

# Policy Brief

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## A Framework for Harmonizing Nutrition Indicators in Kenya

### Highlights of Findings

Improved nutrition is a core development goal for Kenya and has been prioritized in successive commitments such as the Sustainable Development Goals (SDGs, 2030) and Constitution of Kenya (2010). This policy brief provides the harmonized indicators framework that can be adopted for monitoring nutrition outcomes in Kenya.

The key highlights include:

- (i) There are numerous nutrition-specific and sensitive indicators being tracked by different agencies across diverse sectors in Kenya. The harmonization of these indicators is crucial for effective assessment, surveillance and monitoring of nutrition in a coordinated manner across existing systems in Kenya.
- (ii) The prioritized nutrition indicators are related to the health sector (57), agriculture sector (27), arid and semi-arid lands under the National Drought Management Authority (NDMA) (17), water sector (16), education sector (7) and social protection (6).
- (iii) Some nutrition indicators have been poorly defined and therefore not specific, measurable, attainable, relevant and timely (SMART).
- (iv) Regular review and monitoring of the harmonized indicators to cater for any emerging contexts is critical.

### 1 Introduction

Improved nutrition is a core development goal for Kenya and has been prioritized in successive national commitments such as Scaling Up Nutrition (SUN) Movement, the World Health Assembly (WHA) 2025 nutrition targets, the Sustainable Development Goals (SDGs), the United Nations (UN) Decade of Action on Nutrition (2016-2025); the Constitution of Kenya, National Development Plans backed up by National and County-level Nutrition Action Plans. Development commitments need to be assessed and evaluated periodically to determine the progress being made in achievement of the same.

Nutrition is a multi-dimensional aspect in nature and nutrition-related decisions are mostly taken and implemented within a multi-sectoral set-up. Subsequently, sources of available

nutrition data and indicators to assess progress are mostly multi-sectoral in nature. This has led to many indicators being used across relevant sectors.

These indicators are spread among various institutions with direct or indirect link with nutrition, presenting decision makers and planners with challenges in making a judicious choice of the best and representative among the indicators.

Further, sectors tend to collect large amounts of individual data for purposes of constructing indicators. Subsequently, it has been observed that not all the data collected is converted into indicators in addition to issues of quality relating to data collection protocols.

All these inefficiencies limit the utility of existing and future indicators in ascertaining the overall nutrition situation in a country. One step towards improving harmony in nutrition indicators quality, monitoring and evaluating nutrition situation is auditing and vetting indicators across the nutrition action space.

This policy brief is based on the KIPPRA-KNBS study conducted under the National Information Platform for Food and Nutrition (NIPFN) Project that aimed to verify the status of nutrition indicators in Kenya (Kihiu, et al, 2023). The objective of the policy brief is to map out all the nutrition indicators currently being tracked by main stakeholders, with an aim of assessing the relevance, accuracy and adequacy of the same.

The approach engaged technical representatives across sectors in the collection and compilation of nutrition indicators. The same were later subjected to a systematic vetting process, following established methodologies and criteria of indicators.

## **2 Criteria and Framework for Nutrition Indicators**

### **2.1 Criteria for nutrition indicator selection**

Kenya has made several domestic and international commitments to improve the population's nutrition conditions. Due to the multi-sectoral nature of nutrition, the mandate over the commitments falls across at least six sectors. Each sector or agency responsible for certain aspects of nutrition has been tracking the achievement of the national commitments using separate indicators largely relevant to their mandate, without regard to synergies and duplication in efforts. This phenomenon has been observed to render inefficiencies and uncertainties over the measurement of indicators, contributing to uncertainties over the actual achievements made towards certain commitments.

Redundancy of some indicators observed within a sector implies lack of regular review and non-optimal use of resources. Across sectors, there was duplication of efforts in tracking similar indicators, which can be eliminated through harmonization and centralization of nutrition indicators and data sharing. This policy brief presents the findings and recommendations from an assessment of existing nutrition indicators and an attempt to harmonize the same.

The analysis utilized a multi-sectoral expert approach to map and harmonize nutrition indicators per sector and institution by reviewing nutrition-sensitive indicators, strategies and programmes. The process of developing the nutrition indicators harmonization framework

involved collection of views on indicator mapping, ranking, evaluation and prioritization based on expert advice while obtaining consensus on the final key indicators.

The experts were drawn from relevant sectors, notably the Kenya National Bureau of Statistics (KNBS), Ministry of Agriculture and Livestock, Ministry of Health, Ministry of Water and Irrigation and the Kenya Institute for Public Policy Research and Analysis (KIPPRA). The experts applied the indicator selection criteria as demonstrated by Garnica Rosas et al. (2021) and adapted them with modifications. The criterion was based on the principals of relevance, actionability, meaningfulness and usability, accuracy, feasibility, timeliness and international comparability of the indicators. The criteria was also applied by the experts to ensure the selected nutrition sensitive indicators for monitoring and evaluation purposes meet important threshold. Table 1 presents the criteria.

**Table 1: Criteria for nutrition indicator selection**

	Indicator Criteria	Description
1	The indicator is relevant	The indicator is clearly relevant to policy evaluation of malnutrition prevention and/or is a plausible proxy for the underlying measure.
2	The indicator is actionable	The indicator provides information that can lead to action for change; inform and influence policies. It is actionable regarding the nutrition case studies.
3	The indicator is meaningful and usable	The information must be easy to understand, relevant for governments plans and priorities and useful for public health action (e.g. targets population groups that are likely more affected).
4	The indicator is accurate	Scientific soundness: The scientific evidence supporting a link between the performance of an indicator and malnutrition prevention is strong.
		Validity: The indicator appears reasonable as a measure of what it is intended to measure (face validity) and the components of the indicator make sense (construct validity).
		Reliability: The same results can be obtained if measurements are repeated under identical conditions.
5	The indicator is feasible/efficient	Sufficient good quality data are already available and accessible, or data collection can be put in place at relatively low costs.
6	The indicator is ongoing	Data can be regularly collected and compared over time.
7	The indicator is internationally comparable	The indicator is clearly relevant to different cultural settings and regions and not entirely national context bound.
		The information can be harmonized across all EAC member states.

Source: Adapted from Garnica Rosas et al. (2021) with modifications by the authors

## 2.2 The Framework of Harmonized Nutrition Indicators

There is a total of 178 nutrition-specific and sensitive indicators being tracked by different agencies across different sectors in Kenya up to 2020. However, after careful evaluation of each of these indicators by the sector, the indicators that were prioritized for future use

were only 130, of which 57 related to the health sector, 27 to agriculture, 16 to water, 6 to social protection, 17 to NDMA and 7 to the education sector. While selection of indicators was achieved by rating scores, the subsequent process of identifying indicators with highest priority was achieved through experts' consensus in a face-to-face discussion.

The process also included discussions to harmonize indicators, and this was achieved through: merging comparable indicators; standardization through rephrasing indicators to minimize differences in common indicators across sectors; aligning them to existing relevant frameworks; and stratification of policy related indicators by age and sex to assess nutrition outcome differences across different demographic groups and gender.

Table 2 presents the final list of nutrition sensitive indicators that is suitable for easy and standardized assessment of nutrition status and monitoring of progress overtime against targets in a harmonized manner.

**Table 2: Selected and prioritized nutrition sensitive indicators per related sector**

Sector/Indicator
Health
1. The percentage of children under the age of 5 years who are wasted (Moderate acute malnutrition). Weight for height z-score(-2sd)
2. Percentage of stunted (moderate and severe) children aged 0–59 months
3. Percentage of children aged under 5 years who are overweight (obese)
4. Percentage of underweight 0-59 months (<-2 z-score)
5. Percentage of children with: (moderate/severe/acute malnutrition receiving therapeutic treatment
6. Prevalence of acute malnutrition (MUAC)<210MM PLW
7. Prevalence of diarrhea among under 5 years children
8. Percentage consumption of iron-rich foods among children
9. Proportion of households with latrines or population using improved sanitation facilities (per cent)
10. Percentage of population with BMI <18.5, >25 & >30 – Cohorts
11. Food consumption score
12. Minimum acceptable diet
13. Minimum meal frequency
14. Minimum dietary diversity – Children
15. Proportion of population with access to safe water
16. Prevalence of iodine deficiency in the population (Cohort) (per cent)
17. Early initiation of breastfeeding
18. Exclusive breastfeeding under 6 months

19. Children under 5 years with diarrhea receiving Oral Rehydration Solution (ORS) and zinc.
20. Percentage of pregnant women consuming Iron/Folic Acid (IFA) supplement
21. Infant and young child feeding index
22. Incidence of low birth weight among new-borns
23. Consumption of vitamin A-rich foods among children
24. Prevalence of iron deficiency in the population (Cohorts)
25. Children aged 6–59 months who received vitamin A supplementation ( per cent)
26. Women dietary diversity score
27. Minimum dietary diversity – Women
28. Vitamin A deficiency in the population (Cohorts)
29. Compliance of fortified maize flour to fortification standards
30. Prevalence of undernourishment
31. Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)
32. Prevalence of zinc deficiency in the population (Cohorts)
33. Percentage of households using adequately iodized salt
34. Consumption of iron-rich foods among pregnant and lactating women
35. Household hunger scale
36. Prevalence of anaemia in pregnant women (Hb<11g/dl)
37. Prevalence of anaemia among the population (cohorts)
38. Compliance of fortified wheat flour to fortification standards
39. Compliance of fortified fats/oils to fortification standards
40. Unhealthy food consumption by children
41. Coping strategy index
42. Prevalence of folate deficiency among women of reproductive age
43. Proportion of population with raised blood pressure or currently on medication
44. Continued breastfeeding 12-23 months
45. Percentage of children aged 12-59 months correctly de-wormed twice in the year
46. Percentage of school children correctly de-wormed at least once in the year
47. Cure/recovery rate per cent of children discharged from the treatment programme as successfully recovered
48. Death rate per cent of children who died from any cause while registered in the treatment programme
49. Proportion of adults - women and men with normal waist:hip ratio (%)
50. Percentage of under 5 years children consuming multiple micronutrient powder

51. Proportion of men with normal waist:hip ratio (per cent)
52. Introduction of solid, semi-solid or soft foods
53. Mean intake of sodium salt (g/day)
54. Prevalence of insufficient physical activity in adults 18–64 years of age (percent)
55. Defaulter rate per cent of children who were absent for two consecutive weightings
56. Percentage of caregivers receiving nutrition counselling
57. Individual dietary diversity score

Water
1. The percentage of children under the age of 5 years who are wasted (Moderate acute malnutrition). Weight for height z-score (-2sd)
2. Percentage of population using basic drinking water service (disaggregated by national, urban, rural)
3. Percentage of population using safely managed sanitation services
4. Percentage of population using safely managed drinking water services (disaggregated by national, urban, rural)
5. Percentage of population using basic sanitation services
6. Customers connections to sewerage
7. Percentage of utilities meeting drinking water quality standards
8. Time and distance to water source
9. Customers connections to water supply
10. Population practising irrigation agriculture
11. Area under irrigation
12. Hours of water supply (hrs/day) - WASREB
13. Proportion of waste water safely treated - GAP
14. Percentage of population using limited drinking water service (disaggregated by national, urban, rural)
15. Yield in Irrigated area (rice, potatoes, maize, fish, horticulture, cotton, fodder)
16. Distance to water source

Agriculture
1. Food Insecurity Experience Scale (FIES)
2. MDD-W (Minimum Dietary Diversity (women of reproductive age and young children 6-59 months)
3. Household Dietary Diversity Score (HDDS)
4. Diversity of foods produced on-farm

5. Vitamin A-rich food consumption
6. Iron-rich food consumption
7. Food Consumption Score (FCS)
8. Food Prices
9. Cost of a healthy diet
10. Consumption of specific target foods
11. Production volume, by value chain i.e., for crops, livestock, fish
12. Proportion of Agricultural area under productive and sustainable agriculture - Data GAP
13. Individual consumption of 400g fruits and vegetables per day
14. Coping Strategies Index (CSI)
15. Post-harvest losses (crops, livestock products and fish)
16. Number of SMEs engaged in agricultural food processing and distribution
17. Women's time use and labour - Gap Area
18. Women's Empowerment in Agriculture Index (WEAI)
19. Asset ownership by gender
20. Value of agriculture produce marketed
21. Self-sufficiency ratio
22. Food price volatility/food CPI (Proxy)
23. Import dependency ratio
24. Per Caput Daily Supply
25. Per Caput Calorific Daily Supply
26. Quantity of agricultural produce marketed (food crops + milk + eggs + fish)
27. Indicator of nutrition and food safety-related knowledge - GAP (Implementation of GAP for food safety) - Indicator is very key but at the moment the indicator has not been identified. What is available is an area of interest.

Education
1. Number and percentage of learners in school meals programme (By type of programme)
2. Educational attainment of household population: Females/males
3. Quantity of food commodities released from stores per school
4. Attendance rates (gender disaggregated)
5. Enrolment rates (gender disaggregated)
6. Proportion of primary schools providing deworming services to children ages 6-14 years
7. Proportion of primary and secondary schools with functional school gardens - GAP

Social Protection
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1. Number of beneficiaries receiving nutrition-sensitive cash transfer (disaggregated by gender)
2. Number of HH receiving nutrition- sensitive cash transfer top ups
3. Number of NICHE beneficiaries receiving nutrition-counselling
4. Number of households receiving GoK cash transfer programmes after every 2 months (CT-OVC, OPCT, PWSD-CT, HSNP)
5. Number of beneficiaries receiving GoK cash transfer programmes after every 2 months (disaggregated by gender) (CT-OVC, OPCT, PWSD-CT, HSNP)
6. Proportion of population covered by social protection programmes

ASALS (Under National Droughts Management Authority, NDMA)
1. Food Consumption Score (FCS)
2. Population in need of food assistance
3. Rainfall Performance
4. Number of cash transfer beneficiaries under regular and emergency (HSNP)
5. Household milk production
6. Household milk consumption (Ltr)
7. Distance to household drinking water source (km)
8. Proportion of under 5 years children at risk of malnutrition (MUAC)
9. Maize prices (ASAL)
10. Pasture and browse conditions
11. Goat prices
12. Reduced Coping Strategy Index (RCSI)
13. Livestock body condition- PET methodology
14. Vegetation condition index
15. Livestock deaths (for drought)
16. Terms of Trade (ToT)
17. Livestock migration pattern

Source: Compiled by authors

The selected indicators confirm the role of agriculture in provision of adequate food of good quality and that of water and sanitation services make the related sectors important in the nutrition monitoring ecosystem.

### 2.3 Challenges Encountered During Harmonization of Nutrition Indicators

Some nutrition indicators were observed to have been poorly defined and therefore not specific,



measurable, attainable, relevant and timely (SMART). In some of the instances, what had been identified as indicators by sectors represented broad areas of interest to have indicators on rather than specified indicators. This affected the indicators related to the education sector.

Further, the country has limited data on some indicators, which constrains their usability and monitoring. There was insufficient data for some of the priority indicators hence limiting their usability. Another challenge experienced during the process of developing the harmonized indicators framework for monitoring nutrition indicators was lack of a framework for the review of the indicators, despite observed changes in data availability relating to some indicators. The analysis indicated that there is no multi-sectoral platform or framework for designing and data verification of nutrition indicators, going against best practices. Stakeholders currently follow only acceptable methodologies within their sphere of interest and influence, leading to a lack of harmony in indicator data and methodology. Moreover, there were common indicators of interest across various sectors/organizations leading to duplication of efforts in measuring status of nutrition in the Country.

### 3 Policy Recommendations

- (i) Establish a coordinated and harmonized framework to guide regular (quarter, semi-annual, or annual) reviews and monitoring of the prioritized nutrition indicators to cater for any emerging contexts and broadening the sectors to include all other emerging relevant sectors that might have implications on nutrition and include all relevant categories of experts, including medical professionals.
- (ii) Regularly improve the existing list of nutrition indicators to enhance quality of the harmonized indicators, validation of novel indicators, and serve as a sharing platform for experiences gained in the use of nutrition surveillance and monitoring systems.
- (iii) The ministry in charge of nutrition to develop indicators glossary listing all the harmonized indicators and indicating how they are computed.
- (iv) In addition, encourage collaboration among sectors and institutions in the nutrition space and promote data pooling and access to enhance nutrition surveillance and monitoring systems. This will also require investing in granular nutrition data collection and skills development in nutrition monitoring.
- (v) The Kenya National Bureau of Statistics with support from relevant ministries and agencies to establish and maintain a unified nutrition information platform to accommodate automation in data and annual indicator updates based on data availability. This includes establishing and institutionalising a technical committee, affiliated to the national nutrition platform, at national and county levels, with continuity in representation to ensure sustainability of the platform both at national and local levels in the long term.

### References

Garnica Rosas, L. Mensink, G. Finger, J. Schienkiewitz, A. Do, S. Wolters, M. and Hebestreit, A. (2021), "Selection of key indicators for European policy monitoring and surveillance for dietary behaviour, physical activity and sedentary behaviour". *International Journal of Behavioral Nutrition and Physical Activity*, 18(1), pp. 1-18.

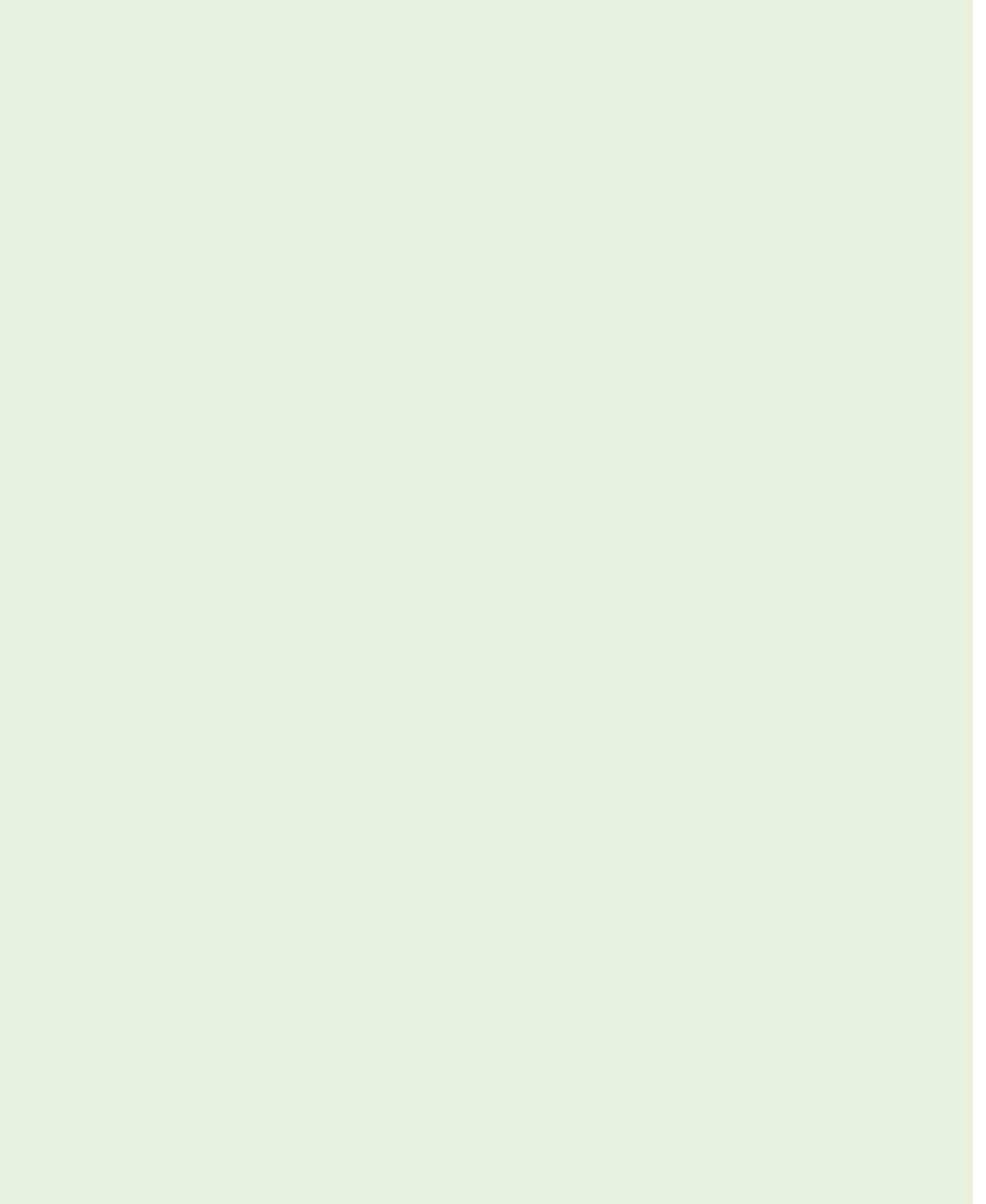
Kihiu, E. Laibuni, N. Gathuru, A. Maina, L. Kipruto, S. Njeri, M. and Murage, S. (Forthcoming), Mapping and harmonization of nutrition-sensitive indicators across sectors to facilitate food and nutrition security Monitoring and Evaluation (M&E) processes. Nairobi: Kenya Institute for Public Policy Research and Analysis / Kenya National Bureau of Statistics.

World Health Organization (2014), Indicators for the global monitoring framework on maternal, infant and young child nutrition (24 November 2014).

World Health Organization (WHO) and United Nations Children's Fund (UNICEF) (2020), Use of Nutrition Data in Decision Making: A Review Paper. Nutrition and Food Safety, WHO/UNICEF Technical expert advisory group on nutrition monitoring (TEAM). Available at:<https://www.who.int/publications/m/item/use-of-nutrition-data-in-decisionmaking-a-review-paper>.

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