NUTRITION

IN THE WHO AFRICAN REGION

World Health Organization
REGIONAL OFFICE FOR Africa

NUTRITION

IN THE WHO AFRICAN REGION

WORLD HEALTH ORGANIZATION
Regional Office for Africa
Brazzaville•2017

NUTRITION IN THE WHO AFRICAN REGION

ISBN: 978-929023391-6

Suggested citation. Nutrition in the WHO African Region. Brazzaville: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Layout and Printing by TIP/AFRO

CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACKNOWLEDGEMENTS

This report is an output of the project *Accelerating Nutrition Improvements in sub-Saharan Africa*, which was carried out in 11 countries with funding from Global Affairs Canada.

Adelheid W. Onyango (WHO Regional Office for Africa) for conceptualizing the report and leading its writing and revision; Laetitia Ouedraogo Nikiema (Consultant) for conducting the desk research, compiling, verifying and analysing data, summarizing survey reports and producing graphs; Sebastian Zielinski (Editor) for preparing the first draft of the report; Hana Bekele (WHO Inter-country Support Team, Eastern and Southern Africa), Ferima Coulibaly-Zerbo, and Elisa Dominguez (WHO Intercountry Support Team, West Africa) for in-depth reviews; Kaia Engesveen (WHO headquarters) for advice on how to extract, analyse and present data from the Global database on the implementation of nutrition action, and integrating results from the Second global policy review survey into this report; Monika Blössner (WHO headquarters) for providing child growth data tables; Anaclet Nganga Koubemba (WHO Regional Office for Africa) for producing maps; Etienne Minkoulou for providing information related to the Real-time strategic information system (rSiS); Mercedes de Onis (WHO headquarters) for a comprehensive review and detailed comments on the first draft; Kuntal Saha (WHO headquarters) for updates on operationalization of some of the global nutrition monitoring framework indicators; and nutrition focal points in the country offices of the WHO African Region for facilitating data verification with their respective ministries of health.

ABBREVIATIONS AND ACRONYMS

AFRO	World Health Organization Regional Office for Africa
AHO	African Health Observatory
ANI	Accelerating Nutrition Improvements in Sub-Saharan Africa
ARI	Acute respiratory infection
DHIS	District Health Information System 2 (DHIS 2)
DHS	Demographic and health surveys
GAM	Global acute malnutrition
GHO	Global Health Observatory
GINA	Global database on the implementation of nutrition action
GNMF	Global nutrition monitoring framework
GSHS	WHO Global school health survey
HMIS	Health management information systems
IDSR	Integrated disease surveillance and response
IST	Inter-country Support Team
MAM	Moderate acute malnutrition
rSiS	Real-time strategic information system
ITN	Insecticide-treated nets
LBW	Low birth weight
MICS	Multiple indicator cluster surveys
MIS	Malaria indicator surveys
MIYCN	Maternal, infant and young child nutrition
MUAC	Mid-upper arm circumference
NCD	Noncommunicable disease
NGOs	Nongovernmental organizations
NLiS	The WHO Nutrition landscape information system
NMG	Nutrition, markets and gender survey in Rwanda
ORS	Oral rehydration salts
PRSP	Poverty Reduction Strategy Paper
RMNCH	Reproductive, maternal, newborn, and child health
SAM	Severe acute malnutrition
SMART	Standardized monitoring and assessment of relief and transitions (survey methodology)
SMART	Specific, measurable, achievable, relevant, and time-bound (targets)
SUN	Scaling up nutrition

TEAM	WHO-UNICEF Technical Expert Advisory Group on Nutrition Monitoring
UNDAF	United Nations Development Assistance Framework
WBTi	World breastfeeding trends initiative
WHA	World Health Assembly
WHO	World Health Organization

FOREWORD

The Transformation Agenda of the Secretariat of the WHO African Region (2015–2020) encapsulates the vision and strategy that we proposed for our collaboration with Member States to improve the effectiveness, timeliness and efficiency of actions that will help us achieve positive results.

This first report on nutrition in the WHO African Region is in alignment with strengthening the culture of evaluation which is integral to the first focus area of the Transformation Agenda, namely, *Pro-results values.* Investing in nutrition is an important contribution to Universal Health Coverage because nutritional well-being underpins resistance to infectious diseases. It also reduces the risk of noncommunicable diseases, thus decreasing requirements in terms of curative services, medical equipment, supplies, and medicines.

The report presents the profile of nutrition in relation to six global targets that Member States have committed to achieve by 2025. It shows that we need to work harder if the Region is to reverse the increase in the number of stunted children and those becoming overweight. Only in so doing can we minimize both the long-term consequences of human capital under-development and the increased risk of diet-related noncommunicable diseases. With recurrent humanitarian crises of various origins in the Region, acute malnutrition is a persistent and direct contributor to high mortality rates. Anaemia in women of reproductive age undermines their health and productivity, in addition to increasing the risk of poor pregnancy outcomes, maternal mortality, and sub-optimal capacity to breastfeed and care for their newborns, infants and young children.

A World Health Assembly resolution was adopted in 2015 calling on Member States to report biennially on progress being made towards the global nutrition targets for 2025, and intermediate factors on pathways to the primary outcomes. This report shows that "current" nutrition status data available for most countries in the Region are more than five years old, and the use of routine data for nutrition monitoring is extremely limited. Existing information platforms in which nutrition data from routine health services could be integrated have been identified through an 11-country project, *Accelerating Nutrition Improvements in sub-Saharan Africa*, which was funded by Global Affairs Canada. The Secretariat is committed to providing tools and collaborating with countries to strengthen information systems and build the capacity required to measure, monitor, take action, and report on nutritional status in the WHO African Region.

Dr Matshidiso R. Moeti
WHO Regional Director for Africa

EXECUTIVE SUMMARY

Nutrition is recognized as a key determinant of health and well-being, and a contributor to human capital development. Optimal physical growth and cognitive development are founded on maternal and child nutrition in the first 1000 days, with long-term health and economic implications for individuals and nations. In recognition of this, a comprehensive implementation plan on maternal, infant and young child nutrition (MIYCN) was adopted in 2012 by the Sixty-fifth World Health Assembly where Member States committed to achieve, by 2025, six global targets related to maternal, infant and young child nutrition.

Achievement of the targets will depend on efforts made by each country to set national targets after taking stock of its baseline status on each of the six outcomes, country-specific influencers of malnutrition, and the resources available to invest in actions to improve maternal and child nutrition. As requested by the Assembly, the WHO Secretariat developed a global nutrition monitoring framework made up of 20 core indicators (six primary outcome indicators, five intermediate outcome indicators, six process indicators, and three policy environment indicators) on which countries will report biennially.

This report explores the current nutrition status of countries in the WHO African Region in relation to the six primary outcomes achievable by 2025 and the other global nutrition monitoring framework indicators. The aim is to highlight where action is needed to drive progress on the global targets for 2025 and Sustainable Development Goal No. 2 that calls on countries to end hunger through achieving food security, improving nutrition and promoting sustainable agriculture.

A complementary objective of the report was to evaluate existing data sources that countries use to monitor programme performance and track progress on the global targets. The report also aims to trigger reflection by governments and their development partners on the investments needed to build capacity and strengthen systems for data collection and utilization. Information from such data can guide policy decisions, programmatic action and performance monitoring, and can provide the basis for progress reports to the Health Assembly and other international accountability forums.

WHO, in collaboration with the European Union and UNICEF, has developed a web-based interactive tracking tool that enables countries to set and monitor national targets aligned with the global nutrition targets for 2025. The tool uses information on nutrition trends, current status, demography, available resources, and time left to 2025, to project trends and estimate the efforts required to achieve each target.

For this report, it is observed that “current” status in the Region is defined by data from population-based surveys that took place at various intervals from country to country. For example, the most recent surveys for two countries predate 2000, and for 27 others, the data were at least five years old. This is a limitation to bear in mind when making projections on the likelihood of achieving the global nutrition targets.

A key finding in this report is that undernutrition is still persistent in the WHO African Region, with major implications for health, particularly among poor and vulnerable population groups. Twenty-five of the Region's 47 countries have high (>30%) or very high (>40%) rates of stunting. In fact, analysis of trends shows that these rates are rising, instead of falling so as to meet the target of reducing the number of stunted children by 40%. Only 17 countries have "acceptable" levels of wasting (<5%). It seems clear that persistent drought, famine, flooding, and civil crises will make it difficult for many countries to achieve the target of reducing and maintaining wasting at less than 5%.

Trend data are not available to monitor progress on the target of reducing the incidence of low birth weight (LBW) by 30%. Twenty-six of the countries with data have LBW rates in excess of 10%. This seems to be an underestimation of the burden since population groups with high socioeconomic status are more likely to deliver in maternity facilities where birth weight is measured, compared to groups with lower socioeconomic status who often deliver at home and are more likely to have babies with low birth weight.

Along with persistent undernutrition, the prevalence of overweight among children under 5 years of age (as well as the overall number of children affected) is rising, whereas the target is to halt its increase. Available data for anaemia in women of reproductive age show high prevalence in many west African countries (the target is to reduce anaemia in this group by 50%). With regard to breastfeeding, only about one third of countries in the Region have already attained the 50% exclusive breastfeeding threshold. Moreover, changes in lifestyle, coupled with weak regulatory measures for breastfeeding protection pose a risk to the attainment and maintenance of the targeted minimum rate of 50%. In sum, a lot remains to be done to achieve global nutrition targets for 2025.

In order for countries to report comprehensively on all the core indicators, it will be necessary to develop intersectoral data platforms and analytical algorithms to show linkages among the intermediate, process and policy environment indicators and the primary outcomes. This requires collaboration between the health sector and other sectors responsible for nutrition-sensitive programmes such as agriculture, education, social welfare, water and sanitation, labour, and trade. Multisectoral efforts in this regard are already taking place, notably through the Scaling up nutrition (SUN) movement to which the majority of countries in the African Region adhere.

In the absence of survey data, properly functioning routine surveillance systems could provide invaluable real-time information for decision making in policy and programme design and implementation. The project *Accelerating Nutrition Improvements in sub-Saharan Africa (ANI),* funded by Global Affairs Canada, was implemented with WHO's technical assistance in 11 countries. The objective of ANI was to strengthen nutrition surveillance. This involved reviewing the structure and functioning of existing information systems; defining nutrition indicators for inclusion; revising or developing data collection tools; and building capacity to collect, analyse and use data to inform action at service delivery and programme management levels. By the end of the project, the countries had incorporated between two and five indicators (out of the six MIYCN primary outcomes) into their national health management information systems.

Sustainability and success in the long term will depend on continuing government leadership and the support of many partners in nutrition surveillance, and stakeholder appreciation of the importance of using information to shape programme decisions. A lot more time and resource investments are required to ensure that the systems continue to run, that they are scaled up (most countries worked only in pilot districts), and that data quality is improved.

The WHO Regional Office for Africa is working with countries on various initiatives involving aggregation of data at regional level. Integrating nutrition data into such systems would create a platform for standardizing how nutrition indicators are defined, measured, analysed and reported. It would improve inter-country knowledge-sharing on data collection and management approaches and systems. Furthermore, it would provide a basis for inter-country comparisons of nutritional status and, ultimately, help standardize reporting on internationally agreed targets at regional and global forums.

Integrated disease surveillance and response systems, the Joint Reporting Form on immunization, and reproductive, maternal, newborn and child health scorecards demonstrate how inter-country agreement on standard reporting can provide a foundation for regional data aggregation and standardized monitoring of performance.

When committing to work towards the six global nutrition targets for 2025, WHO Member States requested the Secretariat to develop a monitoring framework to guide their efforts in addressing the challenge of malnutrition. This report is a contribution to the Secretariat's commitment to support countries as they take stock of progress so far, and consider ways and means of improving programming, monitoring, evaluation, and reporting on internationally agreed targets in maternal, infant and young child nutrition. The question is, are governments and development partners in the WHO African Region willing to invest in strengthening systems and building the capacity required to measure, monitor, take action, and report on their population's nutritional status?

1. INTRODUCTION

1.1 BACKGROUND AND PURPOSE

In 2012, the Sixty-fifth World Health Assembly (WHA) endorsed the comprehensive implementation plan on maternal, infant and young child nutrition (MIYCN),[1] which comprises six global targets[1] to be achieved by 2025, and five corresponding actions (resolution WHA65.6). Action 5 calls for the development of a well-defined monitoring framework to facilitate a harmonized and internationally accepted approach to monitoring progress towards nutrition targets. The framework is meant to inform the design of nutrition surveillance systems in countries, facilitate reporting on the global burden of malnutrition, and help define the actions that need to be taken to give practical effect to the MIYCN comprehensive implementation plan.

The WHO Secretariat used a consultative process to identify indicators for the Global nutrition monitoring framework (GNMF). This resulted in the selection of 20 *core* indicators[2] for application in all countries, and 16 *additional* indicators for countries to select from based on their specific epidemiological patterns and the actions implemented in response to their priority nutrition challenges (Appendix 1). The Sixty-seventh World Health Assembly (2015) approved the GNMF and recommended that Member States report on all the core indicators, beginning in 2016 with 16 of them. The Secretariat will work on operationalizing, refining and validating the remaining four so that countries begin reporting on them in 2018.[3] A joint WHO-UNICEF Technical Expert Advisory Group on Nutrition Monitoring (TEAM) was, therefore, set up in 2015 to provide guidance not only on the operationalization of the indicators, but also on other matters related to the global nutrition monitoring framework. Developing operational definitions for the four delayed indicators was among the first tasks that TEAM undertook. The latter group would also provide ongoing advice on standardization of measurement, reporting, and future refinement of indicators and methods as needed.

In an effort to facilitate reporting on the status of nutrition and the policy response in countries, WHO, with a grant from the Government of Canada, has been working with 11 African countries,[4] under the *Accelerating nutrition improvements (ANI) in sub-Saharan Africa* project, to strengthen nutrition surveillance and scale up nutrition interventions. Some of the lessons learnt from the project will be highlighted in this report.

---

1 Reduce by 40% the number of stunted children under-5; reduce anaemia in women of reproductive age by 50%; reduce the incidence of low birth weight by 30%; halt increase in under-5 overweight; increase the rate of exclusive breastfeeding under age 6 months to at least 50%, and reduce to and maintain under-5 wasting at below 5%.

2 These include the *six* MIYCN global targets as primary nutrition outcomes; *five* intermediate outcome indicators that will monitor how specific diseases and conditions on the causal pathways affect countries' trends towards the six targets; *six* process indicators that monitor programme and situation-specific progress; and *three* policy environment and capacity indicators that measure countries' political commitment and their capacities to implement nutrition interventions.

3 The four "delayed" indicators were minimum acceptable diet, iron and folic acid supplementation, breastfeeding counselling and the presence of trained nutrition professionals.

4 Burkina Faso, Ethiopia, Mali, Mozambique, Rwanda, Senegal, Sierra Leone, Tanzania, Uganda, Zambia, and Zimbabwe.

As a first objective, the report aims to show where countries in the WHO African Region are in relation to both the six global targets for 2025 and the intermediate outcomes. It will also cover the process and policy environment indicators that, together, highlight where action is needed to drive progress on the targets. The second objective is to trigger reflection on the following questions:

(a) What data are available for individual countries to track progress on the various indicators and outcomes?

(b) Are countries in the African Region ready for the requested biennial reporting to the World Health Assembly on the global nutrition monitoring framework?

(c) Considering the great value of having real-time data for sound programme planning and management, are countries in the Region, and their development partners, willing to invest in strengthening capacity for nutrition surveillance and monitoring?

1.2 Data sources for the report

The main sources of the data presented in the report are WHO and UN agency databases which, in turn, rely on surveys as their primary sources: Demographic and health surveys (DHS), Multiple indicator cluster surveys (MICS), and Standardized monitoring and assessment of relief and transitions (SMART) surveys. Joint Malnutrition Estimates published annually by UNICEF, WHO and the World Bank are the main reference for global and region-specific trends in child malnutrition. They also provide estimates on childhood stunting, wasting and overweight. Information on indicators that are not collected in routine surveys was obtained from modelled estimates available from public sources (for example, the Global Health Observatory), status reports, and reviews (such as Marketing of breast-milk substitutes: national implementation of the international code; and the WHO Global nutrition policy review). Although nutrition data are available in some countries through routine data collection systems, we did not attempt to use them for reasons that include lack of comprehensive information regarding which countries extracted such data; population coverage; reliability and comparability in the methods used to collect, aggregate and analyse the data; and lack of standardized approaches from country to country.

The WHO Nutrition Landscape Information System (NLiS) was a particularly important resource for this report. The NLiS dynamically assembles nutrition and related health and development information from WHO and partner agency databases and creates country profiles for malnutrition; nutrition-relevant health indicators and services; food security; infant and young child feeding; policy environment and capacity; education; and the status of women (http://www.who.int/nutrition/nlis/en/).

The databases used for this report include various surveys for different countries accumulated over decades. Because the report focuses on “current” status, we used the data from the most recent survey for each country when drawing from such sources. And in order to include as many countries as possible for each indicator, we searched for the most recent data going back to 2000. For each indicator, the exact range of years for which data were found is noted in the section describing it, while exact survey years are shown in footnotes to the appended graphs.

1.3 Data extraction

We aimed to collect “current status” data for all the indicators (core and additional) included in the Global nutrition monitoring framework and a few other indicators that are used in public health (for example, consumption of iodized salt, and vitamin A supplementation).

An Excel template was created to capture prevalence data for all indicators of the Global nutrition monitoring framework. For indicators that were not available in NLiS, country profiles extracted from the WHO NLiS were supplemented with data from the Global Health Observatory (GHO) and other sources. For under-five stunting, overweight and wasting, the NLiS data were cross-checked against the June 2016 update of the joint database for the UNICEF, WHO and World Bank estimates (the 2016 edition was published in September 2016). Using the abovementioned Excel template, available indicators for each country were recorded on a separate worksheet. These were sent to respective WHO country offices for verification and clearance by national authorities. Corrections and additions were incorporated and are reflected in the summary statistics presented in the report.

2. STATUS OF NUTRITION AND SELECTED CONTRIBUTING FACTORS IN THE WHO AFRICAN REGION

2.1 INTRODUCTION

Regional classifications of countries by different UN agencies vary. For this report, we have focused on the WHO African Region which is made up of 47 countries. This section presents the most recent status data. But it should be recalled from the foregoing section that, for some countries, the data reflect the situation that was as many as 10 years earlier, with inherent limitations on the comparability of "current" status across countries.

2.2 PRIMARY OUTCOME INDICATORS

At the World Health Assembly in 2012, countries committed to achieve improvements in maternal, infant and young child nutrition as summarized in six global targets for 2025.[5] The global targets need to be translated into national targets, taking into account each country's status at baseline, contextual circumstances that impact nutrition, demography, and the resources available to address malnutrition. A tool for this purpose has been developed and is available for download from the WHO website.[6] The tool is interactive and allows users to explore scenarios, taking into account different rates of progress for each target, and the time left to 2025.

The achievement of the six targets is reiterated in Sustainable Development Goal No. 2:

> *By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons.*

In September 2016, UNICEF, WHO and the World Bank Group released the 2016 edition of the Joint child malnutrition estimates for the period 1990–2015. These were the most recent global and regional estimates for three of the six primary outcome indicators, namely, stunting, overweight and wasting. The other indicators, not included in the joint estimates, are anaemia in women of reproductive age, low birth weight, and exclusive breastfeeding of infants below six months of age.

2.2.1 Stunting

- **Global Target 1:** 40% reduction in the number of children under five who are stunted
- **Indicator:** Prevalence of length/height-for-age below -2 z-score of the WHO child growth standard median

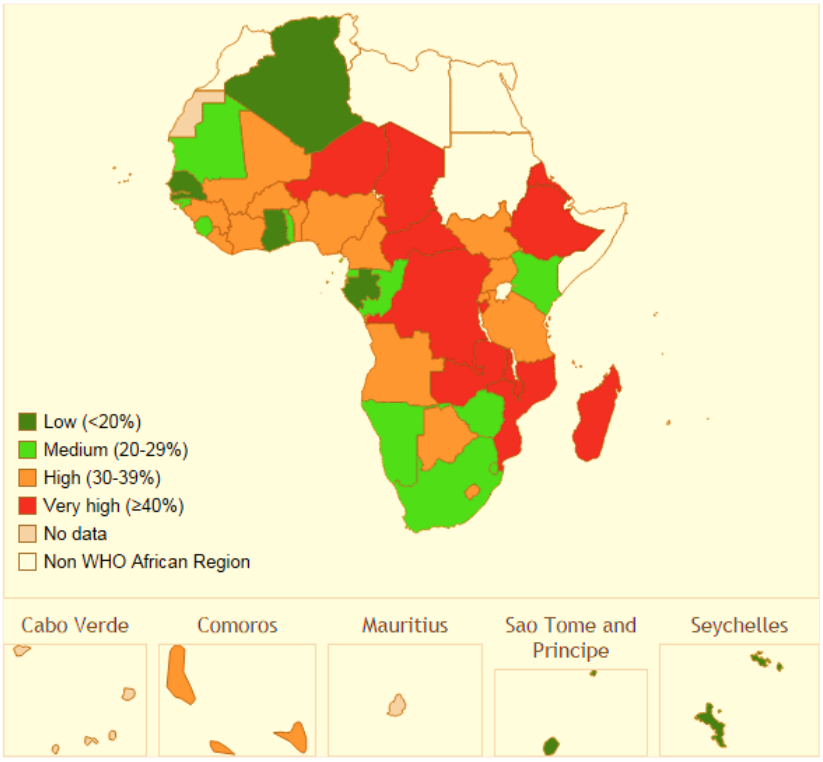
[5] The second of the six targets (anaemia in women of reproductive age) has two indicators: one for pregnant women, and one for non-pregnant, non-lactating women, making seven indicators for the six targets.

[6] http://www.who.int/nutrition/trackingtool/en/

Data on stunting prevalence are available for 45 countries from surveys conducted between 2007 and 2015 (the most recent surveys for Cabo Verde and Mauritius were in 1994 and 1995, respectively). The median stunting prevalence in the Region is 31.3%, and ranges from 7.9% in Seychelles to 50.3% in Eritrea and 57.5% in Burundi (Appendix 2). Six countries (Algeria, Gabon, Ghana, São Tome and Príncipe, Senegal and Seychelles) have so-called low prevalence (<20%). For the rest, 14 countries have medium prevalence (20%–29%), 15 countries have high prevalence (30%–39%), and 10 countries have very high prevalence (≥40%) (Figure 1).

According to the modelled malnutrition estimates published in September 2016, although stunting prevalence among children under 5 decreased from 38% to 32% between 2000 and 2015, the Region regressed with respect to this target, given that the number of children affected increased from 50.4 million to 58.5 million (WHO/UNICEF/World Bank estimates, 2016).[2] It should be recalled that the target is to reduce the *number* of stunted children.

Figure 1: Prevalence of stunting among children under 5 years of age in the WHO African Region[1]



[1] Most recent data: 2007–2015). Data sources:

Algeria,[3] Angola,[4] Benin,[5] Botswana,[6] Burkina Faso,[7] Burundi,[8] Cameroon,[9] Central African Republic,[1,0] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[17] Ethiopia,[18] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[28] Mali,[29] Mauritania,[30] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[34] Rwanda,[35] Sao Tome and Principe,[36] Senegal,[37] Seychelles,[38] Sierra Leone,[39] South Africa,[40] South Sudan,[41] Swaziland,[42] Togo,[43] Uganda,[44] United Republic of Tanzania,[45] Zambia,[46] Zimbabwe.[47]

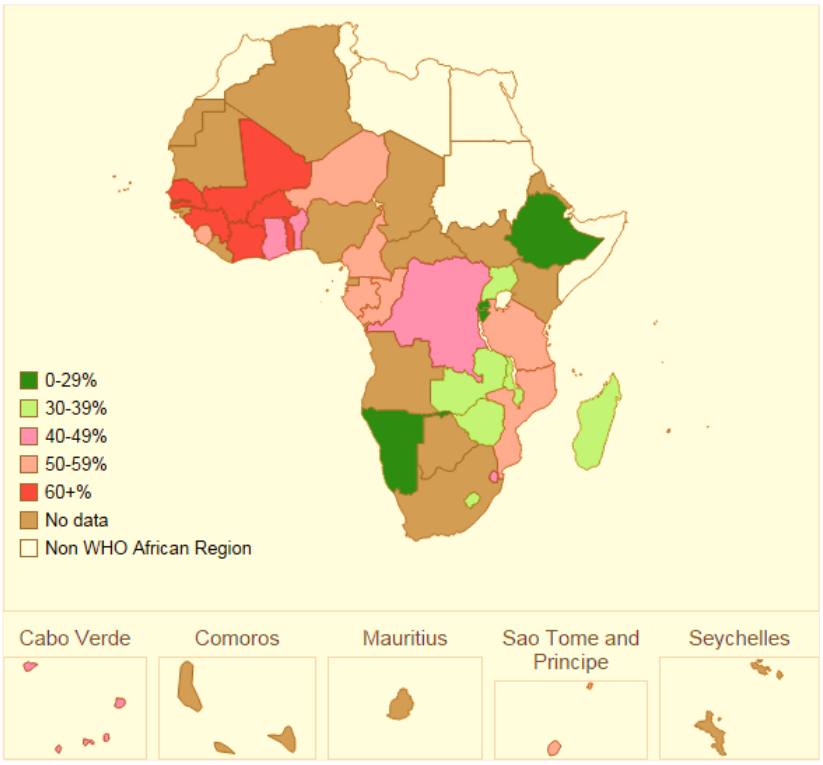
2.2.2 Anaemia

- **Global Target 2:** 50% reduction of anaemia in women of reproductive age
- **Indicators:** Prevalence of haemoglobin <11 g/dL in pregnant women;
- Prevalence of haemoglobin <12 g/dL in non-pregnant women

Demographic and health surveys (DHS) and some national nutrition surveys on anaemia report results for pregnant women separately from non-pregnant and non-lactating women of childbearing age (15–49 years); this distinction has been maintained below.

Among the 30 countries for which survey data are available (2003–2015), the median prevalence of anaemia in pregnant women is 47.3% [it ranges from 22.0% to 23.4% in Ethiopia and Rwanda respectively, to over 60% (Burkina Faso (72.5%), Gambia (67.9%), Guinea (64.9%), Togo (64.1%), Côte d'Ivoire (63.6%) and Senegal (61.4%)] (Appendix 3). In eight other countries (three in west Africa, three in central Africa, and two in eastern Africa), 50%–59% of pregnant women are anaemic (Figure 2).

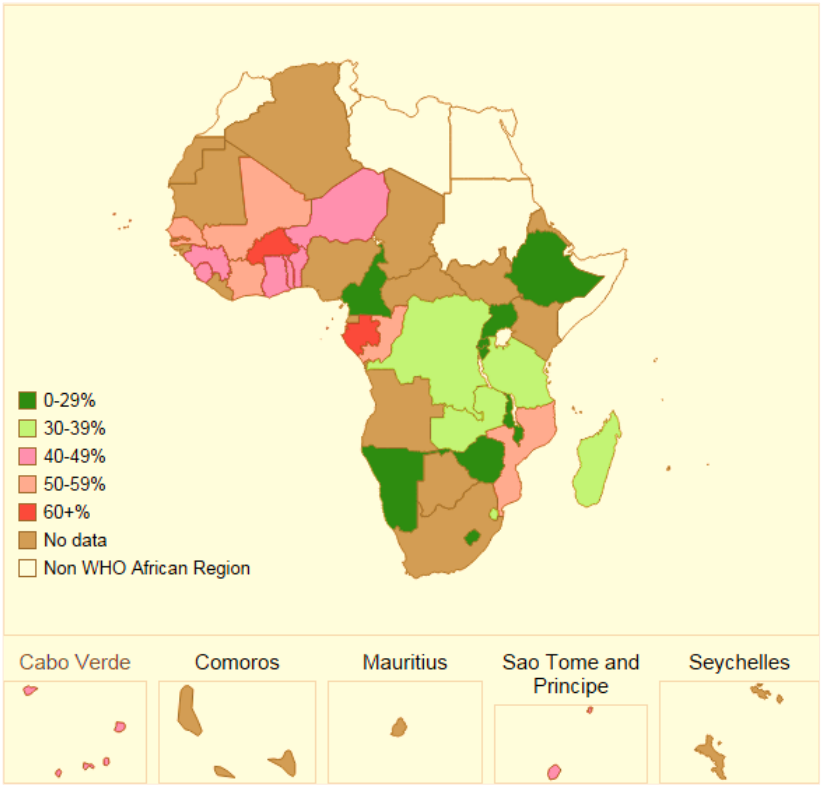
Figure 2: Prevalence of anaemia among pregnant women (haemoglobin <11 g/dL) in the WHO African Region[1]



[1] Most recent data: 2006–2015. Data sources:
Benin,[48] Burkina Faso,[49] Burundi,[8] Cameroon,[50] Cabo Verde,[51] Congo,[52] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Ethiopia,[53] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Lesotho,[25] Madagascar,[54] Malawi,[55] Mali,[29] Mozambique,[31] Namibia,[32] Niger,[33] Rwanda,[35] Sao Tome and Principe,[56] Senegal,[57] Sierra Leone,[58] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[62] Zimbabwe.[47]

For non-pregnant, non-lactating women, the median percentage with anaemia is 39.8%, and ranges from 15% in Ethiopia to 63% in Gabon. In addition to Gabon, six other countries exceed 50% prevalence, namely, Côte d'Ivoire (51.7%), Republic of the Congo (54.5%), Mozambique (55.0%), Senegal (55.7%), Gambia (58.2%) and Burkina Faso (62.0%). The next lowest percentages after Ethiopia are in Burundi (16%), Rwanda (18.7%), Namibia (20.0%), and Uganda (20.3%) (Appendix 4).

Figure 3: Prevalence of anaemia among non-pregnant, non-lactating women (haemoglobin <12 g/dL) in the WHO African Region[1]



[1] Most recent data: 2006–2015. Data sources:
Benin,[48] Burkina Faso,[49] Burundi,[8] Cameroon,[50] Cabo Verde,[51] Congo,[52] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Ethiopia,[53] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Lesotho,[25] Madagascar,[54] Malawi,[55] Mali,[29] Mozambique,[31] Namibia,[32] Niger,[33] Rwanda,[35] Sao Tome and Principe,[56] Senegal,[57] Sierra Leone,[58] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[62] Zimbabwe.[47]

2.2.3 Low birth weight

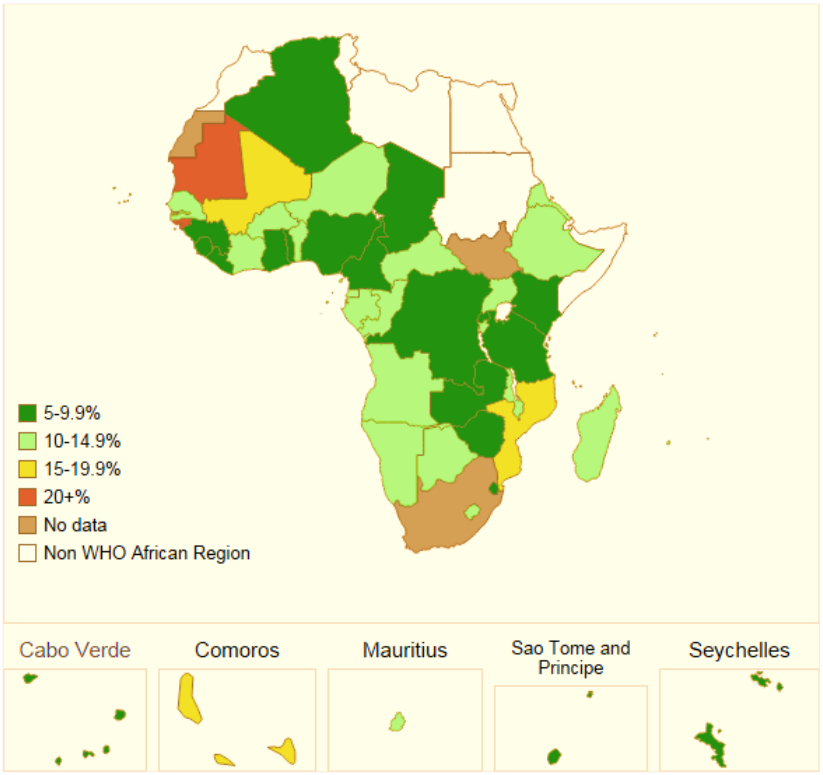
- **Global Target 3:** 30% reduction in low birth weight
- **Indicator:** Prevalence of birth weight <2500 g

Low birth weight data used for this report are UNICEF estimates[7] which, for developing countries, are derived by reanalysis of data from national household surveys and routine reporting systems. Some of the data from surveys are mothers' recall of whether or not the baby was of low birth weight. Even the recorded numerical weights tend to cluster in units of 100 g, suggesting digit piling that reduces reliability of data. Therefore, before incorporation in the UNICEF database, MICS (multiple indicator cluster surveys) and DHS data are adjusted to account for under-reporting and misreporting of birth weights. Consequently, a degree of uncertainty is to be attached to the final estimates.

Forty-five countries have low birth weight (LBW) data dating from 2000 to 2015 (Appendix 5), according to which the median prevalence of low birth weight is 11.4%. Cabo Verde has the lowest prevalence at 6%. In all, 18 countries have LBW rates below 10%, and 21 countries have rates of 10%–14%. Above this range are Mali (15.5%), Comoros (16.2%), Mozambique (16.9%), and Guinea-Bissau (21.3%). Mauritania is an outlier, with 34.7%.

[7] https://data.unicef.org/topic/nutrition/low-birthweight/

Figure 4: Percentage of low birth weight (<2500 g) in the WHO African Region[1]



[1] Most recent data: 2000-2015. Data sources:

Algeria,[63] Angola,[64] Benin,[65] Botswana,[66] Burkina Faso,[67] Burundi,[8] Cameroon,[50] Cabo Verde,[51] Central African Republic,[10] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[68] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[55] Mali,[29] Mauritania,[70] Mauritius,[71] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Sao Tome and Principe,[73] Senegal,[74] Seychelles,[75] Sierra Leone,[58] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[76] Zimbabwe.[47,77]

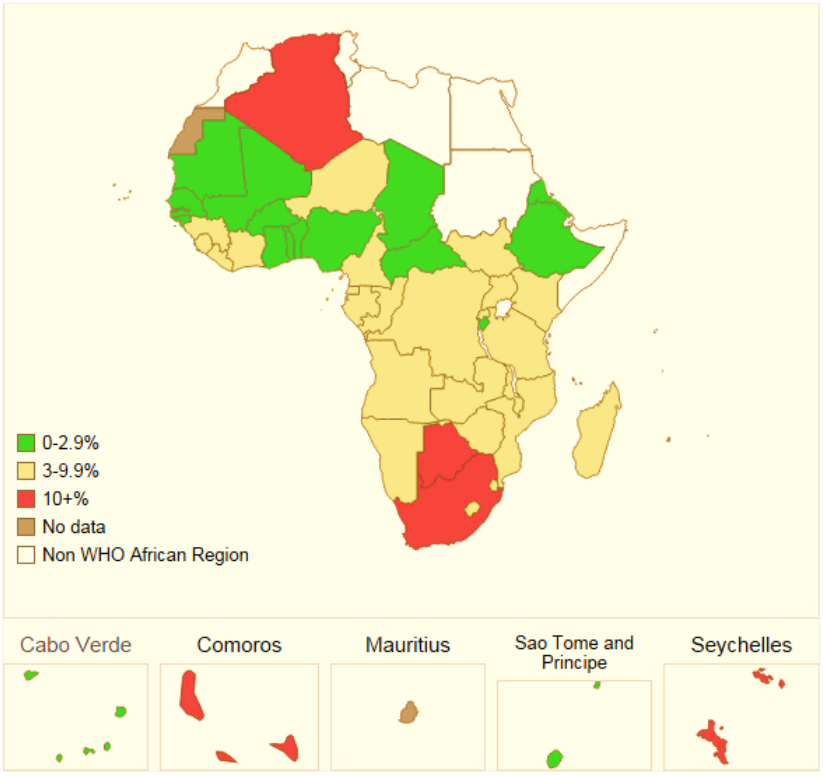
2.2.4 Childhood overweight

- **Global Target 4:** No increase in childhood overweight in children under 5
- **Indicator:** Prevalence of weight-for-height above 2 z-score of the WHO child growth standard median

Information on overweight is available for 45 countries, from surveys dating from 2001 to 2015 (excluding Cabo Verde and Mauritius). The median prevalence is 4.1%. Burkina Faso and Senegal have the lowest prevalence (1.0%) followed by Mauritania (1.2%), while Algeria has the highest prevalence at 12.4 % (Appendix 6). In sum, 16 countries have overweight prevalence below 3%, and 24 countries between 3% and 10%. Above this range are Algeria (12.4%), Botswana (11.2%), Comoros (10.9%), Seychelles (10.2%), and South Africa (10.9%) (Figure 5).

According to the 2016 edition of the UNICEF/WHO/World Bank malnutrition estimates, the number of overweight children in Africa increased by more than 50% between 2000 and 2015. This runs counter to the target of "no increase in overweight" and is a call to action, even for countries that still have low prevalence (<5%) but may be experiencing an increase in childhood overweight, particularly among high income groups.

Figure 5: Prevalence of overweight among children under 5 years of age in the WHO African Region[1]



[1]Most recent data: 2001–2015. Data sources:
Algeria,[3] Angola,[4] Benin,[5] Botswana,[6] Burkina Faso,[7] Burundi,[8] Cameroon,[9] Central African Republic,[10] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[17] Ethiopia,[18] Gabon,[78] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[79] Malawi,[28] Mali,[29] Mauritania,[30] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[34] Rwanda,[35] Sao Tome and Principe,[36] Senegal,[74] Seychelles,[38] Sierra Leone, South Africa,[40] South Sudan,[41] Swaziland,[42] Togo,[43] Uganda,[44] United Republic of Tanzania,[45] Zambia,[46] Zimbabwe.[47]

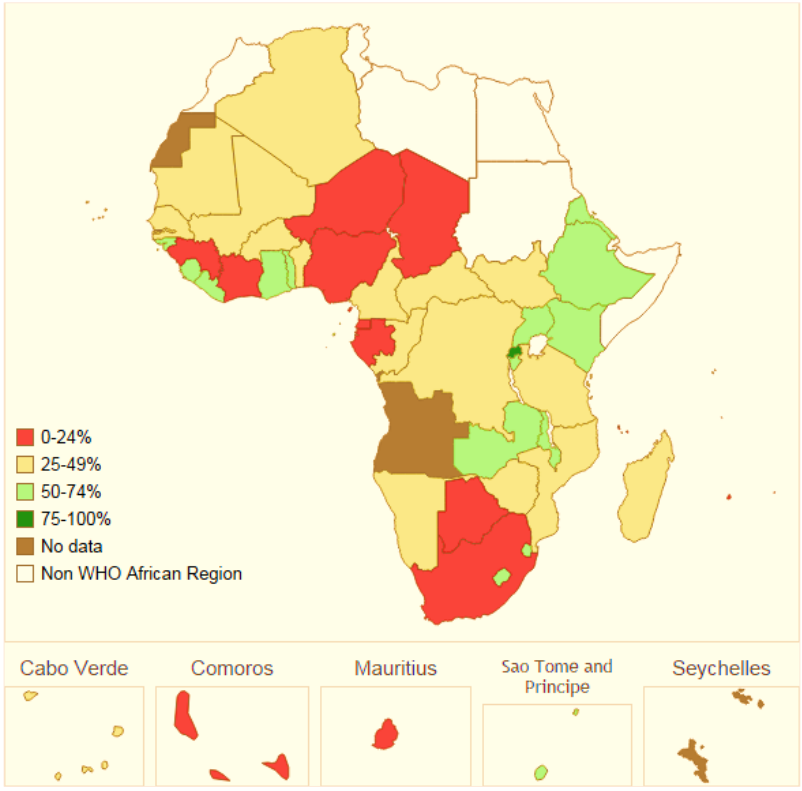
The coexistence in a country of high stunting and overweight rates is a proxy marker of the double burden of malnutrition typical of populations in the nutrition transition. In this regard, Botswana and Comoros have overweight prevalence above 10%, along with stunting rates above 30%. Nine other countries have overweight prevalence rates above 5% and stunting rates above 30%. They include Madagascar, Malawi, Mozambique, and Zambia, where stunting levels are above 40%.

2.2.5 Exclusive breastfeeding

- **Global Target 5:** Increase the rate of exclusive breastfeeding in the first six months up to at least 50%
- **Indicator:** Prevalence of exclusive breastfeeding in infants aged six months or less

Data on exclusive breastfeeding rates are available for 45 countries (excluding Angola and Seychelles). The median exclusive breastfeeding rate for the Region is 41.9% (data from 2002 to 2015). The range is wide: from 0.3% in Chad to 87.3% in Rwanda (Appendix 7). In addition to Rwanda, three countries have breastfeeding rates above 70%, namely, Malawi (70.2%), Sao Tome and Principe (73.8%), and Zambia (72.5%). At the other end of the spectrum, apart from Chad, 10 countries with exclusive breastfeeding rates below 25% are Botswana (23.3%), Comoros (12.1%), Côte d'Ivoire (12.1%), Equatorial Guinea (7.4%), Gabon (6%), Guinea (20.5%), Mauritius (21%), Niger (23.3%), Nigeria (17.4%), and South Africa (8.3%). A total of 16 (35%) out of 45 countries included in the analysis have exclusive breastfeeding rates above the 50% global target for 2025 (Figure 6).

Figure 6: Prevalence of exclusive breastfeeding among infants under 6 months of age in the WHO African Region[1]



[1]Most recent data: 2000–2015. Data sources:
Algeria,[63] Benin,[65] Botswana,[66] Burkina Faso,[7] Burundi,[8] Cameroon,[9] Cabo Verde[8,0] Central African Republic[1,0] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[17] Ethiopia,[69] Gabon,[78] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[28] Mali,[29] Mauritania,[70] Mauritius,[82] Mozambique,[82] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Sao Tome and Principe,[36] Senegal,[37] Sierra Leone,[39] Swaziland,[42] Togo,[43] Uganda,[60] United Republic of Tanzania,[82] Zambia,[76] Zimbabwe.[47]

2.2.6 Wasting

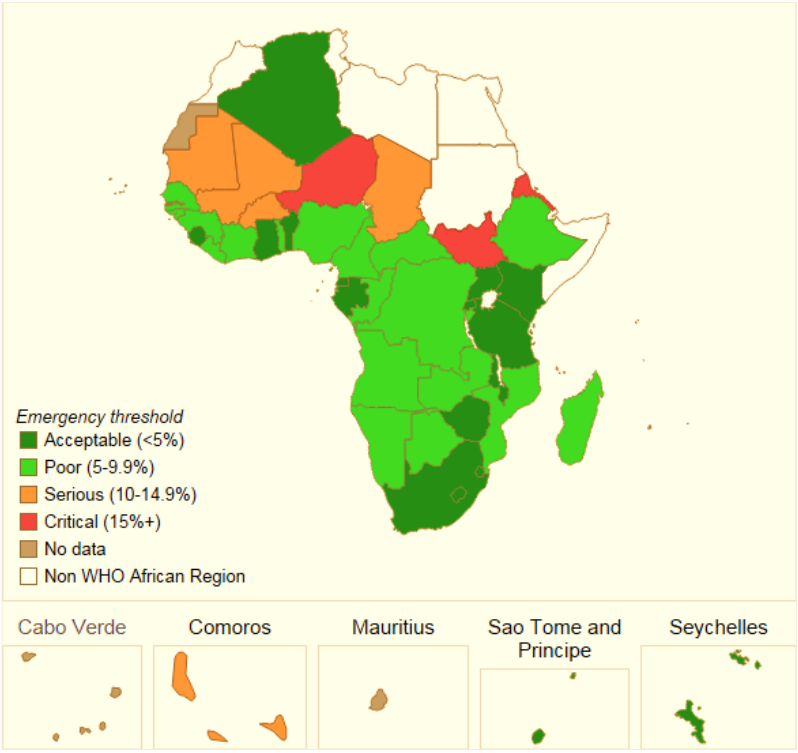
- **Global Target 6:** Reduce to and maintain childhood wasting at less than 5%
- **Indicator:** Prevalence of weight-for-length/height below -2 z-score of the WHO child growth standard median

From the 45 countries with data collected between 2007 and 2015, the median wasting prevalence is 6.3% (and ranges from 2% in Swaziland to 22.7% in South Sudan) (Appendix 8). Considered in terms of *public health emergency* thresholds, 17 countries have so-called "*acceptable prevalence*" (<5%), while 19 have "*poor prevalence*" (5–9%). Burkina Faso, Chad, Comoros, Gambia, Mali and Mauritania have wasting rates between 10% and 14% (in the *serious public health emergency* range), while three countries exceed the 15% *critical public health emergency* threshold: Eritrea (15.3%), Niger (18.7%) and South Sudan (22.7%) (Figure 7).

The lowest wasting rates, after Swaziland, are in Equatorial Guinea (3.1%), Gabon (3.4%), Lesotho (2.8%), Rwanda (2.2%), and Zimbabwe (3.2%). Seventeen out of the 45 countries with data have a wasting rate of 5% or below, thus meeting the 2025 target. Wasting is prone to rapid escalation in the face of seasonal shocks, civil crises and weather events. For this reason, year by year estimates rather than trends are reported in the joint malnutrition estimates published by UNICEF, WHO and the World Bank. According to the 2016 edition of the joint estimates,[1] 14.1 million children under 5 in the UN African Region were wasted (4.3 million of them severely) in 2015. All the UN sub-regions in Africa had wasting rates of 5%–10%. This may not reflect the full impact of the 2015-2016 El Niño

climate pattern that caused the worst drought in southern Africa in 35 years[83] and increased the toll of acute malnutrition[8] in the affected countries. Famine in the Horn of Africa (early 2017) will likely exacerbate the situation.

Figure 7: Prevalence of wasting among children under 5 years of age in the WHO African Region[1]



[1]Most recent data: 2007–2015. Data sources:

Algeria,[3] Angola,[4] Benin,[5] Botswana,[6] Burkina Faso,[7] Burundi,[8] Cameroon,[9] Central African Republic,[10] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[17] Ethiopia,[18] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[28] Mali,[29] Mauritania,[30] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[34] Rwanda,[35] Sao Tome and Principe,[36] Senegal,[37] Seychelles,[38] Sierra Leone,[39] South Africa,[40] South Sudan,[41] Swaziland,[42] Togo,[43] Uganda,[44] United Republic of Tanzania,[45] Zambia,[46] Zimbabwe.[47]

2.3 Intermediate outcome indicators

Of the five indicators in this category, diarrhoea incidence in children is directly related to wasting in the short term, and cumulatively to stunting. Three indicators are maternal-level influencers of pregnancy and birth outcomes, while overweight in school-age children and adolescents could be a useful gauge of adult obesity and NCD risk in future.

2.3.1 Diarrhoea in children

- **Indicator:** Prevalence of diarrhoea in children under five years of age

Diarrhoea in children under 5 is reported in the DHS and MICS by recall with reference to the two weeks preceding the survey. Forty countries have relevant data for the period 2000 to 2015, which show a median prevalence rate of 16.0% (range: 6.1% in Sierra Leone to 25% in Burundi). Five other

[8] Acute malnutrition is another name for wasting, where global acute malnutrition (GAM) includes both moderate acute malnutrition (MAM, or wasting) and severe acute malnutrition (SAM or severe wasting).

countries (Cameroon, Chad, Liberia, Seychelles and Uganda) also have diarrhoea prevalence rates above 20%, while Algeria, Benin and Mali have rates below 10% (Appendix 9).

This was one of the indicators for which the WHO-UNICEF TEAM was tasked with providing operational criteria before countries begin reporting on it. Several considerations led to a recommendation to report instead on "children with diarrhoea receiving oral rehydration solutions (ORS)". This is consistent with the fact that diarrhoea is a seasonal disease, and matches the diarrhoea indicator included in the 100 core health indicators.

2.3.2 Underweight in women of reproductive age

- **Indicator:** Proportion of women aged 15–49 years with low body mass index (<18.5 kg/m2)

Maternal underweight contributes directly to low birth weight (LBW) incidence among term births. Thirty-six countries have data on the proportion of women who had a low body mass index (BMI) between 2000 and 2015; the data show a median of 10.9% (from 3.2% in Swaziland to 37.3% in Eritrea). Nine countries have prevalence rates above 15%, and apart from Eritrea, maternal underweight exceeds 20% in Ethiopia, Madagascar and Senegal. The lowest rates of underweight among women are found in Benin, Cameroon, Ghana, Lesotho, Rwanda, Swaziland and Togo (Appendix 10).

2.3.3 Adolescent fertility

- **Indicator:** Number of births during a given reference period to women aged 15–19 years per 1000 females aged 15–19 years

Adolescent childbearing has direct links with low birth weight and psychosocial factors associated with poor breastfeeding and mother's capacity to provide appropriate feeding and care. Data on adolescent fertility are available in the Global Health Observatory for 47 countries from 2004 to 2014.

The Region has a median adolescent birth rate of 106 per 1000. The range is between 12 in Algeria and 229 in Central African Republic (Appendix 11). In just over half of countries (24 out of 47), the adolescent birth rate is above 100. After Central African Republic, the next highest rates are in Angola (191), Chad (203) and Niger (206). In addition to Algeria, countries with low adolescent fertility rates include Botswana (39), Mauritius (29), Rwanda (45), and South Africa (54).

2.3.4 Overweight or obesity in women

- **Indicator:** Proportion of overweight and obese women 18 years of age and above (BMI ≥25 kg/m2)

Obesity is a risk factor for noncommunicable diseases (NCD), and is included among the nine voluntary targets for 2025 in the Global NCD Action Plan (zero increase in diabetes or obesity). Overweight or obesity in mothers increases the risk in their offspring of high birth weight and subsequent childhood overweight.

Data for this indicator are available for 36 countries as found in surveys dated between 2000 and 2015. The percentage of women classified as overweight (including obesity) in the Region is at a median of 23.8%. The range is from 5.7% in Ethiopia to 50.6% in Swaziland. In all, 12 countries have a prevalence rate of over 30% (Gabon, Ghana and Lesotho have over 40% overweight prevalence).

Six countries with prevalence below 15% are Burkina Faso, Burundi, Chad, Eritrea, Ethiopia and Madagascar (Appendix 12).

2.3.5 Overweight in school-age children and adolescents

- **Indicator:** Proportion of overweight in school-age children and adolescents 5–18 years [sex-specific BMI-for-age > +1 standard deviation (SD)]

Reliable data on this indicator are not available for the WHO African Region. Attempts were made to gather information through the WHO Global School Health Survey (GSHS) – a school-based survey focusing on ten key areas related to morbidity and mortality (alcohol use, dietary behaviour, drug use, hygiene, mental health, physical activity, protective factors, sexual behaviour, tobacco use, violence, and unintentional injury).

However, GSHS data only partially cover the GNMF indicator age range since it is conducted primarily among students aged 13–17 years old. Moreover, the reliability of the BMI results from the survey requires some validation since the questionnaire is self-administered, and weight and height measurements are self-reported. So far, 16 countries[9] in the WHO African Region have conducted the survey.

2.4 PROCESS INDICATORS

These indicators are a mix of household-level correlates of nutritional status and the availability or coverage of primary health services.

2.4.1 Minimum acceptable diet

- **Indicator:** Proportion of children aged 6–23 months who receive a minimum acceptable diet

The proportion of children aged 6–23 months who received a minimum acceptable diet is available for 32 countries (2010–2015). The median consumption of a minimum acceptable diet is 8.6%. This measure is lowest in Guinea at 3.7%, and highest in Kenya at 21.8%. A total of 15 countries have percentages of 10% and above (Kenya is the only country with a measure above 20%). Six countries (Congo, Côte d'Ivoire, Ethiopia, Gabon, Guinea and Liberia) have percentages below 5% (Appendix 13).

This indicator is a summary measure of diet quantity and quality, combining adequate meal frequency for the child's age and consumption of at least four food groups per day (minimum dietary diversity). Appendix 14 presents the two disaggregated components in conjunction with minimum acceptable diet by country. In general, countries have higher coverage for age-appropriate meal frequency than for dietary diversity. Taking the arbitrary threshold of 30% coverage for comparison purposes, 21 of the 25 countries for which disaggregated information was available met the threshold for adequate frequency of feeding among children aged 6-23 months. By contrast only seven countries met the minimum recommended dietary diversity for at least 30% of children in the same age group.

[9] Algeria, Benin, Botswana, Ghana, Kenya, Malawi, Mauritania, Mauritius, Namibia, Senegal, Seychelles, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe

The WHO-UNICEF TEAM is exploring possible approaches to obtaining nationally representative data for minimum acceptable diet. Also under discussion is the question as to whether, for simplicity of reporting by countries, *minimum dietary diversity* should be used instead of *minimum acceptable diet*. Operational guidance will be finalized after these methodological issues are settled.

2.4.2 Safely managed drinking water service

- **Indicator:** Proportion of population using a safely managed drinking water service

Information on this indicator is reported as the *proportion of the population using an improved water source,* and is available for 40 countries (2000–2015). The Region has median percentage coverage of 73.9%. It ranges from 35% in Madagascar, 50.4% in Democratic Republic of the Congo, to 99.9% in Botswana. Twelve countries have percentages above 80%, while coverage in nine countries is below 60% (Appendix 15).

2.4.3 Safely managed sanitation services

- **Indicator:** Proportion of population using safely managed sanitation services

Reports on the population using safely managed sanitation services are available for 39 countries (2000–2015), where median coverage of "*the population using improved, non-shared toilet facilities*" is 21.1%; coverage ranges from 0.9% in Mauritania to 77.0% in Cabo Verde (Appendix 16). Apart from Cabo Verde, only three other countries have coverage above 50% (Lesotho, Rwanda and Senegal). For the rest, 24 countries have improved sanitation coverage below 25%. Of these, six are below 10% (Burundi, Chad, Eritrea, Ethiopia, Madagascar and Mauritania).

2.4.4 Iron and folic acid supplementation

- **Indicator:** Proportion of pregnant women receiving iron and folic acid supplements

Thirty-six countries with surveys between 2002 and 2015 have relevant data for this indicator, measured as the *percentage of women with a live birth in the three years preceding the survey who received iron tablets or syrup during antenatal care*. However, reporting is not explicit about whether or not folic acid was combined with iron supplementation.

As reported, median iron supplementation is 80.9%, and is lowest in Ethiopia at 16.8% and highest in Gambia at 96.6%. Iron supplementation in Eritrea is below 50%. The rate is above 90% in eight countries, among them Gambia, Liberia and Zambia, where iron supplementation is 95% or higher (Appendix 17).

For GNMF country reporting that is due to begin in 2018 on this indicator, ongoing discussion in the WHO-UNICEF TEAM is likely to recommend the operational definition: "*Percentage of women who consumed any iron and folic acid-containing supplements during the current or past pregnancy within the last 2 years"*.

2.4.5 Births in baby-friendly hospitals

- **Indicator:** Proportion of pregnant women receiving iron and folic acid supplements

No comprehensive data are available on this indicator, which would require information on total births and the proportion among them that took place in baby-friendly maternity facilities in each country.

The World breastfeeding trends initiative (WBTi) reports on the percentage of hospitals with maternity services that can be designated as baby-friendly. So far, 19 countries in the WHO African Region have conducted WBTi assessments. Of these, 12 countries report that no hospitals with maternity services can be designated as baby-friendly. In the other seven countries, the percentage of hospitals with baby-friendly maternity services ranges from 0.1% in Uganda (2015) to 59% in Swaziland (2009). It is important to note that the WBTi assessment is not based on representative samples of the maternity facilities in a given country.

2.4.6 Breastfeeding counselling

- **Indicator:** Proportion of mothers of children 0–23 months who have received counselling, support, or messages on optimal breastfeeding at least once in the last year

Currently, data on this indicator are limited. The indicator is listed in NLiS as *"% mothers who received information on breastfeeding in connection with antenatal care",* and the only country for which information is available is Kenya (39.0% in 2003). Information received for this report indicates that in Seychelles 99.8% of mothers received such counselling (2014 birth data) as did 88.7% in Senegal.[84]

In terms of operationalization, the WHO-UNICEF TEAM has recommended an interim indicator, namely, *"availability of a national-level provision for counselling services in public health and/or nutrition programmes"*. The indicator needs further refinement and validation to be integrated into national surveys and other data collection mechanisms. Meanwhile, the forthcoming Global nutrition policy review report (see Section 4) includes information on countries which report implementing breastfeeding counselling programmes.

2.5 POLICY ENVIRONMENT AND CAPACITY INDICATORS

Selected indicators in this category refer to the regulatory environment that should protect breastfeeding, and the capacity to provide nutrition services.

2.5.1 Trained nutrition professionals

- **Indicator:** Number of trained nutrition professionals/100 000 population

In the absence of data on nutrition professionals, a proxy indicator – the ratio of nursing- and midwifery-personnel to population – is often used, since routine nutrition services in primary health facilities are provided by nurses. Information on this proxy indicator is available for 46 countries (2003–2013), and the median ratio is 0.60 nurse/midwife per 1000 population. The regional range is from 0.04‰ in Guinea to 5.11‰ in South Africa (Appendix 18).

A total of 33 countries have less than one nurse or midwife per 1000 population, while the five countries with the highest ratio (Botswana, Gabon, Mauritius, Seychelles, and South Africa) have between 3 and 5 nurses or midwives per 1000 population. Burundi, Chad, Guinea, Niger and Sierra Leone have fewer than 0.2 nurses or midwives per 1000 population (that is, fewer than 1 nurse or midwife per 5000 population).

Operationalization of the GNMF indicator is still under discussion by the WHO-UNICEF TEAM. Meanwhile, in the recently completed Global nutrition policy review survey (see Section 4), 38 countries in the WHO African Region reported on nutrition capacities; all of them confirmed that trained nutrition professionals exist, with 33 countries providing data on the numbers available. The estimated density of nutrition professionals in each country will be calculated and published in the survey report.

2.5.2 Regulation of marketing of breast-milk substitutes

- **Indicator:** Country has legislation/regulations fully implementing the International code of marketing of breast-milk substitutes (resolution WHA34.22)[85] and subsequent relevant resolutions adopted by the World Health Assembly[86]

Status reports on the International code of marketing of breast-milk substitutes (hereafter referred to as the Code) were published in 2011 and 2016. The reports presented information on the enactment and implementation of the Code. Apart from Central African Republic and Equatorial Guinea, data from 2016 are available for all countries in the Region.

The varying levels of implementation of the Code are presented in **Error! Reference source not found.**19. Fifteen countries have no legislative provisions in place, and five have a "few" legislative provisions, according to the 2016 report. Only a third of the countries (14 out of 45) in the Region have full legislative provisions enacting the Code.

Comparing the status of countries in 2011 and in 2016, some 20 countries made little or no progress towards the full enactment of the Code, while five countries reported progress. For example, Burundi and Côte d'Ivoire had draft measures in 2011 that by 2016 had been enacted into law. Comoros has also enacted many measures of the Code into law, compared to 2011 when they were applied voluntarily. Kenya and South Africa have made considerable progress: from voluntary measures in 2011, they had enacted the full Code into law by 2016. It should be noted, however, that the indicator in the GNMF refers to "*full implementation*" of the Code. In reality, many countries face considerable implementation challenges, even after the Code has been fully or partially enacted into law.

2.5.3 Maternity protection

- **Indicator:** Country has legislation/regulations fully implementing the International code of marketing of breast-milk substitutes (resolution WHA34.22)[85] and subsequent relevant resolutions adopted by the World Health Assembly[86]

Apart from South Sudan for which there is no information, all countries in the Region have legally protected maternity leave, ranging from 8 weeks in Malawi to 17 weeks in South Africa (the median is 13 weeks). After South Africa and Congo with 15 weeks, a further 19 countries with 14 weeks have the next longest maternity leave periods. Cabo Verde, Eritrea, Guinea-Bissau, Mozambique, and Sao

Tome and Principle all provide for 9 weeks of legally protected maternity leave – the next lowest after Malawi.

2.6 EXTENDED SET OF INDICATORS

The 16 indicators outlined below are the so-called extended set of indicators that provide an analytical extension to the 20 core GNMF indicators described in the foregoing sections.

(a) *Incidence of malaria:* Although incidence data are not available, prevalence based on microscopy is available for 20 countries with surveys carried out between 2010 and 2015. The surveys showed a median prevalence rate of 21.3% (the range was 0.8% in Gambia to 51.6% in Mali). In six countries (Burkina Faso, Guinea, Mali, Mozambique, Nigeria and Togo), malaria prevalence is over 33%.

(b) *Median urinary iodine concentration in children aged 6–12 years:* No data were available for this indicator in the sources used for this report.

(c) *Proportion of stunted women of reproductive age (15–49 years):* Thirty-six countries have data from surveys carried out between 2000 and 2015. The surveys show that stunting (height less than 145 cm) in this group ranges from 0.2% in Gambia (2013) to 7.2% in Madagascar (2008-2009), with a median of 1.4%. Prevalence is above 5% in Burundi, Democratic Republic of the Congo and Madagascar.

(d) *Percentage of pregnant women aged 15–49 years who used any tobacco product (smokeable or smokeless):* Based on surveys from 34 countries (2005 to 2015), a median 0.2% of pregnant women smoke cigarettes. Rates between 1% and 3.2% are reported in Comoros, Gabon, Guinea, Namibia, Sierra Leone and Swaziland, while in the remaining 28 countries, the rate is less than 1%, and includes Burkina Faso, Gambia, Lesotho, Niger, and Zimbabwe with 0.0%.

(e) *Proportion of children born in the last 24 months who were put to the breast within one hour of birth:* Survey data from 36 countries (2000–2015), show that the median percentage of timely initiation of breastfeeding is 53.4% (it ranges from 16.6% in Guinea to 94.2% in Malawi). In one-third of countries, less than 50% of newborn babies are breastfed within the first hour of birth. The rate is below 33% in Chad, Congo, Cote d'Ivoire, Gabon, Guinea, Nigeria, and Senegal. These countries also have correspondingly low (0.3–33%) exclusive breastfeeding rates.

(f) *New cases of measles:* Measles cases are reported through the integrated disease surveillance and response (IDSR) system; a case-based measles database is also kept by the Polio programme; it is available at inter-country support hubs and the WHO Regional Office for Africa.

(g) *Use of insecticide-treated nets for children aged 0–5 years:* Data are available for 33 countries based on surveys carried out between 2005 and 2015. Median coverage is 42.8%, and coverage ranges from 0.6% in Swaziland (2006–2007) to 75.3% in Burkina Faso (2014). In nearly two thirds of these countries (21 out of 33), less than 50% of children under 5 slept under an insecticide-treated net. The utilization rate is below 25% in seven countries, among them Cameroon, Ethiopia, Niger, and Nigeria which are high endemicity countries for malaria. Zimbabwe has moderate use, while Namibia and Swaziland are classified as moving towards malaria elimination.

(h) *Proportion of children under 5 years old with diarrhoea (in the last two weeks) receiving oral rehydration salts (ORS packets or pre-packaged ORS fluids):* Data for this indicator are available for 42 countries from surveys conducted between 2000 and 2015. Percentages for ORS use range from 14% in Mali to 85.1% in Sierra Leone (median ORS use is 39.6%). In 11 out of the 42 countries, the rate on this indicator is less than 25%.

(i) *Percentage of households that have iodized salt (>15 ppm):* Based on surveys carried out between 2006 and 2015 in 34 countries, median iodized salt coverage in the Region is 92.6% (and ranges from 15.6% in Ethiopia to 99.7% in Rwanda). In eight countries, less than 75% of households use adequately iodized salt; and in three countries (Ethiopia, Gambia, and Mozambique), this rate is below 50%, that is, well below the recommended 90% coverage.

(j) *Percentage of 1-year-old children who have received the appropriate doses of the recommended vaccines in the national schedule by recommended age:* This is an assessment of coverage with eight basic vaccinations of children aged one year old. Data are available for 36 countries based on surveys between 2000 and 2015. The regional median is 55%, with compliance ranging from 18.3% in Chad to 86.6% in Rwanda. In 15 countries, less than half of 1-year olds have received all eight basic vaccinations; in four of them (Chad, Ethiopia, Mauritania and Nigeria), the rate is below 25%.

(k) *Percentage of households consuming iron-fortified wheat flour products:* According to information available in the Global database on the implementation of nutrition action, 10 countries in the Region have wheat flour fortification programmes (2000–2015), namely, Côte d'Ivoire, Ghana, Kenya, Mali, Mozambique, Nigeria, Senegal, South Africa, Uganda, and United Republic of Tanzania. These programmes, however, are not exclusive to iron-fortification, and coverage data are not available online.

(l) *Appropriate use of micronutrient powders for children aged 6–23 months:* In Uganda, children aged 6–23 months receive micronutrient supplements in a programme that also targets mothers (pregnant and lactating) and pre-school-age children. Similar micronutrient supplementation programmes are reported in Kenya and South Africa for infants and young children; however, there is no specification of micronutrient powders for children 6–23 months of age.

(m) *Proportion of children with severe acute malnutrition having access to appropriate treatment, including therapeutic foods and nutrition counselling:* No data were available for this indicator.

(n) *Proportion of children aged 12–59 months receiving at least one dose of deworming medication:* Data on deworming in the past 6 months are available for 34 countries from surveys carried out between 2006 and 2015. The median for deworming is 48.8%, and ranges from 2.6% in Zimbabwe to 80.1% in Rwanda. In most countries (19 out of 34), coverage is below 50%, with rates below 25% in Burkina Faso, Ethiopia, Kenya, Lesotho, Nigeria and Zimbabwe.

(o) *Strength of nutrition governance:* Nutrition governance was originally defined in the context of the landscape analysis on the readiness of countries to accelerate action in nutrition. Scores adopted were "strong", "medium" or "weak", based on 10 characteristics. These included the existence of an intersectoral mechanism to address nutrition; the existence of a nutrition policy, with a strategy or plan integrated into the national development or health plan, budgeted for and implemented; the existence of dietary guidelines; and regular nutrition monitoring and surveillance. The assessment method and scoring scheme on governance are described in detail elsewhere.[10] Thirteen countries in the Region participated in the analysis conducted between 2008 and 2014.[11]

(p) *Number of countries with legislation or regulations to protect children from the marketing of unhealthy foods and beverages:* Data on this indicator were not available, nor was information on programmes that focus explicitly on this subject.

[10] http://www.unscn.org/layout/modules/resources/files/scnnews37.pdf
[11] http://www.who.int/nutrition/landscape_analysis/country_assessments/en/

The next two indicators are not on the extended list, but data on them were collected in surveys; they also appear in health information systems:

(a) *Percentage of children receiving vitamin A supplements:* Survey data are available for 34 countries (2006–2015) and show a median of 64% of children receiving vitamin A supplements. Coverage ranges from 40.8% in Guinea to 88.6% in Senegal. In all, six countries (Benin, Chad, Comoros, Guinea, Nigeria, and Sao Tome and Principe) have less than 50% coverage.

(b) *Percentage of children under 5 years with any anaemia:* Surveys conducted from 2006–2015 in 32 countries give data on this indicator, and show median prevalence of anaemia in children to be 60.3%. Prevalence ranges from 36.3% in Kenya to 86.1% in Burkina Faso. In 26 out of 32 countries (over 80%), more than half of children suffer from anaemia.

2.7 STATUS OF NUTRITION AND CONTRIBUTING FACTORS – IN A NUTSHELL

The first important observation regarding "current" status is that it is defined by data from population-based surveys that take place at variable intervals from country to country. Using child malnutrition indicators that feature in the most recurrent surveys as proxies for how current nutrition data are overall, we found that for two countries, the most recent surveys pre-date 2000, and for 27 others, they are at least five years old. This is an important caveat to bear in mind when making references to "current" status with regard to nutrition and associated indicators of the GNMF. Bearing in mind the limitations of the data available for countries in the Region, what are the likely prospects of achieving the global nutrition targets for 2025?

Among the six primary outcomes that constitute the global nutrition targets, four indicators are stated in terms of change in numbers (childhood stunting) or prevalence (anaemia in women of reproductive age, incidence of low birth weight, and childhood overweight), while two indicators specify thresholds to achieve (50% and higher for exclusive breastfeeding, and 5% or lower for wasting).

For the two child malnutrition indicators where trends are analysed annually, the number of stunted children in the Region is increasing rather than decreasing, and prevalence as well as the number of children under 5 affected by overweight is increasing. For the latter, Algeria, Comoros, Seychelles and southern African countries already have rates in excess of 10%, according to most recent data available (2000–2015). From the same annual estimates, many countries in the Region currently have wasting rates above the 5% threshold, and persistent famine, flooding, and civil crises in some countries pose enduring challenges to meeting the target.

Anaemia in women of reproductive age is high, particularly in west Africa. Apart from Mauritania with more than one third low birth weight incidence, most countries have LBW rates below 20%. Trends analyses are not available to determine if the situation is improving or not. With regard to breastfeeding, a number of countries in southern, central and west Africa have exclusive breastfeeding rates below 25%. Only about one third of countries in the Region have already attained the 50% exclusive breastfeeding threshold, and both changes in lifestyle and weak regulatory measures for breastfeeding protection pose a risk to the attainment and maintenance of the targeted minimum rate.

For intermediate outcome and process and policy environment indicators, there are gaps in current data, given that only a few of the indicators are included in DHS, MICS and other large-scale surveys. The gaps are even larger with reference to extended GNMF indicators.

3. DATA SOURCES FOR NUTRITION SURVEILLANCE AND MONITORING IN THE WHO AFRICAN REGION

The need at country and regional levels to monitor progress towards the six global World Health Assembly targets requires that countries have regular, up-to-date data on the core indicators of the Global nutrition monitoring framework (GNMF). An ideal system to support progress monitoring would require the GNMF indicators to be standardized across countries, and efforts made to aggregate them at the regional level annually or biennially. This would provide material for tracking progress towards the global targets for 2025 and the SDGs. It would also help track regional commitments such as the goal of ending hunger by 2025 as adopted by the African Heads of State in the Malabo Declaration (reducing stunting to 10% is one of the indicators).[87]

At present, surveys are the most relied-upon source of data for nutrition monitoring in the Region. The previous section showed that, for some indicators, no data were available, or only some countries had any data. But even where most or all countries have data, the most recent for one third of them are based on surveys done five or more years ago. There is a clear need to identify and exploit alternative data sources.

This section considers the potential for countries to use data from routine health visits, and the feasibility of conducting "light" nutrition-focused surveys that could fill gaps between major surveys, or respond to specific programme objectives and reporting needs.

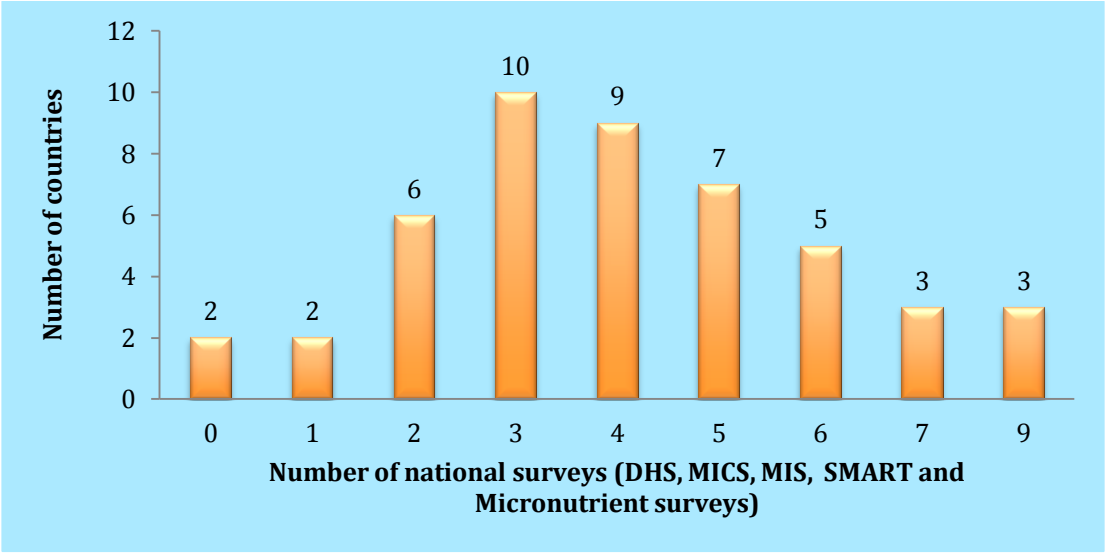
3.1 NUTRITION DATA FROM POPULATION SURVEYS

The principal approaches that can be used at country level to collect primary nutrition surveillance data include repeated cross-sectional household surveys, community-based sentinel monitoring, and school surveys. Secondary surveillance data could be obtained from feeding centres, health facilities, and from community-based screening for malnutrition in children.[88]

Primary data on nutrition indicators relevant to the GNMF in the Region are obtained from demographic and health surveys (DHS); multiple indicator cluster surveys (MICS); micronutrient surveys; malaria indicator surveys (MIS); national nutrition surveys using SMART methodology; and household food consumption surveys. In the 15-year period between 2000 and 2015, the average country in the Region had four national surveys, but disparities between countries are wide (range: 0–9).

Figure 8 presents the distribution of countries according to the number of national surveys carried out between 2000 and 2015. Mauritius and Seychelles had no national surveys during this period, while Cabo Verde and Eritrea each had one survey. Eleven countries had at least six national surveys. These include Burkina Faso, Kenya and Malawi, with nine surveys.

Figure 8: Number of national nutrition surveys carried out between 2000 and 2015 by countries in the Region



SMART surveys have been conducted mainly in the Sahel countries. Some of these surveys have been annual, as in Burkina Faso, Niger, Mauritania and Mali, and are also being introduced as part of vulnerability assessments in eastern and southern Africa. Elsewhere, there is more reliance on MICS and demographic health surveys which take place every 3–5 years, or less frequently. In addition to the high cost and infrequency of representative national surveys, other limitations include the time lag between the surveys and publication of findings. There is also their aggregate nature which limits sample size power for in-depth analyses of the contextual determinants of malnutrition at subnational level.

For countries to be able to monitor their progress with subnational disaggregation, alternative, real-time data sources should be established and exploited. Routine data from health facilities is a source worth exploring. It is likely that nutrition data are collected in registers and mother-child health cards, and other paper formats. However, such data are not collected in standardized formats that are comparable between countries. For example, some countries use the mid-upper arm circumference (MUAC) to define acute malnutrition, while others use the weight-for-height Z-score.

Surveillance systems are needed to provide information for decision making in policy and programme design and implementation. Unfortunately, systematic data collection systems to monitor trends exist in only a few countries (for example, the annual SMART surveys in the Sahel). A limited number of nutrition indicators appear in some health management information systems (HMIS) and integrated disease surveillance and response (IDSR) reports. But annual or biennial nutrition monitoring as part of development programming is rare; only Ethiopia reportedly conducts a mini-DHS every two years. SMART surveys focus primarily on undernutrition, but could provide information on overweight prevalence at no additional cost (this was already being implemented in the Burkina Faso 2016 survey); more recent editions are collecting information also on exclusive breastfeeding.

The next section describes an initiative funded by Global Affairs Canada through which WHO has been supporting 11 countries to establish nutrition surveillance through strengthened national health information systems. It is proposed as a foundation for expanding nutrition surveillance in the Region.

3.2 NUTRITION SURVEILLANCE AND THE ANI PROJECT

The *Accelerating Nutrition Improvement (ANI) in Sub-Saharan Africa* project was implemented by WHO with financial support from Global Affairs Canada. ANI aimed to assist sub-Saharan African countries to conduct nutrition surveillance activities while strengthening health information systems in order to measure progress and inform decision making. WHO provided technical assistance for strengthening nutrition surveillance systems in the 11 sub-Saharan African countries (Burkina Faso, Ethiopia, Mali, Mozambique, Rwanda, Senegal, Sierra Leone, Tanzania, Uganda, Zambia and Zimbabwe), and the conduct of surveys in four other countries (Rwanda, Sierra Leone, Zambia and Zimbabwe) in order to establish baselines for key nutrition indicators.

Since health information systems in the countries vary, the objective of the ANI project in each country was to strengthen the existing system and advocate for inclusion of nutrition indicators. In most of the countries, support began with revising or developing national nutrition policies or plans, and moved to developing a road map for strengthening existing health monitoring systems.

Once a plan for strengthening the surveillance system was completed and a roadmap was in place, the next activity was to identify nutrition indicators to be included in the existing national health information system. The process began with reviewing the system set-up, district reports, registers and aggregate forms as a basis for guiding the adaptation of the software used for data capture (usually the district health information system (DHIS2). Tools for the health management information system (HMIS), integrated disease surveillance and response (IDSR), or sentinel surveillance were then revised to include and integrate the new indicators. Health facility registers were also reviewed and adapted for collection of routine nutrition information. In almost all the countries, health worker capacity in data collection, anthropometry measurement techniques, and data quality monitoring and analysis was strengthened. Burkina Faso, Mali, Rwanda, Senegal, Sierra Leone, Zambia and Zimbabwe received technical or financial support to conduct national nutrition surveys.

3.3 STRENGTHENING NUTRITION SURVEILLANCE THROUGH THE ANI PROJECT

Nutrition data have been integrated into existing health facility tools and national health information systems. Five countries (Rwanda, Senegal, Sierra Leone, Uganda and Zimbabwe) now include nutrition indicators in weekly or quarterly health reports. The main information systems in which nutrition indicators have been included are the HMIS and, to a lesser extent, integrated disease surveillance and response (IDSR), as detailed in the sections that follow.

This section will focus on indicators that would be expected to be routinely monitored in the health sector. It will thus exclude policy and environment indicators, and some process indicators such as safe water and sanitation coverage. If the primary and intermediate outcome indicators were made available from the health system, comprehensive reporting on the GNMF could be achieved in the context of multisectoral nutrition actions through triangulation with information systems belonging to other sectors. For example, dashboards could be used to map sanitation coverage, food insecurity zones, distribution of the burden of infectious diseases, etc., against different forms of malnutrition, so as to identify their underlying causes.

Nutrition indicators in national health management information systems

The district health information system (DHIS2) is the platform used to collect and feed data into the HMIS for most countries (Burkina Faso, Mali, Mozambique, Senegal, Sierra Leone, Uganda, and

United Republic of Tanzania); the indicators are reported monthly. Of the six primary outcomes, Ethiopia and Sierra Leone have each introduced two indicators (low birth weight and wasting); Mali, Senegal, Uganda and Zambia have added four indicators; while Burkina Faso, Mozambique, Rwanda, Tanzania and Zimbabwe have each included five indicators. Inclusion in HMIS of any of the 20 GNMF core indicators by each country is summarized in Table 1.

For primary outcome indicators, low birth weight (from birth registers) and wasting are included in the information systems of all the 11 countries, and stunting in nine countries, (excluding Ethiopia and Sierra Leone). Stunting and wasting come from sick child consultations or growth monitoring programme registers in health facilities, and at community level. Overweight appears in the information systems of six countries. Considering that it is calculated using the same primary measurements as wasting (incorporated in the systems of all 11 countries), it could be incorporated into the HMIS at little cost. Mali, Mozambique, United Republic of Tanzania, Uganda, and Zimbabwe have integrated exclusive breastfeeding in their HMIS.

Anaemia in pregnant women (based on haemoglobin analysis) has been integrated in the systems of five countries (Rwanda, Uganda, United Republic of Tanzania, Zambia and Zimbabwe). Burkina Faso and Mozambique have also incorporated this indicator, but have used clinical symptoms (pale skin, lips, and nails) to identify anaemia cases. Data on anaemia in pregnant women are collected from women that attend antenatal clinics. Senegal collects information on child anaemia (clinical symptoms), but not anaemia in women. No ANI country has integrated data on anaemia in all women of reproductive age.

Among the intermediate outcome indicators of the GNMF, diarrhoea among children under 5 is captured as a child health indicator, and is therefore available for all countries. Underweight in women of reproductive age is reported in Senegal and Uganda. Meanwhile, Rwanda screens for underweight in pregnant women using mid-upper arm circumference (MUAC). A reading of <21 cm is used as the cut-off point. Weight gain during pregnancy is then monitored in the interest of the pregnancy outcome.

Overweight in women of reproductive age is recorded in Senegal, United Republic of Tanzania and Uganda. Overweight in school-age children is also collected in Senegal (but reported only for age range 5–14 years) and United Republic of Tanzania.

For GNMF process indicators, information on the proportion of pregnant women receiving iron and folic acid supplements is collected in all countries; Mozambique even has data on supplementation in adolescent girls. The other process indicators that might be available through routine health sector information (minimum acceptable diet and breastfeeding counselling) are not included in HMIS. The water and sanitation indicators could be triangulated with health indicators in the context of multisectoral nutrition action plans.

The proportion of mothers of children 0–23 months of age who have received counselling, support or messages on optimal breastfeeding at least once in the last year, is included in Mozambique and United Republic of Tanzania. In Uganda, information on counselling for pregnant women, and on infant and young child feeding, is collected in addition to maternal nutrition. Complementary feeding counselling data are collected in Zambia as well.

There are no policy environment and capacity indicators in the HMIS of any of the countries.

Table 1: GNMF indicators included in the health management information systems of the 11 ANI countries

Country	Outcome indicators	Intermediate indicators	Process indicators
Burkina Faso	Stunting, anaemia in pregnant women, low birth weight, child overweight, wasting	-	- Pregnant women receiving iron and folic acid supplements
Ethiopia	Low birth weight, wasting	-	-
Mali	Stunting, low birth weight, exclusive breastfeeding, wasting	-	- Pregnant women receiving iron and folic acid supplements
Mozambique	Stunting, overweight, exclusive breastfeeding, wasting	-	Iron and folic acid supplementation in adolescent girls
Rwanda	Stunting, anaemia, low birth weight, overweight, wasting	-	-
Senegal	Stunting, low birth weight, overweight, wasting	Diarrhoea prevalence in children; proportion of women aged 15–49 years with low BMI; proportion of overweight and obese women 18 and above to 49 years of age. (Overweight school age children, 5–14 years)	Pregnant women receiving iron and folic acid supplements
Sierra Leone	Low birth weight, wasting	-	Pregnant women receiving iron and folic acid supplements
United Republic of Tanzania	Stunting, anaemia in pregnant women, low birth weight, exclusive breastfeeding, wasting	Diarrhoea prevalence in children; proportion of overweight and obese women 18 years and above to 49 years of age; overweight school-age children	Pregnant women receiving iron and folic acid supplements; counselling and support on optimal breastfeeding
Uganda	Stunting, anaemia in pregnant women, low birth weight, overweight, exclusive breastfeeding, wasting	-	Pregnant women receiving iron and folic acid supplements
Zambia	Stunting, low birth weight, overweight, wasting	-	Pregnant women receiving iron and folic acid supplements
Zimbabwe	Stunting, anaemia in pregnant women, low birth weight, exclusive breastfeeding, wasting	-	-

3.3.2 Nutrition indicators in integrated disease surveillance and response systems

The second platform of health information available in some countries is the integrated disease surveillance and response (IDSR) system. The WHO Regional Office for Africa proposed using the IDSR as an approach to improving public health surveillance and response, and linking community, health facility, district and national level action.

Looking at the availability of nutrition indicators in the IDSR in ANI countries, it appears that six of them (Burkina Faso, Mali, Mozambique, Rwanda, Uganda and Zambia) have not yet integrated nutrition indicators into their IDSR systems.

For the rest, Senegal has three nutrition indicators (number of cases of global acute malnutrition (GAM), number of cases of severe acute malnutrition (SAM), and number of cases of moderate acute malnutrition (MAM); one performance indicator (number of deaths among cases admitted in SAM treatment centres); and two child morbidity indicators (acute respiratory infection and

diarrhoea). Only one indicator (number of SAM cases) is included in Ethiopia and Sierra Leone, respectively (Table 2). In Zimbabwe, in addition to the number of SAM cases, data related to nutrition in pregnant women (acute malnutrition and anaemia) are also included. For United Republic of Tanzania, diarrhoea in children under 5 years is the only GNMF-related indicator included in its IDSR system.

Table 2: Nutrition indicators included in IDSR in the ANI countries

Country	Indicators
Burkina Faso	None
Ethiopia	SAM admission in outpatient programmes, SAM admissions in stabilization centres
Mali	None
Mozambique	None
Rwanda	None
Senegal	Number of cases of children suffering from global acute malnutrition admitted in feeding centres; number of cases of children suffering from severe acute malnutrition admitted in feeding centres; number of cases of children suffering from moderate acute malnutrition admitted in feeding centres; number of deaths in the support structures (PEC) in severe cases; number of cases of acute respiratory infection; number of cases of diarrhoea
Sierra Leone	Number of children identified with severe acute malnutrition
United Republic of Tanzania	Diarrhoea in children under 5 years of age
Uganda	Nutrition indicators not yet included
Zambia	None
Zimbabwe	Number of children 0–5 years with severe acute malnutrition; number of pregnant women with acute malnutrition; number of pregnant women with anaemia; number of newborns with low birth weight; number of individuals with pellagra

3.4 IN-COUNTRY DATA PROCESSING AND POTENTIAL FOR AGGREGATION AT REGIONAL LEVEL

The objective of strengthening national health information systems was addressed beginning from the introduction of nutrition indicators in the body of information collected through existing routine systems, namely, HMIS or IDSR. The ANI project then focused on strengthening in-country capacity for data generation, processing, transmission, analysis, reporting, and utilization in decision making to address identified nutrition problems.

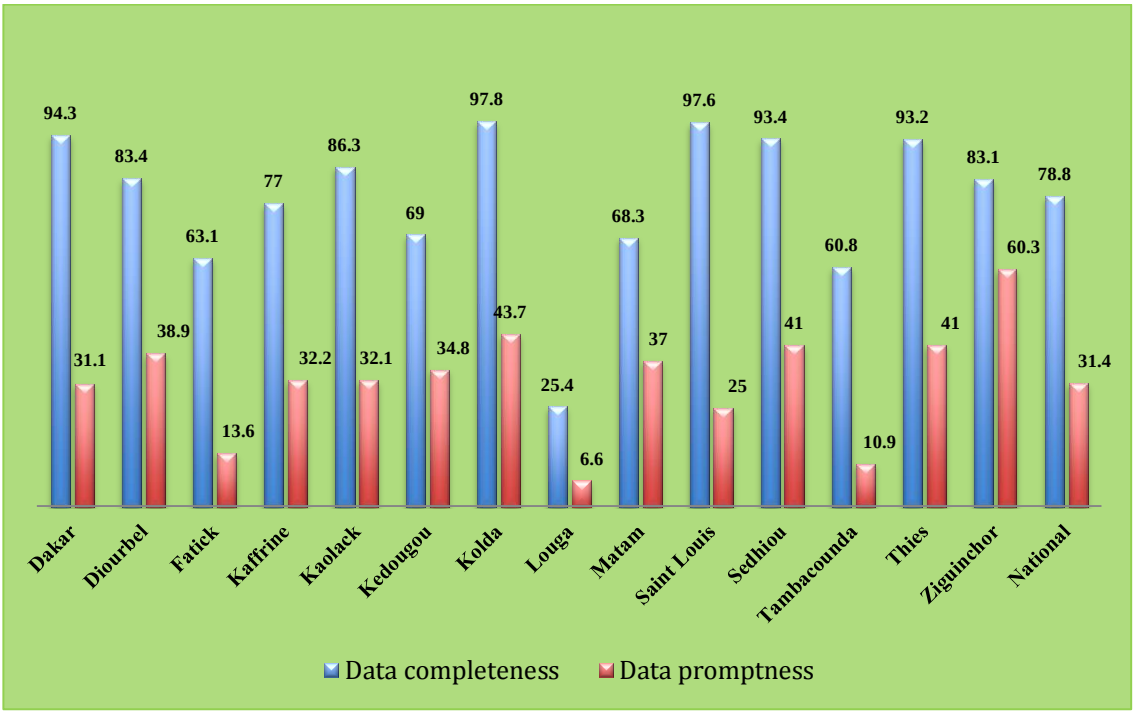
3.4.1 Data flow in the health management information system

For the HMIS, primary health level data are collected at health centres and sentinel surveillance and community centres, and compiled monthly or quarterly. The data are aggregated at primary health centre level and forwarded to the health district. The statistics department at the health district compiles data from its dependent health centres and transmits a monthly report to the statistics department of the ministry of health. The data from all health districts are compiled and processed at this level. Depending on the country, a monthly, quarterly or annual report is prepared for the whole country. These reports may be published as statistical yearbooks by countries, and are shared with WHO country offices.

For this report, wasting and overweight rates in Senegal's aggregated HMIS data for 2015 were compared with national survey estimates from the DHS for 2015 (Note: its HMIS did not include stunting). There was remarkable similarity between the two sources: the DHS for 2015 reported a wasting rate of 7.8% as against 7.7% based on the HMIS data, while overweight prevalence was 1% in DHS for 2015 as against 0.9% in the HMIS.

This is only one country; and while the overall rates are comparable, the completeness and timeliness of the HMIS data were assessed and found to be 78.8% and 31.4% respectively. As shown in Figure 9, a breakdown of each health region's status with regard to these two performance indicators is available and could, therefore, inform targeted surveillance strengthening in Senegal's different regions. In addition to completeness and timeliness of data flow, the quality of data would also need to be reviewed and strengthened.

Figure 9: Completeness and timeliness of nutrition data in HMIS Senegal, 2015



There is as yet no system in place for the transmission of HMIS data from countries to the Regional Office. However, since 2012, countries have been encouraged to establish national health observatories; these could become primary repositories of data from HMIS and parallel systems. Where nutrition indicators are included in the HMIS, they would be compiled along with other health indicators, as has indeed begun in ANI countries.

3.4.2 Data flow in integrated disease surveillance and response systems

With regard to systems for IDSR, nutrition data are transmitted by primary health centres, on a weekly basis, through the same channels as other reportable health events. At the health district level, the data are compiled and submitted online to the ministry of health. These data should normally be published in a weekly newsletter in each country. The same bulletins are transmitted through WHO country offices to the WHO Regional Office for Africa for inclusion in the Real-time strategic information system (rSiS). The rSiS is a platform developed by the Regional Office to support integration, centralization and management of heath data in the Region for decision making.

A search for nutrition information in the rSiS (2015 and 2016) found data on severe acute malnutrition for Central African Republic, Chad, Niger, Sierra Leone and Senegal for both years. In the specific case of ANI countries, of the five that include nutrition data in their IDSR systems (Ethiopia, Senegal, Sierra Leone, United Republic of Tanzania, and Zimbabwe), the rSiS had data from Senegal and Sierra Leone on reported cases of severe acute malnutrition. Similarly, Senegal had data on cases of moderate acute malnutrition. As an example, Table 3 provides details on what was reported in 2015 as nutrition data through the IDSR system in Senegal.

A nutrition module that makes the capture of key nutrition indicators possible is being set up within the rSiS to facilitate the compilation and monitoring of nutrition data at regional level. It will be of primary value in monitoring nutrition in emergencies, in line with other events reported through the IDSR system. The objective is to build into the module the capacity to also extract nutrition data from other systems, notably, the HMIS. Other functions to be included are data quality checks and analysis linking intermediate health outcomes and process indicators to nutrition outcomes.

Table 3: Nutrition data within the Senegal IDSR system, 2015

Health Region	Malnutrition				ARI	
	SAM		MAM			
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Dakar	2235	2	4,658	0	19 359	0
Diourbel	4484	7	3,546	0	30 991	0
Fatick	949	0	2,516	0	11 574	2
Kaffrine	392	0	598	0	770	0
Kaolack	1148	1	1,576	0	10 039	0
Kedougou	334	1	415	0	5307	0
Kolda	1632	22	2,536	0	578	5
Louga	1284	5	2,846	0	9153	8
Matam	1189	4	2,676	0	523	0
Saint Louis	3194	0	6,001	112	16 604	0
Sedhiou	1,152	3	1,897	0	8968	0
Tambacounda	2880	3	5,013	1	2176	0
Thiès	3376	5	8,798	2	75 724	1
Ziguinchor	902	6	2,229	0	8694	0
National	**25 151**	**59**	**45 305**	**115**	**200 460**	**16**

3.4.3 Potential alternative data collection and transmission channels

The Immunization programme has established one of the best systems for collecting, compiling, analysing and reporting data from countries. Since 1998, WHO and UNICEF have been collecting information using a standard questionnaire (the Joint Reporting Form or JRF) that was developed by consensus between the two UN agencies and ministries of health. The data come from each country's HMIS or parallel information system, and feed into regular reports on incidence of vaccine-preventable diseases, immunization coverage, vaccine stocks, etc. Countries that are keen to track their nutrition progress using routine data could include a nutrition page in the Joint Reporting Form and use this established channel for nutrition monitoring. Success of such an experiment would depend on existence of the political will to track nutrition indicators using data that are routinely

collected in primary health services, but more importantly, country willingness to invest in the required capacity for implementation.

In another initiative, 25 countries in the Region produce reproductive, maternal, newborn and child health (RMNCH) scorecards that serve as management tools for ministries of health to track national and subnational performance on key RMNCH indicators. Based on routine data, and produced as often as quarterly in some countries, their use facilitates identification of bottlenecks to progress on achievement of targets, and the actions needed to remove the bottlenecks. The scorecards include nine GNMF-relevant (and extended) indicators, namely, early initiation of breastfeeding; exclusive breastfeeding for six months or less; measles and DPT3 coverage; vitamin A supplementation; use of insecticide-treated bed nets for children under 5; diarrhoea treatment with ORS; improved sanitation; and improved drinking water. This is another possible foundation to build upon in the continuing search for an approach to, and the tools for, reporting on GNMF indicators.

3.5 NUTRITION SURVEYS IN ANI: A POTENTIAL SOURCE OF DATA FOR MONITORING ROGRESS ON NUTRITION TARGETS

Four countries (Rwanda, Sierra Leone, Zambia and Zimbabwe) carried out nutrition surveys as part of the ANI project. Each of these countries used the exercise to address country-determined needs.

3.5.1 Rwanda

The Nutrition, markets and gender (NMG) survey in Rwanda involved nine districts randomly selected to represent the country's five provinces. The primary objectives the survey were to identify the specific causes of stunting in children aged 24 months and under; improve understanding of the relationship between agriculture and nutrition; and provide baseline data prior to implementation of programmes in the surveyed districts. The secondary objective was to collect data that stakeholders could use to manage current programmes, develop new interventions, and inform policy.

The study followed a case-control model, comparing cases (stunted children) with controls (non-stunted children) and assessing risk factors in each group. Questionnaires, anthropometry, blood sampling (for haemoglobin) and 24-hour dietary recalls were used to collect data. In all, 1388 cases and 1400 controls matched closely by location, sex and age completed the study.

It covered a wide range of factors associated with child growth, including age; birth factors; characteristics of the head of the household and spouse; household wealth; health insurance; access to water, sanitation and hygiene; hand-washing practices; maternal education and gender dynamics; time away from the child; child morbidity; food consumption; household food security; diet diversity; agricultural production and market influences; and number of livelihood activities and income therefrom. Although not all of the GNMF indicators were included, given the study's focus on stunting, a few were assessed in some depth. For example, rather than looking at the overall association between stunting and access to a safely-managed drinking water service,[12] the analysis examined the odds of stunting arising from 'piped water in the dwelling' as opposed to 'water from a public tap'; the association between stunting and the time it takes to reach the water source; and whether or not water was treated at home before consumption.

[12] This is one of the process indicators on the Global Nutrition Monitoring Framework

The study found that where income from agriculture was spent on household food purchases and health care, morbidity was reduced, food consumption and dietary quality were improved, and the risk of stunting was reduced. On the other hand, where production for the market was done at the expense of household nutrition, or where market food prices were high, the risk of stunting remained elevated. Increasing levels of schooling among mothers, from the primary level to higher levels of education, were associated with corresponding reductions in the risk of stunting among the children of those mothers.

The survey objectives and the broad scope of the data illustrate that it is possible to conduct nationally representative nutrition studies with the intention of informing and fine-tuning programmatic responses to identified malnutrition causes, and thereby, also monitoring progress towards national and global nutrition targets.

3.5.2 Zambia

A cross-sectional household survey was conducted in 14 districts of Zambia to provide baseline data prior to commencement of the First 1000 Most Critical Days programme in the context of the Scaling up nutrition (SUN) movement. The survey gathered data on children aged 24 months and under, and women of reproductive age (15–49 years). Over 250 households were chosen from each district, resulting in a sample of more than 4,000 households, although the precise number of women and children varied for each indicator, based on data availability.

The study presents the status of the population with regard to 14 indicators that include: iron and folic acid supplementation to pregnant women; micronutrients for children 6–23 months of age and for pregnant women; breastfeeding; complementary feeding; diets of pregnant and lactating women; diarrhoea treatment with zinc; water, sanitation, and hygiene; growth monitoring; vitamin A for children 6–23 months of age; deworming of women and of children 12–23 months of age; management of acute malnutrition in children 23 months old and under; and promotion of various locally available foods and processed foods during the first 1000 days.

Data from subcategories within the indicators provide a broad understanding of both status and how specific factors may be related to malnutrition. For example, the survey found that two thirds of pregnant women received iron and folic acid supplementation, and that nearly all supplements were provided by health centres. This finding can be used to understand issues surrounding antenatal care coverage. It can also inform reflection on how to improve care-seeking or service delivery. Household food consumption data showed that 79% of households consumed an adequate quantity of food (as measured by the food consumption score). Also, according to the household dietary diversity score, diet quality was adequate in 64% of households. With regard to sanitation, although 70% of households had a toilet, only 24% had hand-washing facilities nearby. It was also found that nearly 50% of households washed their hands in one communal bowl before meals. In this regard too, the findings indicate where to focus efforts to improve the process indicators that drive progress on nutrition outcomes.

3.5.3 Sierra Leone

Sierra Leone's first National micronutrient survey was conducted in 2013 as part of the ANI project. The country also carried out a national nutrition survey in 2014 using SMART methodology as will be described hereafter.

Micronutrient survey

The motivation for this survey was the high prevalence of anaemia in women and in children under 5, reported in the 2008 DHS, in addition to the limited availability of data on the population's micronutrient malnutrition. The study was further seen by stakeholders as important for monitoring ongoing nationwide programmes, and for informing decisions on future interventions.

It focused on three population groups: children under 5 years old, non-pregnant women, and pregnant women. It investigated iodized salt usage at household level, and prevalence of mild, moderate and severe anaemia in all three groups.

Factors investigated in relation to children were iron deficiency and iron deficiency anaemia; vitamin A deficiency; and malaria. The exclusive breastfeeding rate was measured for children up to 6 months old, while for children aged 6–23 months, minimum acceptable diet, dietary diversity, and meal frequency were measured.

With regard to non-pregnant women, the study focused on iron deficiency anaemia; deficiencies in iron, vitamin A, folate and vitamin B12; iodine status; and malaria prevalence. Fewer indicators were studied in pregnant women, namely, anaemia, iodine status, and malaria prevalence.

This cross-sectional study used a stratified (rural and urban) national sample. Thirty census areas from each stratum were sampled in the first stage, followed in the second stage by a sampling of 24 households from each of the 60 census areas, for a total of 1440 households. One child under 5 years old was randomly selected from each household, along with the child's mother (respondent to the household and child questionnaire). If the mother was pregnant, a non-pregnant woman of reproductive age was randomly selected to represent that target group. All pregnant women in the household were included in the component of the study looking at anaemia in pregnancy.

Moderate or severe anaemia and malaria affected more than half of the children. Vitamin A deficiency was more prevalent than iron deficiency or iron deficiency anaemia. Just over 40% of children 6 months old and under were being exclusively breastfed, and only about 1 in 10 children 6–23 months of age received a minimum acceptable diet.

Anaemia affected about 70% of pregnant and 45% of non-pregnant women; a third of all women had malaria. Iodine status was normal in both pregnant and non-pregnant women (even though household use of adequately iodized salt was reported for only 81% of households, instead of the recommended 90%). In non-pregnant women, the prevalence of iron deficiency anaemia and deficiencies of iron, vitamin A, and of B12 were below 10% while, on the contrary, folate deficiency affected 79% of this group (these tests were not done for pregnant women). The survey results suggest that a large proportion of anaemia in children and women is caused by factors other than iron deficiency. For this reason, a thorough investigation of the aetiology of anaemia in Sierra Leone is necessary. Based in large part on these results, Sierra Leone is in the process of developing a national multisectoral strategy to prevent and control anaemia. Analysis of haemoglobinopathies is continuing, using leftover blood samples from the survey. The main objective is to determine whether the high prevalence of anaemia in women and children might be linked to sickle cell disease or other factors.

Second national nutrition survey

In comparison to results from the 2008 DHS, the 2013 DHS showed significant improvements in several child health indicators, but the childhood mortality rate was unchanged, as were child nutrition indicators. Apart from the DHS, several nutrition studies have been conducted in Sierra Leone, but using different methodologies. The first National nutrition survey in 2010 used

standardized monitoring and assessment of relief and transitions (SMART) methodology. Therefore, to study trends using consistent methods, a second national nutrition survey using SMART methodology was carried out in 2014. The government hopes to continue using SMART methodology regularly in order to have consistent data available to assist programme planning and nutrition interventions.

The 2014 study aimed to investigate nutritional status and mortality among children 6–59 months of age and women of reproductive age. It also aimed to identify the wider contextual determinants of malnutrition associated with health status; infant and young child feeding; food security; and water, sanitation and hygiene.

A cross-sectional design based on the SMART methodology was used to obtain a representative sample of rural and urban households. During household visits, data were collected using questionnaires on nutrition indicators and contextual information. Mortality among children under 5 years of age was reported for the 90-day period preceding the survey, while morbidity was in reference to the two-week interval leading to the survey.

Coverage was above 90% for measles vaccination, vitamin A, and use of insecticide-treated bed nets (ITN). Timely initiation of breastfeeding and exclusive breastfeeding below 6 months were just under 60%, and 4 out of 5 mothers continued breastfeeding to over 1 year. Other indicators suggested that food insecurity was a pressing problem; for example, in the preceding 30 days, half of the households had had insufficient food or money for food. Meanwhile, most households relied on markets for their food, and two-thirds spent over 50% of their income on food, with only 1% of households producing enough for their own consumption.

Further details suggest that hygiene practices may be an important risk factor. For example, although 4 in 5 primary carers of children washed hands after defecation, only 1 in 5 households washed hands with soap, and fewer than 5% of mothers reported washing hands before breastfeeding. Therefore, coordination with other sectors, such as WASH and agriculture, has been a priority in the country in order to address nutrition issues.

3.5.4 Zimbabwe

In view of the fact that a DHS was ongoing in Zimbabwe, the survey supported by ANI focused on food consumption with a view to identifying suitable vehicles for food fortification. Consequently, with regard to nutrition monitoring, the Zimbabwe ANI study is not analysed here.

3.5.5 Summary of survey approaches for nutrition monitoring

As discussed in Section 3.1, only 18 of the 47 countries in the Region had a national nutrition survey at least once every three years in the reference period between 2000 and 2015, while 20 countries had survey frequencies of five years or more apart. The latter cannot be expected to monitor national progress on nutrition targets. Moreover, large surveys of the DHS and MICS category are costly, and so far, they are driven by external funds for most countries. Meanwhile, from the foregoing discussion of the potential to use routine data through the HMIS and the IDSR system, it is evident that the Region is a long distance away from having the type of information systems that could be the primary source of data for nutrition programme monitoring.

The type of studies conducted in the ANI project countries present a middle ground between periodic surveys and routine surveillance. Their implementation was successful thanks to the pooling of financial and technical resources by governments and development partners (UN agencies, NGOs

and some bilateral partners). In the interest of accountability for commitments and investments in improving maternal and child nutrition, responsible government units should prioritize such nutrition-focused surveys and secure budgets for them from domestic resources and partner contributions. In Rwanda, Sierra Leone and Zambia, they served as important tools for identifying nutrition problems and their associated causes; the better to address them through appropriate programming.

3.6 Opportunities and challenges for nutrition surveillance systems in the WHO African Region

Overall, foundations are in place to further develop nutrition surveillance in the 11 ANI countries, and in others such as Madagascar, Niger, Swaziland, etc., that already collect data for nutrition monitoring. Implementation of the ANI project made it possible to identify opportunities and challenges related to the establishment and operationalization of nutrition surveillance systems, especially as these are applicable beyond the ANI countries.

Among the factors that were identified as facilitators, an important one was that nutrition be a national priority. This means that the government leads and coordinates nutrition initiatives; is willing to invest in nutrition programmes; and monitors the evolution of the country's nutrition situation against both its own national and global commitments. Such leadership was noted in Burkina Faso, Ethiopia, Rwanda, Senegal, Sierra Leone, Uganda, United Republic of Tanzania and Zambia.

Similarly, it was observed in Ethiopia that government demand for the surveillance data produced through ANI reinforced collaboration in general. Importantly, it also helped to inculcate the positive practice of using data not only to inform actions but also to address malnutrition at different levels of government. Country efforts can also be strengthened through regional forums. In west Africa, for example, the Nutrition Forum organized by the West African Health Organization in 2015 urged countries to include nutrition indicators in their national surveillance systems in order to facilitate tracking of progress on global nutrition targets. In the biennial review that took place in 2016, countries were required to report on implementation of Forum recommendations.

Incorporating nutrition indicators in existing health management information systems has several advantages. Since nutrition services targeting mothers and children in the first 1000 days are mainly provided through the health sector, it is logical that primary outcome indicators should be measured and monitored through the same sector. Moreover, however rudimentary the existing information system may be (such as use of registers and paper forms), health workers already collect the primary data (such as child age, height, weight and sex) needed for nutrition surveillance. Sustainability is better assured when an already established information system is continued.

At the same time, the introduction of new indicators can provide an opportunity to enhance the existing system. Among the positive developments in this regard, national plans to strengthen nutrition surveillance and improve HMIS tools have been developed in Burkina Faso and Ethiopia, and DHIS2 is being mainstreamed in Uganda and Zimbabwe. The lingering challenge is to include enough indicators in health information systems so as to have a more comprehensive picture of maternal, infant and young child nutrition. So far, Ethiopia and Sierra Leone have included only two of the six primary indicators of the GNMF.

Another requirement for sustainability is for health workers to be trained and adequately motivated for the additional work required to standardize the collection and compilation of nutrition data (with attention to quality). The health workers have to analyse the data and take action on the situations reflected by them, and to transmit timely and complete reports to the district and national levels to inform programmatic and policy action.

In all the ANI countries, health workers and managers at national, district and health facility levels were trained in the principles and operations of nutrition surveillance. In Rwanda, district nutritionists and officers in charge of monitoring and evaluation are now able to produce food security and nutrition bulletins twice a year. However, instead of seeing what they do as a mere exercise in surveillance, the health workers need to appreciate the value of what they are measuring, and see in it not only a means of improving the services they deliver, but also the positive results they can achieve when problems are identified and action taken.

Other challenges to surveillance include lack of human resources at the district or central level (as noted in Mali, Mozambique, Rwanda, and Senegal) or the absence of training in the use of HMIS tools (as observed in Burkina Faso). Added to this, high staff turnover rates are a perennial challenge to government ministries. What is more, information technology and internet connectivity are not sufficiently developed in the Region to guarantee regular data transmission (examples are Sierra Leone and Zimbabwe), even when computer equipment is installed.

For the gains made in ANI countries to be sustained, local investment or allocation of development aid to nutrition surveillance will be critically important. Although countries joining the Scaling up nutrition movement (SUN) are required to commit to allocating budgets to nutrition (all ANI countries are in SUN), scarcity of resources limits the size of allocations available locally. As a consequence, delivering interventions often takes precedence over routine nutrition surveillance and monitoring. Local funding can be enhanced, as happened in Burkina Faso and Senegal, through UN, NGO and government partnerships that also provided technical support for setting up the respective surveillance systems.

Resources are needed for capacity building and staff training; for the collection, compilation, validation, analysis and use of data; for supportive supervision and mentoring; for procurement and maintenance of the tools required for data collection, processing and transmission; and for monitoring and evaluation. The initial commitment by governments to improve nutrition in their populations should be confirmed through establishment of clear governance structures, with the roles of government departments in data gathering, analysis, and policy formulation defined. Governments should also be clear about their commitment to use nutrition data to inform policy and programme actions.

4. NUTRITION POLICIES AND PLANS IN THE WHO AFRICAN REGION: OVERVIEW FROM GLOBAL DATABASE ON IMPLEMENTATION OF NUTRITION ACTION

The source of the information reviewed for this section of the report is the Global database on the implementation of nutrition action (GINA).[13] The database catalogues nutrition policy or strategy documents, plans, actions, mechanisms and targets. It is, therefore, a useful resource on the policy environment in which countries are pursuing global goals. It currently contains information on 475 policy and legislative documents on the WHO African Region.

Following the 1st Global Nutrition Policy Review conducted in 2009-2010,[14] WHO has undertaken the 2nd Global Nutrition Policy Review (GNPR2) with a view to comprehensively updating GINA. The purpose of the review was to compile updated information on the progress countries are making in implementing actions to achieve the global nutrition targets for 2025, as well as the Framework for Action adopted by FAO and WHO Member States at the 2nd International Conference on Nutrition in 2014.

By February 2017, 40 countries in the African Region had reported on nutrition-related policies and programmes, in response to the GNPR2 survey. In anticipation of the publication of the full report of the Review in 2017, the present report was confined to a few overview remarks on nutrition and diet-related goals, based on responses to the GNPR2 received up to February 2017 and information already available in GINA.

4.1 STATUS OF NUTRITION-RELATED POLICIES AND PLANS IN THE WHO AFRICAN REGION

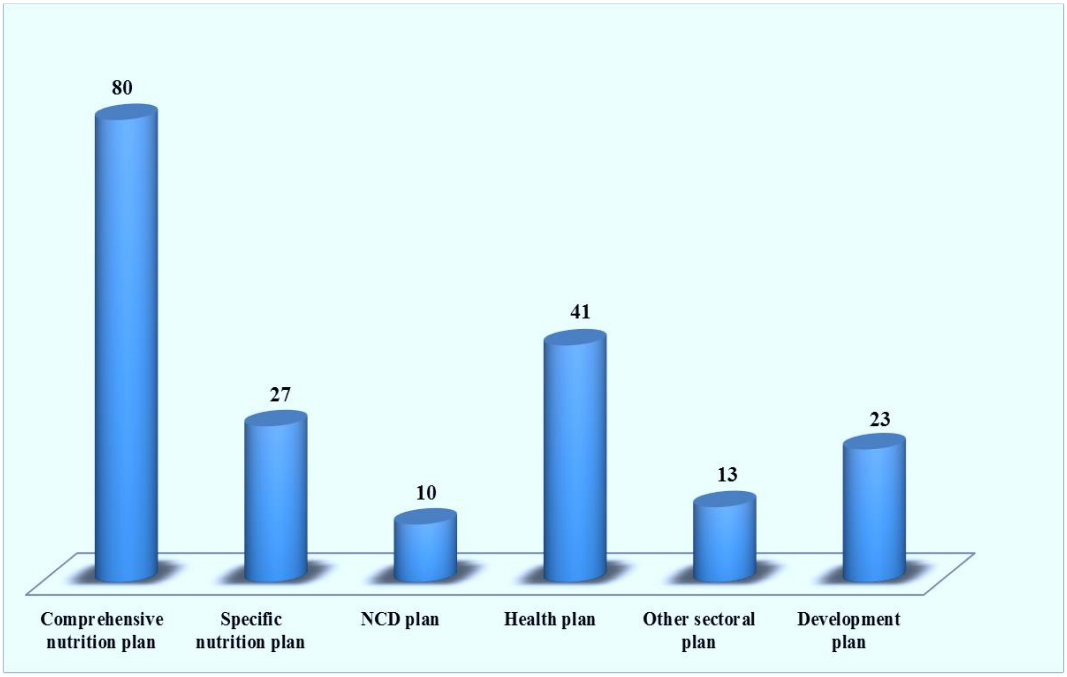
This section summarizes information on the current status of nutrition policies and programmes as reported in the GNPR2 survey by 40 countries, and based on information already available in GINA for the remaining seven (Angola, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Mauritius, Nigeria and South Sudan). The findings show policy goals included in 194 documents that were considered to be the most recent versions (older documents were excluded when later versions became available). These include 80 comprehensive nutrition policies, strategies or action plans; 27 topic-specific nutrition plans (such as infant and young child feeding strategies); 10 NCD plans; 41 health plans; 13 agriculture and other sectoral plans; and 23 broader development plans (for example, Poverty Reduction Strategy Papers (PRSPs)[15] (Figure 10). The available documents from the 47 countries were dated between 2002 and 2017, and more than half of them were developed after 2012.

[13] https://extranet.who.int/nutrition/gina

[14] http://www.who.int/nutrition/publications/policies/global_nut_policyreview/en/

[15] Non-government plans (e.g., United Nations Development Assistance Framework (UNDAF) and nutrition-relevant legislative documents (including the Code of Marketing of Breast-milk Substitutes and Designated Products regulations and maternity protection legislation) were not included.

Figure 10: Nutrition-related policy documents from the WHO African Region



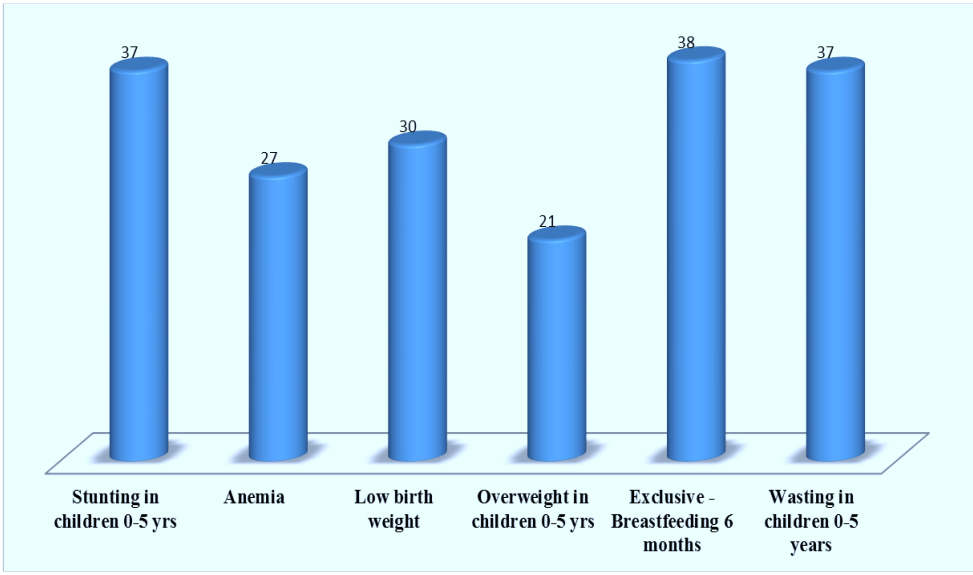
4.2 GLOBAL NUTRITION AND NCD TARGETS IN NATIONAL NUTRITION POLICIES AND PLANS

Elements of policy or action documents that are catalogued in GINA include goals, targets, indicators and action areas. In reviewing them, particular attention was paid to the inclusion of the global maternal infant and young child nutrition targets and related GNMF indicators. Also included were global noncommunicable disease (NCD) targets for 2025 (the diet-related voluntary NCD targets are to reduce salt consumption by 30%, reduce elevated blood pressure by 25%, and halt the increase in diabetes and obesity).

The recommendation to countries interested in contributing to the achievement of the global targets is for them to set SMART (i.e., specific, measurable, achievable, relevant, and time-bound) national targets based on a careful consideration of the burden of malnutrition, the resources available to address it, and a monitoring and evaluation plan that fosters accountability for commitments made. SMART targets reflect a commitment by government to address malnutrition in concrete and measurable terms. For this report, however, the focus was on the nominal inclusion of nutrition and NCD-risk indicators in policy documents rather than an assessment of whether or not the documents included SMART targets.

The indicators most often integrated in policy documents were exclusive breastfeeding (38 countries), wasting and stunting (37 countries) and low birth weight (30 countries). Meanwhile, 27 and 21 countries respectively, include anaemia in pregnant women and the childhood overweight target as an indicator or goal in nutrition policy documents (Figure 11).

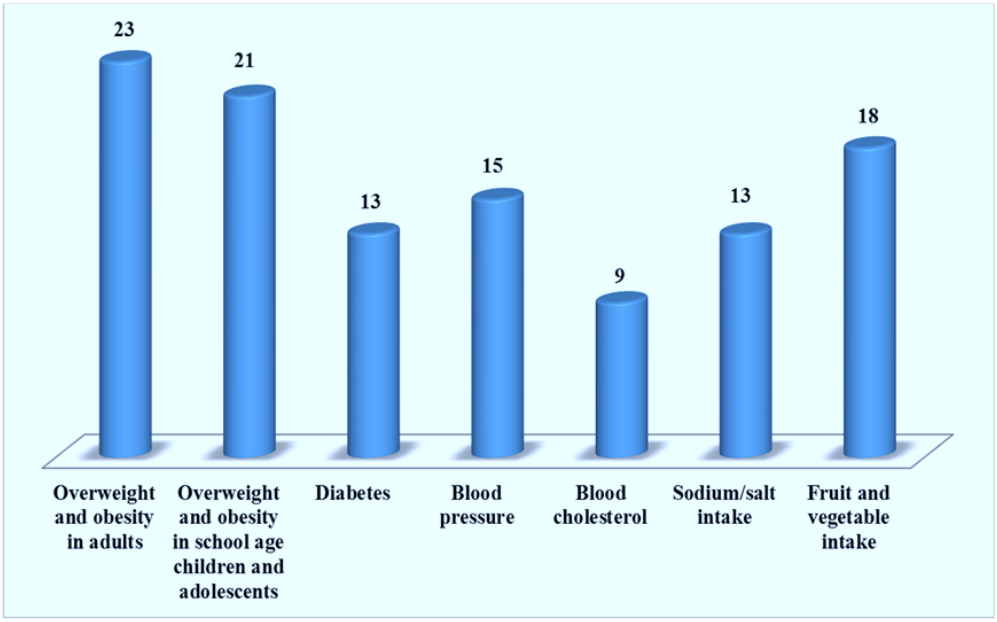
Figure 11: Number of countries with goals, objectives, targets or indicators related to the global nutrition targets for 2025



* Based on a review of 194 policy documents catalogued in GINA and collected through the 2nd Global Nutrition Policy Review from 47 countries of the WHO African Region (2002–2017).

From a country-based assessment of NCD targets in policy documents, half of the countries (23) in the Region included adult overweight or obesity indicators (21 countries included them for school-age children and adolescents). A few countries (9) had indicators of elevated blood pressure in their policies; 13 had sodium or salt intake; another 13 had raised blood glucose; 18 included diabetes or other NCD-linked indicators such as fruit and vegetable intake; and 9 countries had raised blood cholesterol (Figure 12).

Figure 12: Number of countries* with goals, objectives, targets or indicators associated with diet-related voluntary noncommunicable disease targets for 2025



* Based on a review of 194 policy documents catalogued in GINA and collected through the 2nd Global Nutrition Policy Review from 47 countries of the WHO African Region (2002–2017).

5. DISCUSSION AND CONCLUSIONS

The 2015 Global Nutrition Report called for a data revolution that would make comparable data available over time to illuminate the pathways to improved nutrition.[100] In the 2016 edition, data gaps were identified as significant roadblocks to nutrition progress throughout the world.[101] The Report called on every country to gather the national and subnational data needed to understand – and act on – its own unique situation, since each country has a different nutrition context.

The WHO Regional Director for Africa Dr Matshidiso R. Moeti, is leading the Secretariat in implementing a Transformation Agenda (2015–2020) towards universal health coverage.[102] Expanded information, data, analysis, and knowledge generation and management capacity at national, sub-regional, and regional levels are among the core elements required for health systems to achieve universal health coverage. If "what is measured gets done," actors at all levels of the health system (subnational, national, regional, etc.) need to have the skills and tools for strategic information management, including skills and tools for data collection, validation, analysis, and use for evidence-based decisions and actions. This is a necessary ingredient to delivering results.

Therefore, in line with the global nutrition agenda[1, 100,101] and the Regional Transformation programme,[102] this report was aimed, first, at determining where countries in the WHO African Region stand in terms of (a) progress towards the six global nutrition targets for 2025, (b) the intermediate outcomes, and (c) process and policy environment indicators associated with the targets. This would highlight where action is needed to drive progress on the outcomes of the MIYCN comprehensive implementation plan and Sustainable Development Goal No. 2 (*By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons*).

The second objective of the report was to trigger reflection on (a) the availability of data based on which countries can track progress on the various indicators and outcomes; (b) the readiness of countries in the Region for the requested biennial reporting to the World Health Assembly on the global nutrition monitoring framework; and (c) the willingness of countries and their development partners to invest in strengthening country capacity for nutrition surveillance and monitoring, considering the great value of having real-time data for sound programme planning and management.

Where do countries in the WHO African Region stand in terms of progress towards the six global nutrition targets for 2025?

Within the limitations of what is considered "current" status, undernutrition persists as an important problem in the Region. Twenty-five of the Region's 47 countries have high (>30%) or very high (>40%) rates of stunting. In fact, an analysis of trends shows that the numbers are increasing rather than decreasing as desired in the target for 2025. Only 17 countries have "acceptable" levels of wasting (<5%); and persistent famine, flooding and civil crises are certain to make it difficult for many countries to achieve the target. Trend data were not available for the incidence of low birth weight, for which rates exceed 10% in the 26 of the 45 countries that have LBW data. Along with persistent undernutrition, the prevalence of overweight among children under 5 years of age (and the overall number of children affected) is rising, whereas the target is to halt the increase. Available data for anaemia in women of reproductive age show high prevalence in many countries in west

Africa. With regard to breastfeeding, only about one third of countries in the Region have already attained the 50% exclusive breastfeeding threshold. Moreover, changes in lifestyle, coupled with weak regulatory measures for breastfeeding protection, threaten the attainment and maintenance of the targeted minimum rate. In summary, a lot more work needs to be done to achieve the global targets for 2025.

Among the intermediate outcomes and process and policy indicators, a few still require to be operationalized for country reporting. It will be necessary to develop intersectoral data platforms and analytical algorithms to show linkages among these and the primary outcomes, if we are to appropriately inform action at respective levels of the health system. This requires collaboration between the health sector and other sectors responsible for nutrition-sensitive programmes such as agriculture, education, social welfare, water and sanitation, labour, and trade. Multisectoral efforts in this regard are already taking place, notably through the Scaling up nutrition (SUN) movement, which the majority of countries in the WHO African Region have adhered to.[16]

Data availability for tracking progress on the various indicators and outcomes

With regard to data availability, it was noted that periodic surveys are the primary source of information for nutrition monitoring, and that only a few countries have reasonably frequent data collection cycles for reliable monitoring of progress. For two countries, the most recent large-scale surveys pre-date 2000, and for 27 others, they are at least five years old. The DHS and MICS are the most important sources of data, but countries in the Sahel, along with a few others, are implementing SMART and household food consumption surveys to provide basic nutrition data at shorter intervals, including annually. Where representative data are available every 2 to 3 years, individual countries can use the web-based interactive tracking tool to set national targets and monitor their own progress on each of the six outcomes. Such monitoring would provide useful programme strengthening information, as well as feed into reports at regional and global forums where countries report on their commitments.

Where properly functioning surveillance systems exist, they provide invaluable real-time information for decision making in policy and programme design and implementation. The project *Accelerating Nutrition Improvements (ANI) in sub-Saharan Africa* was implemented in 11 countries with the objective of strengthening nutrition surveillance. This involved reviewing the structure and functioning of existing information systems; defining nutrition indicators for inclusion; revising or developing data collection tools; and building the capacity to collect, analyse and use data to inform action at service delivery and programme management levels. By the end of the project, the 11 countries had incorporated between two and five indicators (out of the six MIYCN primary outcomes) into their national health management information systems.

The duration of the ANI project was sufficient to strengthen foundations for nutrition surveillance within existing information systems. However, sustainability and success in the long term will depend on continuing government leadership, and the support of many partners in nutrition surveillance. In many countries, equipment was procured to facilitate data collection and data flow. Use of the data was enhanced by stakeholder appreciation of the importance of using information to shape programme decisions. A lot more time and substantial resource investments are required to ensure that the systems continue to run; that they are scaled up (most countries worked only in pilot districts); and that the quality of data improves.

[16] http://scalingupnutrition.org/sun-countries/about-sun-countries

Although the required infrastructure for data flow from countries to the WHO Regional Office is still very limited, there is potential worth exploring and exploiting. Regional aggregation of data from several countries will create a platform for standardizing how nutrition indicators are defined, measured, analysed and reported. Such a platform will also be useful for inter-country knowledge-sharing on both data collection and management, and systems operations. Additionally, it will provide a basis for inter-country nutrition status comparisons, and ultimately, for standardized reporting at regional and global forums on internationally agreed targets.

The Real-time strategic information system database at the WHO Regional Office for Africa, which is linked to the integrated disease surveillance and response system, illustrates this potential. Similarly, the Joint Reporting Form on immunization and the RMNCH scorecards demonstrate how inter-country agreement on standard reporting can provide a foundation for regional data aggregation and standardized monitoring of performance. In fact, the countries that participate in the RMNCH scorecard initiative can, indeed, begin reporting on their performance on a few of the GNMF indicators.

Are countries and their development partners willing to invest in strengthening capacity for nutrition surveillance and monitoring?

When committing to work towards the six global nutrition targets for 2025, WHO Member States requested the Secretariat to develop a monitoring framework to guide their efforts in addressing the challenge of malnutrition. This report is a contribution to the Secretariat's commitment to support countries as they take stock of where they are, and consider ways and means of improving programming, monitoring and evaluating their action, and reporting on internationally agreed targets on maternal, infant and young child nutrition.

This report ends with the take-home question addressed to governments and development partners in the WHO African Region: are they willing to invest in strengthening capacity for nutrition surveillance and monitoring?

REFERENCES

1. WHO. Comprehensive implementation plan on maternal, infant and young child nutrition. World Health Organization, 2014. http://www.who.int/nutrition/publications/CIP_document/en/
2. UNICEF, WHO, World Bank Group. Joint malnutrition estimates, 2016 edition. http://www.who.int/nutrition/publications/jointchildmalnutrition_2016_estimates.pdf?ua=1.
3. République Algérienne Démocratiqe et Populaire. Ministère de la Santé, de la Population et de la Réforme Hospitalière. Enquête par grappes à indicateurs mulitples (MICS) 2012-2013. Rapport final 2015.
4. Ministerio da Saude. Relatorio do inquerito sobre a nutriçao em Angola 2007. Luanda. Ministerio da Saude, Direcçao nacional de Saude Publica, 2008.
5. INSAE. Enquête par grappes à indicateurs multiples (MICS) 2014. Résultats clés. Cotonou, Benin. Institut National de la Statistique et de l'Analyse Economique, 2015.
6. CSO and UNICEF. 2007 Botswana Family Health Survey IV report. Gaborone, Botswana. Central Statistics Office, 2009 (and additional analysis by UNICEF).
7. Secrétariat général, Direction de la santé de la famille, Direction de la Nutrition. Enquête nutritionnelle nationale 2015: Rapport provisoire. Ministère de la santé, Burkina Faso, Février 2015.
8. Institut de Statistiques et d'Études Économiques du Burundi (ISTEEBU), Ministère de la Santé publique et de la Lutte contre le Sida [Burundi] (MSPLS) et ICF International. Enquête démographique et de santé Burundi 2010 (and additional analysis).
9. Institut National de la Statistique. Enquête par grappes à indicateurs multiples (MICS5), 2014. Rapport de résultats clés. Yaoundé, Cameroun. Institut National de la Statistique, 2015.
10. Institut Centrafricain des Statistiques, et des Etudes Economiques et Sociales. Suivi de la situation des enfants, des femmes et des hommes. Enquête par grappes à indicateurs multiples (MICS) couplée avec la sérologie VIH. Rapport final 2010. Bangui, RCA. ICASEES, 2012.
11. INSEED, Ministère de la Santé Publique (MSP) et ICF International. Enquête Démographique et de Santé et à Indicateurs Multiples du Tchad 2014–2015. Rockville, MD. Institut National de la Statistique, des Études Économiques et Démographiques (INSEED), MSP et ICF International, 2016.
12. Direction Générale de la Statistique et de la Prospective (DGSP) et ICF International. Enquête démographique et de santé et à indicateurs multiples aux Comores 2012. Demographic and Health Surveys and MICS. Rockville (MD). DGSP et ICF International, 2014 (and additional analysis).
13. Institut National de la Statistique (INS) et UNICEF. Enquête par grappes à indicateurs multiples (MICS5) CONGO 2014–2015. Rapport de résultats clés. Brazzaville, Congo. INS et UNICEF, 2015.
14. Institut National de la Statistique (INS) et ICF International. Enquête démographique et de santé et à indicateurs multiples de Côte d'Ivoire 2011-2012. Demographic and Health Surveys and MICS. Calverton (MD). INS et ICF International, 2012 (and additional analysis).
15. Ministère du Plan et Suivi de la Mise en oeuvre de la Révolution de la Modernité (MPSMRM), Ministère de la Santé Publique (MSP) et ICF International. Enquête démographique et de santé en République Démocratique du Congo 2013-2014. Demographic and Health Surveys. Rockville (MD). MPSMRM, MSP et ICF International, 2014 (and additional analysis).
16. Ministerio de Sanidad y Bienestar Social (MSBS), Ministerio de Economía, Planificación, e Inversiones Públicas (MEPIP), ICF International. Encuesta demográfica y de salud en Guinea Ecuatorial (EDSGE-I). Demographic and Health Surveys. Guinea Ecuatorial y Calverton (MD). MSBS, MEPIP e ICF, 2012.
17. National Statistics Office (NSO) [Eritrea] and Fafo AIS [Norway]. Eritrea population and health survey 2010. Asmara, Eritrea. National Statistics Office and Fafo Institute for Applied International Studies, 2013.
18. Central Statistical Agency [Ethiopia]. Ethiopia mini Demographic and Health Survey 2014. Addis Ababa, Ethiopia, 2014.
19. Direction Générale de la Statistique (DGS) et ICF International. Enquête démographique et de santé du Gabon 2012. Demographic and Health Surveys. Calverton (MD) et Libreville, Gabon. DGS et ICF International, 2013 (and additional analysis).
20. The Gambia Bureau of Statistics (GBOS) and ICF International. The Gambia Demographic and Health Survey 2013. Banjul, Gambia and Rockville (MD). GBOS and ICF International, 2014.

21. Ghana Statistical Service (GSS), National Public Health and Reference Laboratory (NPHRL) and the Ghana Health Service (GHS). 2014 Ghana demographic and health survey (2014 GDHS): Key indicators. Demographic and Health Surveys. Accra, Ghana. GSS, NPHRL, GHS, 2015 (pending reanalysis).
22. l'Institut National de la Statistique (INS), Ministère du Plan, Ministère de la Santé et de l'Hygiène Publique, ICF International, UNICEF. Enquête démographique et de santé (EDS-IV) et enquête par grappe à indicateurs multiples (MICS). L'EDS-MICS 2012. Conakry, Guinée et Calverton, MD. INS et ICF, 2013 (and additional analysis).
23. Ministério da Economia e Finanças DGdPINdEI. Inquérito aos Indicadores Múltiplos (MICS) 2014. Principais Resultados. Bissau, Guiné-Bissau. Ministério da Economia e Finanças, Direcçao Geral do Plano Instituto Nacional de Estatística (INE), 2015.
24. Kenya National Bureau of Statistics (KNBS), Ministry of Health, National AIDS Control Council, (NACC) Kenya Medical Research Institute (KEMRI) and the National Council for Population and Development (NCPD). Kenya Demographic and Health Survey (2014 KDHS): Key indicators. Demographic and Health Surveys. Nairobi, Kenya: KNBS, Ministry of Health, NACC, KEMRI, NCPD, 2015 (pending reanalysis).
25. Ministry of Health and ICF International. Lesotho Demographic and Health Survey (2014 LDHS): Key indicators. Demographic and Health Surveys. Maseru, Lesotho: Ministry of Health and ICF International, 2015 (pending reanalysis).
26. Liberia Institute of Statistics and Geo-Information Services, Ministry of Health and Social Welfare, National AIDS Control Program, ICF International. Demographic and Health Survey 2013. Demographic and Health Surveys. Monrovia, Liberia. Liberia Institute of Statistics and Geo-Information Services (LISGIS) and ICF International, 2014 (and additional analysis).
27. Institut national de la statistique (INSTAT). Enquête nationale sur le suivi des indicateurs des objectifs de millénaire pour le développement (ENSOMD). Madagascar, 2012-2013.
28. National Statistical Office. Malawi MDG endline survey 2014. Key findings. Zomba, Malawi. National Statistical Office, 2014.
29. Cellule de Planification et de Statistique (CPS/SSDSPF), Institut National de la Statistique (INSTAT/MPATP), INFO-STAT et ICF International, 2014. Enquête Démographique et de Santé au Mali 2012-2013. Rockville (MD). CPS, INSTAT, INFO-STAT et ICF International.
30. Ministère de la Santé, Office Nationale de la Statistique, UNICEF. Enquête nutritionnelle nationale utilisant la méthodologie SMART: Résultats préliminaires. Nouakchott, Mauritanie. Juillet 2012 (and additional analysis).
31. Ministerio da Saude (MISAU), Instituto Nacional de Estatística (INE) e ICF International (ICFI). Moçambique inquérito demográfico e de Saúde 2011. Demographic and Health Surveys. Calverton (MD). MISAU, INE e ICFI, 2013 (and additional analysis).
32. The Nambia Ministry of Health and Social Services (MoHSS) and ICF International. The Namibia Demographic and Health Survey 2013. Demographic and Health Surveys. Windhoek, Namibia and Rockville, (MD). MoHSS and ICF International, 2014 (and additional analysis).
33. Institut National de la Statistique (INS) et ICF International. Enquête démographique et de santé et indicateurs multiples du Niger 2012. Demographic and Health Surveys and MICS. Calverton (MD). INS et ICF International, 2013 (and additional analysis).
34. National Bureau of Statistics and UNICEF. Summary findings of national nutrition and health survey, 9th Feb to 5th May 2014. Nigeria: SMART methods (and additional analysis).
35. National Institute of Statistics of Rwanda. Rwanda Demographic and Health Survey 2014/2015: Key findings, June 2015. http://statistics.gov.rw/publications/demographic-and-health-survey-dhs-20142015-key-findings.
36. National Institute of Statistics. Sao Tome and Principe. Multiple Indicator Cluster Survey 2014. Final Report. São Tomé, Sao Tome and Principe, 2016.
37. Direction de la Santé de la Reproduction et de la Survie de l'Enfant. Ministère de la Santé et de l'Action Sociale. Enquête Nutritionnelle suivant la méhodologie SMART. Senegal, 2015.
38. Louis-Marie V. The nutritional status and associated risk factors of 0–5 year old children in Seychelles. 7706 Med Health Project (thesis). Queensland, Australia. Griffith University, 2014.
39. Ministry of Health and Sanitation, Sierra Leone and UNICEF Sierra Leone. Sierra Leone National Nutrition Survey 2014. Freetown, Sierra Leone, 2014.
40. Ardington, C., & Case, A. National income dynamics study (NIDS). Health: analysis of the NIDS wave 1 dataset. Discussion paper no. 2. South Africa: The Presidency, Republic of South Africa and SALDRU, 2009.
41. Ministry of Health and National Bureau of Statistics. South Sudan Household Survey 2010. Final Report (MICS4). Juba, South Sudan, 2013.
42. Central Statistical Office and UNICEF. Swaziland multiple indicator cluster survey 2010 (MICS 5): Key findings. Mbabane, Swaziland. Central Statistical Office and UNICEF, 2015.

43. Ministère de la Planification, du Développement et de l'Aménagement du Territoire (MPDAT), Ministère de la Santé (MS) et ICF International. Enquête démographique et de santé au Togo 2013-2014. Demographic and Health Surveys. Rockville (MD). MPDAT, MS et ICF International, 2015.
44. Uganda Bureau of Statistics (UBOS). Uganda National Panel Survey (UNPS) - Wave III. Kampala, Uganda. UBOS, 2013 (and additional analysis).
45. National Bureau of Statistics (NBS) [Tanzania].Tanzania Demographic and Health Survey 2015-16. Demographic and Health Surveys. Dar es Salaam, Tanzania. NBS and ICF International, 2016.
46. Central Statistical Office (CSO) [Zambia], Ministry of Health (MOH) [Zambia], and ICF International. Zambia demographic and health Survey 2013-14. Demographic and Health Surveys. Rockville (MD). Central Statistical Office, Ministry of Health, and ICF International, 2014.
47. Zimbabwe National Statistics Agency and ICF International. Zimbabwe Demographic and Health Survey 2015: Final Report. Rockville (MD). Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International.
48. Ministère du Développement, de l'Analyse Économique et de la Prospective, Institut National de la Statistique et de l'Analyse Économique (INSAE), Cotonou, Bénin et ICF International, Calverton (MD). Benin DHS, 2011-12 - Final Report (French).
49. Ministère de la Santé, Direction de la Nutrition. Enquête nationale d'iode et d'anémie au Burkina Faso 2014 (ENIAB). National iodine status and anemia survey. Burkina Faso, 2014.
50. Institut National de la Statistique (INS) et ICF International. Enquête Démographique et de Santé et à Indicateurs Multiples du Cameroun 2011. Calverton (MD). INS et ICF International, 2012.
51. Instituto Nacional de Estatística (INE) [Cabo Verde], Ministério da Saúde, e Macro International. Segundo Inquérito Demográfico e de Saúde Reprodutiva, Cabo Verde, IDSR-II, 2005. Calverton (MD), INE, 2008.
52. Centre Nationale de la Statistique et des Études Économiques (CNSEE) [Congo] et ICF International. Enquête Démographique et de Santé du Congo (EDSC-II) 2011-2012. Calverton (MD). CNSEE et ICF International, 2013.
53. Central Statistical Agency [Ethiopia] and ICF International. Ethiopia Demographic and Health Survey 2011. Addis Ababa, Ethiopia and Calverton (MD). Central Statistical Agency and ICF International, 2012.
54. Institut National de la Statistique (INSTAT) et ICF Macro. Enquête démographique et de santé de Madagascar 2008-2009. Demographic and Health Surveys. Antananarivo, Madagascar. INSTAT et ICF Macro, 2010 (and additional analysis).
55. National Statistical Office (NSO) and ICF Macro. 2011. Malawi Demographic and Health Survey. Zomba, Malawi and Calverton (MD). NSO and ICF Macro, 2010.
56. Instituto Nacional de Estatística (INE) [São Tomé e Príncipe], Ministério da Saúde, e ICF Macro. Inquérito Demográfico e Sanitário, São Tomé e Príncipe, IDS STP, 2008-2009. Calverton (MD). INE, 2010.
57. Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal] et ICF International. Enquête Démographique et de Santé à Indicateurs Multiples au Sénégal (EDS-MICS) 2010-2011. Calverton (MD). ANSD et ICF International, 2012.
58. Statistics Sierra Leone (SSL) and ICF International. Sierra Leone Demographic and Health Survey 2013. Freetown, Sierra Leone and Rockville (MD). SSL and ICF International, 2014.
59. Central Statistical Office (CSO) [Swaziland] and Macro International. Swaziland Demographic and Health Survey 2006-07: Key Findings. Calverton (MD). CSO and Macro International, 2008.
60. Uganda Bureau of Statistics (UBOS) and ICF International Inc. Uganda Demographic and Health Survey 2011. Kampala, Uganda. UBOS and Calverton (MD). ICF International Inc., 2012.
61. National Bureau of Statistics (NBS) [Tanzania] and ICF Macro. Tanzania Demographic and Health Survey 2010. Dar es Salaam, Tanzania. NBS and ICF Macro, 2011.
62. Report of the National Survey to Evaluate the Impact of Vitamin A Interventions in Zambia in July and November 2003. Micronutrient Operational Strategies and Technologies (MOST). UNICEF, Centers for Disease Control and Prevention, Food and Nutrition Commission of Zambia & University of Zambia.
63. Ministère de la Santé, de la Population et de la Réforme Hospitalière, UNICEF, UNFPA. L'enquête MICS 2012-2013. Algérie.
64. Republic of Angola. Government of Unity and National Reconciliation. National Institute of Statistics. MICS multiple indicator cluster survey 2001. Assessing the situation of Angolan children and women at the beginning of the millennium. Analytical report.
65. Institut National de la Statistique et de l'Analyse Economique (INSAE). Enquête par grappes à indicateurs multiples (MICS), 2014, Résultats clés. Cotonou, Bénin. Institut National de la Statistique et de l'Analyse Economique, 2015.
66. Central Statistics Office (now Statistics Botswana), Private Bag 0024, Gaborone. 2007 Botswana family health survey IV report. November 2009. Access at http://botswana.microdatahub.com/index.php/catalog/9/download/53.

67. Institut National de la Statistique et de la Démographie (INSD) et ICF International, 2012. Enquête Démographique et de Santé et à Indicateurs Multiples du Burkina Faso 2010. Calverton (MD). INSD et ICF International (Re-analyzed by UNICEF HQ, 2013).
68. National Statistics and Evaluation Office (NSEO) [Eritrea] and ORC Macro. Eritrea Demographic and Health Survey 2002. Calverton (MD). National Statistics and Evaluation Office and ORC Macro, 2003.
69. Central Statistical Agency [Ethiopia] and ICF International. Ethiopia Demographic and Health Survey 2011. Addis Ababa, Ethiopia and Calverton (MD). Central Statistical Agency and ICF International, 2012.
70. Office National de la Statistique (ONS). Suivi de la situation des femmes et des enfants – Mauritanie MICS4. Enquête par grappes à indicateurs multiples (MICS) 2011). Rapport final. Avril 2014.
71. UNICEF Global Database: http://data.unicef.org/topic/nutrition/low-birthweight/.
72. National Population Commission (NPC) [Nigeria] and ICF International. Nigeria. Demographic and Health Survey 2013. Abuja, Nigeria, and Rockville (MD). NPC and ICF International, 2014.
73. Instituto Nacional de Estatística (INE) [São Tomé e Príncipe], Ministério da Saúde, e ICF Macro. Inquérito Demográfico e Sanitário, São Tomé e Príncipe, IDS STP, 2008-2009. Calverton (MD). INE, 2010.
74. Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal], et ICF International. Sénégal: Enquête Démographique et de Santé Continue (EDS-Continue 2014). Rockville (MD). ANSD et ICF International, 2015.
75. Seychelles, Ministry of Health . Seychelles Birth data 2014.
76. Central Statistical Office (CSO) [Zambia], Ministry of Health (MOH) [Zambia], and ICF International. Zambia Demographic and Health Survey 2013-14. Rockville (MD). Central Statistical Office, Ministry of Health, and ICF International, 2014.
77. Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. Zimbabwe Demographic and Health Survey 2010-11. Calverton (MD). ZIMSTAT and ICF International Inc, 2012.
78. Institut National de la Statistique et de la Démographie (INSD), ICF International. Enquête Démographique et de Santé et à Indicateurs Multiples du Burkina Faso 2010. Calverton (MD). INSD et ICF International, 2012.
79. Institut National de la Statistique (INSTAT) et ORC Macro. Enquête Démographique et de Santé de Madagascar 2003-2004. Demographic and Health Surveys. Calverton (MD. INSTAT et ORC Macro, 2005 (and additional analysis).
80. Cabo Verde. Inquérito multi-objectivo contínuo. Instituto Nacional de Estatística. Ministério das Finanças e Planeamento. (IMC 2013; IMC 2015). Catálogo de dados: http://dircv.ine.cv/index.php.
81. INSD. Annuaire Statistique Edition 2008. Ouagadougou, Burkina Faso. Institut National de la Statistique et de la Démographie, 2009.
82. UNICEF. Infant and young child feeding Global database. Update: October 2016. Access at https://data.unicef.org/topic/nutrition/infant-and-young-child-feeding/.
83. United Nations Office for Coordination of Humanitarian Affairs. El Niño in Southern Africa. (http://www.unocha.org/el-nino-southern-africa, accessed 1/9/16).
84. Ministère de la santé et de l'action sociale du Sénégal (MSAS). Enquête national sur l'allaitement maternel. Rapport final, 2015.
85. International Code of Marketing of Breast-milk Substitutes. Geneva. World Health Organization, 1981: http://whqlibdoc.who.int/publications/9241541601.pdf?ua=1&ua=1. (Accessed 1 September 2016).
86. Resolution WHA34.22. International Code of Marketing of Breast-Milk Substitutes. In: Thirty-fourth World Health Assembly, Geneva, 21 May 1981. Resolutions and decisions, annexes. Geneva. World Health Organization, 1981. (http://www.who.int/nutrition/topics/WHA34.22_iycn_en.pdf, Accessed 1 September 2016).
87. African Union. Malabo Declaration (June 2014) on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods. Assembly/AU/Decl.1(XXIII).
88. Veronica Tuffrey and Andrew Hall. Methods in nutrition surveillance in low-income countries. Emerging Themes in Epidemiology. 2016, 13:4.
89. Office National de la Statistique (ONS) [Mauritanie] et ORC M acro. Enquête Démographique et de Santé Mauritanie 2000-2001. Calverton (MD). ONS et ORC Macro, 2001.
90. Seychelles. Annual epidemiological report 2014.
91. WHO. Global Health Observatory. Access at: http://apps.who.int/gho/athena/data/GHO.
92. Cosep Consultoria, Consaúde, and ICF International. Angola Malaria Indicator Survey 2011. Calverton (MD). Cosep Consultoria, Consaúde, and ICF International, 2011.
93. Country consensus data, 2011 (personal communication received through WHO Country Office).
94. Institut de Statistiques et d'Études Économiques du Burundi - ISTEEBU, Ministère de la Santé Publique et de la Lutte contre le Sida. MSPLS/Burundi, and ICF International. Enquête sur les Indicateurs du Paludisme Burundi 2012. Bujumbura, Burundi. ISTEEBU, MSPLS, and ICF International, 2013. See more at: http://dhsprogram.com/publications/publication-MIS14-MIS-Final-Reports.cfm#sthash.tAfnq5vl.dpuf.

95. National Malaria Control Programme, NMCP/Kenya, Kenya National Bureau of Statistics, KNBS, and ICF International. Kenya Malaria Indicator Survey 2015. Nairobi, Kenya. NMCP, KNBS, and ICF International, 2016. See more at: http://dhsprogram.com/publications/publication-MIS22-MIS-Final-Reports.cfm#sthash.K6C6eGgO.dpuf.

96. National Malaria Control Programme, NMCP/Malawi and ICF International. Malawi Malaria Indicator Survey - MIS - 2014. Lilongwe, Malawi. NMCP/Malawi and ICF International, 2015. See more at: http://dhsprogram.com/publications/publication-MIS18-MIS-Final-Reports.cfm#sthash.Kn4BnXlp.dpuf.

97. Instituto Nacional de Estatística, INE/São Tomé e Príncipe, Ministério da Saúde, and ICF Macro. 2010. Inquérito Demográfico e Sanitário, São Tomé e Príncipe, IDS STP, 2008-2009. Calverton (MD). INE/São Tomé. .http://dhsprogram.com/publications/publication-FR233-DHS-Final-Reports.cfm#sthash.lNLhSHGL.dpuf.

98. Uganda Bureau of Statistics - UBOS and ICF International. Uganda Malaria Indicator Survey 2014-15. Kampala, Uganda. UBOS and ICF International, 2015. See more at: http://dhsprogram.com/publications/publication-MIS21-MIS-Final-Reports.cfm#sthash.ho6vWSfm.dpuf.

99. Tanzania Commission for AIDS - TACAIDS, Zanzibar AIDS Commission - ZAC/Tanzania, National Bureau of Statistics - NBS/Tanzania, Office of the Chief Government Statistician - OCGS/Tanzania, and ICF International 2013. Tanzania HIV/AIDS and Malaria Indicator Survey 2011-12. Dar es Salaam, Tanzania. TACAIDS/Tanzania, ZAC/Tanzania, NBS/Tanzania, OCGS/Tanzania, and ICF International. - See more at: http://dhsprogram.com/publications/publication-AIS11-AIS-Final-Reports.cfm#sthash.3hhheCeV.dpuf.

100. International Food Policy Research Institute. Global Nutrition Report 2015: Actions and Accountability to Advance Nutrition and Sustainable Development. Washington (DC), 2015.

101. International Food Policy Research Institute. Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030. Washington (DC), 2016.

102. WHO Regional Office for Africa. The Africa Health Transformation Programme 2015–2020: A Vision for Universal Health Coverage. http://www.afro.who.int/en/rdo/reports/4928-the-africa-health-transformation-programme-2015-2020-a-vision-for-universal-health-coverage.html.

APPENDICES

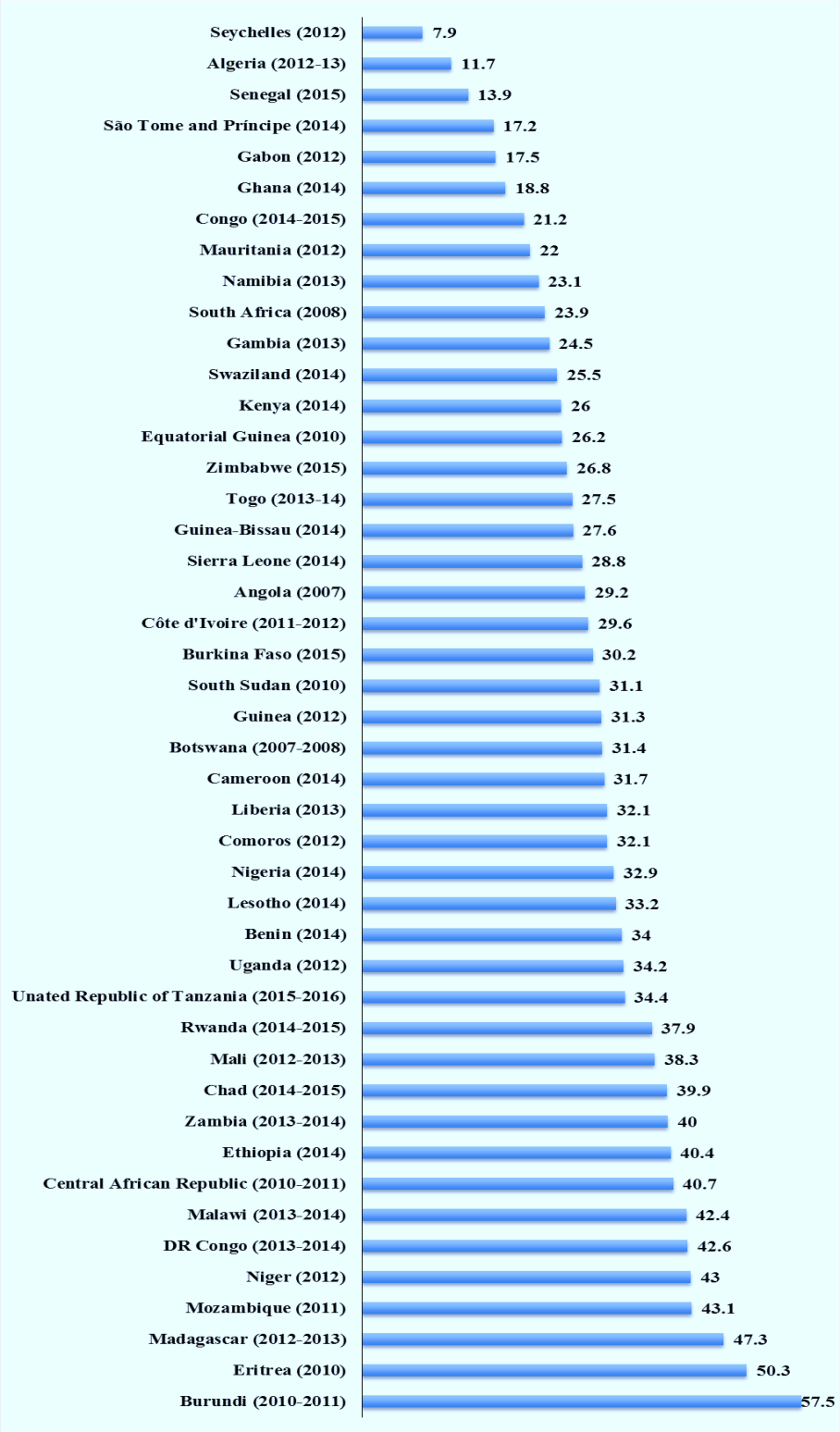
Appendix 1: Indicators of the Global Monitoring Framework on Maternal, Infant and Young Child Nutrition[17]

Core set of indicators	
Primary outcome indicators, monitoring progress towards the six global nutrition targets	
1	Prevalence of low height-for-age in children under five years of age
2a	Prevalence of haemoglobin <11 g/dL in pregnant women
2b	Prevalence of haemoglobin <12 g/dL in non-pregnant, non-lactating women
3	Prevalence of infants born <2500 g
4	Prevalence of weight-for-height >2 SD in children under five years of age
5	Prevalence of exclusive breastfeeding in infants aged six months or less
6	Prevalence of low weight-for-height in children under five years of age
Intermediate outcome indicators, monitoring conditions on the causal pathways to the targets	
7	Prevalence of diarrhoea in children under 5 years of age
8	Proportion of women aged 15–49 years with low body mass index (<18.5 kg/m^2)
9	Number of births during a given reference period to women aged 15–19 years
10	Proportion of overweight and obese women 18–49 years of age (body mass index ≥25 kg/m^2)
11	Proportion of overweight in school-age children and adolescents 5–18 years (BMI-for-age >+1 SD)
Process indicators, monitoring programmes and situation-specific progress	
12	Proportion of children aged 6–23 months who receive a minimum acceptable diet
13	Proportion of population using a safely managed drinking service
14	Proportion of population using a safely managed sanitation service
15	Proportion of pregnant women receiving iron and folic acid supplements
16	Percentage of births in baby-friendly facilities
17	Proportion of mothers of children 0–23 months who have received counselling, support or messages on optimal breastfeeding at least once in the last year
Policy environment and capacity indicators, measuring political commitment	
18	Number of trained nutrition professionals per 100 000 population
19	Number of countries with legislation or regulations fully implementing the International Code of Marketing of Breast-milk Substitutes (resolution WHA34.22) and subsequent relevant resolutions adopted by the World Health Assembly
20	Number of countries with maternity protection laws or regulations in place

[17] Some reports refer to anaemia in pregnant women, on the one hand, and non-pregnant, non-lactating women on the other, as two separate indicators – for a total of 21 instead of 20 core indicators.

Extended set of indicators	
1	Incidence of malaria
2	Median urinary iodine concentration in children aged 6–12 years
3	Proportion of stunted women of reproductive age (15–49 years)
4	Percentage of pregnant women, aged 15–49 years who used any tobacco product (smokeable or smokeless)
5	Proportion of children born in the last 24 months who were put to the breast within one hour of birth
6	New cases of measles
7	Use of insecticide-treated nets in children aged 0–5 years
8	Proportion of children under 5 years old with diarrhoea (in last two weeks) receiving oral rehydration salts (ORS packets or pre-packaged ORS fluids)
9	Percentage of households that have iodized salt (>15 ppm)
10	Percentage of 1-year-olds who have received the appropriate doses of the recommended vaccines in the national schedule by recommended age
11	Percentage of households consuming iron-fortified wheat flour products
12	Appropriate use of micronutrient powders for children aged 6–23 months
13	Proportion of children with severe acute malnutrition having access to appropriate treatment including therapeutic foods and nutrition counselling
14	Proportion of children aged 12–59 months receiving at least one dose of de-worming medication
15	Strength of nutrition governance
16	Number of countries with legislation regulations to protect children from the marketing of unhealthy foods and beverages

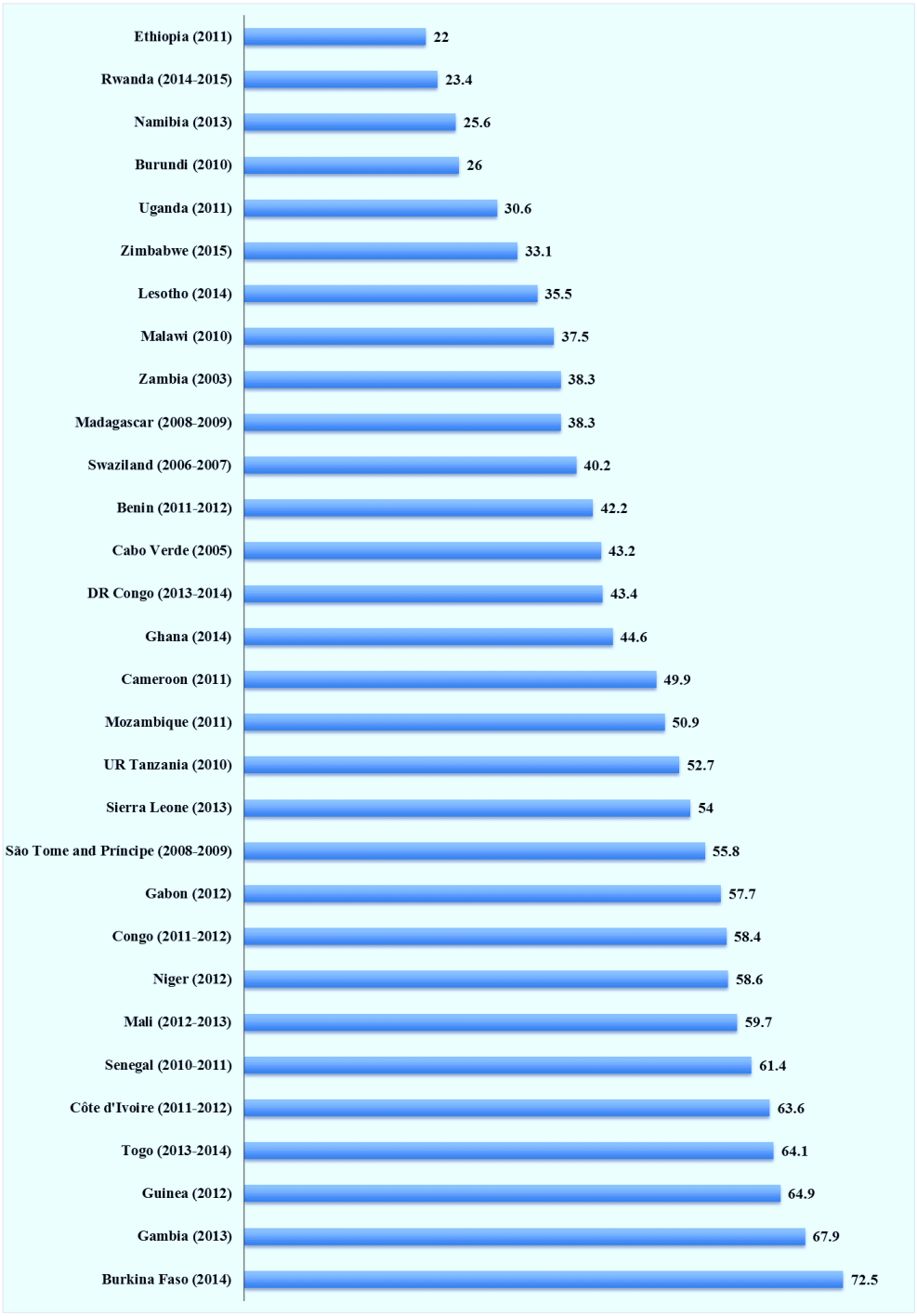
Appendix 2: Prevalence of stunting among children under 5 years of age in the WHO African Region[1]



[1] Most recent data: 2000–2015. Data sources:

Algeria,[3] Angola,[4] Benin,[5] Botswana,[6] Burkina Faso,[7] Burundi,[8] Cameroon,[9] Central African Republic[1,0] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[17] Ethiopia,[18] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[28] Mali,[29] Mauritania,[30] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[34] Rwanda,[35] Sao Tome and Principe,[36] Senegal,[37] Seychelles,[38] Sierra Leone,[39] South Africa,[40] South Sudan,[41] Swaziland,[42] Togo,[43] Uganda,[44] United Republic of Tanzania,[45] Zambia,[46] Zimbabwe.[47]

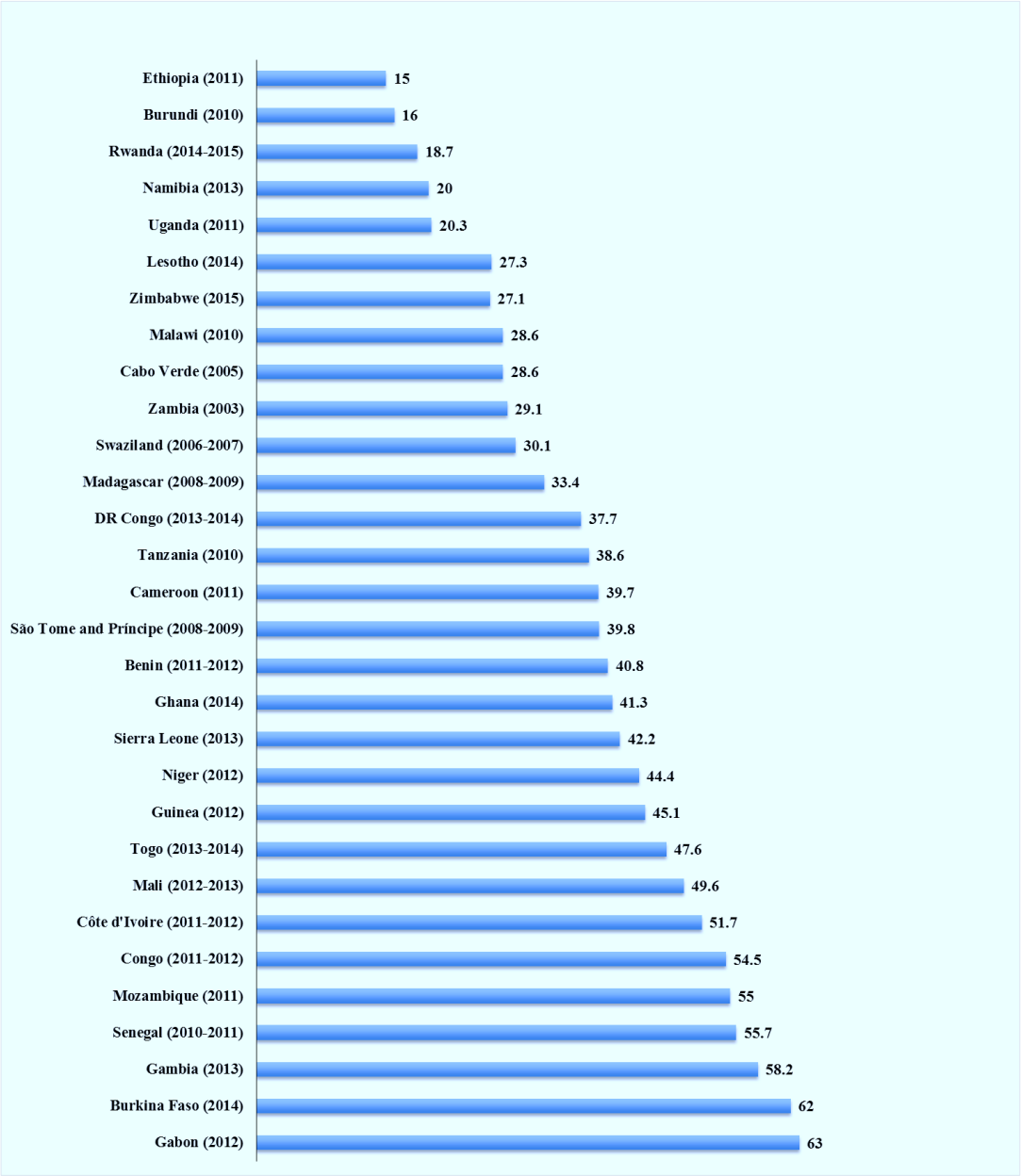
Appendix 3: Prevalence of anaemia among pregnant women in the WHO African Region[1]



[1] Most recent data: 2005–2015. Data sources:

Benin,[48] Burkina Faso,[49] Burundi,[8] Cameroon,[50] Cabo Verde,[51] Congo,[52] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Ethiopia,[53] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Lesotho,[25] Madagascar,[54] Malawi,[55] Mali,[29] Mozambique,[31] Namibia,[32] Niger,[33] Rwanda[35] Sao Tome and Principe,[56] Senegal,[57] Sierra Leone,[58] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[62] Zimbabwe.[47]

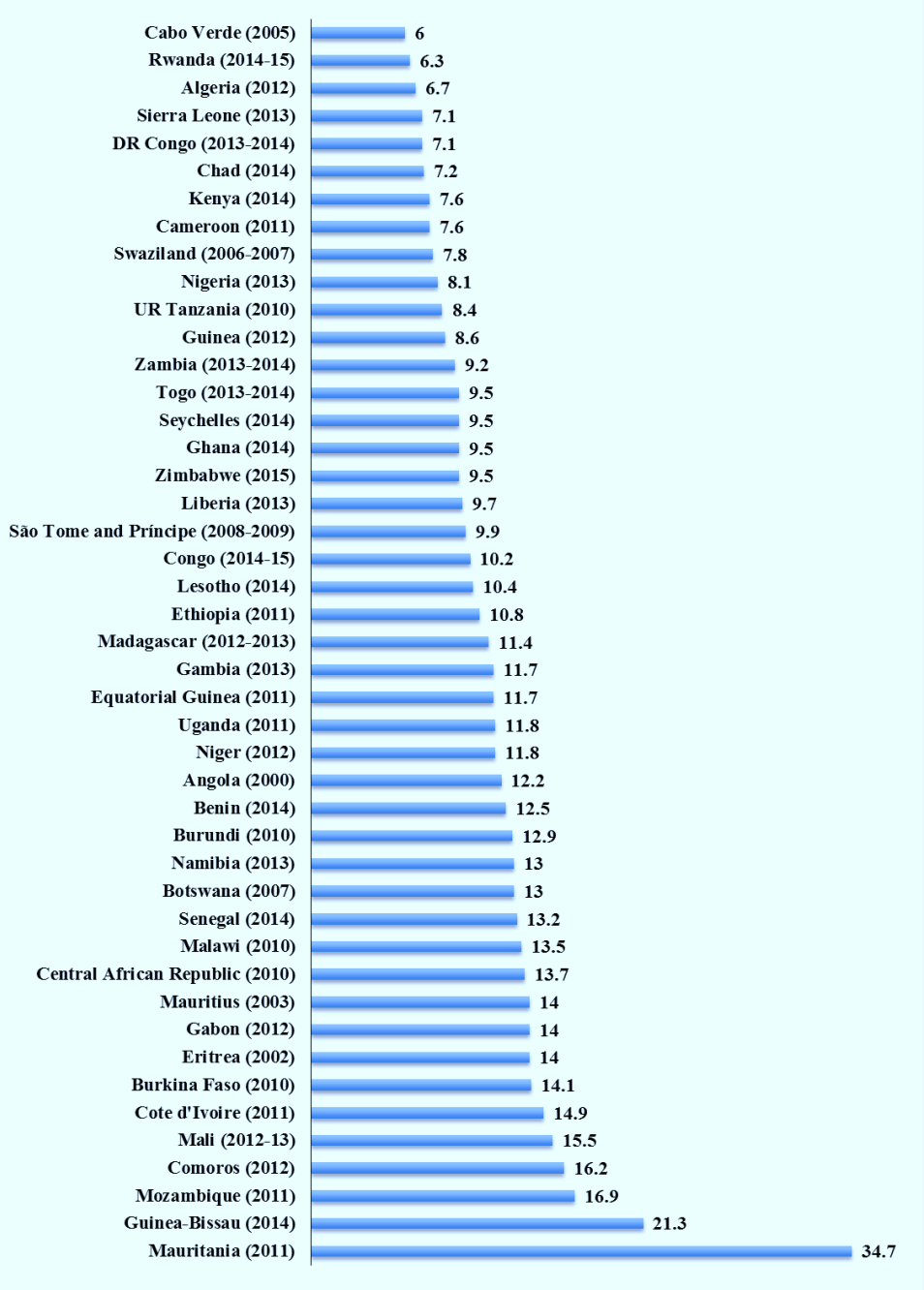
Appendix 4: Prevalence of anaemia among non-pregnant, non-lactating women in the WHO African Region[1]



[1] Most recent data: 2005–2015. Data sources:

Benin,[48] Burkina Faso,[49] Burundi,[8] Cameroon,[50] Cabo Verde,[51] Congo,[52] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Ethiopia,[53] Gabon,[19] Gambia,[20] Ghana[21] Guinea,[22] Lesotho,[25] Madagascar,[54] Malawi,[55] Mali,[29] Mozambique,[31] Namibia,[32] Niger,[33] Rwanda[35] Sao Tome and Principe,[56] Senegal,[57] Sierra Leone,[58] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[62] Zimbabwe.[47]

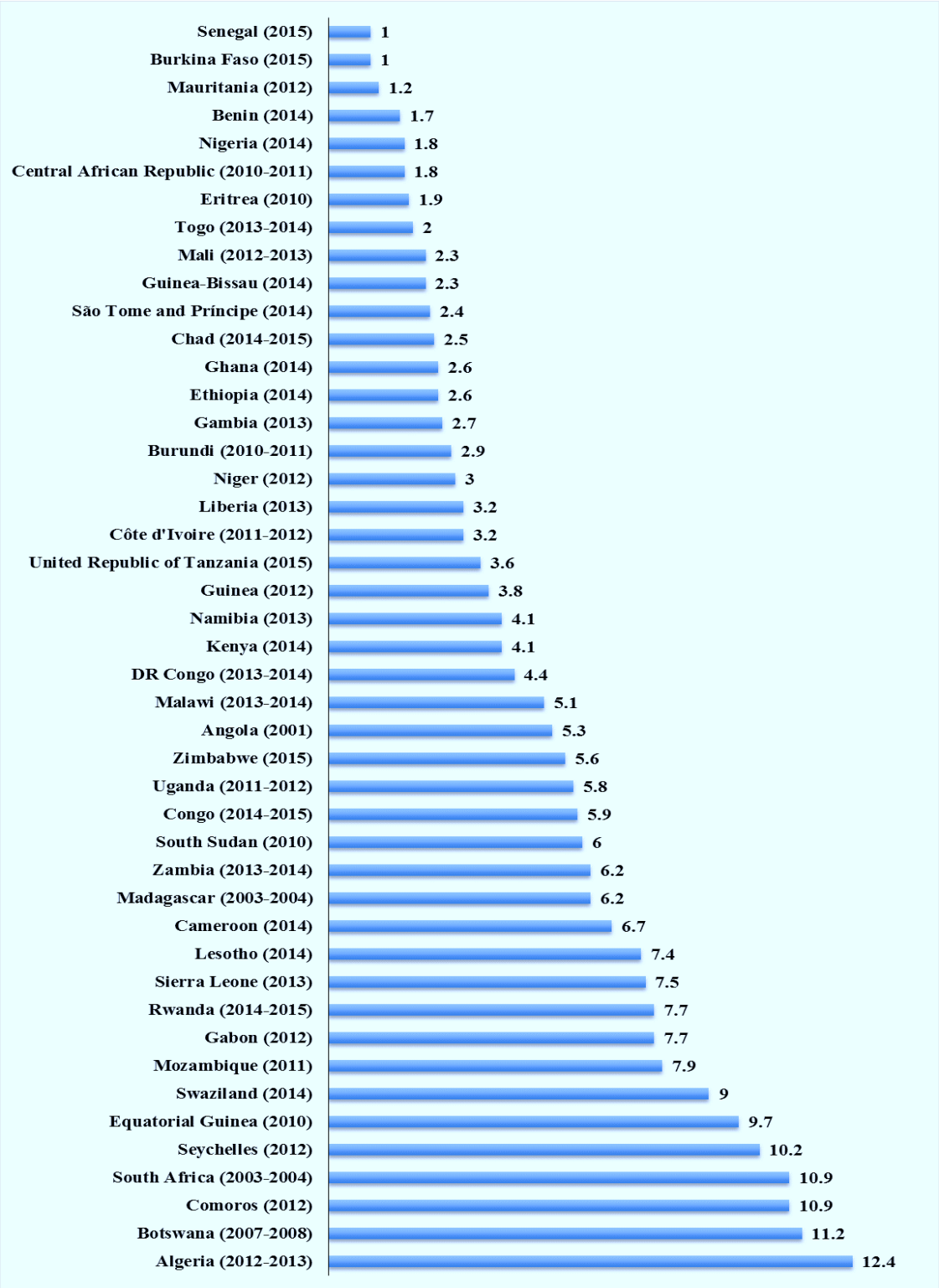
Appendix 5: Percentage of low birth weight in the WHO African Region[1]



[1] Most recent data: 2000–2015. Data sources:

Algeria,[63] Angola,[64] Benin,[65] Botswana,[66] Burkina Faso,[67] Burundi,[8] Cameroon,[50] Cabo Verde,[51] Central African Republic,[10] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[68] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[55] Mali,[29] Mauritania,[70] Mauritius,[71] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Sao Tome and Principe,[73] Senegal,[74] Seychelles,[75] Sierra Leone,[58] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[76] Zimbabwe.[47,77]

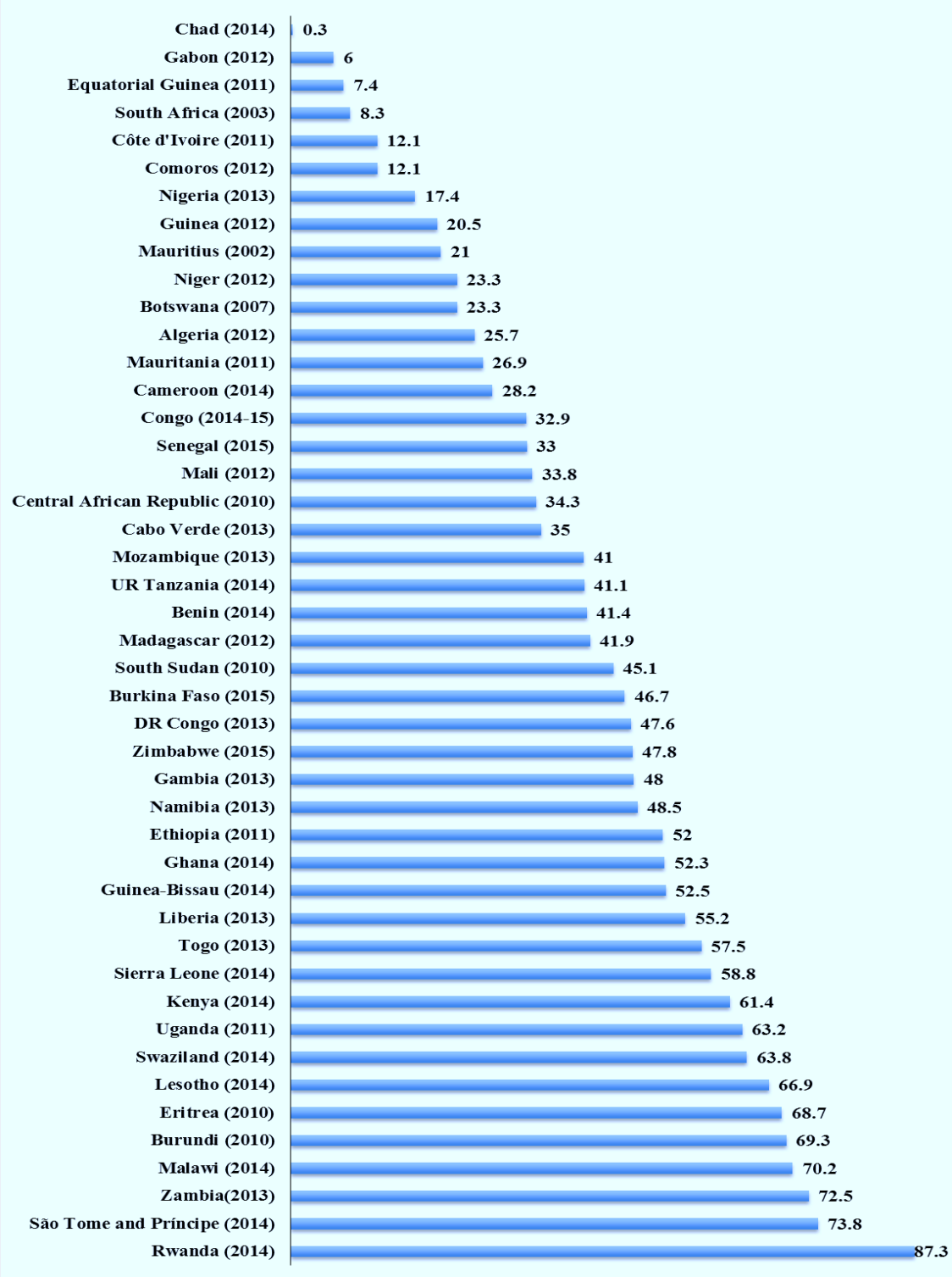
Appendix 6: Prevalence of overweight among children under five years of age in the WHO African Region



[1] Most recent data: 2001–2015. Data sources:

Algeria,[3] Angola,[4] Benin,[5] Botswana,[6] Burkina Faso,[7] Burundi,[8] Cameroon,[9] Central African Republic,[10] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[17] Ethiopia,[18] Gabon,[78] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya, Lesotho,[25] Liberia,[26] Madagascar,[79] Malawi,[28] Mali,[29] Mauritania,[30] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[34] Rwanda,[35] Sao Tome and Principe,[36] Senegal,[74] Seychelles,[38] Sierra Leone,[58] South Africa,[40] South Sudan,[41] Swaziland,[42] Togo,[43] Uganda,[44] United Republic of Tanzania,[45] Zambia,[46] Zimbabwe.[47]

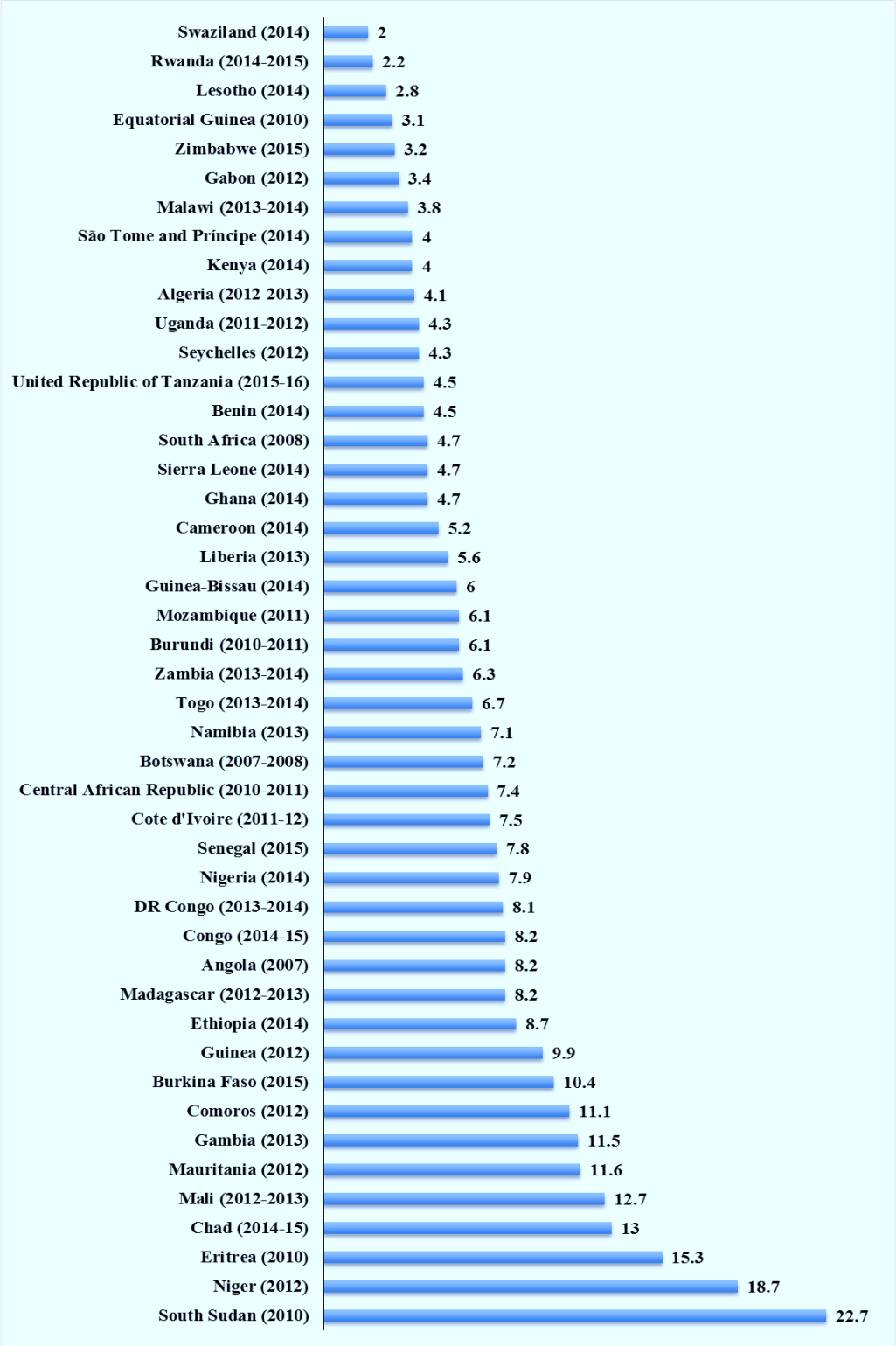
Appendix 7: Prevalence of exclusive breastfeeding among infants under 6 months of age in the WHO African Region[1]



[1] Most recent data: 2000–2015. Data sources:

Algeria,[63] Benin,[65] Botswana,[66] Burkina Faso,[7] Burundi[8], Cameroon,[9] Cabo Verde,[80] Central African Republic,[10] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[17] Ethiopia,[69] Gabon,[78] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[81] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[28] Mali,[29] Mauritania,[70] Mauritius,[82] Mozambique,[82] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Sao Tome and Principe,[36] Senegal,[37] Sierra Leone,[39] Swaziland,[42] Togo,[43] Uganda,[60] United Republic of Tanzania,[82] Zambia,[76] Zimbabwe.[47]

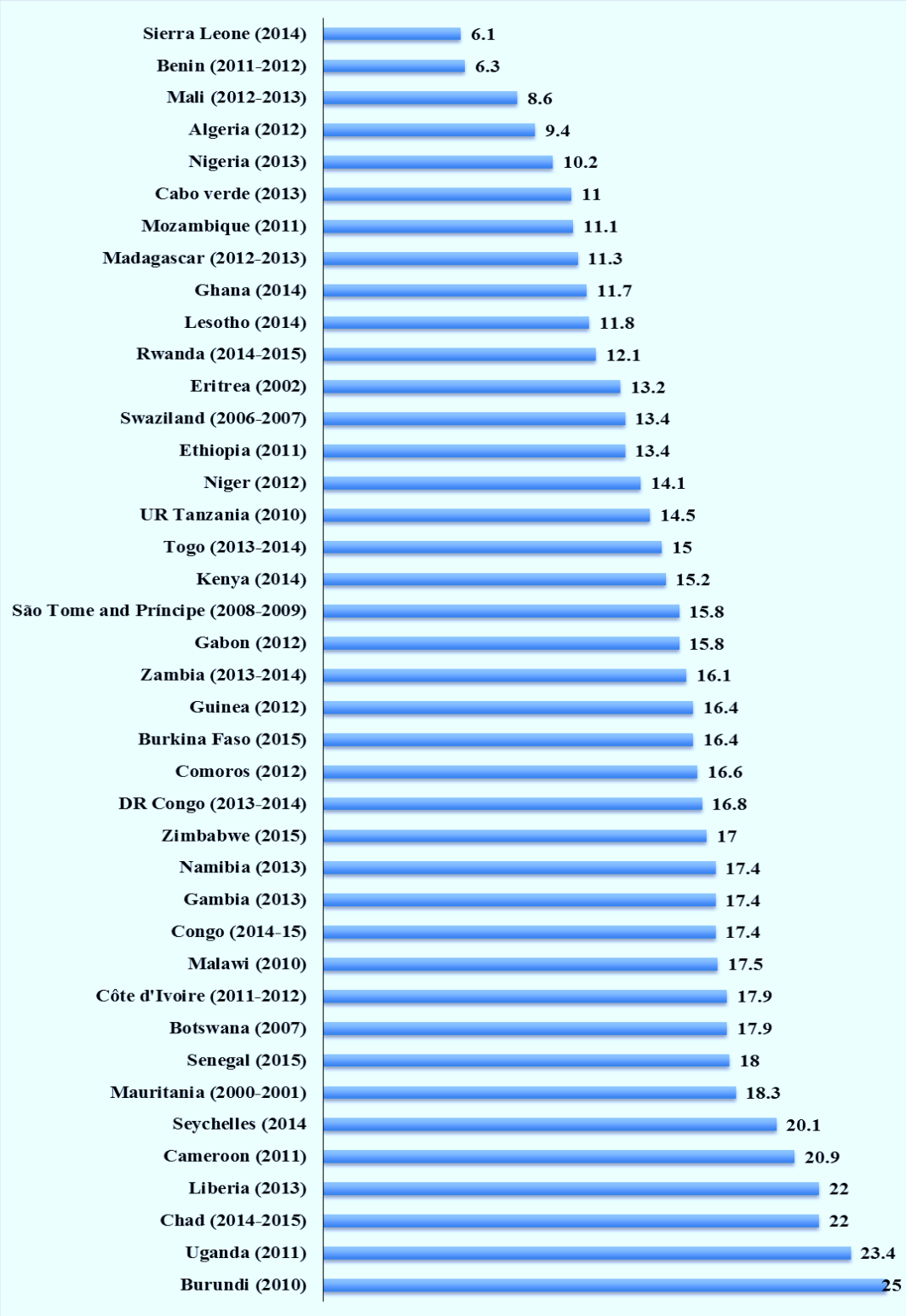
Appendix 8: Prevalence of wasting among children under 5 years of age in the WHO African Region[1]



[1] Most recent data: 2007–2015. Data sources:

Algeria,[3] Angola,[4] Benin,[5] Botswana,[6] Burkina Faso,[7] Burundi,[8] Cameroon,[9] Central African Republic,[10] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Eritrea,[17] Ethiopia,[18] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[28] Mali,[29] Mauritania,[30] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[34] Rwanda,[35] Sao Tome and Principe,[36] Senegal,[37] Seychelles,[38] Sierra Leone,[39] South Africa,[40] South Sudan,[41] Swaziland,[42] Togo,[43] Uganda,[44] United Republic of Tanzania,[45] Zambia,[46] Zimbabwe.[47]

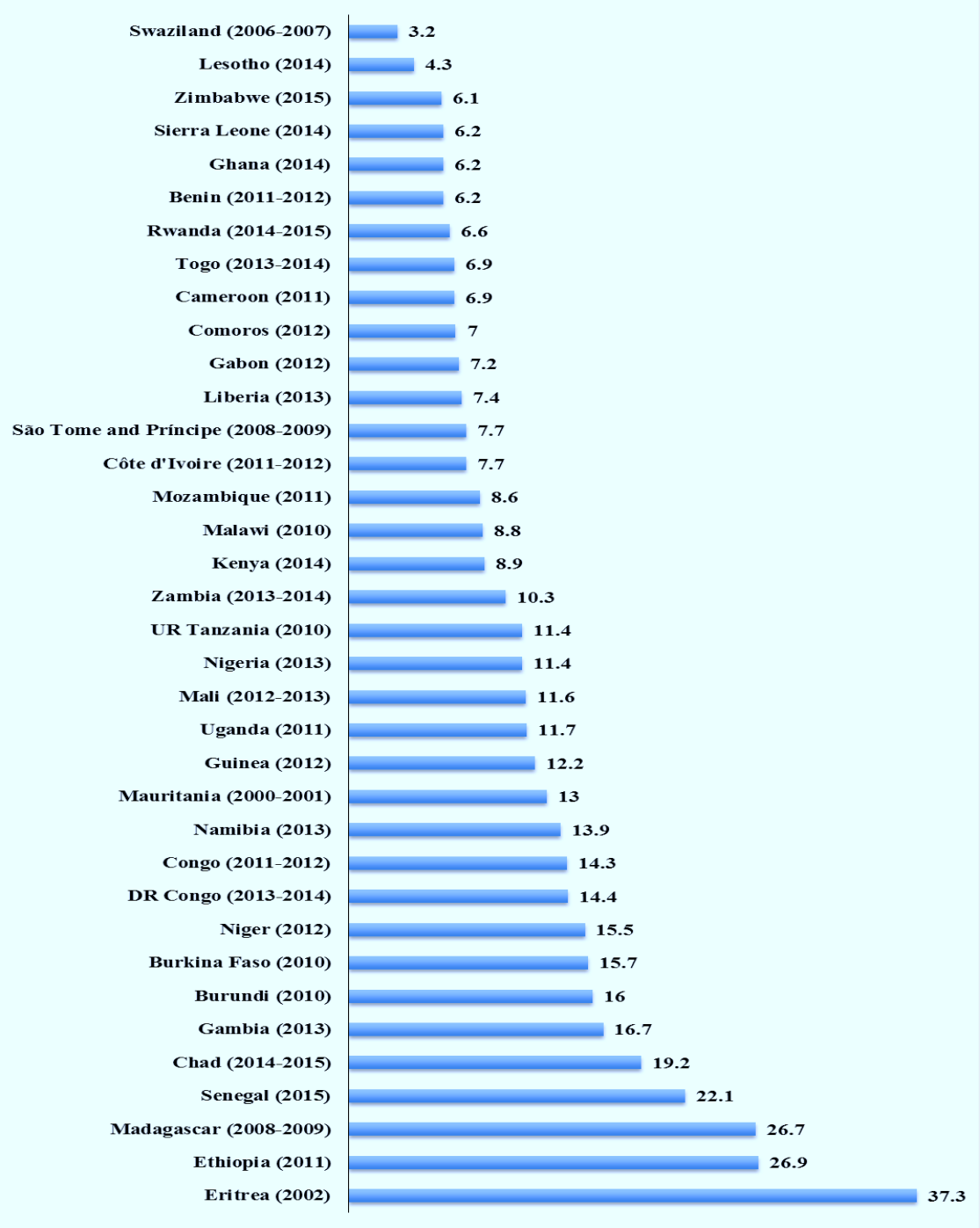
Appendix 9: Percentage of children under 5 years of age with diarrhoea in the WHO African Region[1]



[1]Most recent data: 2000–2015. Data sources:

Algeria,[3] Benin,[48] Botswana,[6] Burkina Faso,[7] Burundi,[8] Cameroon,[50] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Eritrea,[68] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[27] Malawi,[55] Mali,[29] Mauritania,[89] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Sao Tome and Principe,[73] Senegal,[37] Seychelles,[90] Sierra Leone,[39] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[46] Zimbabwe.[47]

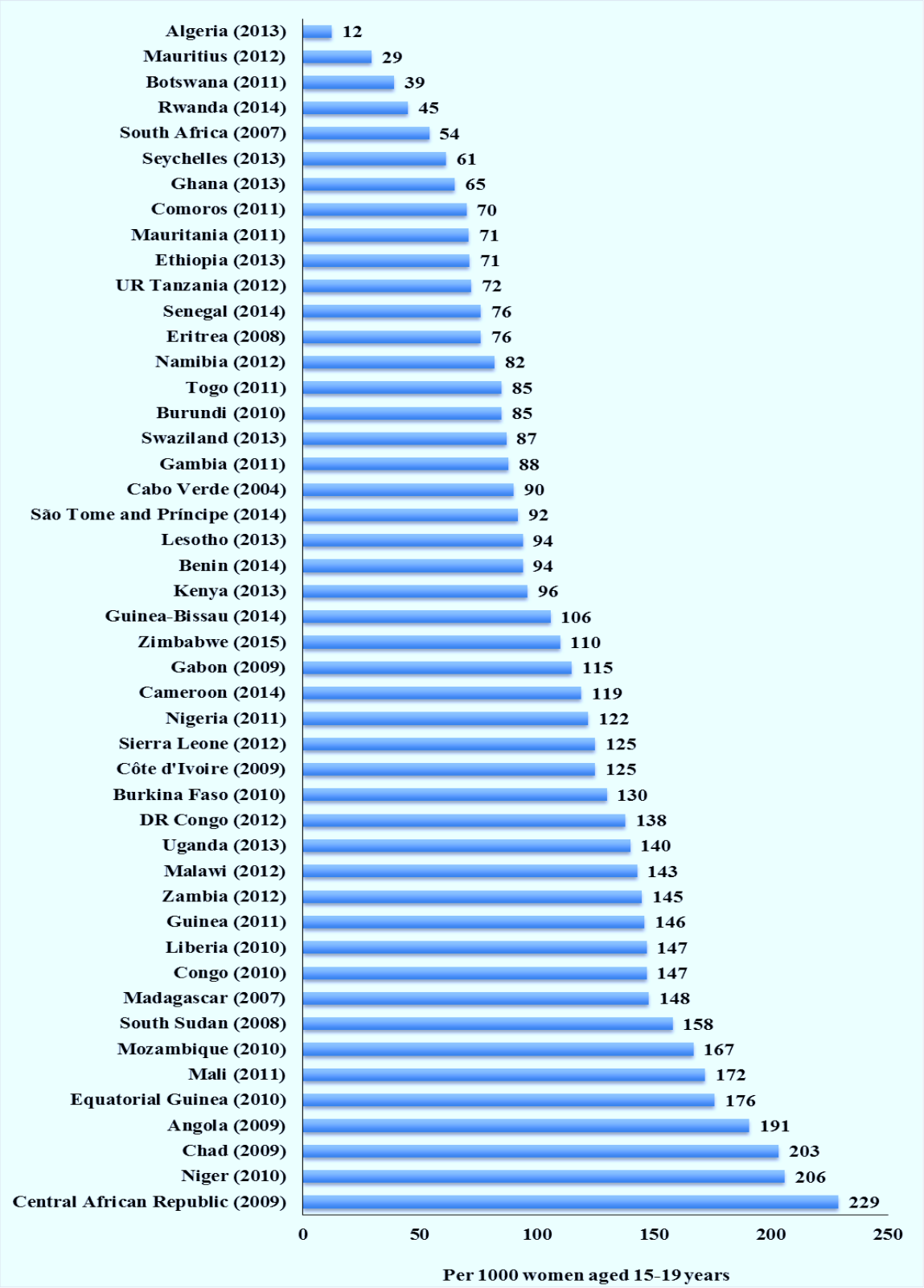
Appendix 10: Percentage of women aged 15–49 who are underweight (BMI<18.5 kg/m2) in the WHO African Region[1]



[1] Most recent data: 2000–2015. Data sources:

Benin,[48] Burkina Faso,[67] Burundi,[8] Cameroon,[50] Chad,[11] Comoros,[12] Congo,[52] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Eritrea,[68] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Kenya,[24] Lesotho[2,5], Liberia,[26] Madagascar,[54] Malawi,[55] Mali,[29] Mauritania,[89] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Sao Tome and Principe,[73] Senegal,[37] Sierra Leone,[39] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[46] Zimbabwe.[47]

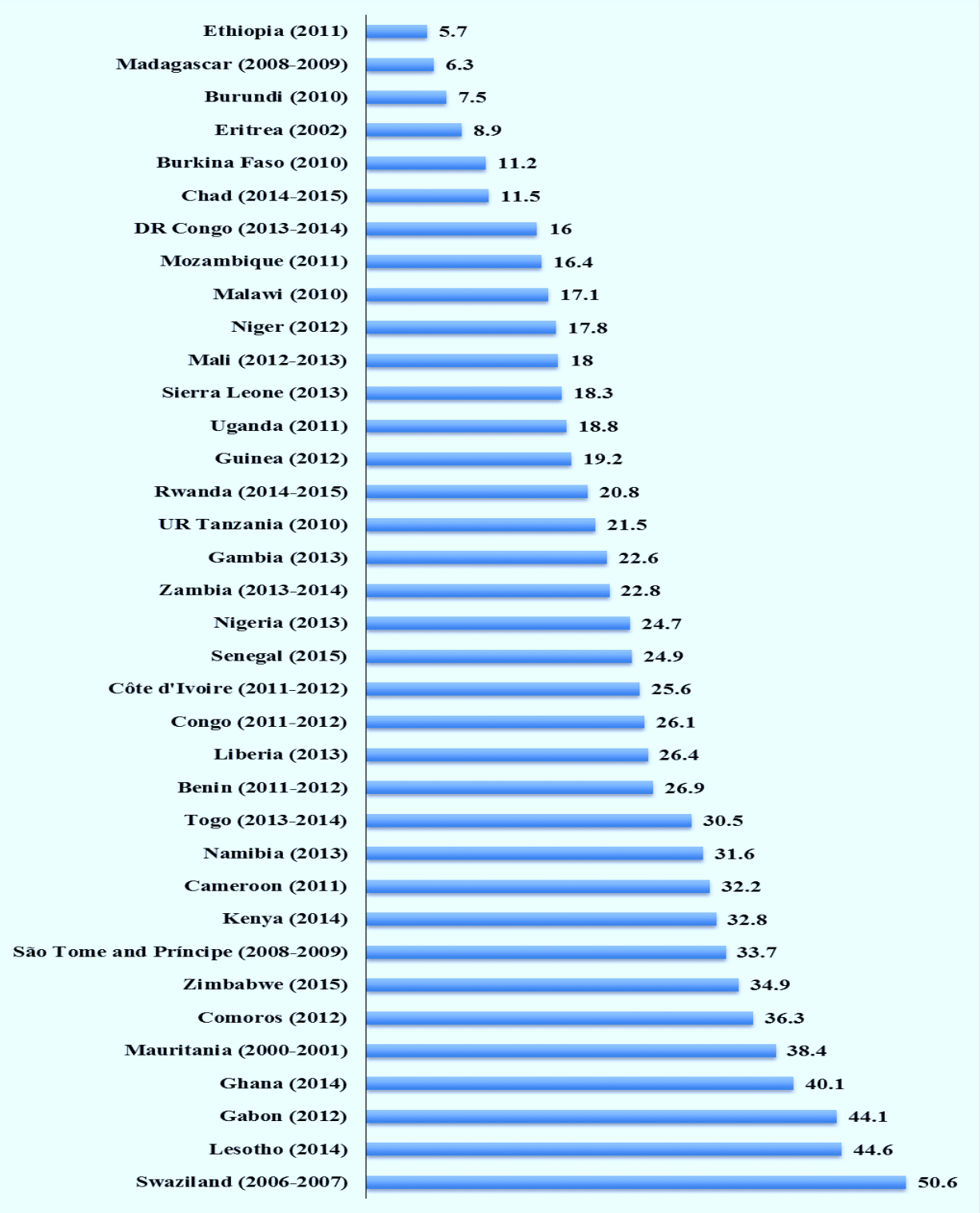
Appendix 11: Adolescent birth rate (per thousand) in the WHO African Region[1]



[1]Most recent data: 2004–2015. Data sources:

Guinea-Bissau,[23] Senegal,[37] Zimbabwe.[47] For the rest of the countries, the data source was the WHO Global Health Observatory.[91]

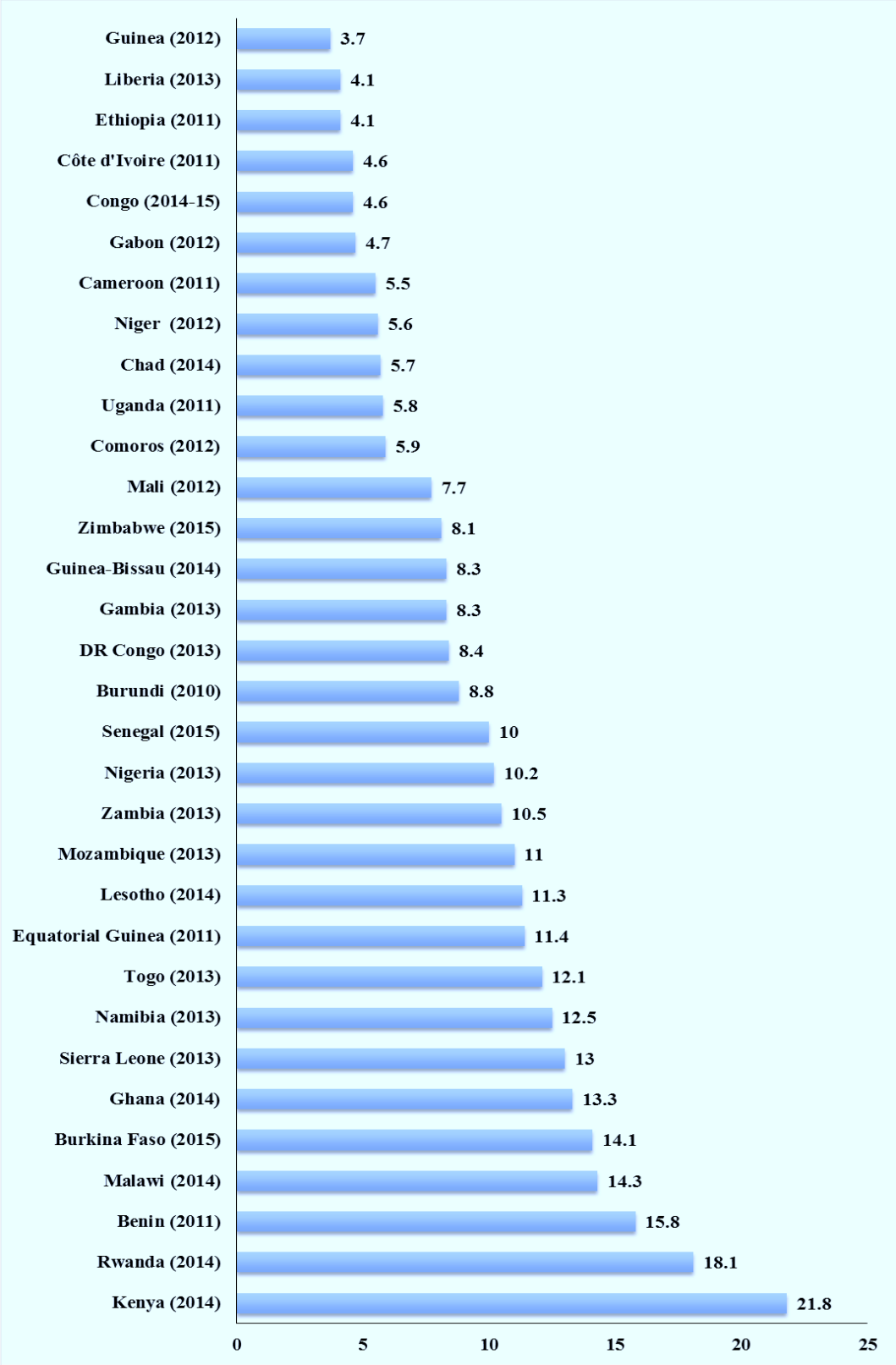
Appendix 12: Prevalence of overweight or obesity among women aged 18–49 (BMI ≥25 kg/m2) in the WHO African Region[1]



[1]Most recent data: 2000–2015. Data sources:

Benin[4,8] Burkina Faso,[67] Burundi,[8] Cameroon,[50] Chad,[11] Comoros,[12] Congo,[52] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Eritrea,[68] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[54] Malawi,[55] Mali,[29] Mauritania,[89] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Sao Tome and Principe,[73] Senegal,[37] Sierra Leone,[39] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[46] Zimbabwe.[47]

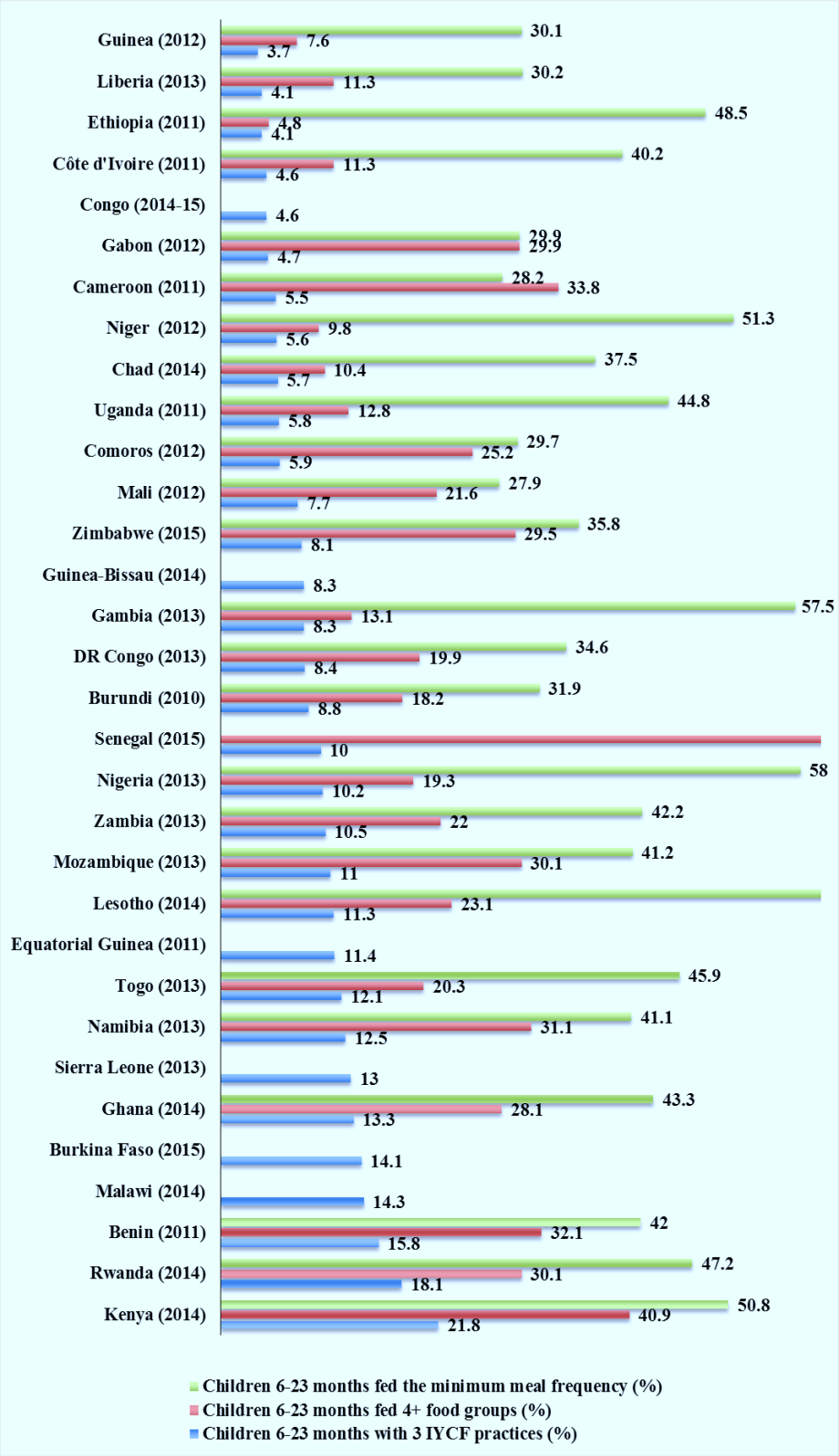
Appendix 13: Proportion of children aged 6–23 months receiving a minimum acceptable diet in the WHO African Region[1]



[1] Most recent data: 2010–2015. Data sources:

Benin,[48] Burkina Faso,[67] Burundi,[8] Cameroon,[50] Chad,[11] Comoros,[12] Congo,[52] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Malawi,[28] Mali,[29] Mauritania,[89] Mozambique,[82] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Senegal,[74] Sierra Leone,[58] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[46] Zimbabwe.[47]

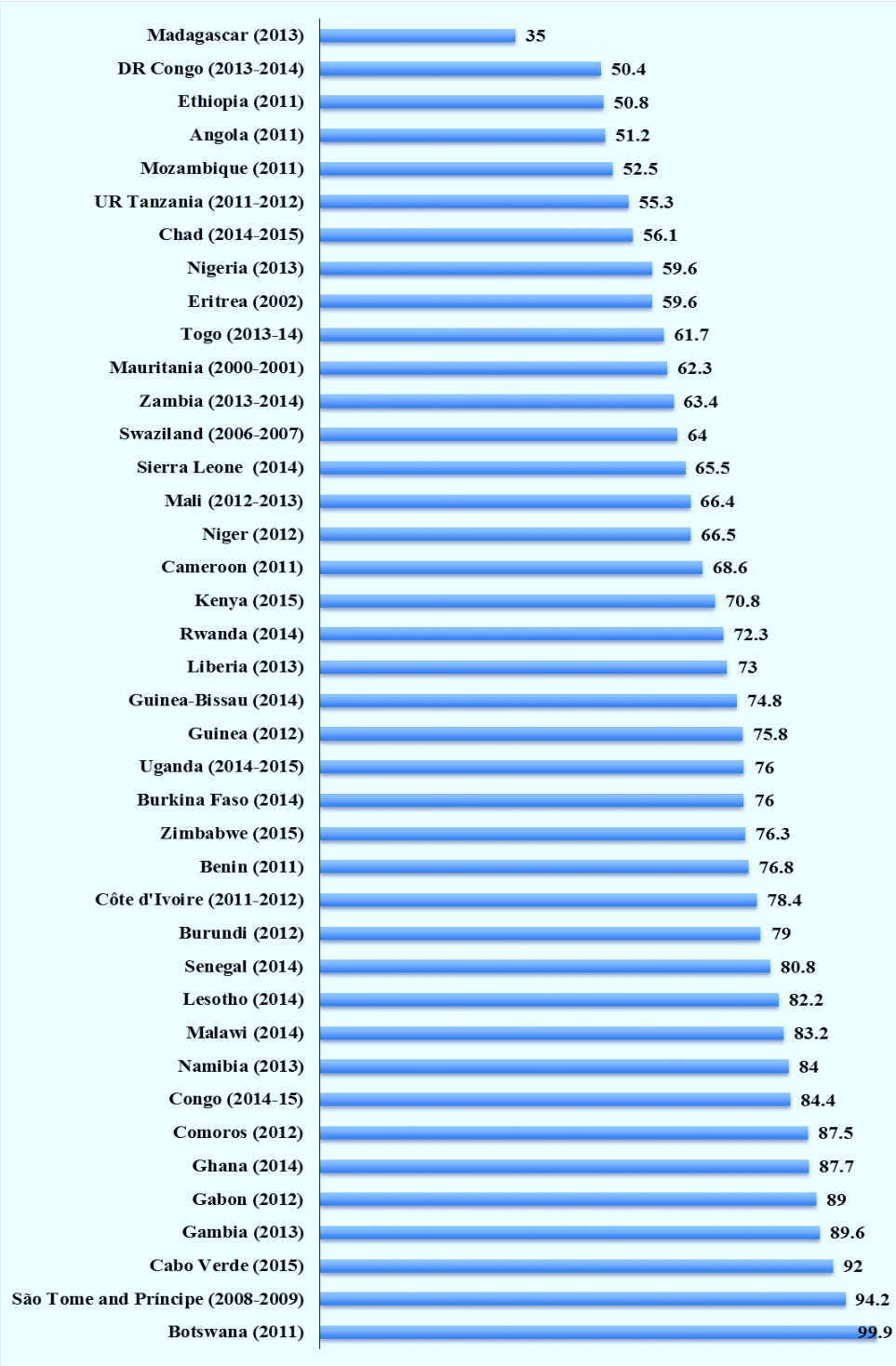
Appendix 14: Complementary feeding indicators for children aged 6–23 months (%) in the WHO African Region[1]



[1] Most recent data: 2010–2015. Data sources:

Benin,[48] Burkina Faso,[67] Burundi,[8] Cameroon,[50] Chad,[11] Comoros,[12] Congo,[52] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Equatorial Guinea,[16] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[24] Lesotho,[25] Liberia,[26] Malawi,[28] Mali,[29] Mauritania,[89] Mozambique,[82] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Senegal,[74] Sierra Leone,[58] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[46] Zimbabwe.[47]

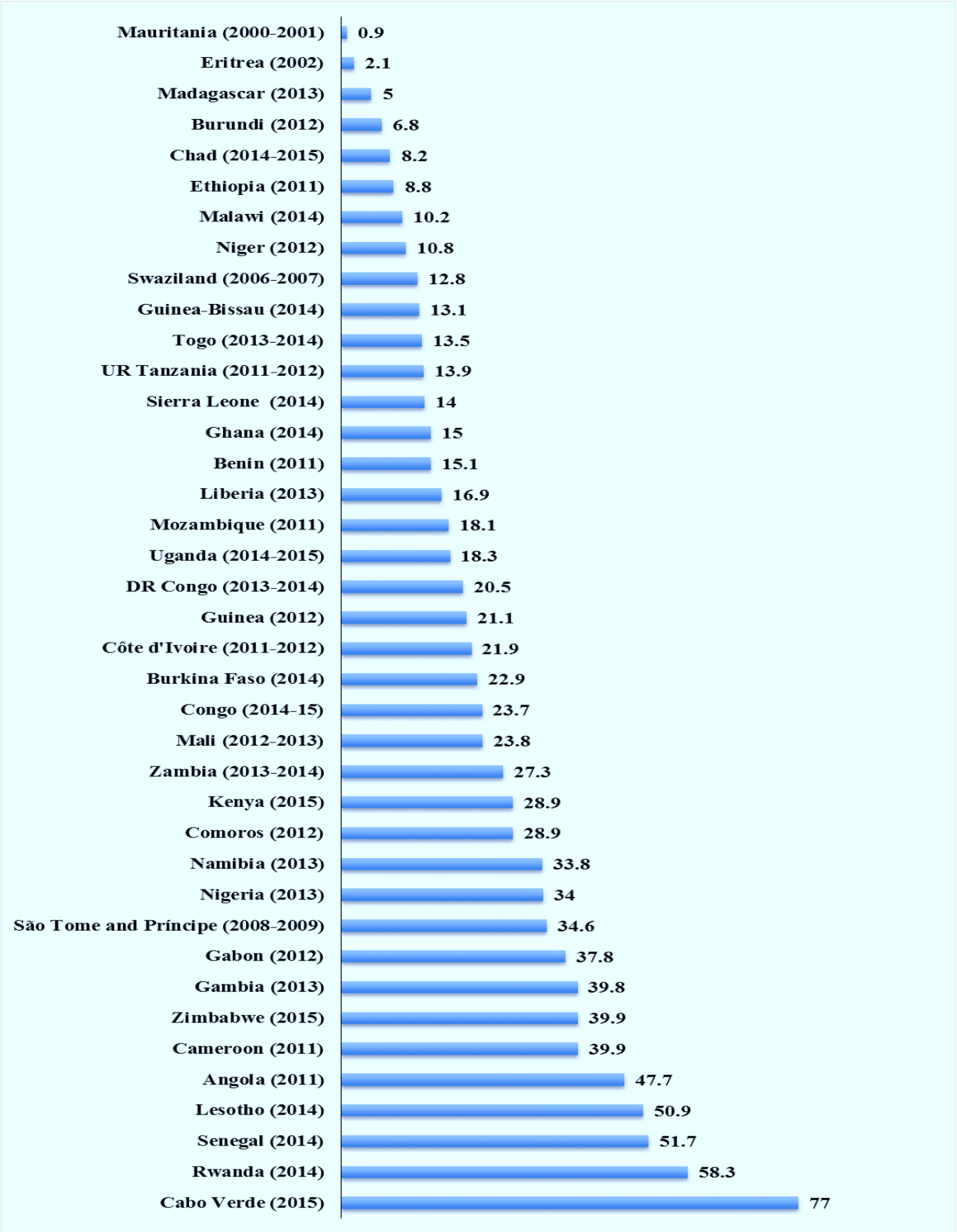
Appendix 15: Percentage of the population using an improved water source in the WHO African Region[1]



[1] Most recent data: 2000–2015. Data sources:

Angola,[92] Benin,[48] Botswana,[93] Burkina Faso,[49] Burundi,[94] Cameroon[50] Cabo Verde,[80] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Eritrea,[68] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[95] Lesotho,[25] Liberia,[26] Madagascar,[54] Malawi,[96] Mali,[29] Mauritania,[89] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[34] Rwanda,[35] Sao Tome and Principe,[97] Senegal,[37] Seychelles,[38] Sierra Leone,[39] Swaziland,[59] Togo,[43] Uganda,[98] United Republic of Tanzania,[99] Zambia,[46] Zimbabwe.[47]

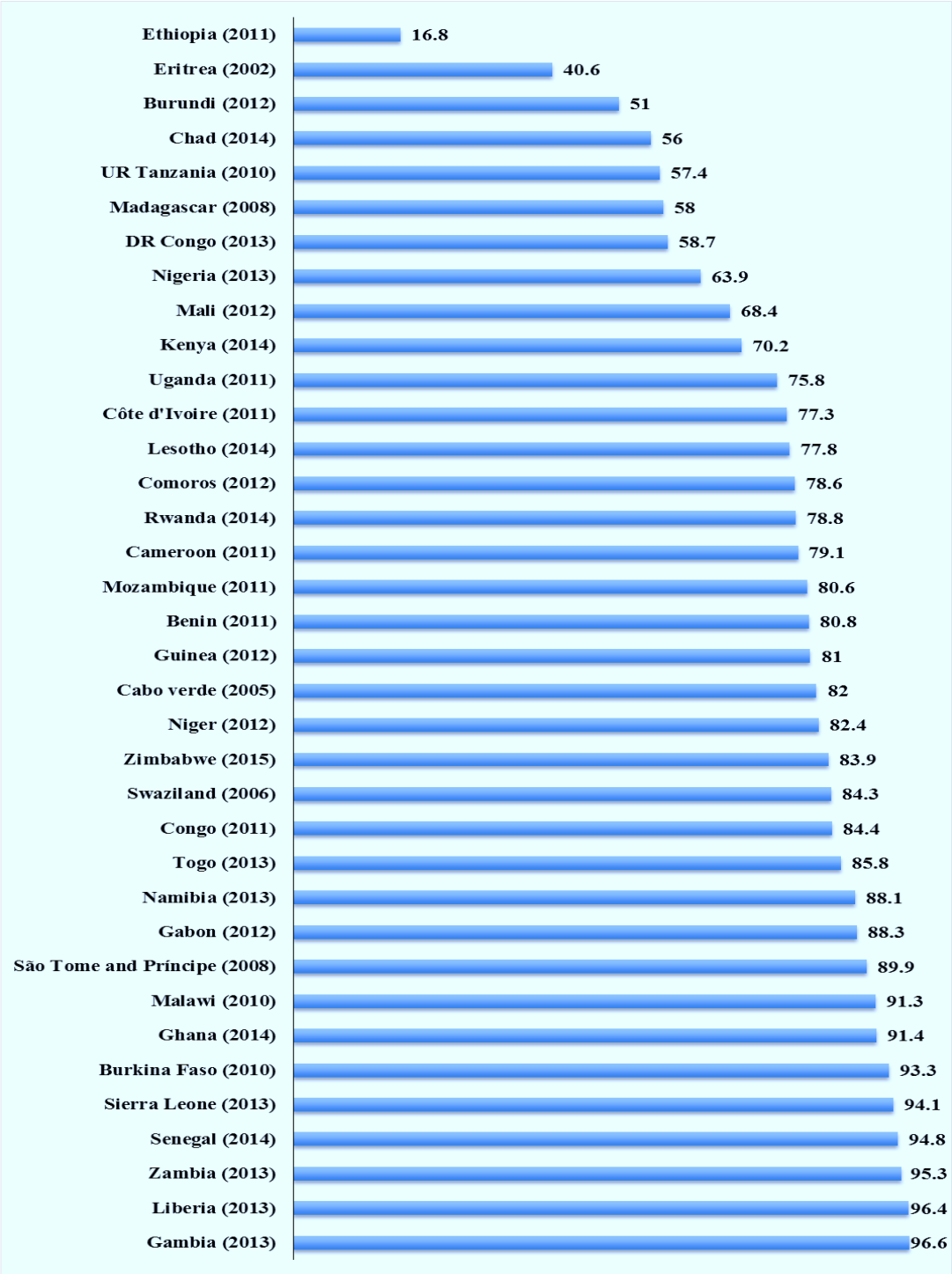
Appendix 16: Percentage of the population using improved, non-shared toilet facilities in the WHO African Region[1]



[1] Most recent data: 2000–2015. Data sources:

Angola,[92] Benin,[48] Botswana,[93] Burkina Faso,[49] Burundi,[94] Cameroon,[50] Cabo Verde,[80] Chad,[11] Comoros,[12] Congo,[13] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Eritrea,[68] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Guinea-Bissau,[23] Kenya,[95] Lesotho,[25] Liberia,[26] Madagascar,[54] Malawi,[96] Mali,[29] Mauritania,[89] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[34] Rwanda,[35] Sao Tome and Principe,[97] Senegal,[37] Seychelles,[38] Sierra Leone,[39] Swaziland,[59] Togo,[43] Uganda,[98] United Republic of Tanzania,[99] Zambia,[46] Zimbabwe.[47]

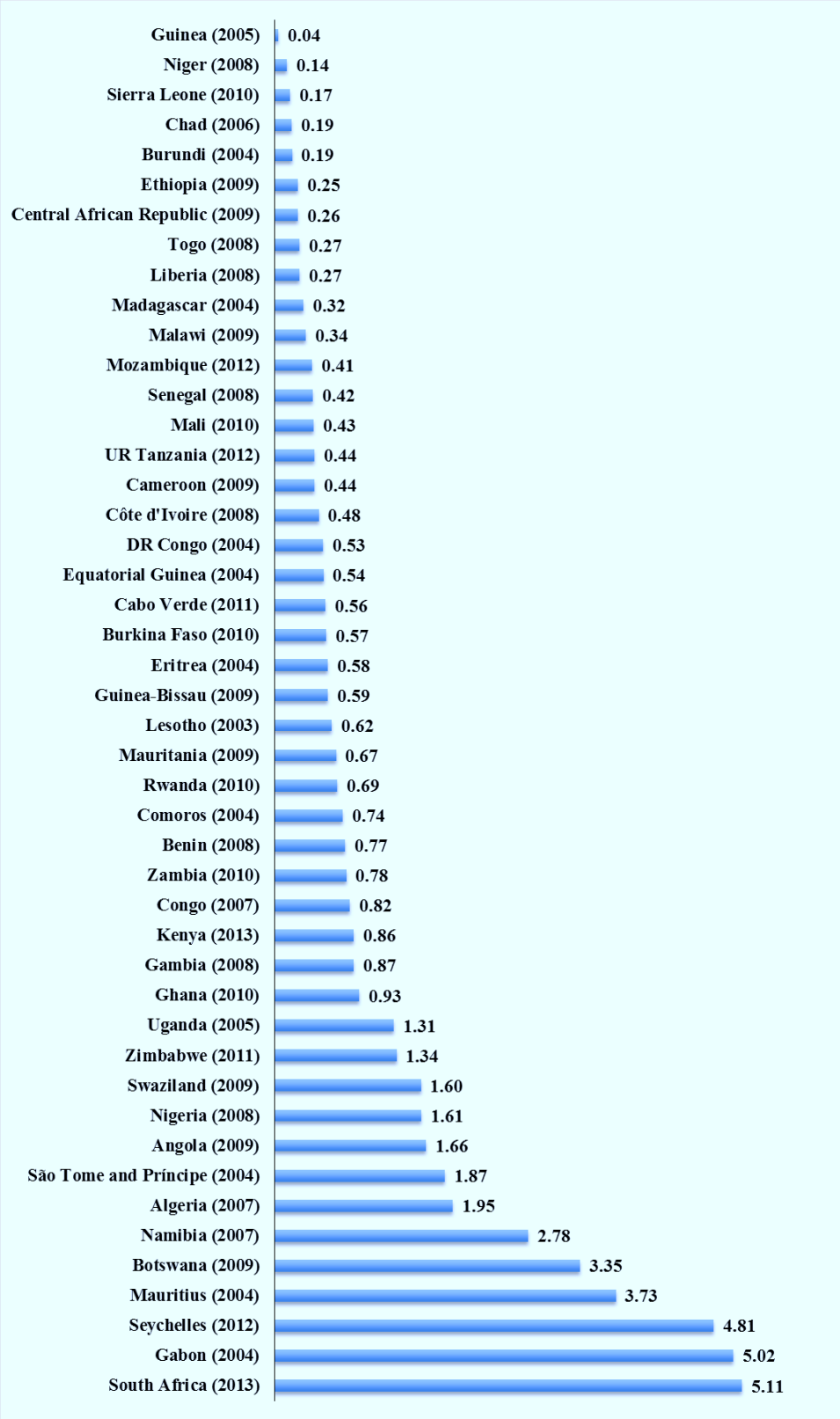
Appendix 17: Proportion of pregnant women receiving iron and folic acid supplements in the WHO African Region1



[1] Most recent data: 2002–2015. Data sources:

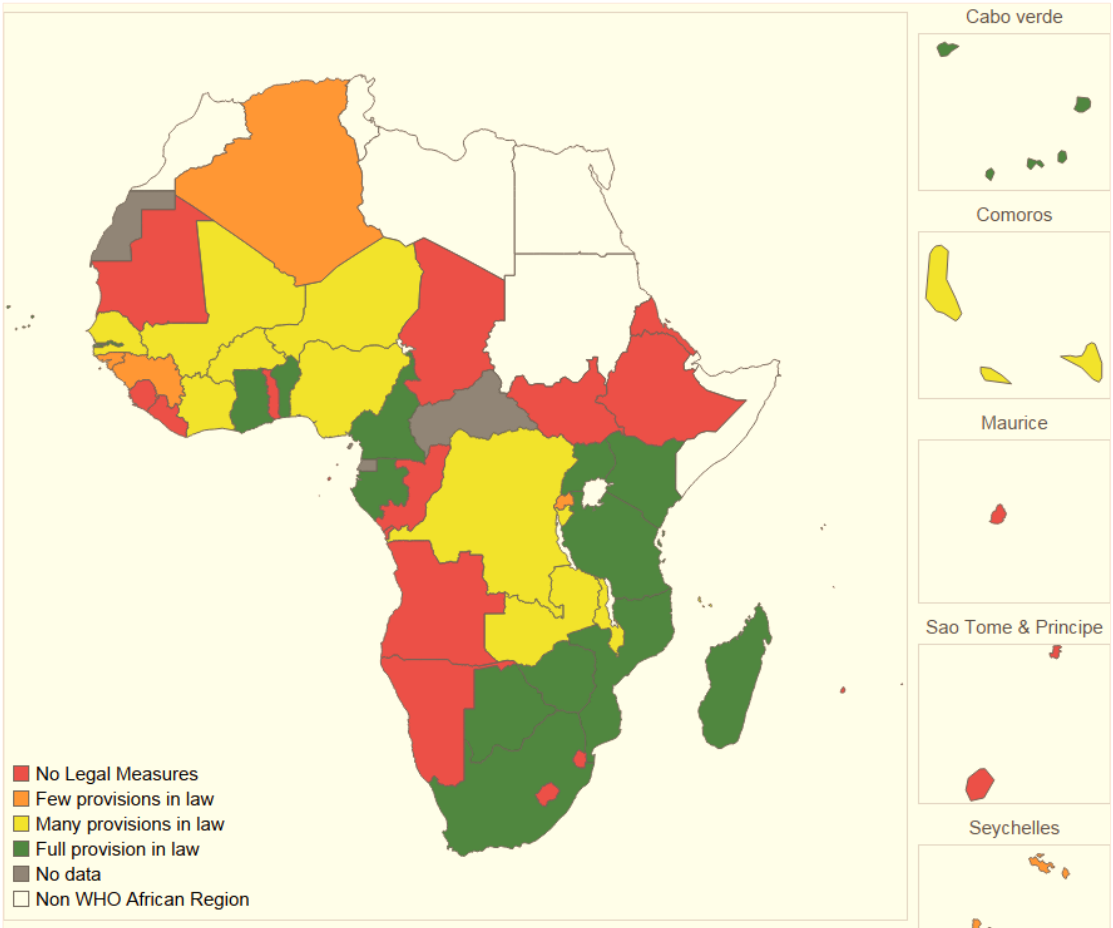
Benin,[48] Burkina Faso,[49] Burundi,[94] Cameroon,[50] Chad,[11] Comoros,[12] Congo,[52] Cabo Verde,[51] Côte d'Ivoire,[14] Democratic Republic of the Congo,[15] Eritrea,[68] Ethiopia,[69] Gabon,[19] Gambia,[20] Ghana,[21] Guinea,[22] Kenya,[24] Lesotho,[25] Liberia,[26] Madagascar,[54] Malawi,[55] Mali,[29] Mozambique,[31] Namibia,[32] Niger,[33] Nigeria,[72] Rwanda,[35] Sao Tome and Principe,[73] Senegal,[74] Sierra Leone,[58] Swaziland,[59] Togo,[43] Uganda,[60] United Republic of Tanzania,[61] Zambia,[46] Zimbabwe.[47]

Appendix 18: Density (per 1000 population) of nurses and midwives in the WHO African Region1



[1] Most recent data: 2003–2015: http://apps.who.int/gho/data/node.main.A1444 (accessed on 14/07/2016)

Appendix 19: Legal status of the International code of marketing of breast-milk substitutes in the WHO African Region, 2016[1]



Source: WHO. UNICEF. IBFAN. Marketing of Breast-milk Substitutes: National Implementation of the International Code. Status Report 2016. Geneva: World Health Organization; 2016.