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DURABLE IMPACTS ON HOUSEHOLD WELL-BEING & RESILIENCE IN BANGLADESH

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An ex-post evaluation of a nutrition-and-gender-sensitive agricultural intervention in Bangladesh sought to measure what program effects persisted four years and two shocks after activities ceased. The continuance of program effects, though modest, among more intensively treated groups, indicates that bundling nutrition and agriculture training may contribute to resilience as well as to sustained impacts on consumption, women's empowerment, and asset holdings in the medium term. The results are promising in light of the low-cost and replicable nature of the intervention, which was primarily delivered by government extension agents.

The Agriculture, Nutrition, and Gender Linkages (ANGeL) project was implemented 2016-2018 by Bangladesh's Ministry of Agriculture. The project was intended to promote agricultural diversity, increase farm household income, improve nutrition, and empower women. Implementation areas were assigned different combinations of the program treatments of agriculture, nutrition, and gender sensitization sessions.

The endline survey, conducted in early 2018, found that most ANGeL households—particularly those that participated in the agriculture treatment—improved their cultivation practices, children's diets, and household relationships. (See Figure 1 for an overview of the treatments.)

Two substantial shocks impacted project areas in the years following the project. In May 2019, Cyclone Nargis hit the country. Among ANGeL household respondents, 12% reported damage. For most households, the Covid-19 pandemic

- A two-year project implemented by Bangladeshi government extension agents created significant effects among most of the treatment groups. Many of the effects were sustained among groups that participated in a bundled agricultural and nutrition intervention.
- Resilience was measured using an adapted Livelihood Coping Strategies Index. Households that used fewer of the coping strategies due to a lack of food, or lack of money to buy food or meet basic needs, are scored as more resilient.
- Most of the effects are modest. While the impact durability is promising, more would be needed to increase the well-being of households on a transformative level.

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created the larger shock, with movement and economic activity severely restricted March-June 2020, and intermittently March-August 2021.

In early 2022, we re-interviewed the ANGeL respondents who had received an agriculture treatment or were in the control group.

Coping with Shocks

To quantify and compare levels of resilience between households, we adapted the Livelihood Coping Strategies Index, which measures how households respond to a shock. Respondents were asked whether they had undertaken any of ten coping behaviors since the start of the Covid-19 pandemic due to a lack of food or money to buy food or meet other basic needs. These behaviors are classified as 'stress,' 'crisis,' or 'emergency' strategies, according to how deeply they may reduce future well-being and the difficulty to reverse them. (See Figure 2.)

Among the full sample, 27% of households did not use any of the coping behaviors, 11% had undertaken up to a stress-level strategy, 32% up to crisis-level, and 11% had used an emergency strategy at least once. The households in the T-AN and T-ANG treatment arms were five percentage points less likely to have used any of the surveyed coping behaviors, and also demonstrated reduced likelihood of using the more severe coping strategies. It appears that the combination of agricultural and nutrition training enabled households to be more resilient to shock.

Consumption and Diets

Consumption, measured as the value of total food consumption and nonfood expenses, grew across the full population. During the intervention, treatment groups experienced increased consumption

Figure 2. Coping strategies by category

Stress strategies	Crisis strategies	Emergency strategies
Spent savings	Reduced health expenditures	Mortgaged/sold jewelry/gold
Bought food on credit	Reduced other essential non-food expenditures	Sold productive assets or livestock
Borrowed money to buy food	Reduced ag input expenditure	Sold land
Sold household goods		

compared to control; up 4% in the T-A group and up to 10% among the T-AN and T-ANG groups. Four years after the project and after the worst effects of the pandemic subsided, consumption among T-A respondents was not significantly different than the control, but the consumption gain was sustained among T-AN and T-ANG groups, which averaged 7% above control.

Between 2018 and 2022, households in the T-AN and T-ANG groups were five percent less likely to experience a per capita consumption decline greater than 5%. This result aligns with the reduced likelihood among the T-AN and T-ANG groups to have used a coping strategy amid shock.

The ANGeL endline survey found that the T-AN and T-ANG treatment arms increased their per capita caloric availability. Four years on, higher caloric availability continued among these groups when the sample was restricted to households with little cultivable land but had homestead gardens at baseline. (We speculate that richer households with more land were more likely to be achieving their caloric needs before the program. Among the poorer households, those with basic gardening experience may have taken more value from the training.)

All treatment arms increased their Global Diet Quality Score, with highest growth among T-ANG households. Four years later, T-AN and T-ANG households continued to have higher scores.

Women's Empowerment

We used the Project Women's Empowerment in Agriculture Index to measure empowerment and gender equality. Beyond the dedicated gender training, all of the trainings were gender sensitizing, as husbands and wives were asked to attend together and discuss what they learned. At endline, all treatment arms had achieved modest increases to women's empowerment, with the highest scores in the T-AN and T-ANG groups. Difference from control narrowed in the four years, with the only significant continued effect among the T-ANG group. No decreases in men's empowerment scores were observed over the course of the evaluation, indicating that women's empowerment gains did not disempower men.

Assets

At endline, none of the treatments showed a statistically significant impact on asset holdings. However, four years after the project end, T-AN households had asset values 9% higher, and T-ANG households 19% higher, than those of the control group. Women's share of assets was unchanged.

Promising, Yet Modest

The significant, sustained effects of the ANGeL project may increase interest in bundling agricultural and nutrition interventions. Nonetheless, most of the effects on households could be characterized as modest, rather than transformative.


Figure 1. Treatment arms

Treatments (T)
A: Agricultural production - 17 training and discussion sessions included cultivation practices for high-value crops as well as home gardens, livestock, and fishponds.
N: Nutrition - 19 sessions used lectures, discussions, games, cooking demos to cover topics including balanced diets, sources of micronutrients, food prep, and hygiene.
G: Gender - 8 sessions with structured activities designed to build intra-family respect, communication, and negotiation skills. Mothers-in-law invited.
Treatment arms studied: T-A T-AN T-ANG Control

Figure 3. Effects by treatment arm and survey

	T-A		T-AN		T-ANG	
	2018	2022	2018	2022	2018	2022
Consumption	+		+	+	+	+
Diet Quality	+		+	+	+	+
Women's Empowerment	+		+		+	+
Assets				+		+

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