Introduction

The population of Guinea-Bissau is expected to double by 2050 and temperatures are projected to rise by more than 3 degrees Celsius around the same time. This could put the current food system, which lacks diversity and affordability, under increased pressure to provide for increasing numbers of people while simultaneously facing erratic weather associated with climate change. The country is heavily dependent on cashew nut monocropping and higher temperatures are detrimental to their production. An estimated 60 percent of the population works in agriculture (80+ percent in rural areas), and this would put their livelihoods at risk through lost income. With most of the population living in multi-dimensional poverty, this scenario jeopardizes improvement to the nutrition situation. Monocrop systems do not have the safety net of crop diversity required to protect them from more frequent impending shocks and this could drive smallholders into deeper poverty, further exacerbating the poor nutrition situation.

Healthy diets depend on good access to, and availability of, a diverse range of nutritious foods. Guinea-Bissau’s food system lacks affordable nutritious foods and is heavily dependent on imported rice - almost half the rice consumed in the country is imported while almost all fish in Guinea-Bissau is exported. This dichotomy has resulted in limited food availability, especially of nutrient-dense foods. A focus on increasing and diversifying production of nutritious food crops such as fruit, vegetables, nuts, legumes, and indigenous grains, plus animal source foods through improved agricultural practices, could strengthen national food sovereignty and improve access and availability for households to meet their nutritional needs.

Opportunities exist to improve and diversify livelihoods. Development of a food fortification strategy focused on improving nutrient intake could include a plan for in-country fortification of local rice and peanut oil, which could expand the country’s food processing sector. Local cashew processing could create jobs in the sector and increase availability of cashews for local consumption. Development of home-grown school feeding programmes could increase availability of nutritious foods and improve dietary diversity for local children and communities, linking smallholder farmers to the school system and creating sustainable incomes and livelihoods via the programmes.
Medium to high rates of stunting and wasting, especially in the east and north, and prevalence of micronutrient deficiencies, are common throughout the country and stem from poor dietary diversity. This was particularly true for vulnerable individuals, including young children, women and adolescent girls. In the Fill the Nutrient Gap (FNG) analysis, crop diversification, improved agricultural practices and social protection interventions were examined alongside nutrition-specific interventions targeting vulnerable individuals. The aim was to understand the impact that each could have on improving nutrition and food security in Guinea-Bissau. An integrated approach to addressing the country’s nutrition challenges will be necessary to see a positive shift in nutrition outcomes.

Process

The FNG in Guinea-Bissau began in April 2020. Cost of the Diet (CotD) training and data collection followed in August and September. Identification of data, CotD and secondary data analyses were conducted from October to December 2020. Modelling plan development and intervention modelling was conducted from January to June 2021, with technical adjustments made through stakeholder engagement.

Methodology

The FNG approach complements a CotD analysis with a large secondary data analysis. Primary food price data was collected to analyse the cost of two diets. The 2019 (SiSSAN-Food and Nutrition Security Monitoring System) and 2018 ZHR Bissau Agregado surveys, with adjustments from Consumer Price Index (CPI) data, were used to estimate the proportion of households that could afford each diet.

Main findings

1. High poverty levels in Guinea-Bissau mean that even an energy-only diet is unaffordable for more than a quarter of the population (28 percent), costing an estimated 1,322 West African Francs (FCFA) per day (USD 2.35) for an average household of seven people. The nutritious diet cost, estimated at FCFA 2,234 (USD 4.00), would be unaffordable for almost three quarters of the population (68 percent).
2. Opportunities exist to increase the availability of nutritious foods by diversifying production and developing the fishing industry. Current levels of domestic food production are insufficient and could be improved by focusing on increasing fresh fruit, vegetables, legumes, nuts and animal source foods.
3. Food sovereignty could be strengthened by improving crop yields, thus reducing reliance on rice imports. Improving agricultural practices could improve yields and decrease post-harvest losses, thus minimizing the need for rice imports.
4. Guinea-Bissau’s monocrop cashew economy is high risk for vulnerable farmers and has come at the detriment of feed security and dietary diversity. As climate shocks become more frequent and temperatures rise, so does the risk associated with cashew cultivation which is dependent on stable temperatures. Thus, reliance on a single cash crop threatens potential income and livelihoods of smallholder farmers, who are mostly women.
5. Current cash-based transfers (CBTs) reduce the cost of a nutritious diet by 40-50 percent depending on their amount and frequency. Cash transfers could be accompanied by targeted advocacy messages promoting the consumption of nutritious fresh fruit, vegetables and animal source foods, outlined in a social behaviour change (SBC) strategy.
6. A food fortification policy and implementation plan could improve micronutrient intake and reduce the prevalence of micronutrient deficiencies. Fortification of oil and rice could target limiting nutrients such as vitamin A and iron that are difficult to reach through locally available foods. Local fortification could be built into, and create jobs within, the current food processing sector.
7. Home fortification for children under 5 years could cover up to 40 percent of micronutrient needs. While continued breastfeeding is acceptable to the financially poorest group, complementary feeding indicators were found to be low. Improvements in complementary feeding could be targeted through SBC messages and activities included in an SBC strategy.
8. Children aged under 5 are particularly vulnerable to stunting and micronutrient deficiencies. Targeted interventions could help meet their nutritional needs. Provision of either groundnut paste or medium quantity lipid-based nutrient supplement (LNS-MQ) could, respectively, result in a 20 percent or 37 percent reduction in the cost of their nutritious diet.
9. It is difficult for adolescent girls and pregnant and lactating women to meet their nutrient needs because of the high cost of nutrient-dense foods. These two individuals have the highest nutrient needs and would account for more than 40 percent of the cost of the household’s nutritious diet. Targeted supplementation could be considered in areas with high prevalence of anaemia.
10. School meals could be improved by adjusting portion sizes and increasing fresh, nutritious foods. By adding fresh foods that target limiting nutrients, such as eggs, guava fruit and cassava leaves, and increasing portion sizes, the meal could be locally appropriate, more nutritious, and lower the amount that households need to spend on a nutritious diet for school-age children.
Stakeholder identified priorities by sector

During regional workshops in the north, east and south and a national workshop in Bissau at the end of March / beginning of April 2022, the main FNG findings were shared and discussed with participants to identify priority areas for action. Based on sector recommendations, the following list was compiled by the WFP country office with input from stakeholders who were involved throughout the FNG process.

Key stakeholder recommendations

Please note that the exhaustive list of recommendations can be found on page 31.

Agriculture

- Develop a market regulation framework to control prices of local vs. imported food products to incentivize purchase of locally nutritious foods.
- Inform and support design of ‘Lei de Terra’ (land use policy) to ensure that vulnerable agricultural households have access to arable land to increase the production of local nutritious foods and household income.
- Implement nutrition smart agriculture programmes through women farmer's associations.
- Support development of fishponds, home gardens, livestock breeding of small ruminants & poultry at the community level.
- Strengthen capacity of Agricultural Technicians to support smallholders, community, and schools to produce nutritious foods.
- Sensitize community leaders, producers, and farmers' associations to promote community, home, and school gardens to increase availability of local nutritious foods.
- Provide financial support or facilitate access to micro-credits for women farmer's associations to improve access to inputs and artisanal fisherman to further develop local fishing value chain and increase domestic supply of fish in markets.

Health

- Increase the number of health centres (and mothers centres) to facilitate access to pre- and post-natal care for pregnant women or implementation of mobile clinics to access remote areas.
- Implement national iron and folic acid supplementation programmes for women and adolescent girls.
- Ensure adequate supply of specialised nutritious foods, equipment, and health kits in health centres.
- Strengthen capacity of health workers to deliver recommendations on adequate feeding practices and optimal nutrition.

Social protection

- Use FNG results to inform design of a national social protection policy to ensure adequate and timely support to the most vulnerable.
- Design and implement a national social protection plan based on the social protection policy to support the most vulnerable individuals.
- Create a database to register vulnerable individuals and monitor their support through a social safety net programme.
- Increase the transfer duration, selection criteria and expand the catchment areas of cash transfer programmes to improve coverage.
- Advocate to telecommunication companies for national mobile phone network coverage to enable money transfer services to deliver cash transfers through mobile money in remote areas.
- Develop an SBC campaign to raise awareness on nutrition for vulnerable groups to create demand for nutritious foods to meet needs.
- Create and allocate a budget to support the development of the social protection assistance in the general state budget (OGE).

Private sector

- Create a national food quality and safety laboratory to implement ECOWAS standards for regular quality control and certification of nutritious foods, fortified and processed foods.
- Conduct feasibility study of community-level milling facilities for production of fortified staple foods.
- Develop a regulatory framework and national specifications for fortified products.
- Strengthen community level knowledge in processing nutritious foods to extend their shelf-life.
- Strengthen technical capacity of smallholder farmers, artisanal fishers, and livestock producers through trainings to improve access to local markets.

Education

- Reactivate the multi-sectorial commission for school canteen management published in the official bulletin n.21.
- Develop national food-based dietary guidelines for the school feeding programme to support the design of recipes using local foods.
- Establish minimum standards for local purchasing of nutritious foods and implement regulatory framework on food safety and quality control.
- Implement mandatory school gardens using nutrition smart agriculture (climate resilient crops) as part of the project and tailor the production of crops according to childrens' nutrient needs as identified in the FNG.
- Advocate to include adolescent girls in the school feeding programme.
- Raise community awareness on healthy eating practices and the importance of dietary diversity for school children and adolescent girls.

**Infrastructure, Energy & Commerce**

- Identify incentives (laws, subsidies, exemptions) for the production, processing and trade of nutritious foods and adjust the regulatory framework to support incentives.

- Implement infrastructure and energy investment plans and prioritise the supply of nutritious foods: cold storage in the supply chain, regional agricultural centres to deliver technical support to farmers; community agricultural centres for processing and storage of nutritious foods.

- Rehabilite infrastructure for schools and agricultural production centres.

- Prioritize investment in development of structural systems to improve the supply of nutritious foods.