



# Malawi Secondary Education Expansion for Development (SEED) Impact Evaluation Midline Summary Report

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## Midline Summary Report

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

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Evaluation

## Contents

Figures .....	1
Tables.....	2
Abbreviations .....	3
Introduction .....	4
The Malawi SEED Activity .....	4
Malawi SEED Impact Evaluation.....	5
Evaluation Questions.....	5
Methods.....	6
Quantitative .....	6
Qualitative.....	7
Limitations .....	7
Ethical Considerations.....	8
Gender Integration.....	8
Key Findings: Evaluation Questions .....	9
Key Findings: SEED Rural .....	11
SEED Inputs.....	11
SEED Outputs.....	12
SEED Outcomes .....	14
SEED Key Outcome Impacts .....	17
Spillovers.....	18
Key Findings: SEED Urban Qualitative.....	20
Recommendations.....	23
Conclusion.....	24

## Figures

Figure 1. Malawi SEED theory of change .....	4
Figure 2. SEED impacts on program inputs at evaluation midline .....	12
Figure 3. SEED impacts on program outputs at evaluation midline.....	14
Figure 4. SEED impacts on program outcomes at evaluation midline .....	16
Figure 5. Selection process for 2022–2023 .....	17
Figure 6. SEED impacts on key distal program outcomes at evaluation midline.....	18

Figure 7. SEED program education and business environment spillovers at evaluation midline.....	19
Figure 8. Positive SEED: Urban outcomes .....	20
Figure 9. Reported unintended SEED: Urban outcomes.....	21
Figure 10. SEED Urban business environment spillovers .....	22

## Tables

Table 1. Midline summary answers to evaluation questions.....	9
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## Abbreviations

AY	academic year
CDSS	Community Day Secondary School
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
IDI	in-depth interview
KII	key informant interview
MHM	menstrual hygiene management
MoE	Ministry of Education
PEPFAR	President’s Emergency Plan for AIDS Relief
PSLCE	Primary School Leaving Certificate of Education
SEED	Secondary Education Expansion for Development
SR-GBV	school-related gender-based violence
SRH	sexual and reproductive health
UNC	University of North Carolina
USAID	United States Agency for International Development
WASH	water, sanitation, and hygiene

# Introduction

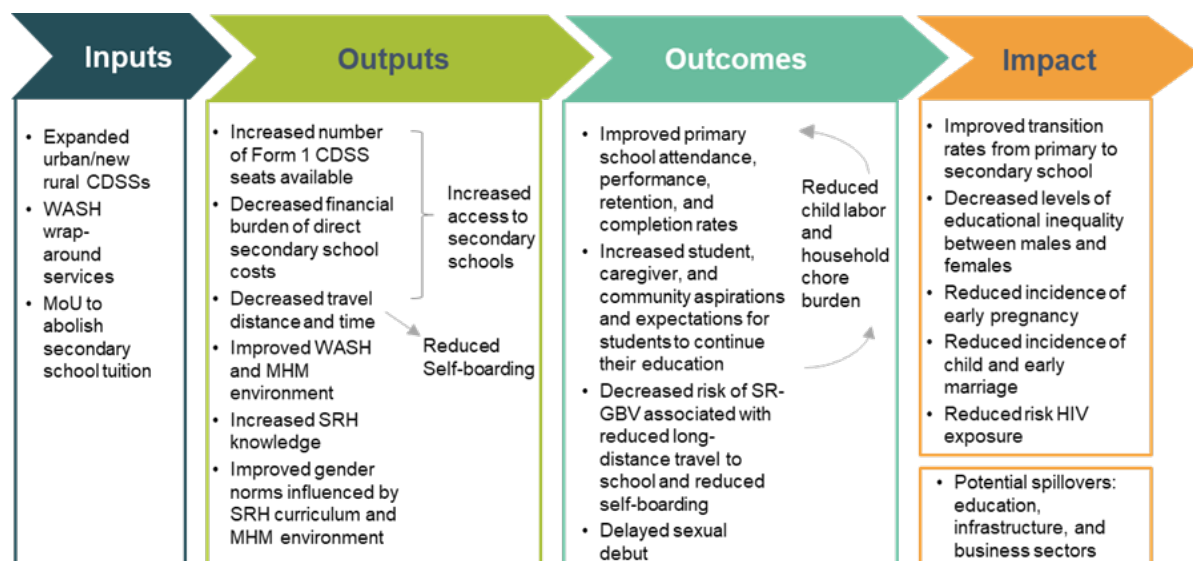
## The Malawi SEED Activity

The Malawi Secondary Education Expansion for Development (SEED) activity is a \$90,000,000 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” CDSSs along with girl latrine blocks, which include a changing room, boy latrine blocks, and teacher latrine blocks 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 secondary schools, young Malawians will attend school rather than move into the “out-of-school” population that impedes the country’s future development. 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 improves 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 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.

**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.

## 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 an historic USAID undertaking in school construction in Malawi. The main audiences for this evaluation comprise USAID, PEPFAR, and the United States Congress, the Ministry of Education (MoE), and other development partners committed to building and 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. This report provides a summary of the SEED midline results. Baseline results can be found [here](#). The full midline report can be found [here](#).

### Evaluation Questions

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

- 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
- 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/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/caregivers, local leaders, and educators?
- 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?
- 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, adjust 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. Two rounds of data collection were completed: 1) a baseline survey was conducted in October–November 2021, and 2) a midline survey was 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 in 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's being built. We surveyed the head teacher (or a designee) at the 64 public primary schools the students were selected from, and at 58<sup>1</sup> CDSSs that were the main CDSS to which the primary schools fed, according to the primary school respondents. 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 Northern region 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 analysis at midline. Primary school aggregate data was 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” (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.

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

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<sup>1</sup> As some primary schools fed to the same CDSS, there were only 58 CDSSs interviewed at baseline, rather than 64.



The baseline response rates for the retrospective and prospective cohorts were 98.1% and 99.6%, respectively. The midline response rates were 99.45% 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 schools (non-SEED feeder schools).

## Qualitative

The qualitative component focused on the treatment group and new SEED 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 component.

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 Northern region was not complete. 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 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 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.

## 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 primary sample units (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. A decrease in statistical power results in an increase in 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 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 academic year (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.

### 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 the University of North Carolina (UNC), 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.

### Gender Integration

Gender has been explicitly integrated throughout the evaluation design and data collection and analysis. 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 toward girls' education.

## Key Findings: Evaluation Questions

Table 1 maps midline evaluation results against the four EQs.

**Table 1. Midline summary answers to EQs**

<b>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?</b>	
<b>Education</b>	<p><b>SEED Rural</b></p> <p>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 (<math>p &lt; 0.001</math>).</p>
<b>SR-GBV</b>	<p><b>SEED Rural</b></p> <p>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 (<math>p &lt; 0.10</math>). However, rural qualitative respondents reported a perception that the new SEED schools had a positive impact on child safety.</p>
<b>ECFM</b>	<p><b>SEED Rural</b></p> <p>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 (<math>p &lt; 0.05</math>).</p>
<b>EQ 2) To what extent does construction of new rural SEED CDSSs/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?</b>	
<b>Attitudinal/behavioral impacts</b>	<p><b>SEED Rural – Youth enrolled in Standard 7 at baseline</b></p> <p>There were no quantitative program impacts at evaluation midline on student optimism and 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.</p>
	<p><b>SEED Urban – Youth enrolled in Form 1 at baseline</b></p> <p>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.</p>
<b>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?</b>	
<b>Sexual behavior</b>	<p><b>SEED Rural</b></p> <p>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.</p>
	<p><b>SEED Urban</b></p> <p>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.</p>
<b>WASH and MHM behaviors</b>	<p><b>SEED Rural</b></p> <p>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</p>

	discomfort ( $p < 0.01$ ). Qualitative respondents indicated that washroom and borehole availability had improved hygiene of the students and their families.
	<b>SEED Urban</b> 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.
<b>Safety</b>	<b>SEED Rural</b> 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 their homes.
	<b>SEED Urban</b> Violence report was rare across sites.
<b>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?</b>	
<b>Education-related spillovers</b>	<b>SEED Rural</b> 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.
	<b>SEED Urban</b> Participants reported improved teacher-student ratios and smaller class sizes; however, some teachers noted their workload had increased with the number of classes.
<b>Business environment spillovers</b>	<b>SEED Urban</b> 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.

## Key Findings: SEED Rural

This section synthesizes and discusses evaluation findings organized by the Malawi SEED theory of change (Figure 1).

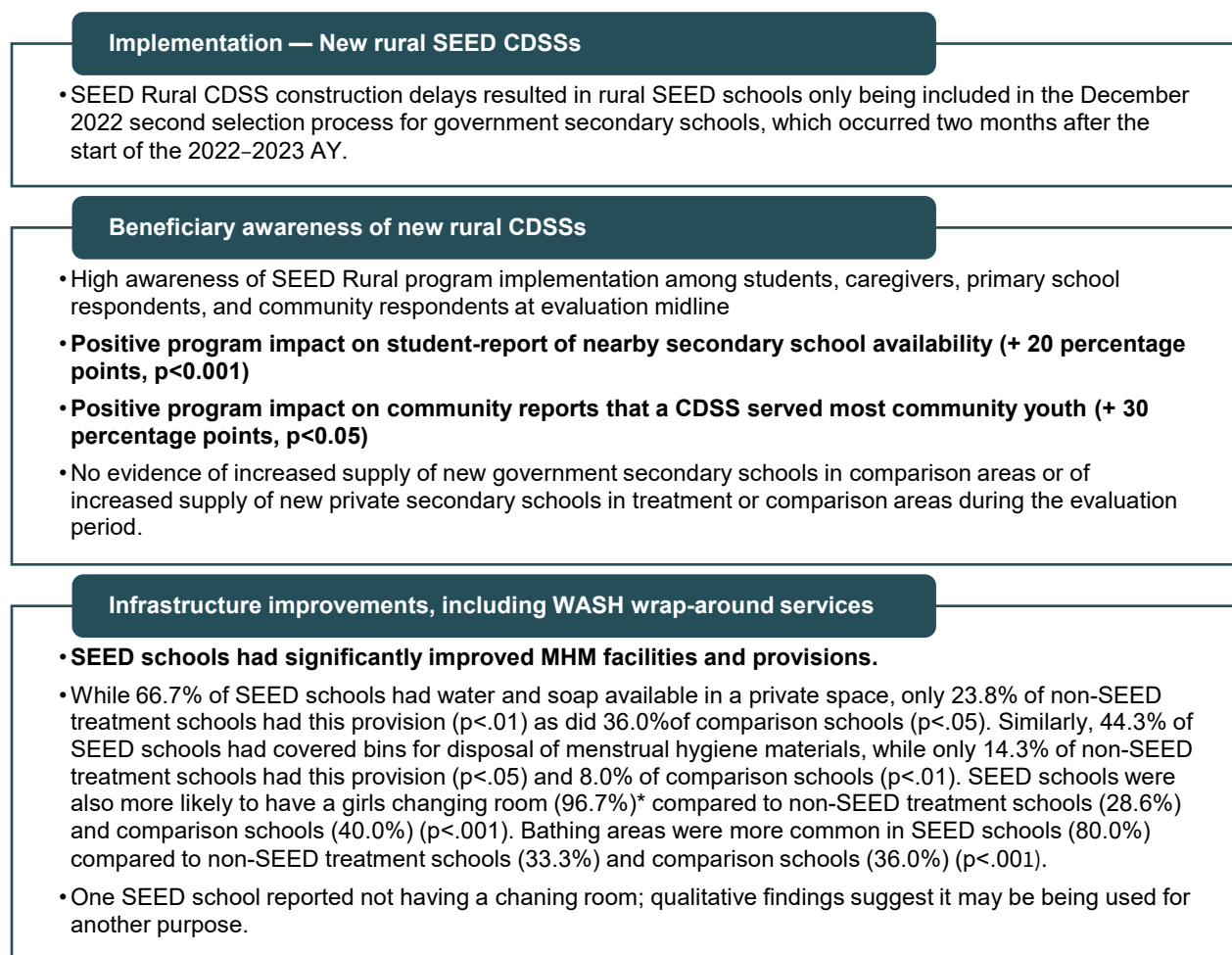
### SEED Inputs

The SEED theory of change and development hypotheses are built upon the successful implementation of program inputs. Figure 2 presents findings related to these inputs. 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.

At midline, we find 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 CDSSs. Desired education outcomes related to primary school performance, completion, and transition to a public secondary school depend upon advance awareness 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 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.

**Figure 2. SEED impacts on program inputs at evaluation midline**



## SEED Outputs

Outputs result directly from program inputs and are the most proximate intermediate results along the development pathway to program outcomes and distal impacts. Figure 3 presents findings related to SEED outputs.

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), with over 85% of treatment group students reporting 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 a lack of Form 1 admissions spaces was a serious barrier to educational attainment among youth and primary school panel respondents. The realization of the increased Form 1 admission spaces is hypothesized to influence program outcomes associated with motivation, 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 outputs related to distance to school. SEED schools were 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 were consistent with quantitative findings, with some caregivers reporting 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 SEED Rural school assignment and attendance are normalized in subsequent AYS.

*"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."*

-Male caregiver

We did not find evidence that SEED Rural 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 because the SEED school is close to their community. 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% 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 midline impact on associated perceptions of financial barriers or SR-GBV incidence and concern. However, some qualitative respondents reported that reduced travel distance to SEED schools reduced SR-GBV enroute to and from school.

Because the abolishment of secondary school tuition fees was implemented at the national level and was not unique to SEED schools, we do not expect to find program impacts related to the 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). 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. Perceptions of continued financial barriers to secondary school may temper the effects of positive program effects on schooling expectations and motivation related to an increased availability of Form 1 seats.

*"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

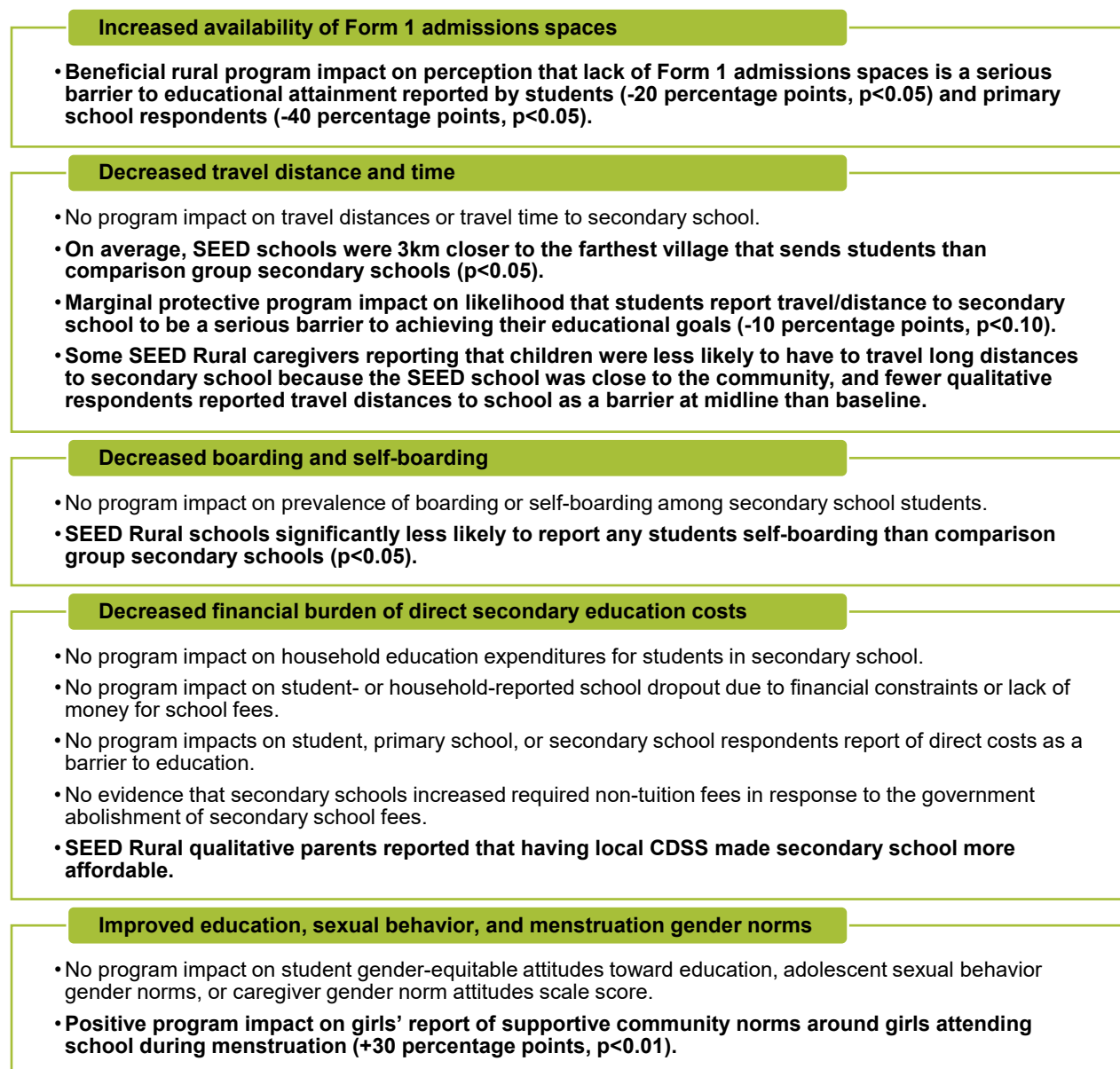
*"Parents do wish that their children remain in school but their inability to provide hinders that."*

-Female caregiver

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 a significant program impact on travel time or self-boarding prevalence, it follows that we do not detect program impact on non-tuition cost barriers.

**Figure 3. SEED impacts on program outputs at evaluation midline**



## SEED Outcomes

A summary of midline program impacts on SEED Rural outcome measures is provided in Figure 4. 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. However, qualitative respondents reported increased optimism for their future due to the new SEED schools.

We did not find significant program impact or general time trends in the PSLCE pass-rate, Standard 8 repetition rate, or dropout rate, despite the expectation that awareness of the new SEED

schools during the construction phase might motivate Standard 8 students from primary treatment schools to work harder and perform better than Standard 8 students at comparison primary schools. As previously noted, our ability to detect program impact on Standard 8 repetition and dropout rates was impeded by the exclusion of 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 caregivers' attitudes toward ECFM. Changes in these outcomes are hypothesized to occur in response to the general education effects of attending school, increased secondary school accessibility, or due to improved schooling optimism, expectations, and motivation. While the treatment group reported significant gains in Form 1 admission space, changes in these behaviors, attitudes, and norms likely require more time to demonstrably change in direct or indirect response to SEED Rural program inputs.

We did find a significant program impact on primary school report of marriage and parenthood barriers to secondary education. 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% comparison group youth at evaluation midline).

No significant program impact was found for 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,  $p < 0.10$ ).

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.

*"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

**Figure 4. SEED impacts on program outcomes at evaluation midline**

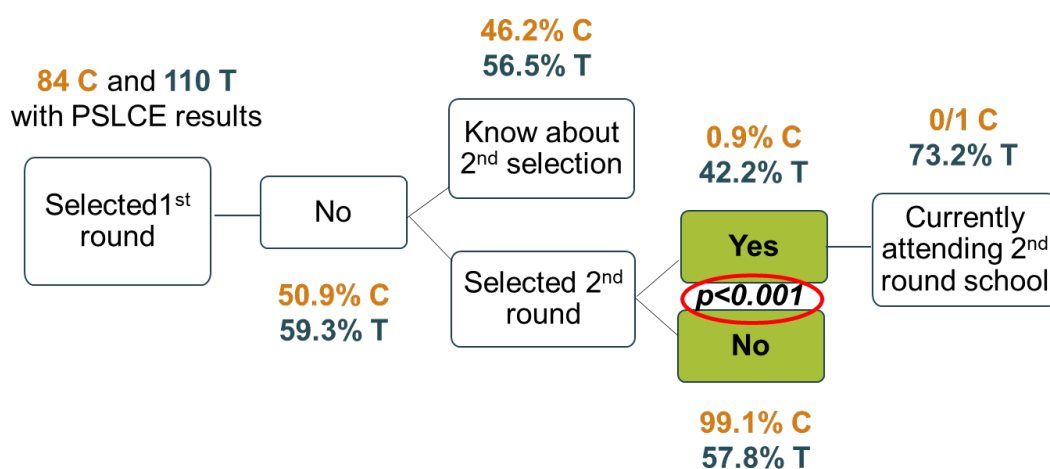
<p><b>Improved primary school performance and completion</b></p> <ul style="list-style-type: none"> <li>• No program impact on PSLCE pass rates, Standard 8 repetition rates, or school drop outs.</li> </ul>
<p><b>Improved WASH and MHM behaviors</b></p> <ul style="list-style-type: none"> <li>• <b>Significant protective program impact on reported secondary school absenteeism during menstruation (- 20 percentage points, <math>p &lt; 0.01</math>).</b></li> <li>• <b>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.</b></li> </ul>
<p><b>Improved student optimism and agency</b></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>
<p><b>Improved education ideals, expectations, motivation, and priority</b></p> <ul style="list-style-type: none"> <li>• No program impact on students' education ideals or expectations.</li> </ul>
<p><b>Increased caregiver support</b></p> <ul style="list-style-type: none"> <li>• No program impact on perceptions that lack of caregiver support is a barrier to educational attainment.</li> </ul>
<p><b>Decreased child labor, chore, and caregiving burden</b></p> <ul style="list-style-type: none"> <li>• No program impact on student labor force participation, or report of school dropout due to job, chores, or caregiving obligations.</li> <li>• Significant program impact on caregiver reporting that paid work is one of the top three reasons community youth do not complete secondary school.</li> </ul>
<p><b>Decreased SR-GBV incidence/concern about SR-GBV and general safety</b></p> <ul style="list-style-type: none"> <li>• No program impact on reported incidence of SR-GBV among girls in secondary school.</li> <li>• <b>Marginally significant protective program impact on SR-GBV-related school absenteeism among girls in secondary school (-20 percentage points, <math>p &lt; 0.10</math>).</b></li> <li>• 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.</li> <li>• <b>Marginally significant program impact on primary school respondent's perception that school travel safety concerns are a serious barrier for girls to join secondary school (-30 percentage points, <math>p &lt; 0.10</math>).</b></li> </ul>
<p><b>Delayed sexual debut and decreased risky sexual behavior</b></p> <ul style="list-style-type: none"> <li>• No program impact on early sexual debut, risky sexual behaviors, or family planning use.</li> </ul>
<p><b>Improved norms, expectations, and perceived barriers for ECFM</b></p> <ul style="list-style-type: none"> <li>• No program impact on student or caregiver attitudes toward ECFM.</li> <li>• Significant program impact on primary school report of marriage as a barrier to girls joining secondary school (40 percentage points, <math>p &lt; 0.05</math>) and boys joining secondary school (30 percentage points, <math>p &lt; 0.001</math>).</li> </ul>
<p><b>Improved norms, expectations, and perceived barriers for early pregnancy</b></p> <ul style="list-style-type: none"> <li>• 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, <math>p &lt; 0.05</math>).</li> </ul>

## SEED Key Outcome Impacts

### Transition Rate

Midline impact findings are summarized for SEED Rural in Figure 6. As discussed for Standard 8 repetition rate and school dropout findings, we were 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 did not find an impact of SEED Rural on the Form 1 transition rate, we did observe strong evidence that the program was associated with a significantly higher likelihood of selection to Form 1, with 42.2% of treatment group students who were eligible but not selected to Form 1 during first selection assigned to Form 1 in second selection, compared to less than 1% of eligible students in the comparison group ( $p < 0.001$ ) (Figure 5).

Figure 5. Selection process for 2022–2023



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 for second term) 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 SEED schools are operational.

### Early Pregnancy

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 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.

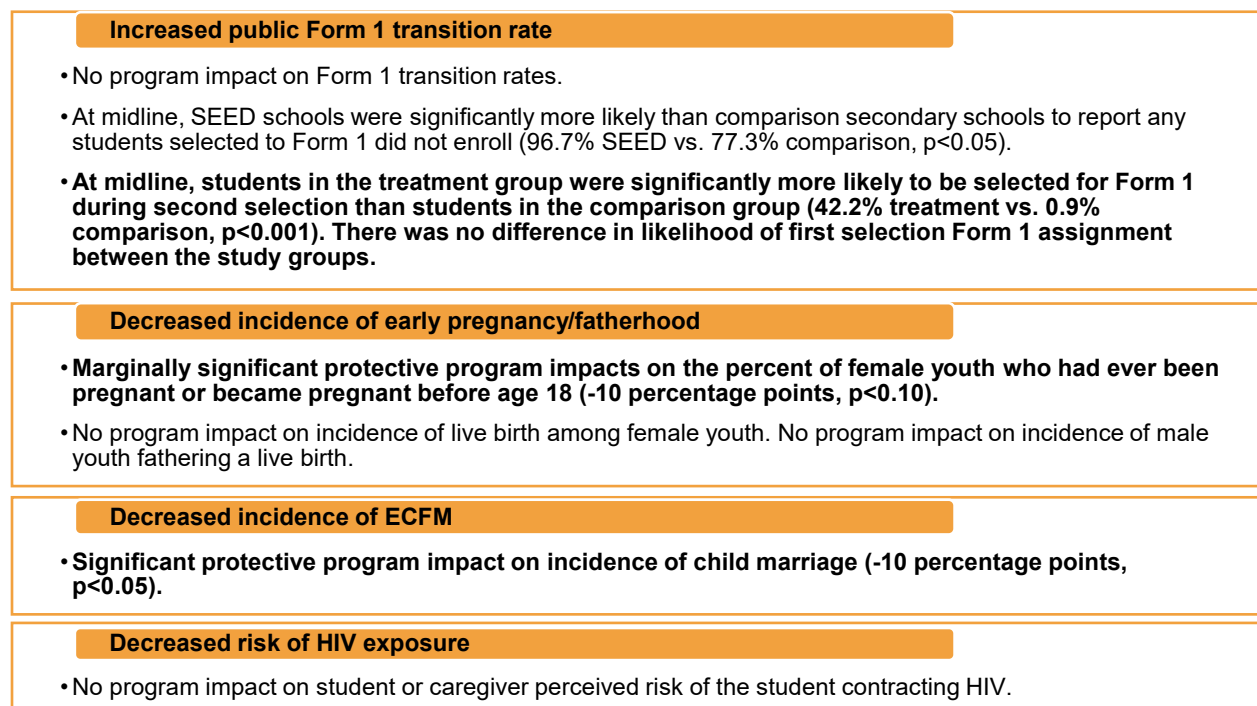
## ECFM

Similarly, we found 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.

## HIV Exposure

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

**Figure 6. SEED impacts on key distal program outcomes at evaluation midline**



## Spillovers

It is possible that primary school teachers from SEED Rural catchment areas transferred to a new SEED school as means of job upgrading, and that the new SEED schools may have hired 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%,  $p < 0.10$ ), and no primary school reported a teacher transfer to a newly opened CDSS during the 2022–2023 AY. With regard to community infrastructure spillover, rural qualitative respondents reported that boreholes drilled for the new SEED schools also benefited the community with improved access to clean, safe water.

**Figure 7. SEED program education and business environment spillovers at evaluation midline**

#### **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%,  $p < 0.10$ ).

#### **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.**

## Key Findings: SEED Urban Qualitative

Respondents reported numerous positive outcomes of the SEED expansion.




Figure 8. Positive SEED: Urban outcomes

<p><b>Students, caregivers, teachers, and community leaders all expressed an increased sense of school pride.</b></p>		<p><b>Conducive learning environment (clean, uncrowded, well-ventilated) has encouraged attendance and facilitated learning.</b></p>	
<p><i>“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.”</i></p> <p>-Community leader</p> 	 <p><i>“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.”</i></p> <p>-Form 3 female student</p>		
<p><b>Reduced absenteeism among girls due to the presence of changing rooms for MHM.</b></p>			
 <p><i>“The expanded washrooms and toilets have made girls more comfortable to attend school regularly ... Before the expansion, we had few toilets and students used to run away from school or ask 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.”</i></p> <p>-Form 3 teacher</p>	<p><i>“When going to the toilet, like the changing rooms, everything was found there, like soap, water, everything was there.”</i></p> <p>-Form 3 female student</p> 		
<p><b>Improved student teacher ratio due to smaller class size.</b></p>		<p><b>Reduced disease/improved hygiene as a result of the new girls’ and boys’ toilets.</b></p>	
<p><i>“There is a good teacher to learner ratio... 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.”</i></p> <p>-Form 3 teacher</p> 	 <p><i>“[The new toilets] “helped us to prevent diseases like the ones occurring in our communities which come due to poor disposal of human waste.”</i></p> <p>-Form 3 male student</p>		

Increased motivation to send children to school due to an improved environment.	Increased motivation to perform well in primary school in order to be selected to the expanded SEED school.
<p data-bbox="207 348 808 695"> <i>“Because of the new block, it has created space. 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.”</i>            -Female caregiver         </p> 	<p data-bbox="1068 348 1474 678"> <i>“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.”</i>            -Form 3 male student         </p> 


Three unintended outcomes were also reported.

**Figure 9. Reported unintended SEED: Urban outcomes**

Increased teacher workload	Increased enrollment
 <p data-bbox="362 1014 979 1381"> <i>“We distributed the students into Form 1A&amp;B, 2A&amp;B, 3A&amp;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.”</i>            -Form 3 teacher         </p>	<p data-bbox="1016 1003 1536 1066">SEED Urban was not intended to increase enrollment, but rather to decrease overcrowding.</p> <p data-bbox="1016 1108 1304 1413">However, respondents noted that the expanded schools can accommodate more students and students were transferring to the expanded schools because they were attracted by the conducive environment.</p> 
<p data-bbox="215 1518 776 1833"> <i>“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.”</i>            -Form 3 female student         </p>	 <p data-bbox="1068 1518 1523 1822"> <i>“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.”</i>            -Form 3 teacher         </p>

Respondents reported piecework, employment, and an increase in consumers as positive business environment spillovers in communities where CDSS's were expanded.

**Figure 10. SEED Urban business environment spillovers**

<b>Business spillovers: piecework, employment, increase in consumers</b>	
 <p><i>“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.”</i></p> <p>-Form 3 teacher</p>	<p>At baseline in 2021, during the construction/expansion phase, community members were hired to draw water, carry bricks and soil, and serve as watchmen.</p> <p>At midline in 2023, respondents noted that some community members had gotten jobs at the school as security guards or cleaners.</p> <p>Respondents at both baseline and midline noted that the increased number of students meant that local businesses were benefiting from an increased number of consumers.</p>



## 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 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.

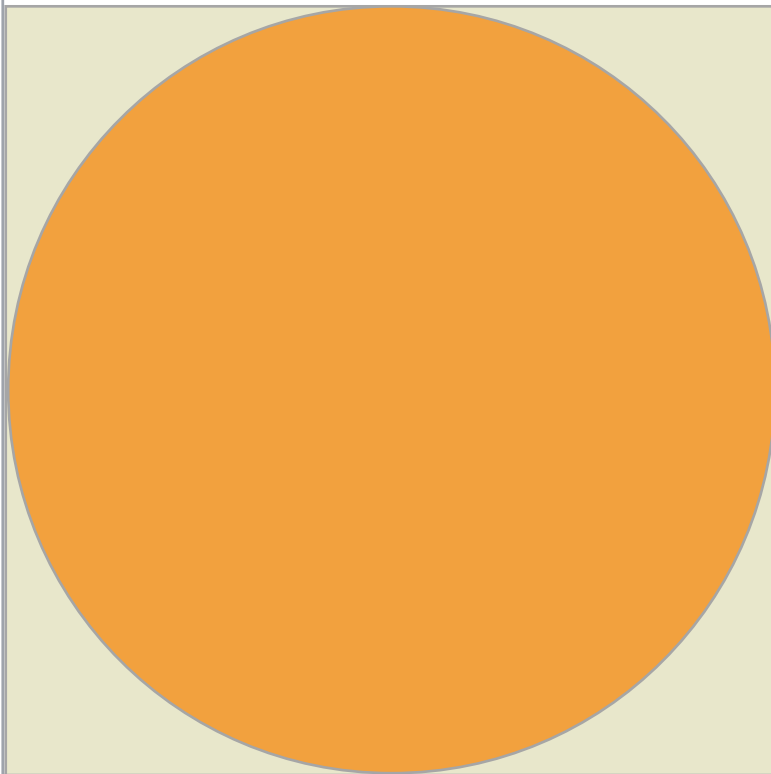
9.2 PTAs and SMCs can organize volunteer-based income-generating activities at the school to offset school development costs and/or replenish consumables such as soap and chalk. Examples of such activities include school gardens or handicrafts for sale.

**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 construction of new CDSSs in underserved rural areas and expansion of existing CDSSs in overcrowded urban areas can positively affect youth education, child marriage, and sexual and reproductive health 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 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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