

Applying geo-spatial information for integrating crop, food, and nutrition for a healthier food system in rural Ethiopia

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Abstract

With nearly three billion people having low-quality diets and more than two billion lacking vital micronutrients (e.g., iron, zinc, vitamin A), the world is facing a nutrition crisis. In low and middle-income countries, the economic losses resulting from undernutrition are estimated to be as high as 11% of a country's Gross Domestic Product annually. Improving the nutritional status of particularly women and children remains a key public health and development priority.

Over the last few decades, although food production has risen globally to significantly help reduce global hunger, access to food and healthy diets still remains a major concern, especially in developing countries. Majority of undernourished people in those countries are smallholder farmers living in rural areas. The current global initiative Sustainable Development Goal (SDG-2) targets ensuring universal access to safe and nutritious food for all and ending all forms of malnutrition by 2030. If the existing trend of reduction in undernutrition prevalence continues to remain, most developing countries including Ethiopia are less likely to achieve the target. Thus, a context-specific assessment of the existing food system at various scales is important.

Food system encompasses interrelated activities from food production to consumption and the output of those activities. Therefore, the present study aims to conduct a comprehensive assessment of diet quality through remote sensing-based village level production diversity, nutritional quality of available foods, georeferenced household survey, individual dietary intake assessment, nutritional status of children and women of reproductive age. In doing so, the study identifies geographic areas at high risk of undernutrition with potential responsible factors and thus provide concerned government sectors and development partners with useful local level information on how to address nutritionally vulnerable households residing in rural Ethiopia.