



FID Series

“Key impact results”

Developing a sustainable school-based agricultural extension program in Liberia

Can programs targeting young people in rural areas sustainably improve both agricultural practices in their communities and students' academic learning? To answer this question, researchers affiliated with Innovations for Poverty Action (IPA) conducted an impact evaluation of a [school-based agricultural extension program](#), implemented by the NGOs Agricorps and 4-H Liberia, in collaboration with the Liberian Ministry of Education. In rural Liberia, the School-Based Agricultural Extension (SBAE) program aims to bridge gaps in agricultural knowledge by using schools not only as places of learning but also as platforms for disseminating information on modern agricultural practices: students learn new agricultural techniques by participating in hands-on activities on school or family plots, and then pass on this knowledge to friends and family in their communities. The researchers conducted an experimental impact evaluation to assess the program's impact on agricultural practices as well as on students' education, livelihoods and aspirations, with a view to informing future scale-up in Liberia and sub-Saharan Africa.

Research team

Jimmy Lee

Christopher Udry



Key impact results

The evaluation shows that schools can become cost-effective hubs for diffusing agricultural technologies and improving rural education when SBAE is paired with parental engagement: light-touch information interventions (a promotional video session and annual farmer field days) that show parents how students' agricultural work under SBAE complements their education. With parental engagement, students' households adopt more yield-improving farming techniques, dropouts fall, absenteeism falls, and studying hours rise. The program also increases students' savings and aspirations, and is among the most cost-effective agricultural extension trials, over twice as cost-effective for improving attendance as a conditional cash transfer benchmark in Malawi.

+ 53%

Increase in the adoption of yield-improving soil management techniques on students' parcels.

-28%

Reduction in student absenteeism, alongside a 22% increase in weekly studying hours.

+ 26%

Increase in the adoption of yield-improving soil management techniques on parents' plots.

+21%

Increase in students' total savings, with 11 percentage points more students saving

Impact study methodology

Conducted between 2021 and 2023, the randomized study compared 100 schools implementing the SBAE program with 97 control schools following a standard curriculum. The researchers tracked 3,757 students and their households, surveying one parent per student, as well as teachers, to assess the program's overall impact on young people's agricultural practices, educational pathways and incomes, as well as the role

played by parental engagement. The evaluation then examined how the program's impact varied when combined with two additional components, randomly assigned to the SBAE schools:

- Video sessions for parents explaining how SBAE's agricultural and education components interact, with testimonials from past participants and authority figures;
- Annual Farmer Field Days inviting parents to observe, discuss and experiment with the promoted technologies on school farms.

The impact evaluation addressed three research questions

- 01** Can schools become effective platforms for disseminating new agricultural practices?
- 02** What impact does the program have on students' academic performance and attendance?
- 03** Does the SBAE program improve students' incomes and future career prospects?

1. Can schools become effective platforms for sharing new agricultural practices?

After three rainy seasons, the evaluation shows that the SBAE program, if paired with parental engagement, increased adoption of the full package of promoted soil management techniques by 53% (0.48 standard deviations) on students' plots and **by 26%** (0.38 standard deviations) on parents' plots. These are large effects compared with traditional village-based extension programs in sub-Saharan Africa, which often struggle to increase adoption among farmers who are not directly trained (Suri & Udry, 2022). The main yield-improving technique, bed preparation, was adopted on 18 percentage points more students' plots and 11 percentage points more parents' plots, compared with control-school rates of 29% and 74%, respectively. In terms of technology adoption, the program's cost-effectiveness was comparable to that of the best village-based extension programs.

Parental engagement activates the program's two routes for spreading new practices: school farms as demonstration plots and students' home farming projects. With engagement, **65% of parents** visited school farms; the number of promoted techniques that students had shown their parents how to use increased **by 92%**; and 18 percentage points more parents reported seeing improved yields on students' plots.

These results provide strong evidence that school-based agricultural extension paired with parental engagement can spread new farming practices effectively, reaching farming households through their children.

2. What impact does the program have on students' education?

Together with parental engagement, SBAE improves a range of educational outcomes.

When both the promotional video and Farmer Field Days were included, SBAE reduced student dropout by an estimated 4 to 5 percentage points per year (compared with dropout rates in control schools of 33%) and reduced absenteeism **by 28%**. Across two school years, students attended 17.6 more days of school-8% more than students in control schools. Weekly study time also increased **by 22%** - an additional 1.17 hours, from 5.39 hours per week. Meanwhile, students' time spent farming did not increase significantly, countering concerns that SBAE might lead to more child labor. With appropriate implementation, school-based agricultural extension can improve attendance as well as household adoption of new farming technologies. The program generated 43 additional days of school attendance for every US\$100 spent, making it **1.7 to 2.5 times as cost-effective** at improving attendance as conditional cash transfers in Malawi (Baird et al., 2011).

However, the program's effects on academic learning were more limited. Students in SBAE schools scored 0.14 standard deviations higher on tests of the promoted farming techniques. The program did not improve students' science or agribusiness knowledge.

3. Does the SBAE program improve students' livelihoods and aspirations?

With parental engagement, SBAE increases students' savings and aspirations

With parental engagement, SBAE increased the share of students with positive savings by **10.7 percentage points** (from 55% in control schools, a 19% increase) and students' total savings by 21% (from approximately US\$20 per year), without reducing spending or meal consumption. It also increased the share of students reporting farm sales by **9.6 percentage points**. Students also showed stronger aspirations for further education. The program increased the share of students taking agriculture as an elective **by 18 percentage points** and the share naming agricultural careers among their top three career choices **by 12 percentage points**. It also increased by 6 percentage points the share of students saving for university (from 17% in control schools).

Taken together, when video sessions and Farmer Field Days were included, SBAE helped achieve several goals at once: increasing adoption of yield-improving practices in rural households, improving school attendance and increasing students' savings.

Perspectives

The findings provide evidence that schools can become cost-effective hubs for rural development when SBAE is paired with low-cost parental engagement. The two engagement activities accounted for only about 10% of average per-school implementation costs. Estimated benefits outweighed costs by a ratio of 1.33 to 1 over the three-year trial, rising to 1.53 to 1 over the first ten years even if annual benefits halved after the first three years.

These findings have informed the next phase of the project, including the gaps in academic learning, which builds on this approach while strengthening teacher training through a “Learning to Learn” approach to improve learning outcomes. The program is scaling up to all rural schools in Liberia by 2035, with expansion into Côte d'Ivoire and Kenya beginning in 2026.

Find out more

Research

Lee, Jimmy.

“Miscategorization as an Information Friction? Activating School-Based Agricultural Education in Liberia with Parental Engagement.” Research Paper, Job Market Paper, Northwestern University, 2026.

Lee, Jimmy & Udry, Christopher.

“Can School-Based Agricultural Extension Programs Improve Technology Diffusion and Rural Education in Liberia?” IPA Best Bet Policy Brief, 2024.