

Improved seeds for vegetable production & income

A research brief by Avery J. Baker



Background:

Seeds for Family Nutrition and Income Generation was created as an extension to previous Asta-Ja & GreaterGood projects. While previous endeavors dealt with water and infrastructure, this was the first agriculturally focused effort. It provided food, training and income-earning capacity for several hundred households to promote healthier living and establish a foundation for markets. Tanahun is a high-altitude village in the foothills of the Himalayas consisting of several hundred small villages and towns, with a small subset represented here.

Introduction:

With the financial support of GreaterGood.org, Asta-Ja Research and Development Center began its “Seeds for Family Nutrition and Income Generation” project in Tanahun, Nepal’ in early March 2019. The following brief explores a subset of data from the midline evaluation period. GreaterGood.org is a non-profit organization based in the United States with a history of collaboration in Nepal with Asta-Ja; they are responsible for winning the grant funding used in this project. Asta-Ja is one of the most successful small NGOs in Nepal, with a long-standing history of development work since its inception in the 2010s. It is run entirely by a Nepali staff with the exception of outside consultants like myself.

Long Term Objectives:

1. Improve nutritional status of the target communities through vegetable production in home gardens.
2. Increase household income through the sale of vegetables.
3. Train communities on improved methods of vegetable cultivation with the provision of vegetable seeds for two seasons (summer and winter) and establish demonstration plots.

Methodology:

150 households representing the project area were randomly selected and interviewed; because of resource constraints, the sample size was decreased to a half of that of the baseline study, which had covered 300 households in the project area; but we used the same questionnaire in both surveys, which was comprised of 8 sections and 30 questions. Most of our interviews were done in person over two weeks in the summer across five villages, but my role was limited to the first phase, in which we conducted interviews with 33 households. Of note, 60.3 percent of respondents were males and 39.7 percent females, which leaves some questions regarding a gender bias.



Sections included: Consent & identification; Respondent demographic profile; Current land use/livestock; Area, production, consumption, sale and purchase of vegetables in the last year; Assessment of vegetable farming in home garden (area, seed quantity); Improved vegetable farming practices implemented last year; Current problems in vegetable cultivation; and Household income last year.



Findings:

The survey results clearly indicate that the project support with vegetable seeds and farmers' training on improved vegetable cultivation has been successful. Not only has the production of summer vegetables increased; vegetable consumption among the target groups has increased significantly along with vegetable sales. Furthermore, a decline in vegetable purchases from outside markets is leading to increased savings and income for farmers. With regard to improved farming practices, most farmers adopted improved seeds and farm-yard-manure (FYM), and a significant decline in the use of chemical fertilizers occurred. This indicates that farmers have realized the importance of organic agriculture. The project promoted the use of improved seeds, and we noted a steep decline observed in the use of inferior quality vegetable seeds. **We reported that 98.5 percent of farmers in the project area received training on improved vegetable farming at the time of our midline.** In addition, no one was found to have used chemical fertilizers as a stand-alone method for their crops.

Production of Summer Vegetables:

The table on the right presents the average production of summer vegetables. Overall, the production of vegetables had increased significantly at midline. The increased percentage production ranged from 60% to 100%, with bitter gourd having the highest increase of 87.3 percent. The increase in production was relatively less than that of the number of plants at the time of midline evaluation. This can be attributed to the hailstorms that occurred and damaged summer crops after about one month of plantation. Had there not been hailstorms in the area, the production would likely have been much more than we observed.

Production of Summer Vegetables:

Table 9 (also on the right) indicates that the increase in sales of the summer vegetables at midline were not only in percentage households, but also in number of types of vegetables and quantity of vegetables sold. At baseline, three types of summer vegetables (bitter gourd, cucumber, sponge gourd) were sold, which were increased to five types of vegetables (bitter gourd, cucumber, pumpkin, sponge gourd, beans) at midline. Regarding the quantity, sponge gourd's sale had recorded the highest increase by 36.3 percent that means an increase from 45.7 kg per household at baseline to 62.3 kg per household at midline. This was followed by bitter gourd (34.1%), and cucumber (20.5%).

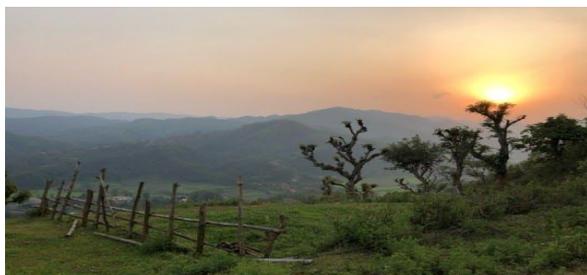


Table 7: Average Production of Summer Vegetables (Kg per Household)

Vegetables Types	Baseline	Midline	% Change
Sponge gourd	24.6	39.3	59.8
Bitter gourd	18.9	35.4	87.3
Bottle gourd	20.6	33.3	61.7
Snake gourd	16.2	28.4	75.3
Cucumber	23.3	40.5	73.8
Pumpkin	26.2	48.5	85.1
Beans	0.0	20.4	100.0

Table 9: Average Sales of Summer Vegetables (Kg per Household of Vegetable Sellers)

Vegetable Types	Baseline (only 3% of total households selling vegetables)	Midline (15% of the total households selling vegetables)	% Change
Sponge gourd	45.7	62.3	36.3
Bitter gourd	71.3	95.6	34.1
Bottle gourd	0.0	0.0	0.0
Snake gourd	0.0	0.0	0.0
Cucumber	71.1	85.7	20.5
Pumpkin	0.0	75.3	100.0
Beans	0.0	40.5	100.0

Income from Vegetable Sales:

As mentioned, vegetable sales rose from 3% to 15% by the end of the midline survey. Table 10 presents the average income from the sales of summer vegetables at midline. Overall, the average income increased, with the highest increased income from the sale of bitter gourd; a 66.9% difference with an increase to NPR 4,302 per household at midline, up from NPR 2,578 per household at baseline. This was followed by sponge gourd (65.1%), and cucumber (53.2%) at midline.



Table 10: Average Income from Sales of Summer Vegetables (NPR per Household) by Vegetable Sellers (baseline 3% of total households and midline 15% of total households selling vegetables)

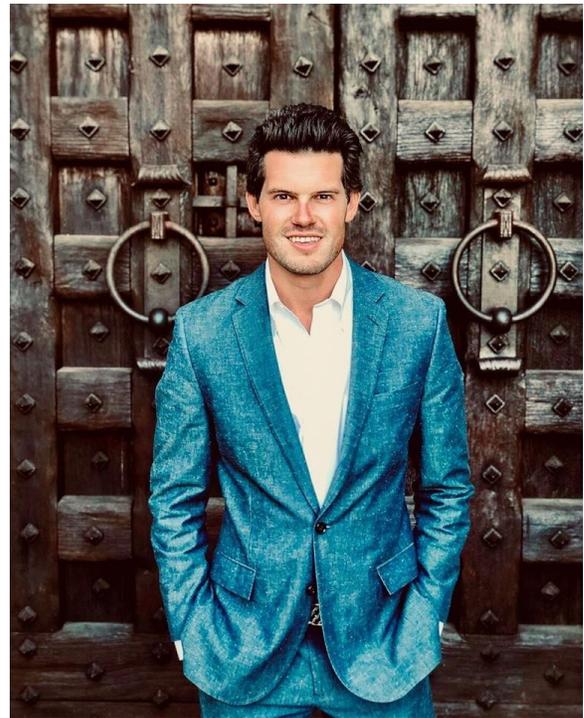
Summer Vegetables	Baseline	Midline	% Change
Sponge gourd	1,321	2,181	65.1
Bitter gourd	2,578	4,302	66.9
Bottle gourd	0	0	0
Snake gourd	0	0	0
Cucumber	5,594	8,570	53.2
Pumpkin	0	2,259	100.0
Beans	0	4,050	100.0

Lessons Learned:

Asta-Ja's intervention ultimately yielded a myriad of both anecdotally and statistically sound data. While it may seem presumptuous, the project's distribution of seeds has unequivocally influenced the performance of crops and overall food security of Tanahun. The greater implication is that agriculture development is just as viable a project directive as water, sanitation or infrastructure (Tanahun also needs these!). Perhaps the greatest lesson learned is that stakeholders (when given training and tools) can fend for themselves without the need for spoon-feeding; a behavior that aid projects often engender.

Conclusion:

Most importantly, the success of this project has opened the door for many more grants and NGO collaboration in Tanahun. The next step (according to a concept note we wrote) will be to establish long-term commercial agriculture production to improve livelihoods and create markets, which currently do not exist. For now, at least the people of Tanahun won't have to put their children to bed hungry.



About the author:

Avery Baker is a graduate student at the University of Arizona (Class of 2020), pursuing a Masters of Development Practice in the school of Geography and Development. He participated in phase 1 of the midline survey for his practicum in Nepal during summer 2019. He was also responsible for various photos, journalism and reports related to the project. Prior to his graduate coursework, he worked in outdoor recreation around the United States and in The Republic of Vanuatu, where he served as a Peace Corps Volunteer from 2015-2017.



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