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How Africa Can Build a Future Free from Hunger and Malnutrition



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ANGOLA



CASE STUDY



NOURISHED - ANGOLA

Since the end of a 30-year civil war in 2002, Angola has seen considerable progress in terms of economic and social development, including its nutritional status. Compared to many southern African countries, Angola's progress has been remarkable in reducing malnutrition levels, with a decrease in its GHI score from 58 in 2000 to 33 in 2016. Beyond the recovered political stability, government institutional and programmatic commitments have played a key role in achieving these outcomes.

INSTITUTIONAL

In Angola, nutrition sits within its own unit, housed within the Ministry of Health's National Directorate of Public Health. Therefore, it is the health sector that is centrally involved in delivering on nutrition interventions. One of the major postwar institutional changes has been the adoption of a multisectoral approach for malnutrition reduction. Government agencies, specifically some of the key ministries, have assumed greater responsibility for coordinating nutrition and food-security activities. The Ministry of Agriculture has played a particularly important role, coordinating the development and implementation of the National Food Security and Nutrition Strategy (NFSNS) since 2009. In addition, the government has put in place the National Council on Food and Nutrition Security, linked to the office of the president, to coordinate all processes pertaining to the NFSNS.

POLICY AND PROGRAMMATIC INTERVENTIONS

In terms of programmatic changes, Angola has made a transition from focusing on emergency operations and humanitarian interventions to a more development-oriented approach to improving nutrition. The following programs have been led mainly by the Ministries of Health and Social Assistance and Reintegration:¹

- Therapeutic Nutrition Centers and Community-based Management of Acute Malnutrition treating signs of acute malnutrition among children 6–59 months of age;
- Municipal Child Days, a biannual campaign that distributes vitamin A supplements and deworming tablets to children aged 6–59 months;
- A baby-friendly hospital initiative focusing on appropriate breastfeeding practices;
- Iron-folic acid (IFA) supplementation for pregnant women, providing IFA supplements as part of an antenatal care program;
- Supplementary Feeding Program for HIV-affected orphans, providing supplementary food to children orphaned by HIV/AIDS;
- Community Infant Centers for milk and porridge provision to malnourished infants; and
- Nutrition Surveillance System for collecting regular and representative primary nutritional data.

There is evidence that nutrition programs have effectively contributed to malnutrition reduction in Angola. In 2003, a 10-year program of food fortification was initiated to produce fortified maize meal.² The program's objective was to combat the

persistent occurrence of pellagra, a micronutrient-deficiency disease found among people whose diets are dominated by maize and which was widespread in Angola after the war. The vitamin premix consisted of niacin, thiamine, riboflavin, folic acid, pyridoxine, and iron. Within one year, the production of the fortified maize meal reached 4 tons per hour and, by 2006, almost 10,000 tons of fortified maize meal had been produced. Approximately 115,000 people received the meal every month.

In addition, a multisectoral program was launched in 2009 to reduce hunger and malnutrition among poor and vulnerable groups. The Joint Programme,³ implemented in Bie, Moxico, and Cunene provinces, brought together different stakeholders to strengthen capacities at the community level to mitigate hunger and malnutrition, to increase advocacy for the protection of children from the adverse effects of rising food prices, and to improve the research on and monitoring and evaluation of food and nutrition of children in beneficiary areas. The program revitalized health services by extending nutrition services in the three provinces. As a result, there was a 20 percent increase in the detection rate of severely malnourished children between 2010 and 2011, and a 60 percent increase between 2011 and 2012, facilitating the treatment of severe and acute malnutrition. The program also provided vitamin A supplementation and deworming for children under five years of age. Coverage of vitamin A supplementation increased from 75 percent in 2010 to 85 percent in 2011, and deworming rates from 82 to 88 percent.

Another program, the Community-based Management of Acute Malnutrition Program,⁴ was launched in 2012 to address acute malnutrition at the community level, targeting families living in rural areas more than 3 kilometers away from the nearest health center. In the four most drought-affected provinces, volunteer community health activists were trained by the Ministry of Public Health to identify and initiate treatment for children with early signs of acute malnutrition. More than 2,000 community health activists were trained under the program to screen children, provide treatment and referrals, and deliver nutrition education. Severely malnourished children who showed medical complications were referred to in-patient facilities, known as Stabilization Centres, for more intensive treatment. Children with moderate acute malnutrition received take-home rations and basic health services. At the end of 2013, the program had been successfully implemented, with coverage estimated at 82 percent in areas reached by the program and the cure rate for severe acute malnutrition estimated at 94 percent.

The success of food fortification and community-based management of acute malnutrition in Angola shows that malnutrition can be successfully reduced. However, with a stunting rate of 34 percent, much progress remains to be made to achieve national and international nutrition targets, including the Malabo Declaration target of reducing stunting levels to 10 percent by 2025.

Preferred citation: Malabo Montpellier Panel (2017). Country case study: Angola. Dakar. December 2017.

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³ MDGF Achievement Fund, Angola: Children, Food Security and Malnutrition in Angola, accessed 17 July, 2017, <http://mdgfund.org/program/childrenfoodsecurityandmalnutritionangola>.

⁴ World Vision, "Community-based Management of Acute Malnutrition Using Community Health Activists in Angola," November 2012–December 2013 Angola Report, 2013, <http://9bb63f6dda0f744fa444-9471a7fca5768-c513a2e3c4a260910b.r43.cf3.rackcdn.com/files/8414/0233/6670/Angola-Report-Child-Health.pdf>.



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BENIN



CASE STUDY



Between 2000 and 2016, Benin made some progress in reducing levels of undernutrition. While stunting rates in the country fell from 39 percent in 2000 to 34 percent in 2016, wasting rates commendably decreased by half during the same period to five percent. The Global Hunger Index value also decreased from 38 to 23 during the same period (equivalent to a 39 percent change). Stronger multisectoral coordination systems and programs for child nutrition and feeding, fortification, and biofortification of millet have played a role in these improvements.

INSTITUTIONAL REFORMS

The importance of institutional and high-level commitments to tackle malnutrition has been recognized since the beginning of the 1960s with the creation of the Food and Applied Nutrition Service (Service Dahoméen d'Alimentation et de Nutrition Appliquée) in 1962, which evolved into the Directorate of Food and Applied Nutrition (Direction de l'Alimentation et de la Nutrition Appliquée, DANA) in 1974. DANA is currently situated within the Ministry of Agriculture. It aims to implement and enforce the government's food security and nutrition policies and is responsible for food security and nutrition programming and surveillance. In 1994, the Mother and Child Health Directorate (Direction de la Santé de la Mere et de L'Enfant, DSME) was created within the Ministry of Health and includes a nutrition unit. This unit is tasked with reducing acute malnutrition and promoting exclusive breastfeeding for infants up to six months of age. In 2009, the government set up a National Council of Food and Nutrition (NCAN) attached to the President's office. The NCAN is a multisectoral and multistakeholder platform charged with strengthening policy making on nutrition. The Council includes members from Health, Agriculture, Industry and Finance Ministries, as well as from academia, civil society, municipalities, private sector, and nongovernmental organizations. It is responsible for ensuring the coordination of all actions related to food security and nutrition in Benin.¹

POLICY AND PROGRAMMATIC INTERVENTIONS

Benin's strong programmatic commitment to tackling malnutrition is demonstrated by its enrollment in the Scaling Up Nutrition movement in 2011. Between 2000 and 2016, many programs related to food security and nutrition were implemented within the health and agricultural sectors. The Ministry of Health made a commitment to develop and implement a Sectoral Program of Applied Nutrition between 2001 and 2005, aiming to improve the nutritional status of vulnerable groups including children, adolescents, and lactating women. In addition, several programs have been developed for the control of micronutrient deficiencies, including for the eradication of iron and vitamin A deficiencies, created in 2004. Furthermore, national legislation on food security and nutrition is comprehensive and includes laws on food fortification, regulation of marketing of breast-milk substitutes, and maternity leave. In 2009, a Strategic Plan for Food Security and Nutrition Development (*Plan Stratégique de Développement de l'Alimentation et de la Nutrition*, PSDAN), which laid out both nutrition-specific and nutrition-sensitive approaches, was adopted and implemented by several ministries, including the Ministries of Health and Agriculture.

The Plan aims to:

- improve the institutional development of the food and nutrition sector;
- guarantee everyone a satisfactory nutritional status through improved availability, access, and use of nutritious foods, particularly for vulnerable groups such as infants and children, adolescent girls, and pregnant and

lactating women; and

- monitor, evaluate, and disseminate actions conducive to scaling-up and sustainability.³

The PSDAN, which was adopted in 2009 is operationalized through a results-based Food Security and Nutrition Programme (Programme National d'Alimentation et de Nutrition axé sur les Résultats, PANAR) and contains five sub-programs that integrate nutrition-specific interventions, primarily targeted at the first 1,000 days. Under the framework of the PANAR, a four-year Community Nutrition Project (PNC) was launched in 2012 to document the lessons learned and to provide education and communication on best nutrition practices. The PNC is now incorporated into the larger Food, Health and Nutrition Multi-sectoral Project (2014–2019). In communities where chronic child malnutrition rates are particularly high, elderly women have been mobilized to improve the healthy and nutritious upbringing of young children and to educate village communities about the importance of proper nutrition. More than 12,000 women have been trained to develop a better understanding of the nutritional value of local foods and the role of hygienic food preparation. Furthermore, approximately 18,000 mothers received training on the benefits of exclusive breastfeeding. As a result, more than 5,000 children aged 0–59 months who were previously suffering from moderate malnutrition and 222 children who were suffering from acute malnutrition showed signs of improved nutrition.⁴

Since 2009, the government has also implemented a food fortification program aimed at sustainably reducing malnutrition and infant and child mortality caused by micronutrient deficiencies. The Beninese Fortification Commission was set up by ministerial decree, which defined standards aligned with regional and international standards for the fortification of oils with vitamin A and flours with iron, folic acid, B-group vitamins, and zinc. Local companies are engaged in the process of vitamin-A fortification of oil and others have committed to fortifying the wheat flour they produce with iron, zinc, folic acid, and B-group vitamins.⁵ The goal of fortification is to cover at least 30 percent of the daily vitamin A needs of the population through the consumption of fortified foods..

Biofortification is another component of government efforts to combat malnutrition in Benin by increasing the nutrient content of foods. An assessment of the potential of iron-biofortified millet to improve the intake of iron among women with marginal iron status was carried out in Natitingou, Northern Benin, in 2013. The study reported that children 12–36 months of age, who consumed an average of 32 g of iron-biofortified millet⁶ per day, could satisfy 46 percent of the 0.5 mg absorbed-iron required daily compared to only 13 percent for those who consumed regular-iron millet. The results showed that total iron absorption by young women from iron-biofortified pearl millet composite meals was double that from regular millet meals, indicating that iron-biofortified millet has potential to overcome iron deficiency in largely millet-consuming populations.⁷

There is evidence to suggest that the interventions and programs implemented by the government of Benin have contributed to an overall improvement of children's nutritional status. The effectiveness of education and communication on best nutrition practices, food fortification, and biofortification show that it is possible to tackle malnutrition in Benin. This progress can be accelerated through government commitment to scale up interventions in the agriculture and health sectors, which have proven to be effective so far.

Preferred citation: Malabo Montpellier Panel (2017). Country case study: Benin. Dakar. December 2017.

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⁷ Ibid.



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BURKINA FASO



CASE STUDY

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NOURISHED - BURKINA FASO

Between 2000 and 2016, the nutrition situation in Burkina Faso improved steadily. The Global Hunger Index fell from 48 in 2000 to 31 in 2016 (equivalent to a 36 percent change). During the same period, child stunting decreased from 45 percent to 33 percent and child wasting from 16 percent to 11 percent. This is partly due to the elevation of the National Center of Nutrition to the Directorate General of Health, the creation of a National Council for Nutrition Consultation, and the implementation of interventions such as mother-to-mother support groups, community-based management of moderate acute malnutrition, and the multisectoral Enhanced Homestead Food Production Programme. Under a plan to scale up optimal infant and young child feeding (IYCF) in 2013, the government committed to raising the number of children, aged 6–23 months, receiving a minimum acceptable diet from 4 percent in 2012 to 30 percent in 2025.

INSTITUTIONAL REFORMS

In Burkina Faso, the Ministry of Health oversees nutrition outcomes through the National Center of Nutrition (Centre National de Nutrition, CNN). In 2002, the CNN became the Directorate of Nutrition (Direction de la Nutrition, DN) attached to the Directorate General of Health. The DN is responsible for ensuring intra- and intersectoral nutrition coordination; defining national nutritional norms and standards; providing advisory support for the development of nutrition activities in health services and at community level; participating in the evaluation of food security and nutrition programs; and managing the national food security and nutrition surveillance system. In 2008, a multisectoral advisory body – the National Council for Nutrition Consultation (CNCN) – was set up to provide insights and recommendations on the implementation of the national nutrition policy.¹ The CNCN includes, among others, the ministries for Agriculture and Food Security, Water and Sanitation, Social Action and National Solidarity, Economic Affairs and Finance, Advancement of Women and Gender Issues, and National Education. The body coordinates, organizes, guides, and monitors the implementation of the 2007 national nutrition policy.

POLICY AND PROGRAMMATIC INTERVENTIONS

The government's commitment to improving the nutrition status of its citizens is reflected in several programs and projects that have been introduced in the past 15 years.² To improve the survival rates of children, and their cognitive and physical development, the government commenced projects for supplementation. For instance, in 2001, universal salt iodization and food fortification programs were implemented, while fortification of vegetable oils with vitamin A began in 2006. The processing of complementary foods using local produce for infants and young children is also encouraged by the government, while the promotion of the superfood, spirulina, has been an active program since 2005.³ In 2013, a plan to scale up optimal IYCF practices was implemented. Its aim was to increase the rate of exclusive breastfeeding among infants under 6 months from 38 percent in 2012 to 80 percent by 2025. Under the same plan, the number of children aged 6–23 months receiving a minimum acceptable diet was to be raised from 4 percent in 2012 to 30 percent in 2025.⁴ Burkina Faso joined the Scaling Up Nutrition movement in 2011.⁵

A new element introduced under the IYCF initiative are mother-to-mother support groups, which function as platforms for community-based counseling to stimulate positive behavior and social change to improve nutrition outcomes. Each mother-to-mother support group includes 15 participants, facilitated by a trained community health worker to encourage early breastfeeding initiation and exclusive breastfeeding for six months. In addition to encouraging early and exclusive breastfeeding, the support groups also provided an entry point for multisectoral nutrition-sensitive interventions, such as homestead food production, home fortification, and optimal Water, Sanitation and Hygiene (WASH) practices promotion using a household model approach.⁶ In 2014, an evaluation showed that the mother-to-mother support groups were an ideal platform to stimulate nutrition-related behavioral change and noted the need to harness the support of community leaders to address cultural and social barriers to optimal nutrition practices.

Furthermore, to address the prevention, timely detection, and community-based management of moderate acute malnutrition, a community-based intervention was implemented by the Ministry of Health's Nutrition Directorate in the district of Tougan between 2013 and 2015. The project used an integrated community-based demonstration program, combining child growth monitoring with the distribution of multiple micronutrient powders for home fortification of complementary foods. It also included cooking demonstrations, and in-depth individual and group training on child feeding practices. Three million micronutrient powder servings were supplied and distributed, and screening and prevention services reached 735,000 children with acute malnutrition.⁷ An additional 60,000 severe acute malnutrition cases were detected and treated with a recovery rate of 90 percent.

Burkina Faso also piloted a multisectoral Enhanced Homestead Food Production Programme between 2013 and 2016. The program established community gardens and provided seeds, tools, and knowledge about good agricultural, health, hygiene, and nutrition practices to mothers with young children (3–12 months old). Within just two years, the program increased women's intake of meat and poultry by 8 percent and of fruits by 16 percent, and raised overall dietary diversity among participating women, compared to those who were not enrolled in the program. Prevalence of underweight among beneficiary women decreased by almost 9 percent, while their children benefited too. The prevalence of anemia in infants aged 3–6 months decreased by 15 percent, and among children aged 3–12 months the prevalence of wasting decreased by 9 percent, while cases of diarrhea were reduced by up to 16 percent.^{8,9}

A wide range of interventions have been implemented in Burkina Faso aimed at improving food security and nutrition in the country, and steady progress has been made toward achieving national and international nutrition targets, including the Malabo Declaration target of reducing stunting levels to 10 percent by 2025. Burkina Faso's multisectoral and multiplayer nutrition platform has since been decentralized to the regional level and efforts are ongoing to adopt monitoring and evaluation as well as common results frameworks to track continued progress.¹⁰

Preferred citation: Malabo Montpellier Panel (2017). Country case study: Burkina Faso. Dakar. December 2017.

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CAMEROON



CASE STUDY



From 2000 to 2016, Cameroon made substantial progress in reducing malnutrition levels. Cameroon decreased its GHI score from 40 to 23 during that period, which was characterized by institutional and programmatic changes.

INSTITUTIONAL REFORMS

In the 1990s, nutrition levels deteriorated in Cameroon due to economic crises and the HIV/AIDS pandemic. There was no clear government policy to address rising malnutrition levels. However, in 2001 the government took concrete measures, notably including food security and nutrition in its health-sector strategy.

Recognizing the importance of a multisectoral approach to malnutrition reduction, in 2009 the Interdepartmental Committee for Food Security, comprising 19 ministries and chaired by the secretary general of the prime minister's office, was created.¹ Its mission was to develop a coherent policy strategy for food security actions and the implementation of the National Food Security Program (PNSA). A network of "parliamentarians for the fight against malnutrition," as well as regulation on the marketing of breast-milk substitutes, food fortification, and maternity leave, have been put in place.

POLICY AND PROGRAMMATIC INTERVENTIONS

In 2006, reflecting the government's commitment, the food and nutrition policy was implemented in the form of a program aimed at improving Cameroon's food and nutrition profile through:²

- Promotion of breastfeeding and food hygiene;
- The fight against malnutrition and micronutrient deficiencies and prevention of noncommunicable diseases related to nutrition;
- Nutritional support for vulnerable groups and individuals living with HIV/AIDS; and
- Food security and training and employment of qualified professionals in the field of nutrition.

Nutrition is also well integrated in the PNSA 2010-2015, which

includes a support component for production and nutrition education to raise awareness of the consumption of food with a high nutritional value, and in the National Agriculture Investment Plan (PNIA) 2014-2020. In 2013, Cameroon joined the SUN Movement.

Direct interventions in Cameroon have proven to have great impact on malnutrition reduction. In 2011, Cameroon instituted a mandatory food-fortification program.³ The program includes the addition of vitamin A to refined vegetable oil and the addition of iron, zinc, folic acid, and vitamin B12 to wheat flour. In 2012, an evaluation of the impact of the fortification program was conducted in Yaoundé and Douala. Greater iron, zinc, folate, and vitamin B12 status and a lower prevalence of deficiencies of these micronutrients among women of reproductive age and children aged 12-59 months were observed, as well as a slightly lower prevalence of anemia among women, one year after the introduction of mandatory wheat-flour fortification.

However, there is evidence that traditional dishes in Cameroon are contributing significantly to addressing malnutrition. A study was conducted to determine the nutrient content of some traditional dishes and their potential contribution to dietary reference intakes.⁴ These dishes were ekomba, prepared from maize flour with roasted-peanut paste; ekwang, prepared from crushed cocoyam tubers and cocoyam leaves; tenue militaire, prepared from dried maize flour and cocoyam leaves; and koki, prepared from dried crushed cowpea seeds. It was found that 100 grams of each dish eaten by children aged one or two years can provide more than 100 percent of their daily recommended vitamin A intake.

The effectiveness of food fortification and the promotion of nutritious traditional dishes show that it is possible to reduce malnutrition in Cameroon. However, spending on agriculture does not yet meet government commitments set out in the Malabo Declaration and Cameroon's medium-/long-term national development policy places little emphasis on nutrition.⁵

Preferred citation: Malabo Montpellier Panel (2017). Country case study: Cameroon. Dakar. December 2017.

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ETHIOPIA



CASE STUDY



NOURISHED - ETHIOPIA

Between 2000 and 2016, Ethiopia made significant progress in reducing malnutrition levels. Stunting rates declined from 57 percent in 2000 to 40 percent in 2014, and Ethiopia's GHI score decreased from 59 to 33 during the same period, largely due to increased stability and government commitment to reducing malnutrition, reflected both at the institutional and programmatic level.

INSTITUTIONAL REFORMS

Institutional reform to address malnutrition in Ethiopia started in 1987 with the creation a nutrition unit situated within the Ministry of Finance and Economic Development, the country's intersectoral coordinating ministry, inspired by the success of the Joint WHO/UNICEF Nutrition Support Programme (JNSP) in Tanzania. However, with a change of government, the unit was disbanded in 1991. Between 1991 and 2008, various institutions took the lead on nutrition policy: emergency nutrition by the Disaster Prevention and Preparedness Agency (DPPA), micronutrients by the Ministry of Health (MoH), and other programs facilitated by development partners. In 2008, the government adopted a multisectoral approach to alleviate malnutrition. One of the major institutional changes was the creation the National Nutrition Coordination Body¹ (NNCB) led by the Federal Ministry of Health, now the main mechanism for leadership, policy decisions, and coordination of the National Nutrition Programme. The NNCB includes government sectors, development partners, civil society organizations, academia, and the private sector.

POLICY AND PROGRAMMATIC INTERVENTIONS

Prior to 2008, the health sector was the lead in tackling malnutrition in Ethiopia, which joined the SUN Movement in 2010. Recently, many well-funded agricultural programs have been developed to improve nutrition. Between the late 1990s and the early 2000s, the Ethiopian government introduced health programs, which were not nutrition-focused but did include promotive and preventive healthcare that took aspects of nutrition into account. In 2004, the first national program, Enhanced Outreach Strategy/Targeted Supplementary Feeding, was established in Ethiopia to link community-based preventive health services with a ration of supplementary food for women and children identified as malnourished. In 2005, the government of Ethiopia also established the Productive Safety Net Programme to enable the rural poor facing chronic food insecurity to resist shocks, create assets, and become food self-sufficient.² In addition, in 2008, the government developed a National Nutrition Program³ (NNP) with the aim of ensuring adequate nutritional status for all Ethiopians in a sustainable manner by targeting the most vulnerable—children under the age of five, pregnant and lactating women, and adolescents. The NNP gives priority to the rural population while recognizing that significant malnutrition exists in low-income urban areas.

Key nutrition activities of the NNP included:

- Health Extension Programme;
- Promotion of Essential Nutrition Actions;
- Community-based Nutrition;
- Therapeutic Feeding Programme; and
- Enhanced Outreach Strategy and Targeted Supplementary Feeding.

Launched in 2008, Community-based Nutrition (CBN) is one the of the key nutrition activities of the NNP.⁴ CBN is focused on children under

the age of two and uses monthly growth-monitoring and promotion to involve families and community members in assessing health- and nutrition-related issues, analyzing the underlying causes, taking action, and monitoring progress. Other important processes of CBN include referral of severely underweight children to therapeutic feeding units or outpatient therapeutic programs; control of micronutrient deficiencies through biannual vitamin A supplementation and deworming; and quarterly screening for acute malnutrition through Community Health Days. Initial analysis of routine program data from 1.5 million children under the age of two, weighed in four regions, showed a decline in underweight from 30 percent in January 2009 to 20 percent in March 2010.

In Ethiopia, the multisectoral approach appears to be effective in undernutrition reduction. The Empowering the New Generation to Improve Nutrition and Economic Opportunities project (ENGINE)⁵ operated in the Amhara, Tigray, Oromia, Southern Nations, Nationalities, and People's Region (SNNPR), and the Somali regions of Ethiopia between 2011 and 2016. ENGINE developed a comprehensive package of support to help Ethiopia's most vulnerable households overcome the barriers that prevented access to quality food and to address the cultural, gender, and other social drivers of malnutrition. ENGINE trained health and agriculture workers who introduced beneficiaries—Ethiopia's most vulnerable households—to homestead gardening of nutrient-dense vegetables and fruits, animal husbandry, and meal preparation using the crops and animal products they farmed. The project provided beneficiaries with essential farming tools, seeds, and livestock and provided financial training and support through village savings groups. ENGINE interventions resulted in a stunting decline of 20 percent in Amhara, 14 percent in SNNPR, and 12 percent in Oromia. The prevalence of underweight children also declined. In addition, the initiation of breastfeeding within a child's first hour increased by 27 percent or more in all three regions; the prevalence of maternal malnourishment as measured by body mass index decreased by 9 percent in Amhara and 6 percent in SNNPR; the proportion of women with low dietary diversity decreased by 25 percent in Oromia; and the proportion of women who took iron-folate supplements during their last pregnancy increased by 126 percent in all three regions.

Between 2008 and 2012, the Ethiopia Productive Safety Net Programme, a large-scale social protection intervention aimed at improving food security and stabilizing asset levels through a mix of public-works employment and unconditional cash and food transfers, successfully improved household food security.⁶ The program may provide a basis for further strengthening nutrition impact, if combined with action for intensified contact of mothers through health extension workers and information on good feeding practices and sanitation.

The multisectoral approach taken in Ethiopia has shown to be effective in reducing levels of malnutrition. However, with a stunting rate of 40 percent, much progress remains to be made to meet national and international nutrition targets, including the Malabo Declaration target of reducing stunting levels to 10 percent by 2025. Furthermore, poor access to safe drinking water and improved sanitation facilities hamper further progress toward improving nutrition outcomes.

Preferred citation: Malabo Montpellier Panel (2017). Country case study: Ethiopia. Dakar. December 2017.

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⁵ USAID and Save the Children, "Improving Nutrition Through Multisectoral Support: The ENGINE Experience Final Report 2011-2016," 2016, https://ethiopia.savethechildren.net/sites/ethiopia-save-thechildren.net/files/library/STC_ENGINE_EOP_Webfinal_rev.pdf.

⁶ G. Berhane, J. F. Hoddinott, and N. Kumar, "The Impact of Ethiopia's Productive Safety Net Programme on the Nutritional Status of Children: 2008-2012," IFPRI Discussion Paper 1604, Washington, DC, 2017, <http://ebrary.ifpri.org/etd/15738coll2/d/1311062/131273.pdf>.



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How Africa Can Build a Future Free from Hunger and Malnutrition



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GHANA



CASE STUDY



In 2008, Ghana was ranked among the 36 countries in the world with the highest burden of chronic childhood undernutrition.¹ However, the reduction of undernutrition levels since then has been substantial compared to other countries in West Africa. In 2006, Ghana was the first African country to achieve the target of cutting the proportion of the population living in extreme poverty by half, and by 2015 had halved the number of hungry people. This is backed up by the GHI score, which decreased from 30 to 14 between 2000 and 2016. Ghana also made significant progress in reducing the proportion of stunted, wasted, and underweight children during the same time.²

INSTITUTIONAL REFORMS

In Ghana, nutrition is well-integrated in the government's policy agenda, led through the Ministry of Health. However, instead of a national-level coordinating body specific to nutrition providing leadership on tackling malnutrition, it was the National Development Planning Commission (NDPC)—a body with oversight of all facets of development in Ghana—that ensured successful implementation and monitoring and evaluation of the National Nutrition Policy. From 2000, under President Kufuor, several health policies and regulations related to nutrition, including the Breastfeeding Promotion Regulation (L11667), Food and Drugs Law (Public Health Act 851 of 2012), Vitamin A Policy, Anemia Strategy, and Infant and Young Child Feeding Strategy have been enforced.³

POLICY AND PROGRAMMATIC INTERVENTIONS

Nutrition is well-integrated in government programs⁴ and clearly highlighted in human development objectives under government policy frameworks such as the Ghana Poverty Reduction Strategy (GPRS I) issued in 2003, the Growth and Poverty Reduction Strategy (GPRS II) for the period 2006–2009, and the Ghana Shared Growth and Development Agenda (GSGDA) for 2010–2013. Although the policies have been largely donor-driven, the government has provided policy backing, personnel, facilities, and logistical support for their implementation. Based on strategic recommendations from the pilot programs, the government, in collaboration with development partners, scaled up interventions to other parts of the country. In 2011, Ghana joined the SUN Movement.

A multisectoral approach bringing together the Ministries of Health, Education, and Agriculture has been shown to be successful in malnutrition reduction.⁵ In 2008, a five-year Integrated Malnutrition, HIV/AIDS and Tuberculosis (TB) Prevention and Control project to reduce childhood illness and death was implemented in central and northern Ghana. The project's goals were to improve household food security and diet quality for children and families, access to quality health services, and a healthy environment and to support communities and institutions implementing programs to address malnutrition. Between 2009 and 2012, stunting rates decreased from 43 to 25 percent, exclusive breastfeeding increased from

63 to 75 percent, consumption of animal-source foods among young children increased from 43 to almost 60 percent, iodized-salt intake increased from 48 to 53 percent, and among pregnant women there was an increase in iron supplement consumption from 77 to 99 percent.

Another project, Nutrition Links,⁶ aims at improving the health and economic well-being of vulnerable rural populations in the Upper Manya Krobo district (Eastern Region) of Ghana. The project develops small poultry businesses for egg production, home gardens, and weekly group meetings promoting nutrition and health education among women and their children. Technical assistance is available each week to address concerns about poultry health, productivity, and egg marketing as well as the community gardens. Before the program started, only 16 percent of all children had consumed eggs in the previous 24 hours; after the intervention, 27 percent of children had consumed eggs in the previous 24 hours.

A positive change in egg consumption over time was more common among children of project beneficiaries (24 percent) compared to those of non-beneficiaries (12 percent). The project highlights that integrated financial, agriculture, and education interventions can improve young children's diets by increasing maternal income from small businesses, which can be used to purchase nutrient-rich foods, and expanding access to home-raised animal-source food products, such as eggs and milk.

In 2009, under a program called KOKO Plus,⁷ a food supplement containing amino acids was added to koko—a porridge made from fermented corn—during cooking, providing additional nutrients for children. Koko is a traditional complementary food in Ghana. However, the levels of protein and micronutrients in traditional koko do not meet WHO's nutrient requirements and dietary recommendations. Results of a pilot study have shown that KOKO Plus was effective in preventing stunting. Moreover, a comparison of hemoglobin levels between children who received the product and ones who did not revealed that KOKO Plus is also effective in preventing anemia.

These interventions show that Ghana can substantially reduce undernutrition by improving the quality of diets for children and families and facilitating access to improved education on health and nutrition. The multisectoral approach involving the agriculture, health, and education sectors should be sustained and the private sector more actively involved. However, spending on agriculture does not yet meet the government commitment of 10 percent set out in the Malabo Declaration and weak access to improved sanitation facilities continues to obstruct better nutrition outcomes.¹

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¹ Black et al., "Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences."

² United Nations in Ghana, MDG 1: Eradicate extreme poverty & hunger, accessed 11 July 2017, <http://gh.une.org/content/unct/ghana/en/home/global-agen-da-in-ghana/millennium-development-goals/mdg-1-eradicate-extreme-poverty-and-hunger.html>.

³ A. B. Ghartey, "Nutrition Policy and Programs in Ghana: The Limitation of a Single Sector Approach," Health, Nutrition and Population Discussion Paper no. 69370, World Bank, Washington, DC, 2010.

⁴ National Nutrition Policy 2014–2017, accessed 10 June 2017, <https://extranet.who.int/nutrition/ghana/sites/default/files/GHA%202013%20National%20Nutrition%20Policy.pdf>.

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⁶ G. S. Marquis, et al., "Improving Children's Diet and Nutritional Status through an Agriculture Intervention with Nutrition Education in Upper Manya Krobo District of Ghana," *The FASEB Journal* 31, no. 1 Supplement 455.8 (2017).

⁷ Ajinomoto Group Nutrition Improvement Project, accessed on June 10, 2017, https://www.ajinomoto.com/en/activity/csr/pdf/aji_ghana_en.pdf.



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MALAWI



CASE STUDY



NOURISHED - MALAWI

Despite frequent droughts, floods, and high levels of HIV prevalence, Malawi made progress in reducing levels of undernutrition between 2000 and 2016. This progress is evidenced by a reduction in the Global Hunger Index from 45 to 27 (equivalent to a 41 percent change). Although still high, child stunting fell from 55 percent to 42 percent, which means that Malawi currently is off-target to reach the Malabo commitment of reducing stunting to less than 10 percent by 2025. Nevertheless, Malawi scored high in the 2014 Hunger and Nutrition Commitment Index (HANCI) for Africa, showing strong commitment to addressing undernutrition. The government's commitment to reducing levels of undernutrition is reflected both in institutional reforms, including the creation of the Department of Nutrition, HIV and AIDS and the National Nutrition Committee, as well as programmatic interventions, which include the Integrating Nutrition in Value Chains program, vitamin A and iron supplementation, and innovative approaches to communicate and disseminate nutrition best practices

INSTITUTIONAL REFORMS

The recognition of a multisectoral approach and high-level political commitment for malnutrition reduction led to the creation of the Department of Nutrition, HIV and AIDS (DNHA) in 2004. Significant improvements in maternal and child health and in nutrition were largely attributed to the prominence of DNHA's location in the Office of the President. However, in 2014, the DNHA was moved to the Ministry of Health. DNHA is responsible for providing oversight, policy and technical guidance, and high-level advocacy on the national nutrition agenda. DNHA also acts as a platform for coordination and convergence of multisectoral and multistakeholder efforts to implement the nutrition elements of the Malawi Growth and Development Framework,¹ which assigned strong importance to nutrition. Malawi also established a National Nutrition Committee (NNC), a multistakeholder platform to mobilize resources and support the implementation of food and nutrition interventions. The committee serves as the convening body for coordinating actions with the Scaling Up Nutrition movement, which Malawi joined in 2011. The NNC is decentralized through District Nutrition Coordination Committees, represented by district nutrition focal points, village development committees, and community leaders for action on nutrition groups.

The Civil Society Organization Nutrition Alliance, which forms part of the NNC, is particularly active in engaging nongovernmental organizations and traditional authorities. It also provides support and training to the Parliamentary Committee on Nutrition to ensure that nutrition issues are central to discussions at a higher level. A number of institutional elements show the country's commitment to addressing malnutrition, including the drafting of the Right to Food and Nutrition Bill (currently under consultation),² a separate budget line for nutrition through which spending and surveillance can be monitored for accountability and transparency.³ Furthermore, national legislation was adopted on salt iodization, food fortification, consumer protection, maternity leave, and the International Code of Marketing of Breast-milk Substitutes.⁴

In parallel to measures in the health sector, agriculture has been elevated to a key national policy priority under the country's growth and development and nutrition agendas. Between 2006 and 2014 Malawi's annual average share of total public spending dedicated to agriculture was 18.9 percent, the highest average among Southern African countries and surpassed the CAADP spending target.⁵ In 2014, Malawi also invested almost 17 percent in the health sector, which exceeds the 15-percent commitment set out in the Abuja Declaration.⁶

POLICY AND PROGRAMMATIC INTERVENTIONS

Malawi has adopted a multisector programming approach to tackle malnutrition. Programs are implemented to address five outcomes in line with

Preferred citation: Malabo Montpellier Panel (2017). Country case study: Malawi. Dakar. December 2017.

¹ Department of Nutrition, HIV and AIDS (DNHA), Mission and Objectives, accessed 27 November 2017, <http://www.dnha.gov.mw/mission-and-objectives/dnha/>

² Ibid.

³ UNDP, "Terms of reference for Malawi Civil Society Organisations Nutrition Alliance (CSONA)", <http://mptf.undp.org/document/download/12223>

⁴ UNDP, "Malawi Develops Right to Food and Nutrition Bill", accessed 27 November 2017, <http://www.mw.undp.org/content/malawi/en/home/presscenter/articles/2016/08/02/malawi-develops-right-to-food-and-nutrition-bill.html>

⁵ Hunger and Nutrition Commitment Index Africa (HANCI-Africa), "Key data for Malawi", Lilongwe, 2014 <http://africa.hancindex.org/files/2016/africa/EN/MW.pdf>

⁶ Scaling-Up Nutrition Movement, "SUN Movement Compendium 2015, Malawi" http://docs.scalingupnutrition.org/wp-content/uploads/2015/10/SUN_Report2015_EN_Malawi2.pdf

⁷ RESAKKS, Monitoring Progress, Malawi, accessed 27 November 2017, <http://www.resakks.org/node/40>

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⁹ USAID, "Malawi nutrition profile 2014", <https://www.usaid.gov/sites/default/files/documents/1864/USAID-Malawi-Profile.pdf>

¹⁰ DNHA, accessed 27 November 2017 http://www.dnha.gov.mw/?option=com_content&view=article&layout=edit&id=1

¹¹ USAID, "Malawi Integrating Nutrition In Value Chains Fact Sheet", 2016. Accessed on 29 September 2017 available at: <https://www.usaid.gov/malawi/fact-sheets/malawi-integrating-nutrition-value-chains-fact-sheet>

¹² Save the Children, "Vitamin A and iron supplementation in schools Successes and lessons learned from Mangochi District, Malawi", 2008 <http://www.schoolsandhealth.org/Shared%20Documents/Downloads/Vitamin%20A%20and%20Iron%20supplementation%20in%20schools-%20Successes%20and%20lessons%20learned%20from%20Mangochi%20District,%20Malawi,%20September%202008.pdf>

¹³ Malawi. Ministry of Agriculture, Irrigation and Water Development. 2015. Nutrition Handbook for Farmer Field Schools. Lilongwe: GPO. Print.

¹⁴ Kuchenbecker, J., Reinbott, A., Mtimuni, B., Krawinkel, M.B. and Jordan, I., 2017, "Nutrition education improves dietary diversity of children 6-23 months at community-level: Results from a cluster randomized controlled trial in Malawi", in PLoS ONE 12(4): e0175216. <https://doi.org/10.1371/journal.pone.0175216>

¹⁵ National Statistical Office, 2014, Malawi MDG Endline Survey 2014, Key Findings. Zomba, Malawi: National Statistical Office.

¹⁶ IFPRI, "Global Nutrition Report 2015: Actions and Accountability

the National Nutrition Policy and Strategic Plan, 2007-2012 (currently under review): improved maternal nutrition and care; improved infant and young child feeding practices outlined in the Infant and Young Child Nutrition Strategy 2009-2014; improved intake of essential micronutrients; prevention and treatment of common infectious diseases; and improved management of acute malnutrition: Malawi has also focused on community-based action, with the 1,000 Special Days National Nutrition Education and Communication Strategy, prioritized for the period 2012 - 2017 to reduce stunting through behavior change and awareness raising.¹⁰

Several interventions have proven to be effective in undernutrition reduction in Malawi. For instance, the Integrating Nutrition in Value Chains (INVC)¹¹ program (2012-2015) introduced climate-smart agriculture practices, including seed varieties that are drought tolerant, disease resistant, and early maturing, benefiting more than 237,000 rural households, particularly women and children. INVC also built capacity among producers' and nutrition organizations strengthening specific value chains such as soy, groundnut, legume, and orange-fleshed sweet potato. For example, the program promoted increased legume production, marketing, and consumption to improve nutrition at the household-level. It also assisted more than 94,000 smallholder farmers to plant soy, taught households how to produce soy-based foods, and connected them to growing domestic and regional markets for this high-demand, high-value commodity. In addition, INVC established 852 so-called "care groups" that used community volunteers to deliver messages—sometimes using drama performances and radio jingles—on infant and young child feeding (including exclusive breastfeeding), basic hygiene and sanitation, dietary diversity, and maternal diet and health practices to about 122,251 households twice a month.

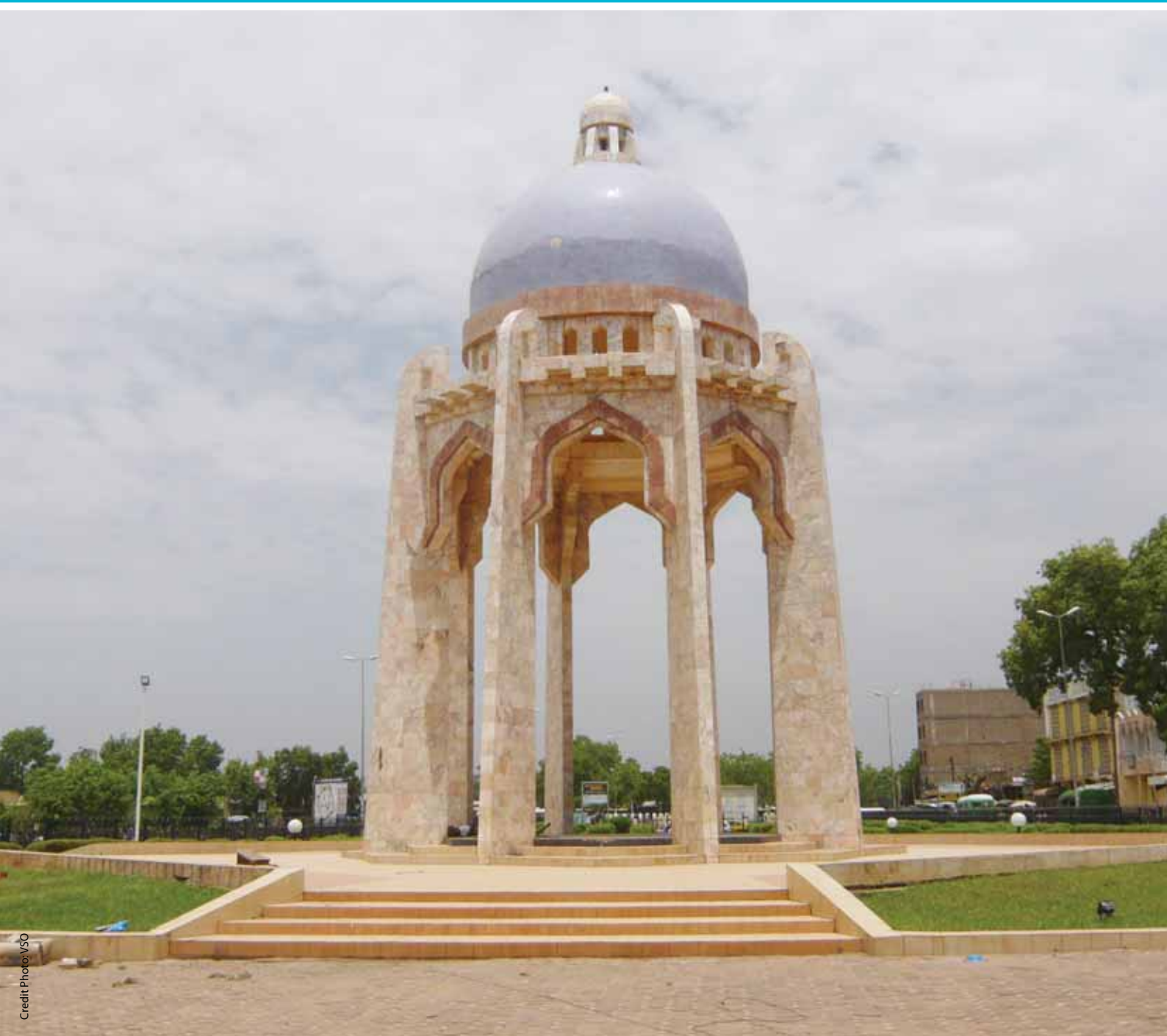
Between 1998 and 2007, a project run in partnership by District Health and Education Offices, schools, and communities provided vitamin A and folic acid in Mangochi. Between 2004 and 2007, approximately 27,000 children—52 percent of children enrolled in primary school—received vitamin A in form of capsules. Teachers were trained to use a participatory approach to teach nutrition and promote the use of locally-available foods rich in vitamin A, iron, and other nutrients. Each school received a manual to help teachers plan these sessions. Once per week over 15 weeks, 20 schools gave children one iron tablet, containing 65 mg of iron and 0.25 mg of folic acid. Schools organized make-up days for children who were absent on distribution day. Trained teachers administered both supplements with support from parents. A study revealed that between 1998 and 2001 the prevalence of anemia fell by 35 percent in intervention schools compared to 21 percent in other schools.¹² In 2007, the Ministry of Education launched a national School Health and Nutrition program, modeled largely on this program.

There are also innovative approaches to communicate and disseminate nutrition best practices among farmers. The Ministry of Agriculture, Irrigation and Water Development¹³ uses Farmer Field Schools to communicate about nutrition. Such field schools traditionally served to reach farmers with various extension messages and are therefore an ideal learning forum to address issues of nutrition. Combining extension and nutrition education encourages better management of farms resulting in better yields and increased profits, as well as improved nutritional status among farm households. A recent study¹⁴ found that participatory community-based nutrition education for caregivers improved child dietary diversity even in a food insecure areas.

In order to meet the Malabo commitment of reducing stunting to less than 10 percent by 2025 successful nutrition interventions need to be built upon or scaled up. Furthermore, overweight and obesity levels are increasing in Malawi, with an estimated 5 percent of children under the age of five considered to be overweight, while 22 percent of adults are overweight and 5 percent obese. This challenge needs to be recognized and addressed.

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MALI



CASE STUDY



Between 2000 and 2016, child undernutrition in Mali has shown signs of modest improvement, possibly hampered by the conflict in the country in recent years, particularly in the north. The Global Hunger Index was reduced from 44 in 2000 to 28 in 2016 (equivalent to a 36 percent change). This progress is also evidenced by a reduction in stunting from 43 percent to 35 percent, but Mali is still off-track to achieve the Malabo Declaration target of reducing stunting to less than 10 percent by 2025.¹ Institutional reforms, such as increased responsibility of the Nutrition Division, and interventions through agriculture and water, sanitation, and hygiene played key roles in making and sustaining progress.

INSTITUTIONAL REFORMS

In Mali, the Nutrition Division is situated within the National Directorate of Health within the Ministry of Health. Since 2001, this division has overseen interventions and support to decentralized healthcare structures. In 2003, the *Agence Nationale de la Sécurité Sanitaire des Aliments* (National Agency for Food Safety) was created to ensure the coordination of all actions related to food safety. In 2004, the Office of the Food Security Commissioner was set up within the Presidency of the Republic with the mission of ensuring the implementation of the national food security policy. In addition, the adoption of the national nutrition policy² in 2013 led to the creation of the National Nutrition Council (NNC) and the Intersectoral Technical Committee for Nutrition (ITCN). The mission of the NNC is high-level planning and coordination of the national nutrition policy while the ITCN acts as a nutrition observer, publishing indicator trends, and ensures that the various sectoral operational plans are harmonized.³ In addition, any legislation specific to nutrition, including the International Code of Marketing of Breast-Milk Substitutes and Food Fortification, are enforced through the ITCN. Furthermore, the government has undertaken to finance nutrition as one of its priority development areas. In 2015, Mali included a separate government budget line for nutrition, enabling transparency and accountability for spending on nutrition-related interventions and activities.⁴

POLICY AND PROGRAMMATIC INTERVENTIONS

Relative to other countries, Mali's medium- and long-term national development policy (*Cadre Stratégique pour la Croissance et la Réduction de la Pauvreté*) assigns strong importance to nutrition.⁵ Mali's Ministry of Health has introduced several programs that have a specific bearing on improved nutrition, including the Management of Acute Malnutrition Program, the Nutrition Management Program for People Living with HIV/AIDS, the Infant and Young Child Feeding Program, and the Essential Nutrition Actions Program. Nutrition has been an integral part of the Strategic Framework for Growth and Poverty Reduction since 2007. In 2011, Mali joined the Scaling Up Nutrition movement (SUN). To operationalize the national nutrition policy, Mali made a clear programmatic commitment in 2014 by adopting a detailed multisectoral nutrition action plan to tackle undernutrition.

Preferred citation: Malabo Montpellier Panel (2017). Country case study: Mali. Dakar. December 2017.

¹ Grebmer, K. von, Bernstein, J., Hossain, N., Brown, T., Prasai, N., Yohannes, Y., Patterson, F., Sonntag, A., Zimmermann, S.-M., Towey, O., Foley, C., 2017, 2017 Global Hunger Index: The Inequalities of Hunger. Washington, DC: International Food Policy Research Institute; Bonn: Welthungerhilfe; and Dublin: Concern Worldwide. <http://ebrary.ifpri.org/utils/getfile/collec-tion/p15738coll2/id/131422/filename/131628.pdf>

² Ministère de la Santé Mali, 2014, Politique Nationale de la nutrition Mali. <http://extwprlegs1.fao.org/docs/pdf/ml152514.pdf>

³ Scaling Up Nutrition Movement, 2014, Mali SUN Movement Compendium.

⁴ http://docs.scalingupnutrition.org/wp-content/uploads/2014/11/SUN_Compendium_ENG_20141026_09Mali.pdf

⁵ *Ibid.*

⁶ Government of Mali, *Cadre Stratégique pour la Croissance et la Réduction de la Pauvreté*, 2011, http://www.maliapd.org/IMG/file/pdf/DOCUMENTS_CLES/1_CSCR-P/2012_Plan_d'Actions_Prioritaires_CSCR_2012_2017_VF2.pdf

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⁸ USAID, 2014, Mali Nutrition Profile. https://www.usaid.gov/sites/default/files/documents/1864/USAID-Mali_NCP.pdf

⁹ Bery, R., Traore, S. and Shafritz, L., 2016, WASHplus in Mali: integrating WASH and nutrition for healthy communities. Field Exchange 51, January 2016. p134. www.enronline.net/fex/51/washplusmali

Interventions to tackle malnutrition appear to be effective in Mali. The Strengthening Community-Based Acute Malnutrition Prevention and Treatment Program (2012–2014) was implemented in the Koulikoro and Sikasso regions.⁶ The program aimed to strengthen community-based detection, referral, and follow-up of acute malnutrition. The program also sought to increase the number of women involved in producing nutrient-rich plant and animal-source foods, to ensure that the most nutritionally vulnerable household members consumed these products, and assisted women in selling surplus produce in nearby markets to enhance household income and resilience. An evaluation revealed a 29 percent and 40 percent increase in essential knowledge about child feeding among women in Koulikoro and Sikasso, respectively. The recovery rate among children treated for moderate acute malnutrition reached 89 percent in Sikasso and 86 percent in Koulikoro.

Further evidence from Mali indicates that a value chain approach to boosting the production and consumption of nutritious food is an effective way to improve nutrition. In 2012, the Improving Vegetable Production and Consumption project, implemented in the region of Sikasso, focused on developing seed lines and gardening practices and on improving dietary diversity, training cooperatives to develop complementary feeding recipes for young children using locally-available and locally-produced nutrient-dense food cereals and vegetables, and established commercial linkages between the cooperatives and input suppliers.⁷ The project also encouraged local women farmers' cooperatives to increase off-season vegetable production by providing inputs and training on gardening techniques. Not only did the project improve household food consumption, but it increased incomes through the sale of surplus produce.

In 2012, an integrated water, sanitation, and hygiene (WASH) and nutrition program was initiated in northern Mali to improve the nutritional status of 187,000 women and 60,000 of their children (especially those under the age of two) in poor, rural households and communities across 180 villages. Four hundred community extension workers were trained to promote improved WASH and nutrition practices at the household level. Activities included the promotion of access to and use of latrines, water treatment demonstrations at the community level, individual household visits that focused on promoting exclusive breastfeeding, handwashing with soap, and nutrition counselling and referrals. Furthermore, extension workers regularly monitored and referred malnourished children in project intervention villages.⁸

Although Mali has shown signs of improving levels of undernutrition, currently the country is still off-track to meet national and international nutrition targets. The institutional and programmatic interventions by the government, including the newly established Nutrition Coordination Unit, show that progress can be made. However, violent conflict in the north of the country continues to put a strain on food production and on improving livelihoods and government budgets, as well as jeopardizing any progress that has been made in reducing undernutrition.

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NIGERIA



CASE STUDY



NOURISHED - NIGERIA

In Nigeria, levels of undernutrition were reduced between 2000 and 2016. The Global Hunger Index decreased from 41 to 26 (equivalent to a 38 percent change) and the prevalence of stunting decreased from 40 percent to 33 percent over the same period. However, given Nigeria's high population, 33 percent represents a large number of people affected. At the same time, overweight and obesity rose to 33 percent and 11 percent respectively, indicating that Nigeria is facing a growing prevalence of the double burden of malnutrition. The government's institutional and programmatic reforms, such as the creation of the Nutrition and Food Safety Division in the Ministry of Agriculture and the implementation of innovative approaches, contributed significantly to improvements in the overall nutritional situation.

INSTITUTIONAL REFORMS

The recognition of the importance of a multisectoral approach to tackling malnutrition led to substantial institutional reforms in favor of nutrition. In 1990, a National Committee on Food and Nutrition, situated in the National Planning Commission, was created to coordinate and provide leadership to articulate a comprehensive policy to effectively reduce or eliminate malnutrition. In addition, a Nutrition and Food Safety Division was created in the Ministry of Agriculture to increase and sustain the availability, accessibility, affordability, and consumption of nutritious and diverse foods.¹ Furthermore, a Nutrition Division was created within the Department of Family Health in the Ministry of Health in 2008 with responsibilities based on the national nutrition policy that include improving and sustaining the nutritional status of Nigerians as well as addressing nutrient deficiencies, especially micronutrient deficiencies and protein-energy malnutrition.² This division of the Ministry of Health is also responsible for implementing activities toward the Scaling Up Nutrition (SUN) movement, which Nigeria joined in 2011. In 2017, the National Council on Nutrition was established which will constitute the highest decision-making body on food security and nutrition in Nigeria.

POLICY AND PROGRAMMATIC INTERVENTIONS

Several programs have been put in place to address malnutrition in Nigeria. Following the launch of the National Food and Nutrition Policy in 2002, the National Plan of Action on Food and Nutrition (NPAFN) was formulated in 2004. The NPAFN included projects and activities to improve the nutritional status of all Nigerians, with an emphasis on the most vulnerable groups including children, women, and the elderly. In 2002, the government adopted fortification of staple crops with vitamin A, and the Ministry of Industry published mandatory standards for vitamin-A fortification of vegetable oil, sugar, and flour. The large-scale fortification program is targeted at fortifying wheat flour, sugar, and corn flour with vitamin A, providing iron-folic acid supplementation during pregnancy, and iodizing salt.⁴

There are ongoing efforts to introduce a budget line dedicated to nutrition in line ministries at the national and state levels. However, to date the level of investment remains low. In 2014, the Government of Nigeria spent only 0.8 percent of its budget on nutrition specific interventions.⁵ Steps have been taken to strengthen and scale up specific nutrition interventions, including the Community Management of Acute Malnutrition program. In addition, the Ministry of Agriculture is promoting the production of high-energy food and food fortification in collaboration with local enterprises.

Some nutrition interventions have been shown to enhance progress in reducing malnutrition levels. One focuses on deworming and commu-

nity-based management of severe acute malnutrition targeting children aged 6-59 months.⁶ This program, which is currently being scaled up, provides improved access to and coverage of appropriate clinical and nutritional care before life-threatening complications set in. Between September 2009 and October 2014, approximately one million children with severe acute malnutrition were treated across 11 states in northern Nigeria⁷ and 173,000 deaths were prevented. As of July 2014, the program was available in 91 out of 259 local government areas in 11 states, with an estimated population of 60 million.⁸

With the expansion of the program, more timely monitoring has become a necessity. In July 2013, the government in collaboration with UNICEF and other implementation partners successfully launched the SAM reports tool (Rapid SMS) in three states in northern Nigeria. The tool uses mobile phones at the health center for real-time reporting and stores data to improve the treatment of acute malnutrition.⁹

Agricultural programs were also at the center of the NPAFN, as one of its objectives was to improve food security at the household and aggregate levels to guarantee that families have access to safe food adequate to meet the nutritional requirements for a healthy and active life. In this context, the government identified biofortification as a priority initiative in its efforts to support nutrition through agriculture. The support for the rapid adoption of biofortification to complement supplementation and fortification efforts made it possible to integrate biofortification into major agriculture and health programs, particularly the Agricultural Transformation Agenda and the Micronutrient Nutrient Deficiency Control programs. Under the program, cassava, a major staple food in Nigeria, which is consumed daily by more than 100 million people, is biofortified with vitamin A, essential for a healthy and productive life. In 2014, vitamin-A cassava varieties, which provide up to 40 percent of the recommended daily vitamin A requirements for children under five, were released. In addition to their higher beta-carotene content, vitamin-A cassava varieties also show improved pest- and disease-resistance traits and higher yields.¹⁰

The institutional and programmatic interventions implemented in Nigeria to have contributed to progress in addressing malnutrition. However, recent data show that the double burden of malnutrition is rapidly becoming a challenge. To accelerate progress, interventions through both the health and agricultural sectors need to be sustained and scaled up, and the quality of food supplied improved. Recent efforts to address malnutrition move in this direction: Nigeria's 2016-2020 agriculture sector strategy for food security and nutrition addresses the incorporation of the recommendations enshrined in the Malabo Declaration to address malnutrition in all its forms.¹¹ However, at 2 percent, Nigeria's spending on agriculture falls short of the commitment set out in the Malabo Declaration (10 percent of public spending), while spending in the health sector (6.7 percent of public spending in 2012) does not yet fully meet the 15-percent commitment set out in the Abuja Declaration. Spending on nutrition-sensitive and nutrition-specific interventions in 2017 was a meagre 0.2 percent according to the Global Nutrition Report.^{12,13} Furthermore, action needs to be taken urgently to end the violent conflict in northeastern Nigeria, which has weakened already fragile livelihoods resulting in a deep humanitarian crisis and undermining any progress in improving malnutrition levels while causing acute hunger and starvation in some areas.

Preferred citation: Malabo Montpellier Panel (2017). Country case study: Nigeria. Dakar. December 2017.

¹ National Planning Commission. "National Plan of Action on Food and Nutrition in Nigeria"; accessed 27 November 2017, <https://extranet.who.int/nutrition/gina/sites/default/files/N-GA%202005%20National%20Plan%20of%20Action%20on%20Food%20and%20Nutrition.pdf>.

² Nutrition and Food Safety Division, Federal Ministry of Agriculture and Rural Development, accessed 27 November 2017, <http://nutritionvaluechain.blogspot.sn/p/mandate.html>.

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⁴ Kuku-Shittu, O., Onabanjo, O., Fadare, O. and Oyejemi, M., 2016. "Child malnutrition in Nigeria: Evidence from Kwara State"; NSSP Working Paper 33, International Food Policy Research Institute (IFPRI), Washington, D.C. <http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/130499>

⁵ Haddad, L., "The State of Nutrition in Nigeria: From Security Threat to Economic Imperative"; accessed 22 November 2017, http://www.developmenthorizons.com/2017/11/the-state-of-nutrition-in-nigeria-from-htm?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+DevelopmentHorizons+%28Development+Horizons%29.

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RWANDA



CASE STUDY



Following conflict in the 1990s, Rwanda's nutrition situation worsened dramatically. However, between 2000 and 2016, Rwanda made significant progress in terms of undernutrition reduction due to a recovered stability on the one hand, and the government's institutional and programmatic commitments on the other hand. The GHI score decreased from 59 in 2000 to 28 in 2016, while stunting rates fell from 48 to 38 percent over the same period.

INSTITUTIONAL REFORMS

Since 1963, nutrition has been positioned as a unit within the Ministry of Health's Unit of Policies and Capacity Building. Nutrition services are offered at health centers across the country. From the mid-1990s, despite government efforts to improve nutritional status, malnutrition remained a major challenge and obstacle to Rwanda's development. In 2007, recognizing the multisectoral nature of nutrition, the government of Rwanda developed a National Nutrition Policy.¹ At the national level, the coordination bodies and implementation structures are composed of an intersectoral nutrition committee, which includes line ministries, NGOs, the Rwanda Bureau of Standards, the Rwandan Consumers Association, the Private Sector Federation, and the national nutrition technical working group. In 2013, Rwanda revised the National Nutrition Policy of 2007 and adopted the National Food and Nutrition Policy (NFNP). Coordination of overall NFNP implementation is situated in the prime minister's office, coordinated by an Inter-Ministerial Coordination Committee (IMCC) drawn from the Social Cluster Ministries (Ministry of Local Government, Ministry of Health, Ministry of Agriculture and Animal Resources, Ministry of Education, and Ministry of Gender and Family Promotion) that meets quarterly to review progress on tackling malnutrition.

POLICY AND PROGRAMMATIC INTERVENTIONS

In 2011, Rwanda joined the SUN Movement. Over the years, there has been coherence in the way nutrition strategies are developed and implemented. Many of the strategic areas and activities originally defined by the National Nutrition Policy (2007) have been retained in the National Food and Nutrition Policy (2013). The government also developed and implemented a three-year (2010-2013) National Multisectoral Strategy to Eliminate Malnutrition (NSEM). The objectives were to reduce all forms of malnutrition in Rwanda by 2013 and to protect nutrition of young children and pregnant and lactating women. All districts in Rwanda have adopted and implemented their own District Plan to Eliminate Malnutrition (DPEM), with involvement of all stakeholders. Between 2000 and 2016, some of the key programs that were implemented included:

- Development and adoption of protocols for managing malnutrition and promotion of optimal infant and young child feeding (IYCN);
- Scaling-up of community-based nutrition programs (CBNP) in every district;
- National supplies of therapeutic food products for treating acute malnutrition; and
- Expansion of micronutrient-fortified staples and special food products to use in emergencies and food programs supplementing the most vulnerable.

As Rwanda adopted a multisectoral approach to tackling malnutrition in 2007, agricultural investment increased. Activities led by the Ministry of Agriculture and Animal Resources included:

- Implementation of the national strategy "One Cow, One Family";
- Promotion of production and consumption of fruits, vegetables, and mushrooms at household level; and
- Reinforcement of a nutrition surveillance system in collaboration with the Ministry of Health, including mapping of food insecure zones.

In addition, in 2009 the President's Initiative to Eliminate Malnutrition² was launched, led by the Ministry of Local Government with technical leadership of the Ministry of Health. More than 30,000 community health workers (CHWs) were trained over a two-month period in 2009 to carry out community-level actions outlined in the National Protocol for the Management of Malnutrition. Over five months, CHWs used circumference tapes to screen more than 1.3 million children across the country; more than 65,000 were referred and treated for moderate or severe acute malnutrition.

There is a strong recognition that making agriculture and the food system more nutrition sensitive is an effective strategy to reduce malnutrition. The Girinka program (One Cow, One Family) provides evidence that agriculture is a key sector in malnutrition reduction in Rwanda.³ Within six months of the program's introduction in 2006, 248,566 cows had been distributed to poor households. Girinka has led to a significant improvement of the nutritional status of children under the age of five, with fewer children found to be wasted, stunted, and underweight than in 2012. Stunting, which remains the main nutritional challenge in Rwanda, decreased from 43 percent in 2012 to 37 percent in 2015.

In addition, as beans are the predominant staple crop in Rwanda, the Rwanda Agriculture Board, with the support of HarvestPlus, is scaling up the availability of biofortified beans.⁴ The beans are iron-enriched and can be grown by rural communities. And their benefits are not limited to the nutritional outcomes: they achieve a higher yield, are virus resistant, and heat- and drought-tolerant. Farming households are trained in nutrition improvements, crop management, postharvest handling, and marketing. Public awareness campaigns are run across the country and leverage the influence of mass media and local icons, including popular musicians, to help raise awareness of micronutrient deficiencies and the benefits of eating and growing iron-biofortified beans. Regular consumption of iron beans provides up to half of daily iron needs. An evaluation revealed that consuming iron biofortified beans improves the iron status in Rwandan women after just 128 days with greater increases in hemoglobin (3.8 g/L), log serum ferritin (0.1 log mg/L), and BI (0.5 mg/kg).⁴

The effectiveness of food fortification and the promotion of nutritious traditional dishes show that it is possible to reduce malnutrition in Cameroon. However, spending on agriculture does not yet meet government commitments set out in the Malabo Declaration and Cameroon's medium-/long-term national development policy places little emphasis on nutrition.

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SENEGAL



CASE STUDY



Between 2000 and 2016, Senegal made remarkable progress on undernutrition reduction. The GHI score fell from 38 in 2000 to 17 in 2016. The prevalence of stunting decreased from 30 percent to 19 percent over the same period. These improvements in nutrition have been driven in large part by significant institutional and programmatic commitment by the Senegalese government.

INSTITUTIONAL REFORMS

Drawing on the experience of the Programme de Nutrition Communautaire (1994–2000), then executed through a private contractor, the Cellule de Lutte contre la Malnutrition (CLM) was created in 2001 within the prime minister's office.¹ It provides technical assistance in the definition and implementation of the national nutrition policy. The CLM coordinates its activities with seven ministries—Health, Education, Economy and Finance, Decentralization, Trade, Industry, and Agriculture—and the National Association of Rural Advisors and civil society organizations.

The main function of the CLM is to:

- Assist the prime minister in defining national nutrition policy and strategies;
- Review and agree on proposals for collaboration from the technical ministries in the implementation of the program;
- Facilitate a framework for consultation between technical ministries, nutrition policy entities, NGOs, and grassroots community organizations;
- Develop good synergy with other programs to fight poverty in general;
- Foster a policy to promote communication for behavioral change and good practices in the fight against malnutrition; and
- Contribute to the strengthening of national capacities for the effective conduct of nutrition programs.

To ensure the implementation of community nutrition interventions in the 14 regions it covers, the CLM has also set up a Bureau Exécutif National (BEN) in charge of programs and project management.

Furthermore, Senegal joined the SUN Movement in 2011.

POLICY AND PROGRAMMATIC INTERVENTIONS

In 2002, the Programme de Renforcement de la Nutrition (PRN) was launched by the CLM. The program seeks to improve nutrition status and healthy development of children under the age of five living in poor urban or rural areas of Senegal, and to strengthen the institutional and organizational capacity to implement and evaluate nutrition interventions. PRN interventions are organized around six types of activities:

- A monthly weighing of the child from birth to age three, followed by advice given to the mother;
- Treatment of moderate cases of malnutrition through the distribution of fortified food and awareness activities treatment;
- For mothers, with severe cases referred to health services for treatment;
- Community-based distribution of products and

- medicines (mosquito nets, iron, vitamin A supplements);
- Information, Education and Communication (IEC) and Communication for Behavior Change for the promotion of key family practices;
- Support for community initiatives (such as mills and market gardening); and
- Provision of potable water.

To implement the PRN, the CLM relies on the Agences d'Exécution Communautaire (AEC) and ministries. The AEC is a network of community agencies, NGOs, and branches of local government, thus putting implementation into the hand of organizations already embedded in local communities. In 2006, an evaluation² of the impact of PRN was carried out by analyzing wasting rates between 2004 and 2006 in villages in the Fatick, Kaolack, and Kolda regions and within the PRN program. It was found that between 2004 and 2006 wasting rates decreased significantly more in the intervention villages (–34 percent) than in the control villages (–21 percent). The reduction in wasting was most pronounced for children of 6–11 months in the intervention villages (–52 percent), against a worsening trend in control villages (+3 percent).

While the health sector remains the lead sector tackling malnutrition in Senegal, there is evidence that making agriculture more nutrition-sensitive can improve nutrition outcomes. A study among pastoralists in northern Senegal has shown that using a dairy value chain approach to promote access to more nutritious food, in this case a micronutrient-fortified yogurt, can improve the nutritional status of preschool children.³ With the introduction of the micronutrient-fortified yogurt, anemia prevalence dropped from a very high 80 percent to close to 60 percent. Furthermore, after one year, hemoglobin concentration increased by 0.55 g/dL more among children consuming micronutrient-fortified yogurt. However, this latter impact was greater for boys than for girls.

Another program, Yaajeende (Abundance),⁴ has been developing biofortified varieties of millet, beans, and sweet potato since 2011, addressing micronutrient deficiencies including iron, zinc, and vitamin A. Yaajeende has been operating in Matam, Bakel, and Kédougou regions since 2011, and was introduced in Kolda in 2014.

It is also promoting the adoption of conservation agriculture and sustainable land management techniques. The Yaajeende mid-term evaluation concluded that households and individuals living in villages in project intervention areas saw greater improvement in nutritional status indicators than those residing in non-project areas: stunting prevalence among children aged 6–59 months in project areas decreased from 23 percent before project implementation to 16 percent at the mid-term evaluation, while in the non-project areas, the stunting level decreased from 32 to 29 percent during the same period. The stunting rate reduction due to the intervention was evaluated at more than 4 percent.

A high level of political commitment and leadership on nutrition through the CLM, coupled with effective interventions under the PRN, has shown that malnutrition can be successfully reduced. This progress could be further accelerated by involving the agriculture sector, as seen in some programs in northern Senegal.

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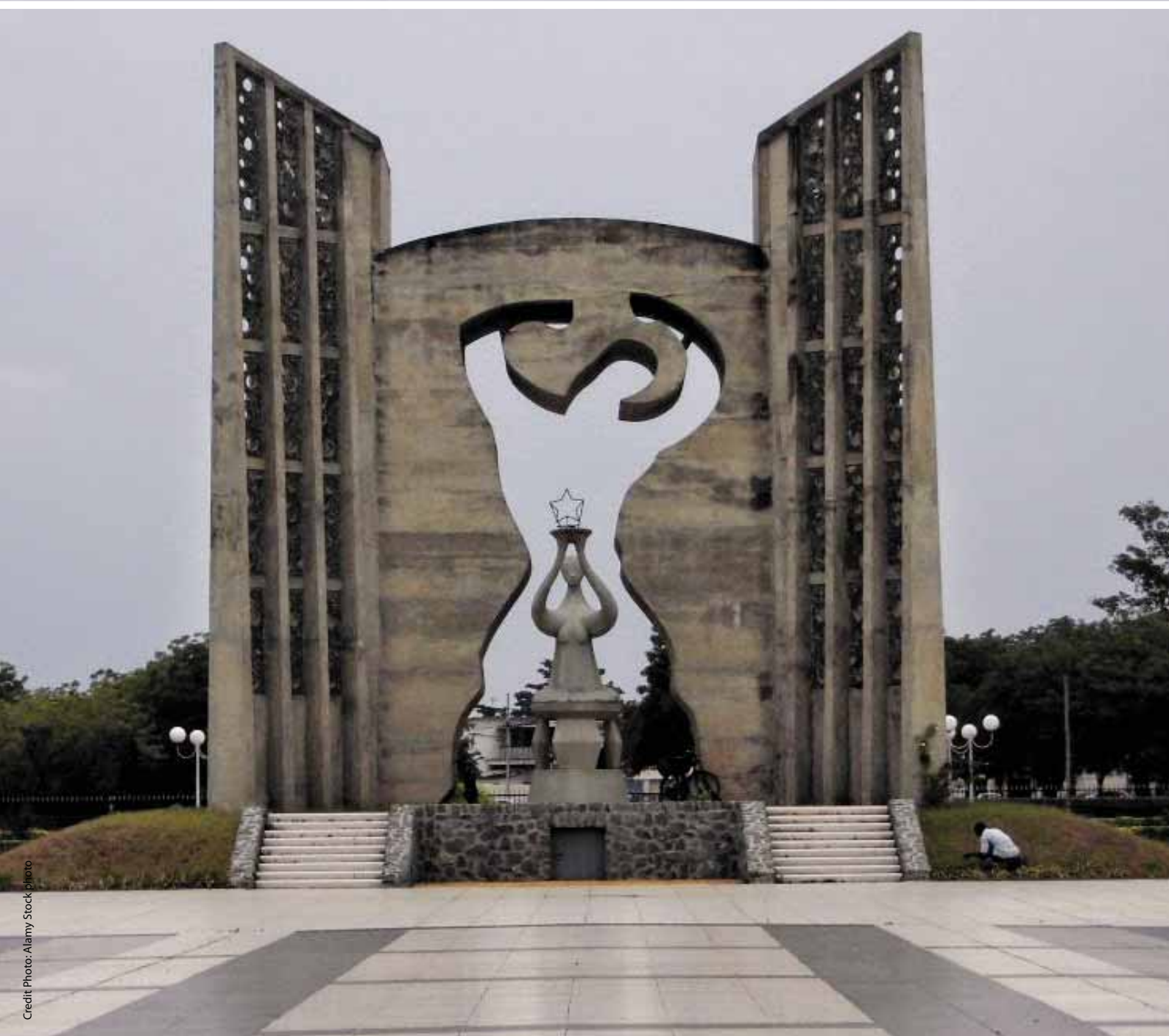
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TOGO



CASE STUDY



After a long period marked by socio-political instability prior to 2000, Togo has made significant progress in terms of reducing malnutrition levels. While the reduction in stunting levels was moderate, with a decrease of just 5 percentage points, from 33 to 28 percent, the level of wasting was nearly halved, from 11 to 7 percent, between 2000 and 2016. Togo's GHI score decreased from 39 in 2000 to 22 in 2016. The government's institutional and programmatic commitment have in part driven this impressive performance.

INSTITUTIONAL REFORMS

The importance of institutional change for malnutrition reduction was recognized by the Togolese government with the creation of the Service National de Nutrition (SNN) within the Ministry of Health in October 1990. However, prior to 2006 the SNN had no clear mission, and operated without a strategic plan to guide and implement its interventions. Following the 2007 nutrition crisis, the government made SNN a priority, and to strengthen the fight against malnutrition further, it created a Nutritional Emergency Response unit within the SNN. National legislation on nutrition is extensive and includes, for example, laws on food fortification (salt, oil, and wheat flour). Furthermore, a multisectoral approach has been adopted to tackle malnutrition by involving the agricultural sector.

POLICY AND PROGRAMMATIC INTERVENTIONS

In 2014, Togo joined the SUN Movement. The Plan Stratégique National d'Alimentation et de Nutrition,¹ which ran from 2012 to 2015 and was led by the Ministry of Health, formed one of the government's key programs for tackling malnutrition. The main elements of the program included:

- Promotion of nutrition and nutritional education and strengthening the implementation of infant and young child feeding;
- Prevention and management of acute malnutrition in the Center for Nutrition Recovery and Education/Health facilities and through a community approach;
- Feeding adolescent women, pregnant women, and lactating women;

- School feeding and nutrition interventions; and
- Management of acute malnutrition.

Additionally, the Ministry of Agriculture ensures food diversification and safety through the Programme National d'Investissement Agricole et de Sécurité Alimentaire and the Programme d'Appui à la Diversification Agricole.²

The government has also been implementing innovative interventions across the country to improve the health and nutritional status of children.³ In 2011, to reduce morbidity and mortality rates among children under age five in the Savannah and Kara regions, community-based high-impact interventions were implemented. The Integrated Management of Newborn Diseases and the Child program trained more than 1,000 community health workers, from villages over 5 kilometers away from the nearest health center, to recognize early signs of childhood illnesses and to either refer patients to community health facilities or to treat some of the most common illnesses, such as malaria, diarrhea, colds, pneumonia, and acute malnutrition, on site.

Furthermore, the implementation of national legislation on food fortification in Togo has ensured that more fortified foods, such as oils, are made available to consumers. A Togolese company, Nioto, manufactures edible oils that meet international standards from local and imported raw materials.⁴ To ensure the quality of its products throughout the production process—from receipt of raw materials to packaging—Nioto works through a well-equipped laboratory and in coordination with other local or international laboratories. Since 2009 the oils have been enriched with vitamin A. Their consumption makes it possible to largely cover 40 IU/g, or 30 percent, of the daily vitamin A requirements recommended by UNICEF and WHO.

Good progress has been made in addressing malnutrition in Togo. The importance of a multisectoral approach has been recognized in Togo's National Nutrition Policy/Strategy and clear time-bound nutrition targets. However, it remains to be translated into effective interventions through involving the agriculture, health, and education sectors and a multisectoral and multisiteholder policy coordination mechanism.

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ZAMBIA



CASE STUDY



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Between 2000 and 2016, Zambia made good progress in reducing levels of undernutrition with a reduction in the Global Hunger Index from 50 to 39 (equivalent to a 23 percent change) and a fall in stunting rates from 58 percent to just 40 percent over the same period.¹ This means that Zambia currently is off-target to reach the Malabo commitment of reducing stunting to less than 10 percent by 2025. Only 11 percent of infants were consuming a minimum acceptable diet in 2013–2014. Furthermore, Zambia is facing an increasing double burden of malnutrition as overweight and obesity rates have also reached 29 percent and 10 percent respectively. The Government of Zambia has committed to tackling malnutrition more actively through institutional reforms and programs.²

INSTITUTIONAL REFORMS

The government began addressing malnutrition as early as the 1960s with the creation of a National Food and Nutrition Commission (NFNC) under the Ministry of Health. The NFNC functioned as an advisory body to the government to promote and oversee nutrition activities in Zambia, primarily focusing on vulnerable groups such as children and women.³ In addition, Zambia is committed to the devolution of government functions as one of the key elements of its decentralization policy. While line ministries continue to approve major programs to be carried out at provincial and district levels, these programs are managed by district-level officers and there is a growing emphasis on community participation and community-level health and other sector activities. Furthermore, civil society organizations, private sector companies, religious leaders, and the media have been recognized to play important roles in promoting healthier diets. Legislation for mandatory fortification, maternity leave, and the International Code of Marketing of Breast-Milk Substitutes have also been introduced over the past years. Furthermore, the government encourages various agricultural research and extension services, and local farmer organizations are involved in setting policy priorities.

POLICY AND PROGRAMMATIC INTERVENTIONS

Although the challenge of malnutrition remains prominent, Zambia has made progress in strengthening or developing new national programs. The inclusion of food security and nutrition objectives in the fifth (2006–2010) and sixth (2011–2015) National Development Plans demonstrated the programmatic commitments by the government to address malnutrition. In addition, Zambia joined the Scaling Up Nutrition Movement in 2011. Recognizing that significant contributions from agriculture, health, education, community development, social services, water and sanitation, and emergency response programs were critical in addressing undernutrition, the government developed the National Food and Nutrition Strategic Plan for the period of 2011–2015, which put a major emphasis of government policy on decentralized program development and management.⁴ As levels of vitamin A deficiency remain high in Zambia, the country is losing an estimated US\$186 million annually due to vitamin and mineral deficiencies. With 54 percent of Zambian children under five estimated to be vitamin A deficient, the government actively promotes complementary feeding practices and provided two high doses of vitamin A supplementation for 93 percent of children in 2013.⁵ The government also committed to increasing financial contributions to nutrition by at least 20 percent annually for the next 10 years, and to reaching the estimated additional US\$30 per child under five required to scale up high impact nutrition interventions. Furthermore, Zambia has developed the Nutrition Trust Fund, a pooled fund that supports innovative approaches to scaling up nutrition. The Fund is currently being implemented.⁶

Moreover, a community-based approach to managing acute malnutrition proved to be a complementary service to inpatient therapeutic care.⁷ The 2011–2015 National Food and Nutrition Strategic Plan for Zambia

consisted of strong community mobilization, identification of children suffering from malnutrition, outpatient supplementary feeding for patients with moderate acute malnutrition, outpatient therapeutic care for uncomplicated cases of severe acute malnutrition, and inpatient care for patients with severe acute malnutrition with medical complications. The adoption of a community-based approach has significantly extended service coverage and improved treatment outcomes in Zambia, with a cure rate of 80 percent, while maintaining a death rate of 5 percent.

Furthermore, the government supports a campaign to replace the traditional white maize with orange maize. Maize is a staple food in Zambia and the more nutritious orange variety⁸ provides consumers with vitamin A. Orange maize has also been included under the government's Farmer Input Support Programme (FISP), which subsidizes farmers' access to seeds. The government is encouraging farmers, millers, and seed companies to champion orange maize and encourage more people to switch from the white to the orange variety. An assessment conducted among school-aged children (four to eight years old) in rural Zambia highlighted that children who ate orange maize showed improved night vision within six months. Their eyes adapted better in the dark, improving their ability to engage in optimal day-to-day activities under dim light, such as during dusk and dawn.⁹ As biofortified maize is scaled up to reach more households in more provinces, the main challenge is to ensure extensive distribution through private networks to outlying areas.¹⁰

From 2011 to 2014, sweet potato production in Zambia ranged between 43,211 and 45,677 tons, which is low compared to Eastern African countries, where sweet potato is one of the main staple foods. The Integrating Orange Project was implemented by the Zambia Agriculture Research Institute in collaboration with the International Potato Center in 2011 to promote orange-fleshed sweet potato (OSP) in rural farming communities in the Eastern and Central Provinces. The target was to reach 15,000 rural households, prioritizing women with children younger than five years. Baseline data for this project showed that only 0.2 percent of households in the Chipata district cultivated OSP, covering a total of only 3.67 ha of land. Since then, a number of strategies have been implemented in the target areas, such as provision of high-quality OSP vines to rural households; training of communities on good agronomic practices, multiplication, and conservation of vines; providing nutritional knowledge related to vitamin A deficiency, OSP, childcare, and dietary diversity; developing promotional and education messages; and building capacity.¹¹

With cassava the second most important staple food crop after maize in Zambia, vitamin A biofortified cassava is currently being field tested in cassava-consuming communities that include the Luapula, Western, North-Western, and Northern provinces.

Although levels of malnutrition and stunting remain high, and obesity and overweight rates are on the rise, the government's commitment to tackling malnutrition is visible. Since 2016, the national Multi-Stakeholder Platform (MSP) has been strengthened, with the designation of the Permanent Secretary of the Ministry of Health as chair by the Special Committee of Permanent Secretaries. The District Nutrition Coordinating Committees (DNCCs) are being expanded to new districts beyond the current 14, and ad hoc Provincial Nutrition Coordinating Committees are also in place. However, although the national budget has doubled since 2012 overall, governmental allocations for nutrition remain stagnant and have declined in some cases. In 2014, the government was spending 11.3 percent of its budget on health, while spending on nutrition-specific interventions was just 0.1 percent in the same year.¹² Furthermore, weak access to safe drinking water and adequate sanitation facilities prevents positive outcomes for nutrition in Zambia.¹³

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