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# Discussion Paper BRIEFS

Food Consumption and Nutrition Division of the International Food Policy Research Institute

Discussion Paper 109

## Does Cash Crop Adoption Detract from Childcare Provision? Evidence from Rural Nepal

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**R**eduction of rural poverty is one of the greatest challenges the Government of Nepal faces. Since most of the country's agricultural production is semi-subsistence-oriented, increased commercialization of this rural-based economy is essential for poverty reduction and economic growth. Consequently, farm output diversification and productivity improvements are priority areas for the government.

### *Purpose of This Study*

There are not many quantitative studies on how men and women respond to new economic opportunities in rural areas. Some case studies infer that women's individual productivity and access to resources decline as households increase commercial crop production. Others indicate that commercialization is not necessarily associated with increased workloads for women. Very few studies examine the changing activity patterns of both men and women in response to commercialization of agriculture. And even fewer collect rigorous time allocation data on these patterns.

Though women's time is valuable in agriculture, it is also valuable in the production of child nutrition. The past 10 years has seen a revolution in the conceptual model underlying child malnutrition. Specifically, there is now a recognition that care of children is at least as important to their growth and nutritional status as are food intake and health. Care behaviors include breastfeeding, psychosocial stimulation, food preparation and storage practices, and hygiene practices. This evolution in thinking as to the causes of child malnutrition warrants further analyses of the time trade-offs that women and men face when adopting new agricultural technologies.

This paper uses data from fieldwork conducted in Nepal to examine the impact of a project designed to commercialize vegetables and fruits—the Vegetable and Fruit Cash Crop Program (VFC)—on male and female time allocation. We use a rigorous time collection methodology to profile the activity patterns of men and women in households that adopt and do not adopt new vegetable and fruit technology. We model the adoption decision and estimate the impact of adoption on men and women's time allocation patterns in various key activities.

### *Nepal's Vegetable and Fruit Cash Crop (VFC) Program*

The findings are based on fieldwork completed in 1991–1993 in the Rapti Zone, Mid-Western Development Region, Nepal. Beginning in the late 1980s, farmers—men and

women—throughout Rapti were encouraged to commercialize their vegetable and fruit production to generate income and meet growing demand for fruits and vegetables. Development assistance was provided by the Rapti Development Project (1985–1995). Within the project's focus on agriculture, the VFC program was developed to focus exclusively on vegetable and fruit commercialization.

The overall goal of the VFC program is to increase the commercial value of the vegetable and fruit production and raise household incomes of targeted farmers. The VFC program provides production inputs, training, and technical assistance to both men and women farmers. The specific vegetables and fruits provided vary according to agroclimatic conditions and existing agricultural practices.

### *Methodology*

At the time of the fieldwork the VFC program was active in 22 communities in the five districts in Rapti. Three were selected as representative of the diversity of the communities in terms of ethnic composition and differences in agro-ecological and market conditions. The VFC program provided technical assistance and crop technologies to the three communities at a level sufficient to achieve demonstrable results in a relatively short time.

A total of 264 households were randomly selected using a two-stage sampling procedure. VFC households are defined as meeting any of the following criteria: (1) received training through the VFC program and are actively using the improved technologies to grow vegetables, fruits, and other cash crops for local markets; (2) received training through the VFC program and are actively using the improved technologies to grow vegetables, fruits, and other cash crops for home consumption only; (3) received training through the

VFC program and are using the improved technologies to grow vegetables, fruits, and other cash crops to a moderate degree.

A number of data collection techniques were

used to obtain qualitative and quantitative information on the production and consumption patterns of households participating and not participating in the VFC program in the three communities. The principal approaches were survey questionnaires, random spot observations of time allocation, ethnographic techniques, and rapid rural appraisals. One innovation of this study is the combination of socioeconomic data with detailed time allocation data collected through the use of repeated random-spot observations.

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The random-spot observation for time allocation data collection involves recording the activity of individuals within the 6:30–18:30 time period by visiting them randomly 30 times during the course of a 12-month period and observing and recording their activity. By focusing on these daily hours, we capture activities that are directly and indirectly affected by changes in farming practices due to the adoption of VFC technologies, including agricultural labor, childcare, food preparation, and fuel and water collection.

### **Results and Discussion**

Our analysis focuses on three related questions. First, what are the determinants of household participation in the VFC program? Second, how does head male and head female mean time allocation among various activities differ by VFC participation status? And third, how does VFC participation affect head male and head female labor allocation to various activities while controlling for a number of individual and household characteristics?

Participation in the VFC program is increased by having a literate household head, being located closer to the VFC extension office, and by community acceptance of the program.

Before the program, the households grew small amounts of vegetables and fruits for home consumption. However, the varieties grown and the technologies used did not produce vegetables and fruits of the quality and variety that would make them commercially viable. The VFC program was successful in its efforts to target both men and women farmers in the sense that household participation in the VFC program resulted in increased head male and head female time spent growing vegetables and fruits. The response of head women's labor to VFC ranges from 55 to 3 minutes per 12-hour period for households with one, two, and three preschoolers respectively. VFC participation increased head male time in vegetables and fruits more than for head females (ranges from 64 to 24 minutes). These responses are large, given that they are averages over one year.

For the 101 households with more than one preschooler, VFC participation results in increased time—for both men and women—to vegetables and fruits; less time to cereals and livestock; and greater time to care of children under 5 years by women and moderately less time to care of children under 5 years by men. For these households, the trade-offs associated with VFC participation do not seem too important for the care of children under 5 years.

For the 67 households with one preschooler, the trade-offs seem more important. In these households, preschoolers receive less care from their parents, who spend more time in cultivation activities, especially in the cash crop, but also in the food crop. Is there scope for a behavior change intervention such as a communications program to increase time by parents in care for preschoolers in this vulnerable set of households? We note that the nonwork (leisure) time of men increased as a result of VFC participation, but for women, leisure time was unaffected. Thus in the short run there is perhaps scope for protecting childcare time by reducing time to leisure. This is not to say that leisure time is unimportant, particularly for the women upon whom the preschoolers primarily depend, but at least VFC participation has not increased overall work time burdens.

In the medium run, benefits may well accrue to unborn preschoolers if VFC participation empowers women. Although the incomes earned from the local sale of VFC products are quite small, they represent the first opportunities women have had to earn and retain income without leaving the community. This may have far-reaching impacts on the ability of women to exert their own preferences in a wide range of activities—including an increased allocation of resources to children. The current data set does not permit a longer-run analysis of the impacts of this agricultural technology and training on the nutrition status of preschoolers, but future data collection efforts in this area of research should strive to do so.

**Keywords:** time allocation, commercialization, childcare, Nepal

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