

# Chapter 7 CONCLUSIONS: THE KEY ROLE OF AGRICULTURE IN ACHIEVING BETTER DIETS IN MALAWI

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THIS REPORT COMBINES INTERNATIONAL EVIDENCE WITH NEW PRIMARY AND SECONDARY analyses of Malawian data to understand the different pathways linking agriculture, food security, and nutrition for households in Malawi and to illuminate different dimensions of these links. In addition to outlining different theoretical and methodological approaches to studying these connections, this report provides evidence on the role of commodity production, food prices, agricultural diversification, and irrigation in changing household food security and access to different nutrients, as well as impacts on individual diets and nutrition. This chapter provides a summary of the empirical chapters, draws out some key themes, and suggests some implications for Malawi and other countries with a large agriculture sector that concurrently face issues of food insecurity, hunger, and malnutrition.

There are several key pathways through which agriculture and food systems affect food security, diets, and nutrition (Gillespie, Harris, and Kadiyala 2012), and these can often be leveraged alongside traditional agriculture-sector goals of productivity, income, and growth. Good nutrition is important—for national development, individual development, and healthy societies—and requires both adequate quantity of food (calories) and adequate quality of diets (nutrients to grow the body). The issue of dietary quality—meaning diets that include safe and hygienic foods from as many food groups as possible, providing a variety of nutrients in addition to calories—is often missing in food security work, but is the chief concept linking agriculture and food systems with nutrition outcomes. As such, of all the indicators along all the pathways reviewed here, diverse diets are a key outcome to measure the success of most agricultural programs and policies, if an impact on population well-being is desired (Herforth and Harris 2014).

Measurement of the effects of agriculture on diets and nutrition is often limited by the data disconnect,

whereby household agricultural and economic data often do not exist in the same datasets as individual dietary and health data. But this can be remedied: wherever possible, the measurement of individual diets (disaggregated by population groups) should be included in household agricultural surveys.

Malawian diets traditionally focused on maize as a key staple food, and, as such, reflect many traditional diets around the world that rely on starchy staple foods to provide enough calories for daily activity (Latham 1997). Interviews with Malawian households, however, reveal a preference for diverse foods in addition to maize, once maize requirements are fulfilled. Nutrition per se may not be a priority for Malawian households, but diversifying their diets is, and this is an important precursor to improved nutrition that the agriculture sector can address. The barriers to accessing more diverse and aspirational foods were predominantly reported by households to be linked to a lack of availability of different foods and a lack of finance to access different foods, given that maize sufficiency is the primary goal and household budgets are limited.

In Malawi, poverty is decreasing overall, but inequality is increasing. Expenditure data show that households across most wealth groups are spending a larger share of the household budget on food than in the past, despite generally declining maize prices, largely due to the effects of the Farm Input Subsidy Program (FISP) on maize yields and production (Arndt, Pauw, and Thurlow 2016). While we might expect this to result in improved access to more diverse and nutrient-rich foods,<sup>13</sup> we find that this is not the case for poorer Malawian households. In particular, poor households are consuming fewer vegetables. Changes toward purchasing more diverse and nutrient-rich foods are found to be constrained by high prices of nutrient-rich foods compared with energy-rich staples; thus, while food security (measured as access to calories) may be improving, nutrition security (measured as access to nutrients) is getting worse.

One potential approach to accessing diverse diets for increased nutrients is for agricultural households to diversify production, thus leveraging the pathways to improved nutrition through own production (through consumption of more diverse production) or increased income (through sale of surplus and purchase of diverse foods). These results also show that the FISP is a driver of production diversification. As has been found in other countries (Masset et al. 2011), diversification of production in Malawi is associated with increased household access to diverse foods. Crucially, it is also associated with increased access to micronutrients for households that diversify production beyond just maize. Another potential approach to increasing access to more nutrient-rich foods is through increasing irrigation, which can promote the production of nutrient-rich, but water-intensive, fruit and vegetable crops. Irrigation, from simple manual irrigation to larger infrastructure projects, can increase productivity and crucially reduce seasonal gaps in production, again operating through the own-production or income pathways to improved diets. While associations are not found between irrigation use and child nutritional status, irrigation is associated with improved household access to diverse foods and a reduction in seasonal food insecurity.

Both diversification and irrigation are policy objectives for the Government of Malawi, and both have the potential to improve diets through the supply side, making diverse nutritious foods available for more of the year. Food prices for these nutritious foods will also fall if production increases, which, along with increased consumption of home-produced foods, would allow Malawians to achieve their aspirations for more diverse diets. Getting farther along the pathways toward nutrition impact requires convergence with other sectors to cover the food, health, and care determinants of improved nutrition (Ved and Menon 2012); the role of the agriculture sector is to focus on improving the availability of and access to diverse nutritious foods.

Agricultural policy in Malawi, as in many countries regionally and globally, calls for diversification of agricultural production as a key component of its approach to development. Most important for nutrition outcomes will be how diversification is implemented. Diversification among different staple grain and root crops can be an important food security strategy, for instance, but is unlikely to lead to dietary diversification across different food groups for a range of nutrients. Diversification into cash crops will only lead to improved diets if diverse foods are available and affordable in the market, so that increased incomes can be spent on them. Diversification into production of nutrient-rich fruits, vegetables, and animal-source foods is important to drive availability and access, but gaps still remain in our understanding of the nuances of these pathways. Furthermore, while there is evidence that promoting staple productivity, for example through the FISP, can promote crop diversification and can even allow income from excess maize to be used to purchase other nutritious foods, the poorest Malawians do not appear to be benefiting in this way and thus require additional support to improve their diets.

In this report, we have started to disentangle the nutritious and less nutritious crops that are kept and consumed, those that are bought and sold, and the production systems that drive this. However, further research is needed to understand by which pathways these crops best improve diets, whether through own consumption, increased incomes, im-

proved market availability, a focus on women as key to both production and nutrition, or a combination of these. Furthermore, the gendered and intra-household effects of production on diets require more research; we need a better understanding of the effects on diets of production of different crops, such as different nutritious foods and cash crops; and we need to understand the differences in outcomes between these foods being available on a subsistence basis and being available in markets. However, to start to answer these questions we need individual dietary data available in the same dataset with agricultural data, which, as is the case in many countries, are currently not available in nationally representative data sources in Malawi.

In addition, while our results indicate that irrigation can begin to address the seasonal availability of diverse foods, other important aspects of seasonal availability of nutritious foods must be explored. Initiatives to leverage nutritious value chains to improve nutrition are likely hindered by the extreme seasonality of perishable nutritious foods, such as fruits and vegetables. When foods are in season, markets are flooded, decreasing marketability and profits; out of season, these foods disappear from the market. An assessment of traditional and modern approaches to perishable food preservation and processing, and their feasibility to narrow seasonal availability in Malawi, would be extremely valuable.

Finally, broadening the range of nutritious foods emphasized for production, consumption, and marketing can potentially broaden the diversity of nutritious foods available in the market, minimize the market glut of the more common seasonal foods, and improve dietary diversity. As such, we need a better understanding of the contribution of native, wild, and foraged foods to diets, how markets are affected when those foods are available, and the extent to which there are high-potential foods in this category that can be promoted to improve diets. In addition, a shift away from a maize-centric definition of food security—by Malawian people and policy makers—is necessary to better conceptualize and facilitate agriculture’s contribution to ending undernutrition.

This report summarizes what we know and what we still need to learn about the links between agriculture, food security, diets, and nutrition in Malawi. If households prefer diverse diets, as suggested in the work presented here, then demand for nutritious foods will increase as availability increases and prices fall. But for this to happen, the agriculture sector needs to maintain focus on agricultural diversification across food groups, with policy backed up by resources and implementation, and improved diets as a key (and measured) outcome.