

Understanding how Rwanda created an enabling environment for improvements in nutrition

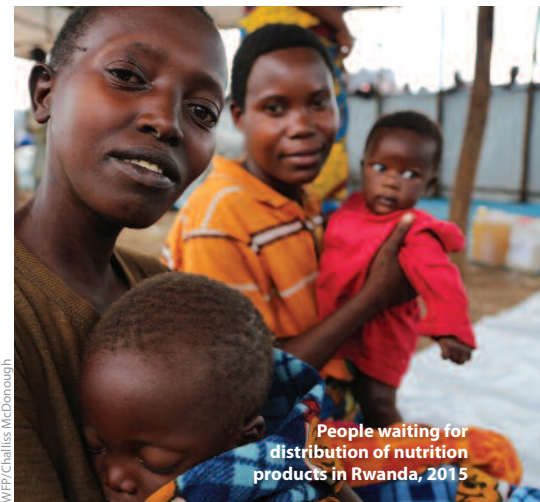
Research snapshot¹

Rwanda has made substantial progress in reducing malnutrition, with reductions in stunting and anaemia of 14 and 15 percentage points respectively between 2005 and 2015. However, stunting reduction has been uneven across the country and prevalence remains very high at 38%. To facilitate further progress, a 'stories of change' study was conducted to identify drivers of stunting and anaemia reduction and potential barriers and facilitators to future progress in Rwanda. Qualitative methods included semi-structured interviews with 90 key stakeholders in nutrition, and 40 focus-group discussions with community members in five districts that experienced reduction in stunting and five that did not. Quantitative data from Demographic and Health Surveys (2005, 2010 and 2015) were also analysed.

Key drivers of change based on the qualitative data were: leadership, peace and security and decentralisation of government; political commitment to nutrition and multi-sector programming, facilitated by national policy (in particular

the National Food and Nutrition Policy 2013-2018) and nutrition coordination mechanisms; and increased provision of community-level, nutrition-related services and programmes, especially in health and agriculture (e.g. nutrition counselling, antenatal care, kitchen-garden programmes). Quantitative data revealed that factors that contributed most to reduced stunting were related to maternal health, including quality of prenatal visits; proportion of women giving birth at a health facility; and the number of children a woman had. Household wealth, parental education and insurance coverage were also important.

Districts without reduced stunting had weaker horizontal and vertical coherence of policy and programming; less robust, multi-sector and integrated monitoring and evaluation for nutrition; and decreased food availability at community level. For further improvements, Rwanda must keep up the momentum of positive change and further strengthen existing plans, systems and approaches. Remaining challenges must also be addressed, including those around financial



constraints; gaps in policy; institutional, horizontal and vertical coherence and monitoring and evaluation for nutrition; and community-level issues such as poverty, food security, gender relations and health, nutrition, and water, sanitation and hygiene practices.

¹ Iruhiriyi, Elyse; Olney, Deanna K.; Ramani, Gayathri V.; Heckert, Jessica; Niyongira, Emmanuel; and Frongillo, Edward A. 2019. Stories of Change: Rwanda: Understanding how Rwanda created an enabling environment for improvements in nutrition and the challenges that remain. Stories of Change Rwanda Program Brief 1. Washington, DC: International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/p15738coll2.133378>

Soya, maize and sorghum ready-to-use therapeutic foods (RUTF) are more effective in correcting anaemia and iron deficiency than standard RUTF

Research snapshot¹

The prevalence of anaemia and iron deficiency (ID) among children with severe acute malnutrition (SAM) and their correction during nutritional rehabilitation are not well documented. A randomised controlled trial was undertaken in central Malawi among children with SAM age 6-59 months (n=389) to assess anaemia and ID prevalence and their predictors at the start of SAM treatment, and the efficacy of their treatment and effect on gut health of two novel ready-to-use therapeutic foods (RUTF) prepared from soybean, maize and

sorghum (SMS) with (MSMS-RUTF) or without added milk (FSMS-RUTF) compared to those of the standard formulation prepared from peanut and milk (PM-RUTF). All the RUTFs were designed to meet the World Health Organisation (WHO) recommendations for RUTF mineral and vitamin levels with the exception of iron and zinc. Iron, zinc and vitamin C levels in FSMS-RUTF and MSMS-RUTF were increased to attain a phytic acid / iron molar ratio, ascorbic acid / iron weight ratio and zinc / iron weight ratio of < 2.5, 3.0- 16.0 and 0.8-3.5, respectively to enhance iron and zinc absorption.

A total of 386 children were surveyed on admission (227 of whom were under 24 months of age and 165 over 24 months); 266 of whom were also assessed at discharge. At admission, the prevalence (%(95%CI)) of anaemia was 48.9(41.4-56.5)%, while that of ID and IDA were 55.7(48.6-62.5)% and 34.3(28.2-41.0)% when using soluble transferrin receptor (sTfR) criterion and 29.1(24.4-34.4)% and 28.9(23.7-34.9)% when using body iron stores (BIS) criterion, respectively. Results, presented in Table 1, show a linear trend in the prevalence of anaemia and iron-deficiency anaemia related to the milk content of the RUTF, with the prevalence lowest

in the FSMS-RUTF and highest in the PM-RUTF. This trend was seen in both those with and without anaemia at admission. A similar trend was observed when comparing haemoglobin change between admission and discharge. SMS-RUTF was also associated with the highest increase in BIS among the iron-depleted at admission (6.2mg/kg (3.7-8.6) for FSMS-RUTF; 3.2mg/kg (0.8-5.6) for MSMS-RUTF; and 2.2mg/kg (0.2-4.3) for PM-RUTF) (p=0.045). Compared to PM-RUTE, FSMS-RUTF had the highest adjusted recovery rate (OR (95%CI) = 0.3 (0.2-0.5) with p < 0.001 for FSMS-RUTF and 0.6 (0.3-1.0) with p = 0.068 for MSMS-RUTF). No effect of iron content on risk of iron overload or gut inflammation was observed. This study found that anaemia including IDA is common among children with SAM. The authors conclude that FSMS-RUTF with a higher level of iron and no cows milk is more efficacious in treating anaemia and correcting BIS in this group of children than standard RUTF.

¹ Akomo, P., Bahwere, P., Murakami, H., Banda, C., Maganga, E., Kathumba, S., Sadler, K. and Collins, C. (2019) Soya, maize and sorghum ready-to-use therapeutic foods are more effective in correcting anaemia and iron deficiency than the standard ready-to-use therapeutic food: randomized controlled trial. BMC Public Health 19:806

	N	%(95%CI)	p-value
<i>Prevalence of anaemia at discharge</i>			
FSMS-RUTF	83	12.0(6.9-20.3)	p=0.023
MSMS-RUTF	77	18.2(11.9-26.8)	
PM-RUTF	106	24.5(15.8-35.9)	
<i>Prevalence of IDA at discharge</i>			
FSMS-RUTF	63	7.9(3.4-17.3)	p=0.028
MSMS-RUTF	46	10.9(4.8-22.6)	
PM-RUTF	83	20.5(10.7-35.5)	

* measured by sTfR criterion (less affected by inflammation)