Mapping Pro-Nutrition Agricultural Interventions in Tigray, Ethiopia

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Background

There is renewed interest in issues of nutrition and malnutrition as policy makers assess the slow progress after decades of effort to improve agricultural productivity and food security. The long-held assumption that agricultural interventions, in different forms, will lead to food security and thereby nutrition security is being increasingly challenged. Although there is ample information on incremental improvements in production following various agricultural interventions, recent studies highlight the lack of empirical evidence on the impact of agriculture interventions on nutrition outcome indicators such as stunting, wasting and underweight, and argue that links between agricultural development and nutrition cannot be projected linearly.

In Ethiopia, and Tigray in particular, the prevalence of malnutrition is high and a number of agricultural interventions are promoted to address the problem. It is therefore important to assess the extent to which nutritional objectives are integrated in agricultural development interventions in the region and understand the pathways by which better nutritional outcomes can be achieved.

Objectives

The objectives of this review were to identify agriculture-related interventions implemented in Tigray region and to assess their impact on the nutritional status of participating households. It also aimed to assess the characteristics of the interventions and their impact pathways linking agriculture and nutrition, and draw lessons for scaling-up of successful interventions. Furthermore, the study aimed to understand the conditions under which interventions yield positive impacts and thereby inform agricultural and nutrition policies.

Study procedure

This review followed three stages. The first was profiling the agricultural interventions for their content through a checklist developed by the AgriDiet team. The second stage was to identify those projects with explicit nutritional objectives. The third stage was to conduct an in-depth assessment of the three projects which appeared to have the greatest impact using a framework adapted by the AgriDiet team for the purpose of mapping the impact pathways between agriculture intervention and nutrition.

Findings

We identified various agricultural interventions conducted by governmental and non-governmental organizations that broadly address agricultural development and nutrition, and categorized these interventions into three types. In most cases, projects promoted a mix of the three categories through integrated approaches.

Production and productivity oriented interventions: This first category includes interventions that focus on the promotion of agricultural production in order to improve availability of food and increase income-generating capacity of target households. Such interventions are designed on the assumption that increased agricultural production will improve food availability for the household and contribute a surplus to enhance national food security. It is implicitly assumed that improved food availability will lead to better nutritional outcomes. Typical interventions in the region are irrigation development, distribution of high yielding cereal and vegetable seeds, promotion of fruit and other high value cash crops and promotion of improved dairy cows. Such interventions are mainly designed to enhance the production capacity of households through better access to technology and extension support systems. The main focus is thus on the supply side, which has been the dominant feature of government agricultural interventions in the region over the past two decades. Investment in the physical and natural capital of communities - such as natural resource rehabilitation programs, irrigation infrastructure, development of roads, and expansion of veterinary services - are included under this category.

Diversification oriented interventions: This second category of interventions includes those that focus on diversification of agricultural production systems through the integration of vegetables, fruits, poultry and similar components, so as to enhance the dietary diversity of households, particularly the resource-poor. Such interventions also aim to improve household dietary diversity and reduce reliance on traditional cereals. Typical interventions in Tigray include promotion of home gardening, poultry production, dairy goats, new fruit varieties, sweet potatoes, orange flesh sweet potatoes, quality protein maize (QPM) and green gram. These may include marketing interventions to increase availability of new crops and promote value addition, thereby increasing income of households. Other interventions under this category include the Other Food Security Packages (OFSP) associated with the government's safety net programs and actions to improve women's resource endowment, diet and health. Better resource endowment and improved physical conditions are assumed to enhance women's role in providing their children and family with better nutrition.

Post-harvest and value-addition interventions: In this category, interventions include those that focus on post-harvest handling, storage, processing and marketing of agricultural products for better nutrition and preservation of quality. Specific examples include interventions relating to preparation of child supplementary food from local agricultural products, training on preservation of surplus production of horticultural products such tomato, potato, and onion, and educating household members about balanced diet, hygiene, and sanitation in use of horticultural products. Other interventions provide training on handling of fresh milk and milk products and its marketing to enhance household income. Some NGOs are promoting informal bartering of food ingredients for preparation of special diets for children and pregnant mothers where formal markets are missing. These interventions also aim to reduce women's work burden and increase time for caring practices.

The review found that most of the interventions promoted have broad objectives of enhancing food production and food security, but few explicitly consider nutrition objectives. Some evaluations report relative improvements in income, food consumption and diversity of food consumed but whether such changes are due to the interventions or to other confounding factors remains unclear.

The available evaluation reports of the three projects reviewed in detail were all based on descriptive approaches which did not allow for systematic verification of the evidence. We found the impact indicators employed by these projects, such as expansion in area of new crops promoted, head counts of beneficiaries reached, quantitative indicators of productivity of crops and livestock promoted, and changes in income and expenditure patterns of households following project implementation, were poor proxies for measuring the nutritional outcomes of the various interventions. Post-intervention evaluations of health and nutritional status based on farmers' recall are methodologically limited without baseline data and controlling for confounding factors.

Conclusion and way forward

The perception of food shortage as the main cause of malnutrition, and hence the focus of policy-makers on boosting food production, need to be reassessed in terms of its overall success and the viability of the specific pathways followed. The evidence available as to which type of agricultural interventions address nutrition objectives best, and the underlying causes of success, is scanty, and further empirical and analytical work is needed.

More comprehensive case studies using rigorous methodologies on selected interventions in the region are recommended to inform policy-makers and other stakeholders in order to promote more effective nutrition-sensitive interventions in agriculture. There is also a need for multi-sectoral involvement in planning agricultural interventions in order to effectively achieve desired nutritional outcomes.

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