

## Nudging Children Toward Healthier Food Choices: An Experiment Combining School and Home Gardens

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### Key Takeaways

- Diets in rural Nepal are changing with increased consumption of rice, meat and snack foods but no apparent increase in fruit and vegetable consumption. Increased availability of cash and the 2015 Nepal earthquake appear to have stimulated this trend.
- School gardens can increase children's vegetable consumption if they also make vegetables more available in the household and stimulate parents' preferences for vegetables. Children's rate of vegetable consumption increased 15-26%, depending on the season.
- Interventions are needed to promote increased consumption of fruit and vegetables.
- School and home gardens, when implemented as complementary interventions, can increase fruit and vegetable consumption among children in low-income countries.

### Objectives

The overall project objective was to deepen the understanding of how school garden programs can be made more effective to influence children's food choices toward healthier diets. This project tested the hypothesis that school garden programs could nudge boys and girls aged 8-12 toward healthier food choices if the programs simultaneously (a) increased children's access to healthy foods within the household and (b) influenced the food behavior of their caregivers. The study also investigated whether increased availability of fruit and vegetables within the household led to healthier food choices among children and parents; and whether improvements in parental knowledge and attitudes about food and nutrition led to healthier food choices among children and parents.

### Background

The World Health Organization recommends that people consume at least 400 grams of fruit and vegetables a day, but few people reach this target. Vegetables are not typically

included in every meal, and when incomes rise vegetable consumption increases only slightly. Increasing vegetable consumption requires not only supply-side interventions (helping farmers to produce more), but also demand-side interventions, namely, stimulating and nudging people to adopt healthier diets that include a sufficient amount and diverse array of vegetables. School gardens are now widely used to influence children's food preferences and behavior in both low- and high-income countries, although such programs are more effective at influencing knowledge and preferences than actual food choice. This may be because school gardens do not adequately engage parents or because healthy food items are not always available in children's homes. Despite the absence of rigorous evidence of impact, school garden programs are being designed and implemented at the national level in some LMICs. Knowing what works, what does not, and how the right school garden design can drive children's food choices is of critical importance to the potential efficacy of all of these programs.

## Methods

This study tested a novel school garden intervention that trained both children and parents in gardening and nutrition, using a cluster randomized controlled trial with 30 schools (15 control and 15 treatment) and 779 children (ages 8-12) and their caregivers in the Sindhupalchok District of Nepal. Quantitative surveys captured changes in diet diversity and nutrition knowledge among children and caregivers. Key informant interviews and focus group discussions with school children, parents and teachers provided data on program implementation and changes in nutrition knowledge and food choice behaviors over time.

## Results

Over the past decade, households reported increased consumption of rice, meat, and snack foods, but no increase in their consumption of fruits and vegetables. The increased availability of cash was a key direct driver of these food choices, along with strong preferences for meat and snack foods, convenience, and limited nutrition

knowledge. Additionally, the 2015 Gorkha Earthquake, accelerated the transition from home-grown food to purchased food. Reconstruction efforts tripled local wage rates and increased the number of shops selling packaged snack foods. As a result of both the increased income and the altered food environment, people became accustomed to eating more meat and snack foods.

The integrated school and home garden intervention contributed to an increase in quantity and diversity of vegetables consumed. Caregivers food and nutrition knowledge significantly increased (+26%), as well as agricultural knowledge (+5%), preferences for vegetables (10%), and home garden productivity (+15%). For children, there was a significant increase in preferences for vegetables (+6%), healthy food practices (+5%), and vegetable consumption (+15-26%, depending on the season), although no significant effects on nutrition knowledge. The results therefore indicate that influencing children's food behavior through school gardens requires targeting children as well as their caregivers.

## More Information

- Schreinemachers P, Yang R-y, Bhattaraj DR, Rai BB, Ouedraogo MS. (2020). "The impact of school gardens on nutrition outcomes in low-income countries." In D. Hunter, E. M. Oro, B. Burgos, C. N. Rogel, B. Calub, & J. Gonsalves (Eds.), *Agrobiodiversity, School Gardens and Healthy Diets: Promoting Biodiversity, Food and Sustainable Nutrition*. -<https://www.taylorfrancis.com/books/e/9780429053788/chapters/10.4324/9780429053788-8>
- **Open Access Data** - [https://dataverse.harvard.edu/dataverse/foodchoice\\_nepal](https://dataverse.harvard.edu/dataverse/foodchoice_nepal)
- **Project Page** - <https://driversoffoodchoice.org/research/project-descriptions/nudging-children-toward-healthier-food-choices/>

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