enrolment in SEED schools at midline (likely due to late selection to secondary school) suggest that the supply of additional Form 1 seats at new SEED schools could have accommodated more students, which could result in significant positive program impact during the second AY that SEED schools are operational.

SEED Rural had a marginally significant protective impact on early pregnancy, with female youth in the treatment group 10 percentage points less likely to have become pregnant before age 18 compared to females in the comparison group ($p<0.10$), but no program impacts were found on having or fathering a live birth before age 18. More girls self-reported they had been pregnant before age 18 than reported having a live birth before age 18. There are no known or hypothesized differences in conditions conducive to carrying a pregnancy to term between treatment and comparison areas; it is possible that the observed program impact occurred after SEED selection, with a reduced pregnancy incidence in the treatment group between January 2023 and midline data collection (~6 months), which would not have had time to reach full term by midline data collection.

Similarly, there is a significant protective impact on the incidence of child marriage (-10 percentage points, $p<0.05$). No program impact was found on student or caregiver attitudes or reported ECFM norms at midline, although rural qualitative student respondents reported they wanted to delay marriage to pursue more education. Like estimated marginal program impacts on early pregnancy, it may be the case that the reduction in marriage before 18 occurred soon after students learned second selection results (i.e., during the period between selection to Form 1 at a new SEED school and midline data collection), and stronger program impact may be observed during the second SEED AY.

Lastly, no program impacts were found on the perceived risk that the student would contract HIV, as reported by the students and their caregivers.

Table 67. SEED impacts on key distal program outcomes at evaluation midline

SEED impact on program distal outcomes
Increased public Form 1 transition rate No program impact on Form 1 transition rates. At midline, SEED schools were significantly more likely than comparison secondary schools to report any students selected to Form 1 did not enroll (96.7% SEED vs. 77.3% comparison, p<0.05). At midline, students in the treatment group were significantly more likely to be selected for Form 1 during second selection than students in the comparison group (42.2% treatment vs. 0.9% comparison, p<0.001). There was no difference in likelihood of first selection Form 1 assignment between the study groups.
Decreased incidence of early pregnancy/fatherhood Marginally significant protective program impacts on the percent of female youth who had ever been pregnant or became pregnant before age 18 (-10 percentage points, p<0.10). No program impact on incidence of live birth among female youth. No program impact on incidence of male youth fathering a live birth.
Decreased incidence of ECFM Significant protective program impact on incidence of child marriage (-10 percentage points, p<0.05).
Decreased risk of HIV exposure No program impact on student or caregiver perceived risk of the student contracting HIV.

11.1.5 Spillovers

It is possible that primary school teachers from SEED Rural catchment areas may transfer to a new SEED school as a means of promotion, and that the new SEED schools may need to hire teachers with only a primary teaching qualification to meet their short-term staffing needs. Midline results indicate that teachers who transferred to a SEED school were more likely to come from a non-SEED treatment secondary school (19.1%) compared to comparison group secondary schools (4.0%, p<0.10), and no primary school reported a teacher transfer to a newly opened CDSS during the 2022–2023 AY.

Some evidence of positive business environment spillovers was reported by urban qualitative respondents. Community members were hired during the construction/expansion phase, community members obtained jobs as cleaners or security guards at midline, and local businesses benefited from selling goods to construction workers and an increased number of new students (Table 68).

Table 68. SEED program education and business environment spillovers at evaluation midline

SEED spillovers
Education – Teacher transfers to new secondary schools There was no significant difference between comparison and treatment primary schools or among comparison or non-SEED treatment schools in reports of any teacher transferring to a secondary school during the AY. At midline, no primary school reported that a teacher transferred to a newly opened CDSS during the 2022–2023 AY. Non-SEED treatment secondary schools were more likely to report any teacher transfers to a newly constructed secondary school during the 2022–2023 AY (19.1%) compared to comparison group secondary schools (4.0%, p<0.10).
Business environment

SEED spillovers
Urban qualitative results found that community members were hired during the construction/expansion phase, and local businesses benefited from selling goods to construction workers. Also, some community members had gotten jobs at new SEED schools as security guards or cleaners, and local businesses were benefitting from an increased number of new students.
General community infrastructure Some rural qualitative respondents reported that boreholes constructed as part of the SEED school had a positive effect on the surrounding community as it allowed access to clean, safe water.

11.2 Program Impacts at Evaluation Midline

Table 69 maps midline evaluation results against the four EQs.

Table 69. Midline summary answers to EQs

EQ 1) What is the impact of SEED Rural at midline (less than one year after SEED schools opened) on children who were in Standard 7 at baseline in the SEED CDSS catchment areas?	
Education	**SEED Rural** There were no midline impacts of SEED Rural on school performance, progression, or transition. However, students in the treatment group were over 40 percentage points more likely than comparison group students to be selected for Form 1 during second selection in December 2022 ($p<0.001$).
SR-GBV	**SEED Rural** No program impact was found on the incidence of student-reported SR-GBV among secondary school girls, but SEED Rural was associated with a reduced likelihood of SR-GBV-related absenteeism among girls in secondary school ($p<0.10$). However, rural qualitative respondents reported a perception that the new SEED schools had a positive impact on child safety.
ECFM	**SEED Rural** SEED Rural had no impact on student or caregiver attitudes towards ECFM, which was viewed highly unfavorably among all study groups at evaluation baseline and midline. However, the program had a significant protective program impact on the incidence of child marriage, with treatment group youth 10 percentage points less likely to marry before age 18 than comparison group youth ($p<0.05$).
EQ 2) To what extent does the construction of new rural SEED CDSSs and the expansion of existing urban SEED CDSSs change the perceptions, attitudes, aspirations, or behaviors related to education and future outlooks among youth, their parents/caregivers, local leaders, and educators?	
Attitudinal/behavioral impacts	**SEED Rural – Youth enrolled in Standard 7 at baseline** There were no quantitative program impacts at evaluation midline on student optimism and a sense of agency over their future or students' education ideals or expectations. However, rural qualitative student respondents reported the new SEED schools increased their optimism for the future.
	SEED Urban – Youth enrolled in Form 1 at baseline Parents were reportedly optimistic about their children's future due to expanded schools and more motivated to send their children to the expanded schools. Youth reported that primary

	students were more motivated to do well in school so they could be selected to the expanded schools. Participants also reported perceived reduced absenteeism due to new facilities.
EQ 3) To what extent does the construction of a new or expanded SEED CDSS positively or negatively affect sexual behaviors, WASH behaviors, and child safety?	
Sexual behavior	**SEED Rural** There were no program impacts on incidence of early sexual debut, risky sexual behaviors, or family planning use at midline. Few youth qualitative respondents reported being sexually active, citing a desire to focus on their educational goals and avoid pregnancy. **SEED Urban** Most students reported that they were not sexually active because they feared getting pregnant or making someone pregnant, which would affect their ability to continue their schooling.
WASH and MHM behaviors	**SEED Rural** SEED Rural had a significant protective program impact on reported secondary school absenteeism during menstruation, with female students in the treatment group 20 percentage points less likely than those in the comparison group to report missing school due to their last menstrual period for a reason other than menstrual pain or discomfort ($p<0.01$). Qualitative respondents indicated that washroom and borehole availability had improved the hygiene of students and their families.
	SEED Urban Respondents perceived that students were now better able to maintain social distance to reduce the spread of disease due to new spacious classrooms and smaller class sizes.
Safety	**SEED Rural** There were no quantitative program impacts on perceptions that school travel, boarding, or self-boarding safety are barriers to education. Some qualitative respondents reported perceptions that the newly constructed SEED schools had positive impacts on child safety since children were attending school near their homes. **SEED Urban** Reports of violence were rare across sites.
EQ 4) To what extent have there been changes in the education environment and the business environment because of new rural SEED CDSS construction or urban SEED CDSS expansion?	
Education-related spillovers	**SEED Rural** We did not find evidence that teachers were leaving SEED Rural catchment area primary or secondary schools to take jobs at the new SEED schools. There were no program impacts on report of a shortage of qualified teachers among primary school students, secondary school students, or primary school respondents, and no difference among comparison, non-SEED treatment, or SEED schools at midline. **SEED Urban** Participants reported improved teacher-student ratios and smaller class sizes; however, some

	teachers noted their workload had increased with the number of classes.
Business environment spillovers	**SEED Urban** Community members were hired during the construction/expansion phase and local businesses benefited from selling goods to construction workers. Also, some community members had gotten jobs at new SEED schools as security guards or cleaners and local businesses benefited from an increased number of new students.

12. Recommendations

1. **We recommend a follow-up survey to assess the longer-term impact of the program given the delay in SEED Rural school openings and the timing of Form 1 selection to SEED schools (two months after the start of the AY).** The SEED Rural intervention is essentially an increase in the CDSS supply environment. There was extremely limited exposure time at evaluation midline; however, there is emerging evidence at midline that results are improving, as hypothesized in the SEED Rural theory of change. In addition, qualitative rural caregivers and youth reported that school closures (due to COVID-19, Cyclone Freddy, and cholera) disrupted the school calendar and resulted in poor performance on exams after schools reopened, as students had forgotten some of what they had learned and the full syllabus could not be completed.
2. **Future urban expansions may want to consider building new teachers' latrine blocks in addition to girls' and boys' latrine blocks** to prevent teachers from restricting the new toilets for staff use.
3. **Create and promote clear school guidance on the use of toilets and changing rooms**. Female students (qualitative) reported challenges accessing changing rooms at SEED schools for girls in both rural and urban areas. At one rural SEED school, there were only male teachers who were custodians of the changing room keys, and this was reported to be a barrier to using the changing rooms as female students were embarrassed to request the key.
4. **Explore the possibility of providing special scholarships after natural disasters.** Cyclone Freddy increased/exacerbated the barrier of school-related costs. Qualitative respondents noted that the loss of crops and homes affected household income and the ability to pay school fees and associated costs.
5. **Performance on junior secondary examinations should be monitored going forward to assess the need for catch-up learning and the feasibility of remedial schooling and exam preparation.** This would benefit all students given the learning losses sustained from closures due to Cyclone Freddy and cholera, and would especially benefit students who transitioned to SEED schools given that they had to condense the AY into two terms rather than three.
6. **Schools and their stakeholders (e.g., PTAs, mother groups, civil society partners) should ensure continuous availability of soap for handwashing and MHM materials for girls.** These items were lacking at most schools.
7. **Monitor teacher workloads.** While class management has improved with smaller class sizes at urban expanded schools, some teachers noted that their workload had increased with the increased number of classes.
8. **Further investigation into why cost is a persistent and pervasive barrier to secondary education is needed.** While secondary school tuition has been abolished, there was no evidence that schools were increasing other fees or adding new fees in response to the loss of tuition revenue. However, school-related costs continued to be reported as a serious barrier to education at midline in rural areas by both quantitative and qualitative rural students and families.

9. **Encourage increased community, caregiver, and student involvement to support and sustain local secondary schools.**

   9.1. PTAs or SMCs should be informed of recent national regulations requiring MoE clearance for school fees exceeding MWK 1,000. This awareness can improve oversight of secondary school fee structures and empower students and caregivers to be aware of their financial obligations and rights.

   9.2. PTAs and SMCs can organize volunteer-based income-generating activities at the school to offset school development costs and/or replenish consumables such as soap and chalk. Examples of such activities include school gardens or handicrafts for sale.

10. **Improve awareness of second selection if future SEED Rural school handover timelines necessitate pupil selection during the second selection phase.** Only about half of the students indicated they were aware of second selection. Qualitative findings were similar, with only about half of the students and caregivers aware of second selection. There is a need to promote awareness and understanding among students and caregivers of second selection. Given the time lag between first and second selection, it is important that students and caregivers are aware of second selection.

    If future SEED Rural handover to MoE is after the start of the AY and students are not selected until second selection, it will be important to inform affected primary schools and communities so students and caregivers can adjust expectations/reassess their likelihood of second selection given an increased secondary school supply environment.

13. Conclusion

The main objectives of the midline impact evaluation were to estimate changes in key evaluation indicators that were attributable to the SEED Rural program using a mixed methods approach and to describe key evaluation outcomes to date associated with the SEED Urban intervention. The primary EQ focuses on the impact of the SEED program on educational performance and progress, SR-GBV, and ECFM. Secondary EQs examine program impact on education-related attitudes, behaviors, and future outlooks and on sexual, WASH, and MHM behaviors. We also examined the extent of the education sector and business environment spillovers. The rural impact evaluation is based on a quasi-experimental DID design with a matched comparison group using longitudinal data from a school-based sample of students. The qualitative component is implemented in rural and urban areas using multiple data collection strategies.

We did not find significant program impacts on school progression and transition indicators, which is likely attributable to the limited exposure to the SEED Rural intervention given CDSS construction delays. However, we did observe that SEED Rural was associated with a significantly higher likelihood of Form 1 assignment during the December 2022 second selection. We also found protective program impacts on secondary school absenteeism due to SR-GBV concerns, the incidence of child marriage, and secondary school absenteeism during menstruation. Despite the abolishment of secondary school tuition, financial constraints persisted as the predominant reason for dropouts and a reported barrier to educational attainment. There was no evidence of teachers leaving primary or secondary schools to teach at the new SEED CDSSs. Despite the lack of statistical significance at evaluation midline, there was quantitative and qualitative evidence of emergent positive movement along with hypothesized SEED Rural impact pathways, particularly among outputs and outcomes related to decreased travel distance. We recommend a follow-up survey given the timing of the 2022–2023 second selection and the delayed opening of new SEED schools.

Students, caregivers, teachers, and community leaders reported many positive outcomes resulting from the SEED Urban school expansion. These included an increased sense of school pride, a conducive learning environment, increased student motivation to do well in school, increased motivation for parents to send their children to school, an improved student-teacher ratio, reduced absenteeism among girls, reduced disease and improved hygiene, and positive business spillovers. At the same time, some unintended outcomes were noted by respondents, such as increased enrollment, increased teacher workloads and blocks, and toilets/changing rooms not being used for their intended purposes.

Taken together, the results indicate that the construction of new CDSSs in underserved rural areas and the expansion of existing CDSSs in overcrowded urban areas can positively affect youth education, child marriage, and SRH outcomes. Although there are limited statistically significant SEED Rural effects observed at evaluation midline, key indicators are moving in the expected direction, consistent with the SEED Rural program theory of change. Positive results from the SEED Urban school expansion suggest that additional gains are likely in SEED Rural catchment areas as the new SEED schools ease secondary school availability and access constraints in underserved areas.

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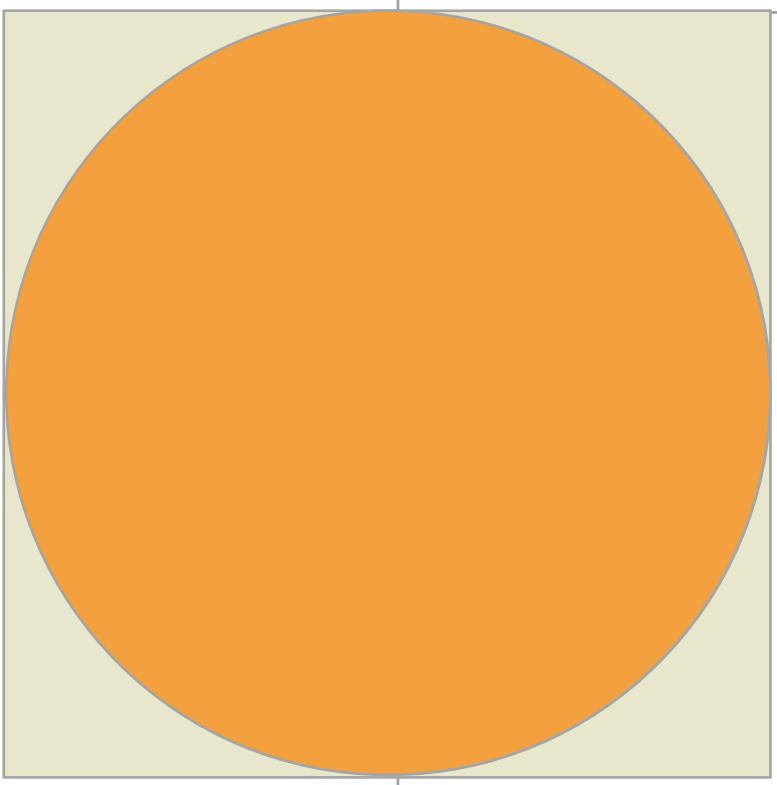

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