NUTRITION INTERNATIONAL

Nourish Life

EMBU

NUTRITION INVESTMENT CASE

KENYA

Despite progress made on health outcomes over time, malnutrition in Embu County remains a major public health problem. The county's stunting level stands at 26.8%, wasting at 3% and underweight at 11.1% (KDHS, December 2014). 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, Embu 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 Embu County CNAP.[1]

EMBU COUNTY CNAP (2020-2025)

TOTAL COST OVER FIVE YEARS:

KSH1.5B

(US $14.4M)

COST OF HIGH-IMPACT PREVENTATIVE INTERVENTIONS:

KSH823M

(US $7.9M)

PROJECTED HEALTH IMPACT:

5,218 cases of stunting averted

545 child deaths averted

1,390 cases of wasting averted

10,031 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 26.8% of children under the age of five (KDHS, 2014), which is equivalent to 16,495 children in Embu County, were stunted. Furthermore, malnutrition causes an estimated 4,205 cases of low birth weight and underweight annually. Overall, undernutrition in Embu County costs the health system approximately KSh 43.19M per year (US $0.41M).

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 193 cases of grade repetition in Embu County annually due to stunting, which costs an estimated KSh 2.41M (US $0.03M) 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. From the analysis, it is estimated that the annual losses in economic productivity due to malnutrition in Embu County were KSh 112M (US $1.07M). Overall, the annual cost of malnutrition in the county is equal to KSh 157.17M (US $1.51M), which represents 0.23% of its GDP.

[2] Kenya COHA Report (2019)

THE COST OF MALNUTRITION

ANNUAL HEALTH COST

KSH 43.19M

(US $0.41M)

ANNUAL EDUCATION COST

KSH 2.41M

(US $0.03M)

ANNUAL PRODUCTIVITY COST

KSH 112M

(US $1.07M)

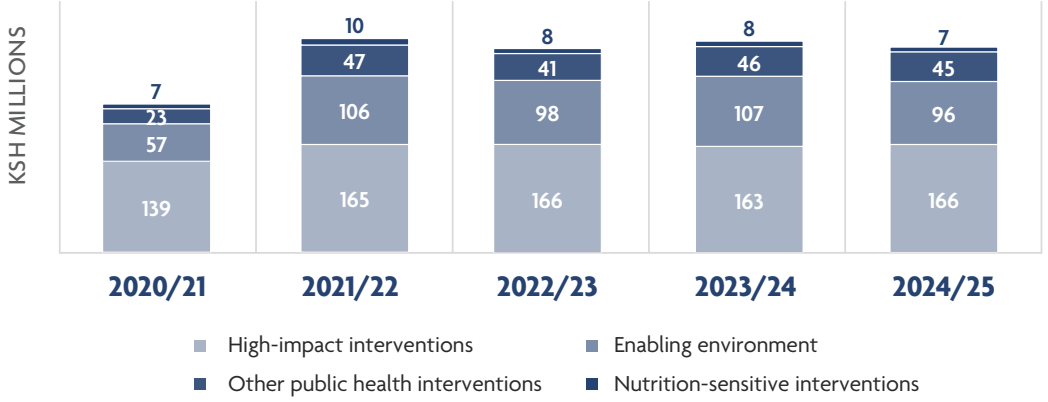
EMBU'S COUNTY NUTRITION ACTION PLAN

TOTAL COST OVER FIVE YEARS

The total public investment required to deliver the Embu CNAP is estimated to be KSh 1.5B (US $14.44M) between 2020 and 2024. Within the CNAP, 55% of the resources are allocated to low-cost high-impact nutrition interventions, 3% to nutrition-sensitive interventions, 20% to other public health interventions, and 22% to health and nutrition system and infrastructure costs (enabling environment). The average annual cost of the CNAP is KSh 300.87M (US $2.89M) per year.

Category	Total Cost (KShB)	Total Cost (US $M)	Total cost (%)
High-impact interventions (with severe acute malnutrition treatment)	0.82	7.90	55%
Enabling environment	0.34	3.22	22%
Other public health interventions	0.31	2.94	20%
Nutrition-sensitive interventions	0.04	0.38	3%
Total	**1.50**	**14.44**	**100%**

CNAP COSTS BY CATEGORY



Source: Embu CIC Analysis

COST OF HIGH-IMPACT NUTRITION INTERVENTIONS

Within the package of evidence-based high-impact preventative nutrition interventions included in the Embu CNAP, the total cost for each preventative interventions over five years is KSh 16.33M (US $0.16M) for iron and folic acid supplementation in pregnancy (IFAS), KSh 324.28M (US $3.11M) for infant and young child feeding (IYCF), KSh 346M (US $3.32M) for the treatment of severe acute malnutrition (SAM), KSh 83.24M (US $0.8M) for vitamin A supplementation (VAS), KSh 37.68M (US $0.36M) for micronutrient powder supplementation (MNP), KSh 6.3M (US $0.06M) for kangaroo mother care (KMC), and KSh 9.48M (US $0.09M) for other high-impact interventions.

ANNUAL COST OF HIGH-IMPACT NUTRITION INTERVENTIONS:

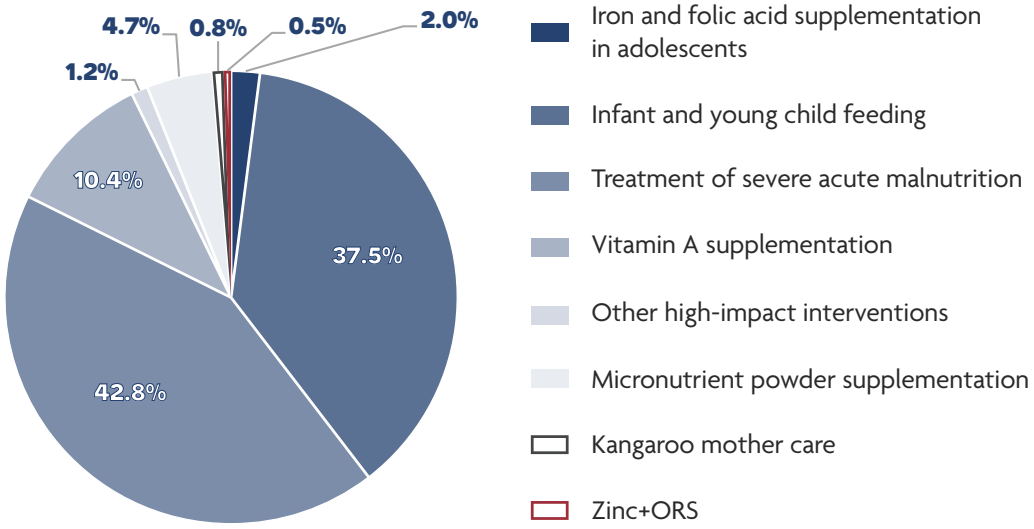
PER CAPITA

KSH 261
(US $2.51)

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

KSH 1,965.6
(US $18.87)

BREAKDOWN OF THE COSTS OF HIGH-IMPACT NUTRITION INTERVENTIONS

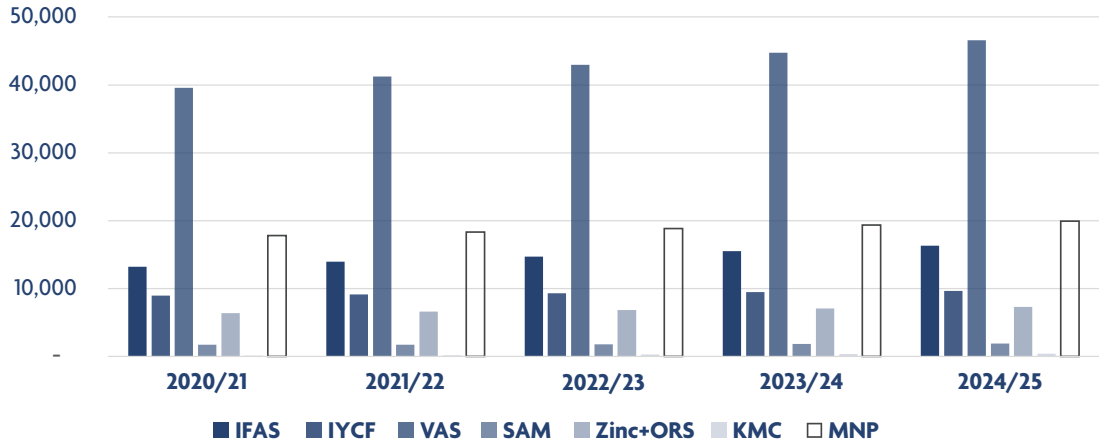


THE HEALTH AND ECONOMIC BENEFITS OF INVESTING IN NUTRITION

INTERVENTION REACH

The preventative high-impact nutrition interventions within the CNAP will reach an average of 89,319 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



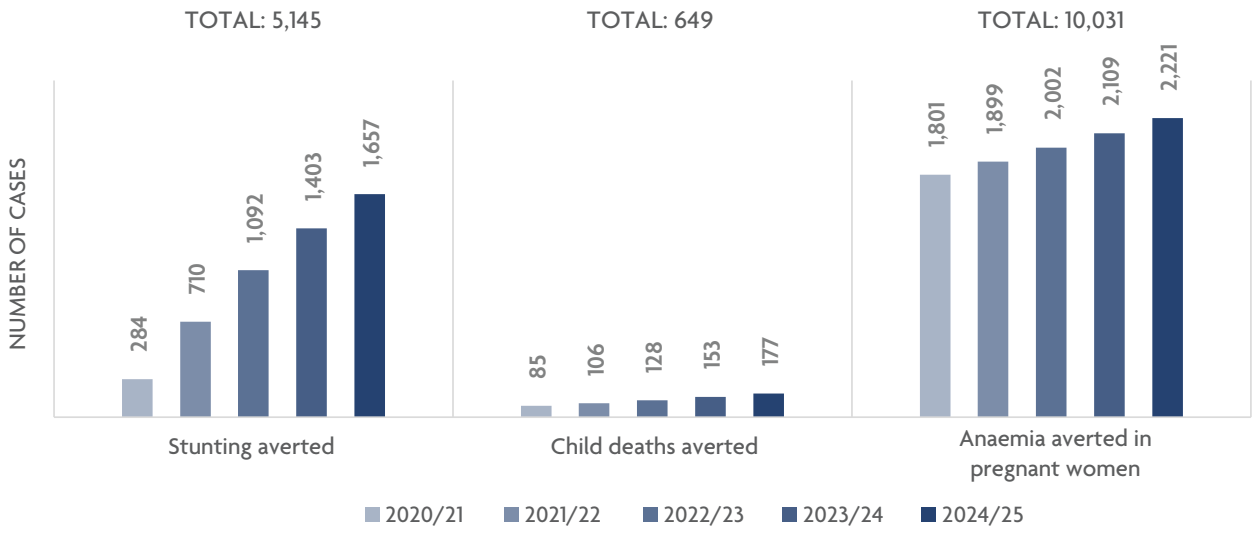
Intervention	Total reach over five years
IFAS	80,178
IYCF	46,544
VAS	215,140
SAM	9,004
KMC	1,475
MNP	94,256

HEALTH IMPACTS

Nutrition interventions within the Embu 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 5,218 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 10,031 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 55%. In addition, the interventions are projected to result in 1,390 cases of wasting averted, which will reduce the prevalence of wasting in children under five by 60%.

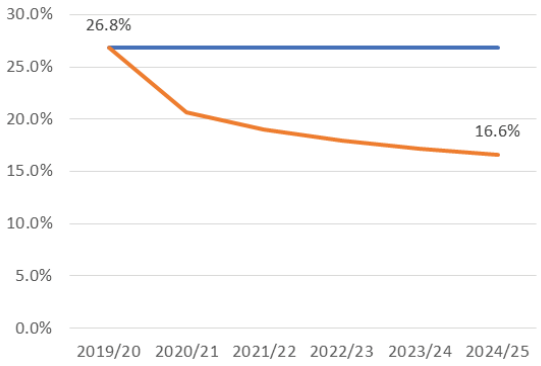
Overall, the interventions are projected to result in 545 child deaths averted. The sum of these health impacts results in a potential 37,497 Disability Adjusted Life-Years (DALYs)[3] averted. In addition to the health impact, these interventions will lead to cognitive and human capital impacts over time such as increased IQ and educational attainment.

HEALTH IMPACTS OF HIGH-IMPACT INTERVENTIONS

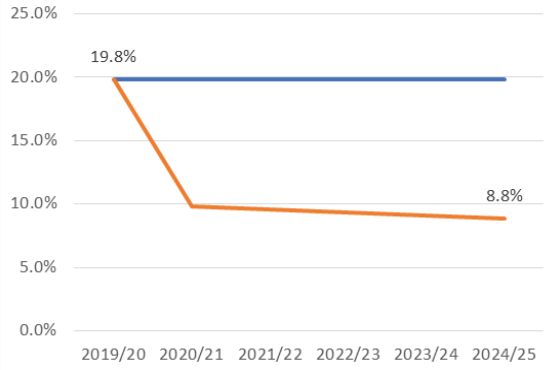


[3] A Disability-Adjusted Life-Year (DALY) averted can be thought as one lost year of "healthy" life.

Prevalence of Stunting in Children



Prevalence of Iron Deficiency Anaemia in Pregnant Women



The CNAP is projected to contribute a relative reduction of 38% in the prevalence of stunting, and of 55% 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 Embu CNAP are highly cost-effective. It is estimated that the cost per case of stunting in children is KSh 130,737 (US $1,255.16). Additionally, the cost per case of anaemia averted in pregnancy is projected to be KSh 1,408 (US $13.52) 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 21,954 (US $211) per DALY averted. Using a Value of Statistical Life-Year for Kenya, the Embu CNAP is also estimated to yield a benefit-cost ratio of 16:1 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

KSH21,954

(US $211)

BENEFIT-COST RATIO

16:1

RECOMMENDATIONS

Recommendation 1:

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

To accelerate and scale up efforts towards the elimination of malnutrition as a public health problem, Embu County government must make adequate budget allocations to nutrition. The resources needed to implement prioritized intervention as reflected in the Embu CNAP require consistent resources allocation by the government for the next five years. Inclusion of a line item on nutrition in the county government budget will be critical to showing the direct investment that the county is making in nutrition programming. This analysis shows there are huge (benefit-cost ratio 16:1) economics benefits that will be realized with optimized investments in nutrition programs in the county, and therefore there is a strong case for a call to harness both domestic and external resources and to direct them to these high impact nutrition interventions.

Recommendation 2:

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 Embu 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 great 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).

Recommendation 3:

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, Embu 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.

Recommendation 4:

Enhance governance and coordination of nutrition interventions at county level.

To realize optimal benefits in nutrition investment, there in need to promote a multisectoral approach and encourage cross-sectoral collaboration to address the social determinants of malnutrition to ensure optimal nutrition for citizens of Embu County. Additionally, political commitment has been noted as a key driver in advancing plans and an essential element in prioritizing the fight against under nutrition. The nutrition stakeholders in Embu County are encouraged to promote continued advocacy and meaningful communication with people (particularly in leadership positions) previously not familiar with nutrition issues to rally them to support nutrition initiatives. Sustained commitment will be required to address the complex and long-term challenges in the actual implementation of scale up plans.