Nutrition Sensitive Agricultural Project Increased Bean Consumption and Improved Protein Quality of Rural Guatemalan Families

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Problem

Beans provide several key nutrients missing from a corn-based diet but are no longer consumed regularly due to increased cost and low yields when grown in family plots using grain as seed obtained from local markets.

MASFRIOJOL Project

A five-year USAID nutrition-sensitive project coupling distribution of 5 pounds of improved bean varieties seed with educational extension lessons delivered in remote rural communities. Five nutrition education lessons were developed:
1. Prevening chronic malnutrition,
2. Enhancing protein quality,
3. Nutrient needs in pregnancy and lactation,
4. Feeding child 6-11 months,
5. Feeding child 1-2 years old

Objective and Audience

To assess impact of nutrition-sensitive agricultural project on intake of beans and improved quality protein of indigenous women and their families in the Guatemalan highlands.

Methods

Pre-nutritional and Agriculture Evaluation (Baseline) → Bean Seed Varieties + Nutrition/Agriculture Education → Post-nutritional and Agriculture Evaluation

Use of Theory

Nutrition lessons were designed based on the Social Ecological Model considering the indigenous highland cultures and local foods grown. They were delivered across geographically dispersed communities in households using wood burning stoves and no refrigeration.

Evaluation

Intervention outcomes were evaluated in two ways:
1. By comparing the household intake of beans both before and after receiving the lessons. A visual instrument was developed and distributed on which households recorded the amount and frequency of beans cooked each day of the week.
2. By using the Most Significant Change technique (MSC) for qualitative assessment to investigate how beneficiaries' knowledge, attitudes and practices supported the quantitative data that showed increased production and consumption. (Davies & Dart, 2005).

Results

The timeframe for the intervention was six months. 571 households from 93 communities reported eating beans 1.5 x/week before receiving the bean seed and training and 2.8 x/week afterwards. Analysis of variance (ANOVA) for household intakes showed statistically significant increases. Qualitative measurements 12 months after the intervention confirmed increased bean consumption across the study area. MSC findings were as follows:

Conclusion

Coupling seed distribution with agricultural and nutrition education resulted in an increased consumption of beans, which when combined with corn and other cereals, improved protein quality intake of women and their families in rural indigenous households in the Guatemalan highlands.

BEAN CROP EXTENSION EDUCATION

ATTITUDES

• Appreciates value of beans and takes better care of crop
• Has a new interest in growing beans
• Listens to technical advice to better manage bean crop

KNOWLEDGE

• Knows how to select seed for next planting season
• Knows benefits of using Personal Protection Equipment
• Knows that improved bean varieties have higher yields
• Knows that improved bean varieties grow faster
• Understands benefits of using bags for bean storage
• Knows how to properly close storage GrainPro bags

PRACTICES

• Does not buy beans since growing own (saves money)
• Implements new crop management practices
• Sells surplus beans
• Uses most of harvested beans for family consumption
• Uses organic products to manage soil fertility
• Uses improved bean varieties seed now

NUTRITION EDUCATION

ATTITUDES

• Appreciates good flavor of improved bean varieties
• Likes Hunapu for fast cooking and thick broth properties

KNOWLEDGE

• Knows how to feed beans to baby
• Knows and recognizes signs of child malnutrition
• Knows that beans contain protein to benefit brain
• Knows that beans contain vitamins
• Knows that beans contain iron (good for pregnancy)
• Knows child age-size relation to chronic malnutrition

PRACTICES

• Consumes more beans than before
• Feeds children more beans because they are nutritious
• Combines beans with other foods

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