

MURANG'A

NUTRITION INVESTMENT CASE

≡ KENYA



Despite progress made on health outcomes over time, malnutrition in Murang'a County remains a major public health problem. However, the county government has demonstrated political commitment for preventing malnutrition by investing in the scale-up of low-cost high-impact nutrition interventions. With the support of Nutrition International, county leadership and nutrition stakeholders, Murang'a County has developed the County Nutrition Action Plan (CNAP) 2020-2025, which sets ambitious targets for the scale-up of nutrition interventions over the next five years. The plan identifies priority multisectoral nutrition actions for each sector, defines targets for each intervention, and provides a monitoring and accountability framework as well as costing of interventions, which the county can use for subsequent planning and budgeting.

This Investment Case highlights the potential health impacts and economic benefits of scaling up the low-cost high-impact nutrition-specific interventions included in the Murang'a County CNAP.¹

MURANG'A COUNTY CNAP (2020-2025)

TOTAL COST OVER
FIVE YEARS:

KSh2.0B

(US \$10.48M)

COST OF HIGH-IMPACT
PREVENTATIVE INTERVENTIONS:

KSh1.091B

(US \$10.48M)

PROJECTED HEALTH IMPACT:

8,847 cases of stunting averted

576 child deaths averted

2,456 cases of wasting averted

17,636 cases of anaemia in pregnancy averted

¹ While all costs and programs included in the CNAP are important, it is not possible to model the impact of nutrition-sensitive, public health and enabling environment interventions due to lack of evidence of their effects.

THE COST OF MALNUTRITION

HEALTH IMPACTS

The Cost of Hunger in Africa (COHA) study in Kenya report (2019) highlighted the high levels of child undernutrition and its lasting health and human capital consequences for the country. The COHA model was applied during the development of this County Investment Case by customizing it using county nutrition data to estimate the level of morbidity, mortality, school repetition, school dropout and reduced physical capacity that can be directly associated to a person's undernutrition before the age of five. The COHA study estimated additional cases of morbidity, mortality, school repetitions, school dropouts and reduced physical capacity that can be directly associated with undernutrition in children under the age of five for the year 2014. It is estimated that 19.3% of children under the age of five (KDHS, 2014), which is equivalent to 21,329 children in Murang'a County, were stunted. Furthermore, malnutrition causes an estimated 7,914 cases of low birth weight and underweight annually. Overall, undernutrition in Murang'a County costs the health system approximately KSh 80.54M per year (US \$0.77M).

HUMAN CAPITAL AND ECONOMIC IMPACTS

In addition to the impact of stunting on the health of individuals, it also affects cognitive development in children, and in turn, reduces a child's educational performance, resulting in increased grade repetition and dropouts. It is estimated that there are 423 cases of grade repetition in Murang'a County annually due to stunting, which costs an estimated KSh 5.22M (US \$50,122.5) annually to the education system and families.²

In addition, stunting affects future economic productivity due to increased mortality (i.e., loss of workforce) and lowered labour productivity. Based on the latest data available, it is estimated that the annual losses in economic productivity due to malnutrition in Murang'a County were KSh 193.60M (US \$1.86M). Overall, the annual cost of malnutrition in the county is equal to KSh 279.36M (US \$2.68M), which represents 0.25% of its GDP.

² Kenya COHA Report (2019)

THE COST OF MALNUTRITION

ANNUAL HEALTH COST

KSH 80.54M
(US \$0.77M)

ANNUAL EDUCATION COST

KSH 5.22M
(US \$50,122.5)

ANNUAL PRODUCTIVITY COST

KSH 193.6M
(US \$1.86M)

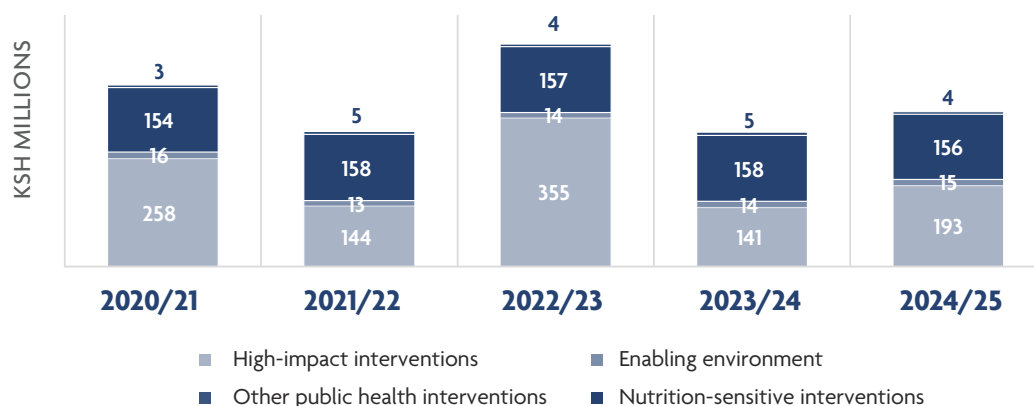
MURANG'A COUNTY NUTRITION ACTION PLAN

TOTAL COST OVER FIVE YEARS

The total public investment required to deliver the Murang'a CNAP is estimated to be KSh 2.0B (US \$18.9M) between 2020 and 2024. Within the CNAP, 56% of the resources are allocated to low-cost high-impact nutrition interventions, 1% to nutrition-sensitive interventions, 40% to other public health interventions, and 4% to health and nutrition system and infrastructure costs (enabling environment). The average annual cost of the CNAP is KSh 393.18M (US \$3.78M) per year.

| Category | Total Cost (KShB) | Total Cost (US \$M) | Total cost (%) |
|--|-------------------|---------------------|----------------|
| High-impact interventions (with severe acute malnutrition treatment) | 1.091 | 10.48 | 56% |
| Enabling environment | 0.07 | 0.69 | 4% |
| Other public health interventions | 0.78 | 7.52 | 40% |
| Nutrition-sensitive interventions | 0.02 | 0.19 | 1% |
| Total | 1.97 | 18.87 | 100% |

CNAP COSTS BY CATEGORY



Source: Murang'a CIC Analysis



COST OF HIGH-IMPACT NUTRITION INTERVENTIONS

Within the package of evidence-based high-impact preventative nutrition interventions included in the Murang'a CNAP, the total cost for each preventative interventions over five years is KSh 294.2M (US \$2.8M) for iron and folic acid supplementation in pregnancy (IFAS), KSh 427.6M (US \$4.1M) for infant and young child feeding (IYCF), KSh 279.5M (US \$2.68M) for the treatment of severe acute malnutrition (SAM), KSh 3.0M (US \$0.03M) for vitamin A supplementation (VAS), KSh 28.6M (US \$0.27M) for micronutrient powder supplementation (MNP), KSh 57.5M (US \$0.55M) for zinc and oral rehydration salts (ORS), and KSh 0.7M (US \$0.01M) for other high-impact interventions.

ANNUAL COST OF HIGH-IMPACT NUTRITION INTERVENTIONS:

PER CAPITA

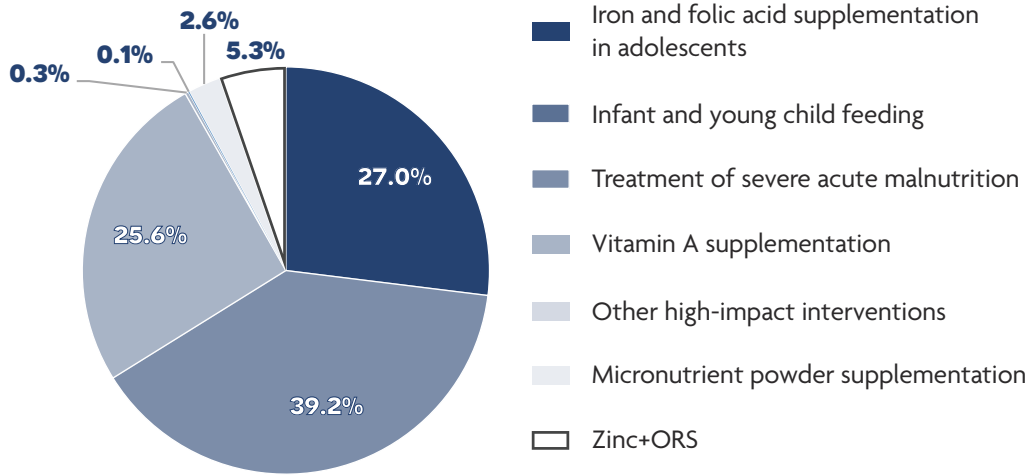
KSH 204
(US \$1.96)

PER PREGNANT WOMAN, ADOLESCENT GIRL AND CHILD (UNDER FIVE)

KSH 1,529
(US \$14.68)



BREAKDOWN OF THE COSTS OF HIGH-IMPACT NUTRITION INTERVENTIONS

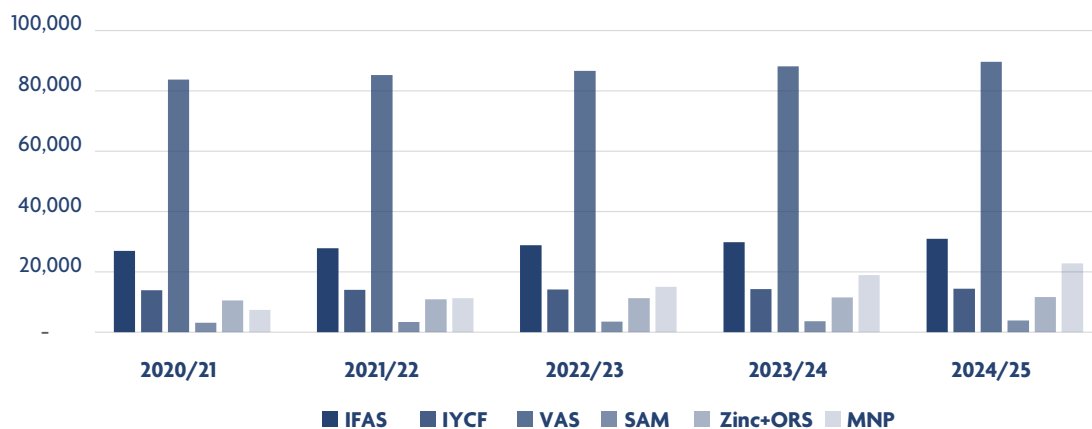


THE HEALTH AND ECONOMIC BENEFITS OF INVESTING IN NUTRITION

INTERVENTION REACH

The preventative high-impact nutrition interventions within the CNAP will reach an average of 143,293 newborns, children, and pregnant women annually. The interventions with the highest reach over five years are VAS, IYCF and IFAS in pregnancy.

REACH OF HIGH-IMPACT NUTRITION INTERVENTIONS



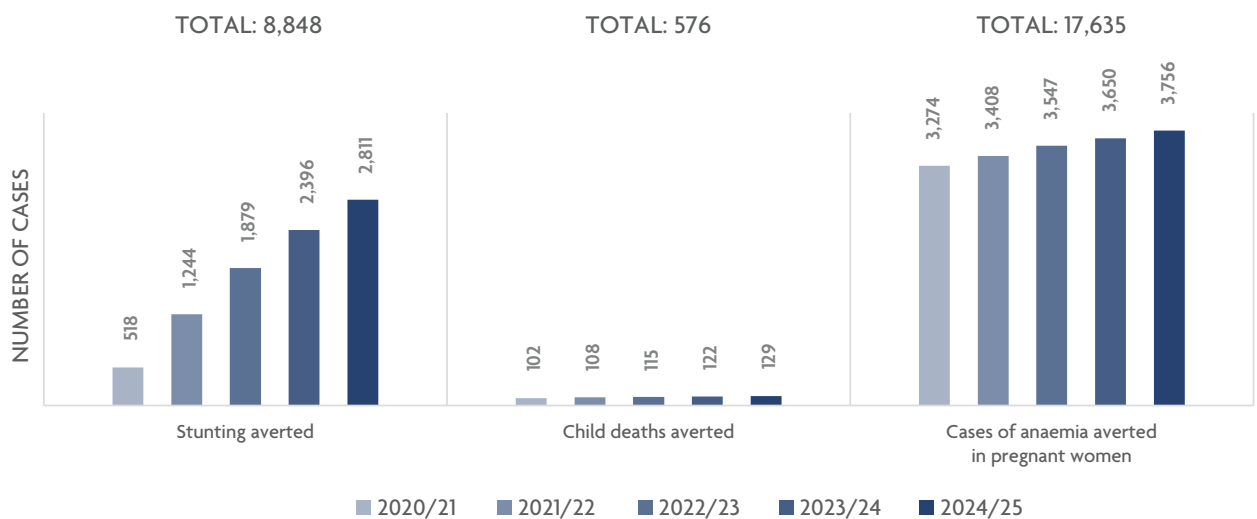
| Intervention | Total reach over five years |
|--------------|-----------------------------|
| IFAS | 129,748 |
| IYCF | 63,765 |
| WIFAS | 388,861 |
| VAS | 15,838 |
| SAM | 50,348 |
| Zinc+ORS | 67,903 |
| MNP | 19,200 |

HEALTH IMPACTS

Nutrition interventions within the Murang'a CNAP are projected to have a significant impact on the health of newborns, children, adolescent girls, and pregnant women. The interventions are projected to result in 8,847 additional alive, non-stunted children (a reduction of the prevalence of stunting by approximately 38% within five years). The interventions are projected to result in 17,636 cases of anaemia averted in pregnant women. This impact will result in reduction of the prevalence of iron deficiency anaemia in pregnant women by approximately 56%. In addition, the interventions are projected to result in 2,456 cases of wasting averted, which will reduce the prevalence of wasting in children under five by 65%.

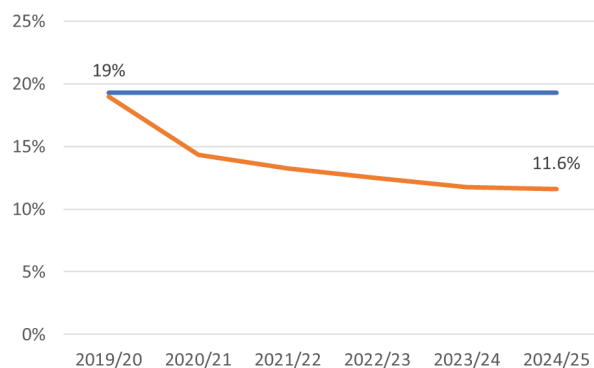
Overall, the interventions are projected to result in 576 child deaths averted. The sum of these health impacts results in a potential 41,199 Disability Adjusted Life-Years (DALYs)³ averted. In addition to the health impact, these interventions will lead to cognitive and human capital impacts over time such as increased IQ and educational attainment.

HEALTH IMPACTS OF HIGH-IMPACT INTERVENTIONS

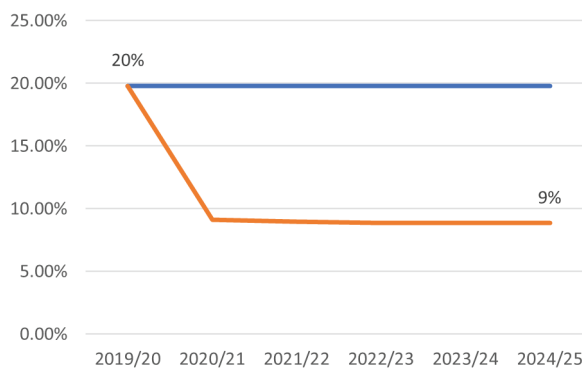


³ A Disability-Adjusted Life-Year (DALY) averted can be thought as one lost year of "healthy" life.

Prevalence of Stunting in Children



Prevalence of Iron Deficiency Anaemia in Pregnant Women



— Baseline scenario — Scale-up scenario

The CNAP is projected to contribute a relative reduction of 38% in the prevalence of stunting, and of 56% in the prevalence of iron-deficient anaemia in pregnant women by 2025, which represent important gains towards the World Health Assembly global nutrition targets.

COST-EFFECTIVENESS AND BENEFIT-COST

There is a strong evidence base demonstrating that the high-impact preventative nutrition interventions included in the Murang'a CNAP are highly cost-effective. It is estimated that the cost per case of stunting in children is KSh 2,911 (US \$27.95). Additionally, the cost per case of anaemia averted is projected to be KSh 719 (US \$6.90) for IFAS in pregnancy.

By translating this level of health impact into DALYs averted, it is estimated that investing in the high-impact nutrition interventions costs KSh 26,484 (US \$254) per DALY averted. Using a Value of Statistical Life-Year for Kenya, the Murang'a CNAP is also estimated to yield a benefit-cost ratio of 14:1 in the long-term, which is indicative of excellent value for money from this investment.

HIGH-IMPACT INTERVENTION COST-EFFECTIVENESS: VERY COST EFFECTIVE

COST PER DALY AVERTED

KSh 26,484
(US \$254)

BENEFIT-COST RATIO

14:1

RECOMMENDATIONS

Invest in nutrition for guaranteed value for money and an essential path to reaching national and county aspirations.

Nutrition is a vital building block in the foundation of human health and development. Murang'a County has high levels of malnutrition making it a key public health concern which could potentially hinder the achievement of the county's developmental agenda. The Murang'a CNAP has identified appropriate interventions and targets to be implemented in the next five years to address the nutrition challenge in the county. To remove access barriers to nutrition interventions and fully realize the benefits outlined in this investment case, there is a need for the county government and other stakeholders to increase the availability of resources in line with the set scaling up and coverage on nutrition interventions. This analysis shows there are huge (benefit-cost ratio 14:1) economic benefits that will be realized with optimized investments in nutrition programs in Murang'a County.

[Take a sustainable financing approach to nutrition.](#)

Sustained investment in nutrition has higher benefits over time, which calls for more sustainable financing approaches to guarantee coverage. Domestic resources mobilization offers an optimal path to sustainable financing for nutrition in Murang'a County, and this will call for continued advocacy to ensure increased political and public support for nutrition, resource allocation for identified high-impact nutrition activities and promotion of healthy nutrition behaviours and practices. These combined efforts will see dramatic improvements in funding and resonate well with the World Bank call for US \$30 per child targeted in order to meet nutrition targets (WB 2014).

[Prioritize the implementation of evidence-based and cost-effective high-impact nutrition interventions for health, human capital and economic benefits.](#)

The CNAP includes a wide range of nutrition-specific and nutrition-sensitive interventions to be implemented across different sectors to help address the causes of malnutrition. The Lancet Series on Maternal and Child Undernutrition (2013) identifies low-cost, high-impact nutrition interventions and the roadmap for scaling up these interventions is included in the CNAP. To reduce the negative effects of child undernutrition on the health, education and labour sectors, Murang'a County should prioritize the implementation of these proven low-cost, high-impact interventions.

[Support the generation of critical nutrition data to guide planning and budgeting for nutrition in the county.](#)

The CNAP defines a common results measurement and accountability framework for county actions. There is a clear need to routinely collect and collate nutrition data from various sectors to inform planning and budgeting and provide clarity on equity and efficiency of interventions. To improve data management and its use for decision making, Murang'a County should facilitate regular nutrition data/information review during coordination meetings and generation/dissemination of knowledge products. This should include data that provides a clear understanding of the nutrition financing landscape in the county.

[Enhance governance and coordination of nutrition interventions at county level.](#)

The CNAP is a multisectoral document that seeks to ensure that nutrition is systematically embedded into existing governance structures by advocating for and supporting county structures and institutions that plan and manage the implementation of nutrition programs. The coordination and governance framework should promote a multisectoral approach and encourage cross-sectoral collaboration to address the social determinants of malnutrition sustainably with an overall aim of ensuring optimal nutrition for citizens of Murang'a County, by ensuring that the roles and responsibilities of the different sectors are clear and that each carries out its action with the recognition that addressing the triple burden of malnutrition requires multisectoral and multi-disciplinary approaches. This will ensure maximization of realized benefits across sectors such as education, health, and WASH.

[Strengthen community health approaches and mobilize communities in the context of COVID-19 and beyond.](#)

The COVID-19 pandemic has disrupted nutrition services through health systems and school-based platforms, and decreased purchasing power resulting from economic slowdown, access to nutritious food resulting from disrupted supply chains, and food production. There is a need to strengthen the community health approach and mobilize communities to adopt behaviours and practices that promote better nutrition at community level.