

## **An analysis of the food system landscape and agricultural value chains for nutrition: A case study from Sierra Leone**

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One of the greatest challenges in development is to ensure that all people have access to sufficient and quality food to ensure food and nutrition security. The agricultural sector in Africa consists mainly of rain-fed, low-technology, low-input, non-mechanized smallholder farming (IFAD 2011) and food production has been insufficient largely due to conflict, natural disasters, crop failure and food prices. While agriculture remains the backbone of the rural economy and increasing agricultural outputs impacts economic growth, agriculture interventions have failed to improve nutritional outcomes (Berti et al 2004). The emphasis has been mainly on food production and less on nutrition security. Agriculture-based approaches to improving diet diversity and nutrition are not straightforward and many potential solutions are in the research pipeline. Food and nutrient losses along the value chain, which may be caused by ineffective or inefficient harvesting, storage, processing and handling, are other factors that affect the availability, cost and hence affordability of nutrient-rich foods.

This paper summarizes a qualitative case study conducted in Sierra Leone to explore the programmatic challenges of linking nutrition and agriculture nationally through a food system landscape analysis, and the implementation of nutrition-sensitive value chains of two commodities – rice and vegetables. The research undertaken in this project aimed to understand the role markets and value chains play in improving dietary diversification both directly, through an increase in the production of nutritious foods sourced from smallholders in Sierra Leone, and indirectly, through an increase in income for smallholder farmers. Much of the analyses done in this study examined the supply side of the value chain. The study highlights the importance in engaging women in value chains, and their potential role as “change agents” to ensure that nutrition is better integrated along the value chains as producers and consumers (IFPRI/ILRI, 2010).

The study also identified various pathways through which rice and vegetables production, processing and marketing could contribute to improving nutritional status and health. Agriculture and health actors would benefit from jointly developing nutrition indicators to insert into the value chain that address both nutrition and agriculture. While a single intervention targeting only one component of the value chain is likely to have a limited impact, addressing all the identified issues, with several interventions at different levels of the chain can make a real difference.

### **Recommendations to policy makers**

#### *Holistic engagement of value chains:*

The research recommends the need for a more holistic approach to value chain programming that engages nutrition along the entire chain. Most of the existing interventions in Sierra Leone only addressed one step of the value chain, being too restrictive and specific and therefore had very little impact. For example, many production interventions do not address processing, fortification, packaging and marketing issues, which makes it difficult for farmers to add real value to their produce. Food processing and value addition of foods

produced by farmers can be enhanced by initiating and supporting scale-up processing of vegetables to enhance shelf-life. In addition, promotion and support to improve methods of parboiling of rice and possibly fortification of rice with micronutrients such as iron and zinc during the parboiling process would also enhance the nutritional value of rice.

*Improving credit access:*

To prevent distress sale of rice and to allow both rice and vegetable farmers to buy sufficient farm inputs in time for the planting season, there is a need to strengthen existing credit initiatives. Flexible and convenient credit facilities that allow poor households to borrow funds to cover emergencies would result in smoothing and stabilization of household food security can contribute to resiliency and improved livelihoods.

*Inclusion of education:*

Incorporation of nutrition education and communication strategies along the value chain that target behaviour change is important in order to increase male and female smallholders' knowledge about the nutritional significance of the foods they produce and purchase and to enable them to make better production and consumption decisions. Investments and interventions should thus not only emphasize the importance of vegetable consumption, but also provide education on proper preparation methods of these vegetables. This requires effective coordination between organizations involved in agriculture/nutrition/education activities. The current Nutrition Technical Committee in Sierra Leone should be strengthened by including other actors to ensure that education is included in agriculture-linked nutrition initiatives.

*Women as the value in the chain:*

Women are important contributors to value chains as both suppliers and consumers. Little emphasis has been given to how consumers can play a role in influencing value chains and how changes in the demand for specific foods can influence the processes and outputs of value chains. There has also been little attention given to how actors, particularly women along the value chain can be better informed on enhancing the nutritional value of local foods. Food and nutrition systems need to be rethought by creating new business paradigms that engage smallholder women farmers from a livelihoods perspective but also from a health and nutrition perspective.

In conclusion, the paper notes that links between what is produced on the farm, the consumer who buys that food, and the income received by the producer does not stop at production (Hawkes and Ruel 2010). Food is stored, distributed, processed, retailed, prepared and consumed in a range of ways that affect the access, acceptability and nutritional quality of foods for the consumer. Understanding the challenges and gaps in the value chain from a nutrition perspective is critically important and the analysis on the rice and vegetables chains in Sierra Leone provide a local context on how these commodities move along the value chain and where, potentially, the chains can be improved from a nutrition perspective.