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Leveraging Agriculture to Improve Nutrition and Health

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Abstract

Agriculture and nutrition are part of a virtuous cycle. Not only does increasing agricultural productivity have the potential to improve rural families' nutrition, but healthier and better-nourished smallholder farmers are more productive, earn more income, and contribute to further economic growth. To address under nutrition using agriculture, in collaboration with our partners, we conduct food consumption and nutrition population surveys to identify commonly consumed foods, preparation methods and portions and determine nutrient intakes of women of childbearing age and preschool children. Studies on nutrient retention are conducted to establish the impact of processing while dietary diversification is achieved through conducting research on product development; improving nutritional quality of traditional food products (food-to-food fortification); increasing availability and access to nutritious and safe food and income through research on processing, packaging and storage targeting small and medium scale entrepreneurs. Our research on food quality includes relating physicochemical characteristics and functional properties with product sensory characteristics and consumer preference. Lessons learned show that there is a steep increase in the incidence of wasting between 6 and 12 months, which corresponds with to the introduction of complementary foods; across the agro-ecological zones, the largest proportion of malnourished children is in the dry savannah compared to moist savannah and humid forest; the onset of the three forms of malnutrition (stunting, wasting, and underweight) appears to occur most often between 6 and 24 months of age. The amount and types of foods consumed by women of child bearing age and preschool children lacks diversity as it is based mainly on starchy staples and vegetables, with very minimal consumption of animal products and fruits. Furthermore, our research indicates that the impact of processing on nutrients is dependent on processing method and variety. The addition of protein-rich crops and by-products of distillation increases the protein quality and quantity of food products. In conclusion, adding value to agricultural produce, and linking crops grown to foods consumed and nutritional status of women of childbearing age and preschool children may offer opportunities of leveraging agriculture to improve nutrition as it will help identify gaps in nutrient intakes resulting in targeted interventions that may also include improving food systems.

Keywords: Bio-fortification, consumer preference, dietary diversification, mal nutrition, sensory characteristics, under nutrition