



# GLOBAL NUTRITION

POLICY REVIEW 2016–2017

COUNTRY PROGRESS IN CREATING ENABLING POLICY ENVIRONMENTS  
FOR PROMOTING HEALTHY DIETS AND NUTRITION





Global nutrition policy review 2016–2017: country progress in creating enabling policy environments for promoting healthy diets and nutrition

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# ABBREVIATIONS AND ACRONYMS

<b>AARR</b>	average annual rate of reduction
<b>AIDS</b>	acquired immunodeficiency syndrome
<b>ANC</b>	antenatal care
<b>BFHI</b>	Baby-friendly Hospital Initiative
<b>BMI</b>	body mass index
<b>eLENA</b>	WHO e-Library of Evidence for Nutrition Actions
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FBDG</b>	food-based dietary guideline
<b>FNAB</b>	foods and non-alcoholic beverages
<b>FOPL</b>	front-of-pack labelling
<b>GDA</b>	guideline daily amount
<b>GINA</b>	Global Database on the Implementation of Nutrition Action
<b>GMP</b>	growth monitoring and promotion
<b>GNPR1</b>	first Global Nutrition Policy Review
<b>GNPR2</b>	second Global Nutrition Policy Review
<b>HIV</b>	human immunodeficiency virus
<b>ICN2</b>	second International Conference on Nutrition
<b>ILO</b>	International Labour Organization
<b>IYCF</b>	infant and young child feeding
<b>IYCN</b>	infant and young child nutrition
<b>MAM</b>	moderate acute malnutrition
<b>MIYCN</b>	maternal, infant and young child nutrition
<b>MNP</b>	micronutrient powder
<b>MUAC</b>	mid-upper arm circumference
<b>NBDG</b>	nutrient-based dietary guideline
<b>NCD</b>	noncommunicable disease
<b>NGO</b>	nongovernmental organization
<b>NLiS</b>	Nutrition Landscape Information System
<b>SAM</b>	severe acute malnutrition
<b>SDG</b>	Sustainable Development Goal
<b>SHN</b>	school health and nutrition
<b>TB</b>	tuberculosis
<b>TEAM</b>	WHO/UNICEF Technical Expert Advisory Group on Nutrition Monitoring
<b>UN</b>	United Nations
<b>UNICEF</b>	United Nations Children's Fund
<b>WHO</b>	World Health Organization

# EXECUTIVE SUMMARY

## Background and methods

Malnutrition, in all its forms, is a critical global public health problem. Increasingly, the conditions of undernutrition and overweight, obesity and diet-related noncommunicable diseases (NCDs) coexist in nations, communities and households, and even within the same individual across the life course. Undernutrition continues to cause nearly half of deaths in children aged under 5 years, and it also impedes children's achievement of their full economic, social, educational and occupational potential. Similarly, overweight, obesity and diet-related NCDs – which are increasing in children and adults, especially in urban populations – result in premature mortality and the early onset of disease with high levels of disability.

The first Global Nutrition Policy Review (GNPR1) was undertaken in 2009–2010. It served as a background paper to the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition, which was adopted by the World Health Assembly in 2012, along with six global nutrition targets to be achieved by 2025. In 2014, Member States and the global community committed to ending malnutrition in all its forms in the Rome Declaration on Nutrition (from the second International Conference on Nutrition [ICN2]). This momentum continued in 2015, with the Sustainable Development Goals (SDGs) for 2030. SDGs 2 and 3 commit the international community to ending all forms of malnutrition, achieving improved nutrition and ensuring healthy lives (including reduced mortality from NCDs). Also, 2016–2025 has been declared as the United Nations (UN) Decade of Action on Nutrition.

The second GNPR (GNPR2) is based on the results of a comprehensive survey of nutrition-related policies, coordination mechanisms, capacities and actions; it was undertaken between July 2016 and December 2017, and 176 Member States (91%) and one area responded.<sup>1</sup> Results of the survey were analysed and compared across World Health

Organization (WHO) regions; a cross-modular analysis reviewed the policy environment in groups of countries, based on whether they are “on track” or “off track” to reach the global nutrition targets; and the results of GNPR2 were compared with the corresponding results of GNPR1, to identify areas that have progressed well since GNPR1 and those that will need greater effort if the global targets for 2025 and 2030 are to be met.

The findings described in this report will help in tracking progress towards achieving the commitments of the ICN2 Rome Declaration; they also serve as a baseline for the UN Decade of Action on Nutrition (2016–2025). Also, countries can use the results when developing commitments that are specific, measurable, achievable, relevant and time bound (SMART), to accelerate actions and progress towards achieving the global targets. The rest of this summary outlines the key findings of the report and the progress made since GNPR1.

## Key findings

### Policies, strategies and plans relevant to nutrition

Of the 167 countries that reported nutrition-relevant policies, strategies and plans, 89% had comprehensive or topic-specific nutrition policies. Among these countries, 77% had published their policies since 2011 (after the GNPR1), and 34% (including almost half of countries in the WHO African Region) since 2015 (i.e. after ICN2). However, only 39% of 149 countries with nutrition policies had costed operational plans associated with them.

More than half of the 167 countries included all of the global nutrition targets in their national policies. Most countries included the targets on child overweight (78%) and exclusive breastfeeding (71%); the largest gaps were in the WHO European Region (e.g. only 40% of countries in this region had policy goals on exclusive breastfeeding). Stunting was reported as being included in almost half of the 46

<sup>1</sup> Subsequently, the term “country” is used to refer to Member States and areas in the reporting of results.

development plans reported; however, these plans often failed to address other global targets, despite these targets being important for productivity and other development goals. Only a fifth of the 76 NCD policies reported had goals related to exclusive breastfeeding, indicating a lack of recognition of the importance of optimal nutrition early in life for prevention of obesity and diet-related NCDs.

### **Coordination mechanisms for nutrition**

Of 169 countries, 80% reported having nutrition coordination mechanisms; that is, multisectoral groups or organizations that oversee, coordinate or harmonize nutrition-related work (e.g. national nutrition councils, task forces and advisory bodies). However, gaps remain; for example, about a third of countries in the WHO regions of Europe and the Western Pacific lack such mechanisms. The ministry of health is the government agency that most commonly coordinates such initiatives, but there is also often involvement from other government sectors (e.g. agriculture, education and social welfare) and nongovernment partners (e.g. private sector, nongovernmental organizations [NGOs] and the UN). In GNPR1, only 17% of 90 countries had a nutrition coordination mechanism in high government offices (e.g. office of the president or prime minister), but in GNPR2 that figure had increased to 30% of 105 countries.

### **Nutrition capacity**

Of 159 countries, 96% reported having trained nutritionists or dieticians, but the density was low (particularly in the WHO African Region) – six countries had no nutrition professionals, and the global median among 126 countries providing details was only 2.3 trained nutrition professionals per 100 000 population. Higher level training on nutrition was offered by 74% of 156 countries. Preservice and in-service training of health professionals in maternal, infant and young child nutrition was offered by 90% of 156 countries, although the number of hours in the preservice curriculum dedicated to this topic were generally fewer than the number of hours dedicated to this subject area in WHO breastfeeding training course curricula.

### **Actions related to infant and young child nutrition**

Actions related to infant and young child nutrition were the most commonly implemented interventions in both GNPR1 and GNPR2. Breastfeeding counselling was implemented by 99% of 165 countries, and most countries in the WHO regions of Africa and South-East Asia included all the recommended breastfeeding practices<sup>1</sup> in their counselling activities. In other WHO regions, national recommendations sometimes diverted from the international guidance on duration of exclusive and continued breastfeeding. Also, only 71% of 162 countries had ever implemented the Baby-friendly Hospital Initiative (BFHI), and only 69% of 157 countries had protocols for infant feeding in difficult situations.

In all regions except the WHO African Region, national guidelines related to breastfeeding in the context of HIV more often addressed replacement feeding than breastfeeding promotion and support. Regulatory measures to protect breastfeeding, including the implementation and enforcement of the International Code of Marketing of Breast-milk Substitutes and the International Labour Organization Maternity Protection Convention, are largely inadequate.

Counselling on complementary feeding was reported by 93% of 158 countries, and growth monitoring and promotion (GMP) by 94% of 161 countries. Also, most countries used the WHO child growth standards for monitoring growth in all children as a growth reference, except in the WHO European Region, where less than half of countries used the WHO child growth standards.

### **Actions related to school health and nutrition programmes**

Of 160 countries, 89% reported having some type of school health and nutrition programme; however, there had been a notable weakening in most specific programme components since GNPR1. In the WHO regions of the Americas, Europe and the Western Pacific, school health and nutrition programmes generally aimed

<sup>1</sup> That is, early initiation of breastfeeding within 1 hour of birth, exclusive breastfeeding for the first 6 months of life, and continued breastfeeding up to 2 years of age or beyond.

to reduce or prevent overweight and obesity; in contrast, in the WHO regions of Africa and South-East Asia, they generally aimed to reduce or prevent undernutrition. School health and nutrition programmes are actually “double duty actions” that can address both undernutrition and overweight and obesity.

The most frequently reported component of school health and nutrition programmes was nutrition education being included in the school curriculum (61%), followed by training of school staff (56%). More than half of the countries had standards or rules for foods and beverages in schools (54%), provided school meals (54%) or made water available free of charge (53%). Provision of school meals was most common in the WHO regions of Africa and South-East Asia; however, not all countries providing meals had standards or guidance for school meals.

Other actions to support healthy diets or improve the school food and beverage environment were less common. For example, only 18% of countries had a ban on vending machines, 24% had standards for regulating marketing of foods and beverages in schools, and 30% had school fruit and vegetable schemes. Just over half of the countries provided any fruit and vegetables at school through school meals or fruit and vegetable schemes, but there were misconceptions about healthy options, with several countries providing 100% fruit juices, which are often as high (or higher) in free sugars as some other sugar-sweetened beverages including soft drinks.

The most common school health and nutrition services were growth monitoring (43%), deworming (36%) and micronutrient supplementation (19%).

### **Actions related to promotion of healthy diet and prevention of obesity and diet-related noncommunicable diseases**

Countries were more likely to implement educational programmes or disseminate information than to improve the food environment. For example, nutrition labelling and media

campaigns were more often implemented than fiscal policies or regulation of marketing to children. The most widely implemented action – nutrition counselling on healthy diets – focused on both positive and negative messages (e.g. increased intake of fruit and vegetables and reduced intake of fats, sugars and salt/sodium). However, media campaigns largely focused only on positive messages (e.g. increased intake of fruit and vegetables). In total, 77% of 155 countries had policies on dietary guidelines, 81% of 153 countries on nutrition labelling, 72% of 152 countries on media campaigns and 83% of 155 countries on nutrition counselling. Food-based dietary guidelines were common in all WHO regions, but were less often found in the WHO African Region. Nutrition labelling was the intervention that saw the largest increase since GNPR1, and most countries reported that they had implemented nutrient declaration. However, the mandatory nutrients to be included in nutrient declaration did not always follow the Codex guidelines on nutrition labelling. Front-of-pack labelling (FOPL) systems and menu labelling, which can be effective methods of displaying and communicating nutrition information, were not commonly used in countries, although FOPL systems were used more widely in the WHO European Region.

Only 43% of 143 countries had policies on reformulation, 19% of 139 countries on banning *trans*-fatty acids, 30% of 142 countries on regulating marketing to children, 14% of 133 countries on portion-size control and 27% of 143 countries on fiscal policies. The measures to ban or virtually eliminate industrial *trans*-fatty acids were generally mandatory, and they often applied to all food products and to all settings. In relation to marketing of foods and non-alcoholic beverages to children, an important omission is that most only cover children aged up to 12–13 years. Also, less than half of such policies use nutrient profile models to define the foods and beverages covered by the regulatory measure, even though five of the six WHO regions have developed such models for countries to use. The most common taxation measure was taxation of sugar-sweetened beverages, but few countries were carefully defining the tax bases to induce a customer price preference that would encourage healthier behaviours. For example, some countries

only targeted particular sugar-sweetened beverages, and excluded some sugar-sweetened beverages that contain high levels of free sugars, such as sweetened milk-based beverages or 100% fruit juices, from the taxation base.

### **Actions related to vitamin and mineral nutrition**

Vitamin and mineral supplementation schemes were widely implemented for pregnant women (90% of 155 countries) and children (72% of 148 countries), but only 39% of such schemes in 150 countries targeted women of reproductive age, which may not be sufficient to reach the global nutrition target of 50% reduction in anaemia in this population group. For both pregnant women and other women of reproductive age, the most commonly reported supplementation schemes were for iron and folic acid. The most notable development since GNPR1 was a shift from iron supplementation to multiple micronutrient powders (MNPs) in children, probably in response to the publication in 2011 of guidance on MNPs.

In relation to measures to fortify food, iodization of salt was reported by 80% of 148 countries, and fortification of wheat flours (typically with iron and folic acid) by 52% of 144 countries. Among countries fortifying staple foods (wheat flour, maize flour and rice), most added iron and folic acid to these foods. Fortification of wheat flour, salt, rice and oil have all increased slightly since GNPR1.

### **Actions related to prevention and treatment of acute malnutrition**

Food distribution programmes – particularly emergency food aid programmes, and foods for infants and young children – were reported by 61% of 140 countries, especially those in the WHO African Region. Treatment of moderate acute malnutrition (MAM) was reported by 60% of 141 countries, particularly those in the WHO regions of Africa and South-East Asia. The most common components of MAM treatment programmes were breastfeeding promotion and support, and nutrition counselling. Treatment of severe acute malnutrition (SAM) was reported by 65% of 137 countries, particularly those in the WHO regions of Africa and South-East Asia. Many countries

with SAM treatment programmes have protocols; however, only a third of these had been published or revised since the 2013 update of the WHO guidelines on the management of SAM. Treatment of MAM and SAM have increased considerably since GNPR1.

### **Actions related to nutrition and infectious disease**

Actions related to nutrition and infectious disease varied widely between WHO regions, reflecting differences in the burden of these epidemics. Nutritional care and support was provided for people living with HIV/AIDS by 61% of 137 countries (particularly in those in the WHO regions of Africa and the Americas) and for people living with active tuberculosis (TB) by 50% of 138 countries (particularly in those in the WHO African Region). Nutrition counselling was the most common component of nutritional care and support for people living with HIV or active TB, or both.

Of 139 countries, 50% conducted deworming campaigns, particularly those in the WHO regions of Africa and South-East Asia. These campaigns often involved provision of anthelmintic drugs alongside education on health and hygiene, but less often involved provision of adequate sanitation.

### **Cross-cutting issues**

Most countries in all the WHO regions reported that the government was either responsible for or involved in the implementation, funding and monitoring of all nutrition programme areas. The ministry of health was the sector that was most involved, followed by the ministry of education. Other sectors – particularly food and agriculture, trade, industry and labour – were less involved. Nongovernmental partners (e.g. the UN agencies, NGOs, civil society organizations and the private sector) were involved in all WHO regions, but not consistently across all nutrition programme areas.

The health system was the primary delivery channel used for implementing many nutrition interventions in all WHO regions. But most countries also used other platforms, such as schools, communities and shops (including markets and pharmacies),

or intervened at different stages or processes of the food system. These various delivery channels could be better used by countries to further accelerate the scaling-up of actions to promote nutrition and healthy diets.

Most countries were implementing nutrition programmes targeting “the first 1000 days” and beyond (i.e. pregnant and lactating women, infants and young children, preschool-age children and school-age children). However, countries could implement healthy diet promotion more effectively by targeting critical phases, such as before conception, and during childhood and adolescence.

Monitoring of intervention coverage was high across all regions, with coverage data usually collected routinely and also through surveys. However, countries were less likely to have coverage data for interventions to promote healthy diets for prevention of overweight, obesity and NCDs.

Most countries reported that they are monitoring and enforcing regulatory actions in school health and nutrition programmes, to promote healthy diets, and also to improve vitamin and mineral nutrition. Many countries have established formal monitoring mechanisms; such mechanisms could be leveraged and expanded to other regulatory interventions. Monitoring mechanisms focused mainly on compliance and applying sanctions to identified violations (except in the WHO Western Pacific Region), and focused less on public dissemination of monitoring results or sanctions.

Most countries reported that they are evaluating nutrition programmes (e.g. through impact studies, process evaluation and cost-effectiveness analysis), especially in the WHO African Region, and particularly for interventions related to infant and young child nutrition, and vitamin and mineral nutrition.

### **Policy environments for achieving the global nutrition targets**

Most countries now have policies for ensuring that the global nutrition targets are met. However,

many countries are not yet making the necessary progress towards achieving these targets. Countries affected by stunting, anaemia and wasting had more relevant policy environments than countries not affected by these conditions, but this was not the case in relation to exclusive breastfeeding. Furthermore, most of the countries that were “on track” to meet the global targets (e.g. reducing stunting and anaemia, having high rates of exclusive breastfeeding and reducing levels of childhood obesity) had more relevant policy environments than countries that were “off track”. For example, countries that were on track to reach the exclusive breastfeeding goal more often had protocols for infant feeding in difficult situations and regulation of marketing of breast-milk substitutes. Although no countries were on track to reach the anaemia goal, those making some progress had fortified staple foods with iron more often than the countries that were not making any progress. Another issue is implementation – countries that included relevant actions in their policies did not always implement those actions.

## **Progress since the first global nutrition policy review**

Policies for nutrition have improved since GNPR1, with an increase in the inclusion of specific nutrition goals and targets, and relevant actions in national policies, especially for stunting, breastfeeding and food fortification. The largest increases were for adult overweight and obesity in national policies in the WHO Eastern Mediterranean Region, food fortification in the WHO European Region and zinc supplementation in the WHO South-East Asia Region. However, there were also decreases in focus in some nutrition areas. For instance, fewer countries in the WHO Western Pacific Region included nutrition goals, targets or relevant actions related to undernutrition, and to vitamin and mineral nutrition.

Coordination mechanisms for nutrition have also been strengthened. As outlined above, more countries, particularly in the WHO African



Region, now have the president or prime minister's office as the location for coordination of their nutrition issues. This reflects an increasing understanding that tackling all forms of malnutrition and diet-related NCDs requires multisectoral approaches, which in turn require high-level political leadership to facilitate coordination and cooperation (both vertically and horizontally) across the multiple sectors and levels involved.

The implementation of nutrition actions largely increased across all areas, with the exception of school health and nutrition programmes, where implementation has actually decreased considerably since the GNPR1. The biggest increases were seen in nutrition labelling, nutrition counselling in primary health care, and media campaigns on healthy diet and nutrition. The use of iron supplements for children decreased – especially in the WHO regions of Africa, South-East Asia and the Western Pacific – probably reflecting the increased use of MNPs for children, following the 2013 release of WHO guidelines on such supplementation.

## Recommendations

The analyses presented in this report show that, although many improvements have been made since the GNPR1 was conducted in 2009–2010, policy gaps and challenges remain. This indicates the need for further actions to be taken at the country level, in particular:

- Strengthening national policies to address nutrition problems in countries, and making further efforts in costing and financing these policies so that they can be translated into operational actions with clear accountabilities.
- Increasing coherence in policies of different sectors to ensure synergistic action to address nutrition challenges.
- Engaging all concerned sectors and partners in implementing nutrition actions and using the full spectrum of delivery channels, ensuring effective coordination mechanisms by placing

them at high political levels to facilitate multisectoral collaboration and policy coherence across sectors, while safeguarding against potential conflict of interest in the development and implementation of nutrition programmes.

- Strengthening accountability for implementation of high-quality nutrition interventions.
- Strengthening capacity development for nutrition, including increasing the number of trained nutrition professionals with public health nutrition competencies as well as integrating training on essential nutrition actions among all front-line health workers.
- Further institutionalising breastfeeding and complementary feeding counselling through baby-friendly maternity services as well as protocols for infant feeding in difficult circumstances.
- Expanding services to reach all stages of the life cycle, especially women before and during pregnancy and adolescent girls, with essential nutrition actions.
- Strengthening school health and nutrition programmes to ensure nutrition-friendly schools where policies, curriculum, environments and services are designed to promote healthy diets and support good nutrition.
- Continuing further development, implementation, monitoring and enforcement of legislative and regulatory measures to improve food environments in order to promote healthy diets.
- Establishing context-specific comprehensive strategies to address vitamin and mineral deficiencies through both general and targeted approaches and addressing underlying causes such as poor sanitation and hygiene.
- Where needed, implementing programmes to prevent and treat acute malnutrition, ensuring that programmes do not risk augmenting overweight and obesity in communities.
- Where needed, integrating nutrition into communicable disease programmes to stop the vicious cycle of malnutrition and infectious disease.







# 1. INTRODUCTION

The world faces challenges from malnutrition of all forms, with one in three people being directly affected by either underweight, vitamin and mineral deficiency or overweight, obesity and diet-related noncommunicable diseases (NCDs) (1). Moreover, these conditions increasingly coexist, whether in a nation, a community or a household, or even in the same individual across the life course. In 2015, more than 1.9 billion adults were overweight or obese worldwide, while 462 million were underweight (2). In 2017, 151 million children aged under 5 years were affected by stunting, while 38 million were overweight and 51 million were affected by wasting (3). Furthermore, in 2016, over 340 million children aged 5–19 years were overweight or obese, while 192 million were underweight (4).

Undernutrition continues to cause nearly half of deaths in children aged under 5 years (5); it also impedes children's achievement of their full physical growth, and their economic, social, educational and occupational potential. However, low- and middle-income countries are now witnessing a rise in childhood overweight and obesity, especially in countries in Africa and Asia (3, 4); furthermore, some 1.6 billion people are anaemic, mainly due to iron deficiency (6). The increasing prevalence of unhealthy diets contributes not only to undernutrition, but also to the rise in overweight and obesity and diet-related NCDs, which in turn result in premature mortality (<70 years of age) and the early onset of diseases that are associated with high levels of disability. One in 12 adults worldwide now has diabetes; mainly, this is type 2 diabetes, which is linked to overweight and obesity, and is often undiagnosed (7).

There have been many important developments in the global nutrition policy environment since 2009–2010, when the first Global Nutrition Policy Review (GNPRI) was conducted (8). In 2011, the United Nations (UN) General Assembly adopted a political declaration on the prevention and control of NCDs (9). This was a first global call for action on NCDs, and in 2014, progress was reviewed (10).

In 2012, the World Health Assembly approved the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition (11). The plan has six global nutrition targets to be achieved by 2025, including reductions in child stunting and wasting, and no increase in overweight, as well as reductions in maternal anaemia and low birth weight, and increases in breastfeeding (12). In 2013, the World Health Assembly approved the Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020, together with nine voluntary global NCD targets and 25 indicators (13).

At the second International Conference on Nutrition (ICN2), held in November 2014, Member States and the global community committed to eliminate malnutrition in all its forms. In the Rome Declaration on Nutrition, they articulated a common vision for global action that can be taken through the implementation of policy options described in the Framework for Action (14, 15). The ICN2 reiterated the commitments to achieve the six global nutrition targets for 2025, as well as the diet-related NCD targets for 2025.

In September 2015, the UN General Assembly adopted the Agenda for Sustainable Development, with 17 Sustainable Development Goals (SDGs) (16). The SDGs commit the international community to ending poverty and hunger, and achieving sustainable development by 2030. SDG2 is to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture, with Target 2.2 aiming to “end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons”. SDG3 is to ensure healthy lives and promote well-being for all at all ages, with Target 3.4 aiming to “reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being”.

In April 2016, the UN General Assembly proclaimed 2016–2025 the UN Decade of Action on Nutrition (17). In May 2016, the World Health Assembly requested the Director-General of WHO to work with the Director-General of the Food and Agriculture Organization of the UN (FAO) to support Member States in developing, strengthening and implementing commitments for nutrition actions that are specific, measurable, achievable, relevant and time bound (SMART) in the context of their nutrition situations and within the framework of UN Decade of Action on Nutrition (2016–2025) (WHA69.8) (18).

WHO guidance on effective nutrition programmes has also evolved considerably since the undertaking of GNPR1 in 2009–2010 (8). An interpretation guide for the country profile indicators of the Nutrition Landscape Information System (NLiS) was published in 2010 (19). The NLiS brings together nutrition-related indicators in a standardized form for all Member States, and keeps these indicators up to date; it allows tracking over time as well as generation of easy-to-interpret country profiles. Up-to-date guidelines on effective nutrition interventions have been maintained in the WHO e-Library of Evidence for Nutrition Actions (eLENA)<sup>1</sup> since 2011. In November 2012, the Global Database on the Implementation of Nutrition Action (GINA)<sup>2</sup> was launched. GINA provides valuable information on the implementation of numerous nutrition policies

and interventions across the globe. The database incorporates the information collected in GNPR1, and will include the results collected through the second Global Nutrition Policy Review (GNPR2), which was conducted in 2016–2017 to compile current information on countries' progress in implementing actions to achieve the global nutrition targets for 2025. Furthermore, in 2013, WHO published Essential nutrition actions, which lists nutrition interventions that have been proven to be effective for improving maternal, infant and young child nutrition (MIYCN), together with evidence of best practice in delivery mechanisms, including community-based programmes (20). WHO, in collaboration with the United Nations Children's Fund (UNICEF) and the European Commission, has also developed a tracking tool<sup>3</sup> to help countries set their national targets and monitor progress.

The purpose of this report is to take stock of progress towards achieving the global targets, the commitments of the ICN2 and the progressive realization of nutrition-related human rights. The report examines the results of the GNPR2 to assess any major difference across the regions, identifying areas that have progressed well since GNPR1 and those that will need greater effort if the global targets for 2025 and 2030 are to be met. The outcomes of GNPR2 also serve as a baseline for assessing progress achieved during the UN Decade of Action on Nutrition (2016–2025).

<sup>1</sup> Available at <http://www.who.int/elena/en/>.

<sup>2</sup> Available at <http://www.who.int/nutrition/gina/en/>.

<sup>3</sup> Available at <http://www.who.int/nutrition/trackingtool/en/>.





## **2. METHODS**

## 2.1. Questionnaire development and data collection

A comprehensive online questionnaire containing four sections (one of which has six subsections) (Box 2.1) was developed by the WHO Department of Nutrition for Health and Development, with inputs from the six WHO regional offices, and from external experts and partner agencies.<sup>1</sup> Web-based versions of the questionnaire were prepared on the WHO Dataform platform, in Arabic, English, French, Russian and Spanish. The online versions of the questionnaire were prefilled with existing information contained in GINA, provided by countries through regular contacts, during GNPR1 and from partner organizations. These online versions of the questionnaire were disseminated to Member States through the WHO regional and country offices to ministries of health from July to November 2016. Member States were asked to review and update the prefilled information, and incorporate any new or updated information that was available for their respective countries. The modular approach of the questionnaire allowed the person responsible for the relevant issues and programmes to complete different sections. Furthermore, an abbreviated questionnaire was developed as an offline PDF form, and was disseminated in January 2017, to obtain information from those Member States that had not completed the full online version of the questionnaire. The abbreviated version of the questionnaire contained 42 questions; it covered the main top-level questions, but did not include the high level of detail requested in the full online version. Responses from Member States were received from July 2016 until December 2017.

## 2.2. Data validation

The information and data reported by Member States were validated, as far as possible, by

reviewing documents submitted by Member States and triangulating with secondary sources such as partners' databases and regional monitoring initiatives.<sup>2</sup> Documents were systematically reviewed and assessed for key content in each topic area. Furthermore, respondents in concerned countries were contacted to obtain any missing information or clarifications, and required documentations were also requested, if necessary. The WHO regional and country offices provided further verification of nutrition actions implemented in Member States. Overall, about 2000 documents – including policies, strategies and action plans, as well as protocols, guidelines and regulations underpinning the implementation of the programmes and actions – were reviewed to validate the information and responses provided by Member States to GNPR2.

## 2.3. Inclusion criteria and data validation

Documents were included in the policy analyses (Section 3.2) if they represented official national documents currently in use, as reported by the countries. Thus, policies were excluded from the analysis if they had been replaced by newer versions. Legislation, codes, regulations, protocols and guidelines were also excluded from the policy analysis section (Section 3.2), to avoid duplication, because they are analysed in Section 3.5. Coordination mechanisms were considered in the analyses (Section 3.3) only if they represented established mechanisms that had a main objective of coordination across sectors; that is, coordination mechanisms within a single institution were excluded from the review. Information on nutrition capacities (Section 3.4) was scrutinized for any double counting of trained professionals, and was checked against country resources in case of inconsistent responses. Unless otherwise indicated, action programmes and other legislative or voluntary measures were included in the analyses (Section 3.5) as reported by Member States.

<sup>1</sup> The questionnaire can be obtained from [NPUinfo@who.int](mailto:NPUinfo@who.int) on request.

<sup>2</sup> Such initiatives include FAO food-based dietary guidelines, the FAO/WHO Global Individual Food consumption data Tool (GIFT), the Food Fortification Initiative, the World Cancer Research Fund, the SUN network, the UNICEF NutriDash, the UNICEF East Asia and Pacific Regional Office salt fortification monitoring report and the WHO Western Pacific Regional Office nutrition country profiles.

## 2.4. Analysis of the policy environment for achieving the global nutrition targets

A cross-modular analysis reviewed the existence of relevant policies, coordination mechanisms, capacities and actions in groups of countries, based on the most recent status of the global nutrition target outcome indicator, and on whether the groups were “on track” or “off track” to reach the global nutrition targets (Section 3.6). The relevant elements in the policy environment were identified based on the following (Table 2.1):

- the interventions for which systematic reviews suggest links to the respective targets, as listed in eLENA;<sup>1</sup>
- the interventions proposed in the respective WHO global nutrition targets for 2025 policy briefs (21); and
- key interventions for improving breastfeeding practices listed in the WHO/United Nations Children’s Fund (UNICEF) Global Strategy for Infant and Young Child Feeding (22).

### BOX 2.1

#### QUESTIONNAIRE STRUCTURE AND CONTENT OVERVIEW

##### 1 POLICIES, STRATEGIES AND PLANS RELATED TO NUTRITION

This section aims to map out the main policies, strategies and plans which relate to improving nutrition and promoting healthy diets. These include not only comprehensive nutrition policies, but also those focusing on a specific nutrition issue, as well as policies, strategies and plans which address nutrition and dietary risk factors as part of the strategic action areas, such as NCD strategies, health sector strategic plans, social protection plans, food security strategies or national development plans.

##### 2 COORDINATION MECHANISMS FOR NUTRITION

This section aims to compile information on coordination mechanisms for nutrition. This includes multisectoral coordinating mechanisms (e.g. national nutrition council, technical working group, task force, advisory body or committee) which oversee, coordinate or harmonise nutrition or diet-related work.

##### 3 NUTRITION CAPACITY

This section aims to compile information on nutrition capacity in the country. This includes the existence of nutrition degrees, the number of nutrition professionals, and the training on nutrition for health personnel such as medical doctors, nurses and midwives.

##### 4 NUTRITION ACTIONS, PROGRAMMES AND MEASURES BEING IMPLEMENTED

This section aims to map out the actions implemented in the country that have an impact on nutrition across the life cycle. For each action, information is collected on implementation details specific to the action, delivery mechanisms and target groups, and evaluation and lessons learned. The actions assessed relate to:

- improving infant and young child nutrition
- school health and nutrition programmes
- promoting healthy diet and preventing obesity and diet-related NCDs
- improving vitamin and mineral nutrition
- prevention and treatment of acute malnutrition
- addressing nutrition and infectious diseases

<sup>1</sup> Interventions by global target, available at <http://who.int/elena/global-targets/en/>.

TABLE 2.1

## INTERVENTIONS CONSIDERED IN THE CROSS-MODULAR ANALYSIS OF POLICY ENVIRONMENT TO REACH THE GLOBAL NUTRITION TARGETS FOR 2025

TARGET	INTERVENTIONS
<b>STUNTING</b>	Growth monitoring and promotion, <sup>A</sup> breastfeeding counselling, <sup>A,B</sup> BFHI, <sup>B</sup> complementary feeding counselling, <sup>A,B</sup> nutrition counselling in pregnancy, <sup>B</sup> iron–folic acid supplementation in pregnant women <sup>B</sup> and in women of reproductive age, <sup>A</sup> vitamin A <sup>A,B</sup> and zinc <sup>B</sup> supplementation in children, and provision of foods for infants and young children. <sup>A</sup> The extent of implementation of a comprehensive maternal child nutrition intervention package was also assessed.
<b>ANAEMIA</b>	Iron–folic acid supplementation in pregnant women, <sup>A,B</sup> iron–folic acid supplementation in women of reproductive age, <sup>A,B</sup> fortification of staple foods with iron, <sup>A,B</sup> nutrition counselling in pregnancy, <sup>B</sup> deworming <sup>A</sup> and optimal timing of cord clamping. <sup>A</sup>
<b>LOW BIRTH WEIGHT</b>	Nutrition counselling in pregnancy, <sup>B</sup> iron–folic acid supplementation in pregnant women, <sup>B</sup> iron–folic acid supplementation in women of reproductive age, <sup>A</sup> fortification of staple foods with iron, <sup>B</sup> food aid programmes targeting pregnant women, micronutrient supplementation of HIV-infected women during pregnancy, <sup>B</sup> daily calcium supplementation for women in settings with low calcium intake <sup>A</sup> and fortification of food-grade salt with iodine. <sup>A</sup>
<b>CHILD OVERWEIGHT</b>	Growth monitoring and promotion, <sup>A</sup> breastfeeding counselling, <sup>A,B</sup> BFHI, <sup>A,B</sup> complementary feeding counselling, <sup>A,B</sup> regulating marketing of complementary foods, <sup>A</sup> nutrition counselling in pregnancy, <sup>A</sup> school food standards, <sup>A</sup> vending machines, <sup>A</sup> dietary guidelines, <sup>A</sup> nutrition labelling, <sup>A</sup> reformulation (i.e. to reduce sugars intake), <sup>B</sup> fiscal policies, <sup>A</sup> regulation of marketing of foods and non-alcoholic beverages to children, <sup>A,B</sup> portion size control <sup>B</sup> and media campaigns. <sup>A</sup>
<b>EXCLUSIVE BREASTFEEDING</b>	Breastfeeding counselling, <sup>C</sup> BFHI, <sup>C</sup> infant feeding in difficult circumstances (i.e. in the context of low birth weight, HIV and emergencies), <sup>C</sup> regulation of marketing of breast-milk substitutes <sup>C</sup> and maternity protection. <sup>C</sup>
<b>WASTING</b>	Growth monitoring and promotion, <sup>A</sup> breastfeeding counselling, <sup>A</sup> complementary feeding counselling, <sup>A</sup> nutrition counselling in pregnancy, <sup>B</sup> iron–folic acid supplementation in pregnant women, <sup>B</sup> distribution of foods for infants and young children, <sup>B</sup> treatment of MAM <sup>A,B</sup> and treatment of SAM. <sup>A,B</sup> The extent of implementation of a comprehensive maternal child nutrition intervention package was also assessed.

BFHI, Baby-friendly Hospital Initiative; eLENA, WHO e-Library of Evidence for Nutrition Actions; HIV, human immunodeficiency virus; MAM, moderate acute malnutrition; SAM, severe acute malnutrition; UNICEF, United Nations Children's Fund; WHO, World Health Organization.

Three reference documents were used for associating targets with specific interventions. The interventions in these three documents reflect WHO guidelines and other evidence for which there are no WHO guidelines. In some cases (e.g. deworming), new WHO guidance was issued after this analysis was conducted, but the actions were still included, to reflect actions currently implemented in countries. These sources may include other interventions, but those additional interventions were not assessed in the questionnaire and therefore not included in this table.

<sup>A</sup> Global nutrition target policy briefs (21).

<sup>B</sup> eLENA interventions linked to the global nutrition targets.

<sup>C</sup> WHO/UNICEF Global Strategy for Infant and Young Child Feeding (22).

Prevention of stunting and wasting requires general improvements in maternal and child nutrition; therefore, the analysis also considered the extent of implementation of a package of interventions drawing on the *Essential nutrition actions* (20) and the Lancet Nutrition Series 2013 (24). The interventions considered in this analysis were limited to those that countries reported on in the questionnaire; they do not represent a complete set of interventions to address the global nutrition targets.

Countries were categorized in two different ways, one being the most recent status of the global nutrition target outcome indicator and the other being whether countries were on track to reach the global nutrition targets or not (i.e. off track). The former categorization was based on recognized cut-offs for public health significance for stunting (i.e. 20%), anaemia (i.e. 20%) and wasting (i.e. 5%) (6, 25). For exclusive breastfeeding, the categorization was based on having reached the global target (i.e. 50%), and for child overweight it was based on the global baseline

<sup>1</sup> WHO recommends preventive chemotherapy (deworming) as a public health intervention in areas endemic for soil-transmitted helminths, to decrease the worm burden of soil-transmitted helminth infections in children, adolescent girls, women of reproductive age and pregnant women, including those coinfecting with HIV (23).



level (i.e. 6%). The categorization of countries into on-track or off-track groups for reaching the global nutrition targets was based on analysis done by WHO in accordance with a set of rules provided by the WHO/UNICEF Technical Expert Advisory Group on Nutrition Monitoring (TEAM) (26). These rules provide cut-offs that are based on a combination of prevalence and average annual progress rates. The rules also restrict country assessment to recentness of data (at least two points since 2008) as well as at least one data point beyond 2012. For the purpose of this report, these two restrictions were lifted for countries that had at least two points from any range of years that could be used to assess their average annual progress rates, to ensure that such countries could be included in the analyses. Inclusion of countries with less recent data was based on their two latest estimates for all targets except wasting, where first and latest data points were used to reflect longer term trends. This deviation from the TEAM's recommended rules was implemented because the groups of countries available for analysis would otherwise have been small, and because the recentness of data was assessed as being less relevant for analysing the association between policy environment and nutrition trends. The implications of the deviation for this analysis of policy coherence are considered to be small, because policy development and subsequent implementation can be a long process, and therefore often reflect older data that were available at the time when the political priorities were set.

A quantitative cross-modular analysis of policy environment in countries was done for five of the six global targets for which agreed datasets were available. However, only a qualitative analysis was done for low birth weight because data were not available at the time of preparing this report.

## 2.5. Analysis of progress since the first Global Nutrition Policy Review

The results of GNPR2 (2016–2017) were compared with the corresponding results of GNPR1 (2009–2010). Selected goals and actions from national policies, information on coordination mechanisms and implementation of nutrition actions were compared by absolute percentage change between the two reports. This cross-sectional analysis included all countries that responded to any of the reviews rather than being limited to the countries that responded to both. For every comparison, there is a detailed description of the number and regional composition of respondents, and of the steps taken to make results comparable (e.g. merging of preschool-age child [those aged <5 years] and school-age child overweight results in GNPR2 to be comparable with child overweight results in GNPR1).

## 2.6. Country-specific information and data

As was the case for GNPR1, country-specific information and data obtained from GNPR2 are made available in GINA<sup>1</sup> and also in the NLiS Global Nutrition Monitoring Framework country profiles.<sup>2</sup> Hence, interested users will be able to access country data in these two resources, in order to assess their own progress, identify gaps in nutrition policies and actions, and learn from other country experiences.

<sup>1</sup> Data may be accessed through GINA at <http://www.who.int/nutrition/gina/en/>.

<sup>2</sup> Data may be accessed through the NLiS Global Nutrition Monitoring Framework country profiles at <http://apps.who.int/nutrition/landscape/global-monitoring-framework>.





# **3. RESULTS**

Section 3.1 provides an overview of respondents, and Sections 3.2–3.5 present raw percentages for the implementation of policies and actions by region, although they may not be relevant in every country. Section 3.6 provides an in-depth analysis of policy environment by status and by progress in countries for which specific actions are applicable. Each chapter commences with the top-level responses provided by all countries answering to either of the questionnaires. This is followed by more detailed information for the smaller numbers of countries that had responded to the full questionnaire, or for which policies, protocols, guidelines and regulations were available for further information and verifications. Throughout the report, “no answers” have been excluded from the data presentations. Therefore, denominators may vary within the same section.

### 3.1. Country responses

Of the 194 WHO Member States, 176 Member States and one area<sup>1</sup> responded to GNPR2; this is equivalent to an overall response rate of 91% of Member States. A total of 82 Member States responded to all sections of the full questionnaire, while 44 Member States responded only to some sections of the full questionnaire. An additional 50 Member States and one area responded to the abbreviated top-level questionnaire.<sup>2</sup> Detailed information on the responses by Member States in different regions is provided in Table 3.1 and on the responses to different sections in Table 3.2.<sup>3</sup>

TABLE 3.1

#### RESPONSES BY WHO REGION

Region	Total responses	Completed full questionnaire	Completed some sections of the full questionnaire	Completed abbreviated questionnaire	No response	Member State response rate (%)
<b>AFR</b>	41	20	6	15	6	87%
<b>AMR</b>	30	10	11	9	5	86%
<b>EMR</b>	21	11	6	4	0	100%
<b>EUR</b>	48	21	17	10	5	91%
<b>SEAR</b>	11	9	1	1	0	100%
<b>WPR<sup>A</sup></b>	25 (1)	11	3	11 (1)	2	93%
<b>All</b>	<b>176 (1)</b>	<b>82</b>	<b>44</b>	<b>50 (1)</b>	<b>18</b>	<b>91%</b>

AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>A</sup> The area Guam is included in the WHO Western Pacific Region.

<sup>1</sup> The respondents were as follows: 41 of 47 Member States in the **WHO African Region** (Algeria, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, Togo, Uganda, United Republic of Tanzania, Zambia and Zimbabwe); 30 of 35 Member States in the **WHO Region of the Americas** (Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia (Plurinational State of), Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Peru, Saint Kitts and Nevis, Saint Lucia, Suriname, Trinidad and Tobago, United States of America, Uruguay and Venezuela (Bolivarian Republic of)); 21 of 21 Member States in the **WHO Eastern Mediterranean Region** (Afghanistan, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arabic Republic, Tunisia, United Arab Emirates and Yemen); 48 of 53 Member States in the **WHO European Region** (Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, United Kingdom and Uzbekistan); 11 of 11 Member States in the **WHO South-East Asia Region** (Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste); 25 of 27 Member States in the **WHO Western Pacific Region** (Australia, Brunei Darussalam, Cambodia, China, Cook Islands, Fiji, Japan, Lao People's Democratic Republic, Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Tonga, Tuvalu, Vanuatu and Viet Nam); and one area (Guam).

<sup>2</sup> A total of 17 countries responded to some sections of the full questionnaire as well as the abbreviated top-level questionnaire. These are counted under the top-level questionnaire in Table 3.1, to avoid double counts, but their detailed answers are included in the analyses under the respective programme areas.

<sup>3</sup> Subsequently, in the reporting of results, the term "country" is used to refer to Member States and areas.

TABLE 3.2

## RESPONSES TO EACH SECTION OF THE QUESTIONNAIRE

Region	1. Policies, strategies and plans	2. Coordination mechanisms	3. Nutrition capacity	4. Implementation of programmes					
				4.1	4.2	4.3	4.4	4.5	4.6
				Infant and young child nutrition	School health and nutrition programmes	Healthy diet and prevention of obesity and diet-related NCDs	Vitamin and mineral nutrition	Prevention and treatment of acute malnutrition	Nutrition and infectious disease
Number of Member States (number of areas)									
<b>AFR</b>	40	39	39	39	38	38	39	40	38
<b>AMR</b>	28	28	29	28	25	26	27	25	23
<b>EMR</b>	19	21	20	20	19	19	21	18	17
<b>EUR</b>	43	45	40	45	43	45	43	34	36
<b>SEAR</b>	11	11	10	10	10	11	10	10	10
<b>WPR<sup>A</sup></b>	25 (1)	24 (1)	25 (1)	24 (1)	24 (1)	23 (1)	23 (1)	24 (1)	23 (1)
<b>Total</b>	<b>166 (1)</b>	<b>168 (1)</b>	<b>163 (1)</b>	<b>166 (1)</b>	<b>159 (1)</b>	<b>162 (1)</b>	<b>163 (1)</b>	<b>151 (1)</b>	<b>147 (1)</b>

AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>A</sup> The area Guam is included in the WHO Western Pacific Region.

## 3.2. Policies, strategies and plans related to nutrition

### 3.2.1 Types of policy documents considered

A total of 167 countries reported on the policies, strategies and plans (hereafter referred to as “policies”)<sup>1</sup> relevant to improving nutrition and promoting healthy diets in their countries.

Countries reported 889 documents, of which 660 represented the most recent national policies and were included in the analyses<sup>2</sup> (Fig. 3.1). Of the policies reported, 60% had been developed since 2011 (i.e. since the GNPR1), and many had been developed even more recently, since the ICN2, especially the comprehensive nutrition policies.<sup>3</sup> In terms of countries, 90% had policies that had been developed in 2011 or later, and 47% had policies that had been developed in 2015 or later.

<sup>1</sup> Legislation, codes, regulations, protocols and guidelines were excluded from the policy analysis section, to avoid duplication. Such documents were analysed in the relevant sections on nutrition actions and programmes.

<sup>2</sup> A total of 229 documents were excluded, as follows: 50 were older policies, strategies or plans that had been replaced by newer versions; 69 were laws; 44 were guidelines or protocols; 41 had incomplete information to be assessed; 21 were programmes, projects or campaigns; two were evaluations; and two were duplications.

<sup>3</sup> About 99% of the policies had been developed in 2000 or later; earlier policies were long-standing national programmes that were still in place and valid.

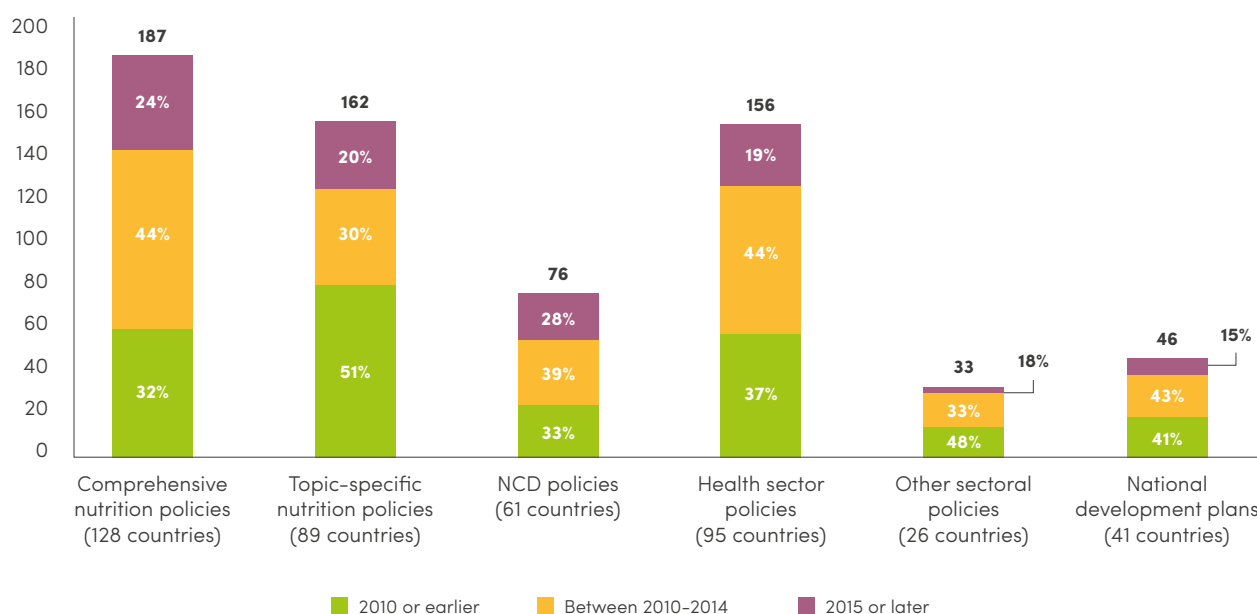
Most of the policies were dedicated to nutrition, with 349 comprehensive or topic-specific nutrition policies in 149 countries (89%) (Fig. 3.2). Among these, 128 countries (77%) had comprehensive nutrition policy documents that aimed to address all forms of malnutrition in the country, and 89 countries (53%) had policy documents that focused on specific nutrition topics such as infant and young child nutrition (IYCN), obesity, healthy diet, or vitamin and mineral nutrition. Forty-seven countries had multiple comprehensive nutrition policy documents, usually representing documents of different levels of operationalization. For example, a country could have a high-level nutrition policy, a 10-year nutrition strategy and a shorter term nutrition action plan. In some cases, especially in the

WHO European Region, the policies represented different geographical and administrative areas within the same country. Only a handful of countries had separate nutrition policy documents issued by different government sectors.

In addition to dedicated nutrition policies, the analyses also considered other government policies in which nutrition was one of several strategic areas. These other policies included 76 NCD policies in 61 countries,<sup>4</sup> 156 health sector policies in 95 countries, 33 other sectoral policies<sup>5</sup> (e.g. food and agriculture, or social protection) in 26 countries, and 46 national development strategies and plans with nutrition components in 41 countries.

FIGURE 3.1

NUMBER OF DIFFERENT TYPES OF POLICY DOCUMENTS CONSIDERED IN 167 COUNTRIES AND PERIOD WHEN THEY WERE DEVELOPED



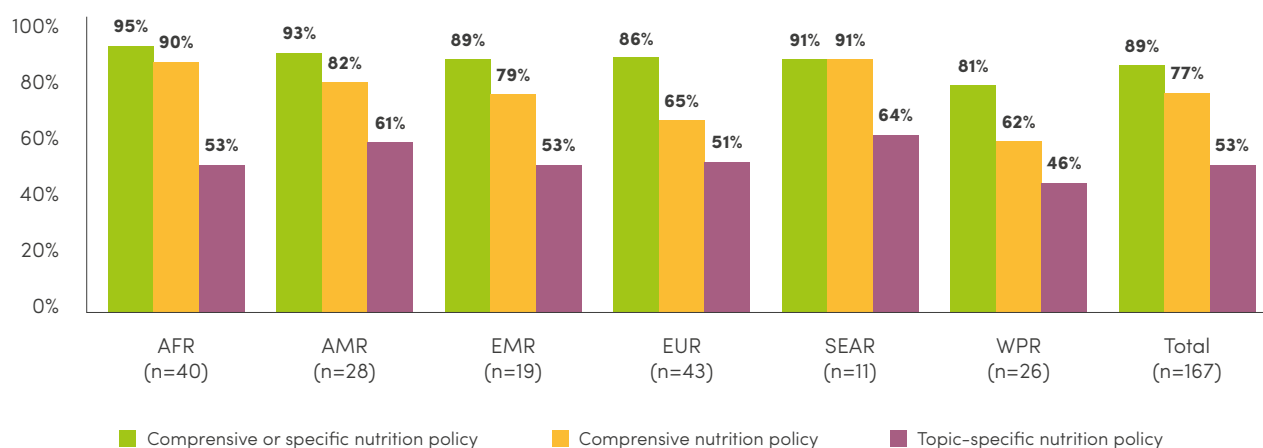
NCD, noncommunicable disease.

<sup>4</sup> This review only asked for policies relevant to nutrition. For a more comprehensive overview of NCD policies in countries, please refer to the NCD progress monitor (27) and the NCD document repository available at <https://extranet.who.int/ncdccc/documents/>.

<sup>5</sup> A total of 21 food security and agriculture policies and 12 social welfare policies were reported.

FIGURE 3.2

COMPREHENSIVE AND TOPIC-SPECIFIC NUTRITION POLICIES IN 167 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

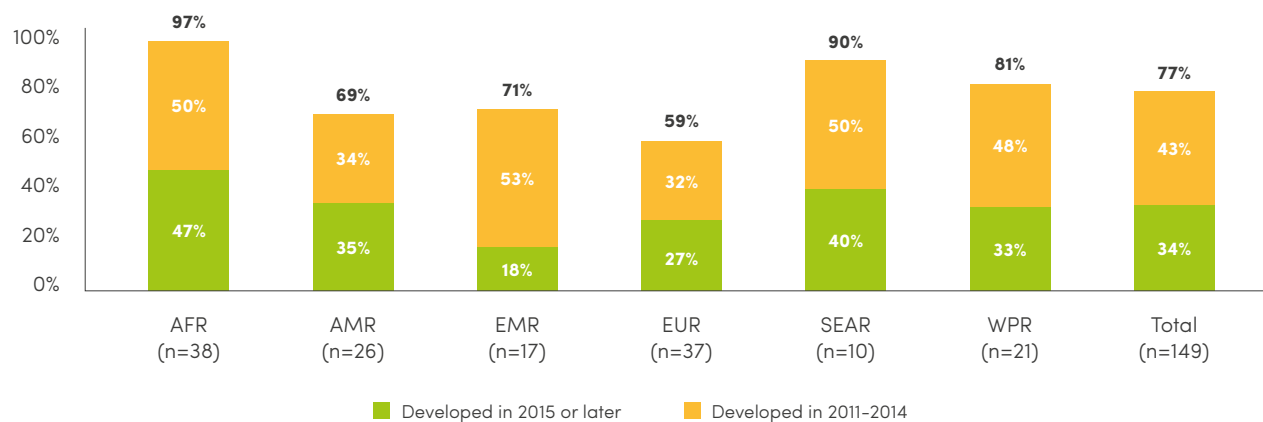
3.2.2 Nutrition policies

In all regions, 77% of countries with nutrition policies had published these in 2011 or later; that is, after GNPR1 (Fig. 3.3). Furthermore, 34% of countries had nutrition policies that had been published in 2015 or later; that is, after the ICN2. Almost half of the countries in the WHO African Region had nutrition policies that had been published after the ICN2.

In total, 39% of the countries reported that costed operational plans were associated with their nutrition policies (Fig. 3.4). Costed operational plans were most common in countries in the WHO regions of the Eastern Mediterranean (71%) and South-East Asia (60%), and were least common among countries in the WHO regions of the Americas (23%), Europe (27%) and the Western Pacific (29%).

FIGURE 3.3

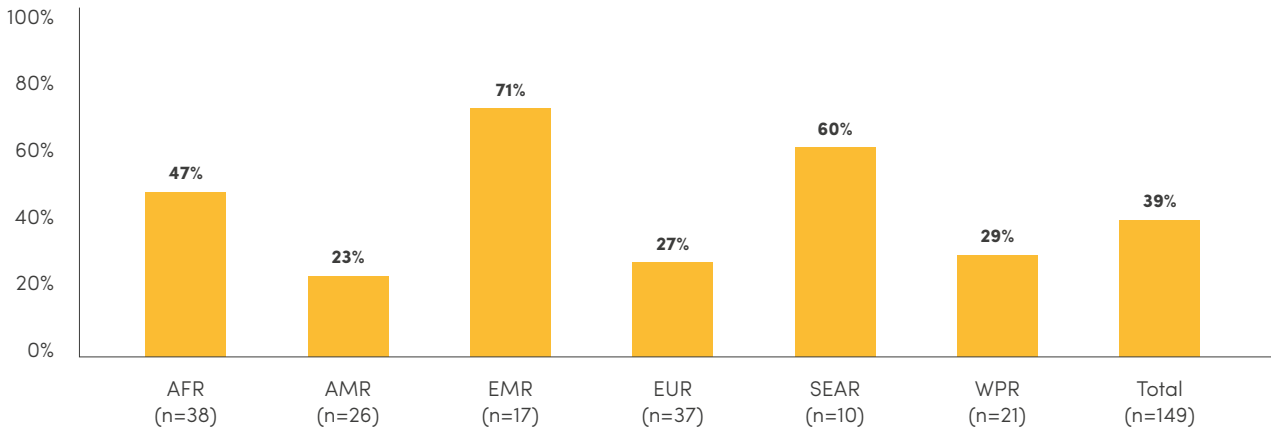
COUNTRIES WITH RECENTLY DEVELOPED NUTRITION POLICIES IN 149 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.4

COSTED OPERATIONAL PLANS ASSOCIATED WITH NUTRITION POLICIES IN 149 COUNTRIES



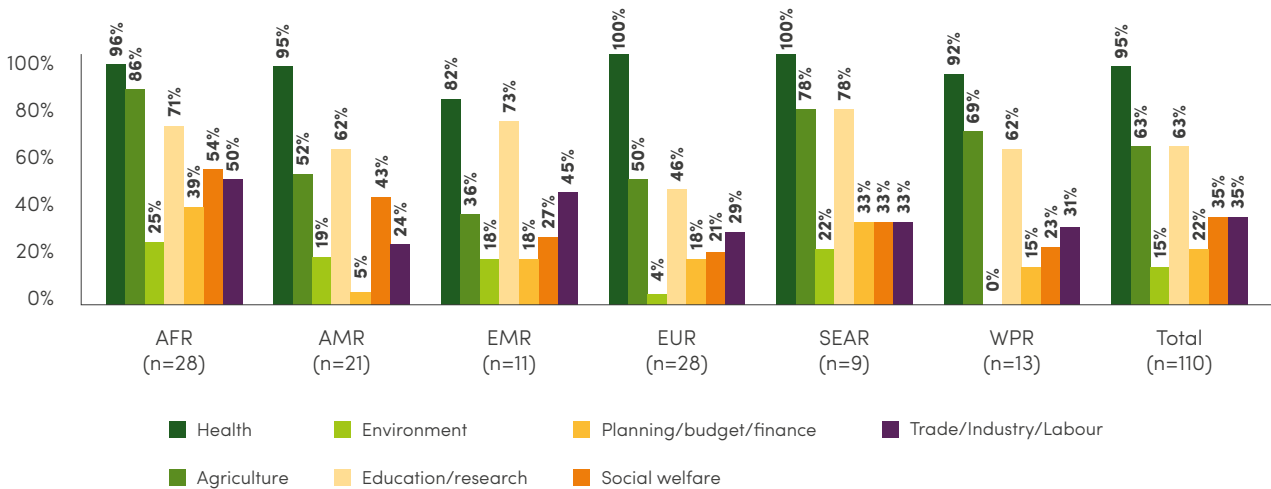
AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

This sector most often involved in the implementation of nutrition policies was the ministry of health, followed by education and agriculture.

The extent of the involvement of different sectors varied among regions (Fig. 3.5).

FIGURE 3.5

SECTORS INVOLVED IN THE IMPLEMENTATION OF NUTRITION POLICIES IN 110 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.



### 3.2.3 Goals and targets included in national policies

Overall, the **global nutrition targets** were included in policies in more than half of the countries (Fig. 3.6). Reducing or preventing child overweight was the target most often included (i.e. by 78% of countries responding). This was especially the case in the WHO regions of the Americas, Europe and the Western Pacific, but also in other regions where undernutrition remains a great challenge, such as the WHO regions of Africa and South-East Asia. Most of the countries in the WHO African Region that had a child overweight target had introduced this as a new policy target in 2012 or later, which probably reflects the influence of the global nutrition targets adopted by the World Health Assembly in 2012.

The second most common target included was increasing the prevalence of exclusive breastfeeding for 6 months; this was included by 71% of countries, reflecting the universality of this “double duty action”, which addresses all forms of malnutrition. The lower inclusion of this target in the WHO European Region may be due to several

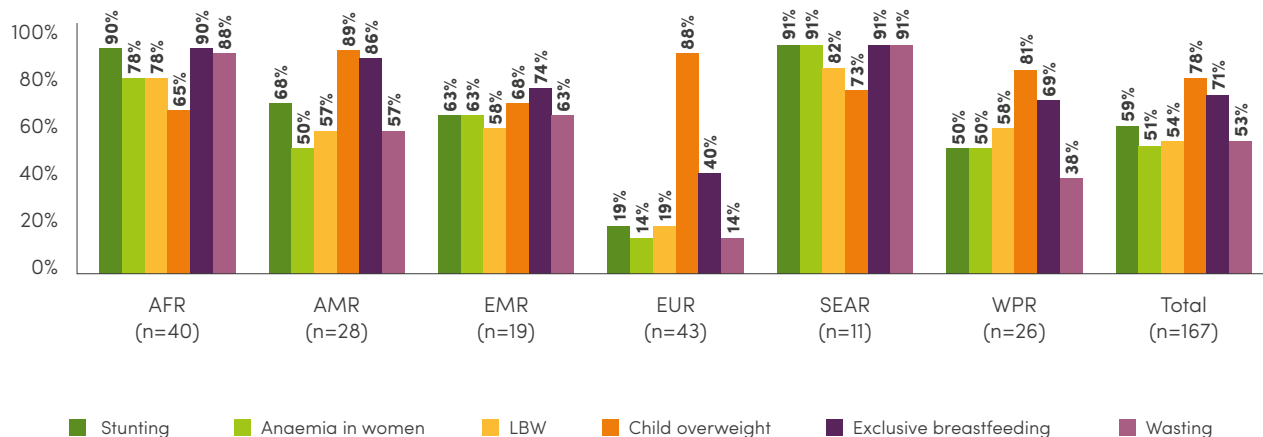
countries recommending exclusive breastfeeding for a shorter duration (4–6 months).

The targets related to undernutrition – stunting, anaemia, low birth weight and wasting – were most frequently included in national policies in the WHO regions of Africa and South-East Asia, being reported by more than 75% of all countries in these regions. Although anaemia is a widespread global nutrition problem, only half of the countries in other regions had policy targets on anaemia.

Goals, targets or indicators related to the global nutrition targets were most commonly included in comprehensive nutrition policies (Fig. 3.7). In addition, infant and young child feeding (IYCF) strategies and national health policies often had goals to increase the prevalence of exclusive breastfeeding. NCD plans often included goals to reduce child overweight, but seldom included goals on exclusive breastfeeding; this indicates a lack of recognition of the importance of optimal nutrition early in life for prevention of obesity and diet-related NCDs. Furthermore, stunting was often included in national development plans.

FIGURE 3.6

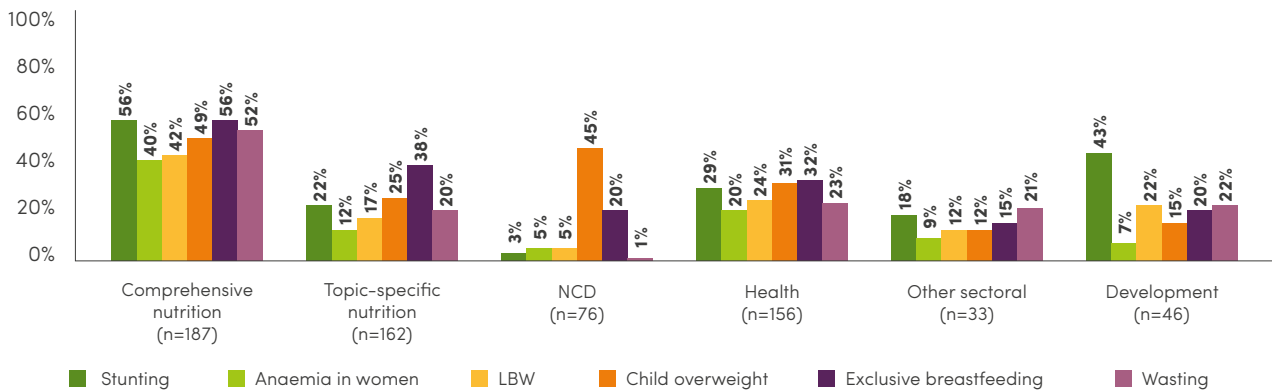
#### INCLUSION OF GOALS, TARGETS OR INDICATORS RELATED TO THE GLOBAL NUTRITION TARGETS IN NATIONAL POLICIES IN 167 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; LBW, low birth weight; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.7

**INCLUSION OF GOALS, TARGETS OR INDICATORS RELATED TO THE GLOBAL NUTRITION TARGETS IN DIFFERENT CATEGORIES OF 660 NATIONAL POLICIES IN 167 COUNTRIES**



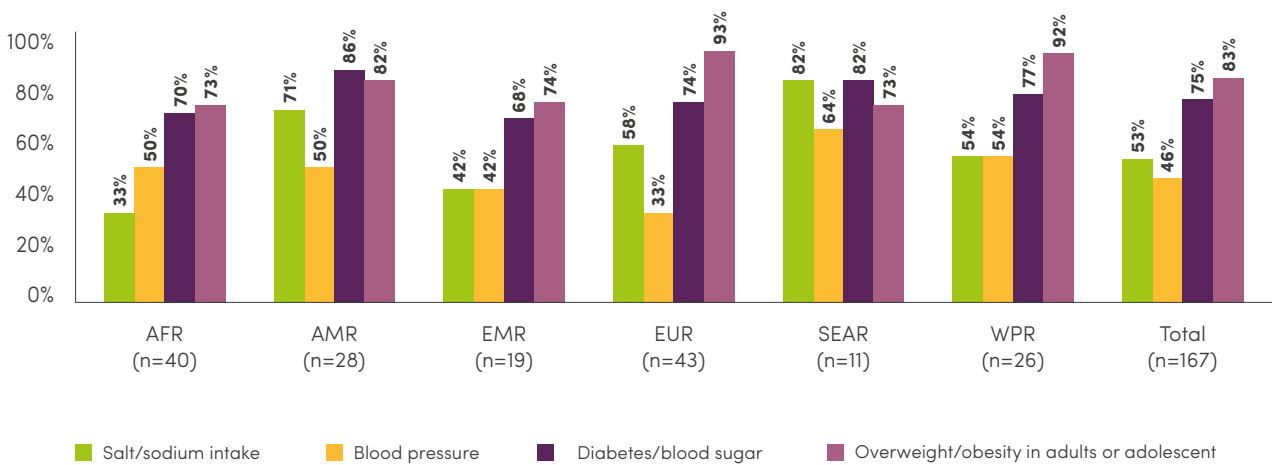
LBW, low birth weight; NCD, noncommunicable disease.

For the **diet-related NCD targets**, most countries reported having goals, targets or indicators related to diabetes and to overweight in adults or adolescents (Fig. 3.8). Not surprisingly, most of these

were included in the NCD policies, although almost half of the national comprehensive nutrition policies also included goals to reduce adult or adolescent overweight and diabetes.

FIGURE 3.8

**INCLUSION OF GOALS, TARGETS OR INDICATORS RELATED TO THE DIET-RELATED GLOBAL NONCOMMUNICABLE DISEASE TARGETS IN NATIONAL POLICIES IN 167 COUNTRIES**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

Considering all the goals, targets and indicators included in national policies, stunting was the most frequently included undernutrition target, being reported by 59% of countries – slightly more than underweight, at 56% (Fig. 3.9). The relatively high inclusion of underweight in children – even though it is not a global nutrition target – reflects the continued influence from the Millennium Development Goal (MDG) era, when this was one of the indicators. Underweight in women or adolescent girls was still not frequently included in national policies, despite the increased attention to the role of maternal nutrition.

Anaemia was the vitamin and mineral deficiency most commonly included in national policies, ahead of iodine deficiency disorders and vitamin A deficiency. The WHO regions of Africa and South-East Asia showed the highest percentages of policy goals related to undernutrition and micronutrient deficiencies, whereas these goals were not included in the policies of many countries in the WHO European Region.

Concerning IYCF, goals, targets and indicators for practices other than exclusive breastfeeding

were less often included in national policies, especially the indicator on minimum acceptable diet, which has been adopted by the World Health Assembly as part of the Global Nutrition Monitoring Framework. Few NCD policies included goals related to IYCN, indicating a gap in acknowledging the role of nutrition in early life for preventing overweight, obesity and diet-related NCDs later in life.

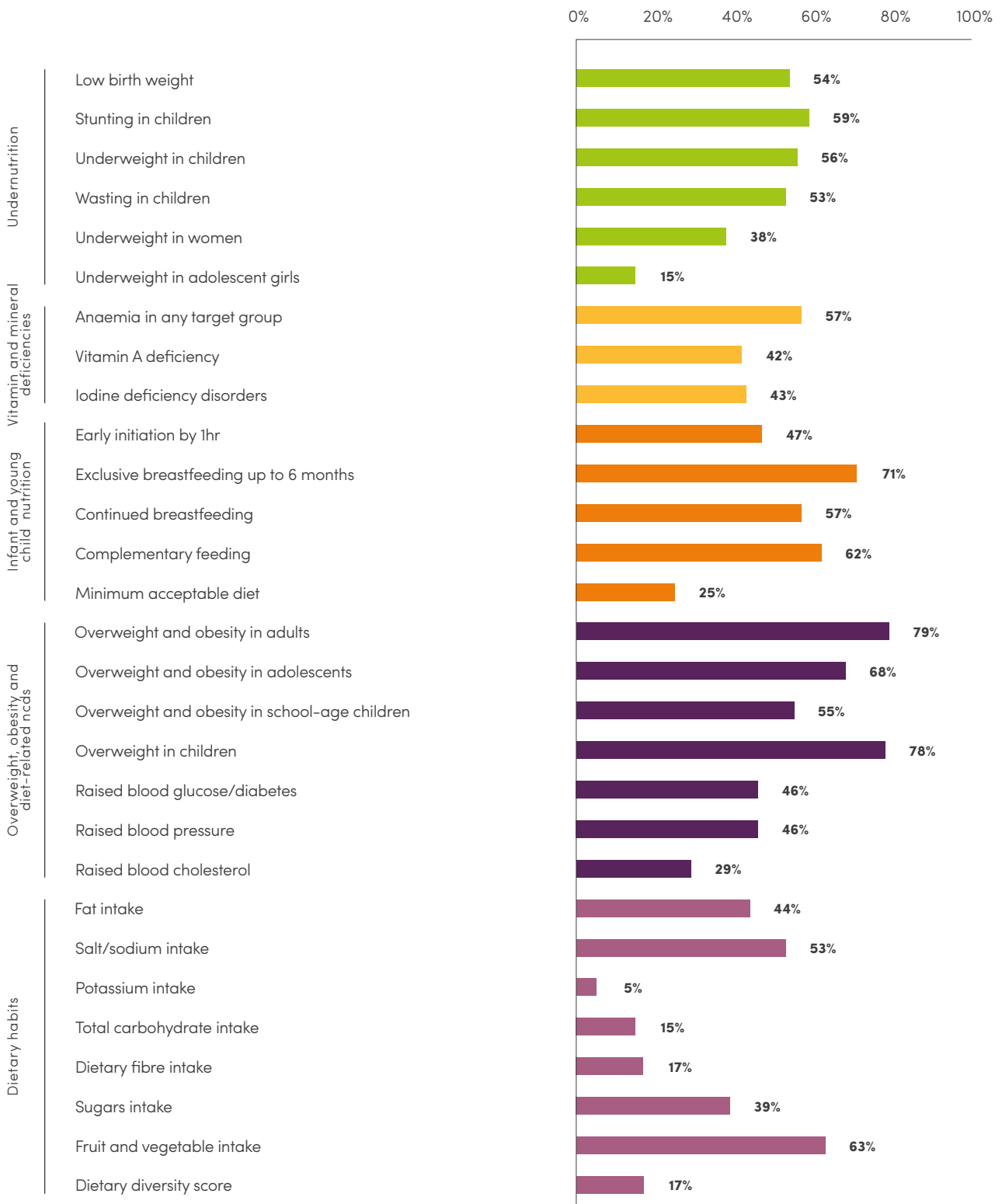
Goals, targets or indicators related to overweight and obesity were more often included in the policies than diet-related NCDs; however, this may be explained by an underreporting of NCD policies in responses to the questionnaire focusing on nutrition.<sup>1</sup> Overweight and obesity goals, targets and indicators were especially prevalent among the WHO regions of the Americas, Europe and the Western Pacific. The most common goals, targets and indicators of dietary habits were fruit and vegetable intake, followed by intake of salt/sodium, fats and then sugars. Fat intake usually concerned saturated or *trans*-fatty acids, and sugars intake more often concerned added sugars only, rather than all free sugars, including sugars naturally present.<sup>2</sup>

<sup>1</sup> For a more comprehensive overview of NCD policies and national targets, please refer to the NCD progress monitor (27) and the NCD document repository available at <https://extranet.who.int/ncdccs/documents/>.

<sup>2</sup> “Free sugars” refers to sugars added to foods and drinks by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates (28).

FIGURE 3.9

INCLUSION OF GOALS, TARGETS OR INDICATORS IN NATIONAL POLICIES IN 167 COUNTRIES



NCD, noncommunicable disease.

### 3.2.4 Action areas included in national policies

Among actions related to MIYCN, breastfeeding promotion and counselling was most commonly included in national policies (74%) (Fig. 3.10). Despite the high level of breastfeeding counselling indicated, fewer countries have gone beyond general breastfeeding promotion to institutionalize this action through the Baby-friendly Hospital Initiative (BFHI) (57%) or to train health professionals on breastfeeding (47%). Policy actions related to infant feeding in difficult situations (e.g. in the context of low birth weight, HIV and emergencies) varied greatly by region, and one or more of these were reported by more than half of the countries only in the WHO regions of Africa and South-East Asia. Regulation of marketing of complementary foods was addressed by only a few countries (16%), half of which had included the action area in national policies developed in 2015 or later, probably as a result of Member States' interest in the topic area and WHO efforts to develop guidance (29).

The most common policy action in school health and nutrition was nutrition in the school curriculum, followed by provision of school meals, and standards on types of foods and beverages available in schools. Provision of school meals was most common in the WHO regions of Africa, the Americas and South-East Asia, whereas school food standards were most common in the WHO Western Pacific Region. Growth monitoring among children in school was commonly included as a policy action among most of the countries in the WHO South-East Asia Region.

Policy actions to promote healthy diets were more strongly related to education and information than to regulative measures. Nutrition education and counselling on healthy diet was included in national policies by more countries than any other action (75%), but also common were media campaigns on healthy diet and nutrition (61%) and dietary guidelines (54%). Of the remaining actions in this category, only the regulation of marketing of foods and non-alcoholic beverages to children

was included by more than half of the countries in one WHO region (Region of the Americas).

A high percentage of countries included micronutrient supplementation and food fortification in their national policies. Within micronutrient supplementation, vitamin A and iron or folic acid were the most common schemes globally. Additionally, countries in the WHO South-East Asia Region frequently included zinc supplementation and multiple micronutrient powders (MNPs) in their policies. Salt iodization was the most common food fortification programme included in national policies.

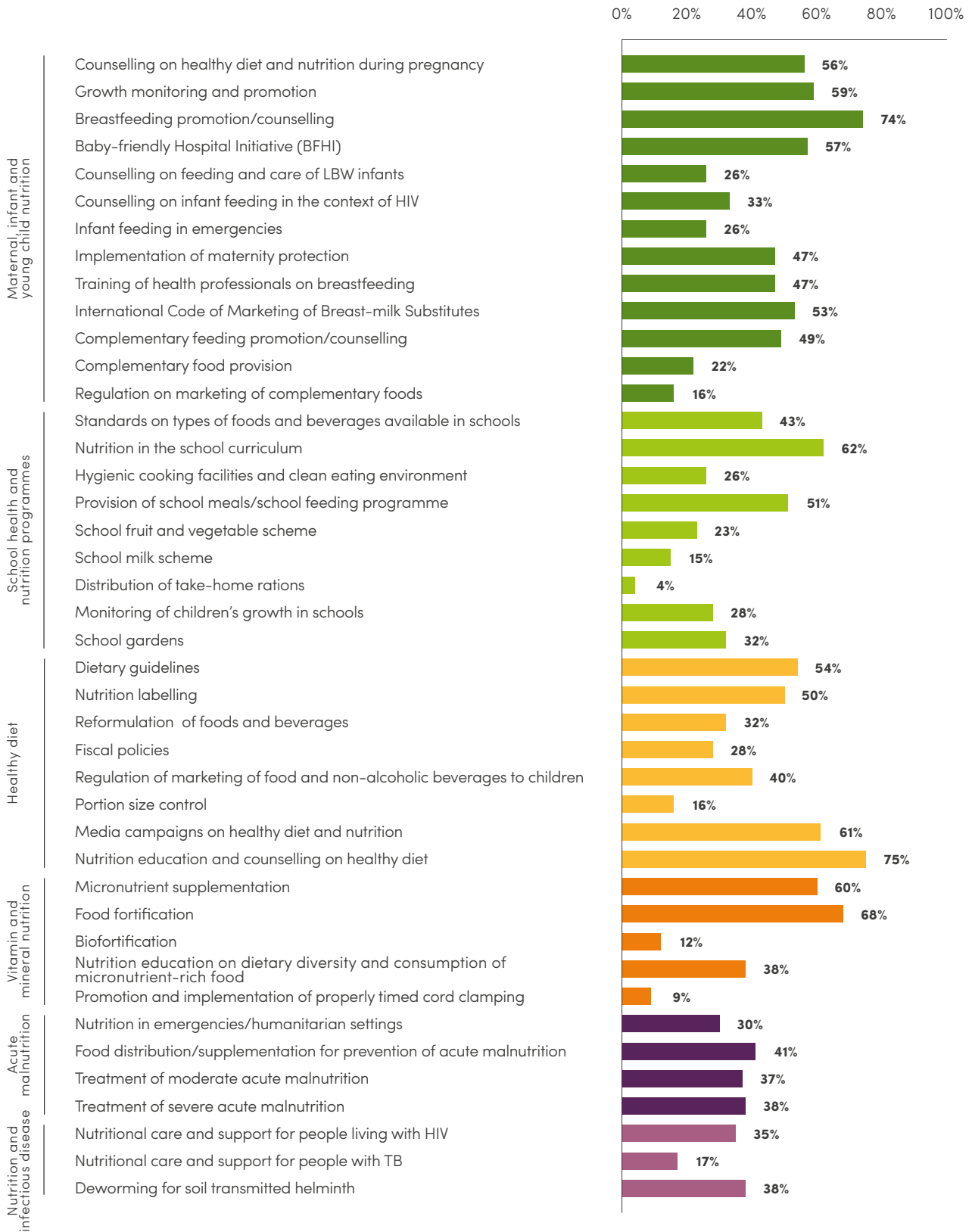
Policy actions related to acute malnutrition, and nutrition and infectious diseases were widely included only in the WHO regions of Africa and South-East Asia, with most countries having expressed policy actions on treatment of moderate acute malnutrition (MAM) and severe acute malnutrition (SAM) and on deworming. Most countries in the WHO African Region also had policies covering nutritional care and support of people living with HIV/AIDS.

Overall, all regions had a high inclusion of policy actions related to MIYCN, school health and nutrition, and healthy diet. Policy actions related to vitamin and mineral nutrition were slightly less common in the WHO regions of Europe and the Western Pacific, whereas policy actions related to acute malnutrition, and nutrition and infectious diseases were more variable across regions (Fig. 3.11).

Since laws were excluded from this part of the analysis focusing on policies, strategies and action plans, there may be an underreporting of policy actions commonly implemented by regulation (e.g. food fortification or regulation of marketing). Furthermore, routine actions being implemented through the health system and well integrated into national protocols – for example, iron-folic acid supplementation to pregnant women or optimal timing of cord clamping – may not have been explicitly expressed in the national policies. The implementation of nutrition actions and programmes is covered in Section 3.5.

FIGURE 3.10

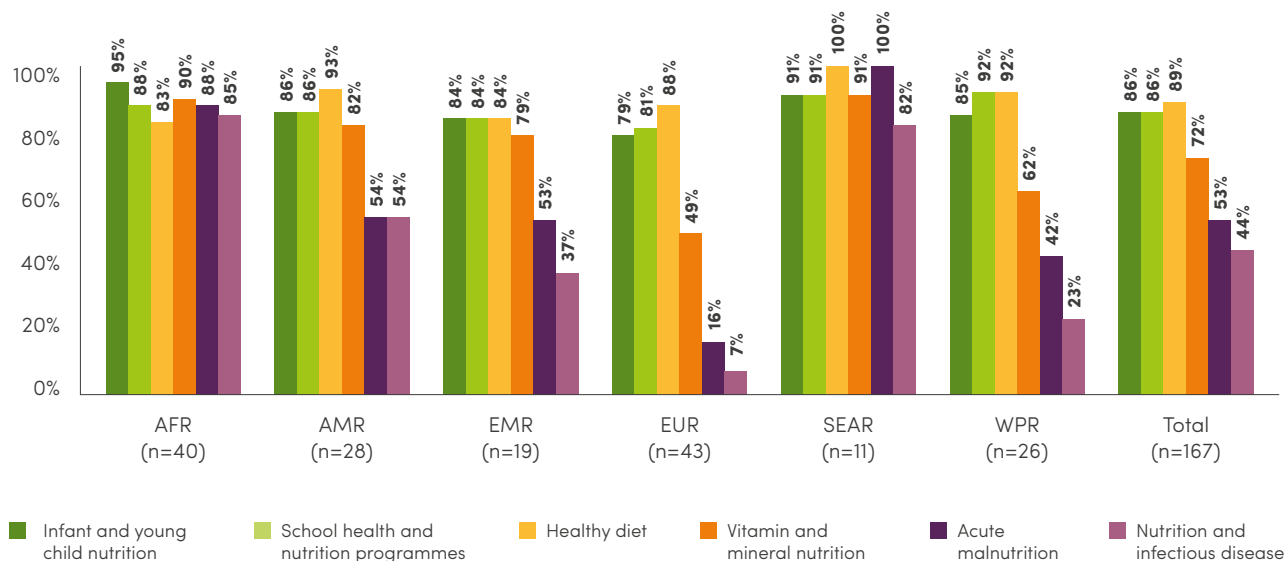
INCLUSION OF ACTION AREAS RELATED TO NUTRITION IN NATIONAL POLICIES IN 167 COUNTRIES



HIV, human immunodeficiency virus; LBW, low birth weight; TB, tuberculosis.

FIGURE 3.11

MAIN ACTION AREAS INCLUDED IN NATIONAL POLICIES IN 167 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

### 3.3. Coordination mechanisms

#### 3.3.1 Coordination mechanisms in countries

A total of 169 countries responded to the section on coordination mechanisms, and 135 (80%) of these countries reported having multisectoral groups or organizations that oversee, coordinate or harmonize nutrition-related work (e.g. national nutrition councils, technical working groups, task forces, advisory bodies and coordinating committees).<sup>1</sup> All the countries in the WHO South-East Asia Region and the great majority of countries in the WHO regions of Africa, the Americas and the Eastern Mediterranean had coordination mechanisms. In contrast, one third of the countries in the WHO regions of Europe and the Western Pacific did not have such mechanisms.

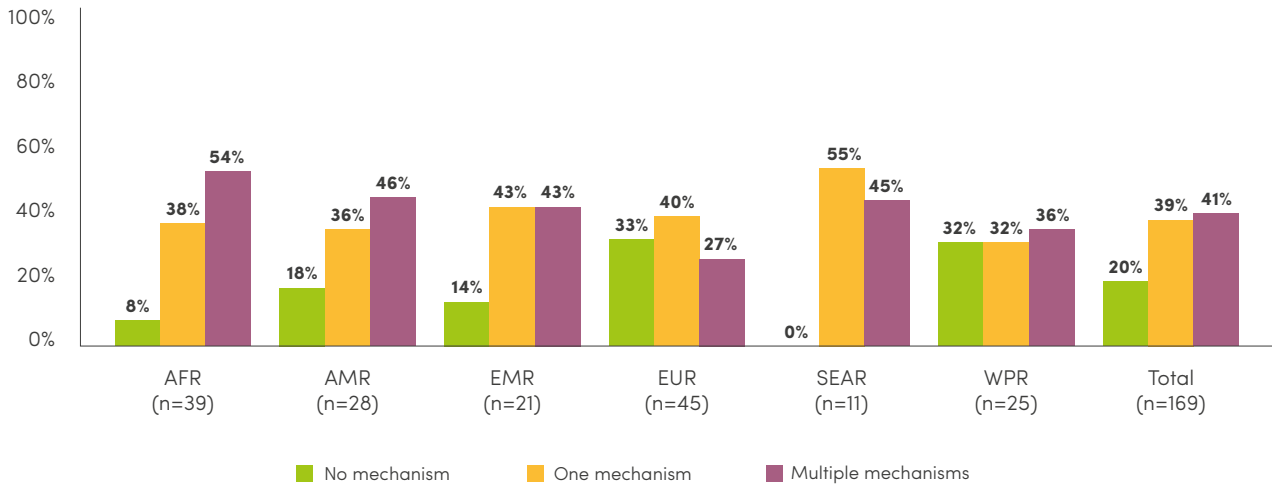
About half of the countries with mechanisms had one coordination mechanism set up in their countries to address food and nutrition

issues, while the rest had multiple coordination mechanisms related to food and nutrition (Fig. 3.12). In countries with multiple coordination mechanisms, these were often established to focus on specific nutrition issues (e.g. breastfeeding, food fortification and reduction of *trans*-fatty acids) or to include particular constituencies (e.g. nutrition partners). Multiple mechanisms were also commonly established at different levels. For example, half of the countries with mechanisms established at the level of the president or prime minister had additional coordination mechanisms that addressed nutrition in other institutions. Furthermore, many countries reported on mechanisms that were not primarily focused on nutrition but in which nutrition was being integrated (e.g. an NCD working group or a coordination committee for a national health programme); in some cases, separate subgroups had been established on nutrition (e.g. a subcommittee on nutrition of the maternal and child health committee).

<sup>1</sup> The 169 countries reported 301 coordination mechanisms, of which 276 were included in the analyses; the remaining 25 were excluded because they were single institutions, policies or programmes rather than coordination mechanisms. Four countries that only reported mechanisms that were excluded are included in the "no mechanisms" category in Fig. 3.12.

FIGURE 3.12

NUTRITION COORDINATION MECHANISMS IN 169 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

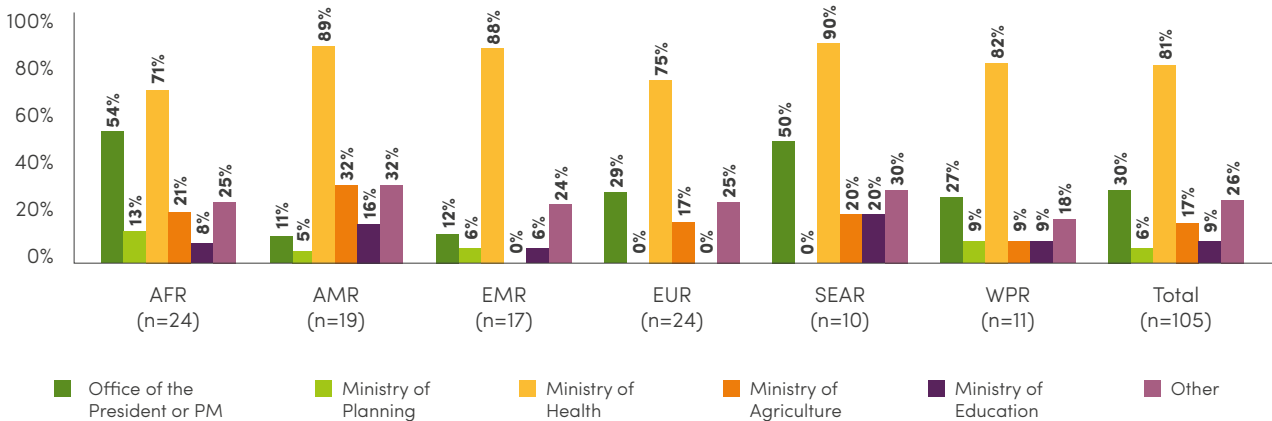
3.3.2 Location of coordination mechanisms

The ministry of health was the most common government agency in which the coordination mechanism to address food and nutrition issues was established, ranging from 90% in the WHO South-East Asia Region to 71% in the WHO African Region (Fig. 3.13). Mechanisms in high government

offices (i.e. the office of the president or prime minister) could further facilitate the multisectoral coordination necessary to address nutrition issues; such mechanisms were most common in the WHO regions of Africa and South-East Asia. Coordination mechanisms were also located in a variety of other offices, including ministries of commerce and industry, and social welfare.

FIGURE 3.13

PLACE OR SECTOR WHERE COORDINATION MECHANISMS ARE LOCATED IN 105 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; PM, Prime Minister; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.



### 3.3.3 Members of coordination mechanisms

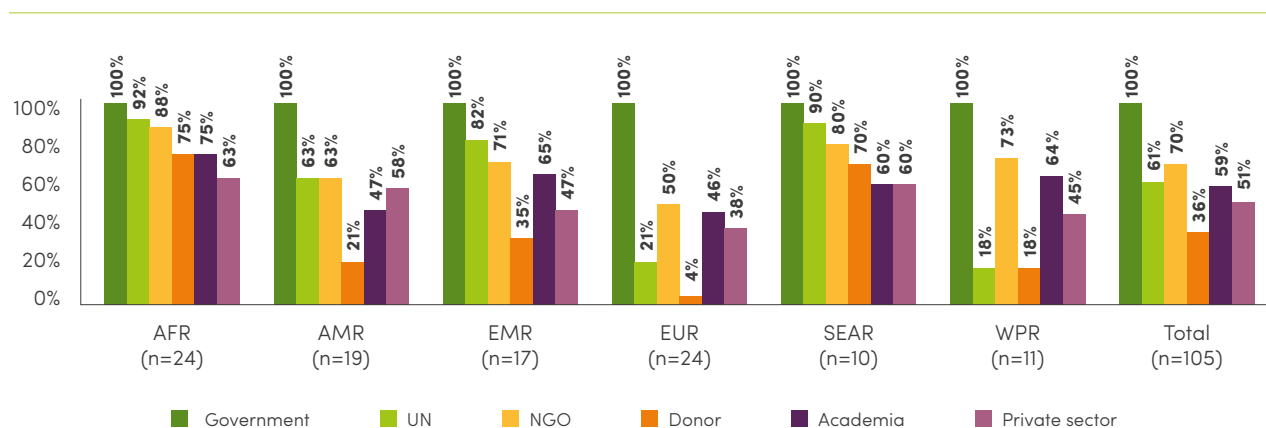
All the coordination mechanisms had government members (Fig. 3.14), most often from health, followed by agriculture and education (Fig. 3.15). The relatively high percentages across many sectors suggested a high level of intersectoral involvement in coordination mechanisms, to integrate nutrition actions across multiple sectors.

As for the nongovernment stakeholders involved, it is striking to note the high prevalence of private sector

involvement in the coordination mechanisms at the country level across all regions. In the WHO African Region, the private sector was involved in the general nutrition coordination mechanisms, whereas in other regions this sector was often involved in mechanisms focusing on specific topics (e.g. food fortification). In the WHO regions of Africa and South-East Asia, some countries had established mechanisms that reflected their involvement in the Scaling Up Nutrition (SUN) movement,<sup>1</sup> sometimes in addition to existing mechanisms.

FIGURE 3.14

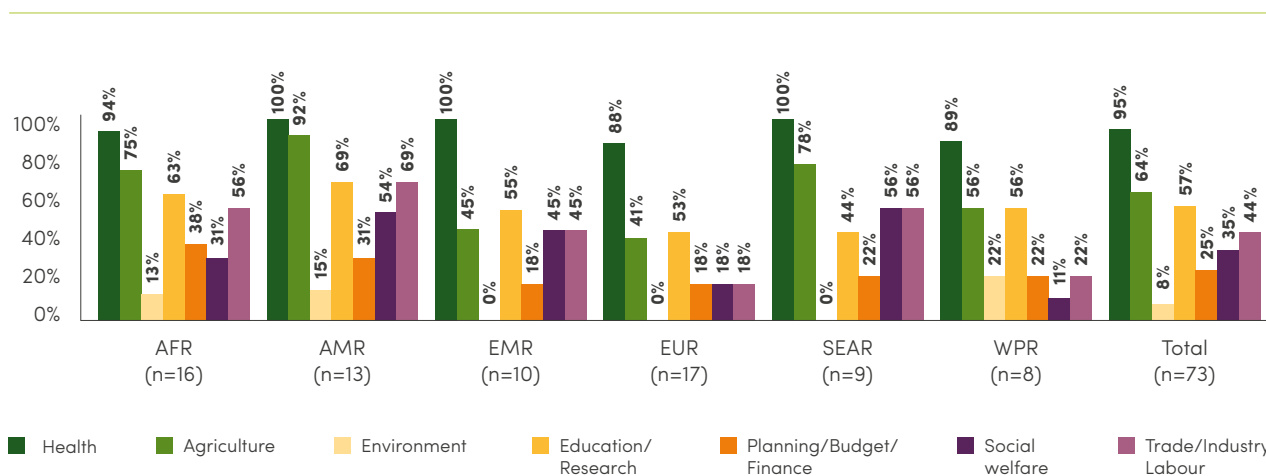
#### MEMBERSHIP OF COORDINATION MECHANISMS IN 105 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; NGO, nongovernmental organization; SEAR, WHO South-East Asia Region; UN, United Nations; WPR, WHO Western Pacific Region.

FIGURE 3.15

#### GOVERNMENT SECTORS INVOLVED IN COORDINATION MECHANISMS IN 73 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> See <http://scalingupnutrition.org/>.

### 3.4. Nutrition capacities

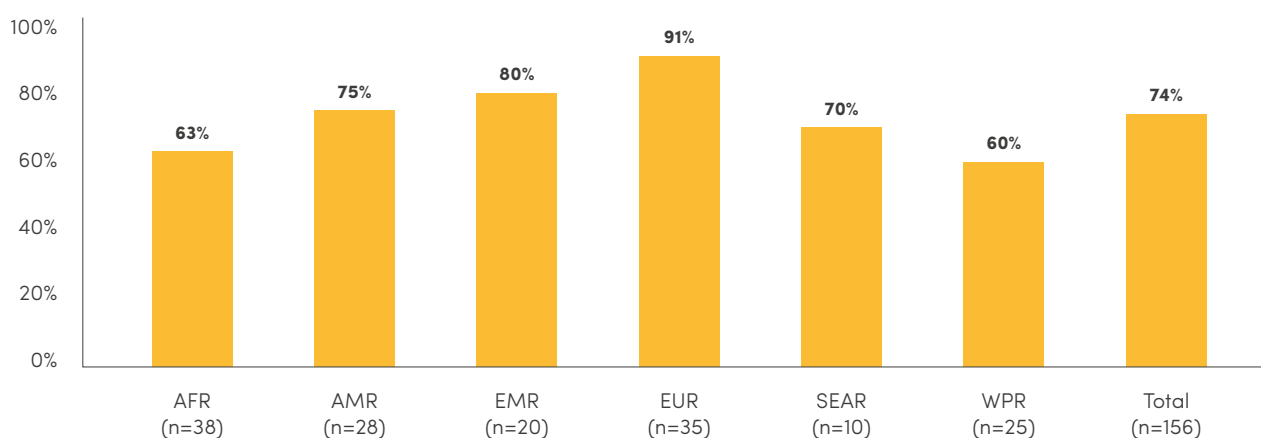
A total of 164 countries reported on various aspects of nutrition capacities in their countries. The data collected for this part of the GNPR2 were later used to inform the development of the indicator on trained nutrition professionals of the Global Nutrition Monitoring Framework that was adopted by the 68th World Health Assembly in May 2015 (WHA68(14)) (Box 3.1).

Most countries (74%) reported having **higher education institutions that offer training in nutrition**<sup>1</sup> (Fig. 3.16); however, more than one third of the countries in the WHO regions of Africa

and the Western Pacific did not have nutrition courses in higher education institutions. The most common higher education training programmes were in public health nutrition and clinical nutrition and, in some regions, in community nutrition and nutrition science (Fig. 3.17). Few countries included nutrition education and counselling skills in higher education. Several countries commented that many of the subject areas were provided in a single course, mostly in a nutrition or dietetics degree or in master's level courses. Public health nutrition courses were most commonly offered at the master's level, whereas clinical nutrition courses were most common at the bachelor's level (Fig. 3.18).

FIGURE 3.16

#### HIGHER EDUCATION INSTITUTIONS OFFERING TRAINING IN NUTRITION IN 156 COUNTRIES

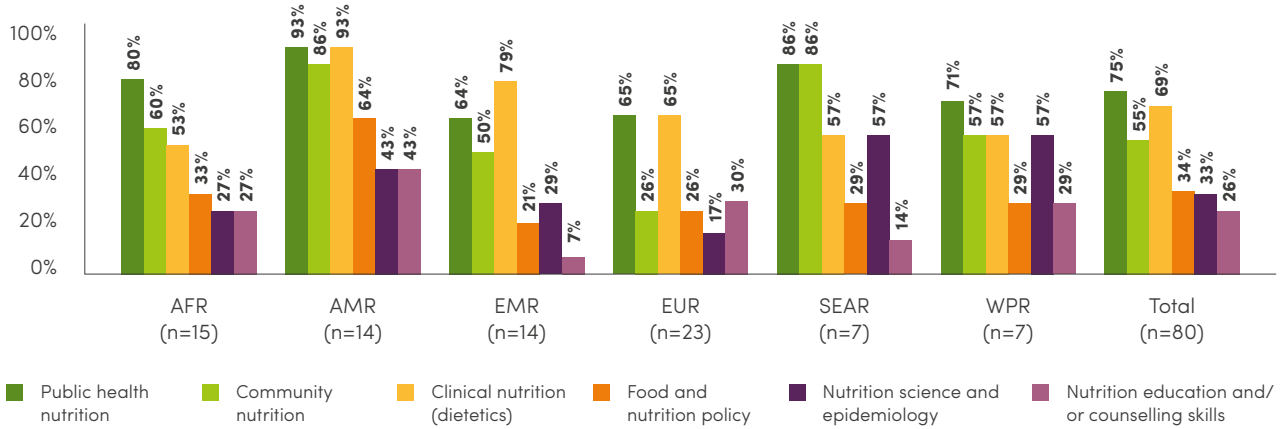


AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> A total of 156 countries responded to the question on higher education institutions, of which 80 provided detailed information.

FIGURE 3.17

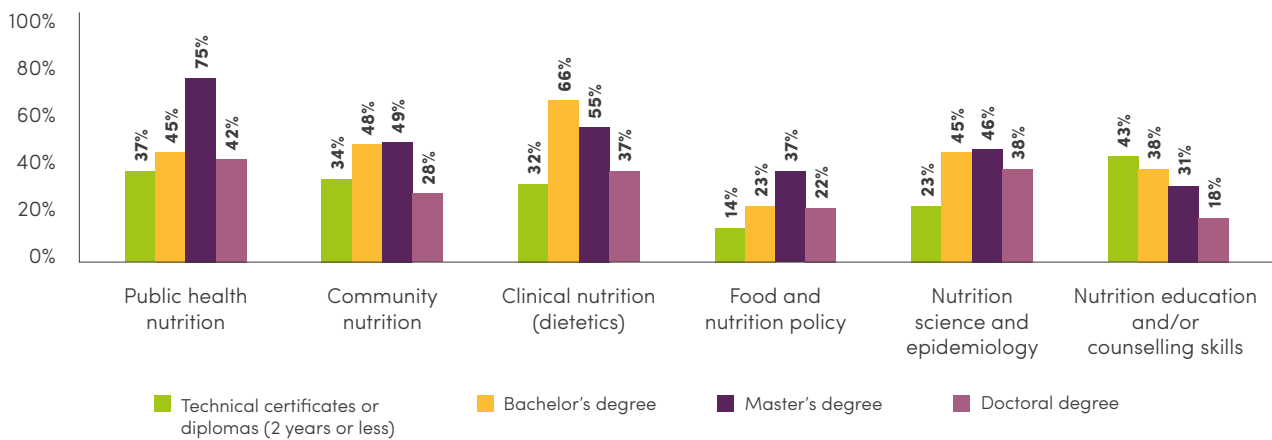
TYPES OF HIGHER EDUCATION OFFERED IN 80 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.18

TYPES AND LEVEL OF HIGHER NUTRITION EDUCATION OFFERED IN 80 COUNTRIES PROVIDING DETAILED INFORMATION



The vast majority of countries in all regions reported having **nutrition professionals**;<sup>1</sup> that is, trained nutritionists or dietitians (Fig. 3.19). However, the density of nutrition professionals varied greatly between the countries (Fig. 3.20). Most countries in all regions had low densities, as expressed per

100 000 population. Among the 126 countries that reported the number of nutrition professionals, only 23 countries<sup>2</sup> had densities of 10 per 100 000 population or higher. On the other hand, six countries<sup>3</sup> reported having no nutritionist or dietitian, whereas in 37 countries<sup>4</sup> the density of

<sup>1</sup> A total of 159 countries responded to the question on nutrition professionals, of which 126 provided detailed information.

<sup>2</sup> Eight in the WHO Region of the Americas, three in the WHO Eastern Mediterranean Region, seven in the WHO European Region, one in the WHO South-East Asia Region and four in the WHO Western Pacific Region.

<sup>3</sup> One in the WHO Region of the Americas, one in the WHO Eastern Mediterranean Region and four in the WHO European Region.

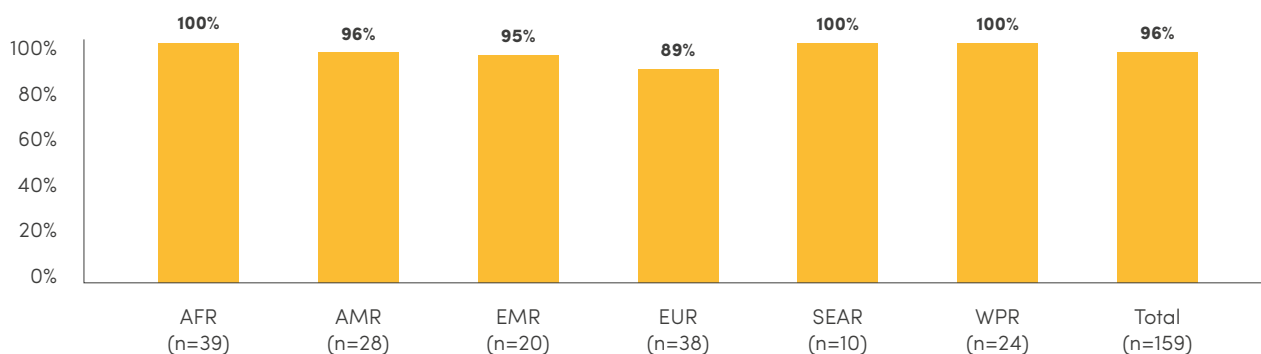
<sup>4</sup> Seventeen in the WHO African Region, two in the WHO Region of the Americas, five in the WHO Eastern Mediterranean Region, seven in the WHO European Region, four in the WHO South-East Asia Region and two in the WHO Western Pacific Region.

nutrition professionals was lower than 1 per 100 000 population. The highest absolute density (as well as the largest spread of densities between countries in the region) was seen in the WHO Region of the

Americas, while the WHO Western Pacific Region had the highest average density. The lowest average density was in the WHO African Region, which also had the lowest variation in densities.

**FIGURE 3.19**

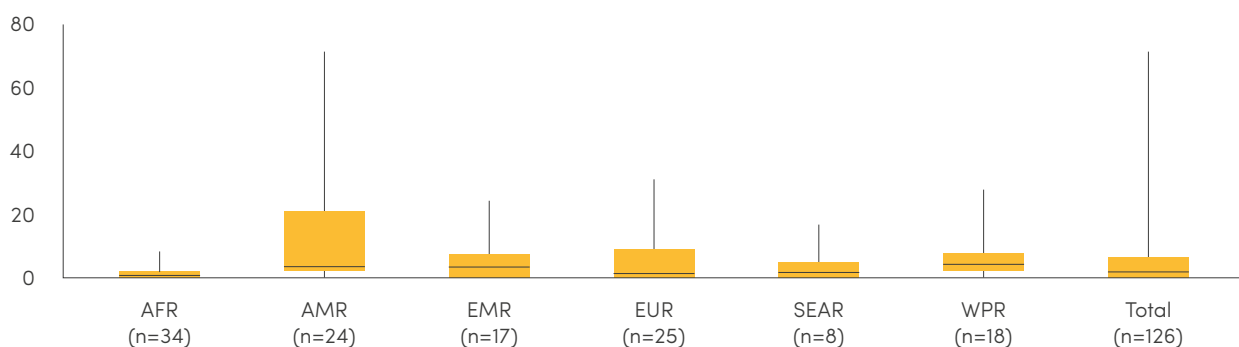
**AVAILABILITY OF NUTRITION PROFESSIONALS IN 159 COUNTRIES**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

**FIGURE 3.20**

**DISTRIBUTION OF NUTRITION PROFESSIONAL DENSITY (NUTRITION PROFESSIONALS PER 100 000 POPULATION) IN 126 COUNTRIES PROVIDING DETAILED INFORMATION**



	AFR (n=34)	AMR (n=24)	EMR (n=17)	EUR (n=25)	SEAR (n=8)	WPR (n=18)	Total (n=126)
Minimum	0	0	0	0	0	0	0
1st quartile	0.2	2.0	0.5	0.2	0.5	2.2	0.6
Median	0.9	3.7	3.5	1.4	1.6	4.2	2.3
3rd quartile	2.1	20.9	7.6	10.9	5.2	7.5	6.6
Maximum	8.4	70.2	24.0	30.6	16.7	27.5	69.8

AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

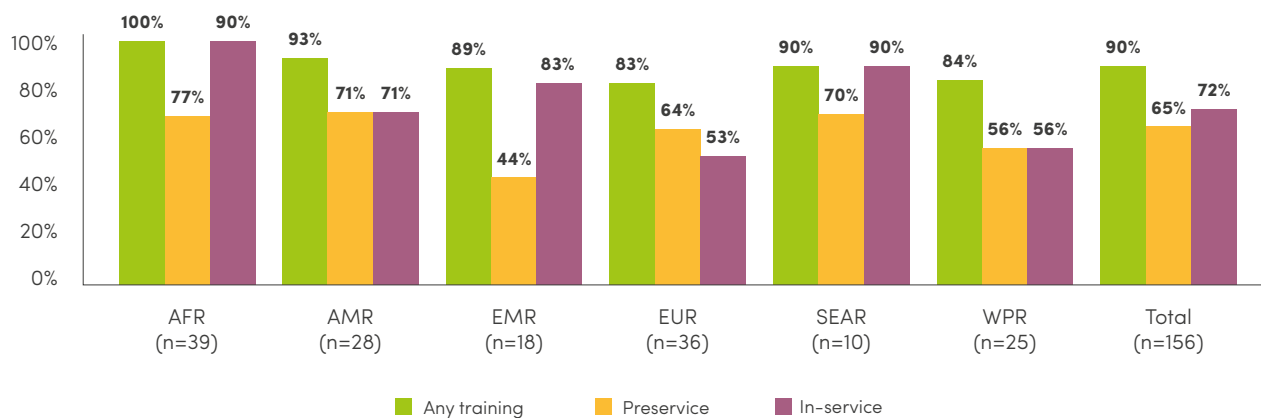
More than 80% of countries in all regions reported **training of health workers in MIYCN**.<sup>1</sup> Preservice training was most commonly used by countries in the WHO European Region, while in-service training was most commonly used by countries in the WHO regions of Africa, the Eastern Mediterranean and South-East Asia (Fig. 3.21). Most preservice training curricula for any health worker category had fewer than 20 hours allocated to any of the three topics that are examined and for which training packages exist and are being implemented (i.e. acute malnutrition, growth monitoring and promotion [GMP], or breastfeeding and complementary feeding counselling). Furthermore, few countries allocated 40 or more hours in the curricula for any topic (Fig. 3.22). In contrast, most relevant WHO

training course curricula are at least 20 hours (30) or even longer (e.g. 40 hours) (31–34).

The health workers who most often received training in acute malnutrition, GMP, and breastfeeding and complementary feeding were nurses, followed by medical doctors and nutritionists; community health workers and midwives were less often trained in these nutrition topics (Fig. 3.23). It was not possible to determine whether this situation is due to more training of nurses, medical doctors and nutritionists, or better availability of information on their training. Such training programmes were more common in the WHO regions of Africa and South-East Asia, and as part of preservice training in the WHO Region of the Americas.

FIGURE 3.21

**TRAINING OF HEALTH WORKERS ON MATERNAL, INFANT AND YOUNG CHILD NUTRITION IN 156 COUNTRIES**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> A total of 156 countries responded to the question on training of front-line health workers, of which 52 provided detailed information.

FIGURE 3.22

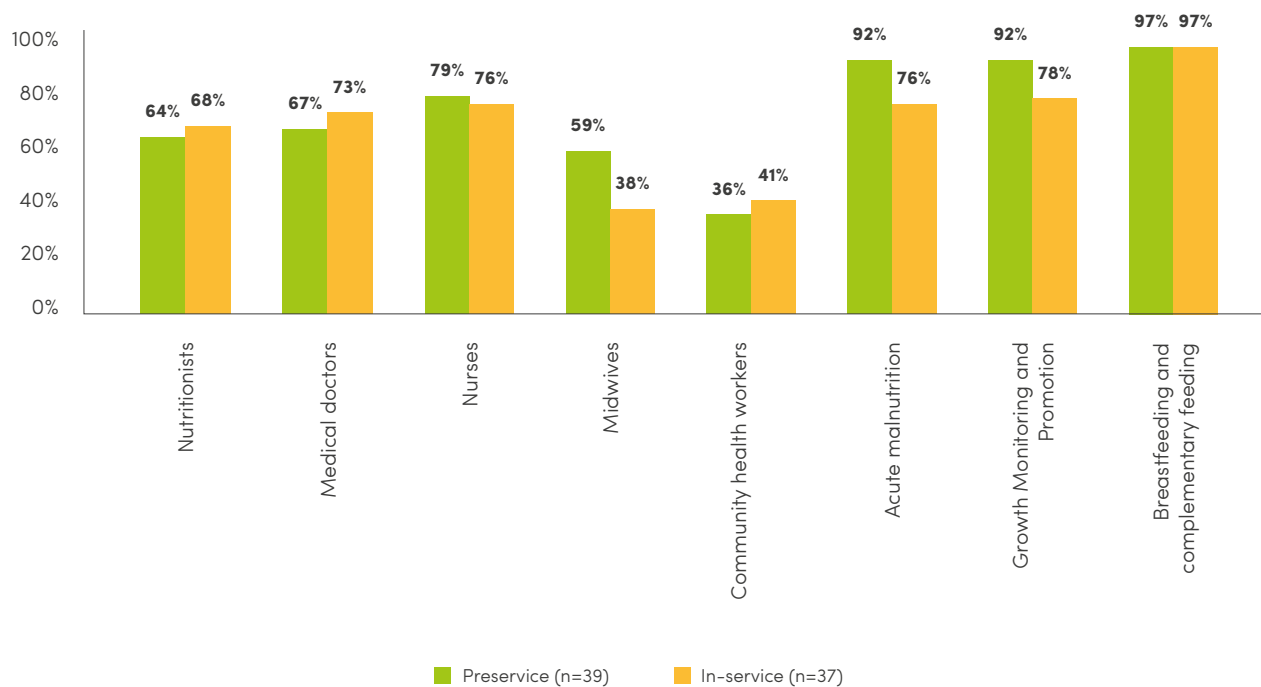
**HOURS IN CURRICULA FOR DIFFERENT MATERNAL, INFANT AND YOUNG CHILD NUTRITION PRESERVICE TRAINING OF DIFFERENT HEALTH WORKER CATEGORIES IN 39 COUNTRIES PROVIDING DETAILED INFORMATION**



CHW, community health worker.

FIGURE 3.23

**CATEGORIES OF HEALTH WORKERS TRAINED, AND TRAINING TOPIC AREAS COVERED IN 52 COUNTRIES<sup>A</sup> PROVIDING DETAILED INFORMATION**



<sup>A</sup> Of the 52 countries, 24 had both preservice and in-service training, 15 had preservice training only and 13 had in-service training only.

## FEASIBILITY AND VALIDITY OF NUTRITION WORKFORCE INDICATORS DERIVED FROM THE SECOND GLOBAL NUTRITION POLICY REVIEW

In May 2014, Member States approved indicators to monitor the six global nutrition targets as part of the Global Nutrition Monitoring Framework. In May 2015, in WHA68(14) (35), Member States approved 14 additional core indicators to monitor progress towards the targets at national and global levels, with reporting commencing in 2016. However, four of these indicators needed further development and were therefore recommended to be reviewed by the Executive Board once available, with reporting to begin in 2018. Among these four indicators was the nutrition workforce density indicator “Number of trained nutrition professionals per 100 000 population”. Defining this indicator proved challenging, because there was no such indicator in common use; hence, a further elaboration and operationalization was requested by Member States. The WHO/United Nations Children’s Fund (UNICEF) Technical Expert Advisory Group on Nutrition Monitoring (TEAM) subsequently engaged the Capacity Building Working Group of the World Public Health Nutrition Association to evaluate the *feasibility* and *validity* of various indicators proposed by TEAM. As part of this work, the second Global Nutrition Policy Review (GNPR2) was identified as the most recent and the most comprehensive dataset, in terms of covering the highest number of the proposed indicators for a large number of countries. The results of the review were therefore used to inform the development of the three nutrition workforce indicators listed below.<sup>A</sup>

1. **Density of post-secondary training institutions that offer a degree in nutrition or another degree programme with a nutrition-specific track or minor.** Based on the findings of the GNPR2, collecting such data was deemed feasible. Countries that were asked for details about higher education courses seemed readily able to provide these details, although the accuracy of the information supplied was not verified. A crude indicator on “availability of nutrition training institutions”<sup>B</sup> and a “nutrition course score”<sup>C</sup> were explored. The “nutrition course score” could be calculated for almost three quarters of countries. Validation with linear modelling using univariate analysis of variance found that only one of the six global target indicators examined (wasting) was significantly associated with both indicators related to nutrition training institutions. Furthermore, there was a strong correlation between the two indicators, suggesting that there is no substantial additional value in calculating the “nutrition course score” rather than simply asking about “availability of nutrition training institutions”.
2. **Nutrition professionals density.** Collecting these data was also considered feasible through questionnaires such as the GNPR2, with most countries asked being able to provide information on numbers of nutritionists and dieticians. Two indicators were explored: a crude indicator on “availability of nutrition professionals”<sup>B</sup> and a “density of nutrition professionals”<sup>D</sup>. The density indicator was defined as “number of trained nutrition professionals per 100 000”, and could be calculated for about three quarters of the countries reporting on the nutrition workforce. Validation with linear modelling using univariate analysis of variance showed only one global target indicator (child overweight) that was significantly associated with the question concerning the availability of nutritionists and dieticians working in nutrition-related areas. However, four of the six target indicators examined (stunting, wasting, child overweight and low birth weight) were significantly associated with the “nutrition professionals density” score. This result suggests that calculating the density score provides substantial additional value for indicating nutrition capacity.

<sup>A</sup> WHO. Developing and validating an indicator on trained nutrition professionals for monitoring progress of the Global Monitoring Framework (GNMF) indicators. Forthcoming.

<sup>B</sup> Yes or no to top-line question.

<sup>C</sup> Number of positive responses to courses in each subject area at each tertiary level course – maximum 28.

<sup>D</sup> The sum of nutritionists and dieticians per 100,000 population. The denominator was the total mid-year population of the country, using UN country population data from 2015.



**3. Front-line health workers trained in key nutrition service delivery.** The low response rates to these questions in the GNPR2 indicate that they may be less feasible. Two indicators were constructed: “hours of preservice training in the three key MIYCN [maternal, infant and young child nutrition] areas”<sup>E</sup> and “density of health workers having received in-service training on the three MIYCN areas (i.e. growth monitoring and promotion, breastfeeding and complementary feeding, acute malnutrition) over the past 2 years”<sup>F</sup>. Because of the relatively low number of countries providing data on hours of preservice training and of numbers of health workers having in-service training, valid indicator scores could only be calculated for less than a quarter of the countries. There was no linear or ranked correlation between preservice and in-service indicators; therefore, they would need to be treated as separate indicators. Validation with linear modelling using univariate analysis of variance showed only one global target indicator (low birth weight) that was significantly associated with hours of preservice training of health professional indicators. The validation step for density of health professionals having in-service training indicators showed a strong and significant association between one of the training topics (breastfeeding and complementary feeding) and one global target indicator (exclusive breastfeeding).

## CONCLUSION

It appears from this analysis that the density of trained nutritionists and dieticians is the indicator that has the greatest validity as an indicator of nutrition capacity. Furthermore, most countries can identify whether trained nutritionists and dieticians are working in the country. Of these about 80% could provide numbers, with higher reporting rates in low- or middle-income countries than in high-income countries. It is clear from the responses to the questions that many countries are still unclear about the importance of capacity in nutrition, and an authoritative guidance paper from WHO would help to resolve this. The specificity of the questions used is also being improved, to facilitate the construction of future indicators.

<sup>E</sup> Sum of hours of preservice training across all cadres within each key MIYCN area was used to create three specific scores, which were then summed to create one overarching score.

<sup>F</sup> Sum of numbers receiving in-service training across all cadres within each key MIYCN area was used to create three scores, each specific to an MIYCN area, which were then summed to create one overarching score for all areas.

## 3.5. Nutrition actions and programmes being implemented

### 3.5.1 Actions related to infant and young child nutrition

Appropriate IYCF is key for achieving good nutrition in early life, and it has implications for nutrition and health later in life. Children and adolescents who were breastfed as babies are less likely to be overweight or obese, and to suffer from type 2 diabetes in adulthood (36). They also perform better on intelligence tests and have higher school attendance (37). Moreover, breastfeeding is associated with higher income in adult life (38, 39). Improving child development and reducing health costs results in economic gains for individual families and for countries. Longer duration of breastfeeding also contributes to the health and well-being of mothers, reducing the risk of ovarian and breast cancer (40, 41) and helping to space pregnancies. WHO recommends that mothers initiate breastfeeding within 1 hour of birth, and that infants be exclusively breastfed for the first 6 months of life to achieve optimal growth, development and health (42). Thereafter, to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complementary foods, while continuing to breastfeed for up to 2 years or beyond. The Global Strategy on Infant and Young Child Nutrition calls on countries to develop and implement comprehensive IYCF policies that protect, promote and support breastfeeding and complementary feeding (22). This requires effective training of health workers and peer counsellors, to provide skilled support to all mothers to practise the recommended feeding practices, including in difficult situations and through the implementation of the BFHI. Furthermore, countries should enact legislation to implement the International Code of Marketing of Breast-milk Substitutes and the guidance on ending the inappropriate promotion of foods for infants and young children to protect infant feeding from commercial influence (29, 43);

they should also enact legislation to protect the breastfeeding rights of working mothers.<sup>1</sup>

A total of 167 countries responded regarding the implementation of actions related to IYCN. Breastfeeding counselling, GMP and complementary feeding counselling were implemented by more than 80% of countries in all regions except the WHO Eastern Mediterranean Region, where implementation of some programmes was slightly lower (Fig. 3.24). Although breastfeeding counselling was widely implemented, specific programmes such as the BFHI were implemented by less than 80% of countries in all regions. In the WHO regions of Africa, the Americas and South-East Asia, 80% or more of countries reported having protocols for infant feeding in difficult situations.

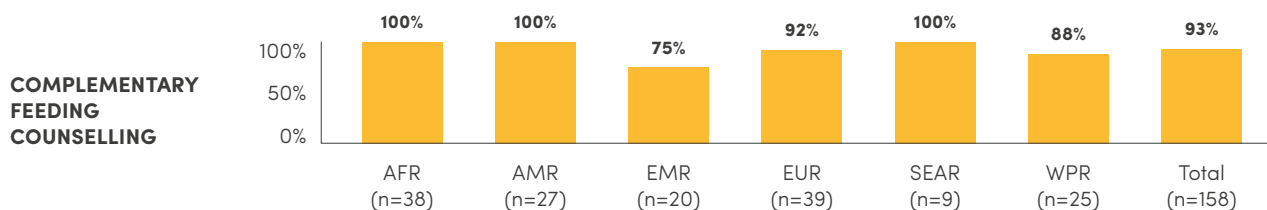
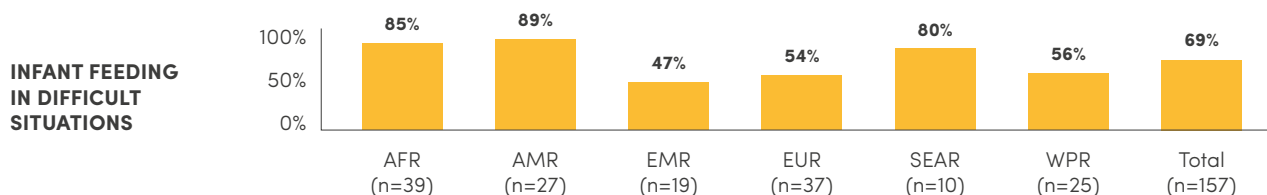
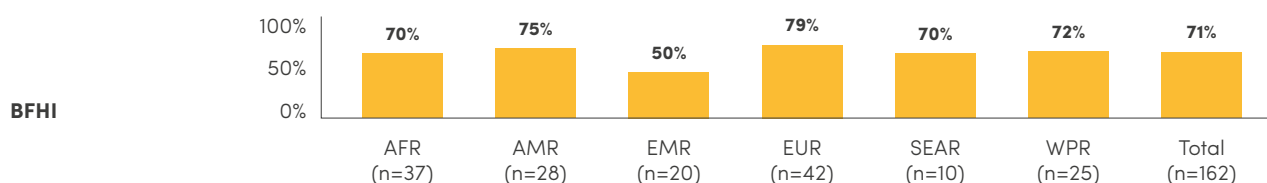
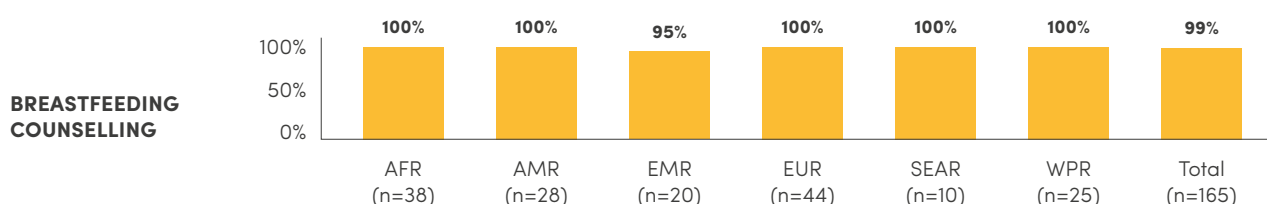
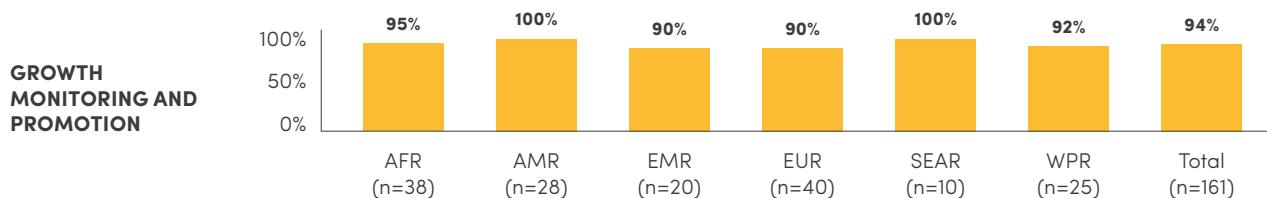
The concept of **GMP** is largely based on the experiences developed by pioneers of primary health care in low- and middle-income countries in the 1980s (46); it involves monitoring children's growth and counselling on nutrition. WHO recommends that all infants and children aged less than 5 years presenting to primary health-care facilities should have both weight and height measured in order to determine their weight-for-height and their nutritional status according to WHO child growth standards (47, 48). More than 80% of countries used GMP as an opportunity to take and record measurements, discuss with parents, counsel on nutrition and ensure follow-up (Fig. 3.25). The WHO child growth standards were used as a growth reference by more than 80% of countries in all regions except the WHO European Region, where only 45% of countries used the WHO standards. Other GMP components mentioned included linkages with supplementary food programmes and referral to health services.

The most common measurements taken during GMP were weight (98%) and height or length (90%) (Fig. 3.26). Some countries, largely in the WHO African Region, reported that they were measuring mid-upper arm circumference (MUAC).

<sup>1</sup> This survey did not enquire about the status of the implementation of the International Code of Marketing of Breast-milk Substitutes, or about measures to protect the breastfeeding rights of working mothers, since these aspects are reported elsewhere (44, 45).

FIGURE 3.24

REPORTED IMPLEMENTATION OF ACTIONS RELATED TO INFANT AND YOUNG CHILD NUTRITION IN 167 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; BFHI, Baby-friendly Hospital Initiative; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

MUAC is most commonly used to screen for children that are severely wasted and require therapeutic feeding (49); it has the advantage that it does not require measuring both weight and height. Other measurements mentioned included head circumference, which is used to screen for microcephaly or macrocephaly, which are extremely rare conditions.

Many countries reported tracking indicators derived from the measurements. Stunting and wasting were the most commonly tracked indicators in the WHO regions of Africa, the Eastern Mediterranean, South-East Asia and the Western Pacific, whereas overweight was more common in the WHO regions of the Americas and Europe (Fig. 3.27). The lowest tracking of indicators was in the WHO South-East Asia Region, where countries less often reported tracking these indicators; however, five of the eight countries in this region mentioned tracking underweight.

Recent evidence (50) confirms the conclusions of an early WHO paper on growth monitoring (51), which indicated that the most important way to carry out GMP is to weigh children regularly and plot their weight for age on the growth chart, with monthly weighing where possible, concentrated in the first 12 months of life. More recently, it has been shown that two successive falterings of weight growth in the first year of life are indicative of length growth faltering (52). Plausible evidence from low- and middle-income countries that have implemented regular community-based GMP in young children indicates that such programmes do have an impact (20). GMP was most frequently undertaken monthly, especially in the WHO regions of Africa, South-East Asia and the Americas (Fig. 3.28). The second most common response globally and the most common response in the WHO Eastern Mediterranean Region was that GMP was undertaken during vaccination and routine health care.

FIGURE 3.25

**COMPONENTS OF GROWTH MONITORING AND PROMOTION IN 107 COUNTRIES PROVIDING DETAILED INFORMATION**

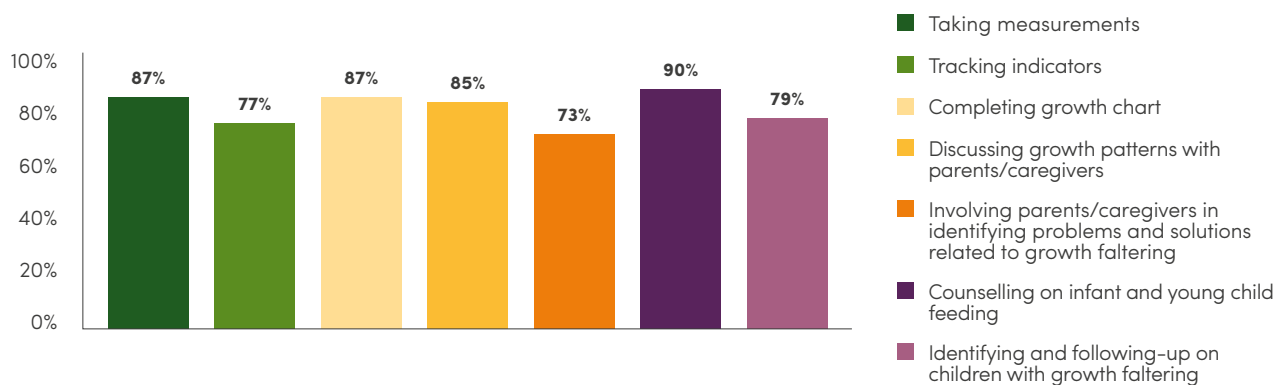
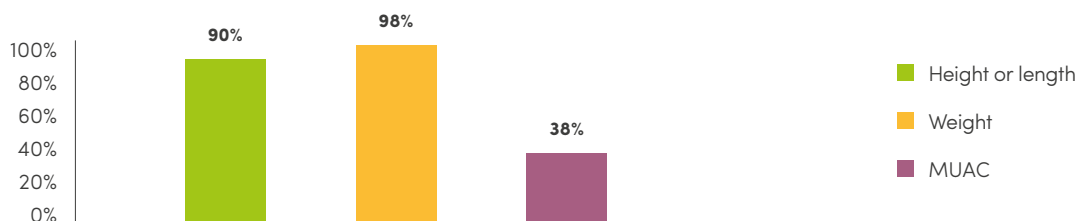


FIGURE 3.26

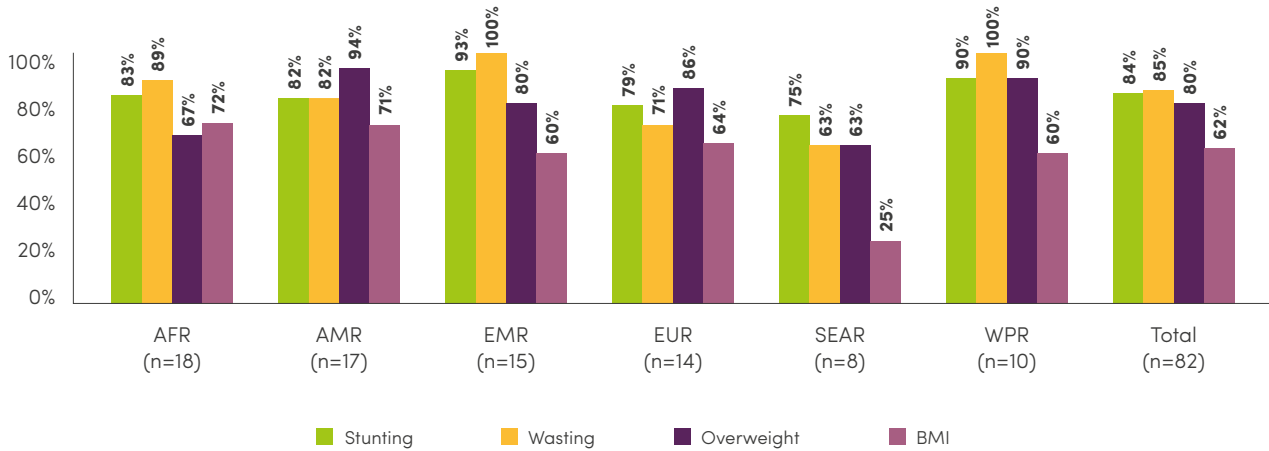
**MEASUREMENTS TAKEN AS PART OF GROWTH MONITORING AND PROMOTION IN 93 COUNTRIES PROVIDING DETAILED INFORMATION**



MUAC, mid-upper arm circumference.

FIGURE 3.27

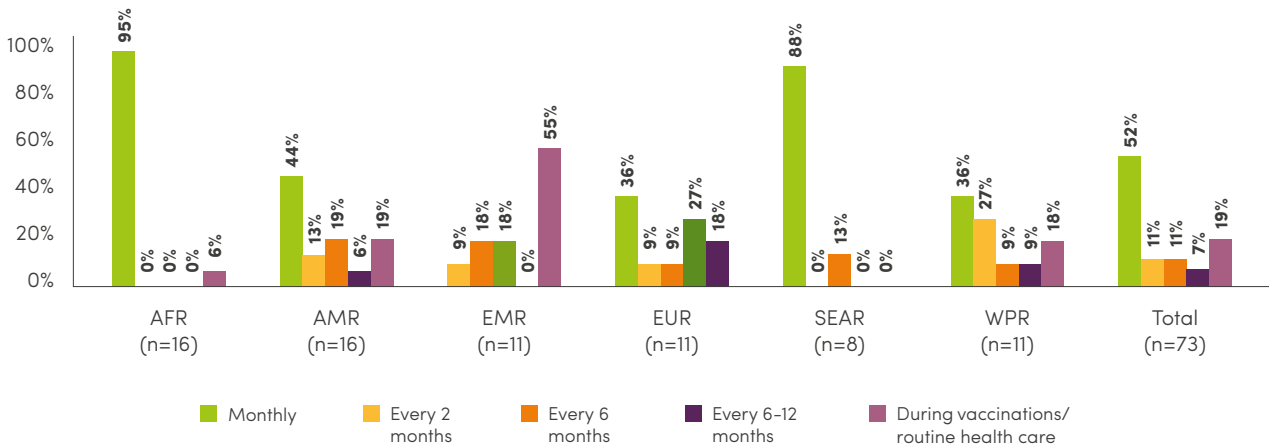
INDICATORS TRACKED DURING GROWTH MONITORING AND PROMOTION IN 82 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; BMI, body mass index; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.28

FREQUENCY OF GROWTH MONITORING AND PROMOTION IN 73 COUNTRIES PROVIDING DETAILED INFORMATION



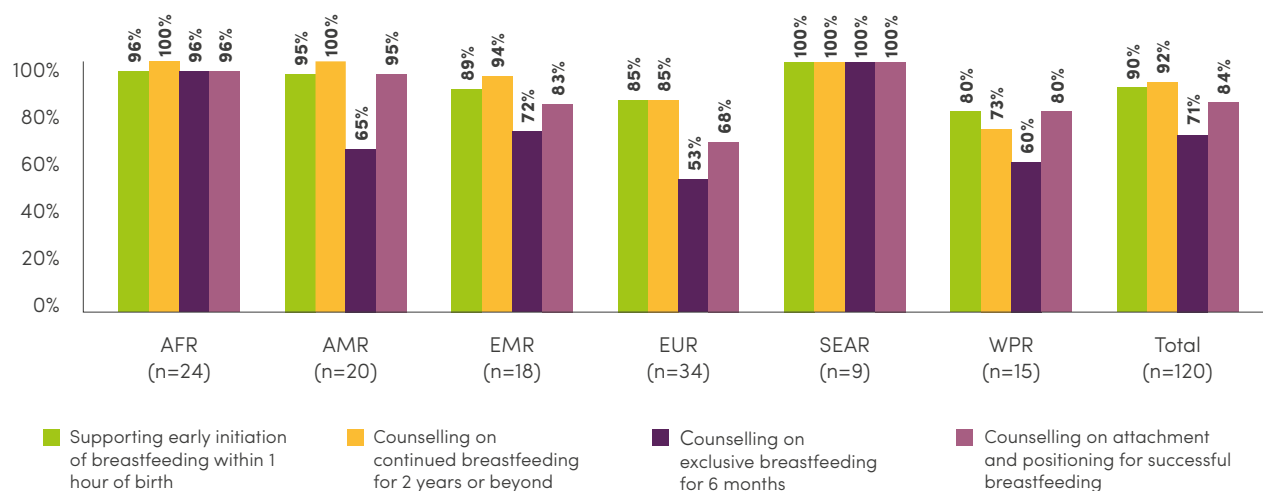
AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

As was the case for policies, **breastfeeding counselling** was the intervention that was most often reported as being implemented by countries in all regions, in antenatal care (ANC) as well as

during postnatal check-ups. This finding reflects the universality of this double duty action, which is important to prevent both undernutrition, and overweight and obesity.

FIGURE 3.29

**CONTENT OF BREASTFEEDING COUNSELLING  
IN 120 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

All the components of breastfeeding counselling reported were high for all countries, especially in the WHO regions of Africa and South-East Asia (Fig. 3.29). More than 90% of countries in these regions included all the recommended breastfeeding practices in their counselling activities. In other regions, national recommendations sometimes diverged from international guidance. Some countries mentioned recommending 4 months of exclusive breastfeeding or 1 year of continued breastfeeding. However, simply informing mothers is not sufficient to improve breastfeeding prevalence; mothers need skilled support to gain confidence, improve feeding techniques, and prevent or resolve breastfeeding problems. Counselling on attachment and positioning, which is key to successful breastfeeding, was widely reported in all regions, except in the WHO European Region, where one third of countries did not include this.

Although breastfeeding counselling was the most commonly implemented intervention, fewer countries (71%) reported implementing the **BFHI**. The BFHI is a global effort that was launched by WHO and UNICEF in 1991. Its aim is to protect,

promote and support breastfeeding in maternity facilities through implementing the Ten Steps to Successful Breastfeeding, and the International Code of Marketing Breast-milk Substitutes and its subsequent relevant World Health Assembly resolutions. Since then, the global BFHI materials have been revised, updated and expanded for integrated care (53, 54). A separate report on national implementation of the BFHI (55) has been prepared by WHO, based on an earlier set of responses to the GNPR2,<sup>1</sup> supplemented with additional sources of information; some of the results presented here are drawn from that report. The vast majority of countries have implemented BFHI, and most introduced BFHI in the early 1990s, soon after it was launched globally. However, in 2016–2017 not all countries had an operational BFHI programme and only 20% of countries had ever designated more than half of their facilities as baby-friendly. The overall coverage of births by the BFHI in 2016 is estimated to be 10% globally. This percentage varies widely by region, with a coverage rate of over 35% in the WHO European Region but less than 5% in the WHO regions of Africa and South-East Asia.

<sup>1</sup> The current report on implementation considers three additional countries that were not included in the BFHI report.

The guidance from WHO and UNICEF states that facilities need to be externally assessed regularly to ensure that they continue to adhere to the criteria; this should be done at least every 5 years but preferably more often (54). However, only half of the countries with an active BFHI programme had established a process for external assessment, and most of these countries reported that this occurs less often than every 5 years.

About two thirds of countries reported having protocols for **infant feeding in exceptionally difficult circumstances**, as recommended in the Global Strategy on Infant and Young Child Feeding (22). The most common protocols were on infant feeding in the context of HIV in the WHO African Region (79%) and in the context of low birth weight in the WHO South-East Asia Region (70%) (Fig. 3.30).

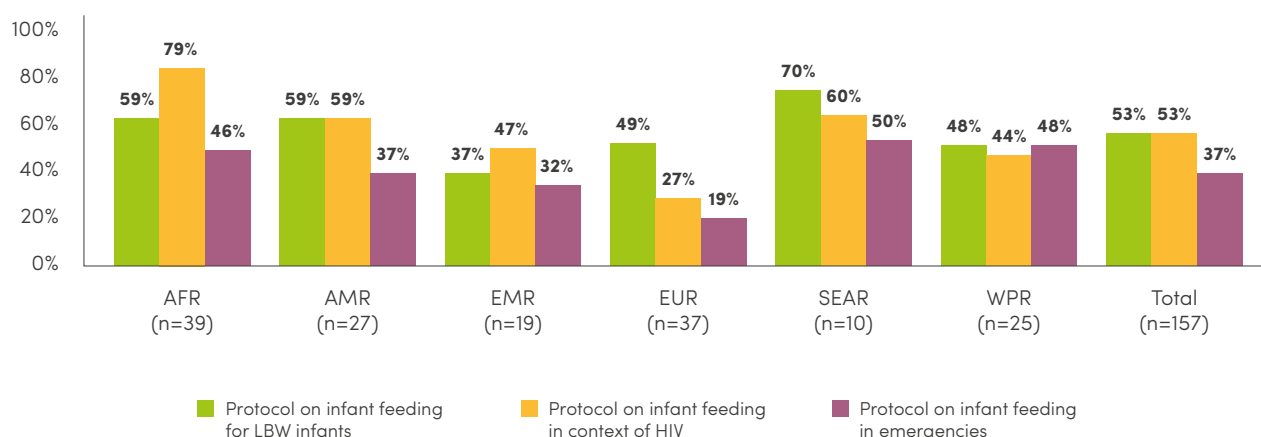
National guidelines on feeding and care of **premature or low birth weight infants** (<2500 g) most often covered the establishment of breastfeeding (96%), and cup-feeding with mother's own milk for those unable to breastfeed (87%) (Fig. 3.31). The promotion of kangaroo care was less common globally, but was still reported by the vast majority of countries

in the WHO regions of the Eastern Mediterranean and South-East Asia. Feeding with donor human milk for infants that cannot be fed their mother's own milk was the least common component reported by countries; two thirds of countries that recommended the use of donor human milk reported the existence of safe and affordable milk-banking facilities as part of donor milk feeding, and the remaining countries reported that wet nurses were recruited within families.

In line with WHO guidelines (56), antiretroviral therapy for the mother has become the most common component of national protocols on **infant feeding in the context of HIV**, followed by replacement feeding (Fig. 3.32). In all regions except the WHO African Region, more national guidelines address replacement feeding than breastfeeding promotion and support, especially counselling on attachment and positioning, which is particularly important in the context of HIV to prevent breast conditions that may increase transmission of the virus (Fig. 3.33). More than half of the countries addressing replacement feeding reported that government or foundations provide free distribution programmes.

FIGURE 3.30

**TYPES OF PROTOCOLS ON INFANT FEEDING IN EXCEPTIONALLY DIFFICULT SITUATIONS IN 157 COUNTRIES**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; HIV, human immunodeficiency virus; LBW, low birth weight; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.31

COMPONENTS OF PROTOCOLS FOR INFANT FEEDING IN THE CONTEXT OF LOW BIRTH WEIGHT IN 53 COUNTRIES PROVIDING DETAILED INFORMATION

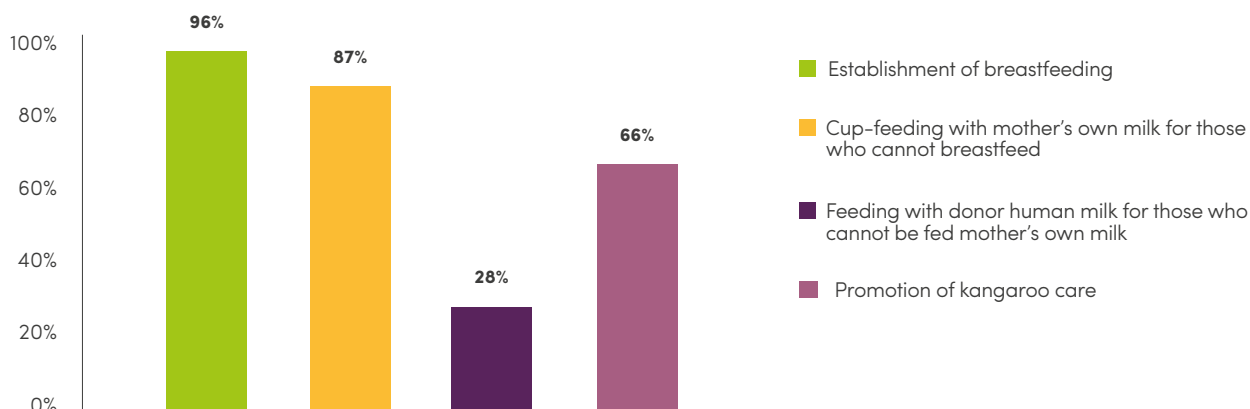
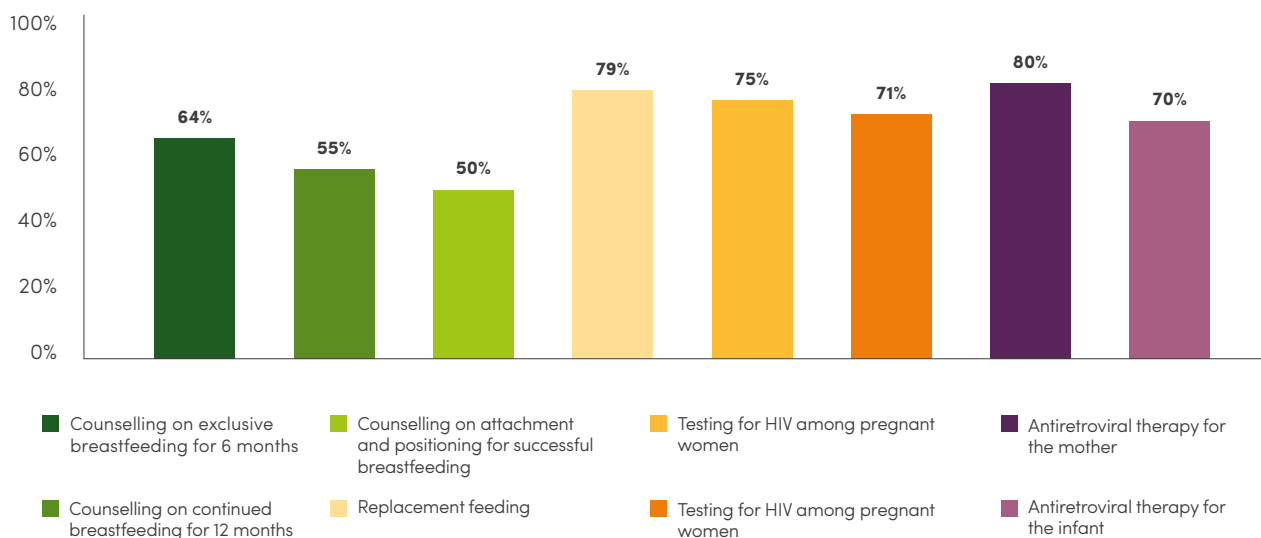


FIGURE 3.32

COMPONENTS OF PROTOCOLS FOR INFANT FEEDING IN THE CONTEXT OF HIV IN 56 COUNTRIES PROVIDING DETAILED INFORMATION

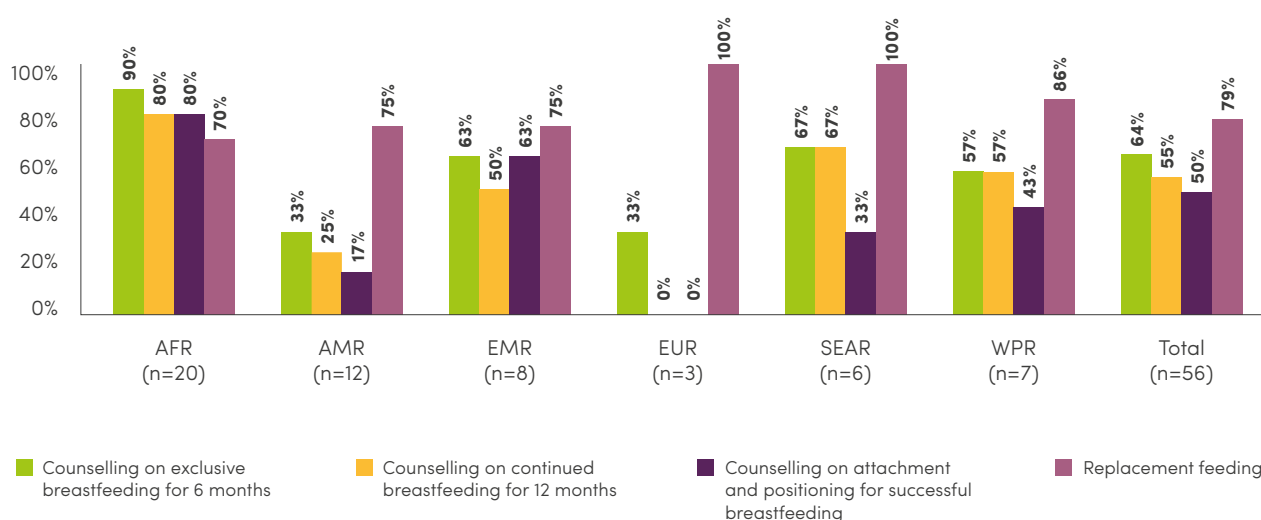


HIV, human immunodeficiency virus.



FIGURE 3.33

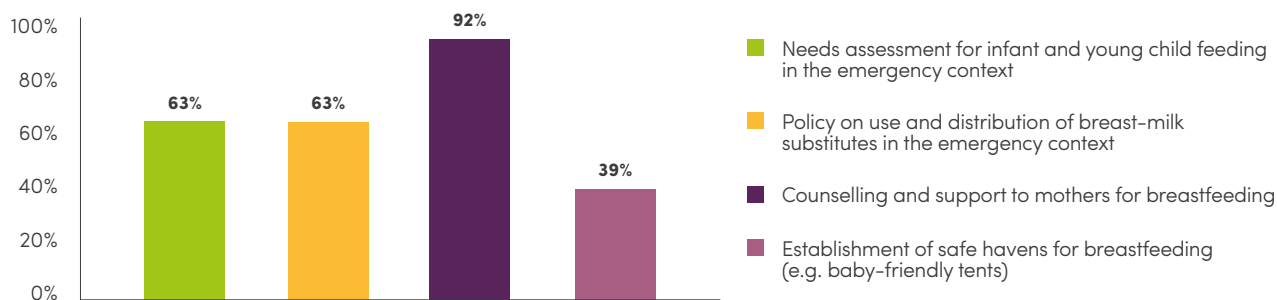
**INFANT FEEDING RECOMMENDATIONS IN THE CONTEXT OF HIV IN 56 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.34

**COMPONENTS OF PROTOCOLS FOR INFANT FEEDING IN EMERGENCIES IN 38 COUNTRIES PROVIDING DETAILED INFORMATION**



Counselling and support to mothers for breastfeeding was the most common component included in protocols or guidelines related to **infant feeding in emergencies**, but less than half of the countries mentioned establishing safe havens where distressed mothers may breastfeed (Fig. 3.34). However, many protocols included policies on the use and distribution of breast-milk substitutes, and required a needs assessment for IYCF in the emergency context.

**Regulation of marketing of breast-milk substitutes** is an important measure to protect breastfeeding, not only in difficult situations but in all contexts. A recent report on the implementation of the International Code of Marketing of Breast-milk Substitutes shows that, as of March 2016, 135 countries had at least some form of legal measure in place covering some provisions of the code (45). This represents significant progress since 2011, when only 103 countries had relevant legal measures in place.

However, only 39 countries have comprehensive legislation or other legal measures reflecting all or most of the provisions of the code. Global sales of breast-milk substitutes reached US\$ 40 billion in 2013, and growth in sales exceeds 10% annually in many low- and middle-income countries. Unless stricter regulatory frameworks are adopted and are coupled with independent, quantitative monitoring and compliance enforcement to counter the impacts of formula marketing (57), breastfeeding prevalence, especially in low- and middle-income countries, are unlikely to meet the targets.

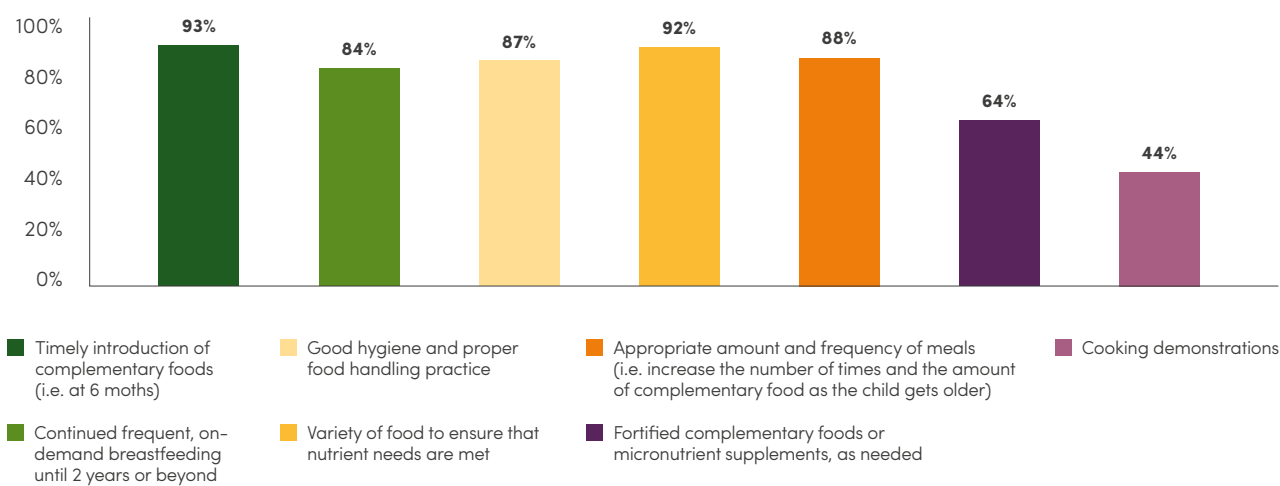
Similarly, **maternity protection** is important to protect breastfeeding rights of working women. It comprises leave, cash benefits, employment protection and nondiscrimination, health protection and breastfeeding arrangements at work and in childcare. The International Labour Organization (ILO) Maternity Protection Convention was established nearly 100 years ago, stating that women should have the right to paid maternity leave as well as breaks during the work day for breastfeeding. The Convention was subsequently updated in 1952 and again in 2000 to prescribe at least 14 weeks of leave and cash benefits at a rate of at least two thirds, paid by social insurance or public funds. The accompanying maternity protection recommendation states that countries should

provide at least 18 weeks of leave and 100% of cash benefits, paid by social insurance or public funds. ILO maintains a legal database and periodically reviews the status of maternity protection in countries. The last ILO report showed that 57 out of 185 countries (34%) fully met the requirements of Convention C183 on three key aspects: duration of leave, amount of cash benefits and source of funds (44). Highest conformity was observed in eastern Europe and central Asia and the developed economies, whereas lowest conformity was observed in Asia and the Middle East (44).

The most common components of the reported **complementary feeding counselling** interventions were timely introduction of complementary foods at 6 months; continued frequent, on-demand breastfeeding until at least 2 years; good hygiene and proper food handling; variety of foods to ensure nutritional needs are met; and appropriate amounts and frequency of meals (Fig. 3.35). The use of fortified complementary foods or micronutrient supplements as well as cooking demonstrations were less frequent globally, but were more often reported by countries in the WHO regions of Africa and South-East Asia. Furthermore, 82% of countries reported using tools and job aids, the great majority of which were based on locally available foods.

FIGURE 3.35

**COMPONENTS OF COMPLEMENTARY FOODS COUNSELLING IN 105 COUNTRIES PROVIDING DETAILED INFORMATION**



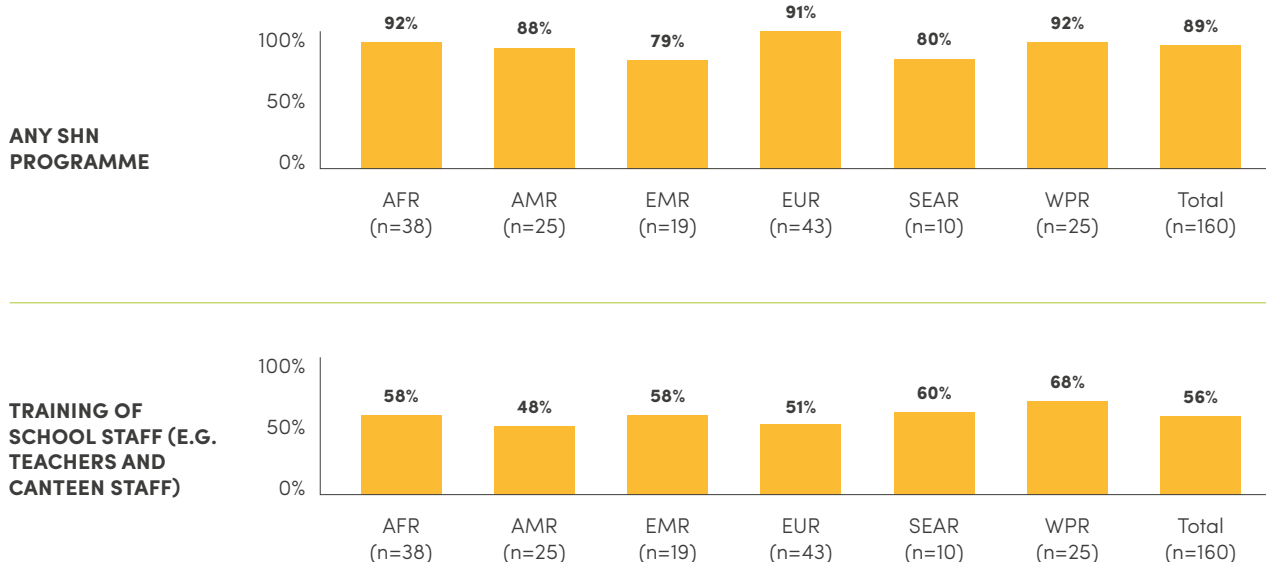
### 3.5.2 Actions implemented through school health and nutrition programmes

Schools constitute an important setting to protect, promote and support good nutrition in children, which could not only help children to establish lifelong healthy dietary practices, but also have an impact on their families and communities. Comprehensive school-based nutrition and health programmes (e.g. the Nutrition-Friendly Schools Initiative) address multiple components such as school food and beverage standards, including for meals served, and other actions addressing the school environment, such as vending machines or areas for physical activity. Comprehensive programmes also include curricula on nutrition and healthy diets, provide school health and nutrition services and involve parents and the communities in improving nutrition among school children. Although these components alone have positive effects, multifaceted programmes are particularly associated with a range of positive outcomes, including healthier weight, diet and levels of physical activity among school children.<sup>1</sup>

Out of 160 countries responding to the sections on school health and nutrition programmes, 142 countries reported having such programmes.<sup>2</sup> The proportion of responding countries that reported having school health and nutrition programmes varied little across the regions, with the WHO Eastern Mediterranean Region being the lowest at 79% (Fig. 3.36). The most common school health and nutrition programme component reported was nutrition education included in the school curriculum, followed by training of school staff. Provision of school meals was reported by more than two thirds of countries in the WHO regions of Africa, the Americas and South-East Asia. In the WHO regions of Europe and the Western Pacific, the provision of school meals was less common, but more than two thirds of countries had standards or rules for foods and beverages available in schools. School fruit and vegetable schemes were also more common than provision of school meals in the WHO European Region.

FIGURE 3.36

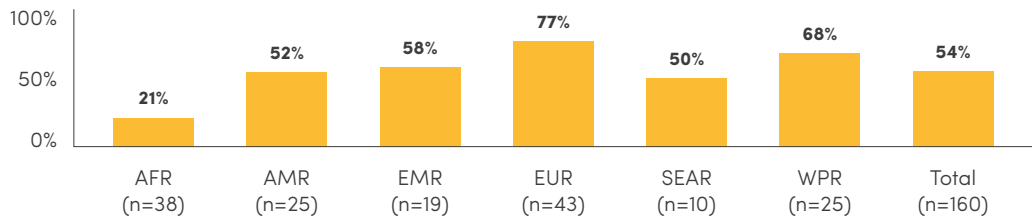
#### REPORTED IMPLEMENTATION OF SCHOOL HEALTH AND NUTRITION PROGRAMMES IN 160 COUNTRIES



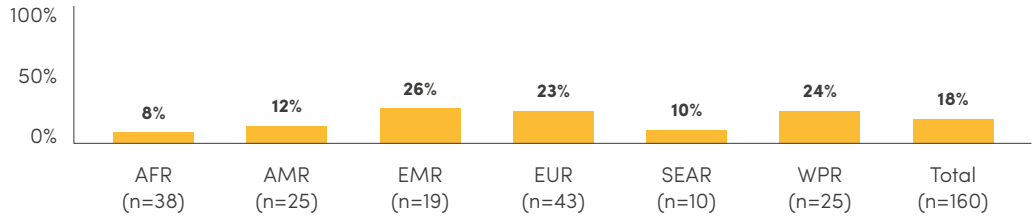
<sup>1</sup> WHO. Evidence review for the Nutrition-Friendly Schools Initiative. Forthcoming.

<sup>2</sup> Detailed information was provided by 94 of the 142 countries on a total of 121 school health and nutrition programmes (15 countries reported more than one programme).

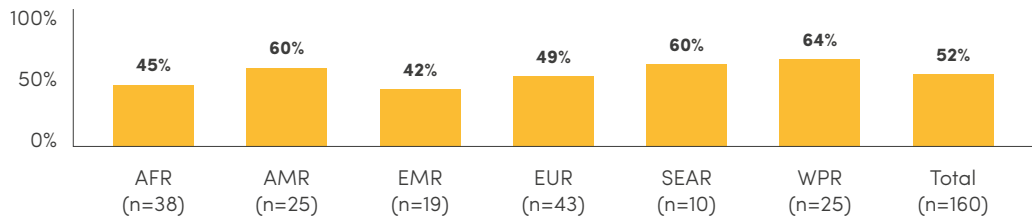
**STANDARDS OR RULES FOR FOODS AND BEVERAGES AVAILABLE IN SCHOOLS**



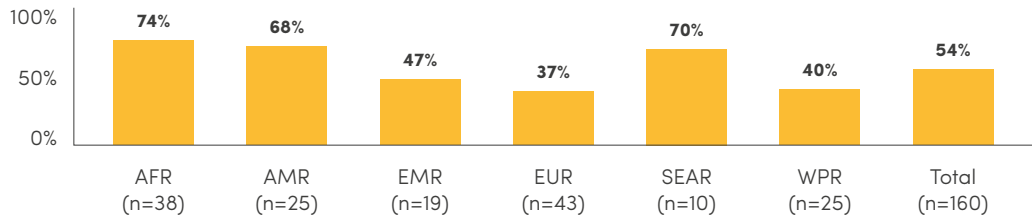
**BAN ON VENDING MACHINES IN SCHOOLS**



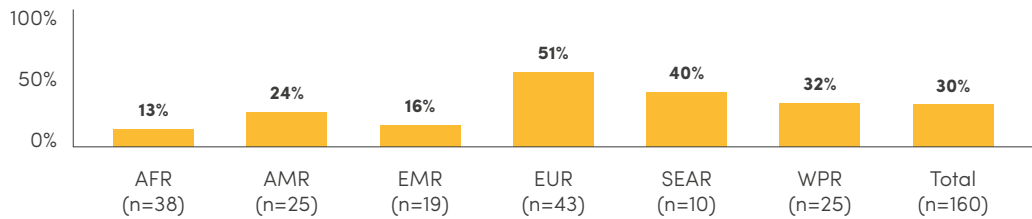
**HYGIENIC COOKING FACILITIES AND CLEAN EATING ENVIRONMENT IN SCHOOLS**



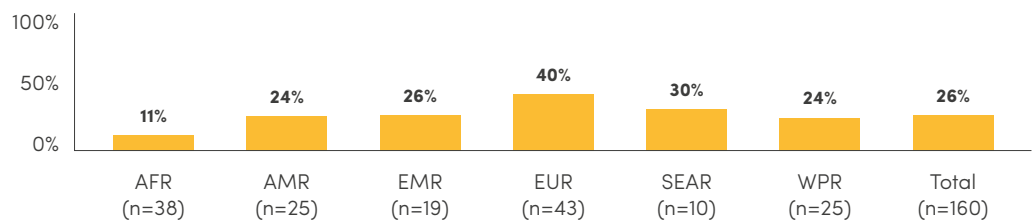
**PROVISION OF SCHOOL MEALS, SCHOOL FEEDING PROGRAMME**



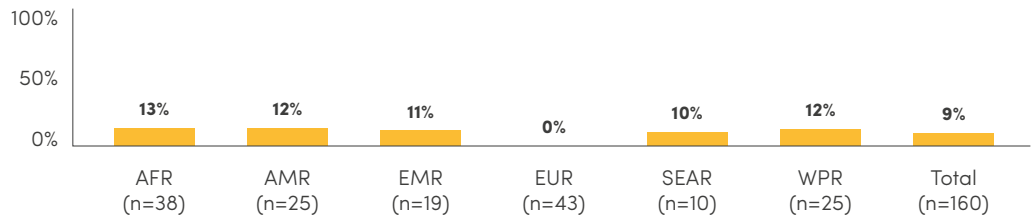
**SCHOOL FRUIT AND VEGETABLE SCHEME**



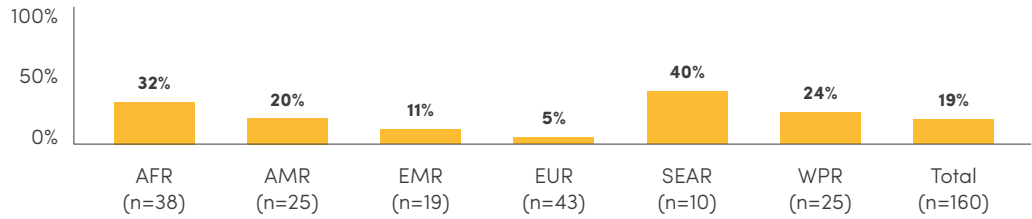
**SCHOOL MILK SCHEME**



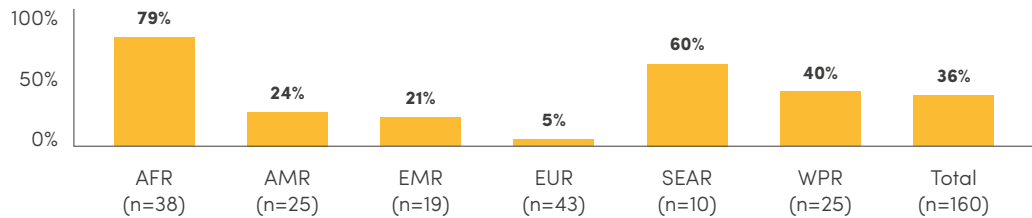
**TAKE-HOME RATIONS DISTRIBUTED THROUGH SCHOOLS**



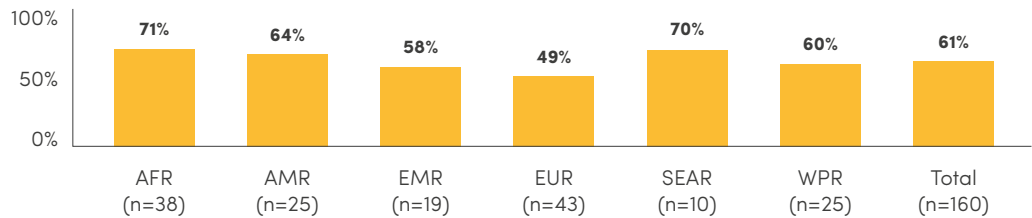
**MICRONUTRIENT SUPPLEMENTATION (E.G. IRON, VITAMIN A)**



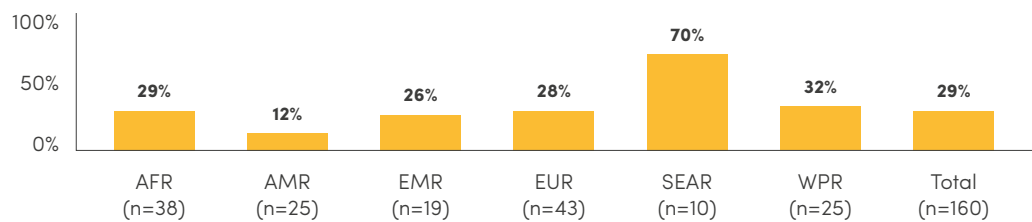
**DEWORMING**



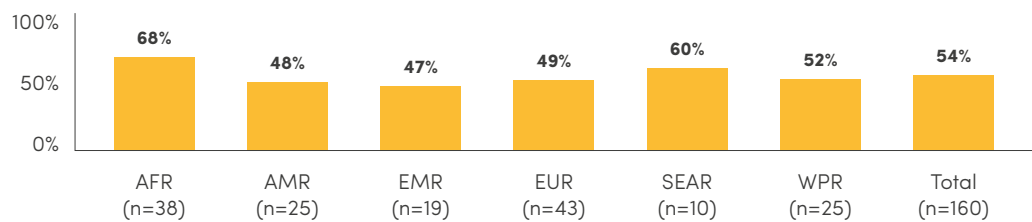
**NUTRITION EDUCATION INCLUDED IN SCHOOL CURRICULUM**



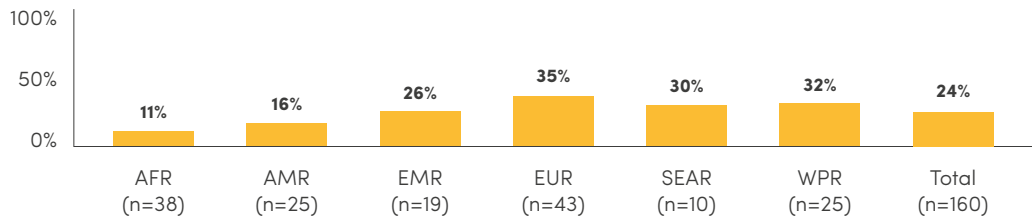
**EXTRACURRICULAR NUTRITION EDUCATION**



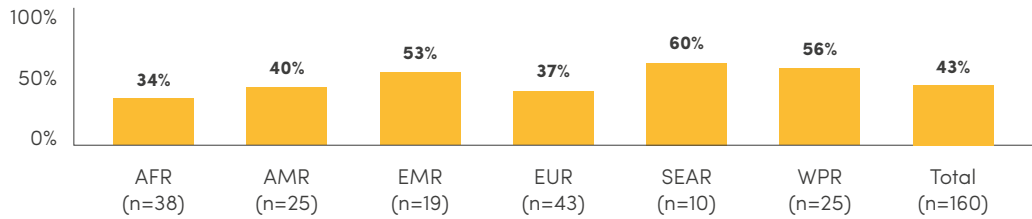
**PHYSICAL EDUCATION IN SCHOOL CURRICULUM**



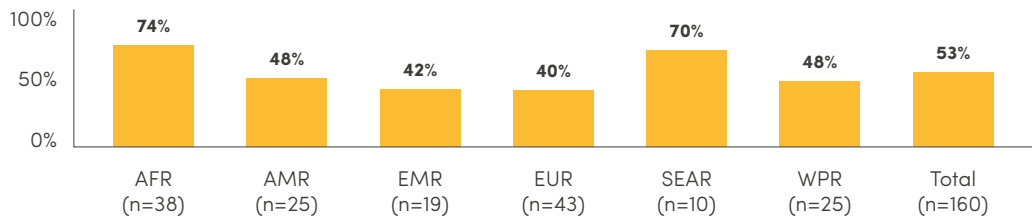
**STANDARDS FOR MARKETING OF FOOD AND NON-ALCOHOLIC BEVERAGES**



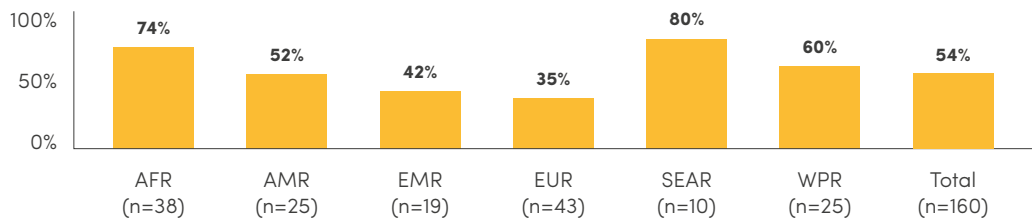
**MONITORING OF CHILDREN'S GROWTH IN SCHOOLS**



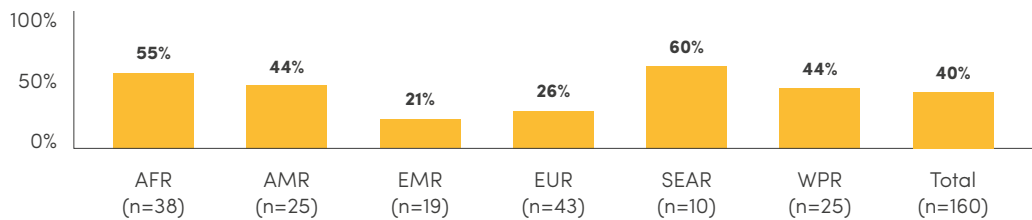
**SAFE DRINKING WATER AVAILABLE FREE OF CHARGE IN SCHOOLS**



**ADEQUATE SANITATION AND HYGIENE FACILITIES IN SCHOOLS**



**SCHOOL GARDENS**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; SHN, school health and nutrition; WPR, WHO Western Pacific Region.

The earliest school health and nutrition programmes dated back to the 1930s, while most were from 2000 or later, and 17% from 2015 or later. These programmes were most commonly implemented at primary school level in all WHO regions (Fig. 3.37). Preschool-level school health and nutrition programmes were most common in the WHO South-East Asia Region and less common in the WHO regions of Africa and the Western Pacific, while secondary level programmes were most common in the WHO Western Pacific Region and were less common in the WHO regions of Africa and the Americas.

The most common school health and nutrition programme objectives were related to fostering a healthy diet and lifestyle habits, and educating children and improving knowledge about healthy diet and lifestyle habits (Fig. 3.38). Two thirds of countries had school health and nutrition programmes that aimed to reduce or prevent childhood overweight or obesity. Such programmes could be crucial to halting the rise in diabetes and obesity, which is Target 7 of the Global Action Plan for the Prevention and Control of Noncommunicable

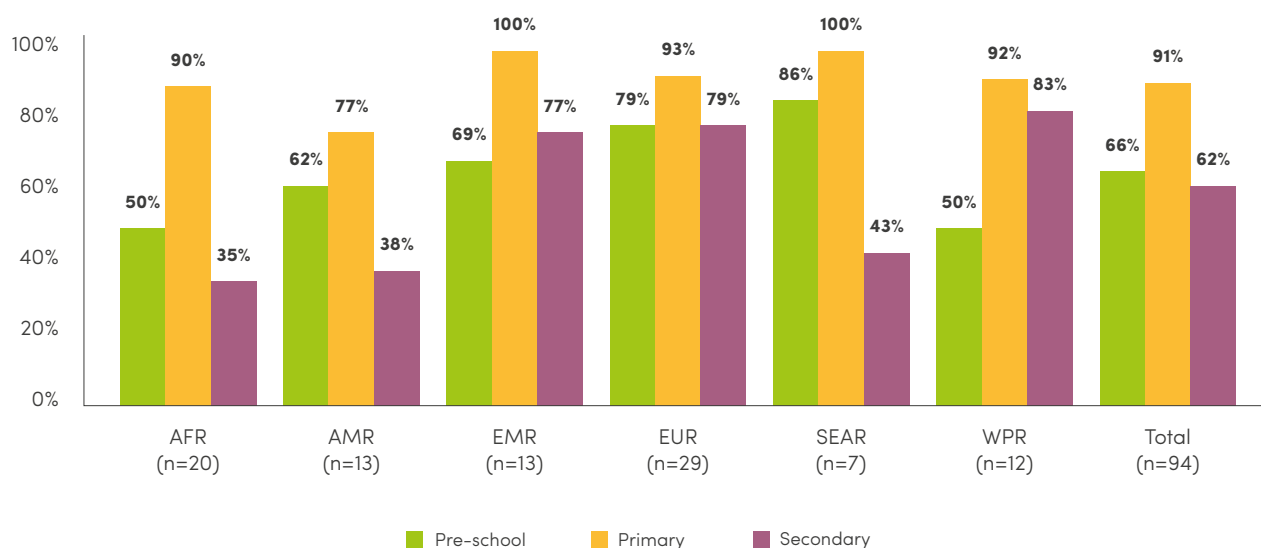
Diseases 2013–2020 (13). The fifth recommendation of the report of the Commission on Ending Childhood Obesity (58) concerns the implementation of comprehensive programmes that promote healthy school environments, health and nutrition literacy, and physical activity among school-age children and adolescents.

School health and nutrition programmes aiming to reduce or prevent undernutrition were reported by over half of the countries. Micronutrient deficiencies can certainly be tackled in the school setting with periodic deworming and micronutrient supplementation, and are especially important when directed at adolescent girls (59).

Objectives related to the prevention of undernutrition were most common in the WHO regions of Africa and South-East Asia, whereas those related to prevention of overweight and obesity were most common in the WHO regions of the Americas, Europe and the Western Pacific (Fig. 3.39). Other less common objectives included improving academic performance, school attendance, children’s cooking and food hygiene skills, and school enrolment.

**FIGURE 3.37**

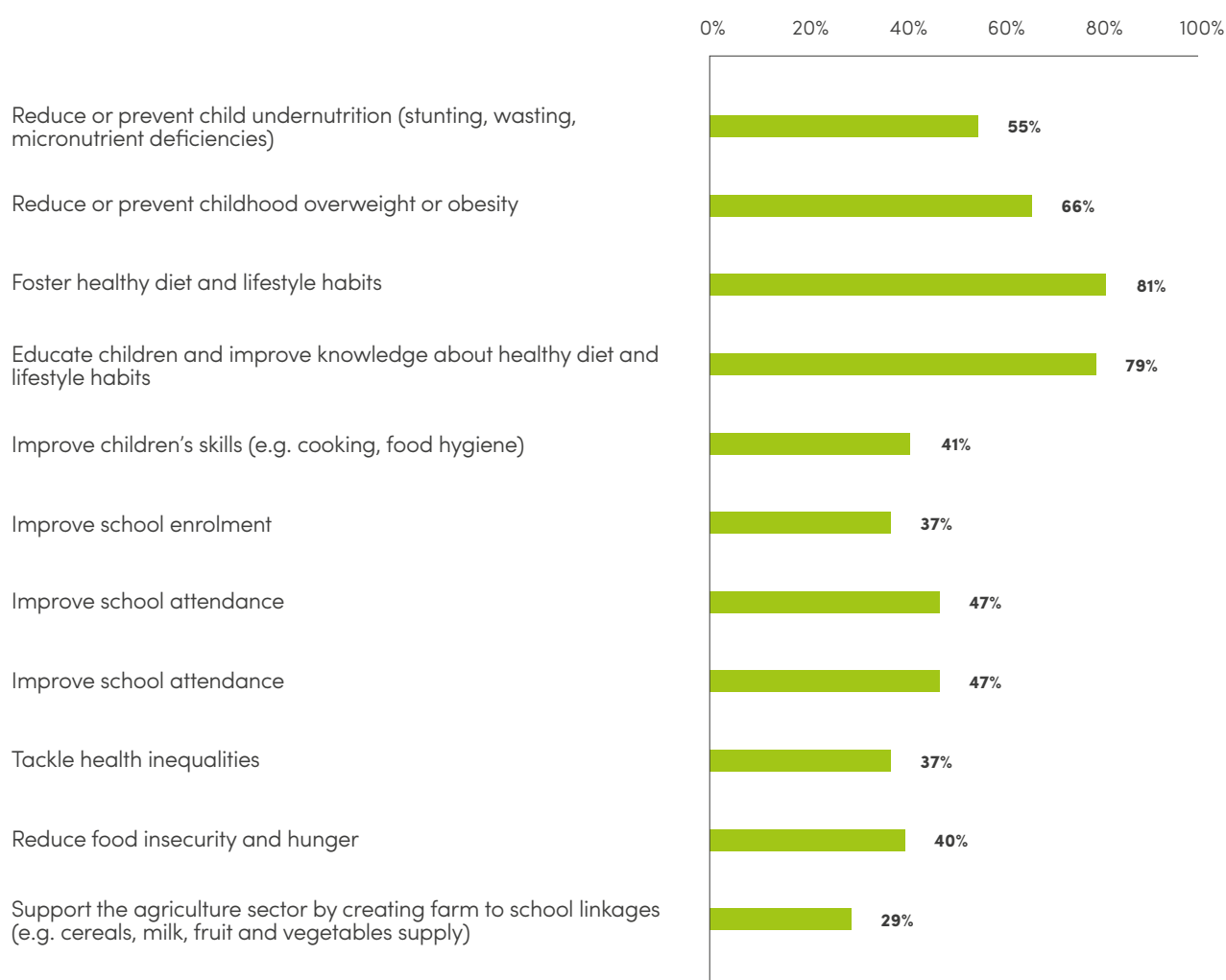
**LEVEL OF SCHOOL HEALTH AND NUTRITION PROGRAMMES IN 94 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.38

**SCHOOL HEALTH AND NUTRITION PROGRAMME OBJECTIVES  
IN 94 COUNTRIES PROVIDING DETAILED INFORMATION**



The most commonly reported **standards or rules for foods and beverages available in schools**<sup>1</sup> (e.g. school meals, vending machines and snack bars) were those for foods and beverages served for lunch or other mealtimes in school canteens and cafeterias, as well

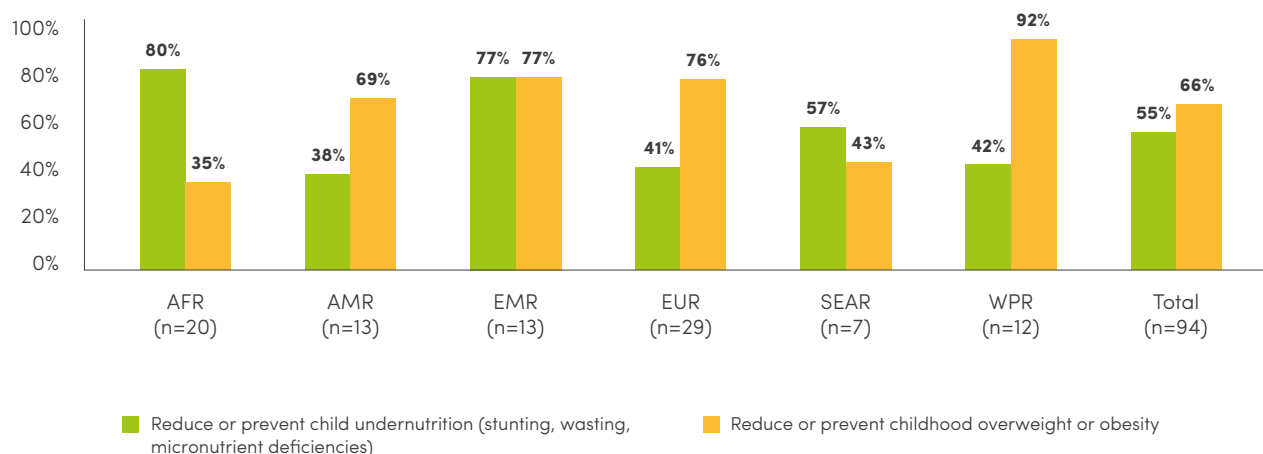
as foods and beverages being sold in the school, whether through tuck shops or vending machines (Fig. 3.40). The least common type of standard or rule concerned the types of foods and beverages being sold in the immediate vicinity of the school.

<sup>1</sup> A total of 87 countries reported having standards for foods and beverages in schools, of which 64 provided detailed information



FIGURE 3.39

**SCHOOL HEALTH AND NUTRITION PROGRAMME OBJECTIVES RELATED TO PREVENTING UNDERNUTRITION OR OVERWEIGHT AND OBESITY IN 94 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

The criteria used to determine the standards and rules were most often based on specific foods and beverages that are prohibited (e.g. sugar-sweetened beverages), limited (e.g. fried foods) or encouraged (e.g. fruit and vegetables), or were based on nutrient content (e.g. energy, fats, sugars or salt/sodium). Globally, the most common nutrient content criteria were based on energy or salt/sodium content, or both (Fig. 3.41). Countries in the WHO South-East Asia Region had the most comprehensive inclusion of nutrients in the criteria, whereas those in the WHO African Region had the lowest. The criteria in the WHO regions of Africa and the Americas were most often based on energy, fats and salt/sodium; criteria based on sugars were more common in the WHO regions of the Eastern Mediterranean and the Western Pacific. School food and beverage standards criteria based on portion size were less common. The great majority of

countries reported that the criteria were set forth in legislation, regulations or guidelines.

About half of the countries with **school meal programmes**<sup>1</sup> reported that the menus were based on food-based dietary guidelines (FBDGs) (Fig. 3.42). This was the case in all regions except the WHO African Region, where 38% were based on maximum levels of specific nutrients such as fats, sugars, and salt/sodium, while just 31% were based on FBDGs. Six countries with school meal programmes, mostly in the WHO African Region, reported that they had no standards or guidance for the composition of the meals. The responsibility for planning school meals was reported as being with nutritionists in 49% of the countries. A contribution of school meals to the rise in overweight and obesity in school children has been observed in some countries (60); across the globe, administrators of school meal programmes should take note of this finding.

<sup>1</sup> A total of 87 countries reported school meal programmes, of which 55 provided detailed information in the full questionnaire.

FIGURE 3.40

SCOPE OF SCHOOL FOOD AND BEVERAGE STANDARDS  
IN 64 COUNTRIES PROVIDING DETAILED INFORMATION

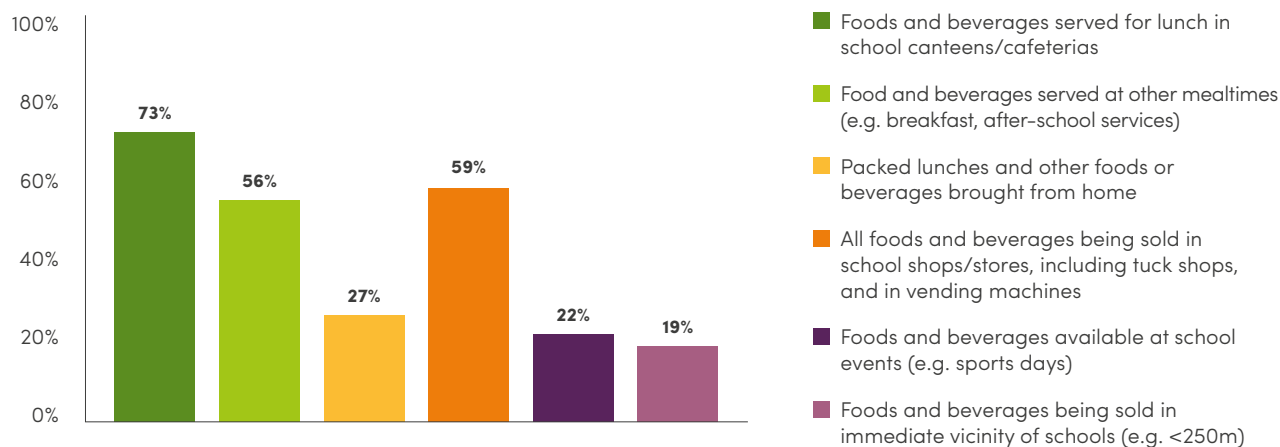
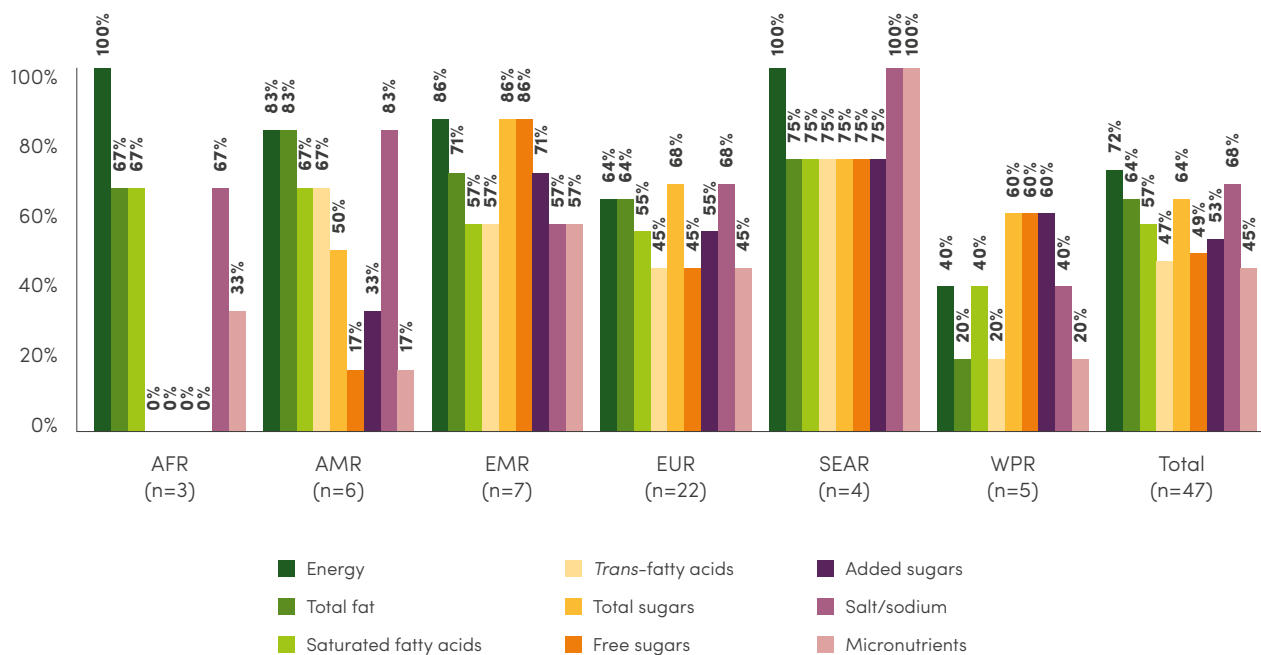


FIGURE 3.41

NUTRIENTS COVERED IN 47 COUNTRIES WITH NUTRIENT-BASED  
CRITERIA FOR SCHOOL FOOD AND BEVERAGE STANDARDS



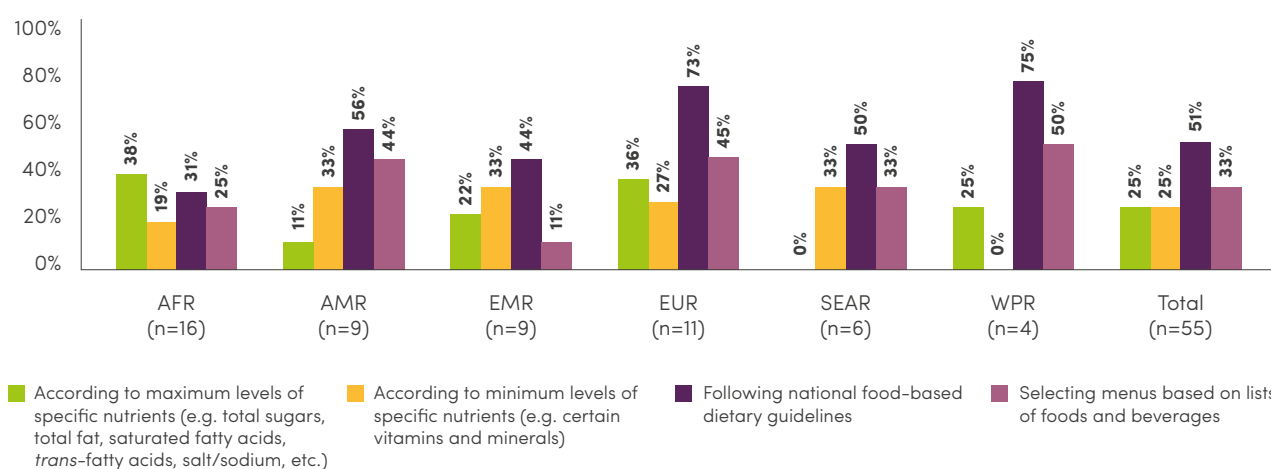
AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

Foods for school meal programmes were usually procured from the country or were even local to the schools, except in the WHO African Region, where more than half of the countries indicated that foods were also procured internationally. Fruit and vegetables were provided as part of school meals

by most countries, varying from 56% in the WHO regions of Africa and the Eastern Mediterranean, to 100% in the WHO Western Pacific Region (Fig. 3.43). Where information was provided on the frequency of fruit and vegetables as part of school meals, the frequency was 3–5 times per week.

**FIGURE 3.42**

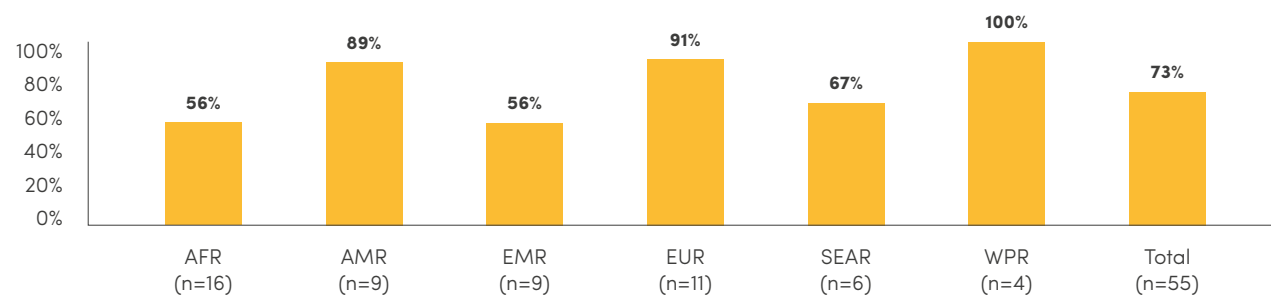
**BASIS FOR MENU PLANNING IN 55 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

**FIGURE 3.43**

**FRUIT AND VEGETABLE PROVISION AS PART OF SCHOOL MEALS IN 55 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

In all regions, most countries with specific **school fruit and vegetable schemes**<sup>1</sup> provided fresh fruit and vegetables (Fig. 3.44). Some countries – largely those in the WHO regions of the Eastern Mediterranean and Europe – provided fruit juices or dried fruits as part of the schemes, whereas tinned fruits in water were most common in the WHO Region of the Americas. The fruit and vegetable schemes were linked to nutrition education activities in most countries, and to school gardens in nearly half of the countries. Visits to farms or cooking classes were less common.

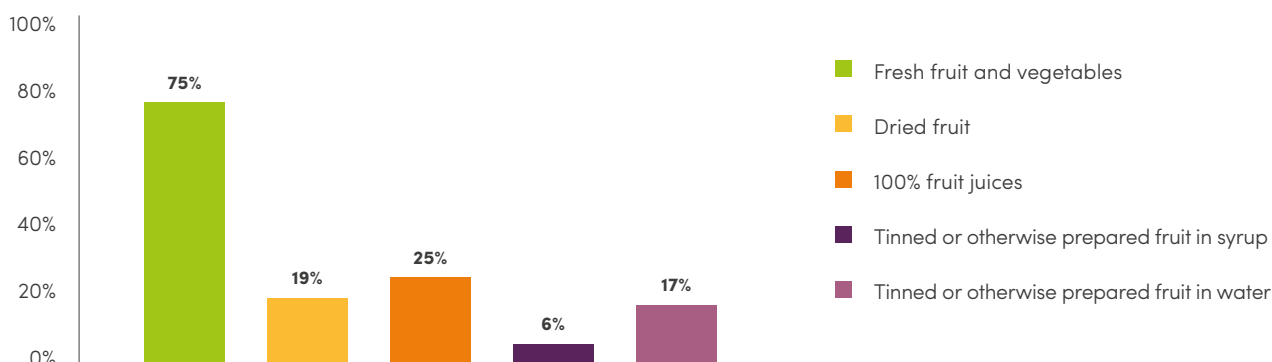
Considering both the fruit and vegetables served through school meals and through separate fruit and vegetable schemes, overall, 60% of countries provided fruit and vegetables in schools.<sup>2</sup> The highest proportion was in the WHO European Region (71%) and the lowest in the WHO Eastern Mediterranean Region (46%). However, some countries are providing fruit juices containing free sugars or tinned fruits prepared in syrup as part of school fruit and

vegetable schemes to promote healthy diets in school-age children; hence, the role of fruit and vegetables in a healthy diet needs to be clearly defined to schools and authorities who determine school food procurements in countries.

The most common milks provided through **school milk schemes**<sup>3</sup> were full-fat or whole milk, or low-fat milk. Flavoured milks with added sugars or sweeteners were reported in 24% of countries (Fig. 3.45), all of which were in the WHO regions of the Americas and the Western Pacific. Some of these countries even had school food standards that included the upper level limit on sugars, so the provision of these products would contravene the existing national standards. The provision of sweetened and/or flavoured milk in schools is surprising, given that increased consumption of such sugar-sweetened beverages has been identified as contributing to increased consumption of sugars, which is associated with dental caries, and childhood overweight and obesity (28).<sup>4</sup>

FIGURE 3.44

**CONTENT OF SCHOOL FRUIT AND VEGETABLE SCHEMES  
IN 36 COUNTRIES PROVIDING DETAILED INFORMATION ABOUT SUCH SCHEMES**



<sup>1</sup> School fruit and vegetable schemes were reported by a total of 48 countries, of which 36 provided detailed information in the full questionnaire.

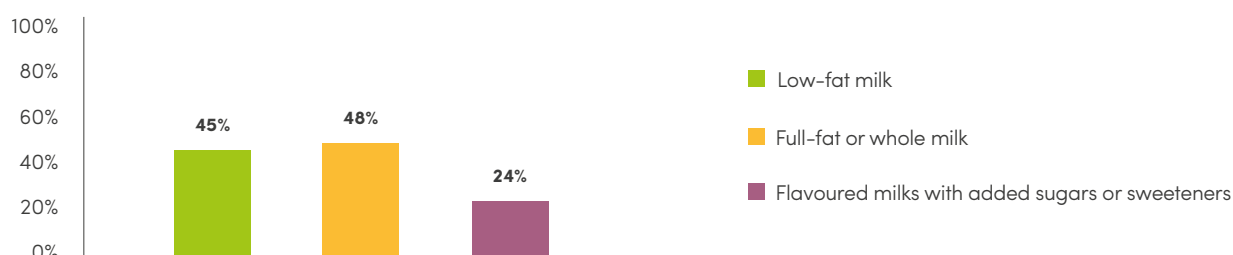
<sup>2</sup> The figure of 60% is for the 98 countries for which such information was available.

<sup>3</sup> School milk schemes were reported by 41 countries, of which 29 provided detailed information in the full questionnaire.

<sup>4</sup> eLENA – Reducing consumption of sugar-sweetened beverages to reduce the risk of childhood overweight and obesity. Available at [http://www.who.int/elena/titles/ssbs\\_childhood\\_obesity/en/](http://www.who.int/elena/titles/ssbs_childhood_obesity/en/).

FIGURE 3.45

TYPES OF MILKS PROVIDED IN SCHOOL MILK SCHEMES IN 29 COUNTRIES PROVIDING DETAILED INFORMATION

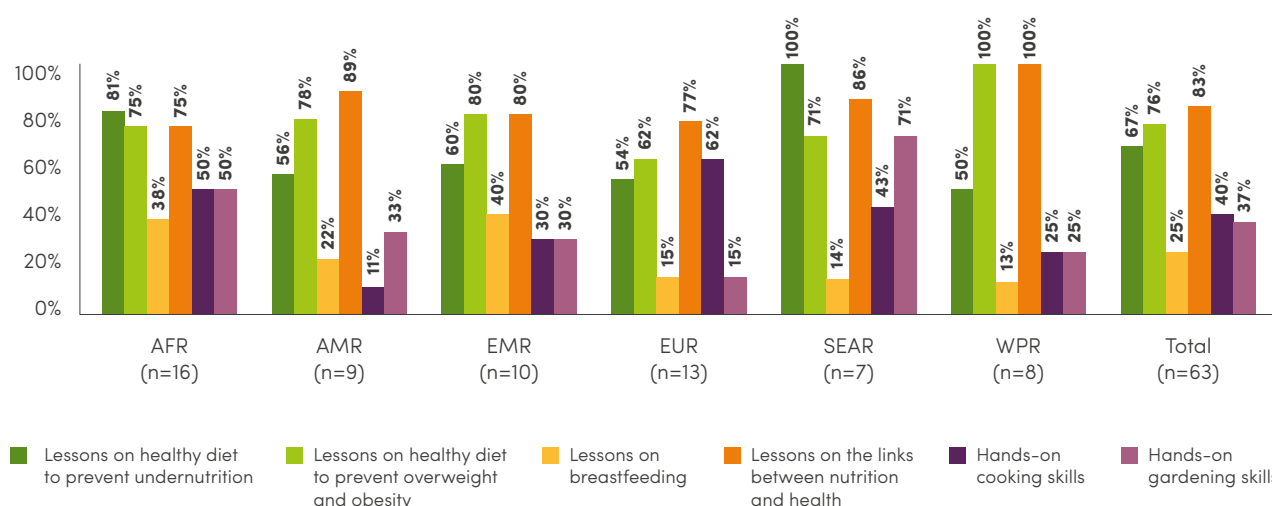


**Nutrition education in the school curriculum<sup>1</sup>** was usually mandatory for primary schools. The most common content of the nutrition education was reported to be lessons on the links between nutrition and health, healthy diets to prevent overweight and obesity, and healthy diets to prevent undernutrition (Fig. 3.46). Undernutrition was more common in the WHO regions of Africa and South-East Asia, whereas overweight and obesity were more common in the

other WHO regions. Hands-on cooking skills were most common in the WHO European Region, and hands-on gardening skills were most common in the WHO South-East Asia Region. In countries reporting **extracurricular nutrition education<sup>2</sup>**, activities were often linked to health centres, and they included cooking demonstrations, celebration of national nutrition days in the community and learning about cultural aspects of nutrition in the local setting.

FIGURE 3.46

CONTENT OF NUTRITION EDUCATION IN 63 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> Nutrition education in the school curriculum was reported by 97 countries, of which 63 provided detailed information.

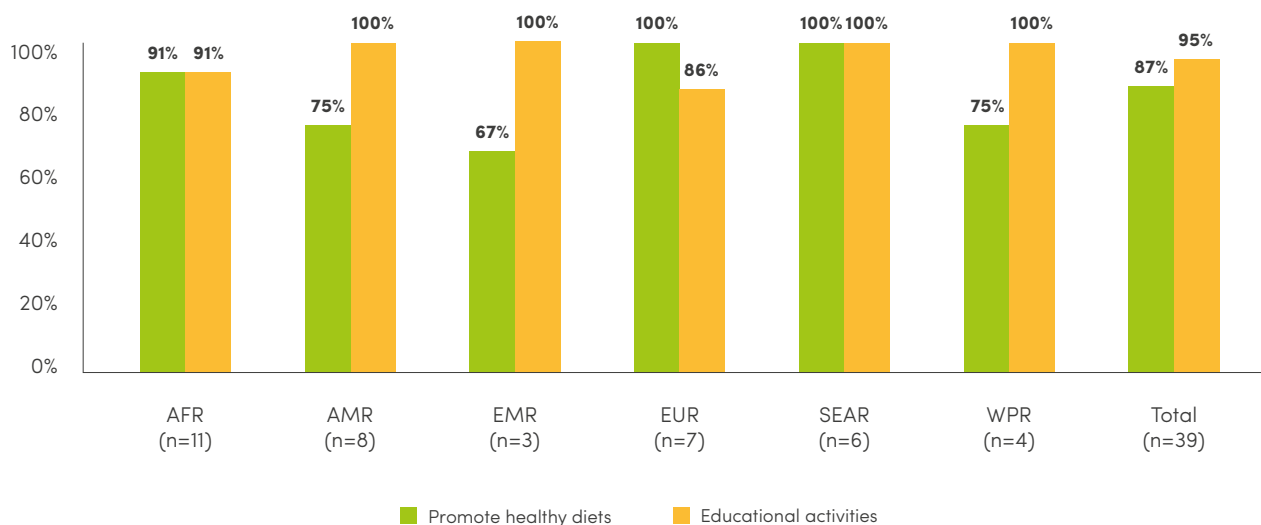
<sup>2</sup> Extracurricular nutrition education was reported by 46 countries, of which 28 provided detailed information.

**School gardens<sup>1</sup>** were used to promote healthy diets (e.g. using the fruit and vegetables produced for school meals) and for educational activities (Fig. 3.47). Countries mentioned that school gardens provide an opportunity to educate children on nutrition, and to motivate and increase fruit and vegetable intake; they also mentioned that these gardens can complement and increase the nutritional value of school feeding programmes. One of the main limitations for the implementation of school gardens seemed to be the availability of space. School gardens could also serve as a way to promote more sustainable, eco-conscious and healthier diets.

**Monitoring children’s growth as part of school health and nutrition programmes<sup>2</sup>** was usually done by measuring height and weight annually, either through the schools or through visits to health centres organized by the schools. These measurements were used to calculate different indicators (Fig. 3.48). In the WHO regions of the Eastern Mediterranean and Europe, the indicator most often reported was overweight, whereas in the WHO Region of the Americas, the indicator most often reported was underweight. Body mass index (BMI) was calculated by all countries in the WHO regions of Europe and the Western Pacific. The great majority of countries reported that they had protocols for growth monitoring that included performing referral as needed.

**FIGURE 3.47**

**USE OF SCHOOL GARDENS AS PART OF SCHOOL HEALTH AND NUTRITION PROGRAMMES IN 39 COUNTRIES PROVIDING DETAILED INFORMATION**



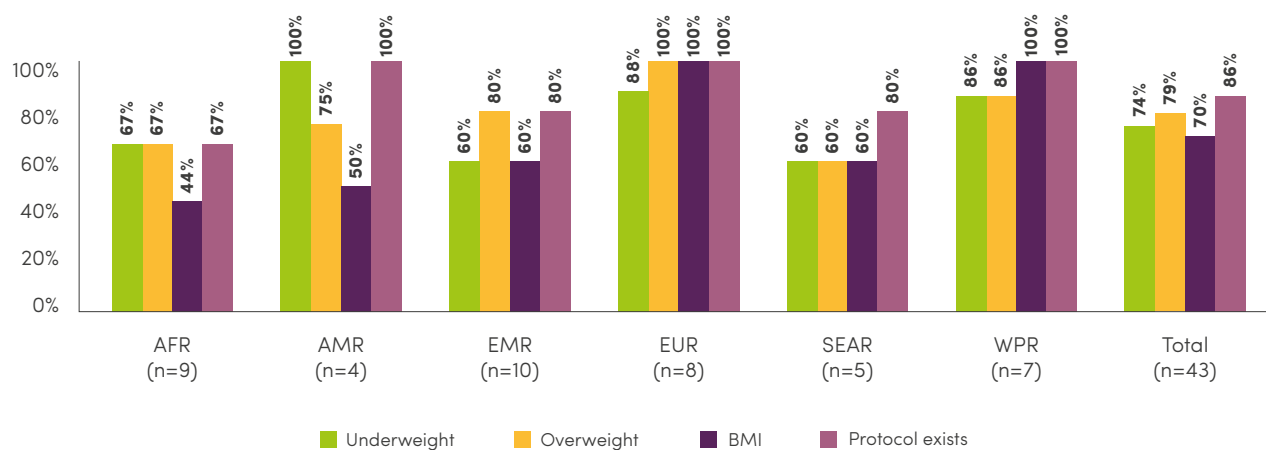
AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> School gardens were reported as being used in school health and nutrition activities by 64 countries, of which 39 provided details on the programme.

<sup>2</sup> Monitoring growth was reported to be part of SHN programmes by 69 countries, of which 43 provided detailed information.

FIGURE 3.48

INDICATORS CALCULATED AS PART OF GROWTH MONITORING  
IN SCHOOLS IN 43 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; BMI, body mass index; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

3.5.3 Actions to promote healthy diets and prevent overweight and obesity

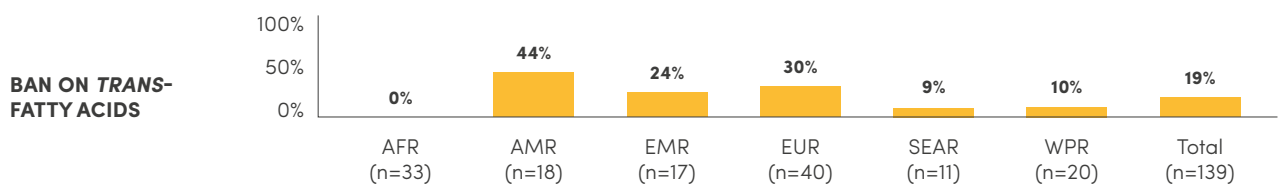
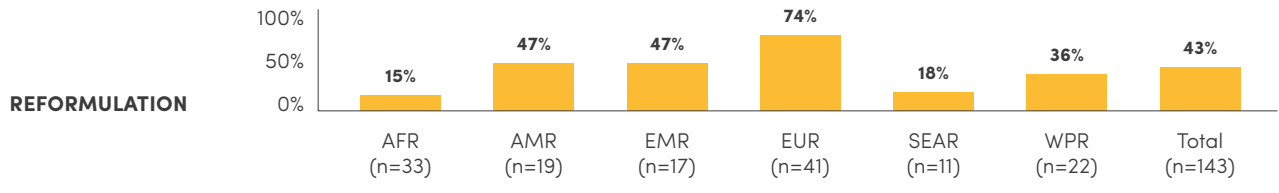
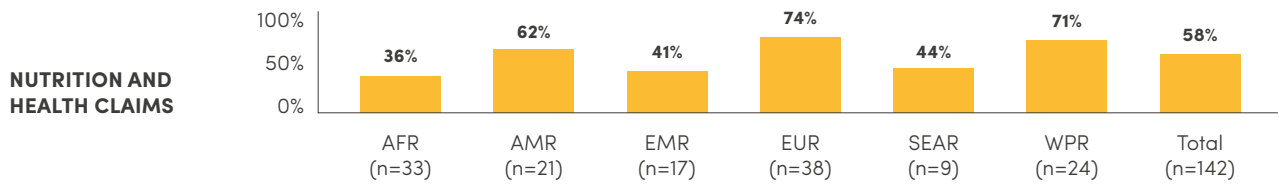
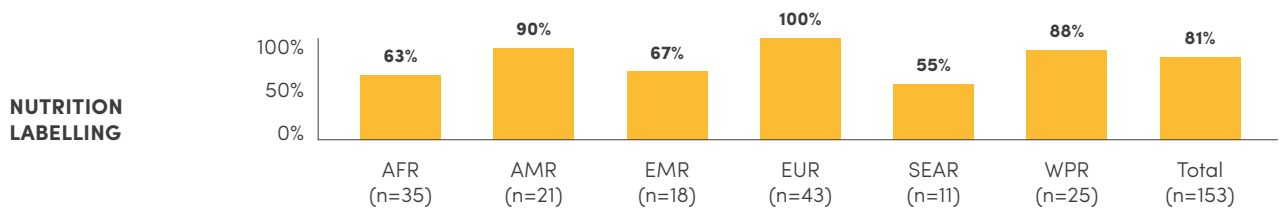
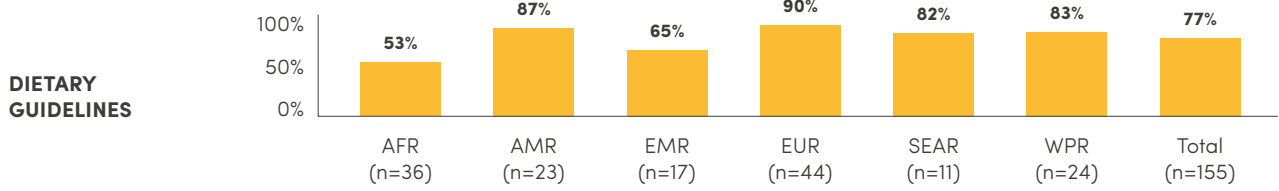
A poor diet is the leading global risk factor for ill-health (61), and a healthy diet helps to protect against malnutrition in all forms, as well as diet-related NCDs including diabetes, heart disease, stroke and cancer (62). The WHO-recommended dietary goals for the prevention of NCDs are that intake of total fat should not exceed 30% of total energy intake, saturated fatty acid intake should not exceed 10% of total energy intake, and *trans*-fatty acid intake should not exceed 1% of total energy intake (63), with a shift in fat consumption away from saturated fatty acids to polyunsaturated fatty acids (64). Intake of free sugars should be limited to less than 10% of total energy intake, with additional health benefits to be obtained by further lowering intake of sugars to less than 5% of total energy intake (28) and salt intake to less than 5 g per day (sodium intake less than 2 g per day) (65). Across the globe, the food energy supply is increasing in the vast majority of countries, regardless of income group and at rates that are sufficient to explain concurrent body weight increases (66). This is also reflected in various studies of individual dietary intakes in countries, with saturated fatty acid intakes

exceeding 10% in more than half of the countries (67); increasing consumption of products high in sugars, especially sugar-sweetened beverages (68); and salt/sodium intakes exceeding the recommended intakes in almost all countries (69).

A total of 163 countries responded to the questions related to promotion of healthy diets and prevention of overweight and obesity, with varying rates for different actions and measures taken. Globally, most countries reported having dietary guidelines, regulation for nutrition labelling and nutrition and health claims, media campaigns on healthy diets, and counselling on nutrition and healthy diets through primary health care (Fig. 3.49). However, there was important variation across the regions, with the WHO regions of Africa and the Eastern Mediterranean lagging behind other regions in developing dietary guidelines. About a third of the countries in the WHO regions of Africa, the Eastern Mediterranean and South-East Asia had regulations for nutrition and health claims, and these were also the regions with the least number of nutrition labelling standards. Less than half of the countries in the WHO Eastern Mediterranean Region conducted media campaigns.

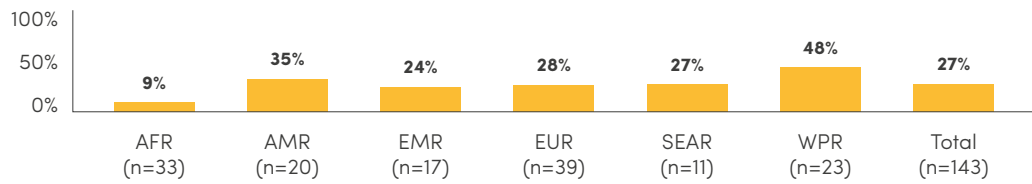
FIGURE 3.49

**ACTIONS AND MEASURES TO PROMOTE HEALTHY DIETS AND PREVENT OVERWEIGHT AND OBESITY AMONG 163 COUNTRIES**

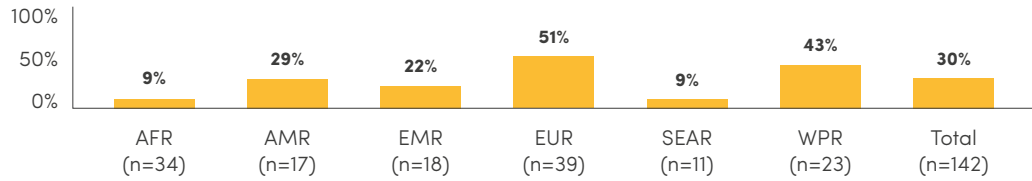




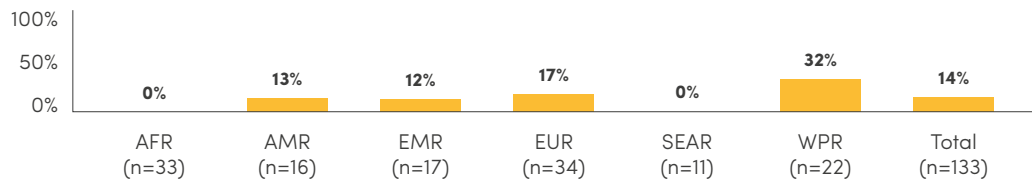
**FISCAL POLICIES**



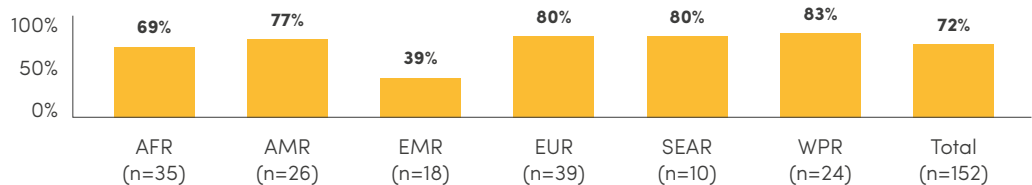
**REGULATION OF MARKETING OF FNAB TO CHILDREN**



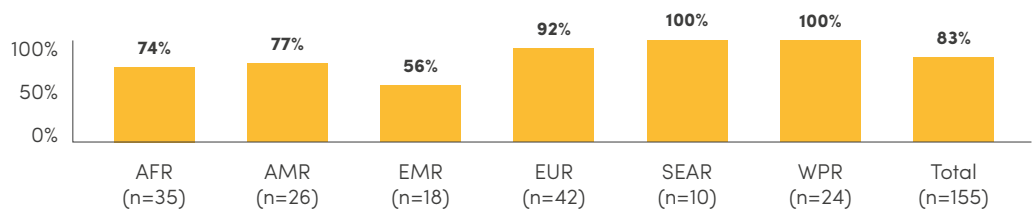
**PORTION SIZE CONTROL**



**MEDIA CAMPAIGNS**



**NUTRITION AND DIET COUNSELLING**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; FNAB, foods and non-alcoholic beverages; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

The implementation of actions to improve the food and drink environment was lower than informational and educational actions, and different regions seemed to focus on different sets of actions. The WHO European Region had the highest implementation of any of these actions, with about three quarters of countries reporting measures to promote reformulation of foods and beverages. Furthermore, half of the countries in that region reported regulating the marketing of foods and non-alcoholic beverages to children, and almost a third had regulations to ban *trans*-fatty acids. Almost half of the countries in the WHO Region of the Americas had reformulation measures and bans on *trans*-fatty acids, while many countries also reported implementing fiscal policies to regulate the price of foods and beverages. More than half of countries in the WHO Western Pacific Region had taken measures to implement fiscal policies (i.e. taxes or subsidies), almost half reported marketing regulation and almost a third reported portion size control measures. Few countries in the WHO regions of Africa and South-East Asia had implemented any of these actions.

Guidance on the preparation and use of **FBDGs** was first provided by the Joint FAO/WHO Expert Consultation in 1995 (70), as a follow-up to the 1992 ICN. The aim was to provide advice to the public by disseminating qualitative or quantitative dietary guidelines relevant to different age groups and appropriate for the country contexts, to improve consumption patterns and nutritional well-being of individuals and populations as a whole. FBDGs focus on foods that are commonly consumed, indicate portion sizes and, in some cases, include behavioural and social messages. FBDGs also contribute to and guide public policies on food, nutrition, health and agriculture, as well as nutrition education programmes to foster healthy eating habits and lifestyles. Among countries that reported having **dietary guidelines**,<sup>1</sup> the most common were FBDGs, except in the WHO African Region, where the proportion of countries with FBDGs was similar to the proportion of countries with **nutrient-based dietary guidelines** (Fig. 3.50).

Countries often had FBDGs in addition to nutrient-based dietary guidelines. The FBDGs were usually developed by the ministry of health in collaboration with the ministries of food and agriculture and of education, whereas the nutrient-based dietary guidelines were usually developed by the ministry of health in collaboration with nutrition experts.

Specific dietary guidelines for different population groups (e.g. adults, preschool-age children, school-age children and pregnant women) make them more suitable and effective to communicate and put into practice. The results of the GNPR2 indicate that more countries have developed age-specific NBDGs than FBDGs for specific population groups (Fig. 3.51).

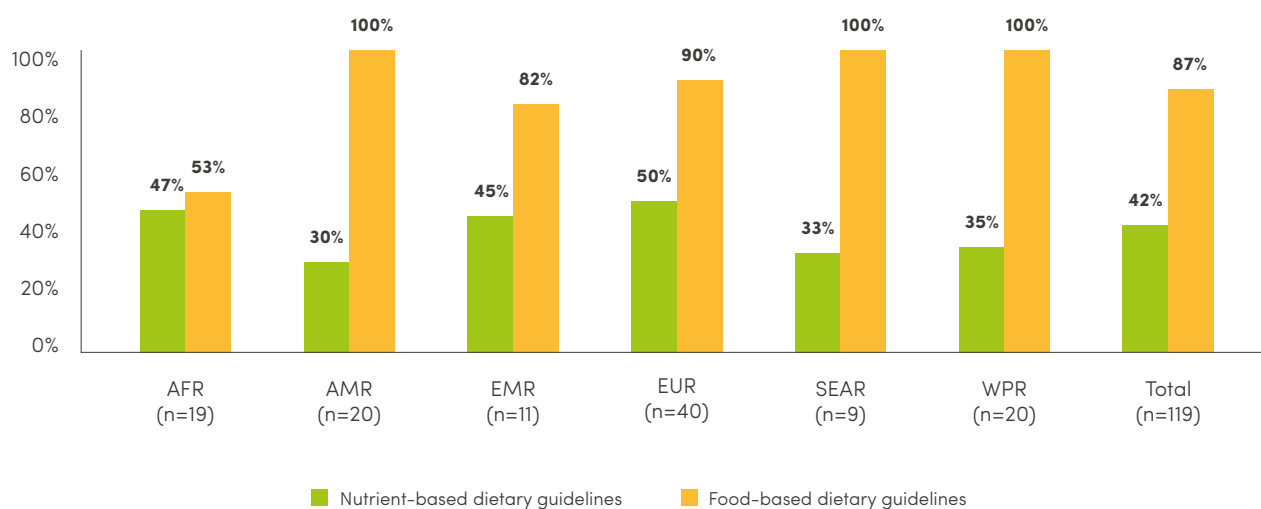
It was reported that dietary guidelines were disseminated through media, during campaigns, through the health system and in schools. The most common use of dietary guidelines was for guidance and promotion of healthy dietary practices, as well as nutrition education and nutrition campaigns (Fig. 3.52). Over half of the countries confirmed that they had specific food guides, in the forms of food pyramids, healthy plates, or various other shapes based on the national context (e.g. palm, tent, rainbow, coal pot or flag).

Many countries reported that their dietary guidelines also contained guidance on physical activity. Furthermore, several countries suggested that the successful implementation of dietary guidelines, particularly at the school level, should involve inclusion of the dietary guidelines in the school curriculum. Others reported that efforts to implement dietary guidelines at the community level should involve local leaders and community participation. Successful integration of environmental and health aspects into dietary guidelines, as proposed by the FAO (71), was also reported, and one country mentioned having estimated the potential economic gains of following the dietary guidelines.

<sup>1</sup> A total of 119 countries reported having different types of dietary guidelines, of which 81 provided detailed information.

FIGURE 3.50

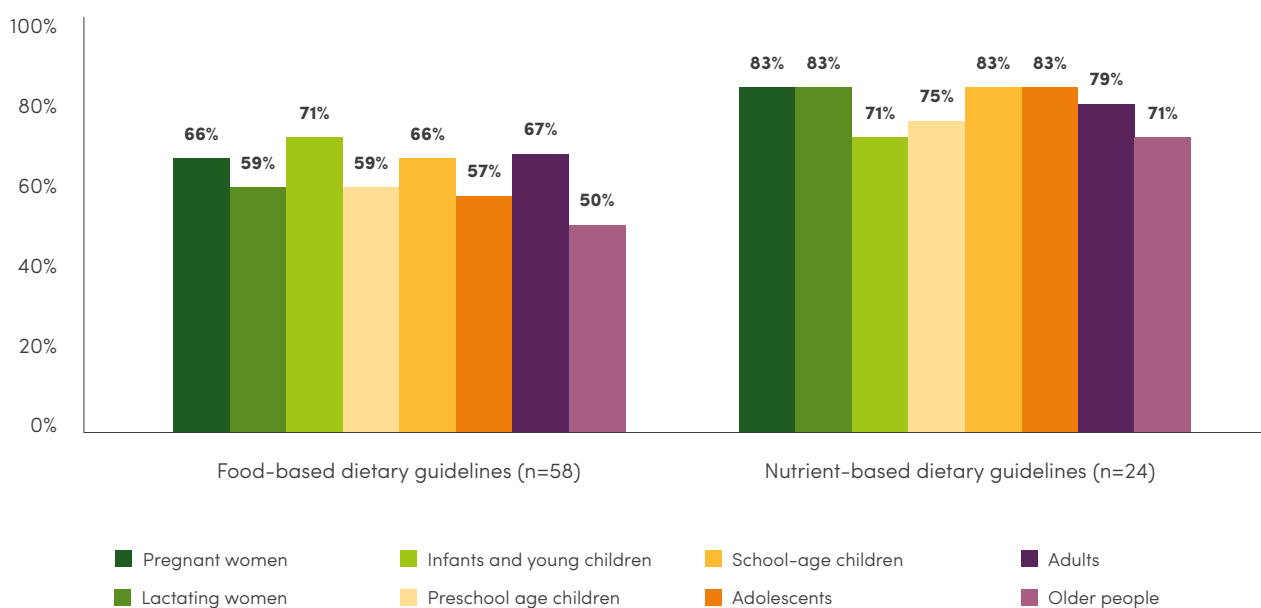
TYPE OF DIETARY GUIDELINES IN 119 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.51

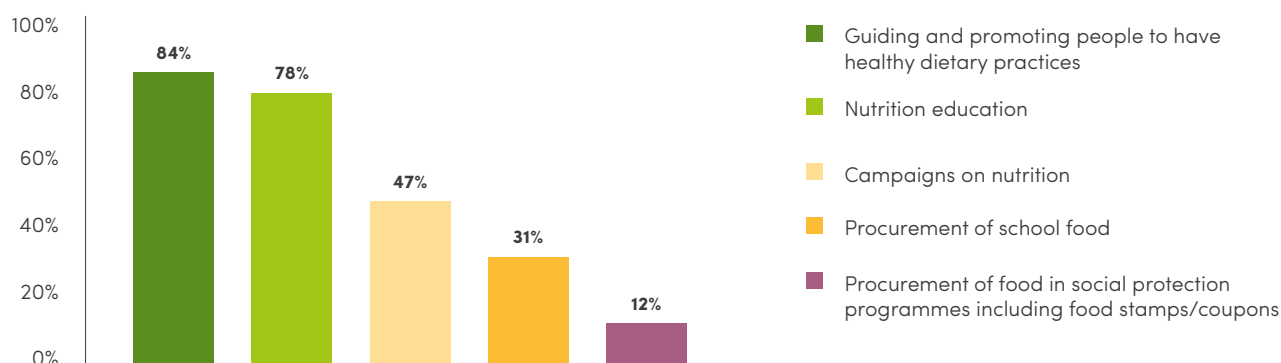
TARGET POPULATION GROUPS OF FOOD- AND NUTRIENT-BASED DIETARY GUIDELINES IN 112 COUNTRIES<sup>1</sup> PROVIDING DETAILED INFORMATION



<sup>1</sup> Based on those providing detailed information plus FBDGs reviewed from countries answering the top-level questionnaire, where documentation was obtained from the FAO FBDGs repository at <http://www.fao.org/nutrition/education/food-dietary-guidelines/home/en/>.

FIGURE 3.52

USE OF DIETARY GUIDELINES IN 81 COUNTRIES PROVIDING DETAILED INFORMATION



The most common types of **nutrition labelling** of pre-packaged foods and beverages concerned nutrient declaration and list of ingredients. **Nutrient declaration**<sup>1</sup> was reported by at least 80% of countries in the WHO regions of the Americas, Europe and the Western Pacific, but by less than half of the countries in the WHO regions of Africa and South-East Asia (Fig. 3.53). At an international level, the Codex guidelines on nutrition labelling provide detailed guidance on how nutrition labelling is to be implemented (72). Guideline updates over the past decade reflect alignment and policy coherence with WHO's policies and guidance on preventing NCDs. These include an expansion of the list of mandatory nutrients to be declared (i.e. total fat, saturated fatty acids, total sugars and salt/sodium) and establishment of nutrient reference values for NCDs (i.e. saturated fatty acids, salt/sodium and potassium) in accordance with WHO guidelines. Most countries providing detailed information reported that their nutrient declaration measures were mandatory, especially countries in the WHO regions of the Americas and Europe (Fig. 3.54). Most countries from the WHO regions of Africa and South-East Asia reported having voluntary nutrient declarations. In countries with mandatory measures, the most common nutrients to be disclosed (each >70%) were energy value and amounts of protein, available carbohydrate, total fat, salt/sodium and total sugars.

*Trans*-fatty acids, added sugars and dietary fibre were the nutrients that were least often included as mandatory nutrients ( $\leq 26\%$ ) (Fig. 3.55).

An increasing number of countries are developing and implementing **front-of-pack labelling (FOPL)** systems,<sup>2</sup> particularly countries in the WHO regions of the Americas, Europe and the Western Pacific (Fig. 3.53). In countries with FOPL systems, the information most often included on such labels was energy value, salt/sodium, total sugars, saturated fatty acids and total fat (Fig. 3.56). A mix of different elements was used to display this information, and sometimes several approaches were combined in these labels (Fig. 3.57). The most common elements were summary indicators, such as endorsement logos, which are designed to provide consumers with an easy visual representation of food quality. The second most common way of displaying nutrient content was the proportion of recommended daily intakes; that is, the percentage of the guideline daily amount (GDA). Other visual representation, such as the colour coding or traffic light system, was reported by 16% of countries, and warning symbols are being used by an increasing number of countries, in particular in the WHO Region of the Americas. The FOPL systems reported had been developed since 2009, and most were voluntary. Fewer than 10 countries reported actively monitoring

<sup>1</sup> Nutrient content declaration measures were reported by 106 countries, of which 73 reported or provided detailed information.

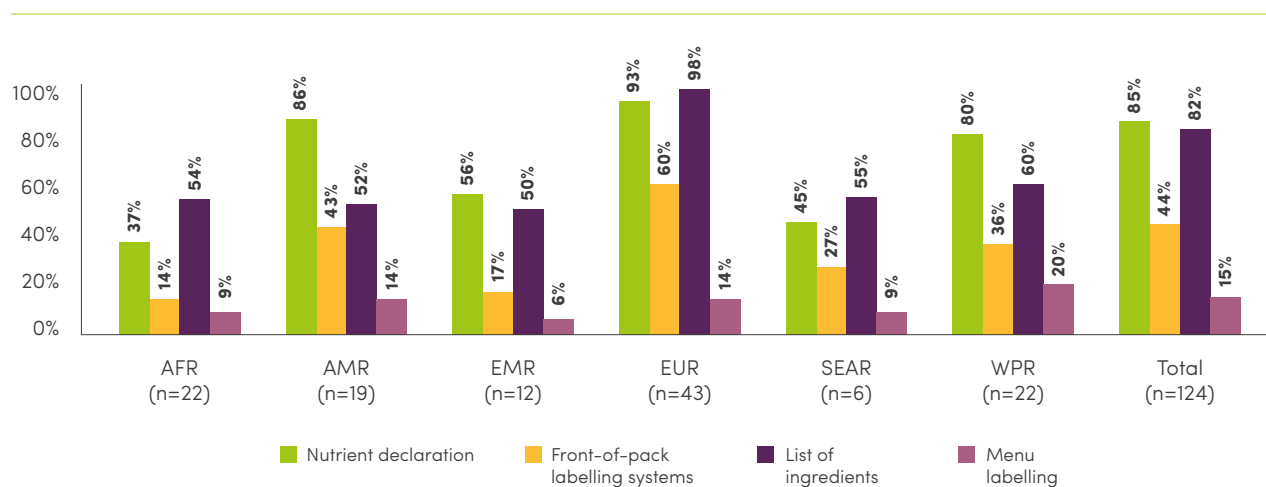
<sup>2</sup> FOPL systems were reported by 55 countries, of which 37 provided detailed information available.

whether food and beverage products bear the front-of-pack labels, and some of these countries indicated that the information was obtained directly from food and beverage industries. The Codex guidelines on nutrition labelling (72) also contain a provision for “supplementary nutrition information”, and the Codex Committee on Food Labelling has agreed to review the guidance on FOPL systems, taking into consideration WHO’s evidence-based reviews on nutrition labelling and related ongoing work.

**Menu labelling,**<sup>1</sup> which is an effective way of reducing energy consumed in restaurants and canteens (73), was less often implemented in all regions (Fig. 3.53). Menu labelling measures were typically voluntary, and where mandatory, such measures were often linked to a certification scheme such as “healthy cafeterias”. Menu labelling measures had typically been developed since 2012, and were most widely used by food chains. Energy content was the component most often displayed on menu labels.

**FIGURE 3.53**

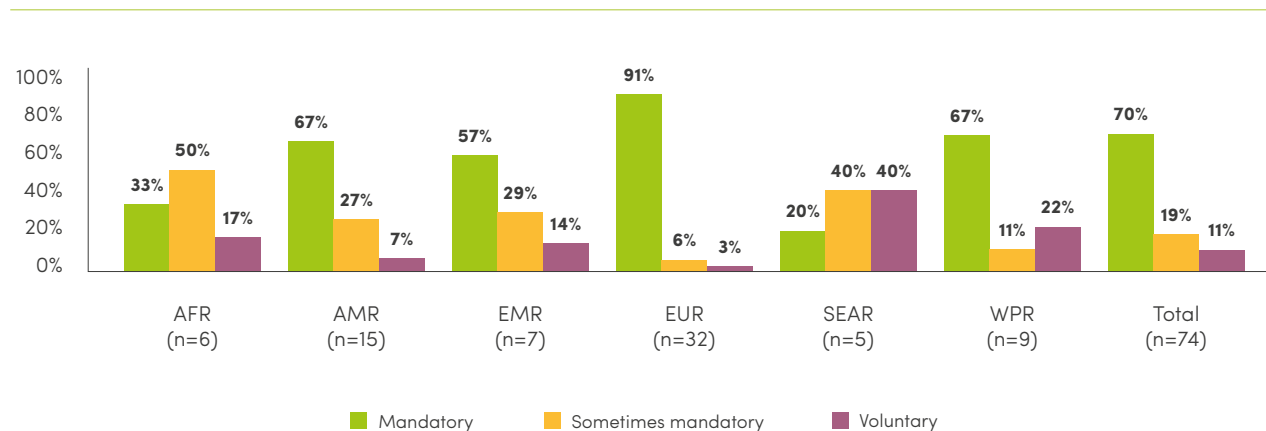
**TYPES OF NUTRITION LABELLING IN 124 COUNTRIES**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

**FIGURE 3.54**

**MANDATORY AND VOLUNTARY NUTRIENT CONTENT DECLARATION IN 74 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> Menu labelling was reported by 19 countries, of which 10 provided detailed information.

FIGURE 3.55

MANDATORY NUTRIENT CONTENTS TO BE DECLARED IN NATIONAL MEASURES ON NUTRIENT DECLARATION IN 66 COUNTRIES PROVIDING DETAILED INFORMATION

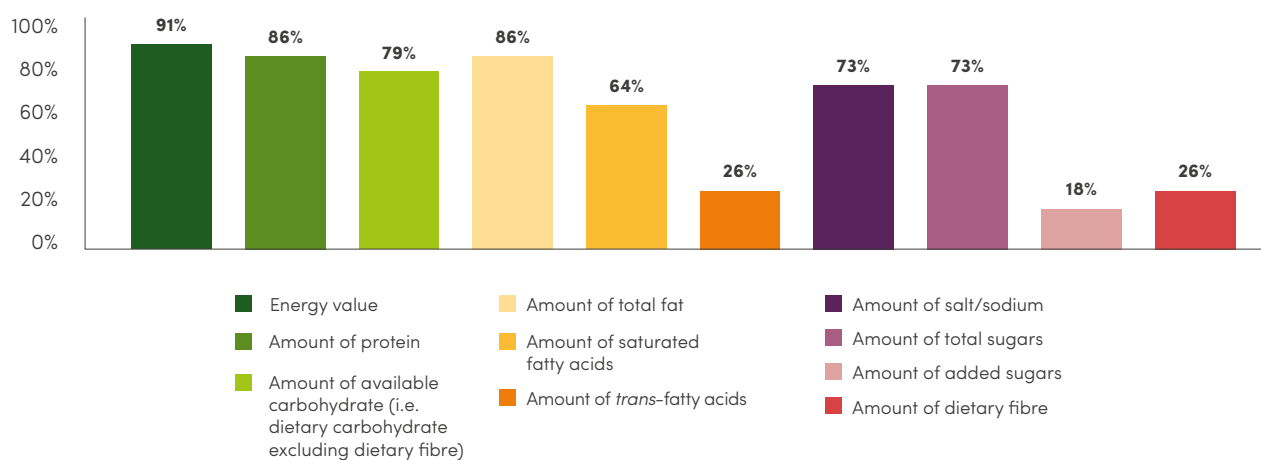


FIGURE 3.56

NUTRIENTS INCLUDED IN FRONT-OF-PACK LABELLING SYSTEMS IN 37 COUNTRIES PROVIDING DETAILED INFORMATION

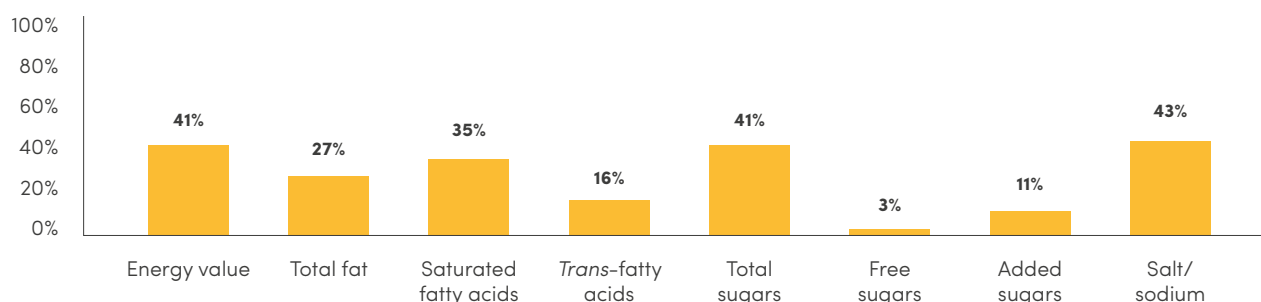
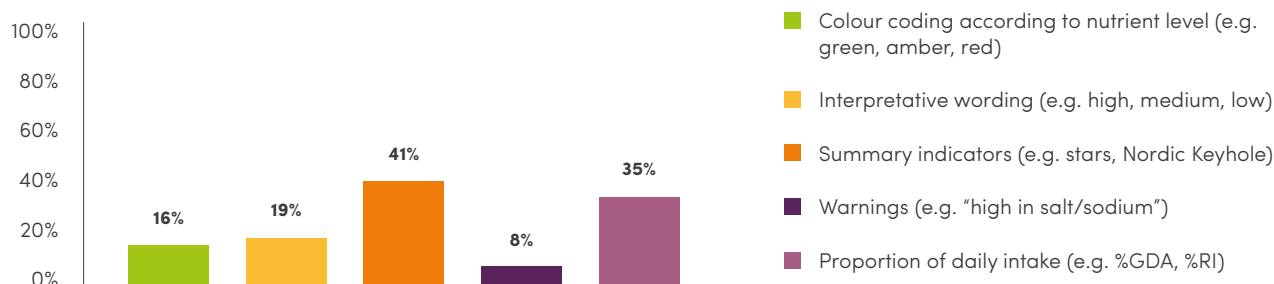


FIGURE 3.57

ELEMENTS USED BY COUNTRIES IN FRONT-OF-PACK LABELLING SYSTEMS IN 37 COUNTRIES PROVIDING DETAILED INFORMATION



GDA, guideline daily amount; RI, reference intake.

**Measures to regulate or guide nutrition and health claims**<sup>1</sup> (i.e. that the food produces a health benefit) were usually included in national labelling regulations, and typically used criteria based on specific nutrients or on requirements that the claim be substantiated (Fig. 3.58). Most countries in the WHO regions of the Americas, South-East Asia and the Western Pacific also used criteria based on predefined lists of foods and beverages. Virtually all countries with nutrient-based criteria followed the upper level conditions specified in the Codex guidelines for making claims that a product is “low” in or “free” from energy, total fat, saturated fatty acids, cholesterol, sugars, sodium and so on. Similarly, they used the lower level conditions specified in the Codex guidelines for making claims that a product is a “source” of or is “high” in protein, vitamins and minerals, dietary fibre and so on. Many countries also mentioned instances where claims were not allowed, such as products for infants and young children, alcoholic beverages and other “non-nutritious” products such as coffee, tea, kava and spices.

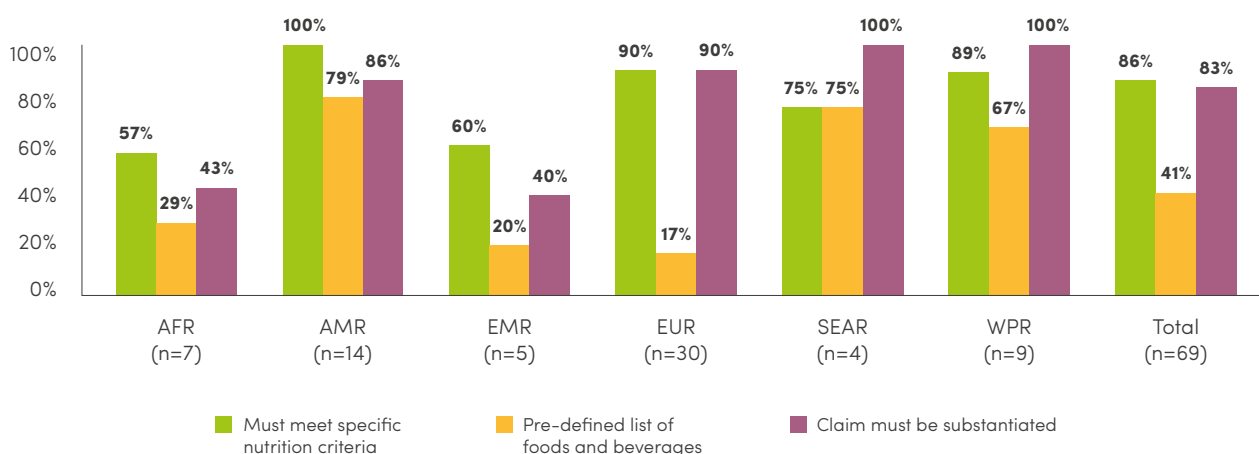
The earliest nutrition and health claims regulations dated from 1980, but most were developed since

2007, with almost a quarter developed since 2013, when the Codex guidelines incorporated nutrient reference values for noncommunicable diseases. Claims were often linked to nutrition labelling laws. Only 10 countries reported monitoring the use of claims, and a few of these countries referred to published reports that had studied the use and sometimes the impact of such claims. Many countries emphasized the need for nutrition and health claims to be based on evidence of impact. However, small and medium enterprises – which often make up the majority of food producers in many regions – may find such processes to be complex, time consuming and financially expensive (74).

A range of food and beverage products were subject to **reformulation to reduce the content of saturated fatty acids, trans-fatty acids, sugars and salt/sodium**.<sup>1</sup> The most common measures related to salt/sodium reduction, particularly in breads, but also in processed meat, cheeses, ready-made meals and sauces (Fig. 3.59). Sugars were most often reduced in yoghurts and sugar-sweetened beverages, saturated fatty acids from butter and cheeses, and *trans*-fatty acids from oils and margarines.

FIGURE 3.58

**NUTRIENT CRITERIA USED TO DETERMINE ELIGIBILITY OF NUTRITION AND HEALTH CLAIMS IN 69 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> Nutrition and health claims were reported by 82 countries, of which 69 provided detailed information.

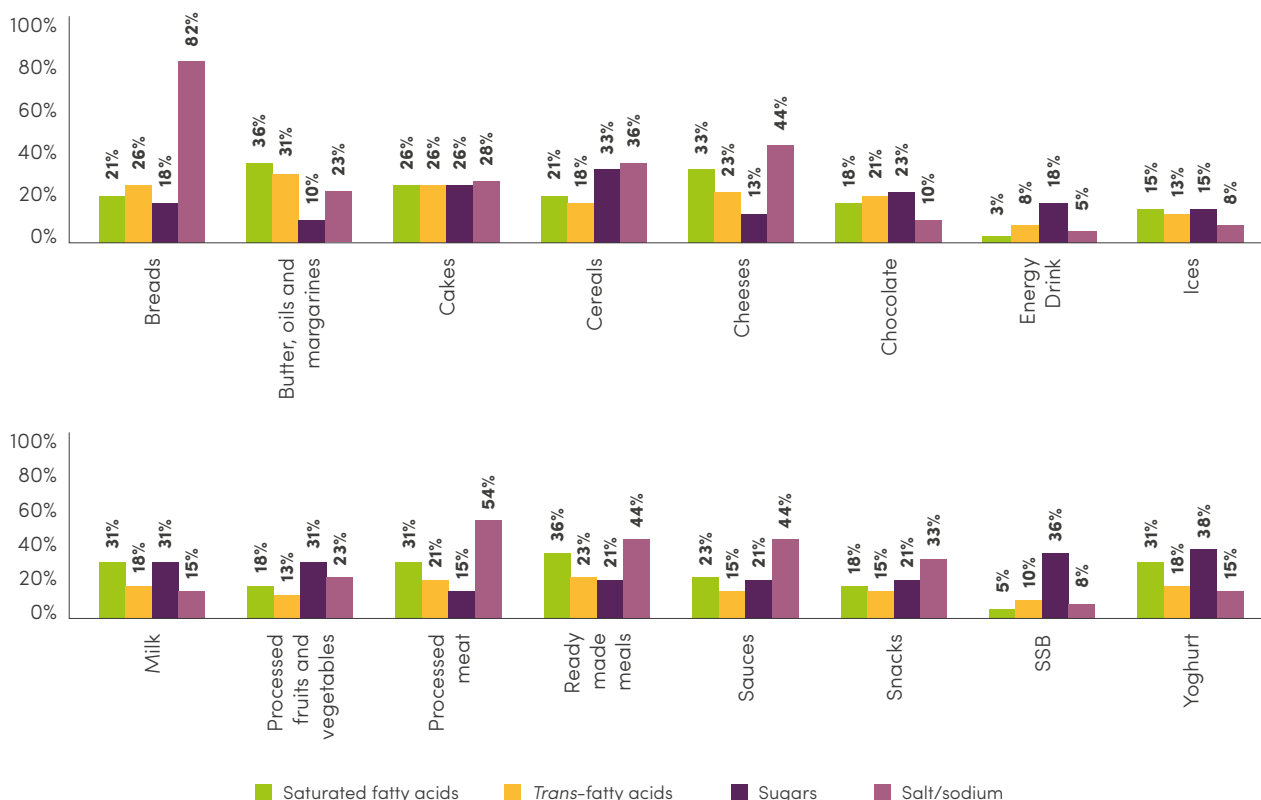
Guidelines and regulations on reformulation were usually voluntary and addressed salt/sodium reduction (Fig. 3.60). Less than half of the countries mentioned sugars reduction, and reduction of saturated fatty acids or *trans*-fatty acids. A relatively high proportion of reformulation measures for *trans*-fatty acids were mandatory, possibly reflecting the increasing number of countries with regulations banning *trans*-fatty acids. Two thirds of the countries had set specific reformulation targets, of which targets for salt/sodium were the most common. Some countries mentioned that reformulation targets have been set on hundreds of food products, whereas other countries focused on some key food sources (e.g. salt/sodium in breads and *trans*-fatty acids in oils) or foods targeted at vulnerable groups (e.g. school meal foods).

Countries usually worked with food industries on reformulation through voluntary commitments

from individual food companies, although many also described cross-sectoral agreements (e.g. all bread manufacturers). Guidelines and regulations on reformulation were usually linked to salt/sodium reduction, although some mentioned sugar-sweetened beverage policies or a ban on *trans*-fatty acids; in some cases, reformulation was part of requirements for implementing FOPL systems. Some countries described negotiating reformulation targets with the food and beverage industries, whereas others called for more voluntary actions. Often, the challenge for smaller countries is that much of the processed food is produced outside the country, so dialogue must take place with manufacturers abroad. Along with governments' efforts to stimulate reformulation and consumer demand, the food retailers play an important role in driving the demand for healthier foods and beverages through continuous campaigns on healthier choices.

FIGURE 3.59

**FOODS AND BEVERAGES SUBJECT TO REFORMULATION OF FOUR NUTRIENTS IN 39 COUNTRIES PROVIDING DETAILED INFORMATION**

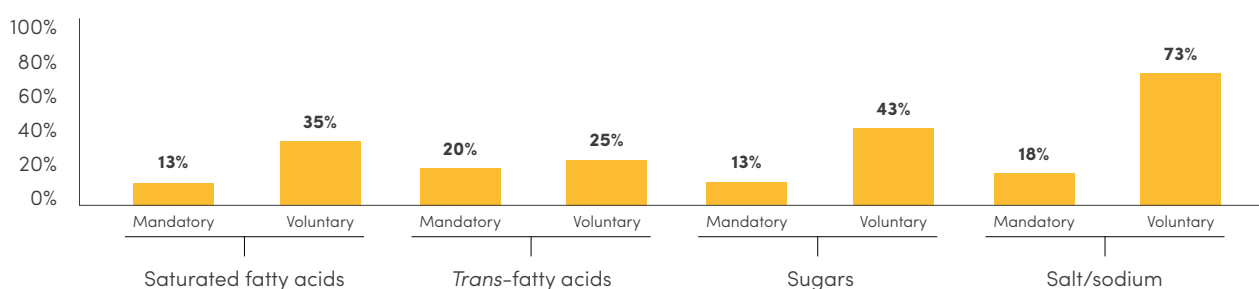


<sup>1</sup> Processes for reformulation of unhealthy food and beverage products were reported by 62 countries, of which 48 provided detailed information.



FIGURE 3.60

MANDATORY AND VOLUNTARY REFORMULATION IN 40 COUNTRIES PROVIDING INFORMATION



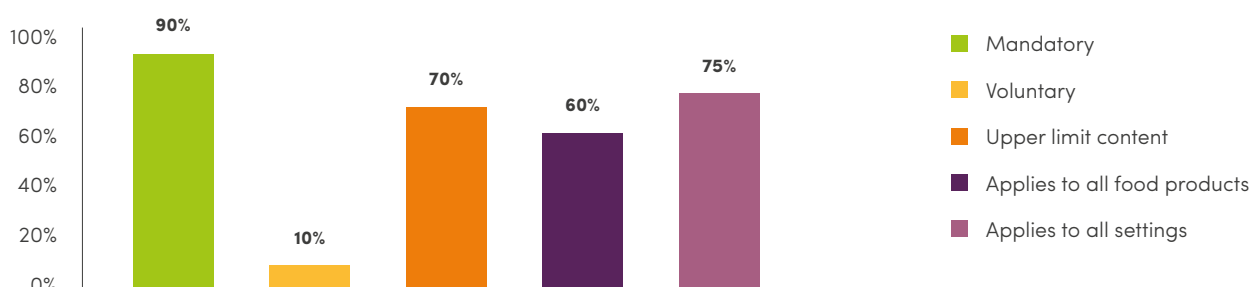
*Trans*-fatty acids can be industrially produced by the partial hydrogenation of vegetable and fish oils, but also occur naturally in meat and dairy products from ruminant animals (e.g. cattle, sheep, goats and camels). Industrially produced *trans*-fatty acids are the predominant source of dietary *trans*-fatty acids in most populations, and can be found in baked and fried foods (e.g. doughnuts, cookies, crackers and pies), prepared snacks, and partially hydrogenated cooking oils and spreads. A number of countries have begun introducing **bans on industrially produced *trans*-fatty acids<sup>1</sup>** through legislative measures. The earliest of these legislative documents was from 2006, but most were from 2014 onwards. The vast majority of bans on *trans*-fatty acids were mandatory (Fig. 3.61).

Bans typically applied to all foods and all settings; however, in some countries, they only applied to schools, imported food, oils or margarines, or infant and young child foods. Just four countries mentioned that the *trans*-fatty acid content of foods (especially cakes, snacks, oils and margarines, but also breads, processed meats, sauces and ice creams) was being monitored to ensure compliance with the bans. Three countries had previous assessments, and two of these reported reductions of *trans*-fatty acid levels over time.

Several countries that did not currently have a ban mentioned that they were planning such bans or, in many cases, they observed that some food manufacturers had voluntarily reduced the level of *trans*-fatty acids.

FIGURE 3.61

SCOPE OF BANS ON *TRANS*-FATTY ACIDS IN 20 COUNTRIES PROVIDING DETAILED INFORMATION



<sup>1</sup> Bans on *trans*-fatty acids were reported by 29 countries, of which 20 provided detailed information.

Interest in using **fiscal policies** to control the consumption of unhealthy foods has increased since 2011, when the UN General Assembly recommended fiscal measures as a means to improve diets and address NCDs as a matter of priority in national development plans (9). More than half of the countries with fiscal policies<sup>1</sup> had increased taxes on unhealthy foods and beverages, and almost a quarter had introduced subsidies on healthier foods and beverages (Fig. 3.62).

**Increased taxes on unhealthy foods and beverages**<sup>2</sup> were most often applied to sugar-sweetened beverages, followed by non-sugar-sweetened beverages, energy drinks and juices. The earliest taxes reported on unhealthy foods originated in the 1920–1930s with a “luxury tax” on carbonated beverages and chocolate – not for health purposes but to create income. Most of the tax laws on unhealthy foods and beverages were from 2011 or later. The criteria for determining whether foods and beverages are taxable or not were most often based on sugars levels and sometimes on energy density. Taxation of sugar-sweetened beverages was the most common taxation measure; however, many of these measures excluded 100% fruit juices and sweetened or flavoured milk-based beverages from the taxation base. Other measures were based only on the content of added sugars and not on the free sugars present in fruit and vegetable juices, which are released from the cell walls during the process of squeezing the juice. These omissions are not in line with the guidance on sugars intake for adults and children, because these beverages are often just as high, or even higher in sugars and calories as most other sugar-sweetened beverages. Finally, several countries reported tax policies intended to induce a consumer price preference for healthier foods, but it was not clear whether the policies would encourage healthier behaviours. For example, some countries had taxes of 10–20% on all beverages, but it was unclear from the laws whether the higher range was applied for unhealthier varieties (e.g. sugar-sweetened beverages) and the lower

range for healthier options (e.g. aerated waters). In 2015, WHO convened a technical meeting, which concluded that there is reasonable and increasing evidence that appropriately designed taxes on sugar-sweetened beverages would result in proportional reductions in consumption, especially if the taxes were aimed at raising the retail price by 20% or more (75).

The earliest measures to ensure **subsidies on healthier foods and beverages**<sup>3</sup> were from the 1960s. From the few countries that provided details on the measures employed, the subsidized products included milk, breads, pasta or rice, cereals, yoghurt, cheeses, oils, fresh meat, and fruit and vegetables.

Few countries reported **removing taxes**<sup>4</sup> or **subsidies**<sup>5</sup> as a means of encouraging healthier dietary patterns. Of those providing any details, taxes had been removed on milk, breads, pasta or rice in one country, and on fruit and vegetables in another country, whereas subsidies had been removed on palm oil in a third country.

Few countries had evaluated their fiscal policies in support of healthier diets. One exception was the evaluation of the tax on sugar-sweetened beverages in Mexico, which observed reduced purchases of taxed beverages containing sugars and increased purchases of other beverages such as bottled water (76). The results achieved in Mexico also suggested that the level of tax should be at least 20% of the price (77), and that such taxes should be accompanied by other measures – for example, increased access to and availability of drinking-water, or promotion of healthy foods and beverages – and by changing agricultural practices to increase local production of healthy foods and beverages. Some countries commented that subsidies are easier to implement and monitor than taxes. Other countries mentioned the challenges of economic cooperation and industry complaints as a result of taxation of unhealthy foods and beverages.

<sup>1</sup> Use of fiscal policies to improve dietary intakes was reported by 39 countries, of which 25 provided detailed information.

<sup>2</sup> Increased taxes on unhealthy foods and beverages were reported by 21 countries, of which 12 provided detailed information.

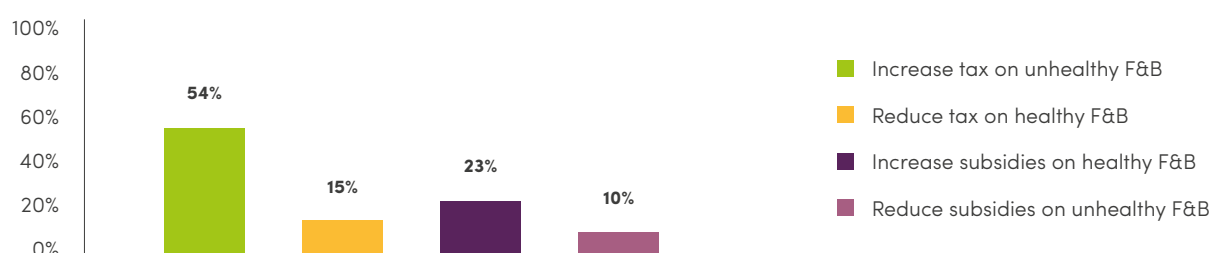
<sup>3</sup> Subsidies on healthier foods and beverages were reported by nine countries, of which four provided details.

<sup>4</sup> Removing tax from healthier foods and beverages was reported by six countries, of which two provided details.

<sup>5</sup> Removing subsidies on unhealthy foods and beverages was reported by four countries, of which one provided details.

FIGURE 3.62

TYPE OF FISCAL POLICIES AMONG 39 COUNTRIES PROVIDING DETAILED INFORMATION



F&B, foods and beverages.

Many countries, especially in the WHO European Region, had implemented measures related to the **regulation of marketing of foods and non-alcoholic beverages to children**,<sup>1</sup> which was recommended by the World Health Assembly in 2010 (78). The main purpose of the World Health Assembly recommendation was to guide efforts by Member States to design new policies or strengthen existing policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fatty acids, *trans*-fatty acids, sugars or salt/sodium. Evidence indicates that marketing of unhealthy foods and beverages increases dietary intake and preference for energy-dense, nutrient-poor foods and beverages (79). The food industry spends an estimated US\$ 40 billion a year globally on advertising processed and often unhealthy foods and beverages (80). Moreover, children are often the ones most likely to be targeted by such marketing (81).

The measures reported for regulating such activities were either guidelines or codes, and although these were mostly mandatory, not all were incorporated into laws or regulations. Some countries had adopted laws specifically for advertising of foods and beverages to children, other countries had measures focusing more on promoting healthy diets in which marketing was one component, and some other countries again had more general

advertising laws. Most countries reported that the ministry of health was responsible for developing the approach, but some countries reported that industry was either responsible for or very involved in developing voluntary guidelines (e.g. being active in public-private partnerships with government to develop guidelines), in developing nutrient criteria or lists of specific food and drink products (e.g. fast food, sugar-sweetened beverages or energy drinks), or in performing self-regulation.

The principal objectives of regulation were to reduce children's exposure to marketing of unhealthy foods and beverages, prevent misleading marketing to children, reduce or prevent childhood obesity, and foster healthy diets and lifestyle habits. Most of the 18 countries that had set a definition of age of children covered by the measures reported that it applied to children up to the age of 12 or 13 years. Two countries reported that it applied to children up to the age of 18 years, and one that it applied to children up to the age of 9 years.

Countries reported a mix of different approaches employed to define which foods and beverages are covered in the regulatory or other measures to control the advertising of foods to children (Fig. 3.63). Some measures covered all foods and beverages; however, more than half of the countries used specific food and drink products or categories, and

<sup>1</sup> Measures taken regarding the marketing of foods and non-alcoholic beverages to children were reported by 43 countries, of which 30 provided detailed information.

FIGURE 3.63

APPROACH USED TO DEFINE FOODS AND BEVERAGES COVERED BY THE REGULATORY OR OTHER MEASURES IN 17 COUNTRIES PROVIDING DETAILED INFORMATION

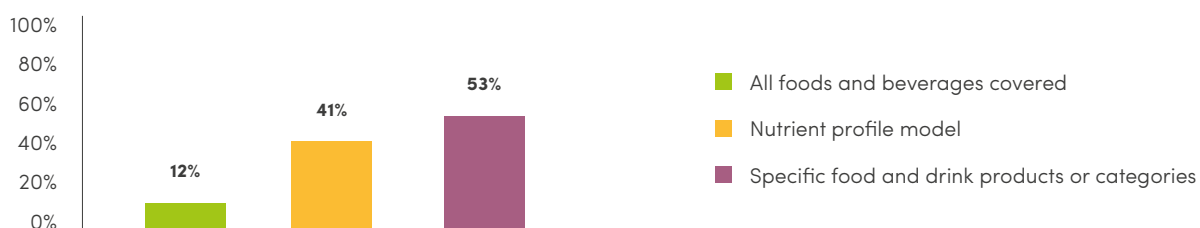
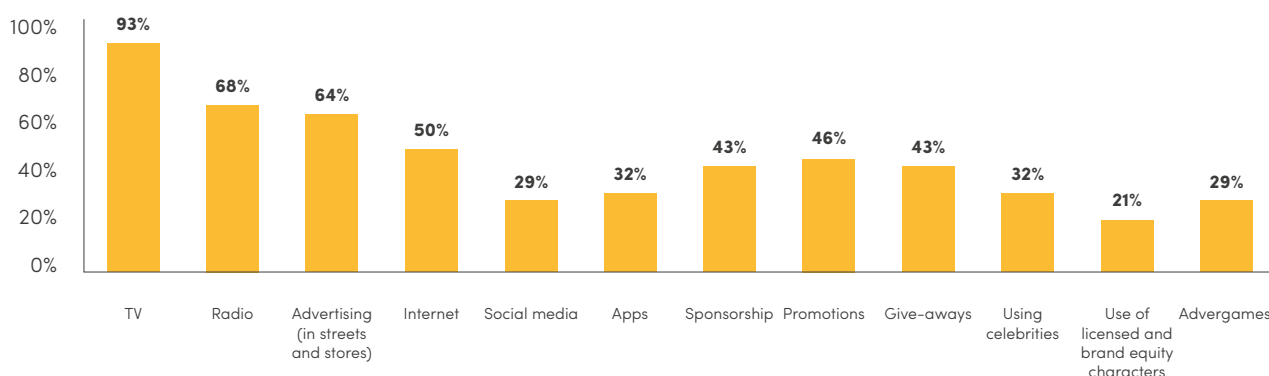


FIGURE 3.64

COMMUNICATION CHANNELS COVERED BY MEASURES TO REGULATE MARKETING OF FOODS AND NON-ALCOHOLIC BEVERAGES TO CHILDREN IN 28 COUNTRIES PROVIDING DETAILED INFORMATION



many countries had developed a nutrient profile model based on the existing regional models (82-86). More than half of the countries reported that television, radio and outdoor advertising were covered by their regulatory or other measures (Fig. 3.64). However, many other communication channels are also used, including promotions, sponsorships, Internet advertisements and social media platforms.

Over the past 4 decades, portion sizes have progressively increased in most higher income countries (87, 88). From 1977 to 1998, portion sizes and energy intakes for a variety of foods

have increased markedly, especially in fast food establishments in the United States of America (USA) (87). This trend continued through the first decade of the 21st century, with new large-sized portions introduced for hamburgers, burritos, candy bars and beverages (88). Although systematic reviews confirm that people consistently consume more food and drink when offered larger sized portions than when offered smaller sized ones (89, 90), few countries reported measures related to **portion size control**.<sup>1</sup> Furthermore, many of the measures implemented were based on information to consumers rather than structural changes in the food and drink environment. Approaches relying

<sup>1</sup> Measures related to portion size control were reported by 18 countries, of which 14 provided detailed information.

on consumer education included guidelines on “healthy plates”, showing right serving size and composition (often as part of FBDGs), and efforts to ensure that advertisements show appropriate portions. Although behavioural interventions may change eating patterns and attitudes of children and their parents and caregivers, changing the food and drink environment through regulatory actions would lead to a reduction in the portion sizes. In this respect, some countries reported implementing mandatory serving sizes in schools based on school food standards.

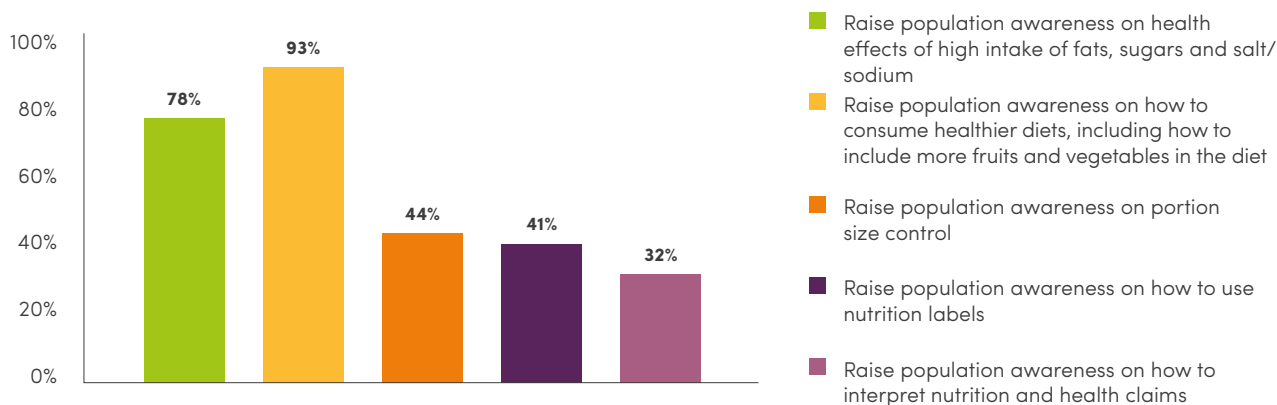
Some countries without measures noted that the food and beverage industry had taken steps to reduce portion sizes of sugar-sweetened beverages and snacks. One country said that this happened after the government introduced stricter labelling (e.g. a mandatory GDA). Despite the common reliance on industry self-regulation and private–public partnerships, there is no evidence of their effectiveness or safety. Public regulation

and market interventions are the only evidence-based mechanisms to prevent harm caused by the unhealthy commodity industry (91).

Many countries reported that they were implementing **media campaigns**.<sup>1</sup> The great majority were conducted for limited time periods and dated from 2015 or later, whereas continuous campaigns were much less frequent. The objectives of the media campaigns generally related to raising awareness on how to consume healthy diets, including increasing fruit and vegetable consumption and raising awareness of the health effects of high dietary intakes of fats, sugars and salt/sodium (Fig. 3.65). Less frequent were objectives related to portion size control, how to use nutrition labels, and the interpretation of nutrition and health claims; hence, these constitute potential areas for improvements. Many countries also mentioned that these media campaigns included the promotion of physical activity, IYCF, the use of local products, the use of fortified foods, and food safety and hygiene.

**FIGURE 3.65**

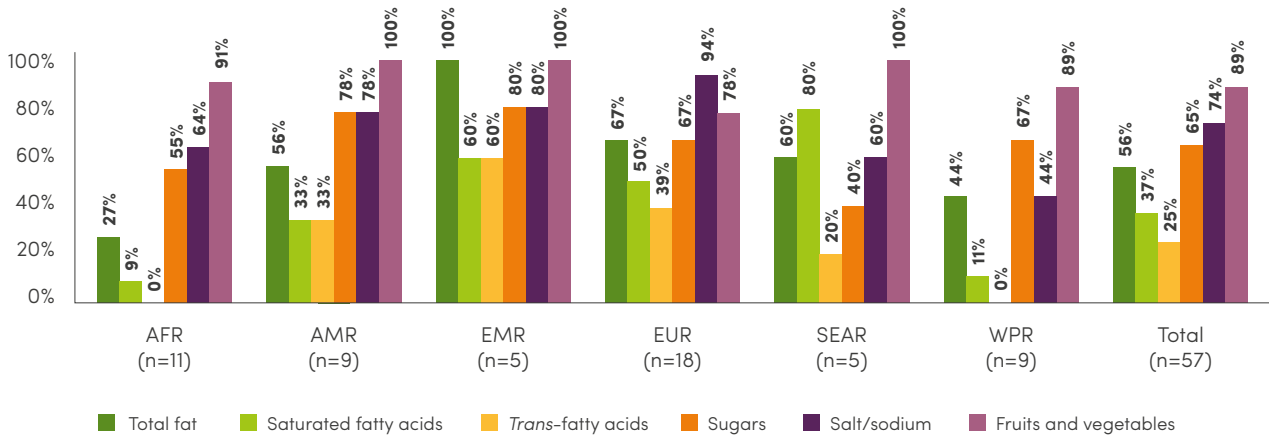
**OBJECTIVES OF MEDIA CAMPAIGNS IN 59 COUNTRIES PROVIDING DETAILED INFORMATION**



<sup>1</sup> Implementation of media campaigns was reported by 110 countries, of which 64 provided detailed information on a total of 106 campaigns, with 25 countries reporting on more than one campaign.

FIGURE 3.66

NUTRIENTS AND FOODS ADDRESSED IN MEDIA CAMPAIGNS  
IN 57 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

Most countries in all regions had campaigns to increase consumption of fruit and vegetables (Fig. 3.66). In the WHO European Region, campaigns on salt/sodium reduction were most frequent, whereas in the WHO Eastern Mediterranean Region, reduction of total fat intake was most frequent, along with increased fruit and vegetable intake. Campaigns focusing on reduction of sugars intake were conducted by most of the countries in the WHO regions of the Americas, the Eastern Mediterranean, Europe and the Western Pacific. Countries in the WHO Eastern Mediterranean Region most consistently focused on a wide range of nutrients and foods in their campaigns. *Trans*-fatty acids were the least frequently addressed in campaigns, globally and in all regions. A published literature review found that media campaigns for fruit and vegetable consumption, fat intake and breastfeeding were the most successful compared with other health topics (92).

The channels most often used for media campaigns on nutrition were television, radio and Internet (including social media). Other channels less frequently mentioned were printed material such as pamphlets and handouts, as well as billboards and posters, and outreach through traditional arts

and performances or mobile vans. The media campaigns targeted the entire population in most countries. Some countries' campaigns targeted food-supply actors; such campaigns were largely focused on reducing salt/sodium, or increasing fruit and vegetable consumption.

Several countries highlighted the importance of a mix of strategies. This aligns with evidence in the literature that, although mass media campaigns alone can influence knowledge related to healthy behaviours, the use of laws and entertainment and education-based approaches are more likely to affect those behaviours (93). Further lessons learned included the importance of role models and the positive deviance approach for achieving behaviour change, including the need to balance negative and positive messages; that is, the "dos" and the "don'ts".

Many countries reported providing **education and counselling on nutrition and healthy diets**,<sup>1</sup> most often through primary health care (Fig. 3.67). In some countries, this was not yet a routine service, and would only be delivered in large hospitals, or to individuals at risk of obesity or NCDs. One country reported providing a nutrition counselling

<sup>1</sup> Implementation of counselling on healthy diets and nutrition was reported by 129 countries, of which 88 provided detailed information.

programme as a “green prescription”, offering participation in a total of five meetings to discuss what constitutes a healthy diet and how to achieve it. Workplaces, markets or other food outlets, and food security programmes represent underused opportunities where nutrition education may be strengthened.

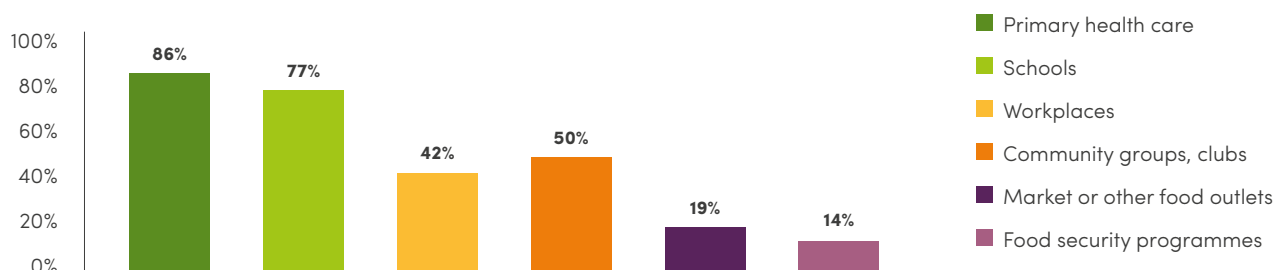
Nutrition education activities are most effective when they involve multiple components and are implemented alongside changes in the food and drink environment (94). Countries frequently reported the use of various tools for nutrition education, with the vast majority of these referring to FBDGs, and some to other tools such as flip charts, images, motivational interviewing and leaflets. The most common forms and approaches

used in the delivery of nutrition education were information education and communication with aids such as pamphlets, posters, guidelines and question–answer sessions (Fig. 3.68). However, less than 50% of countries reported effective counselling through targeted behaviour change communication or participatory dialogue.

The most common areas covered in these nutrition education activities were the health effects of high intakes of fats, sugars and salt/sodium, and how to consume healthier diets including more fruit and vegetables (Fig. 3.69). Less frequently, the nutrition education and counselling was related to portion sizes or gave practical skills on how to use nutrition labels or interpret nutrition and health claims.

**FIGURE 3.67**

**SETTINGS WHERE NUTRITION EDUCATION AND COUNSELLING ON HEALTHY DIETS IS PROVIDED IN 88 COUNTRIES PROVIDING DETAILED INFORMATION**



**FIGURE 3.68**

**FORMS OR APPROACHES USED IN DELIVERING NUTRITION EDUCATION IN 88 COUNTRIES PROVIDING DETAILED INFORMATION**

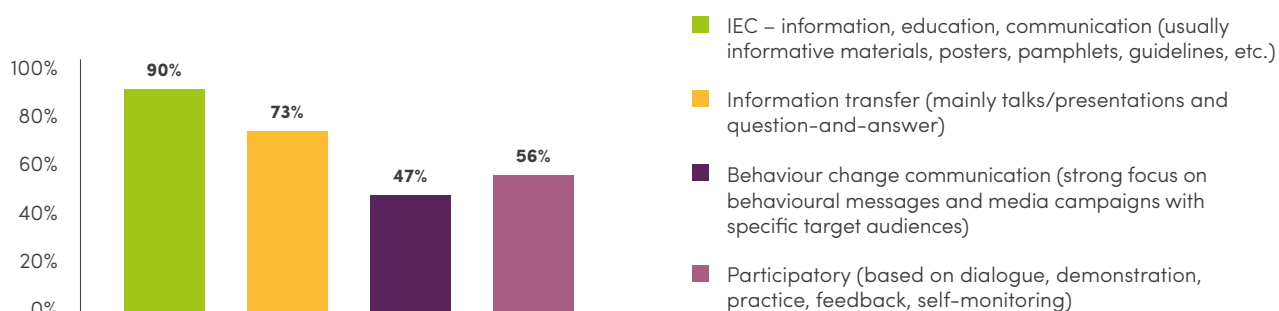
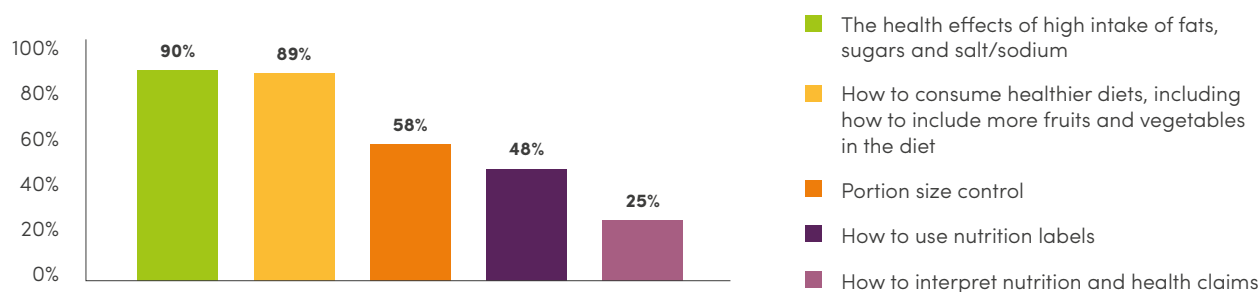


FIGURE 3.69

**CONTENT COVERED IN NUTRITION EDUCATION AND COUNSELLING ACTIVITIES  
IN 88 COUNTRIES PROVIDING DETAILED INFORMATION**



**3.5.4 Actions related to vitamin and mineral nutrition**

The best way to prevent vitamin and mineral deficiencies is to ensure consumption of a balanced and diversified diet that is adequate in all micronutrients. Unfortunately, this is not being achieved everywhere, as indicated by the high prevalence of anaemia, vitamin A deficiency and iodine deficiency disorders (95, 96).<sup>1</sup> Actions to further improve vitamin and mineral nutrition beyond a balanced diet generally include micronutrient supplementation and fortification of foods with micronutrients.

A total of 164 countries responded to the questionnaire concerning their actions to improve vitamin and mineral nutrition. **Vitamin and mineral supplementation<sup>2</sup>** was most often targeted at pregnant women, as reported by more than 90% of countries in all WHO regions except the WHO European Region (Fig. 3.70). In many regions, pregnant women often attend ANC at later stages of pregnancy (97); hence, reaching them in the

pre-pregnancy period may be equally important. However, no more than half of the countries in any region reported having supplementation schemes targeted at women of reproductive age. In contrast, supplementation schemes targeted at children were more common, and were reported by more than 80% of countries in the WHO regions of Africa, the Eastern Mediterranean and South-East Asia.

WHO recently issued comprehensive guidance on ANC for a positive pregnancy experience (98); this guidance recommends daily iron and folic acid supplementation for all pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight and preterm birth. It also contains context-specific recommendations for intermittent iron and folic acid supplementation, where daily iron is not acceptable due to side-effects or in areas where anaemia prevalence of pregnant women is below 20%; calcium supplementation in populations with low dietary calcium intake; and vitamin A supplementation in areas where vitamin A deficiency is a severe public health problem.

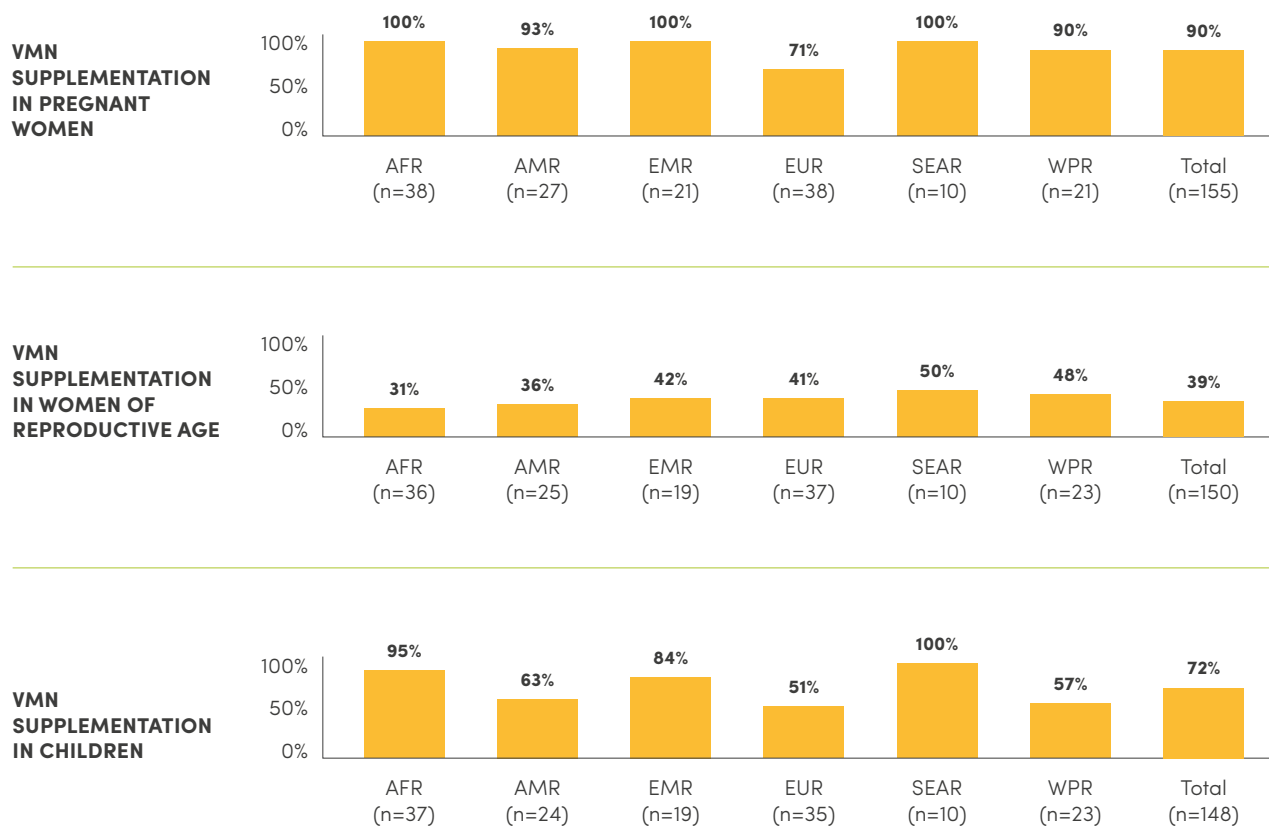
<sup>1</sup> WHO. Trends in anaemia in women and children: 1995 to 2016. Forthcoming.

<sup>2</sup> Actions related to vitamin and mineral nutrition supplementation schemes were reported by 164 countries, of which 129 provided detailed information.



FIGURE 3.70

TARGET GROUPS OF VITAMIN AND MINERAL SUPPLEMENTATION IN 164 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; VMN, vitamin and mineral nutrition; WPR, WHO Western Pacific Region.

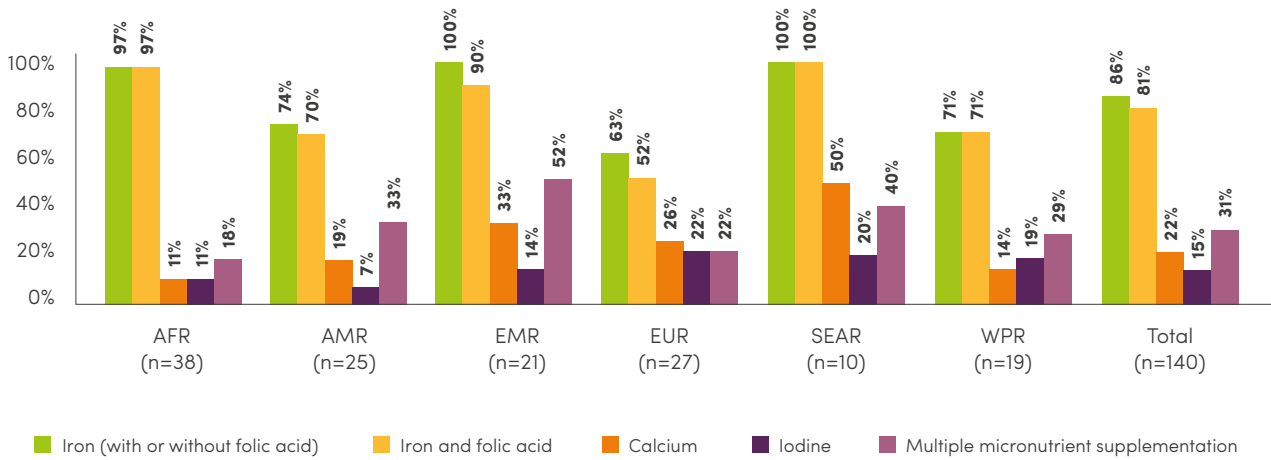
The most common **vitamin and mineral supplementation programme for pregnant women<sup>1</sup>** was iron, usually in the form of iron combined with folic acid and taken daily (Fig. 3.71). The provision of other vitamin and mineral supplements during pregnancy was much less common, including multiple micronutrient supplements, calcium, iodine and vitamin A. Some regions report higher implementation; for example, calcium in the WHO South-East Asia Region and multiple micronutrient supplementation in the WHO Eastern Mediterranean Region. Multiple micronutrient

supplementation did not seem to be in lieu of iron and folic acid supplementation, because most countries reporting the former also implemented the latter. Few countries specified the composition of the multiple micronutrients provided. Only one in 12 countries providing detailed information on calcium dose reached 1500 mg per day, indicating challenges in the feasibility of implementing this recommendation, in addition to the costs of the supplements. Low-dose supplementation of vitamin A in pregnant women was reported by only one country in the WHO Eastern Mediterranean Region.

<sup>1</sup> Implementation of vitamin and mineral supplementation schemes targeted at pregnant women were reported by 140 countries, of which 102 provided detailed information.

FIGURE 3.71

DIFFERENT VITAMINS AND MINERALS PROVIDED TO PREGNANT WOMEN IN 140 COUNTRIES



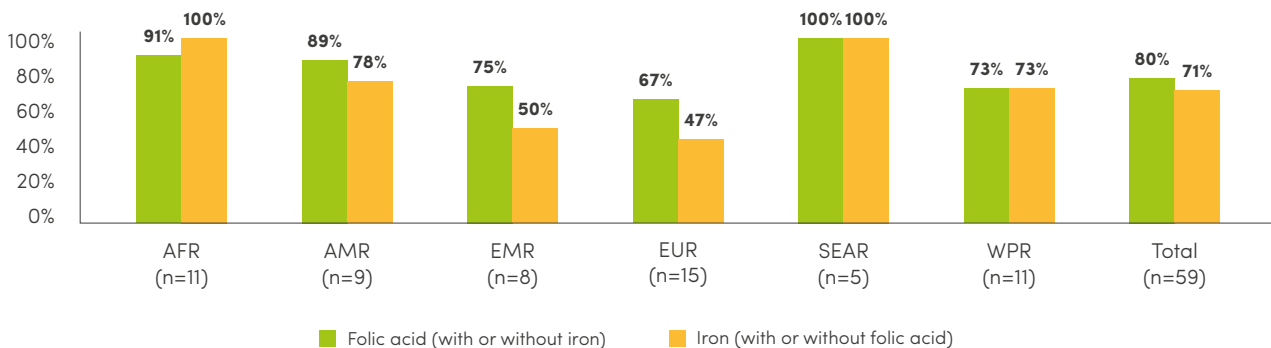
AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

The most common **vitamin and mineral supplementation schemes targeted at women of reproductive age<sup>1</sup>** were folic acid followed by iron, with the most common supplements being iron and folic acid combined (Fig. 3.72). WHO recommends periconceptual folic acid supplementation to prevent neural tube defects.<sup>2</sup> The WHO recommendation for the prevention of anaemia and iron deficiency in menstruating adult

women and adolescent girls is intermittent iron and folic acid supplementation in populations where the prevalence is 20% or higher (99), and daily supplementation where the prevalence of anaemia is 40% or higher (100). Countries in the WHO regions of Europe, South-East Asia and the Western Pacific reported weekly iron–folic acid supplementation schemes to this target group, whereas daily schemes were more common in the other regions.

FIGURE 3.72

DIFFERENT VITAMINS AND MINERALS PROVIDED TO WOMEN OF REPRODUCTIVE AGE IN 59 COUNTRIES



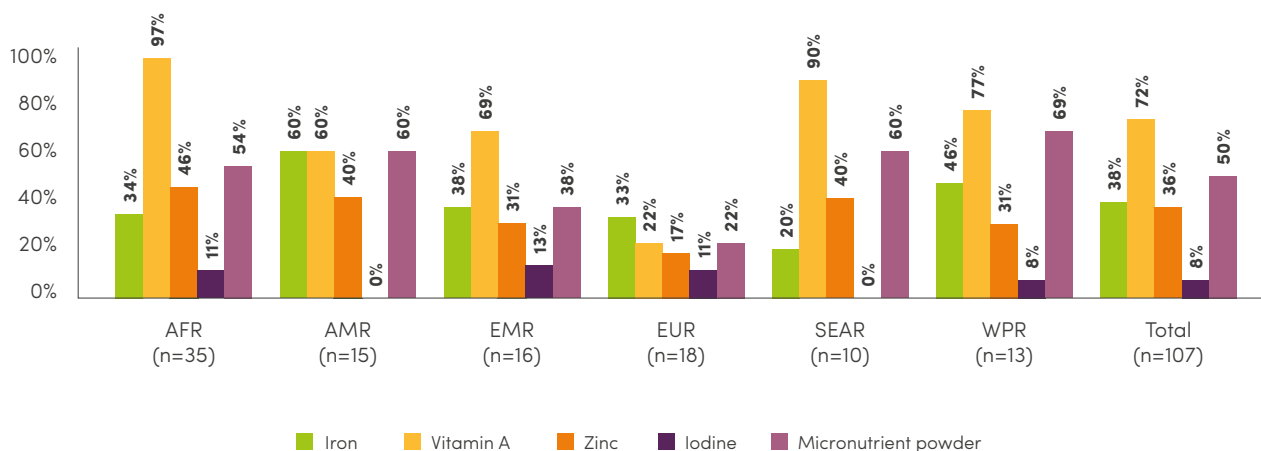
AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> Implementation of vitamin and mineral supplementation schemes targeted at women of reproductive age were reported by 59 countries, of which 42 provided detailed information.

<sup>2</sup> Periconceptual folic acid supplementation to prevent neural tube defects. Available at [http://who.int/elena/titles/folate\\_periconceptual/en/](http://who.int/elena/titles/folate_periconceptual/en/).

FIGURE 3.73

DIFFERENT VITAMINS AND MINERALS PROVIDED TO CHILDREN IN 107 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

The most common type of **vitamin and mineral supplementation in children<sup>1</sup>** was vitamin A, especially in the WHO regions of Africa and South-East Asia, but also in parts of other WHO regions where vitamin A deficiency is a public health problem. High-dose vitamin A supplementation is recommended in infants and children aged 6–59 months in settings where vitamin A deficiency is a public health problem (Fig. 3.73) (101). Many of these programmes were initiated in the 1970s or earlier, and countries have reported successfully integrating strategies to deliver vitamin A supplements to infants and children, together with immunizations during routine health visits and through periodic outreach on child health days.

The next most commonly reported micronutrient supplements provided to children were multiple MNPs. WHO has recently recommended iron-containing MNPs for point-of-use fortification of foods consumed by infants and young children aged 6–23 months and children aged 2–12 years in populations where the prevalence of anaemia in children is a public health problem (102). All of the MNP programmes were initiated in 2008 or later. In settings where anaemia is highly prevalent, daily iron supplementation is recommended for these children for 3 consecutive

months in a year, as a public health intervention for preventing iron deficiency and anaemia in infants, young children and school children (103). Iron supplementation in children was most commonly reported in the WHO Region of the Americas.

Zinc supplementation was most commonly provided in the WHO regions of Africa, the Americas and South-East Asia. Zinc supplementation has been shown to reduce the duration and severity of diarrhoea and to prevent subsequent episodes in areas where child undernutrition is common (104). WHO and UNICEF recommend that children with diarrhoea be given zinc supplementation for 10–14 days, together with oral rehydration salts (105).

The most common **food fortification programme<sup>1</sup>** was for food-grade salt, followed by wheat flour and oil (Fig. 3.74). The foods least frequently reported as fortified by countries were condiments, rice, maize flour or corn meal and sugar. There was little variation across the regions regarding these proportions, except that fortification of rice was as common as fortification of wheat flour in countries in the WHO South-East Asia Region, and fortification of maize flour or corn meal was more common in the WHO African Region than in any other WHO region.

<sup>1</sup> Vitamin and mineral supplementation in children was reported by 107 countries, of which 74 provided detailed information.

FIGURE 3.74

REPORTED IMPLEMENTATION OF DIFFERENT FOOD FORTIFICATION PROGRAMMES IN 155 COUNTRIES



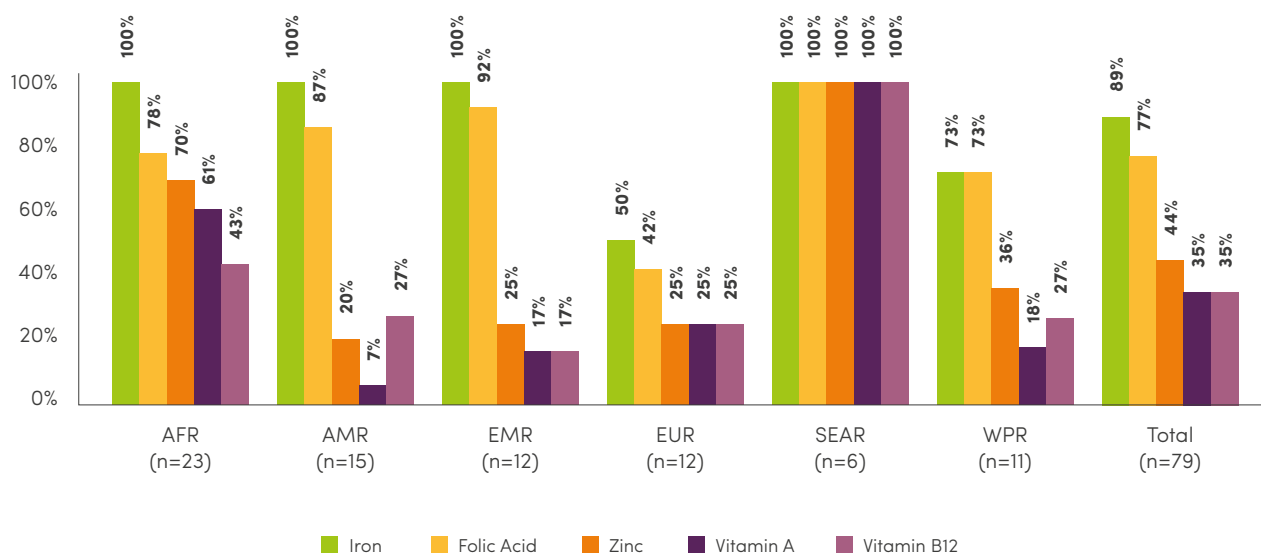
The most common nutrients used in the **fortification of staple foods (i.e. wheat flour, maize flour or corn meal, or rice)**<sup>1</sup> were iron and folic acid, whereas fortification with zinc, vitamin A and vitamin B12 were reported by fewer countries (Fig. 3.75). Countries in the WHO South-East Asia Region added all five micronutrients in any of the reported staple foods, whereas countries in the WHO European Region reported the least frequent fortification with these micronutrients. Wheat flour was by far the most commonly used vehicle (Fig. 3.74), and the vast majority of countries that reported maize flour or corn meal and rice fortification were also fortifying wheat flour. WHO recently issued guidelines on the fortification of maize flour and corn meal with iron

to prevent iron deficiency, and with folic acid to reduce the risk of neural tube defects (106); WHO is currently in the process of updating guidelines on fortification of wheat flour and rice.

Most fortification of staple foods was mandatory, especially in the WHO regions of Africa and the Americas, but less so in the WHO European Region. Legislation related to fortification of wheat flour was enacted from the 1970s onwards, whereas the earliest legislation on fortification of maize flour or corn meal and rice was enacted during the 1990s. Most laws regarding the fortification of staple foods are relatively recent, however, with almost half being from the past 5 years.

FIGURE 3.75

NUTRIENTS ADDED TO STAPLE FOODS IN 79 COUNTRIES

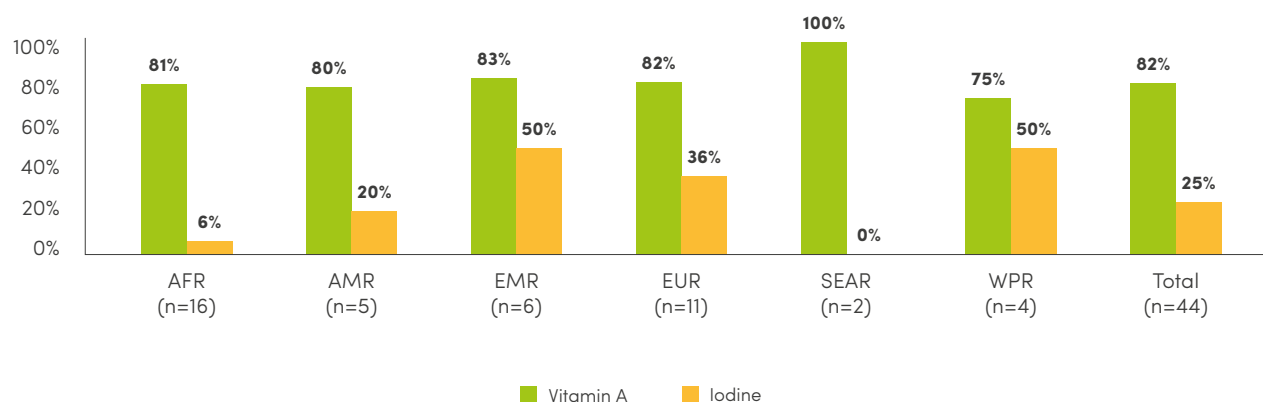


AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

<sup>1</sup> Fortification of wheat, maize or rice was reported by 79 countries, of which 55 provided detailed information. Of these countries, 75 were fortifying wheat flour, 20 were fortifying maize flour and 14 were fortifying rice

FIGURE 3.76

NUTRIENTS ADDED TO OILS AND MARGARINES IN 44 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

**Oil fortification<sup>1</sup>** was more often applied to locally produced oils than imported ones. The most common nutrient added to oils and margarines was vitamin A, with little variation across the regions (Fig. 3.76). The fortification of oil with iodine was much less commonly reported globally, and iodine was more frequently reported to be added to oils and margarines in countries in the WHO regions of the Eastern Mediterranean and the Western Pacific. Most oil fortification programmes were mandatory, including all programmes in the WHO regions of Africa, the Americas and the Western Pacific. The earliest legislation on oil fortification was from the 1960s, with about half from the past 5 years.

Iodine was added to food-grade salt in almost all the countries that reported and only a few countries reported fortifying salt with other micronutrients such as fluoride. Salt fortification was not always mandatory. This was particularly true in the WHO European Region, where all countries with salt fortification reported that salt was being iodized; however, **salt iodization** was mandatory in just 48% of countries (Fig. 3.77). The need to end iodine deficiency in this region, including among pregnant and lactating women, has received renewed interest (107). Salt iodization legislation

more often applied to table salt than to salt for processed foods, which was often mentioned in national legislation to be exempted in cases where the iodine may interfere with the food processing.<sup>2</sup> Most countries mentioned that the legislation applied to both locally produced and imported salt. The earliest salt legislation was from the 1960s; more than one third of the laws and regulations were from before 2000, and another third were from the past 5 years. Universal salt iodization has been widely implemented on a large scale over recent decades, with three quarters of households worldwide having access to iodized salt (108). WHO recommends fortification of all food-grade salt with iodine as a safe and effective strategy for preventing and controlling iodine deficiency (109).

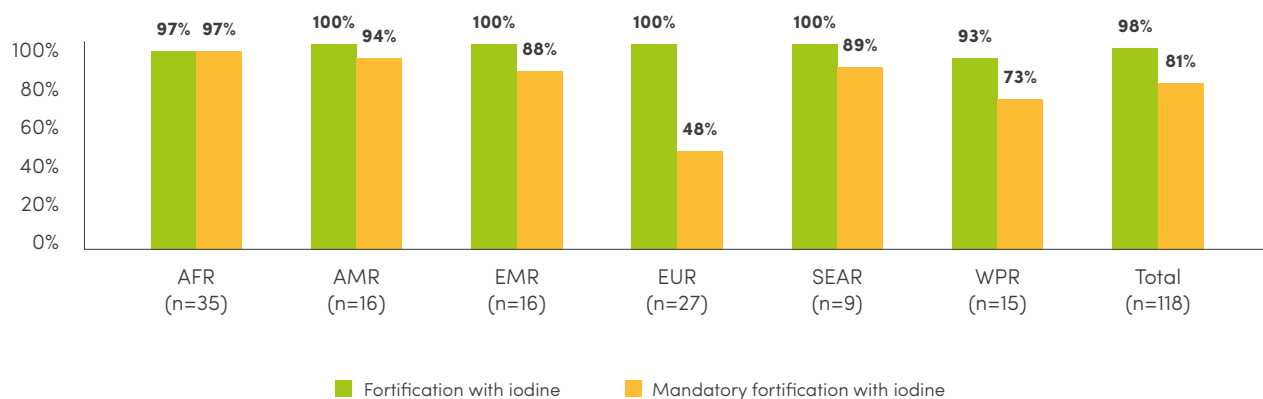
**Fortification of other foods such as sugar and condiments** was much less common. Fortification of sugar (mostly with vitamin A) was reported by 15 countries, primarily in the WHO regions of Africa and the Americas. About half of these programmes were mandatory and half were voluntary. Fortification of condiments – usually on a voluntary basis with iron or iodine, or both – was only reported by eight countries, largely in the WHO regions of Africa, South-East Asia and the Western Pacific.

<sup>1</sup> Oil fortification was reported by 44 countries, of which 33 provided detailed information.

<sup>2</sup> Detailed information on salt iodization legislation was provided by 83 countries.

FIGURE 3.77

**IODINE ADDED TO FOOD-GRADE SALT IN 118 COUNTRIES THAT FORTIFY SALT**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

**3.5.5 Actions to prevent and treat acute malnutrition**

Malnutrition in children, particularly SAM, increases the risk of death from common childhood illnesses and contributes to 45% of deaths in children aged under 5 years (110). Globally, as of 2016, an estimated 52 million preschool-age children were wasted, of whom 17 million were severely wasted (3). Most of these children live in Asia, particularly southern Asia, where wasting has become a critical public health problem, with a subregional prevalence of 15.4%. In food-insecure settings or where people do not have access to food (e.g. in many emergency contexts), food distribution programmes may be implemented to prevent acute malnutrition. MAM is ideally treated by essential nutrition actions such as breastfeeding promotion and support, education and nutrition counselling for families, and dietary interventions based on locally available foods, in addition to other activities that identify and prevent the underlying causes of malnutrition such as the treatment of medical conditions (111). However, in food-insecure settings, the distribution of supplementary foods is usually necessary, either targeted at children with

MAM or through blanket distribution to vulnerable groups (e.g. pregnant and lactating women, and children aged 6–23 months). The management of SAM requires special treatment, which includes appropriate nutritional care using specific therapeutic foods in combination with treatment of medical complications.

A total of 152 countries responded concerning their actions to prevent and treat acute malnutrition. Most countries reported that they had food distribution programmes for the prevention of acute malnutrition,<sup>1</sup> as well as programmes for the treatment of MAM and SAM (Fig. 3.78). The WHO African Region had the highest proportion of countries with all three types of programmes. The WHO South-East Asia Region, which has the largest number and the highest prevalence of wasting in children, had the second highest implementation of programmes to treat MAM or SAM.

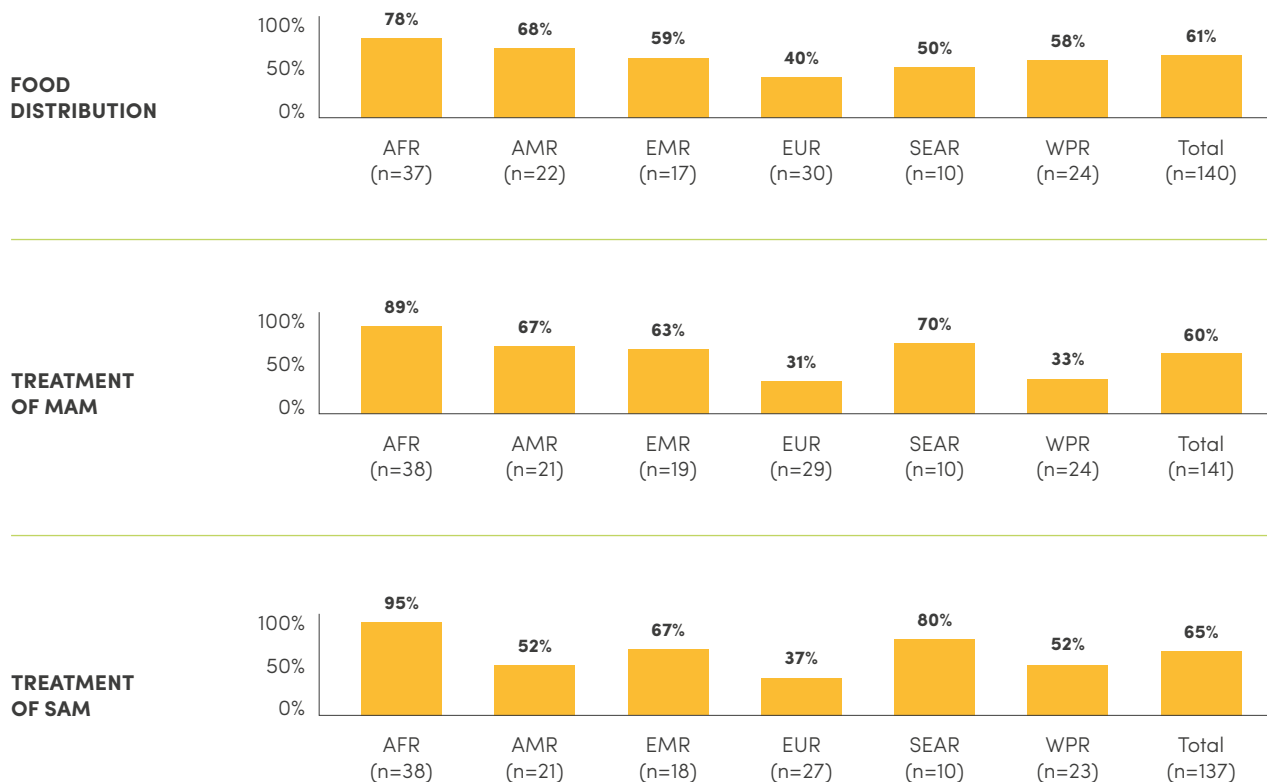
**Food distribution programmes<sup>2</sup>** are often part of nutrition-sensitive interventions (112), such as social safety nets that are employed to address the underlying causes of malnutrition, especially in populations threatened with food insecurity.

<sup>1</sup> Interventions not specifically targeting individuals with MAM; for example, emergency food aid programmes, direct food-based transfers, foods for infants and young children, and take-home rations distributed through schools.

<sup>2</sup> Food distribution programmes were reported by 85 countries, of which 50 provided detailed information.

FIGURE 3.78

ACTIONS TO PREVENT AND TREAT ACUTE MALNUTRITION IN 152 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; MAM, moderate acute malnutrition; SAM, severe acute malnutrition; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

These programmes complement the investments in nutrition-specific interventions that tackle the immediate causes of malnutrition (24). Most of the food distribution programmes reported by the countries were from 2008 and later, while several dated back to the 1940s. Most were either emergency food aid programmes, or special foods for infants and young children (or both) (Fig. 3.79).

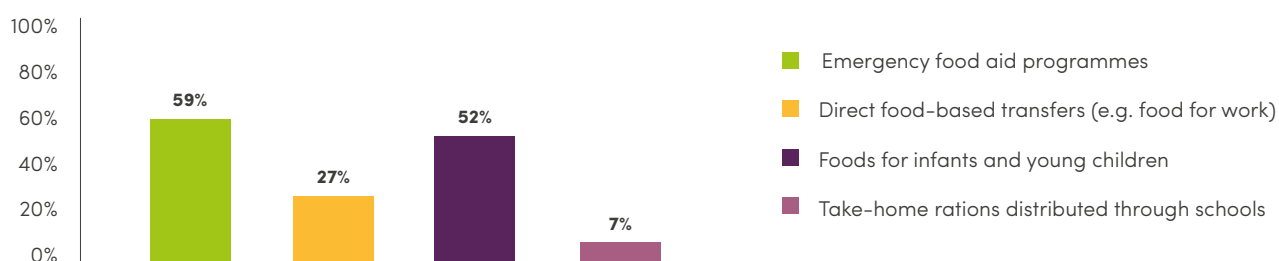
Emergency food aid programmes were most common in the WHO regions of Africa and South-East Asia, and least common in the WHO European Region. Direct food-based transfers (e.g. food for work schemes) were far less frequent, ranging from 0% in the WHO European Region to 48% in the WHO African Region. Most of the emergency food aid and direct food-based transfer programmes

targeted specific groups; for example, infants and young children, preschool-age children, pregnant and lactating women, elderly people, refugees, Ebola-affected households and food-insecure households. Many of these programmes included fortified foods as part of rations, especially fortified blended foods and fortified oils, but some also provided fortified biscuits and fortified wheat flour. Some countries mentioned distribution of lipid-based nutrition supplements as part of emergency food aid to selected groups (e.g. pregnant women and lactating women). The reported energy content of emergency food aid rations ranged from 1844 kcal/day to 2300 kcal/day, whereas that of food transfers ranged from 250 kcal/day to 1954 kcal/day. Special foods for infants and young children were common among country reports across all regions, varying from 67%



FIGURE 3.79

TYPES OF FOOD DISTRIBUTION SCHEMES IN 85 COUNTRIES PROVIDING DETAILS



in the WHO Region of the Americas to 36% in the WHO Western Pacific Region. These programmes were often linked to MAM programmes. The most common foods provided were ready-to-use infant formula and complementary food supplements including fortified products such as corn-soy blend.

Take-home rations distributed through schools were the least frequently reported type of food distribution schemes reported by countries. Some countries also mentioned various subsidization programmes for vulnerable groups, such as food stamps or food coupons.

**Treatment of children with MAM<sup>1</sup>** is ideally based on the optimal use of locally available nutrient-dense foods to improve the nutritional status of children, which prevents them becoming severely acutely malnourished and failing to thrive (111). WHO recommends not providing formulated supplementary foods on a routine basis to children who are moderately wasted or stunted who present to primary health-care facilities (48). However, there may be a role for the provision of supplementary foods to children with moderate wasting in settings where there is food insecurity, at community or household level, and as part of the continuum of care for the individual child. Supplementary foods are specially formulated foods in ready-to-eat or milled form that are both energy and nutrient dense.

The earliest programmes were from the 1950s and 1970s, but most MAM programmes were initiated in 2009 and later. Three quarters of the countries with MAM programmes reported having a MAM protocol. All MAM programmes were targeted at children aged 6–59 months. In addition, about half of the countries also targeted children aged 0–5 months, and about a third targeted other groups including children aged up to 18 years and pregnant and lactating women. In children aged 6–59 months, MAM was usually assessed by measuring weight-for-height or weight-for-length. Only three countries relied solely on MUAC. All countries addressing MAM in the age group 0–5 months assessed MAM by weight-for-length.

The components most commonly included in the MAM programmes were breastfeeding promotion and support, and nutrition counselling (Fig. 3.80), which were reported by more than 80% of countries in all regions. Nutrition counselling mostly included instruction to increase intake of animal-source and plant-source foods high in nutrients. Instruction on the processing of plant-source foods high in antinutrients (e.g. through soaking, germination, malting or fermentation) was less common globally, but among countries reporting this it was most common in the WHO regions of Africa and South-East Asia. Activities to identify and address the underlying causes of malnutrition were reported by 75% of countries in all regions.

1 Programmes related to the treatment of MAM were reported by 84 countries, of which 59 provided detailed information.

Food security interventions were reported by at least 60% of countries in the WHO regions of Africa, the Americas and the Western Pacific, and water sanitation and hygiene interventions in at least 40% of all countries. The least frequently reported component of MAM programmes were conditional or non-conditional cash transfers, which were only common in the WHO regions of Africa and the Americas.

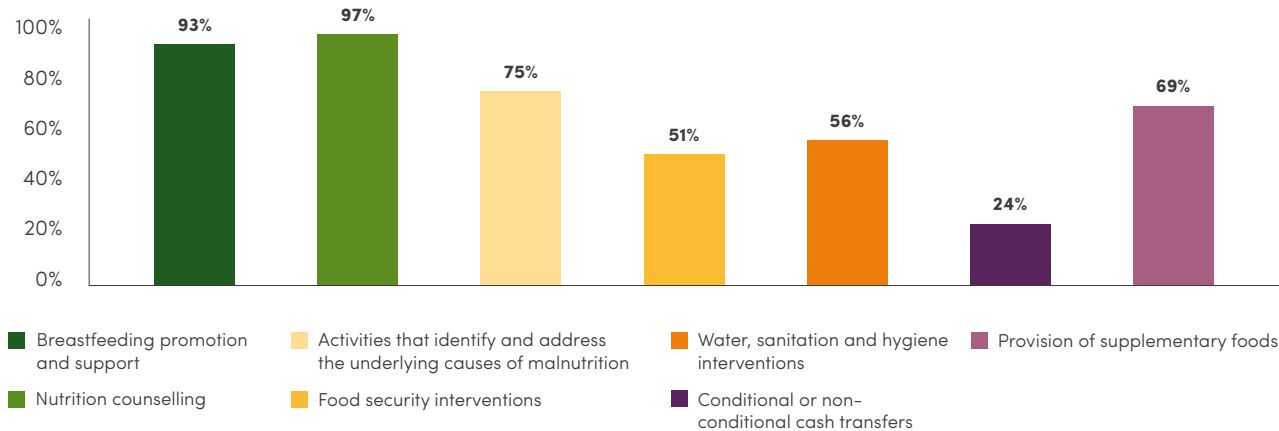
More than two thirds of countries provided supplementary foods through the MAM treatment programmes. Ready-to-use-supplementary foods (RUSFs) were most common in the WHO regions of the Eastern Mediterranean and the Western Pacific, whereas fortified blended foods (e.g. corn-soy blend) were most common in the WHO regions of Africa and South-East Asia. The appropriate choice of supplementary food depends on the context. Evidence from a systematic review in 2013 suggested that fortified blended foods may be equally effective and cheaper than RUSF in treating children with MAM (113). WHO is currently reviewing the efficacy, effectiveness and safety of different types of supplementary foods. Premixed complementary foods for sale in low- and middle-income countries have often been found to lack an adequate nutrient composition (114).

Among the lessons learned, countries mentioned the importance of community involvement and the need to increase the focus on prevention through food-based methods (e.g. home gardens) and non-food-based methods (e.g. optimal breastfeeding practices and hygiene practices). Additionally, some countries linked families of children admitted to the MAM programme to other income-generating programmes in the local area in order to strengthen resilience.

The earliest programmes reported for the **treatment of children with SAM**<sup>1</sup> dated from the 1970s. Most of the countries with SAM programmes reported having protocols. The great majority of these protocols had been published in 2008 or later, after the publication in 2007 of a joint statement on community-based management of SAM (115), and almost two thirds had been published in 2011 or later (i.e. since GNPR1), but only about a third had been published after 2013, which is when the WHO guidelines were last updated (49). The 2007 joint statement allowed outpatient treatment with specially formulated foods, because it is generally better for both the children and their families that they are treated at home. The 2013 guidelines also provided evidence-informed recommendations on a number of specific issues related to the treatment

FIGURE 3.80

**COMPONENTS OF THE MODERATE ACUTE MALNUTRITION PROGRAMME  
IN 59 COUNTRIES PROVIDING DETAILED INFORMATION**



<sup>1</sup> Programmes for treatment of SAM were reported by 89 countries, of which 63 provided detailed information.

of SAM in infants and children, such as admission and discharge criteria, and treatment of infants with SAM who are aged under 6 months.

The target groups of the SAM programmes were generally children aged 6–59 months, and those aged 0–5 months. In addition, nearly one quarter of the countries mentioned other target groups including children aged over 5 years, pregnant and lactating women, elderly people, HIV or tuberculosis (TB) patients, refugees or any person with SAM. The great majority of countries assessing SAM in children aged 6–59 months used weight-for-height or weight-for-length less than 3 Z-scores. In addition, 75% of these countries reported using MUAC less than 11.5 cm. Across the regions, weight-for-height or weight-for-length was more frequently reported than MUAC, except in the WHO African Region, where some countries relied solely on MUAC. Bilateral pitting oedema was also reported to be a criterion for SAM in children of any age group in most countries. All countries reported assessing SAM in children aged 0–5 months by using weight-for-length.

All countries with SAM programmes reported having inpatient treatment and a great majority also had outpatient treatment. There was consistent high reporting of using the recommended admission criteria for children with SAM in both age groups (Fig. 3.81). Additionally, several countries reported

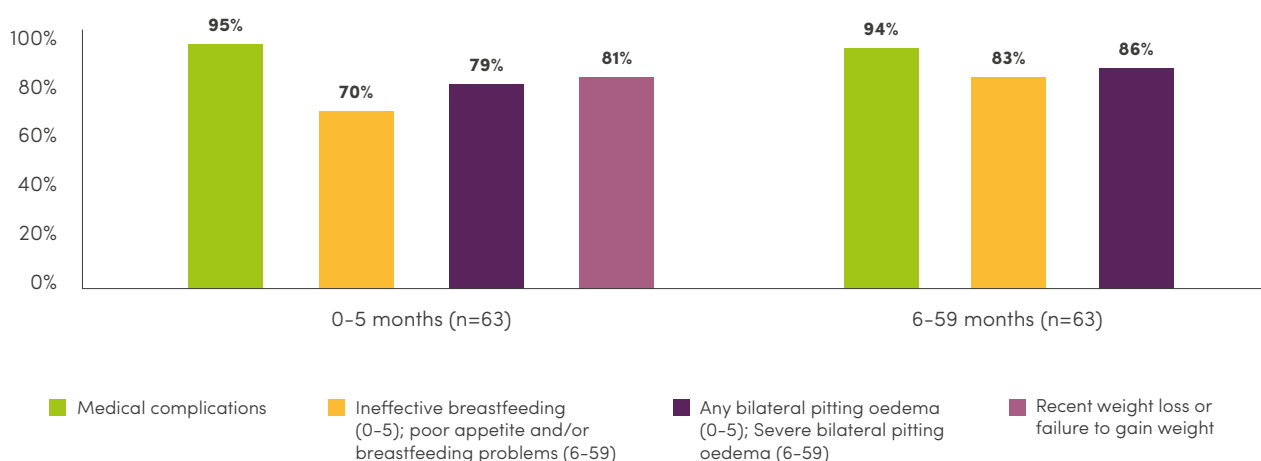
admitting children with SAM weighing less than 3 kg or 4 kg, even if aged over 6 months or if the caregivers were unable to care for the child.

Most countries reported regular screening for SAM, and many conducted active screening in the communities, with the screening undertaken either by community health workers monthly, or by trained villagers who complete village registers of child malnutrition. Some countries reported that they rely on opportunities when children attend clinic-based GMP sessions or during outreach campaigns (e.g. vaccinations and micronutrient supplementation). Several countries reported the involvement of nongovernmental organizations (NGOs) in the screening and treatment of SAM.

Countries reported a combination of discharge criteria, including regained appetite or breastfeeding effectively (or both), weight-for-length or weight-for-height greater than or equal to 2 Z-score, no bilateral pitting oedema for at least 2 weeks, and MUAC equal to or greater than 125 mm (Fig. 3.82). Several countries used stricter criteria for discharge, notably weight-for-height or weight-for-length greater than or equal to 1.5 Z-score. Furthermore, some countries still used the previous criteria in the 2007 joint statement (i.e. 15% or 20% weight gain for two consecutive visits) (115).

FIGURE 3.81

**ADMISSION CRITERIA FOR CHILDREN AGED 0–5 MONTHS AND 6–59 MONTHS WITH SEVERE ACUTE MALNUTRITION TO INPATIENT CARE IN 63 COUNTRIES PROVIDING DETAILED INFORMATION**



Several countries noted that SAM treatment requires sufficient numbers of trained staff, and that SAM treatment skills need to be regularly updated through refresher training, because new knowledge and approaches are frequently available. Furthermore, follow-up of discharged children is essential, preferably at home, with ample time for nutrition counselling and cooking demonstrations. All of this accords with the evidence available from the literature on treatment of SAM, which has often concluded that – because the prevalence of SAM is highest in resource-poor environments – there is usually a substantial mismatch between the many patients requiring treatment and the few skilled staff and the scarce resources available to treat them (116). Furthermore, gaps in our ability to estimate the effectiveness of overall treatment approaches for SAM and MAM persist, largely due to the lack of high-quality programme evaluations (117).

### 3.5.6 Actions related to nutrition and infectious diseases

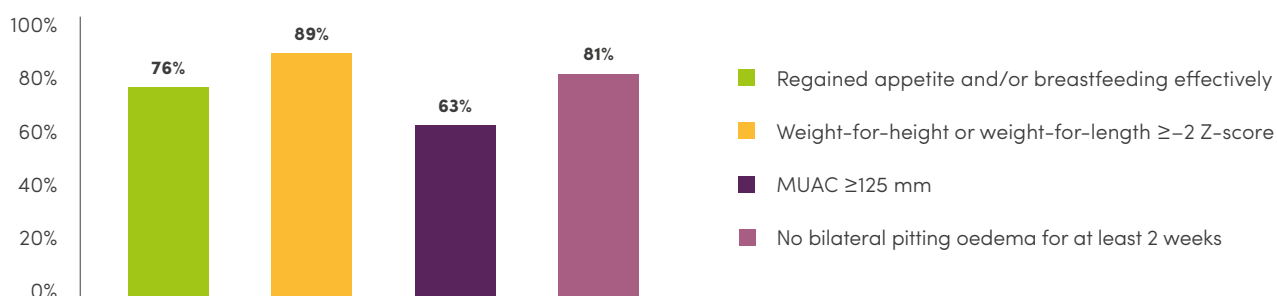
Undernutrition increases the risk of infectious diseases and vice versa. Undernutrition is highly prevalent among those with TB and HIV, and can accelerate disease progression. Therefore, targeted programmes of nutritional assessment, care and support are needed

for people living with active TB or HIV (or both) (118). Soil-transmitted helminth and other parasites can also contribute to malnutrition by causing malabsorption of nutrients, loss of appetite and diarrhoea. Deworming to reduce worm and parasite load – along with improved water, sanitation and hygiene, and health education – are recognized as important underlying conditions to improve nutrition.

A total of 148 countries responded to the questions on actions related to nutrition and infectious diseases. The most commonly reported intervention was nutritional care and support for people living with HIV, followed by deworming, and nutritional care and support for people with active TB (Fig. 3.83). There was much regional variation in the responses, reflecting regional differences in these epidemics. Nutritional care and support for HIV programmes were most commonly reported by countries in the WHO regions of Africa and the Americas, and were least frequently reported by countries in the WHO regions of Europe and the Western Pacific. The WHO African Region was also the region where countries most often reported nutritional care and support for TB. Deworming was most frequently reported by countries in the WHO South-East Asia Region, followed by the WHO regions of Africa and the Western Pacific.

FIGURE 3.82

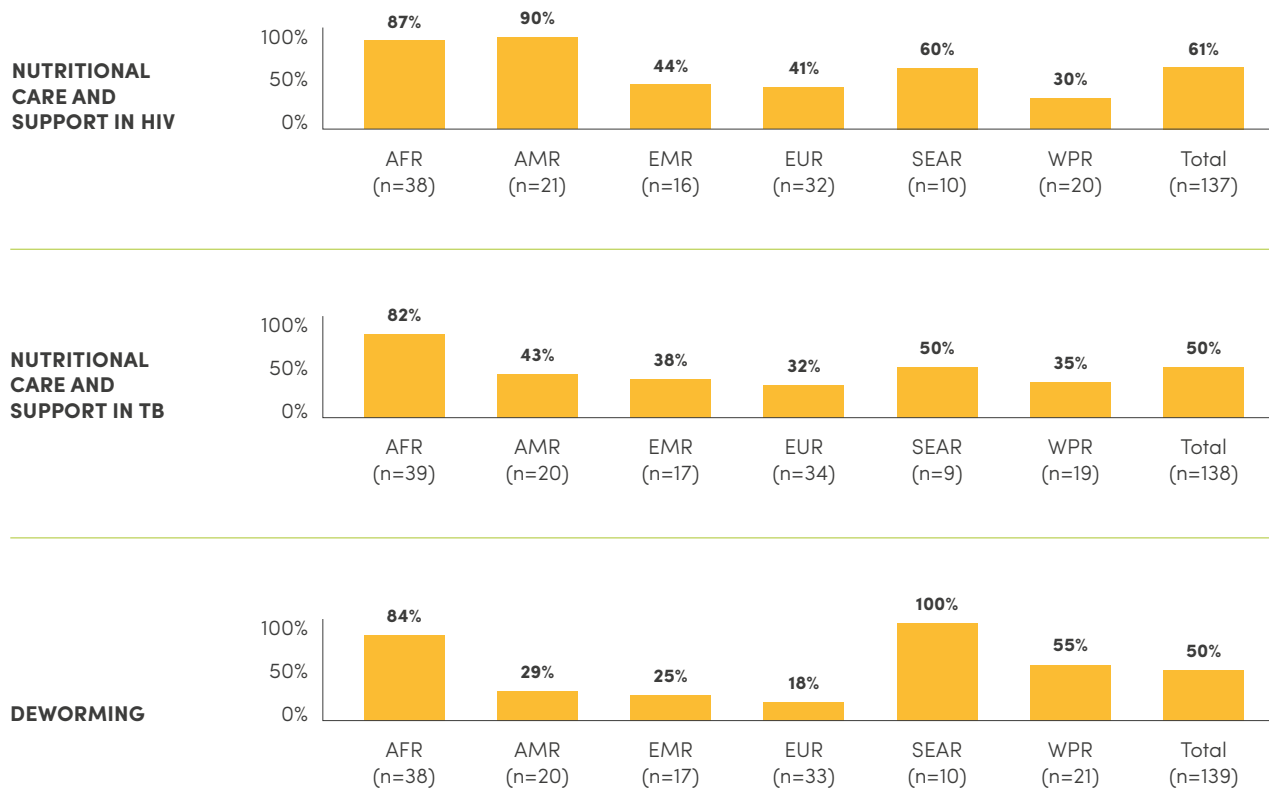
#### DISCHARGE CRITERIA FROM THE SEVERE ACUTE MALNUTRITION PROGRAMME IN 63 COUNTRIES PROVIDING DETAILED INFORMATION



MUAC, mid-upper arm circumference.

FIGURE 3.83

ACTIONS RELATED TO NUTRITION AND INFECTIOUS DISEASES IN 148 COUNTRIES



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; HIV, human immunodeficiency virus; SEAR, WHO South-East Asia Region; TB, tuberculosis; WPR, WHO Western Pacific Region.

Nutritional assessment, counselling and support are critical components of preventing and managing undernutrition in individuals affected by HIV. The most common component of **nutritional care and support for people living with HIV<sup>1</sup>** was nutrition counselling (Fig. 3.84). Virtually all countries reported providing counselling on the prevention of undernutrition in their HIV programmes. Two thirds of countries also included counselling on healthy diets for the prevention of obesity and diet-related NCDs, including half of the countries in the WHO African Region – the region with the largest number of countries with such programmes. Nutrition assessment and food or nutrition support were reported by two thirds of the countries. Fortified food supplements or food baskets were more often provided than micronutrients or vouchers for food.

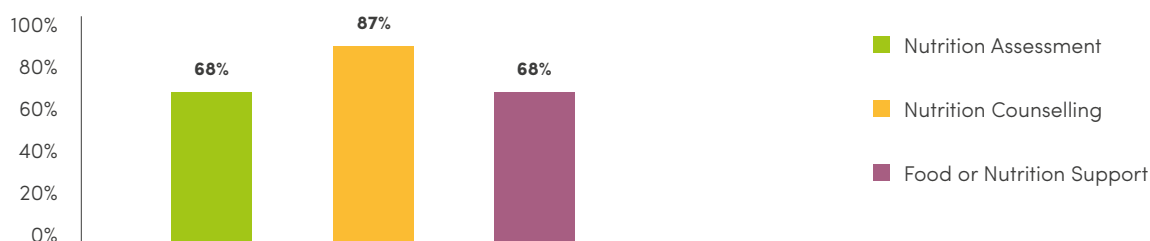
As with HIV, nutritional assessment, counselling and support are critical components of preventing and managing undernutrition in individuals affected by TB (119). The most common component of **nutritional care and support for people with active TB<sup>2</sup>** was nutrition counselling (Fig. 3.85). Virtually all countries reporting such programmes gave advice about the prevention of undernutrition, whereas half also gave advice on the prevention of obesity and diet-related NCDs. Nutrition assessment was reported by three quarters of the countries, whereas food or nutrition support was reported by over half of the countries. Again, fortified food supplements or food baskets were more often provided than micronutrients or vouchers for food.

<sup>1</sup> Implementation of nutritional care and support for people living with HIV was reported by 84 countries, 53 of which provided detailed information.

<sup>2</sup> Implementation of nutritional care and support for people with TB was reported by 69 countries, of which 39 provided detailed information.

FIGURE 3.84

**COMPONENTS OF NUTRITIONAL CARE AND SUPPORT TO PEOPLE LIVING WITH HIV  
IN 53 COUNTRIES PROVIDING DETAILED INFORMATION**



In areas where helminth infections are common, WHO recommends preventive chemotherapy or the periodic large-scale administration of anthelmintic medicines to populations at risk, to reduce the burden of worms caused by soil-transmitted helminth infections (23, 98). Helminth infection can impair nutritional status by causing internal bleeding, which can lead to loss of iron and anaemia, intestinal inflammation and obstruction, diarrhoea, and impairment of nutrient intake, digestion and absorption. The great majority of countries reporting **deworming campaigns for soil-transmitted helminths<sup>1</sup>** provided anthelmintic drugs along with education on health and hygiene (Fig. 3.86). However, less than half of the countries provided adequate sanitation, which sustainably eliminates the root causes of worm infestations. All deworming

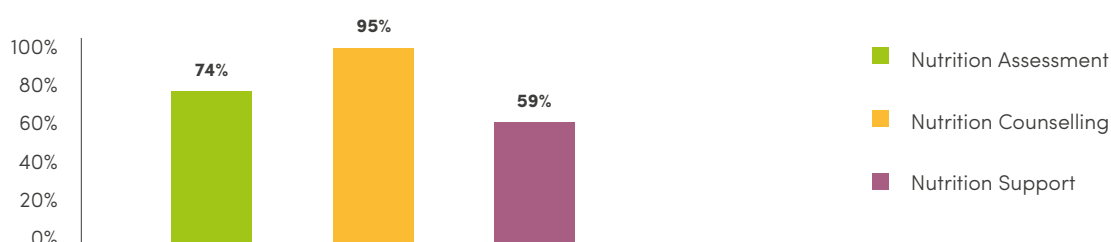
campaigns targeted preschool-age or school-age children (or both). Furthermore, about half of the countries had deworming directed towards pregnant women, except in the WHO Western Pacific Region, where half of the countries instead had programmes directed towards women of reproductive age.

**3.5.7 Partners involved in delivering nutrition action**

Improving nutrition requires multistakeholder and intersectoral involvement and collaboration among government, UN agencies, NGOs, the private sector and other groups (e.g. donor agencies, civil society, community groups and academic institutions). Most countries in all

FIGURE 3.85

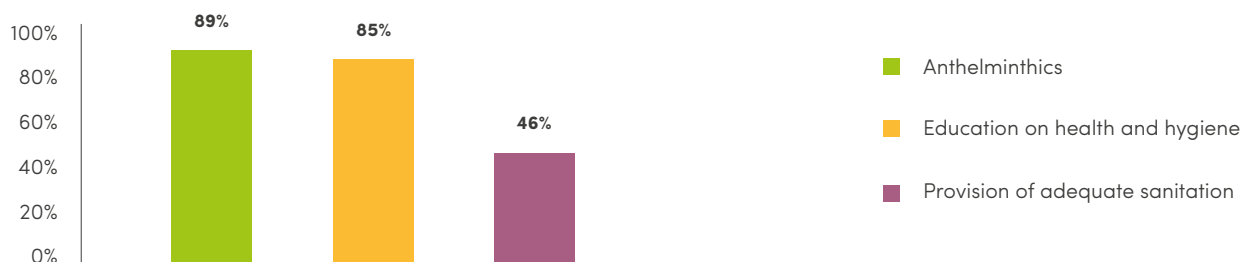
**COMPONENTS OF NUTRITIONAL CARE AND SUPPORT TO TUBERCULOSIS PATIENTS  
IN 39 COUNTRIES PROVIDING DETAILED INFORMATION**



<sup>1</sup> Implementation of deworming was reported by 69 countries, of which 46 provided detailed information.

FIGURE 3.86

COMPONENTS OF DEWORMING CAMPAIGNS IN 46 COUNTRIES PROVIDING DETAILED INFORMATION



regions reported that the **government** was responsible for or involved in the implementation, funding and monitoring of nutrition programmes in all nutrition areas (Figs. 3.87, 3.88 and 3.89).<sup>1</sup>

**NGOs, both national and international**, were involved in more than 75% of countries in all regions, usually as implementing partners and most often supporting IYCN and nutrition and infectious diseases (Figs. 3.87, 3.88 and 3.89). The interventions most often supported by NGOs were breastfeeding counselling and nutritional care and support in HIV and TB, especially in the WHO regions of Africa, South-East Asia and the Western Pacific.

**UN agencies** were involved in more than two thirds of countries in the WHO regions of Africa, the Eastern Mediterranean, South-East Asia and the Western Pacific, supporting implementation of or funding nutrition programmes, particularly those related to acute malnutrition, and nutrition and infectious diseases (Figs. 3.87, 3.88 and 3.89). The interventions

most often supported by the UN were treatment of SAM and MAM, deworming campaigns, and vitamin and mineral supplementation to children.

The **private sector** – mainly consisting of private clinics and hospitals, media companies and food manufacturing companies – were involved in more than two thirds of countries in the WHO regions of Africa, the Americas, the Eastern Mediterranean and South-East Asia, most often supporting implementation of food fortification, reformulation and fiscal policies (Figs. 3.87, 3.88 and 3.89). After government, the private sector was the most involved partner on many interventions to support healthy diets, such as reformulation, labelling and bans on *trans*-fatty acids. The high level of involvement of the private sector in delivering nutrition actions in countries emphasizes the need for transparent processes and mechanisms to address and manage conflicts of interest. WHO is developing a set of tools to identify and address conflict of interest at different stages of the policy cycle<sup>2</sup> (120).

<sup>1</sup> The analysis of stakeholder involvement in implementation considers interventions being **implemented** within IYCN (breastfeeding counselling and promotion, complementary feeding and promotion, and GMP), school health and nutrition programmes, promotion of healthy diet (increased tax on unhealthy foods and beverages, increased subsidies on healthier foods and beverages, media campaigns on healthy diet, nutrition education and counselling for healthy diets, and a ban on *trans*-fatty acids), vitamin and mineral nutrition (supplementation in pregnant women, women of reproductive age and children), acute malnutrition (food distribution, and treatment of MAM and SAM), nutrition and infectious diseases (nutrition counselling and support in HIV and TB, and deworming campaigns).

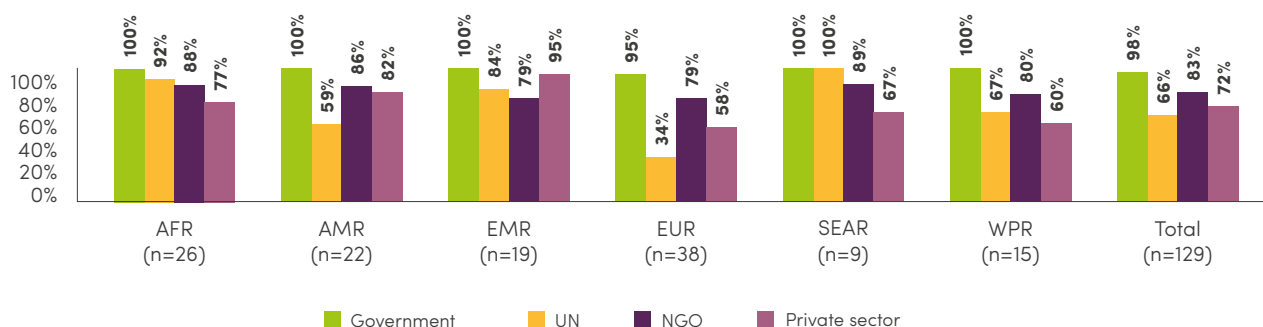
The analysis of stakeholder involvement in **funding** considers interventions being implemented within IYCN (breastfeeding counselling and promotion, complementary feeding and promotion, and GMP), school health and nutrition programmes, promotion of healthy diet (increased subsidies on healthier foods and beverages, increased tax on unhealthy foods and beverages, media campaigns on healthy diet, nutrition education and counselling for healthy diets, and a ban on *trans*-fatty acids), vitamin and mineral nutrition (supplementation of pregnant women, women of reproductive age and children), acute malnutrition (food distribution, and treatment of MAM and SAM), nutrition and infectious diseases (nutrition counselling and support in HIV and TB, and deworming campaigns).

The analysis of stakeholder involvement in **monitoring** considers interventions being implemented within vitamin and mineral nutrition (food fortification of wheat, maize, rice, oil and salt), promotion of healthy diet (FOPL system, menu labelling, nutrient declaration, portion size control, reformulation of foods and beverages, and regulation of marketing to children), and school health and nutrition programmes (school food standards).

<sup>2</sup> Safeguarding against possible conflicts of interest in nutrition programmes: Approach for the prevention and management of conflicts of interest in the policy development and implementation of nutrition programmes at country level. Available at <http://www.who.int/nutrition/consultation-doi/comments/en/>.

FIGURE 3.87

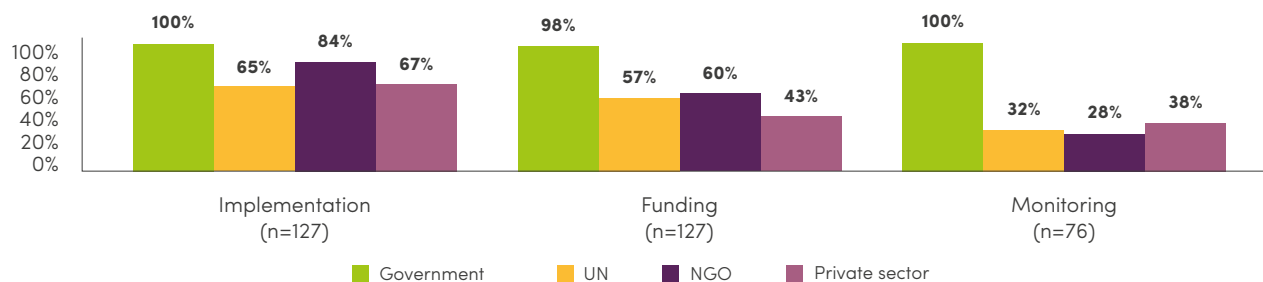
**INVOLVEMENT OF PARTNERS IN NUTRITION PROGRAMMES BEING IMPLEMENTED IN 129 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; NGO, nongovernmental organization; SEAR, WHO South-East Asia Region; UN, United Nations; WPR, WHO Western Pacific Region.

FIGURE 3.88

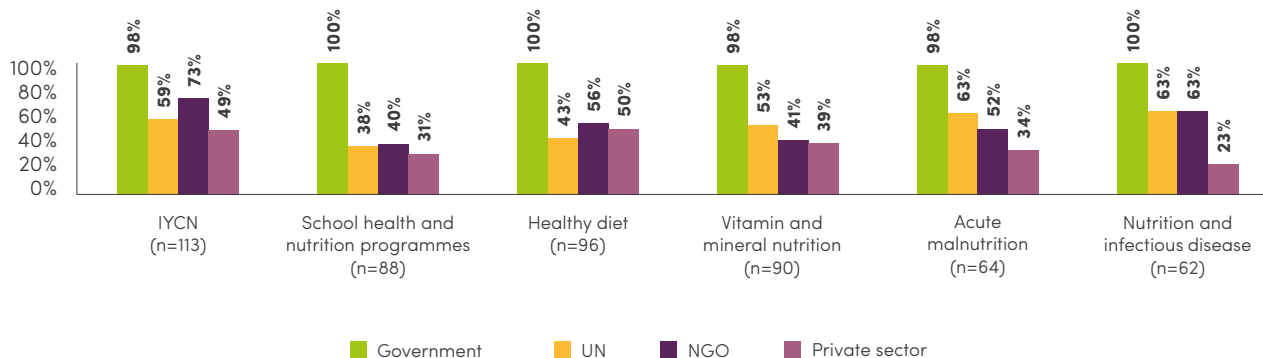
**ROLES OF PARTNERS INVOLVED IN NUTRITION PROGRAMMES BEING IMPLEMENTED IN 129 COUNTRIES PROVIDING DETAILED INFORMATION**



NGO, nongovernmental organization; UN, United Nations.

FIGURE 3.89

**INVOLVEMENT OF PARTNERS IN DIFFERENT NUTRITION PROGRAMMES BEING IMPLEMENTED IN 129 COUNTRIES PROVIDING DETAILED INFORMATION**

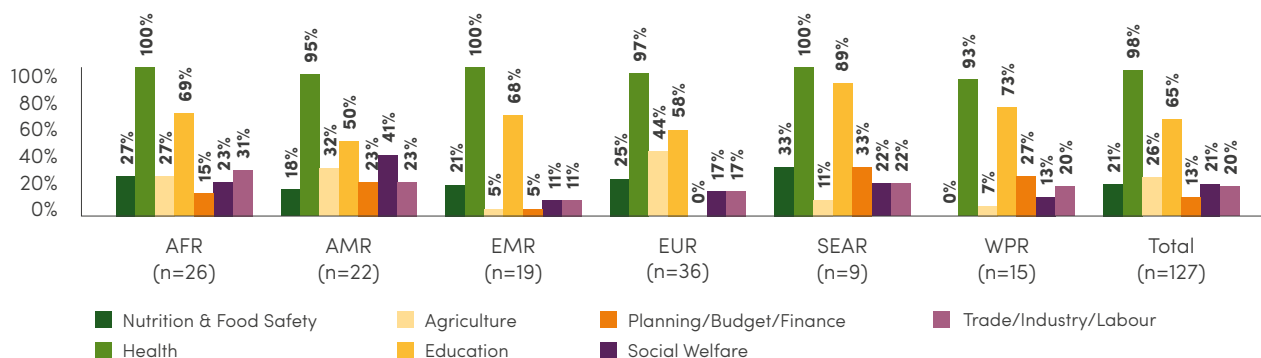


IYCN, infant and young child nutrition; NGO, nongovernmental organization; UN, United Nations.



FIGURE 3.90

INVOLVEMENT OF GOVERNMENT SECTORS IN NUTRITION PROGRAMMES BEING IMPLEMENTED IN 127 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.91

ROLES OF GOVERNMENT SECTORS INVOLVED IN NUTRITION PROGRAMMES BEING IMPLEMENTED IN 127 COUNTRIES PROVIDING DETAILED INFORMATION

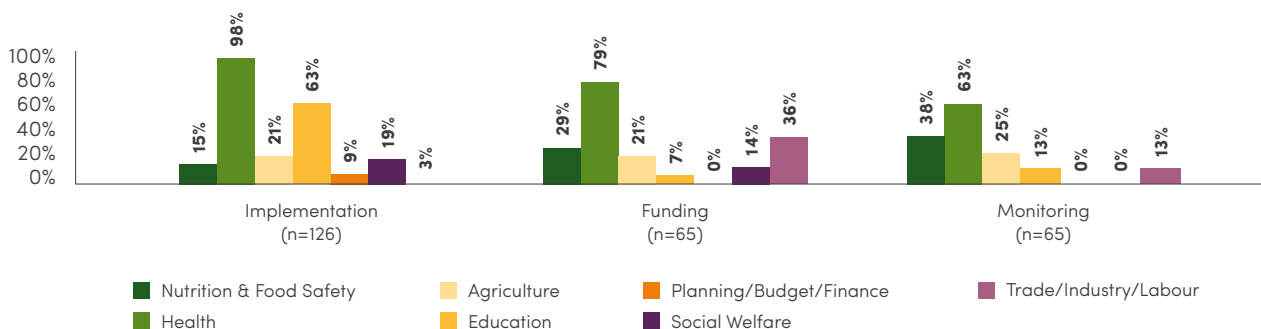
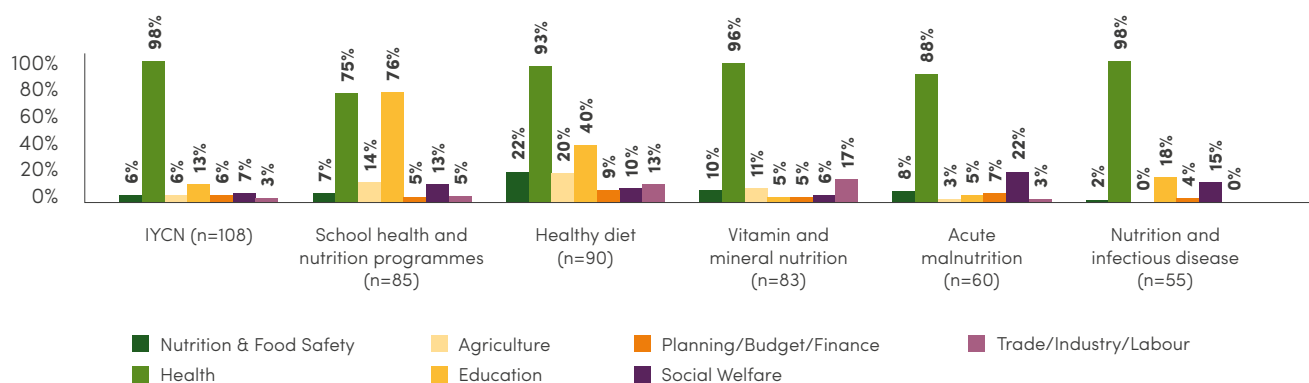


FIGURE 3.92

INVOLVEMENT OF GOVERNMENT SECTORS IN DIFFERENT NUTRITION PROGRAMMES BEING IMPLEMENTED IN 127 COUNTRIES PROVIDING DETAILED INFORMATION



IYCN, infant and young child nutrition.

In all regions, among the government sectors, the ministry of health was the sector most involved in all the roles of nutrition programming, and in virtually all the nutrition programmes that were being implemented (Figs. 3.90, 3.91 and 3.92).<sup>1</sup> IYCN interventions were primarily handled by the health sector; however, the questionnaire did not include questions on implementation of the International Code of Marketing of Breast-milk Substitutes or maternity protection for working mothers because these data were collected and reported elsewhere (44, 45). The implementation of these interventions would require the involvement of trade and labour, respectively, in addition to the health sector. The ministry of education was the second most involved sector in all regions, notably as an implementer of school health and nutrition programmes. In addition to health and education, school health and nutrition programmes in the WHO Region of the Americas often involved agriculture, and in the WHO African Region, social welfare.

Despite having important roles to play, the non-health sectors had little involvement in protecting, promoting and supporting healthy diets. For example, nine out of 11 countries with reformulation measures reported that the health sector was involved, whereas only one country with such measures mentioned the agriculture sector and another the trade sector. The education sector mainly engaged in nutrition education and in regulating marketing of foods and beverages to

children in the school setting. The agriculture sector was most often involved in monitoring food and nutrition labelling measures and bans on *trans*-fatty acids, whereas the trade and finance sectors were engaged in fiscal policies.

There were also gaps in sector involvement for vitamin and mineral nutrition. The trade and industry sectors engaged in fortification programmes in about one third of countries – particularly programmes related to oil, wheat flour and salt – but the agriculture sector was less involved. Acute malnutrition, and nutrition and infectious diseases were also handled by the health sector, although the social welfare sector was often involved in food distribution programmes and the education sector in deworming campaigns.

### 3.5.8 Delivery channels for nutrition actions

Across all regions, the primary delivery channel used for implementing any nutrition intervention was the health system (Fig. 3.93).<sup>2</sup> The vast majority of countries also used schools, the food chain, communities and shops, pharmacies or markets as delivery channels for implementing nutrition interventions. Media was less used in the WHO Eastern Mediterranean Region, whereas food aid and food security programmes were less used in the WHO regions of the Americas, Europe and the Western Pacific.

<sup>1</sup> See previous footnote.

<sup>2</sup> The analysis of delivery channels considered implementation of interventions within IYCN (GMP, breastfeeding and complementary feeding counselling, and BFHI), school health and nutrition programmes, promotion of healthy diet (nutrition labelling and claims, reformulation, a ban on *trans*-fatty acids, portion size control, fiscal policies, regulation of marketing of foods and non-alcoholic beverages to children, media campaigns, and nutrition education and counselling for healthy diets), vitamin and mineral nutrition (supplementation programmes and food fortification of wheat, maize, rice, salt and oil), acute malnutrition (food distribution programmes, and treatment of MAM and SAM), nutrition and infectious disease (nutrition counselling and support in HIV and TB, and deworming campaigns).

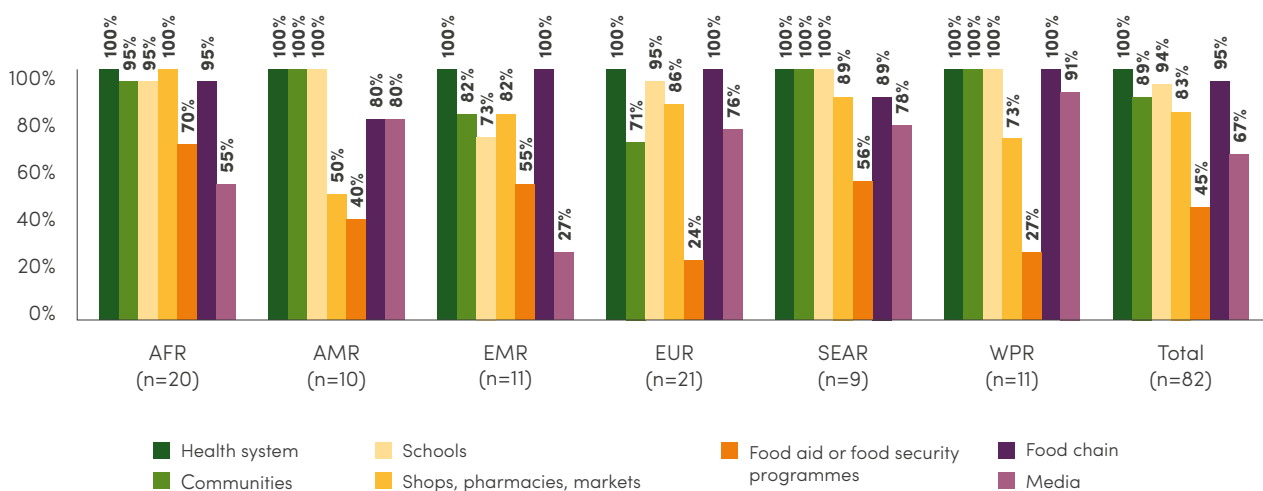
The health system was also the primary delivery channel within most nutrition intervention areas (Fig. 3.94). Schools were commonly used as delivery channels for actions to promote healthy diet (nutrition education, standards to regulate sales and marketing of foods and beverages, and a ban on vending machines), infectious diseases (deworming), and vitamin and mineral nutrition (use of fortified foods, mainly iodized salt, or supplementation programmes). Communities played a prominent role in the delivery of interventions in all areas except school health and nutrition programmes. Shops, pharmacies and markets were important channels for obtaining fortified foods, and for certain vitamin and mineral supplements. Food aid and food security programmes were used not only for food distribution, but also for distribution of fortified foods and for nutrition education and counselling. Interventions targeting the food chain primarily related to labelling, fortification of food-grade salt and wheat flour, and reformulation. Interventions using the media mainly comprised media campaigns on healthy diets, with fewer countries regulating commercial marketing to children in media. Workplaces were generally

used for nutrition education and counselling activities.

Actions to promote healthy diets and vitamin and mineral nutrition were delivered through the highest number of channels. However, there is great potential in further using these delivery channels in areas that are relevant in all settings; that is, IYCN, school health and nutrition programmes, healthy diets, and vitamin and mineral nutrition. As noted in Section 3.5.3, regulatory actions and structural changes to the food and drink environment are not widely implemented in all regions. Promotion of healthy diets may further expand into delivery channels not yet fully exploited (e.g. communities and workplaces), to accelerate scaling-up. Similarly, vitamin and mineral nutrition could be better ensured through communities, and in food aid and food security programmes. The lower use of delivery channels in acute malnutrition, and nutrition and infectious diseases reflects the fact that not all countries need to implement these interventions. Section 3.6 analyses the implementation of relevant actions based on the country context in relation to the global nutrition targets.

FIGURE 3.93

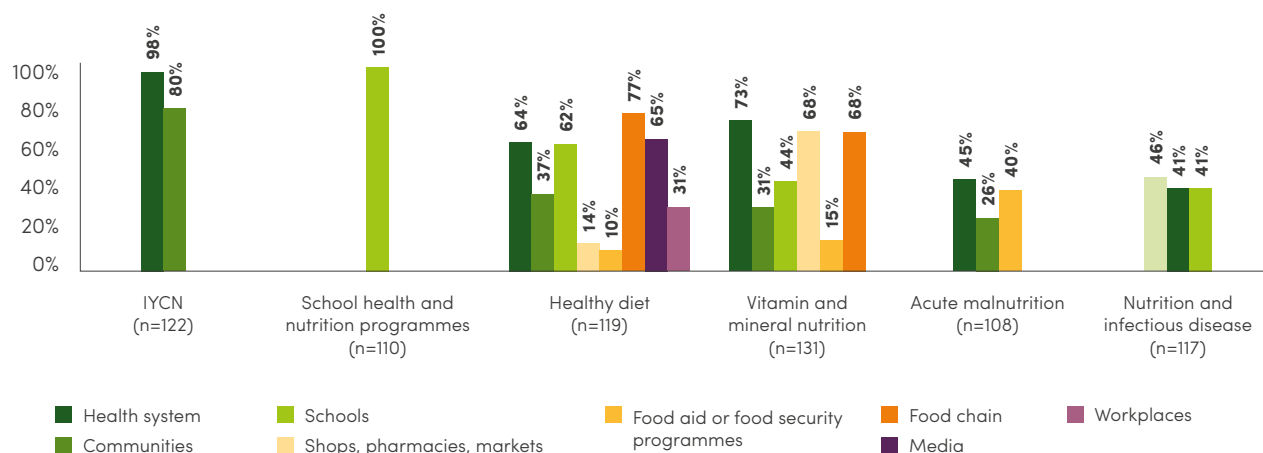
**DELIVERY CHANNELS USED FOR IMPLEMENTING NUTRITION INTERVENTIONS IN 82 COUNTRIES PROVIDING DETAILS ON ALL SECTIONS OF THE QUESTIONNAIRE**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.94

**DELIVERY CHANNELS USED FOR IMPLEMENTING DIFFERENT NUTRITION PROGRAMMES IN 136 COUNTRIES PROVIDING DETAILED INFORMATION**



IYCN, infant and young child nutrition.

**3.5.9 Targeting of nutrition interventions across the life cycle**

More than 90% of countries in almost all regions were implementing nutrition programmes targeting “the first 1000 days” and beyond; that is, pregnant and lactating women, infants and young children, preschool-age children and school-age children (Fig. 3.95).<sup>1</sup> In the WHO European Region, specific nutrition programmes targeting preschool-age children or pregnant and lactating women were slightly less common than in other WHO regions.

**Infants and young children** were targeted through breastfeeding and complementary feeding counselling, other IYCF programmes, certain vitamin and mineral supplementation schemes (e.g. iron supplementation and MNPs), and food distribution to prevent acute malnutrition (Fig. 3.96). The entire **preschool-age children** population was addressed through GMP activities, treatment of MAM and SAM, and health and nutrition programmes in preschool institutions. Vitamin and mineral supplementation in this age group included

mostly vitamin A, but also iron supplements as well as zinc in the case of diarrhoea. Deworming was also common in this age group. As expected, **school-age children** and **adolescents** were largely addressed through school-based programmes. Many countries also had specific actions targeting this age group to promote healthy diets; for example, regulation of marketing of foods and non-alcoholic beverages, and media campaigns. School-based deworming programmes were also common.

Programmes targeting **pregnant and lactating women** mainly concerned vitamin and mineral supplementation, especially iron and folic acid. Several countries reported on nutrition education that focused on healthy diets or media campaigns targeting this group; such education may address maternal obesity as a risk factor for childhood obesity. Some countries implemented deworming among pregnant women or included them in programmes to treat MAM or SAM. Programmes targeting **women of reproductive age** were less common, and mainly comprised supplementation with iron or folic acid, and media campaigns for healthy diets.

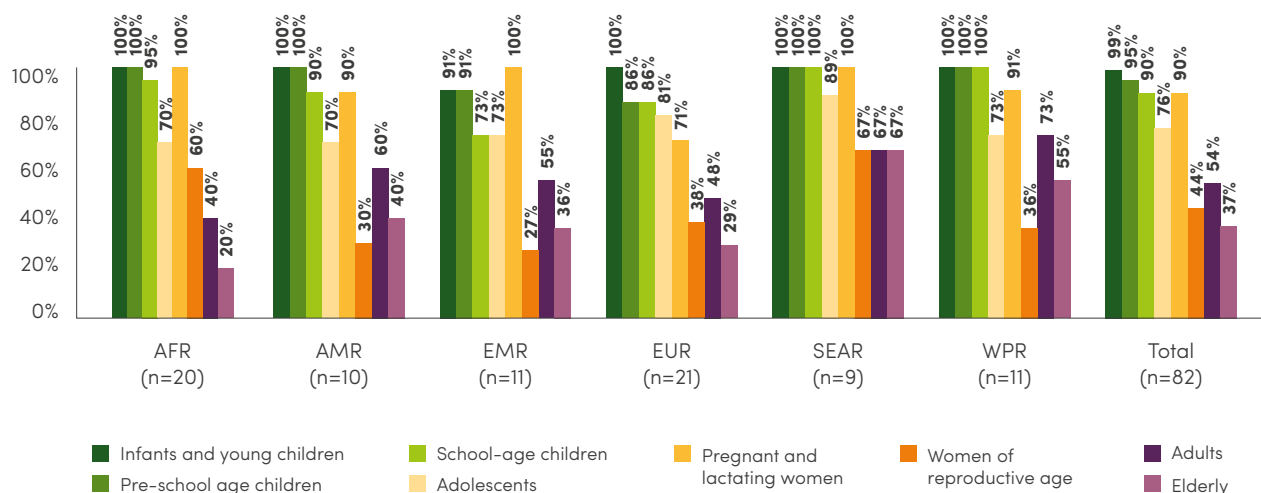
<sup>1</sup> The analysis of target groups considered implementation of interventions within IYCN (GMP, breastfeeding and complementary feeding counselling, infant feeding in difficult situations and BFHI), school health and nutrition programmes, healthy diets (regulation of marketing of foods and non-alcoholic beverages to children, media campaigns, and nutrition education and counselling for healthy diets), vitamin and mineral nutrition (supplementation programmes and food fortification of wheat, maize, rice, oil and salt), acute malnutrition (food distribution to infants and young children, and treatment of MAM and SAM), nutrition and infectious disease (nutrition counselling and support in HIV and TB, and deworming campaigns).

Programmes specifically targeting **adults** or **elderly people** were the least often reported, and largely comprised media campaigns and nutrition education to promote healthy diets. More countries may be

encouraged to improve programmes targeting elderly as a result of the recently published WHO guideline on the integrated care for older people, which includes recommendations on nutrition (121).

FIGURE 3.95

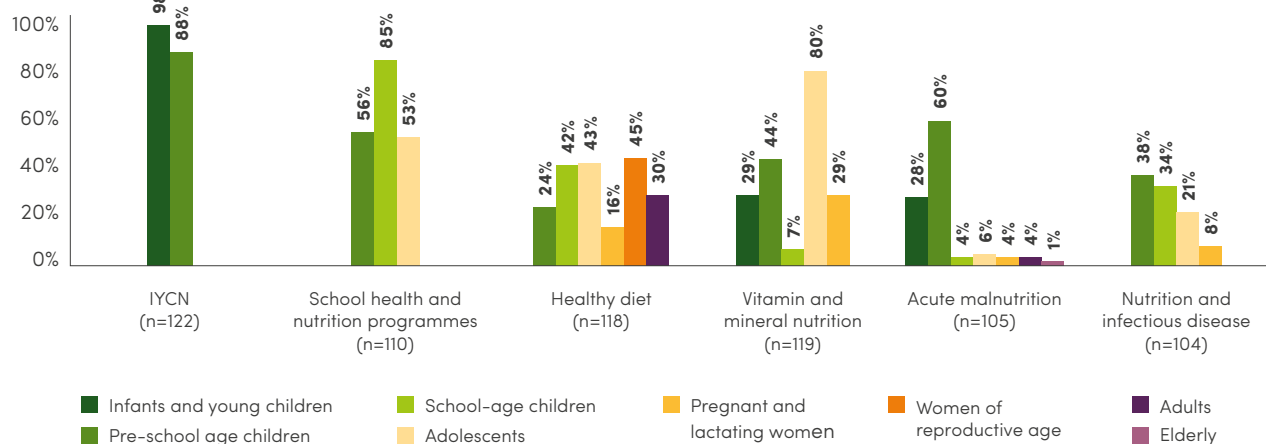
**IMPLEMENTATION OF NUTRITION INTERVENTIONS TARGETING DIFFERENT POPULATION GROUPS ACROSS THE LIFE CYCLE IN 82 COUNTRIES PROVIDING DETAILED INFORMATION ON ALL SECTIONS OF THE QUESTIONNAIRE**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.96

**IMPLEMENTATION OF DIFFERENT NUTRITION PROGRAMME AREAS AND TARGET GROUPS ADDRESSED IN 132 COUNTRIES PROVIDING DETAILED INFORMATION**



IYCN, infant and young child nutrition.

All individuals in an intervention target group (e.g. children aged 6–59 months) were usually eligible to receive those interventions. Some countries reported that nutritional care and support in HIV or TB were typically intended for those with, or at risk of, poor nutritional status. Vitamin and mineral supplementation was sometimes only provided based on nutritional risk, and zinc supplementation in children was often specified for children with diarrhoea. In some cases, eligibility for school health and nutrition programmes was determined by food security status.

### 3.5.10 Monitoring and learning for scaling up nutrition action

Successful scaling up of nutrition action requires monitoring of implementation progress, ensuring that the interventions reach the intended target groups, evaluating the impact of interventions and learning lessons for more efficient implementation.

**Monitoring of intervention coverage** was high across all regions, but particularly in the WHO regions of Africa, South-East Asia and the Western Pacific, where all countries reported collection of coverage data for any of their nutrition interventions (Fig. 3.97).<sup>1</sup> In all regions, coverage data were usually collected routinely, while many countries also collected them through surveys, especially in the WHO African Region (Fig. 3.98). Despite most countries monitoring coverage of nutrition

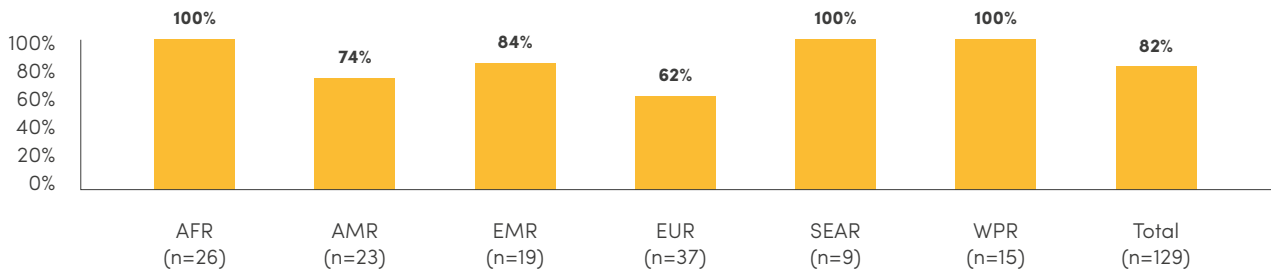
interventions, fewer countries reported having coverage data for any given nutrition area (Fig. 3.99). Only about half of the countries reported having coverage data for interventions in most of the nutrition areas, with even fewer countries having coverage data available for interventions to promote healthy diets and to prevent obesity and NCDs. The single interventions most often monitored were treatment of MAM or SAM, vitamin A supplementation in children and deworming. Routine collection was most common across all nutrition areas, but surveys were also quite common for collecting coverage data for interventions related to acute malnutrition, and vitamin and mineral nutrition (Fig. 3.100).

Actual coverage data were most often reported for vitamin and mineral nutrition interventions, followed by IYCN and acute malnutrition, and were least often reported for healthy diets because this only included one intervention (counselling on healthy diets), with only five countries reporting specific coverage data (Fig. 3.101). High levels of intervention coverage (>80%) were most often achieved for IYCN and SHN programmes, whereas acute malnutrition interventions most often had lower intervention coverages. The single interventions most often reported to be implemented at high coverages were breastfeeding and complementary feeding counselling, school fruit and vegetable schemes, and zinc supplementation to children.

<sup>1</sup> The analysis of coverage monitoring considered interventions being implemented within IYCN (counselling and promotion of breastfeeding and complementary feeding, and GMP), school health and nutrition programmes (school meals, school fruit and vegetable schemes, school milk schemes, school take-home rations and nutrition education), promotion of healthy diets (counselling for healthy diet), vitamin and mineral nutrition (supplementation schemes targeted at pregnant women, women of reproductive age and children), acute malnutrition (treatment of MAM and SAM, and food distribution), and nutrition and infectious diseases (nutrition counselling and support in HIV and TB, and deworming campaigns).

**FIGURE 3.97**

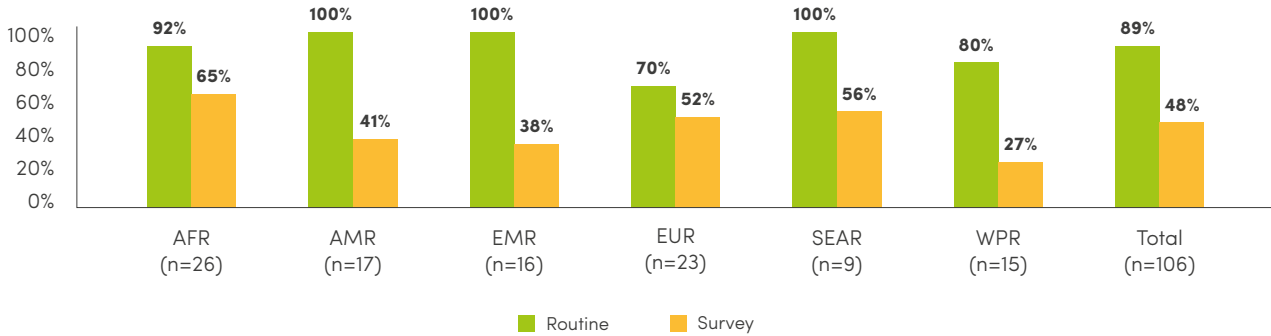
**COVERAGE MONITORING OF ANY INTERVENTION BEING IMPLEMENTED  
IN 129 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

**FIGURE 3.98**

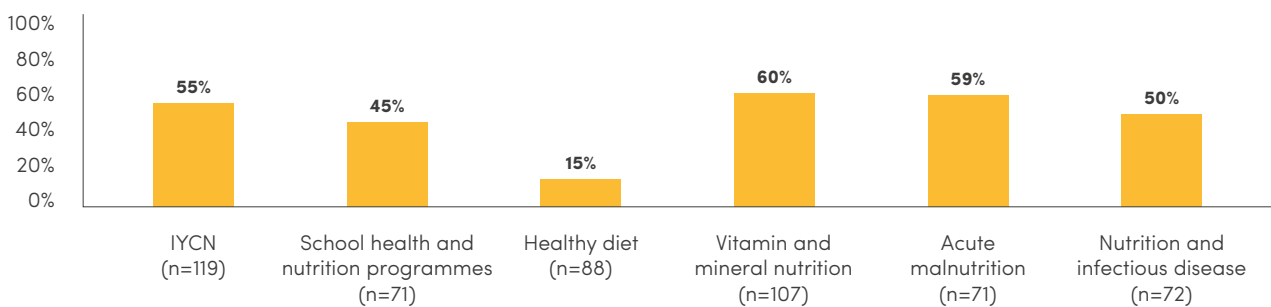
**SOURCE OF COVERAGE DATA BY REGION IN 106 COUNTRIES WITH COVERAGE  
MONITORING DATA PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

**FIGURE 3.99**

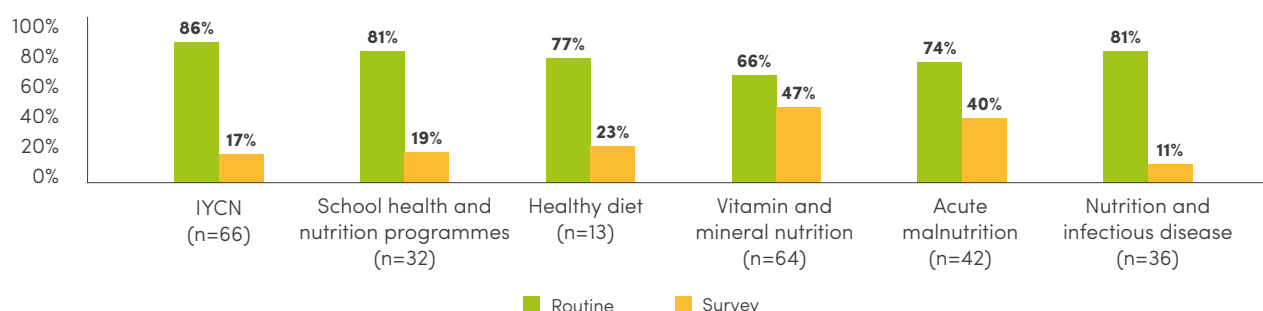
**COVERAGE MONITORING IN DIFFERENT NUTRITION INTERVENTION AREAS  
IN 129 COUNTRIES PROVIDING DETAILED INFORMATION**



IYCN, infant and young child nutrition.

FIGURE 3.100

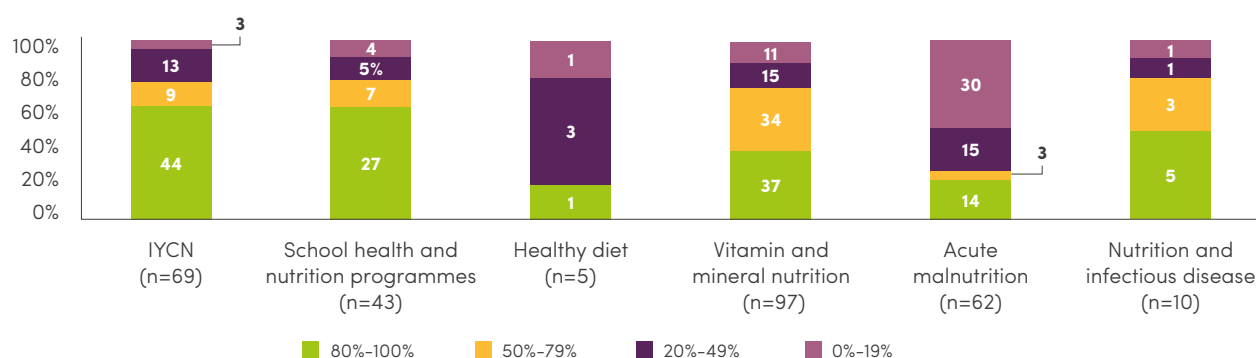
**SOURCE OF COVERAGE DATA BY NUTRITION AREA IN 106 COUNTRIES WITH COVERAGE MONITORING DATA PROVIDING DETAILED INFORMATION**



IYCN, infant and young child nutrition.

FIGURE 3.101

**RANGES OF REPORTED COVERAGE OF 286 INTERVENTIONS IN DIFFERENT NUTRITION AREAS IN 91 COUNTRIES PROVIDING DETAILED INFORMATION**



IYCN, infant and young child nutrition.

Almost all countries in all regions reported **monitoring and enforcing regulatory action**,<sup>1</sup> and most countries reported that they had established formal monitoring mechanisms for this (Fig. 3.102). Moreover, most countries were monitoring at least one of the regulatory actions being implemented in the three different nutrition areas (Fig. 3.103). Of any single intervention, school food standards were monitored most often, but not always through formal mechanisms. There was great variation in how regulatory actions to promote healthy diet were monitored. Although nutrition labelling was monitored through formal mechanisms by most countries, fewer countries had established mechanisms to monitor and enforce measures for

portion size control, reformulation of foods and beverages, and regulation of marketing of foods and non-alcoholic beverages to children. Fortification of food-grade salt was monitored more often than fortification of other foods.

The primary role and responsibility of monitoring mechanisms was to monitor compliance, followed by applying sanctions to identified violations (Figs. 3.104 and 3.105). However, public dissemination of monitoring results or sanctions applied was less common in all regions and areas. This was consistent across all regions and nutrition areas, except in the WHO Western Pacific Region, where sanctions were less common.

<sup>1</sup> The analysis of monitoring and enforcement of regulations considered measures being implemented within school health and nutrition programmes (school food standards), promotion of healthy diets, nutrition labelling (nutrient declaration, FOPL system or menu), portion size control, reformulation regulation of marketing to children, and vitamin and mineral nutrition (food fortification of wheat, maize, rice, oil and salt).



FIGURE 3.102

**MONITORING OF REGULATORY ACTIONS AND MONITORING MECHANISMS ESTABLISHED IN 115 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.103

**MONITORING AND MONITORING MECHANISMS ESTABLISHED FOR REGULATIONS IN DIFFERENT NUTRITION AREAS IN 115 COUNTRIES PROVIDING DETAILED INFORMATION**

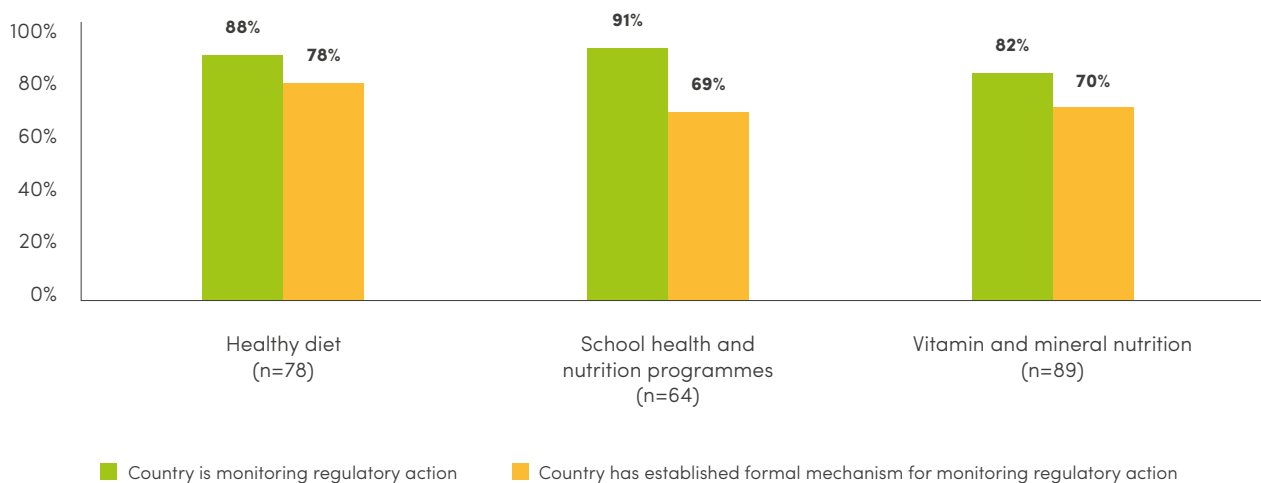
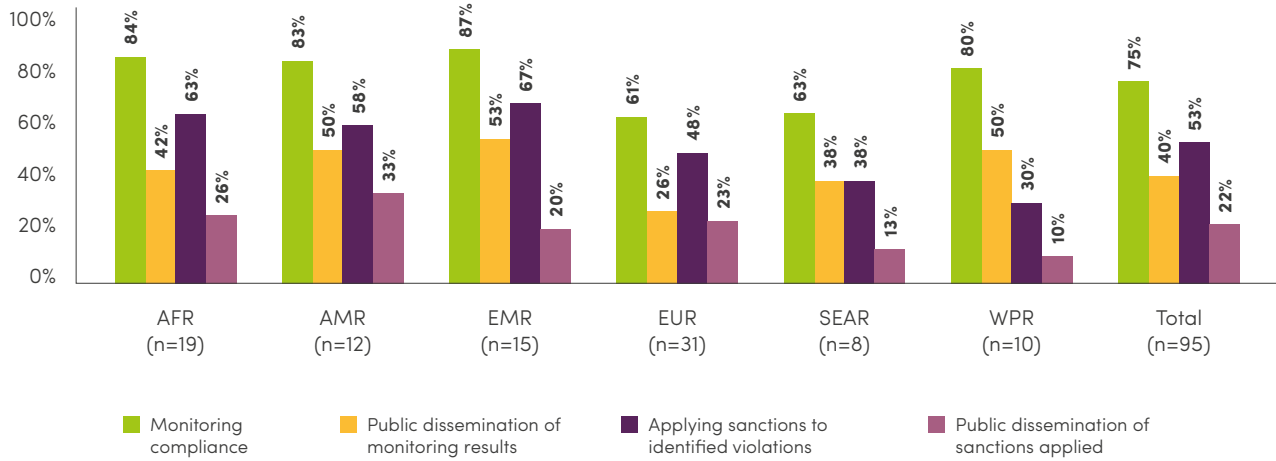


FIGURE 3.104

**ROLES AND RESPONSIBILITIES OF MONITORING AND ENFORCEMENT MECHANISMS OF EXISTING REGULATIONS IN 95 COUNTRIES PROVIDING DETAILED INFORMATION**



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.105

**ROLES AND RESPONSIBILITIES OF MONITORING AND ENFORCEMENT MECHANISMS OF EXISTING REGULATIONS BY NUTRITION AREA IN 95 COUNTRIES PROVIDING DETAILED INFORMATION**

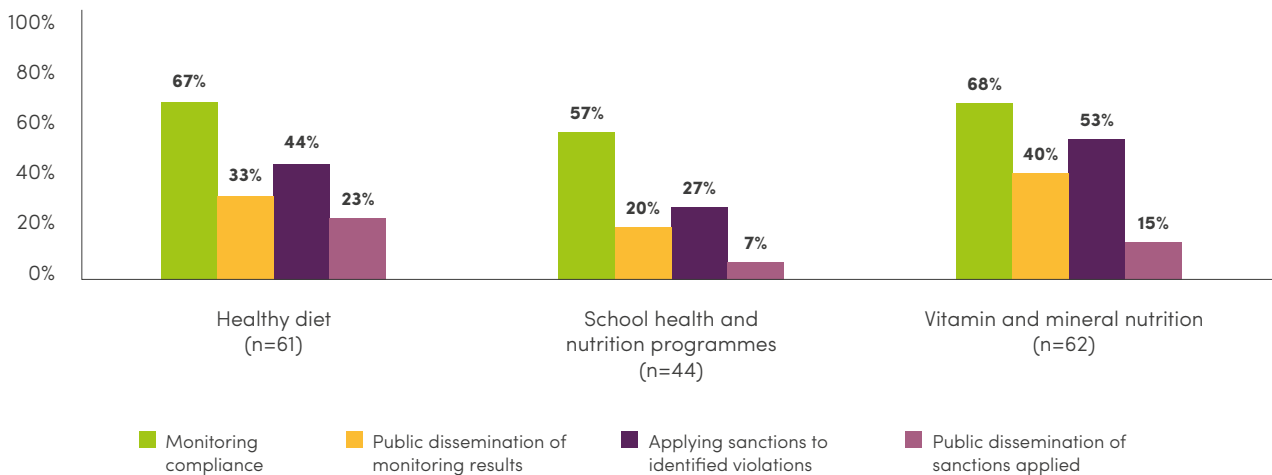
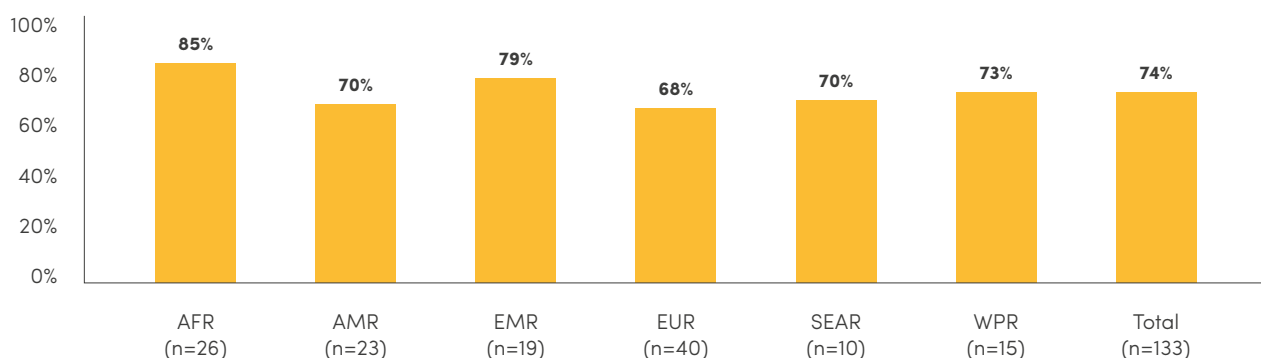


FIGURE 3.106

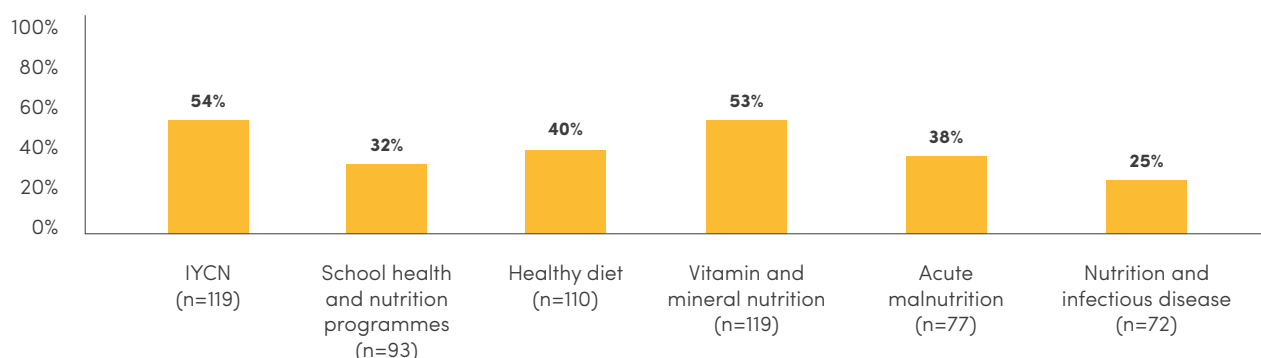
EVALUATION OF ANY NUTRITION PROGRAMME BEING IMPLEMENTED IN 133 COUNTRIES PROVIDING DETAILED INFORMATION



AFR, WHO African Region; AMR, WHO Region of the Americas; EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; SEAR, WHO South-East Asia Region; WPR, WHO Western Pacific Region.

FIGURE 3.107

EVALUATION OF DIFFERENT NUTRITION PROGRAMMES BEING IMPLEMENTED IN 133 COUNTRIES PROVIDING DETAILED INFORMATION



IYCN, infant and young child nutrition.

Most countries in all regions reported **evaluation of nutrition programmes** being implemented (e.g. impact studies, process evaluation and cost-effectiveness analysis), especially in the WHO African Region (Fig. 3.106).<sup>1</sup> Among the nutrition areas, more countries conducted evaluations of interventions for

IYCN, and for vitamins and minerals than for other types of intervention (Fig. 3.107). The single interventions most often evaluated were breastfeeding counselling and fortification of food-grade salt, although less than half of the countries implementing these interventions reported evaluating them.

<sup>1</sup> The analysis of evaluation of nutrition programmes considered interventions being implemented within IYCN (breastfeeding counselling and promotion, complementary feeding counselling and promotion, and GMP), school health and nutrition programmes, promotion of healthy diet (dietary guidelines, fiscal policies, nutrition and health claims, nutrition education and counselling for healthy diet, nutrition labelling, portion size control, reformulation, regulation of marketing of foods and non-alcoholic beverages to children, and a ban on *trans*-fatty acids), vitamin and mineral nutrition (supplementation programmes and food fortification of wheat, maize, rice, salt and oil), acute malnutrition (treatment of MAM and SAM, and food distribution), and nutrition and infectious diseases (nutrition counselling and support in HIV and TB, and deworming campaigns).

## 3.6. Policy environment for achieving the global nutrition targets

To assess whether countries are addressing their nutrition challenges adequately, cross-modular analyses of the policy environment were carried out. These analyses were based on the current status of the global nutrition target outcome indicators, and on whether they were on track or off track to reach the global nutrition targets. The methodology for selection of relevant elements in the policy environment and categorization of countries is described in Section 2.4.

### 3.6.1. Stunting

To achieve the global target of reducing the number of stunted children by 40% by 2025, affected countries need to implement comprehensive nutrition programmes focusing on the first 1000 days from a woman's pregnancy to her child's second birthday (122). Policies, coordination mechanisms, capacities and actions in support of such programmes were analysed for 109 countries.

Most of the on-track countries had stunting prevalence of below 20% (Table 3.3), which is the threshold defining the stunting prevalence as "low" (25), traditionally used to identify countries with a stunting problem. Ten countries with higher prevalence, all in the range of 20–40%, had shown significant improvements and were therefore classified as being on track using the TEAM rules for required average annual rate of reduction (AARR). Most countries in both of the off-track groups had stunting prevalence above 20%.

The policy environment was analysed based on stunting prevalence and the on-track or off-track status. Countries with a medium or high stunting prevalence ( $\geq 20\%$ ) were more likely to have a relevant policy environment (i.e. policies, coordination, capacities and actions that support stunting reduction) than countries with a lower prevalence of stunting (Fig. 3.108). This situation is probably a result of the intensified global attention to stunting since the first Lancet series on nutrition in 2008, which advocated for scaling-up of effective nutrition interventions in the first 1000 days period in countries with a stunting prevalence of 20% or higher.

TABLE 3.3

#### STUNTING PREVALENCE AND ON-TRACK OR OFF-TRACK STATUS IN 109 COUNTRIES<sup>1</sup>

Stunting prevalence	On track	Off track: some progress	Off track: no progress or worsening	Only one data point	Total
<20%	29	3	7	12	51
$\geq 20\%$	10	29	17	2	58
<b>Total</b>	<b>39</b>	<b>32</b>	<b>24</b>	<b>14</b>	<b>109</b>

<sup>1</sup> A total of 137 countries answered all the relevant GNPR2 sections that were used to analyse policy coherence for stunting reduction, but 28 of these did not have stunting data, leaving 109 countries, of which 14 did not have two data points for stunting required for estimating the AARR. Hence, a total of 95 countries were included in the analysis of whether countries were on track or off track. Of these 95 countries, 38 had recent data and had been assessed using TEAM's recommended rules, whereas 57 had been assessed using similar methods for the purpose of this report, as described in Section 2.4.

Further investigation of the 56 countries<sup>1</sup> with medium or high prevalence of stunting showed a consistent pattern between having or not having a relevant policy environment and being on track or off track (Fig. 3.109).<sup>2</sup> More than 80% of these countries had policy goals on stunting, regardless of their on-track or off-track status. However, less than two thirds of countries that were classed as “off track: no progress or worsening” had relevant policy actions to tackle stunting, even for key IYCN interventions such as breastfeeding counselling, which was the second most common policy action in all countries (Fig. 3.10 in Section 3.2.4).

More than 80% of countries in all groups had coordination mechanisms for nutrition as well as training for health workers in MIYCN. Among countries providing detailed information, most countries in all groups reported that their coordination mechanisms addressed MIYCN, and about half reported that training of health workers included breastfeeding and complementary feeding counselling, and GMP.

To address stunting adequately, it is necessary to implement a comprehensive package of interventions to improve maternal and child nutrition. The vast majority of countries in all groups reported relevant IYCF interventions, iron–folic acid supplementation in pregnant women, and vitamin A supplementation in children. However, only the countries that were on track seemed to address the pre-pregnancy period through supplementation programmes targeted at women of reproductive age. The countries that were on track were also more often found to provide zinc supplementation to children. The implementation of most of the interventions in the maternal and child nutrition intervention package (Section 2.4) was high in all groups, but was lowest in countries classed as “off track: no progress or worsening”.

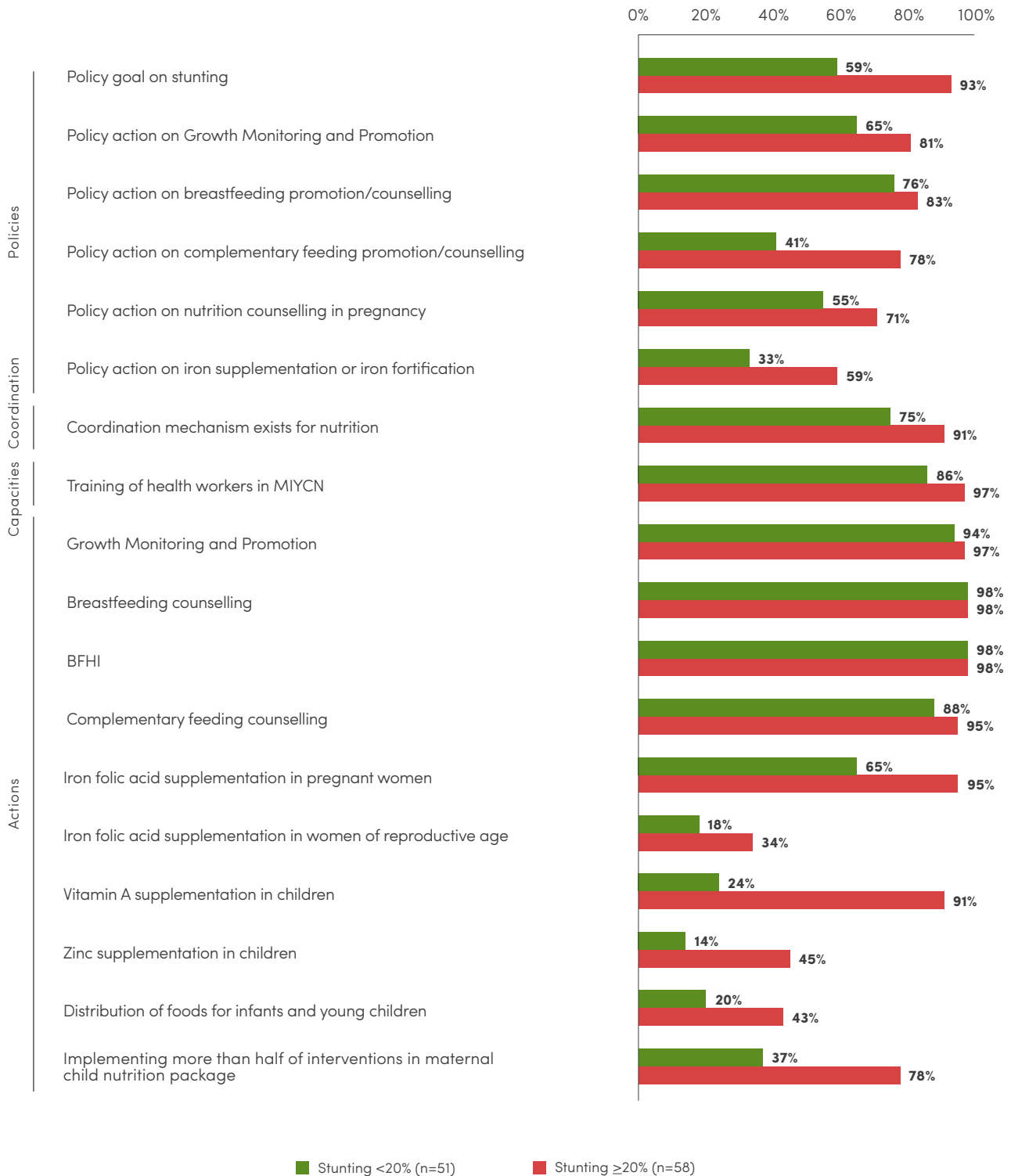
Stunting results from several household, environmental, socioeconomic, cultural and even intergenerational factors. This means that, in addition to the policies and programmes analysed here, stunting reduction requires diverse and nutrition-sensitive action in multiple sectors.

<sup>1</sup> Two countries with stunting prevalence of 20% or higher were excluded from the analysis because they had only one data point and hence the rate of progress could not be assessed.

<sup>2</sup> A similar pattern was not seen when the countries with prevalence lower than 20% were included.

FIGURE 3.108

POLICY ENVIRONMENT IN 109 COUNTRIES WITH STUNTING PREVALENCE ABOVE AND BELOW 20%<sup>1</sup>

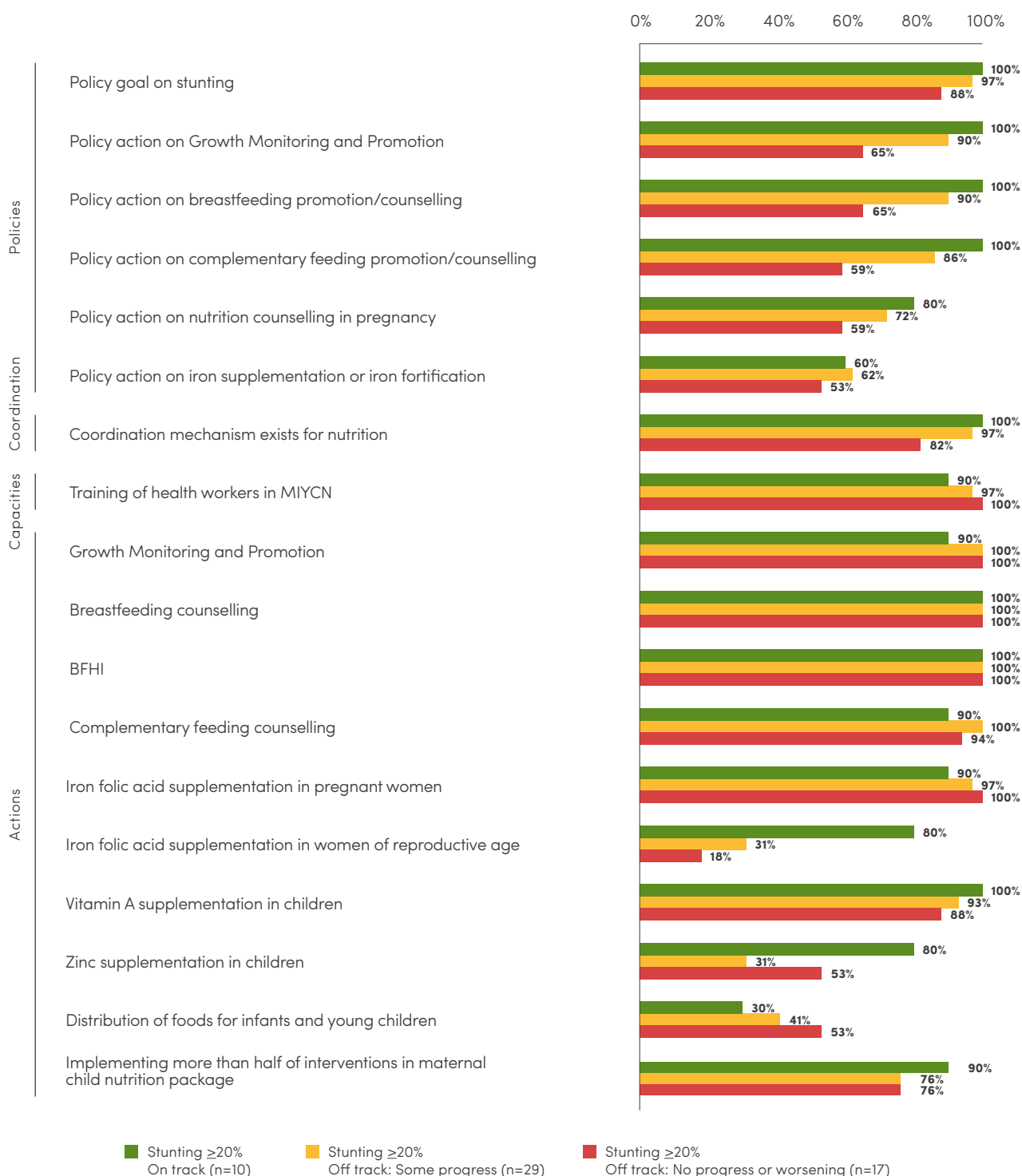


BFHI, Baby-friendly Hospital Initiative; MIYCN, maternal, infant and young child nutrition.

<sup>1</sup> Of the 51 countries with stunting prevalence lower than 20%, five were in the WHO African Region, 16 were in the WHO Region of the Americas, five were in the WHO Eastern Mediterranean Region, 11 were in the WHO European Region, two were in the WHO South-East Asia Region and 12 were in the WHO Western Pacific Region. Of the 58 countries with stunting prevalence of 20% or higher, 32 were in the WHO African Region, three were in the WHO Region of the Americas, eight were in the WHO Eastern Mediterranean Region, one was in the WHO European Region, eight were in the WHO South-East Asia Region and six were in the WHO Western Pacific Region.

FIGURE 3.109

**POLICY ENVIRONMENT IN 56 COUNTRIES<sup>1</sup> WITH STUNTING PREVALENCE OF 20% OR HIGHER BEING ON TRACK OR OFF TRACK FOR REACHING THE GLOBAL NUTRITION TARGET OF REDUCING THE NUMBER OF STUNTED CHILDREN BY 40% BY 2025**



BFHI, Baby-friendly Hospital Initiative; MIYCN, maternal, infant and young child nutrition.

<sup>1</sup> Of the 10 countries with stunting prevalence of 20% or higher that were on track, five were in the WHO African Region, one was in the WHO Region of the Americas, one was in the WHO Eastern Mediterranean Region and three were in the WHO South-East Asia Region; of the 29 countries with stunting prevalence of 20% or higher classed as "off track: some progress", 17 were in the WHO African Region, one in the WHO Region of the Americas, two in the WHO Eastern Mediterranean Region, one in the WHO European Region, five in the WHO South-East Asia Region and three in the WHO Western Pacific Region; of the 17 countries with stunting prevalence of 20% or higher classed as "off track: no progress or worsening", 10 were in the WHO African Region, one was in the WHO Region of the Americas, four were in the WHO Eastern Mediterranean Region and two were in the WHO Western Pacific Region.

### 3.6.2. Anaemia

The causes of anaemia are variable, but it is estimated that half of cases are due to iron deficiency. Public health strategies to prevent and control anaemia include improvements in dietary diversity; food fortification with iron, folic acid and other micronutrients; distribution of iron-containing supplements; and control of infections and malaria (123). Policies, coordination mechanisms, capacities and actions in support of such programmes were analysed for 138 countries with data that allowed assessment of their status towards achieving the anaemia reduction target (Table 3.4). Most of the 138 countries had an anaemia prevalence of 20% or higher, which is the threshold for identifying countries where anaemia is a moderate or severe public health problem (6). Furthermore, most of the countries were “off track: no progress or worsening” for reaching the global anaemia target, while no country was found to be on track.

As with stunting, countries with higher levels of anaemia tended to have more relevant policy environments (Fig. 3.110), indicating a commitment to respond to the problem. Regardless of anaemia prevalence, countries classed as “off track: some progress” consistently had more relevant policy environments than those that were “off track: no progress or worsening” (Fig. 3.111). The differences between the groups making some or no progress were also more profound than when considering

high or low anaemia prevalence only. For example, countries classed as “off track: some progress” had mandatory fortification of staple foods with iron more than twice as often as the countries classed as “off track: no progress or worsening”. In addition, the policies of the former more often had anaemia goals or actions on supplementation or fortification, deworming and optimal timing of cord clamping. Specific anaemia or cord clamping protocols were also more common. This indicates an association between a favourable policy environment and better progress, although no country is yet on track.

The insufficient improvements in anaemia prevalence despite high reporting of key interventions may reflect other implementation challenges. That 80% of countries with higher anaemia prevalence reported providing iron supplements to women during pregnancy suggests that these interventions may not be benefiting the intended target groups effectively. Even when the distribution of iron supplements through antenatal clinics is high, often, few mothers consume enough of the supplements; that is, compliance is low (124, 125). There are several examples in the literature, however, where compliance and programme effectiveness have been improved when iron supplements are delivered through community-based workers instead of antenatal clinics (126, 127) or to adolescent girls through schools (128).

TABLE 3.4

#### ANAEMIA PREVALENCE AND ON-TRACK OR OFF-TRACK STATUS IN 138 COUNTRIES<sup>1</sup>

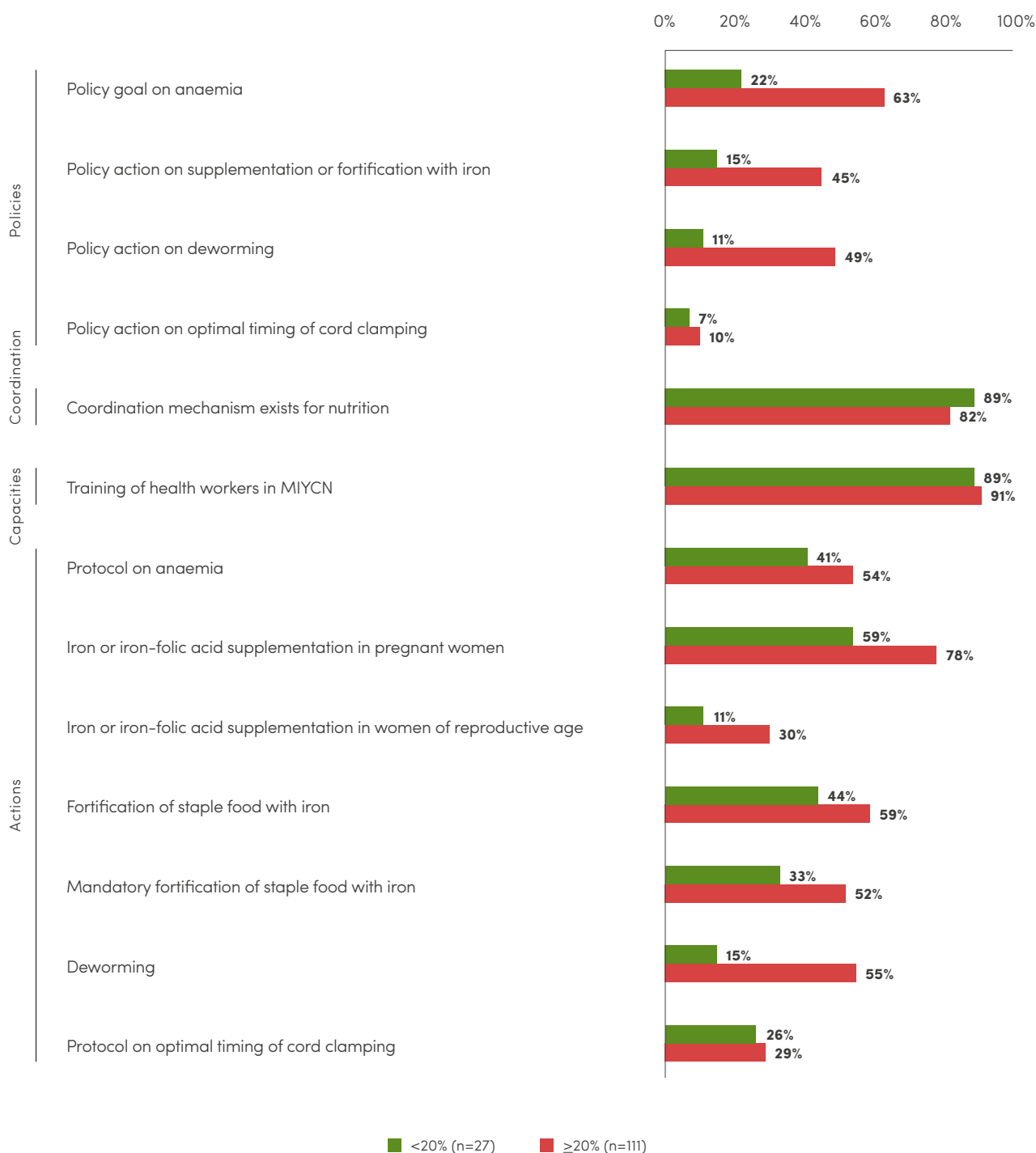
Anaemia prevalence	On track	Off track: some progress	Off track: no progress or worsening	Total
<20%	0	3	24	27
≥20%	0	36	75	111
<b>Total</b>	<b>0</b>	<b>39</b>	<b>99</b>	<b>138</b>

<sup>1</sup> A total of 142 countries answered all the relevant GNPR2 sections that were used to analyse policy coherence for anaemia reduction, but four of these did not have anaemia estimates, resulting in 138 countries being included in the analysis. All countries had recent data and had been assessed using TEAM’s recommended rules.



FIGURE 3.110

**POLICY ENVIRONMENT IN 138 COUNTRIES WITH ANAEMIA PREVALENCE IN WOMEN OF REPRODUCTIVE AGE ABOVE AND BELOW 20%<sup>1</sup>**

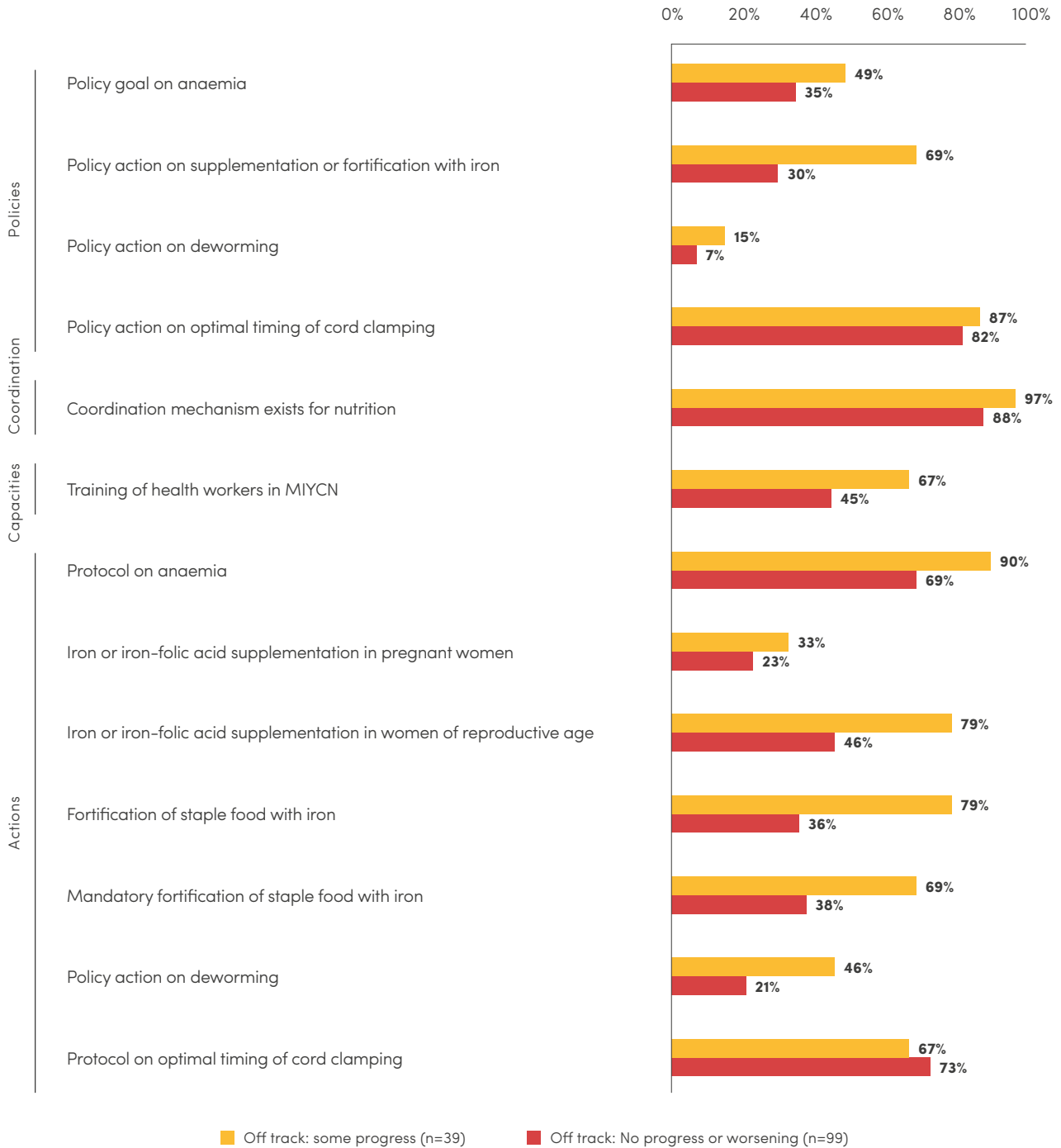


MIYCN, maternal, infant and young child nutrition.

<sup>1</sup> Of the 27 countries with anaemia prevalence lower than 20%, eight were in the WHO Region of the Americas, 14 in the WHO European Region and five in the WHO Western Pacific Region; of the 111 countries with anaemia prevalence of 20% or higher, 38 were in the WHO African Region, 14 in the WHO Region of the Americas, 16 in the WHO Eastern Mediterranean Region, 18 in the WHO European Region, 10 in the WHO South-East Asia Region and 15 in the WHO Western Pacific Region.

FIGURE 3.111

**POLICY ENVIRONMENT IN 138 COUNTRIES BEING OFF TRACK WITH SOME OR NO PROGRESS FOR REACHING THE GLOBAL NUTRITION TARGET OF HALVING ANAEMIA IN WOMEN OF REPRODUCTIVE AGE<sup>1</sup>**



MIYCN, maternal, infant and young child nutrition.

<sup>1</sup> Of the 39 countries classed as "off track: some progress", 21 were in the WHO African Region, 11 in the WHO Region of the Americas, one in the WHO Eastern Mediterranean Region, two in the WHO European Region, two in the WHO South-East Asia Region and two in the WHO Western Pacific Region; of the 99 countries classed as "off track: no progress or worsening", 17 were in the WHO African Region, 11 in the WHO Region of the Americas, 15 in the WHO Eastern Mediterranean Region, 30 in the WHO European Region, eight in the WHO South-East Asia Region and 18 in the WHO Western Pacific Region.

### 3.6.3. Low birth weight

At the time of this review, low birth weight estimates were not available; therefore, this section does not include a detailed analysis of the policy environment based on countries' status and progress in achieving the target.<sup>1</sup> Based on the data available, the highest incidence of low birth weight occurs in South Asia (28%) (129), with India alone accounting for one third of the global burden (130). Most countries in the WHO South-East Asia Region addressed low birth weight in their policies: 82% of countries had policy goals on low birth weight, 73% on underweight in women, and 91% on anaemia in pregnant or non-pregnant women. However, fewer countries had set policy goals addressing adolescent girls – not more than 36% of countries had policy goals on underweight and only 55% had policy goals on anaemia for this age group. Concerning actions being implemented, 100% of countries reported iron supplementation in women of reproductive age and in pregnant women, as well as fortification of staple foods with iron, and 90% reported fortification of food-grade salt with iodine. Despite the highly reported implementation of

these key interventions, high prevalence of low birth weight persists.

### 3.6.4. Overweight

Overweight and obesity are complex, multifaceted problems that arise from the combination of exposure to an unhealthy environment, and inadequate behavioural and biological responses to that environment. In many countries, these conditions exist alongside a continuing problem of undernutrition and micronutrient deficiencies, creating a “double burden” of malnutrition. Therefore, coherent and comprehensive strategies are needed not just to reduce undernutrition, but also to effectively and sustainably prevent and manage overweight and obesity (131). Policies, coordination mechanisms, capacities and actions in support of such programmes were analysed for 101 countries. About half of the countries had child overweight prevalence of 6% or higher (Table 3.5), which is the global baseline level (26).<sup>2</sup> Within both these groups, slightly more countries were on track than off track to achieve the global target of no increase in child overweight by 2025.

TABLE 3.5

#### OVERWEIGHT PREVALENCE AND ON-TRACK AND OFF-TRACK STATUS IN 82 COUNTRIES<sup>3</sup>

Overweight prevalence	On track	Off track	Only one data point	Total
<6%	26	15	5	46
≥6%	23	19	13	55
<b>Total</b>	<b>49</b>	<b>34</b>	<b>18</b>	<b>101</b>

1 As described in Section 2.4, such detailed analysis would have considered policy goals and actions related to low birth weight, underweight in women and adolescent girls, anaemia, nutrition counselling in pregnancy, iron and folic acid supplementation, calcium supplementation, multiple micronutrient supplementation, fortification of food-grade salt, fortification of staple foods with iron and food aid programmes targeting pregnant women.

2 Thresholds for public health significance for childhood overweight are currently being established.

3 A total of 110 countries answered all the relevant GNP2 sections that were used to analyse policy coherence for child overweight, but nine of these did not have overweight data, resulting in 101 countries. Of these 101 countries, 18 did not have the two data points required for estimating the AARR, resulting in 83 countries included in the on-track or off-track analysis. Of these 83 countries, 33 had recent data and had been assessed using TEAM's recommended rules, whereas 50 had been assessed for the purpose of this report as described in Section 2.4.

Countries with higher prevalence of overweight more often reported policies and actions related to promotion of healthy diets, but less often reported those related to MIYCN (Fig. 3.112). However, the differences between the two groups were small. Important policy gaps exist because less than half of countries with higher childhood overweight prevalence had relevant policies or actions on important measures such as reformulation, fiscal policies, regulation of marketing of food and non-alcoholic beverages to children, and portion size control.

Regardless of overweight level, countries that were on track tended to have more relevant policy goals and actions, but similar or lower implementation of interventions to promote healthy diets than countries that were off track (Fig. 3.113). The largest differences were seen for policies on FBDGs, nutrition labelling, regulation of marketing of food and non-alcoholic beverages to children

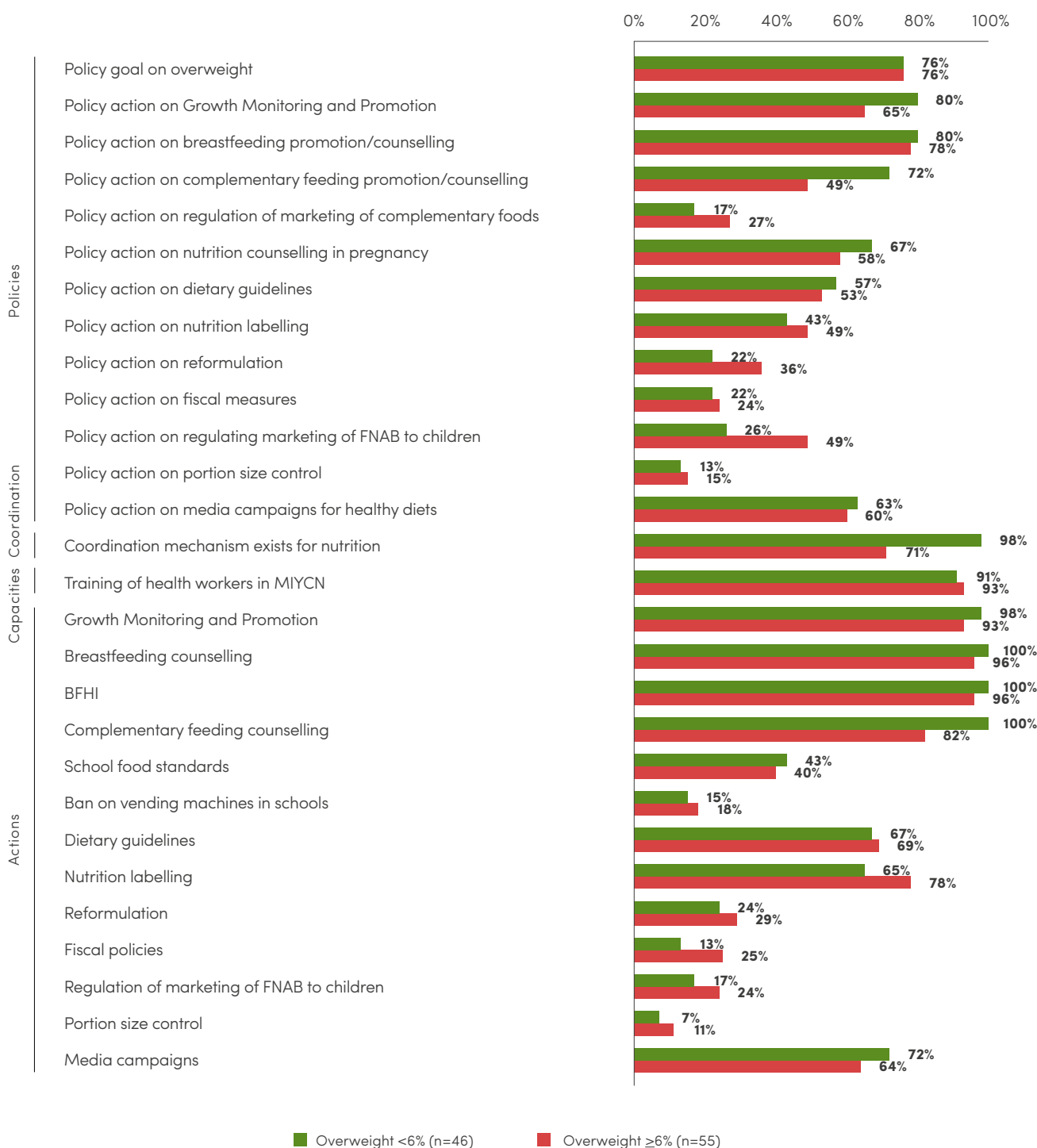
and portion size control; such policies were more frequent in countries that were on track than those that were off track.

As noted in Section 3.5.3, actions to promote healthy diets generally focused on information (e.g. media campaigns and dietary guidelines) rather than regulatory actions or structural changes to the environment (e.g. reformulation, fiscal measures, portion size control and bans on vending machines in schools).

National coordination mechanisms and capacity strengthening of health workers were reported slightly more often in countries that were on track to achieve the target. Among 38 countries with child overweight prevalence of 6% or higher that provided detailed information, almost all the countries that were on track had coordination mechanisms focusing on healthy diets, compared with just half of the countries that were off track.

FIGURE 3.112

**POLICY ENVIRONMENT IN 101 COUNTRIES WITH CHILDHOOD OVERWEIGHT PREVALENCE AT OR ABOVE, OR BELOW, THE GLOBAL BASELINE OF 6%<sup>1</sup>**

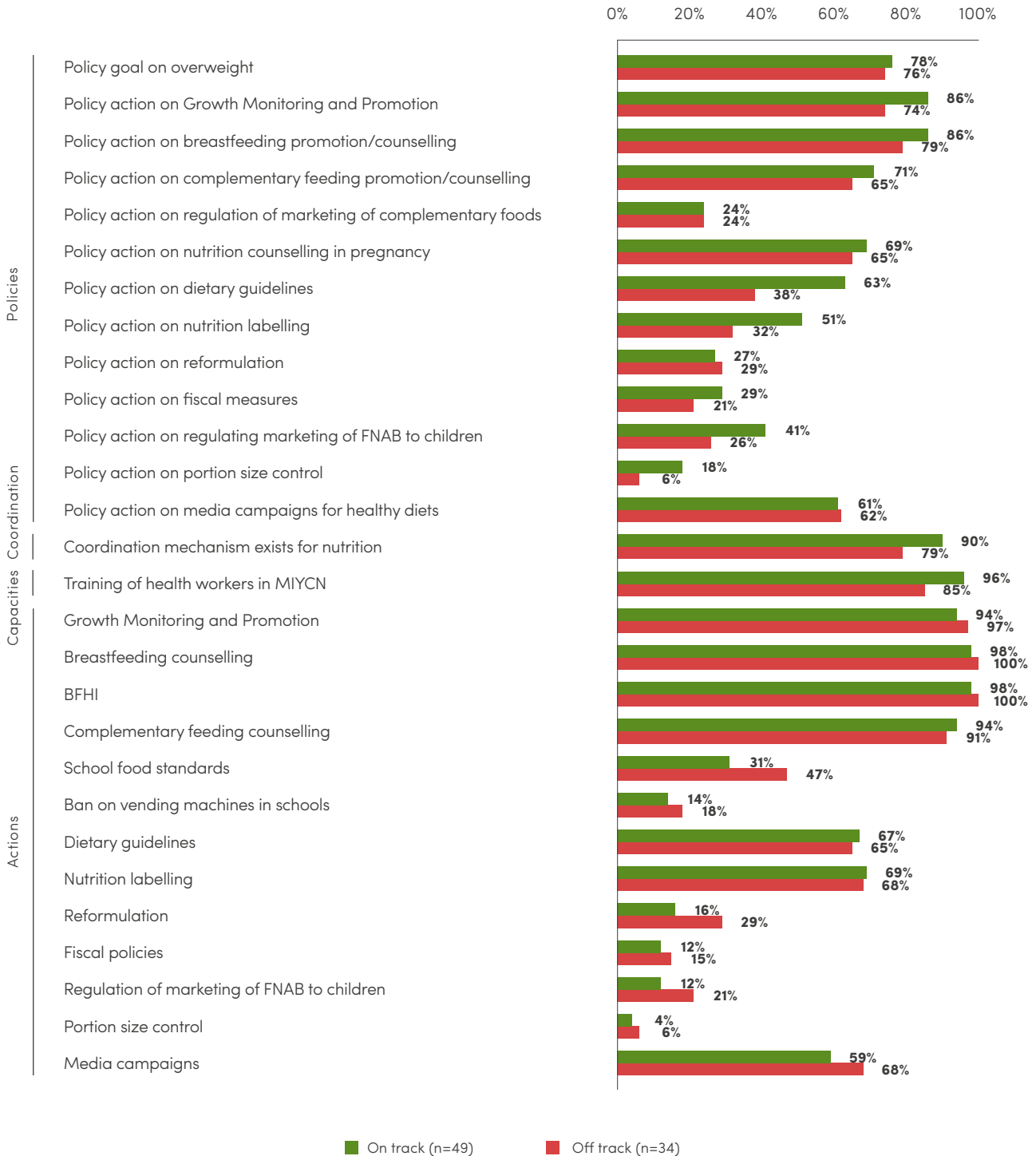


BFHI, Baby-friendly Hospital Initiative; FNAB, foods and non-alcoholic beverages; MIYCN, maternal, infant and young child nutrition.

<sup>1</sup> Of the 46 countries with overweight prevalence lower than 6%, 22 were in the WHO African Region, three were in the WHO Region of the Americas, five were in the WHO Eastern Mediterranean Region, three were in the WHO European Region, six were in the WHO South-East Asia Region and seven were in the WHO Western Pacific Region; of the 55 countries with overweight prevalence of 6% or higher, 12 were in the WHO African Region, 13 were in the WHO Region of the Americas, seven were in the WHO Eastern Mediterranean Region, nine were in the WHO European Region, four were in the WHO South-East Asia Region and 10 were in the WHO Western Pacific Region.

FIGURE 3.113

**POLICY ENVIRONMENT IN 83 COUNTRIES ON TRACK OR OFF TRACK TO REACH THE GLOBAL NUTRITION TARGET OF NO INCREASE IN CHILD OVERWEIGHT BY 2025<sup>1</sup>**



BFHI, Baby-friendly Hospital Initiative; FNAB, foods and non-alcoholic beverages; MIYCN, maternal, infant and young child nutrition.

<sup>1</sup> Of the 49 countries that were on track for reaching the child overweight target, 23 were in the WHO African Region, six were in the WHO Region of the Americas, five were in the WHO Eastern Mediterranean Region, seven were in the WHO European Region, seven were in the WHO South-East Asia Region and one was in the WHO Western Pacific Region; of the 34 countries that were off track for reaching the target, nine were in the WHO African Region, six were in the WHO Region of the Americas, five were in the WHO Eastern Mediterranean Region, three were in the WHO European Region, three were in the WHO South-East Asia Region and eight were in the WHO Western Pacific Region.

### 3.6.5. Exclusive breastfeeding

To achieve the global target of increasing exclusive breastfeeding prevalence up to at least 50%, it is necessary to protect, promote and support optimal breastfeeding practices at the health system, community and policy levels (132). Policies, coordination mechanisms, capacities and actions in support of such programmes were analysed for 106 countries. Half of the countries that were on track still had a prevalence below 50%, but had shown significant improvements and were therefore classified as being on track using the TEAM rules for required AARR (Table 3.6). Most of the countries that were off track had a prevalence below 50% – in particular, those countries that were classed as “off track: no progress or worsening”.

In contrast to stunting and anaemia, countries with exclusive breastfeeding prevalence of 50% or higher tended to have slightly more relevant policy environments than those with lower prevalence, indicating the need to build further commitment in the latter group (Fig. 3.114).

Overall, countries that were on track more often had relevant policies than countries that were off track (Fig. 3.115) – in particular, for infant feeding in difficult situations and regulation of marketing of breast-milk substitutes, although policy coverage of both of these remains low across the board. The countries that were on track also more often had protocols on infant feeding in difficult situations, in addition to having policies that included this topic.

With regard to coordination and capacities, the on-track countries and those classed as “off track: some progress” performed better than those classed as “off track: no progress or worsening”. Among 60 countries that had provided detailed information, having coordination mechanisms focusing on MIYCN was most common in the countries that were on track, whereas training for health workers on breastfeeding and complementary feeding was most common in countries classed as “off track: some progress”.

TABLE 3.6

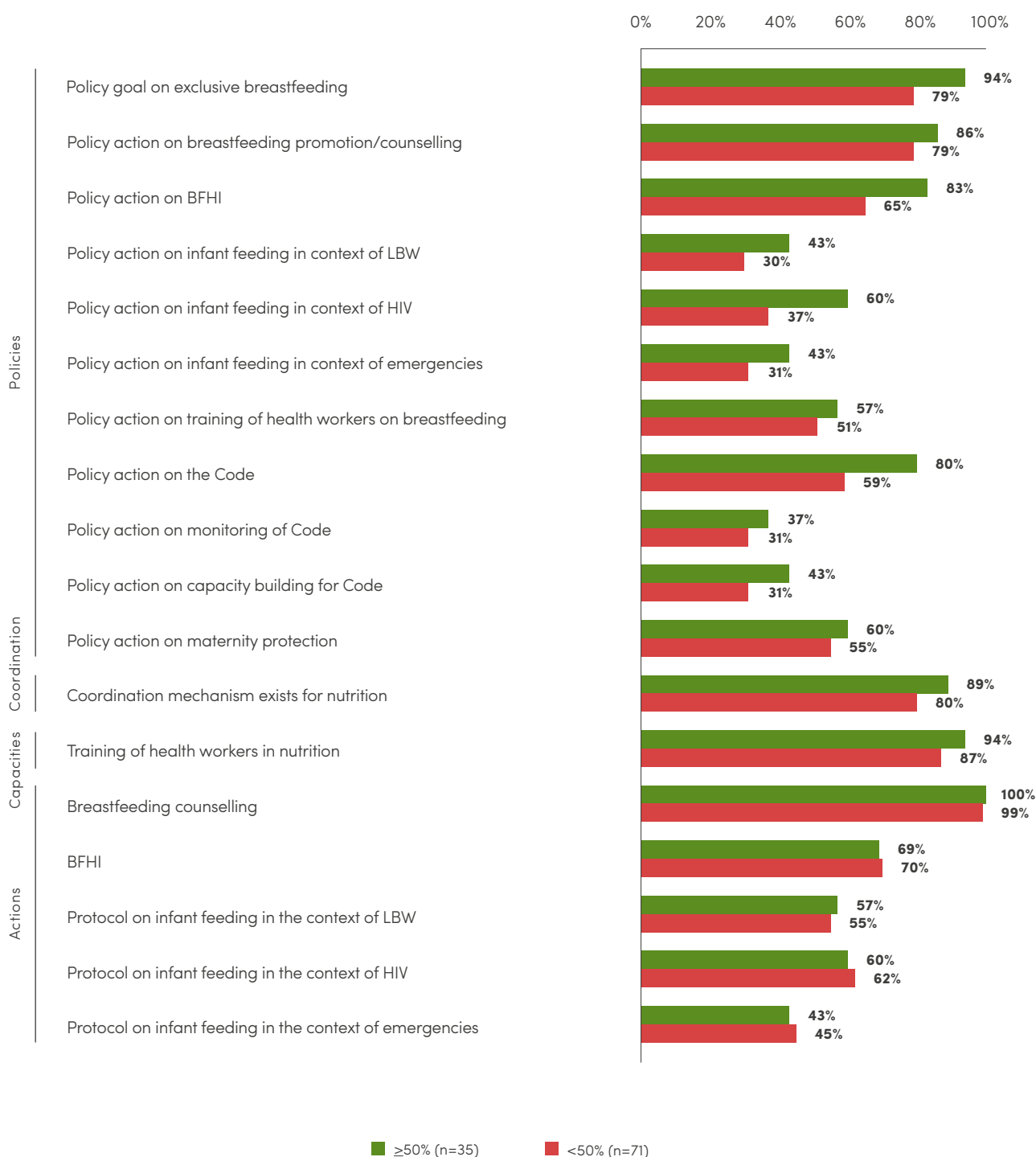
#### EXCLUSIVE BREASTFEEDING PREVALENCE AND ON-TRACK OR OFF-TRACK STATUS IN 87 COUNTRIES<sup>1</sup>

Exclusive breastfeeding prevalence	On track	Off track: some progress	Off track: no progress or worsening	Only one data point	Total
<50%	16	11	29	15	71
≥50%	17	9	5	4	35
<b>Total</b>	<b>33</b>	<b>20</b>	<b>34</b>	<b>19</b>	<b>106</b>

<sup>1</sup> A total of 154 countries answered all the relevant GNPR2 sections that were used to analyse policy coherence for protecting, promoting and supporting exclusive breastfeeding, but 48 of these did not have any data on exclusive breastfeeding prevalence, resulting in 106 countries being included. Of the 106 countries with prevalence lower than 70%, 19 did not have two data points for exclusive breastfeeding prevalence required for estimating the AARR, resulting in 87 countries included in the on-track or off-track analysis. Of these 87 countries, 37 had recent data and had been assessed using TEAM's recommended rules, whereas 50 had been assessed for the purpose of this report, as described in Section 2.4.

FIGURE 3.114

**POLICY ENVIRONMENT IN 106 COUNTRIES WITH EXCLUSIVE BREASTFEEDING PREVALENCE AT OR ABOVE, OR BELOW 50%<sup>1</sup>**



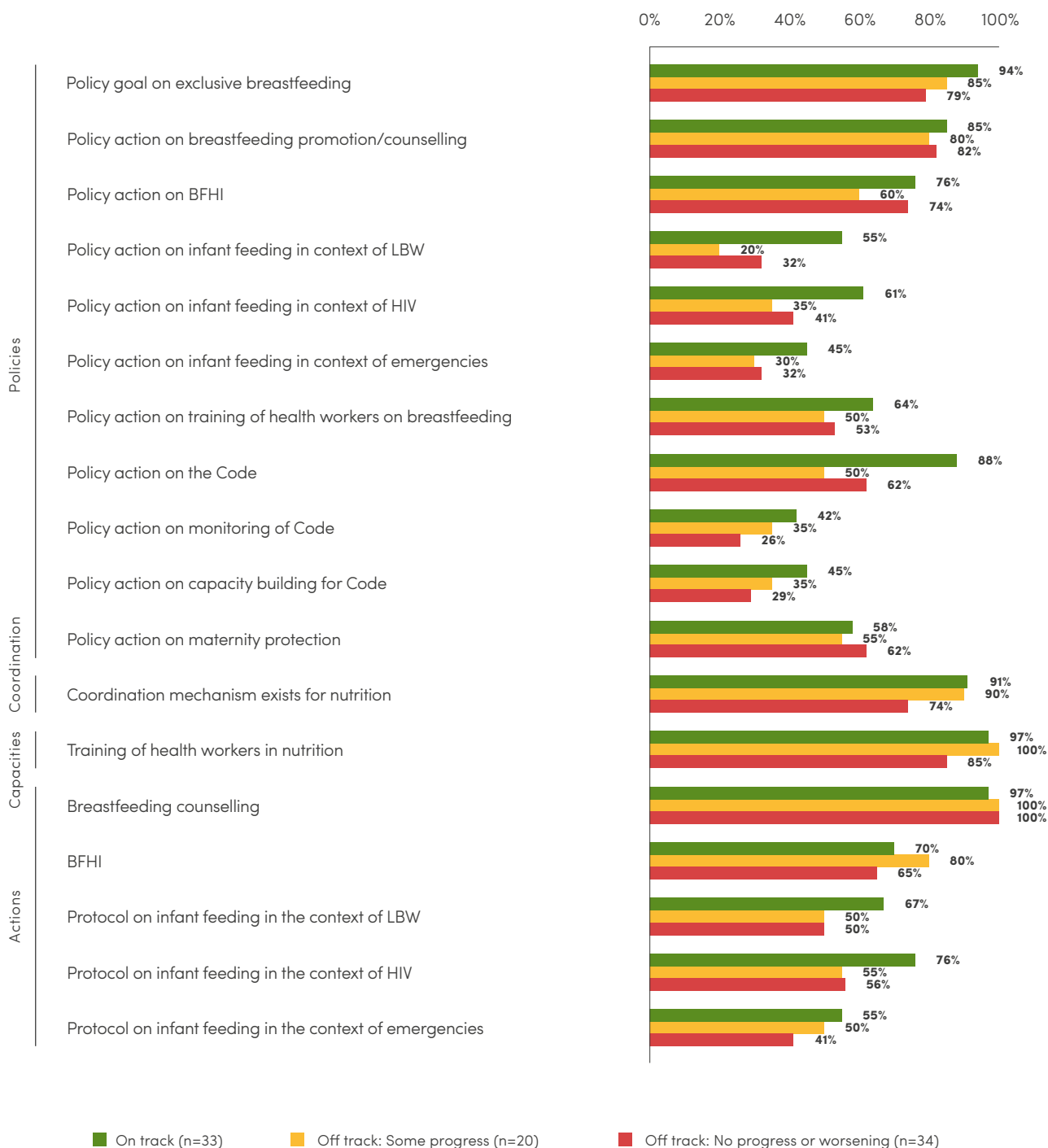
BFHI, Baby-friendly Hospital Initiative; HIV, human immunodeficiency virus; LBW, low birth weight.

<sup>1</sup> Of the 35 countries with exclusive breastfeeding prevalence of 50% or higher, 16 were in the WHO African Region, three in the WHO Region of the Americas, two in the WHO Eastern Mediterranean Region, one in the WHO European Region, six in the WHO South-East Asia Region and seven in the WHO Western Pacific Region; of the 71 countries with exclusive breastfeeding prevalence lower than 50%, 21 were in the WHO African Region, 16 in the WHO Region of the Americas, 11 in the WHO Eastern Mediterranean Region, 11 in the WHO European Region, four in the WHO South-East Asia Region and eight in the WHO Western Pacific Region.



FIGURE 3.115

**POLICY ENVIRONMENT IN 87 COUNTRIES ON TRACK OR OFF TRACK FOR REACHING THE GLOBAL NUTRITION TARGET OF INCREASING PREVALENCE OF EXCLUSIVE BREASTFEEDING TO AT LEAST 50% BY 2025<sup>1</sup>**



BFHI, Baby-friendly Hospital Initiative; HIV, human immunodeficiency virus; LBW, low birth weight.

<sup>1</sup> Of the 33 countries that were on track, 21 were in the WHO African Region, one in the WHO Region of the Americas, two in the WHO Eastern Mediterranean Region, one in the WHO European Region, four in the WHO South-East Asia Region and four in the WHO Western Pacific Region; of the 20 countries classed as "off track: some progress", five were in the WHO African Region, seven in the WHO Region of the Americas, one in the WHO Eastern Mediterranean Region, four in the WHO European Region and three in the WHO South-East Asia Region; of the 34 countries classed as "off track: no progress or worsening", nine were in the WHO African Region, seven in the WHO Region of the Americas, five in the WHO Eastern Mediterranean Region, seven in the WHO European Region, two in the WHO South-East Asia Region and four in the WHO Western Pacific Region.

### 3.6.6. Wasting

Achieving the global target of reducing and maintaining wasting to less than 5% requires identification and treatment of children with SAM, as well as effective prevention strategies addressing the underlying causes of wasting in the communities (133). Policies, coordination mechanisms, capacities and actions in support of such programmes and

strategies were analysed for 105 countries based on whether they were on track or off track to achieve the global target. As per the TEAM rules, all countries with wasting prevalence lower than 5% were classed as being on track to achieve the global target and those with prevalence of 5% or higher were classed as being off track. Among the countries that were off track, most were classed as “off track: no progress or worsening” (Table 3.7).

TABLE 3.7

#### WASTING PREVALENCE IN THE ON-TRACK AND OFF-TRACK COUNTRY GROUPS<sup>1</sup>

Wasting prevalence	On track	Off track: some progress	Off track: no progress or worsening	Only one data point	Total
<5%	58	0	0	0	58
≥5%	0	13	35	7	55
<b>Total</b>	<b>58</b>	<b>13</b>	<b>35</b>	<b>7</b>	<b>113</b>

Countries with prevalence equal to or higher than 5% (i.e. off track) had more relevant policy environments than those with prevalence lower than 5% (i.e. on track) (Fig. 3.116), demonstrating their response to the problem. Among the off-track countries that had higher wasting prevalence, there was less of an overall consistent pattern in the policy environment, as was seen for stunting.

Countries classed as “off track: some progress” more often had policies focusing on MIYCN and food distribution programmes. They also more often had actions focusing on food distribution (general or directed at infants and young children). In contrast, countries “making no progress or

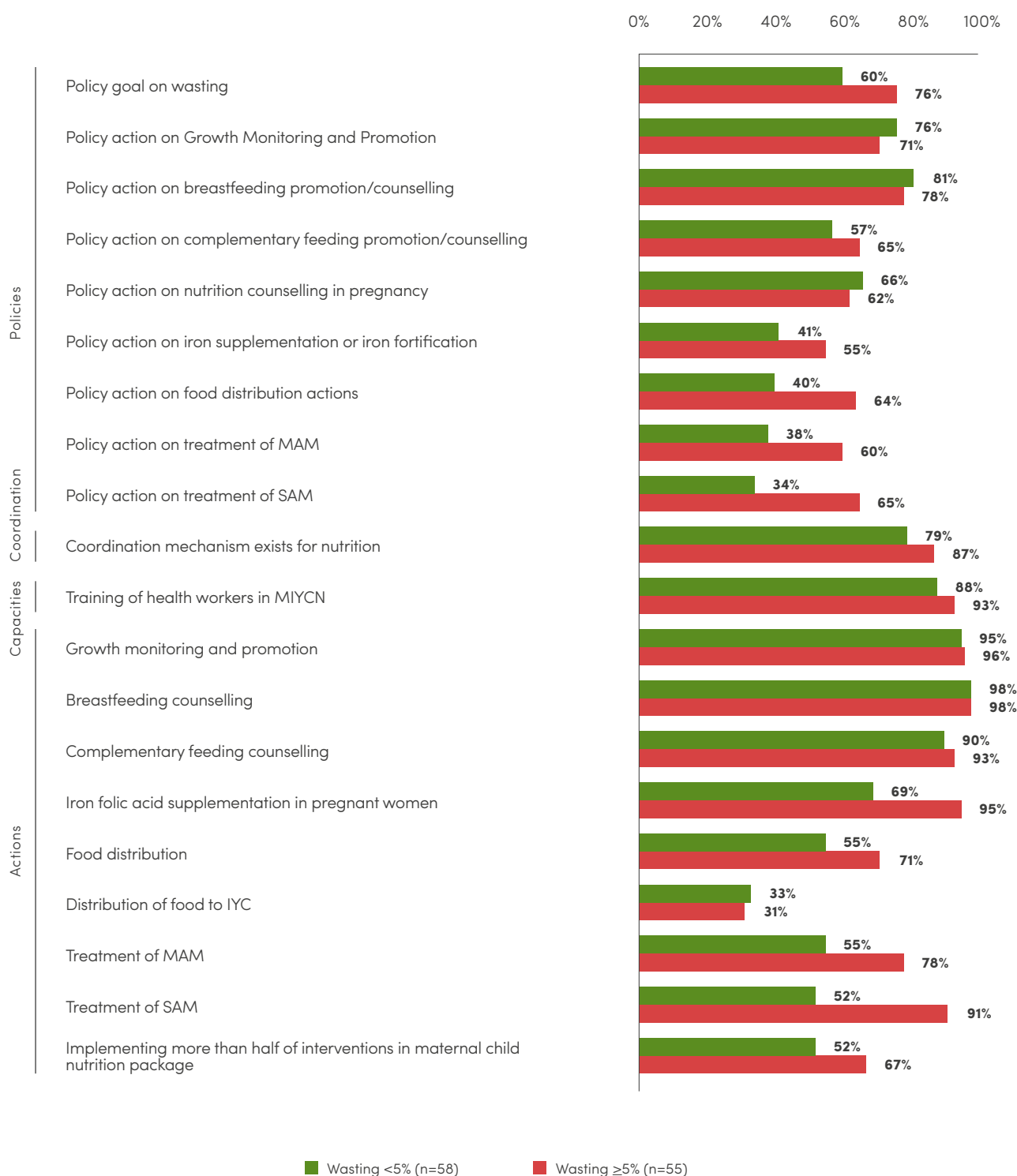
worsening” more often focused on treatment of MAM or SAM. However, the causes of wasting are highly contextual, and interventions beyond the direct nutrition interventions assessed in this questionnaire may be more relevant.

Most countries reported having coordination mechanisms for nutrition and strengthening health workers’ capacities for nutrition. Among 68 countries providing detailed answers, those with higher prevalence of wasting – and especially those making some progress – more often had coordination mechanisms or capacity strengthening focusing on acute malnutrition.

<sup>1</sup> A total of 141 countries answered all the relevant GNPR2 sections that were used to analyse policy coherence for wasting, but 28 of these did not have data on wasting, resulting in 113 countries. Seven of the 113 countries with prevalence of 5% or higher did not have the two data points required to estimate the AARR, resulting in 106 countries included in the on-track or off-track analysis. Of these 106 countries, 43 had recent data and had been assessed using TEAM’s recommended rules, whereas 63 had been assessed for the purpose of this report, as described in Section 2.4.

FIGURE 3.116

POLICY ENVIRONMENT IN 113 COUNTRIES WITH WASTING PREVALENCE AT OR ABOVE, OR BELOW 5%<sup>1</sup>

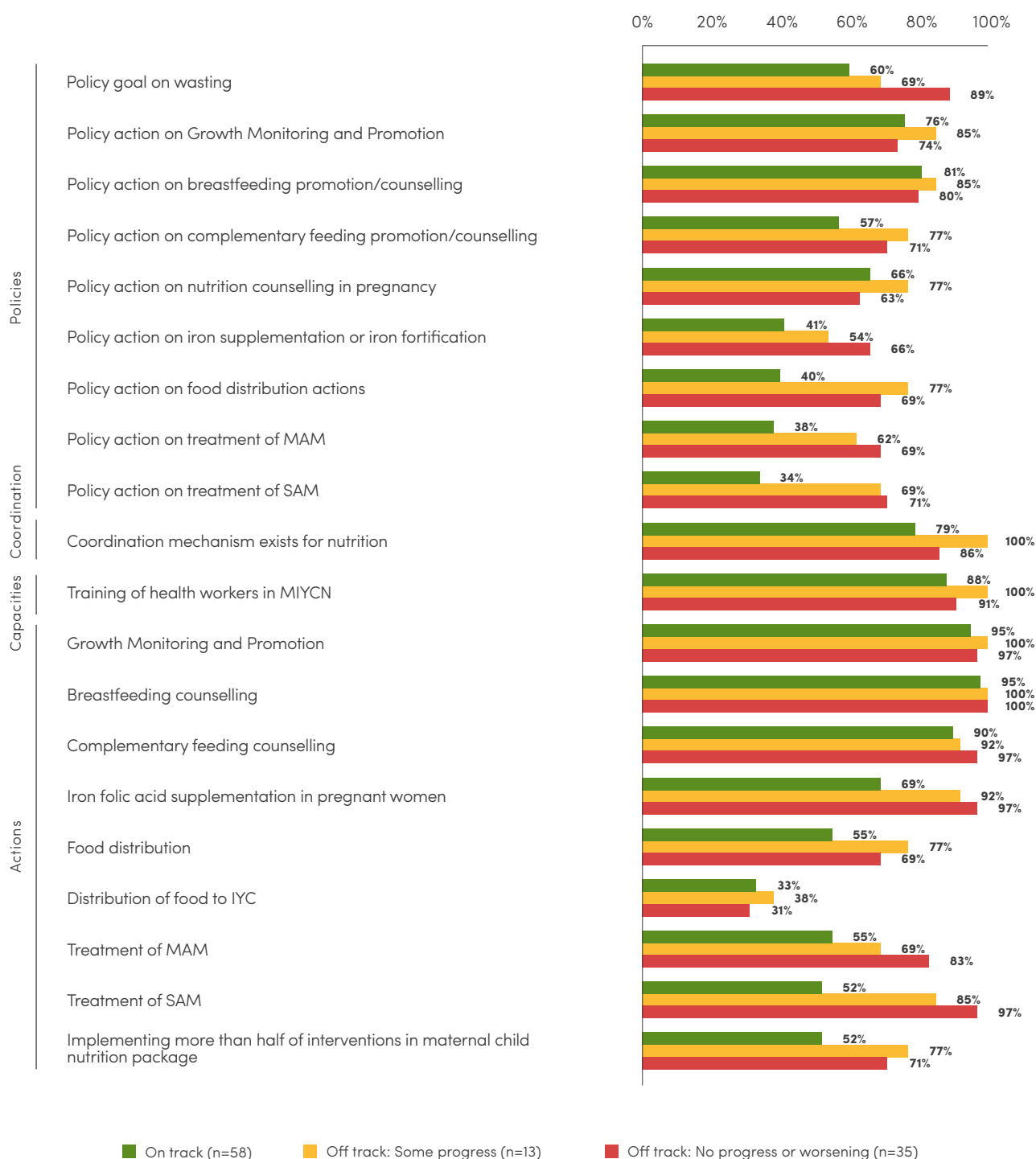


IYC, infants and young children; MAM, moderate acute malnutrition; MIYCN, maternal, infant and young child nutrition; SAM, severe acute malnutrition.

<sup>1</sup> Of the 58 countries with wasting prevalence lower than 5%, 14 were in the WHO African Region, 17 in the WHO Region of the Americas, four in the WHO Eastern Mediterranean Region, 11 in the WHO European Region, one in the WHO South-East Asia Region and 11 in the WHO Western Pacific Region; of the 55 countries with wasting prevalence of 5% or higher, 23 were in the WHO African Region, three in the WHO Region of the Americas, 11 in the WHO Eastern Mediterranean Region, one in the WHO European Region, nine in the WHO South-East Asia Region and eight in the WHO Western Pacific Region.

FIGURE 3.117

**POLICY ENVIRONMENT IN 106 COUNTRIES ON TRACK OR OFF TRACK FOR REACHING THE GLOBAL NUTRITION TARGET OF MAINTAINING WASTING LEVELS TO BELOW 5% BY 2025<sup>1</sup>**



IYC, infants and young children; MAM, moderate acute malnutrition; MIYCN, maternal, infant and young child nutrition; SAM, severe acute malnutrition.

<sup>1</sup> Of the 58 countries with wasting prevalence lower than 5% and therefore on track to achieve the target, 14 were in the WHO African Region, 17 in the WHO Region of the Americas, four in the WHO Eastern Mediterranean Region, 11 in the WHO European Region, one in the WHO South-East Asia Region and 11 in the WHO Western Pacific Region; of the 13 countries classed as "off track: some progress", six were in the WHO African Region, one in the WHO Region of the Americas, one in the WHO Eastern Mediterranean Region, two in the WHO South-East Asia Region and three in the WHO Western Pacific Region; of the 35 countries classed as "off track: no progress or worsening", 16 were in the WHO African Region, one in the WHO Region of the Americas, seven in the WHO Eastern Mediterranean Region, one in the WHO European Region, seven in the WHO South-East Asia Region and three in the WHO Western Pacific Region.







# **4. PROGRESS**

SINCE THE FIRST GLOBAL  
NUTRITION POLICY REVIEW

The overall response rate to GNPR2 of 91% of Member States is a considerable increase over GNPR1, when just 62% of Member States responded; this increase reflects the growing importance being given to nutrition policies (1). The improvement was seen across all regions, with the biggest increases seen in the WHO regions of Africa, the Eastern Mediterranean and South-East Asia. The WHO Eastern Mediterranean Region went from being the region with the lowest response rate in GNPR1 (38%) to being one of the regions with the highest response rate in GNPR2 (100%). The vast majority of countries that responded to GNPR1 also responded to GNPR2.

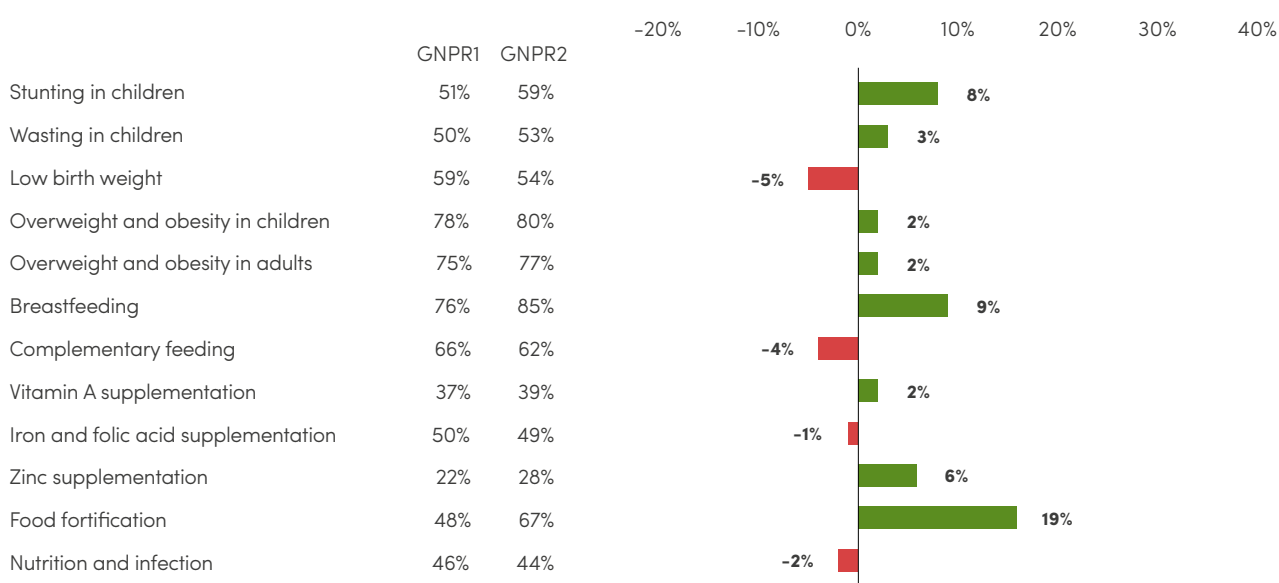
Most of the goals, indicators and action areas included in national policies, plans and strategies in GNPR2 have grown (in terms of percentage) since GNPR1 (Fig. 4.1). This is especially so for stunting in children, breastfeeding and food fortification, all of which grew by at least eight percentage points. Overall, the inclusion of most topics has increased; however, this progress has not been consistent across all regions. The largest increases concerned the inclusion of adult overweight and obesity in

national policies in the WHO Eastern Mediterranean Region, food fortification in the WHO European Region and zinc supplementation in the WHO South-East Asia Region, whereas the largest decreases were seen for undernutrition targets and vitamin and mineral action areas in the WHO Western Pacific Region. Small decreases were seen for low birth weight, complementary feeding, and nutrition and infectious disease. These decreases were seen in all regions, except for low birth weight and complementary feeding in the WHO Eastern Mediterranean Region, and complementary feeding and nutrition and infectious disease in the WHO African Region. These differences probably reflect policy changes since the GNPR1 rather than just a change in the composition of respondents, because 90% of the countries had policies that had been developed since 2011, which was after the collection of policies for GNPR1.

The greatest difference in the coordination mechanisms reported in GNPR2 as compared with GNPR1 was the location of the mechanism (Fig. 4.2). A growing number of countries have set up a coordination mechanism in high government offices.

**FIGURE 4.1**

**COMPARISON OF NATIONAL POLICY GOALS AND ACTIONS REPORTED IN THE FIRST AND SECOND GLOBAL NUTRITION POLICY REVIEW**



GNPR, Global Nutrition Policy Review.

A total of 123 countries responded to the section on policies for GNPR1, whereas 167 countries responded to the section on policies for GNPR2.



For example, the president or prime minister’s office as the location for nutrition coordination grew by 13 percentage points – with the largest increase seen in the WHO African Region – such that almost a third of countries now have their nutrition coordination at this level. This again reflects the growing importance of nutrition programmes and policies, as well as the increasing understanding that tackling all forms of malnutrition and diet-related NCDs requires multisectoral whole-of-government approaches. To ensure maximum coherence across sectors to tackle these problems, such mechanisms need to be placed above the various sectors involved, in order to ensure high-level political leadership (134) and facilitate cooperation both vertically and horizontally across the multiple actors and levels involved (135). The simultaneous decrease in countries that have coordination mechanisms for nutrition set up in the ministries of health or agriculture may indicate that these are being replaced by the high-level mechanisms.

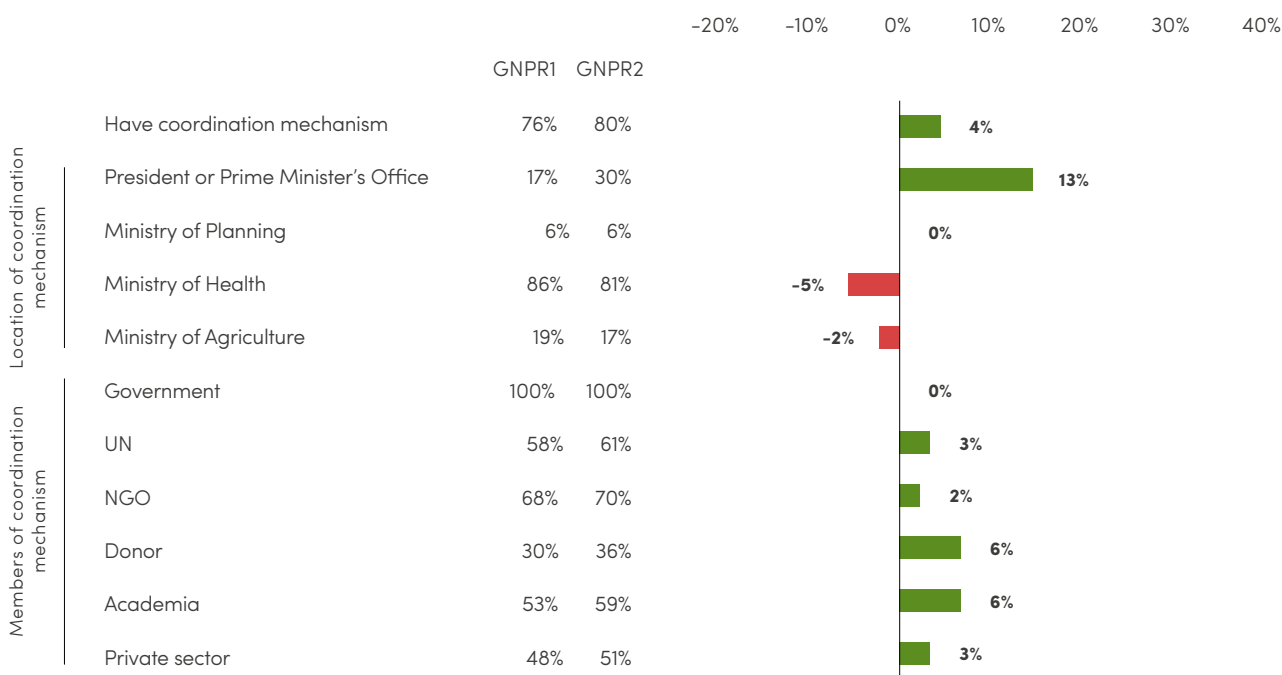
There was a small increase in the participation of nongovernment partners over the period.

Progress in relation to programmes to promote IYCN showed little change (Fig. 4.3). This is because most countries included such programmes in both reviews; thus, the promotion of breastfeeding was reported by 98% of countries in GNPR1 and 99% in GNPR2, with the promotion of improved complementary feeding reported by 87% and 93%, respectively.

Programming for school health and nutrition largely deteriorated across the two reviews. All the regions saw large overall decreases in most programme components, although there were some exceptions; for example, increased inclusion of deworming and safe drinking-water in the WHO African Region and growth monitoring and deworming in the WHO Eastern Mediterranean Region.

**FIGURE 4.2**

**COMPARISON OF NUTRITION COORDINATION MECHANISMS REPORTED IN THE FIRST AND SECOND GLOBAL NUTRITION POLICY REVIEW**

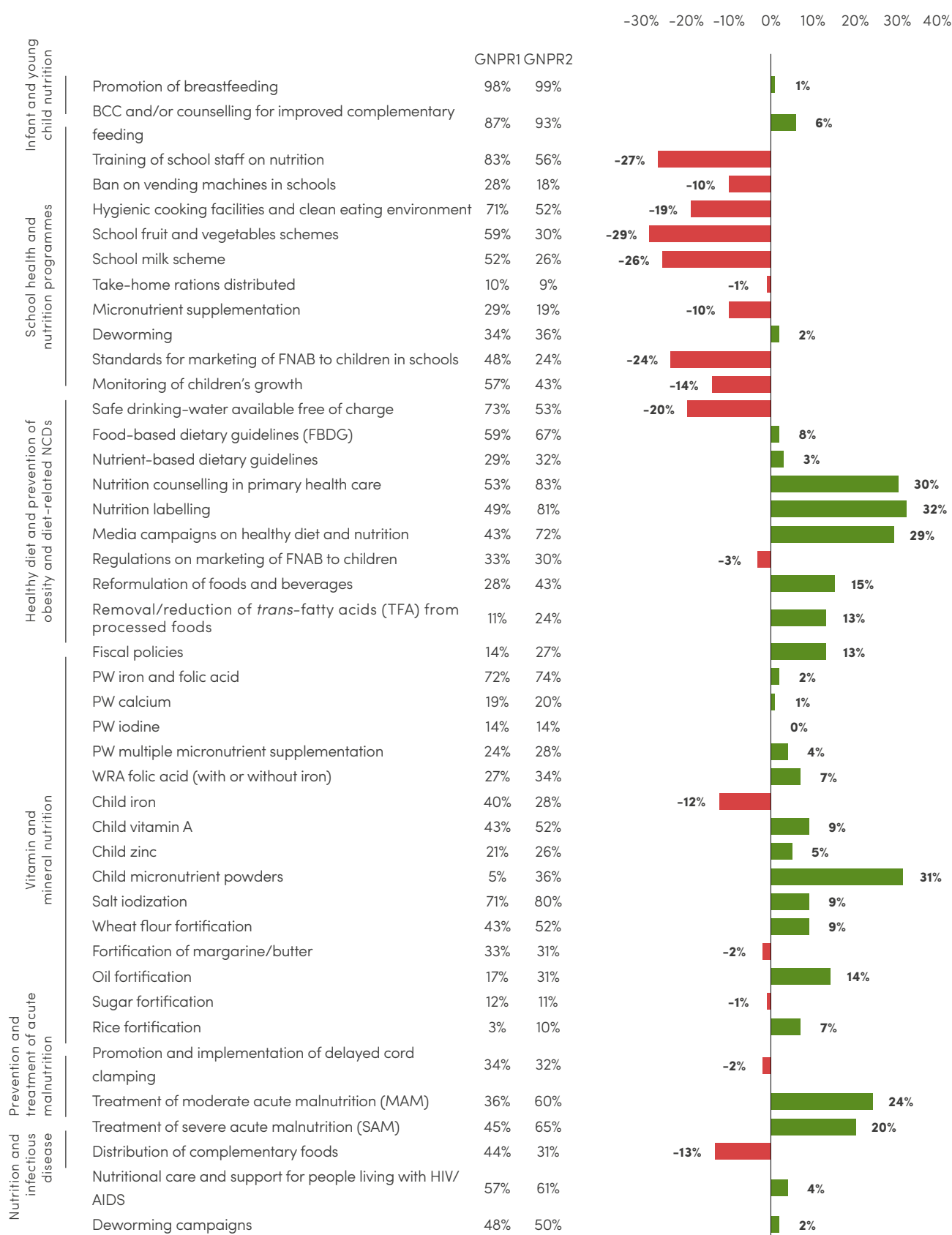


GNPR, Global Nutrition Policy Review; NGO, nongovernmental organization; UN, United Nations

A total of 119 countries provided information on nutrition coordination mechanisms for GNPR1, and 169 responded to the GNPR2. Detailed information about the location and members of the coordination mechanisms were provided by 90 and 105 countries in the GNPR1 and GNPR2, respectively.

FIGURE 4.3

COMPARISON OF NUTRITION ACTIONS IMPLEMENTED AS REPORTED IN THE FIRST AND SECOND GLOBAL NUTRITION POLICY REVIEW



AIDS, acquired immunodeficiency syndrome; BCC, behaviour change communication; GNPR, Global Nutrition Policy Review, HIV, human immunodeficiency virus; NCD, noncommunicable disease; PW, pregnant women; WRA, women of reproductive age

Number of countries included in analysis is as follows:<sup>1</sup>

- infant and young child nutrition: 104 for GNPR1 and 167 for GNPR2;
- school health and nutrition: 83 for GNPR1 and 160 for GNPR2;<sup>2</sup>
- healthy diet and prevention of obesity and diet-related NCDs: 105 for GNPR1 and 163 for GNPR2;<sup>3</sup>
- vitamin and mineral supplementation: 83 for GNPR1 and 164 for GNPR2;
- fortification: 86 for GNPR1 and 155 for GNPR2;
- optimal timing of cord clamping: 104 for GNPR1 and 137 for GNPR2;
- prevention and treatment of acute malnutrition: 104 for GNPR1 and 152 for GNPR2; and
- nutrition and infectious disease: 104 for GNPR1 and 148 for GNPR2.<sup>4</sup>

This may well reflect an increased focus by national nutrition authorities on the “1000 days” window, which is a critical period for healthy growth and development, and for prevention of stunting. However, it is during school years that children can and should learn the importance of a healthy diet and should learn to eat healthy foods, to help to prevent all forms of malnutrition. The greatest decrease was seen in the school fruit and vegetable schemes. This is an unfortunate trend that needs to be reversed, especially since one of the recommendations of the Report of the Commission on Ending Childhood Obesity concerns the implementation of comprehensive programmes that promote healthy school environments, health and nutrition literacy, and physical activity among school-age children and adolescents (58). This decline may also be explained in part by the different composition of responding countries between the two reviews; more countries responded from the WHO regions of Africa and the Eastern Mediterranean in GNPR2. But even in regions with similar respondents in both reviews, the implementation of most nutrition interventions in school health and nutrition programmes was decreasing.

There has been considerable progress in the implementation of measures and programmes to promote healthy diets and to prevent obesity and diet-related NCDs. The biggest increases were in measures to implement nutrition labelling, nutrition counselling in primary health care, and media campaigns on healthy diets and nutrition. Among the WHO regions, those of Africa and Europe

showed the greatest progress in interventions to promote healthy diets.

There has been little change in the programmes related to vitamin and mineral nutrition. The use of iron and folic acid supplements for pregnant women remains high, being reported by 74% of countries. The decrease in iron supplements for children – especially in the WHO regions of Africa, South-East Asia and the Western Pacific – probably reflects the increase in the use of MNPs for children, for which guidelines were issued in 2011 (136) and subsequently updated in 2016 (102). The 2016 guideline supersedes the 2011 one for infants and young children aged 6–23 months, and provides new recommendations for children aged 2–12 years. Fortification of wheat flour, salt, rice and oil have all increased slightly since GNPR1.

Between the two reviews, there was higher implementation of almost all interventions to prevent or treat acute malnutrition, as well as those related to nutrition and infectious disease. This may be partly due to the larger number of responses from countries in the WHO regions of Africa, the Eastern Mediterranean and South-East Asia, where such programmes are more relevant due to the country context. The largest increases were seen for treatment of MAM and SAM, which may represent the high focus on scaling up these programmes, and on transforming isolated efforts and pilot projects into national programmes through developing protocols. As noted in Section 3.5.5, almost two thirds of countries with SAM protocols had developed these after GNPR1.

1 These numbers refer to the countries that responded to each section of the questionnaire, and thus may differ slightly for each question asked in the survey. The accurate denominator can be found in the respective earlier sections.

2 Micronutrient supplementation in schools from GNPR2 was compared to vitamin A supplementation in schools from GNPR1.

3 Measures to remove or reduce *trans*-fatty acids from processed foods in GNPR1 were compared to a ban on *trans*-fatty acid and reformulation of foods and beverages to reduce *trans*-fatty acids in GNPR2. Measures to remove or reduce the salt/sodium content of processed foods in GNPR1 were compared to reformulation (of any type) for GNPR2, because this was the most common nutrient addressed among countries providing detailed information on the type of reformulation.

4 Deworming (of all groups) for GNPR2 was compared to deworming of children aged 0–2 years in GNPR1



A stylized owl logo is centered on the page. The owl's body is a light gray triangle pointing downwards. Its wings are dark purple, and its feet are a dark blue. The text "5. CONCLUSIONS" is overlaid on the owl's body in white, bold, uppercase letters.

## **5. CONCLUSIONS**

There is a growing global resolve to deal with the problems of malnutrition in all its forms. With one in three people directly affected by some form of malnutrition, the health and economic consequences are already enormous, and will only get worse unless urgent measures are taken. Cognizant of this serious situation, the UN General Assembly made the elimination of all forms of malnutrition part of the Agenda for Sustainable Development, and proclaimed the UN Decade of Action on Nutrition (2016–2025), with the aim of accelerating implementation of the ICN2 commitments to achieve the global nutrition and diet-related NCD targets by 2025. Improving nutrition will contribute to meeting the SDGs by 2030, and vice versa (137).

Great progress has been made in terms of developing and adopting national policies, with 167 countries reporting to GNPR2 that they have policies and action plans relevant to improving nutrition and promoting healthy diets. Among these countries, 149 (89%) have comprehensive or specific nutrition policies, most of which were developed in 2011 or later; that is, after GNPR1 was conducted in 2009–2010. Nutrition governance has also been strengthened since the time of GNPR1, with a higher proportion of countries reporting that they had established nutrition coordination mechanisms – increasingly so in high government offices, reflecting the growing importance of the nutrition agenda. Current progress and trends in achieving the global nutrition and diet-related NCD targets are not sufficient, however, and these global targets are unlikely to be achieved unless accelerated actions are implemented worldwide.

## 5.1. Country progress on achieving the global nutrition and diet-related NCD targets

The **global nutrition target to reduce the number of children aged under 5 years who are stunted by 40%** will certainly require extra efforts, particularly in southern Asia and Africa (3). Just over half of all

stunted children aged under 5 years live in Asia and more than a third live in Africa; while the numbers are decreasing in Asia, they are increasing in Africa. National policies increasingly incorporate goals to reduce stunting, from 63 of 123 countries (51%) in GNPR1 to 99 of 167 countries (59%) in GNPR2. Moreover, almost half of the national development plans included stunting reduction as a goal, reflecting the increased attention given to stunting as an overall indicator of children’s well-being and an accurate reflection of social inequalities (138). Of 161 countries, the vast majority (151 countries [94%]) reported that they were monitoring and promoting child growth. The WHO child growth standards (47) were used as a growth reference by most countries in all regions except the WHO European Region, where less than half of countries used these standards.

Priority actions to prevent stunting include adequate nutrition for pregnant and lactating mothers, exclusive breastfeeding during the first 6 months of life and appropriate complementary feeding, in addition to continued breastfeeding up to 2 years and beyond (122). Virtually all countries reported that they were implementing breastfeeding and complementary feeding counselling. The in-depth analysis of stunting trends and policy environment in 109 countries showed that the 56 countries with medium or high prevalence of stunting more often had a relevant policy environment, with those being on track to achieve the target having the most relevant policies. Even though stunting causality is linked with the global nutrition targets on anaemia in women of reproductive age, low birth weight, exclusive breastfeeding for 6 months and wasting (122, 139), maternal nutrition issues are often considered separately from infant and young child nutrition. If countries in Asia and Africa in particular want to achieve stunting reduction targets, they must also progress on these other four targets. The in-depth analysis of stunting trends and policy environment in 56 countries with high stunting rates showed that 80% of the countries (8 of 10 countries) that were on track to meet the stunting target implemented iron–folic acid supplementation in women of reproductive age versus less than a third of the countries (12 of 46 countries) that were off track to meet this target, especially those countries without progress or worsening.

Achieving **the global nutrition target of a 50% reduction of anaemia in women of reproductive age** will require a lot more effort. The 2016 trends in global estimates of anaemia show that anaemia was at least a mild public health problem (i.e. prevalence  $\geq 5\%$ ) in all 186 countries for which there are estimates available and 149 of these countries have a moderate to severe problem (i.e. prevalence  $\geq 20\%$ ) (140). It is in the WHO regions of Africa, the Eastern Mediterranean and South-East Asia where anaemia burden is greatest and the emphasis on increased effort is most needed. Although the prevalence of anaemia in women of reproductive age fell from 39.6% in 1990 to 32.8% in 2016, indicating that progress is possible, the trend has stagnated over the past decade. Overall, 85 of 167 countries (51%) had policy goals to address anaemia in women of reproductive age. These were most common in the WHO regions of Africa and South-East Asia, and least common in the WHO European Region. The in-depth analysis of policy coherence for reaching the global nutrition targets in 138 countries showed that policy goals on anaemia were almost three times as common in countries with moderate or severe anaemia than in countries with mild anaemia.

The in-depth analysis also showed that 87 of 111 countries (78%) with moderate or severe anaemia indeed provide iron supplements to women during pregnancy, yet high prevalence of anaemia remains. This suggests that there are implementation challenges and that these interventions may not be benefiting the intended target groups effectively. On the other hand, only 33 of the 111 countries (30%) with moderate or severe anaemia provided iron supplements to women of reproductive age. Iron and folic acid supplementation is an essential part of anaemia control programmes, not only for pregnant women, but also for women of reproductive age including adolescent girls. Such supplementation must be built into the primary health-care system and other feasible delivery channels in order to address challenges that have limited their effectiveness, such as poor attendance at antenatal clinics, insufficient doses

for supplementation, or insufficient emphasis on behavioural aspects of using supplements on a regular basis (128).

As a broader public health measure, 75 of 144 countries (52%) reported that they fortified wheat flour, usually with iron and folic acid. Fortification of staple foods with iron and folic acid was common in most regions, and the relative proportion of countries implementing this measure had increased since GNPR1. Other food-based approaches to increase dietary iron intake (e.g. animal source food) or absorption (e.g. simultaneous intake of foods rich in vitamin C) were not examined in this survey, but should go hand in hand with supplementation programmes. The WHO ANC guidelines recommend counselling pregnant women on healthy eating, including the consumption of a variety of foods such as green and orange vegetables, meat, fish, beans, nuts, whole grains and fruit (98). However, only up to about half of maternal anaemia is amenable to iron supplementation (96). Other important determinants of anaemia include genetic haemoglobin disorders and malaria and other infections (141), emphasizing the need to integrate iron supplementation with infectious disease control measures, again as part of primary health care.

The in-depth analysis of anaemia trends and policy environment in 138 countries found that countries making some progress towards achieving the global target had more favourable policy environments to address anaemia problems, including supplementation, fortification and health-care protocols (e.g. on optimal timing of cord clamping). It is imperative that leaders and policy-makers understand the serious impact of anaemia, not only on nutrition and health status of the population, but also on the economy. It is estimated that anaemia accounted for more than 68 million years lived with disability worldwide in 2010 (142). Furthermore, the cost of not investing in prevention of anaemia would result in 265 million more cases of anaemia in women worldwide in 2025 than in 2015, and nearly 800 000 more child deaths and 7000–14 000 more maternal deaths (143).

The **global nutrition target of achieving a 30% reduction in low birth weight** is perhaps the most challenging problem. In 2013, an estimated 22 million babies were born with low birth weight, around 16% of all births (129). The highest prevalence of low birth weight occurs in South Asia (28%), followed by sub-Saharan Africa (13%). The global burden is concentrated in East and South Asia and in the Pacific region, where about 70% of low birth weight babies are born. Analysis of trends is difficult (e.g. half of babies are not being weighed at birth); nevertheless, there appears to have been little or no change in the prevalence of low birth weight in both sub-Saharan Africa and Asia over the period 1990 to 2000. Affordable, accessible and appropriate health care, including prevention and treatment of maternal anaemia, are critical for reducing low birth weight. But other interventions beyond the health sector are also important, including social protection for subpopulations at risk of food insecurity, tackling household smoke, and culturally appropriate interventions to create community support for improving antenatal clinic visits as well as for addressing child marriage and teenage pregnancies, all of which are important causes of low birth weight.

At the time of this review, low birth weight estimates were not available and therefore no quantitative analysis was done of the coherence in the policy environment in countries with different prevalence or status of progress. Looking at the policy environment in the WHO South-East Asia Region (the region most affected), among the 11 countries, nine (82%) had policy goals to reduce low birth weight, eight (73%) had goals for underweight in women and 10 (91%) had goals for anaemia in pregnant or non-pregnant women. However, fewer countries had set similar policy goals addressing adolescent girls; among the 11 countries, four (36%) had policy goals on underweight and six (55%) had policy goals on anaemia for this age group. Countries in the region also reported high implementation of iron supplementation in pregnant women and in women of reproductive age, as well as fortification of staple foods with iron and fortification of food-grade salt with iodine. Despite the highly reported implementation of

these key interventions, high prevalence of low birth weight persists in the WHO South-East Asia Region.

The **global nutrition target of ensuring no increase in childhood overweight** is also likely to be difficult to achieve. Globally, estimates were that 38 million children (5.6%) aged under 5 years were overweight in 2017, with the highest rates being in Southern Africa (13.7%), Central Asia (10.7%) and Northern Africa (10.3%) (3). In terms of numbers, three quarters of overweight children live in Asia (46%) and Africa (25%), where the numbers had increased by 26% and 47%, respectively, between 2000 and 2017. Furthermore, global estimates were that over 340 million children aged 5–19 years were overweight or obese in 2016, having increased 10-fold from 11 million in 1975 to 124 million in 2016 (4). Another contributing factor to the rise in overweight and obesity is the increased availability of so-called ultra-processed foods, which typically include higher amounts of energy, fats, sugars and salt/sodium. These ultra-processed foods now make up a large part of the food supply in high-income countries, and are increasing rapidly in middle-income countries and probably in low-income countries as well although estimates are not available (144). This shift away from natural, minimally processed foods and towards ultra-processed foods has been associated with the increasing rates of obesity and diet-related NCDs observed globally.

Countries are aware of this challenge, with 130 of 167 countries (78%) having formulated policy goals on overweight in children aged under 5 years, which was the most common policy goal related to the global nutrition targets. Considering all age groups of children, there had been a slight increase in the proportion of countries formulating related policy goals, from 96 of 123 countries (78%) in GNPR1 to 134 of 167 countries (80%) in GNPR2.

Having relevant policies indicates commitment to take action. The in-depth analysis of child overweight trends and relevant policy environment in 101 countries showed that those on track to meet the global nutrition target



on child overweight were more likely to have relevant policy goals. However, commitment must be followed up with implementation of relevant actions and measures. The in-depth analysis also showed that less than half of the 55 countries with higher prevalence of childhood overweight had relevant policies or actions on important measures such as reformulation, fiscal policies, regulation of marketing of foods and non-alcoholic beverages to children, and portion size control. Countries on track included more relevant actions in their policies, but they had not always taken the next steps and passed legislation to implement these actions.

Since GNPR1, there has been a general increase in implementation of actions to promote healthy diets and prevent overweight and obesity, such as nutrition labelling policies, which increased from 51 of 105 countries (49%) in GNPR1 to 124 of 153 countries (81%) in GNPR2. Yet implementation gaps exist; for example, nutrient declaration is implemented less in the WHO regions of Africa and South-East Asia, and in all regions, nutrients covered by regulations do not always meet Codex guidelines. Also, the regulation of marketing of foods and non-alcoholic beverages to children was reported to be implemented in just 43 of 142 countries (30%), but many of the measures were implemented through voluntary guidelines or codes rather than mandatory regulations, and only covered children aged up to 12–13 years.

The tremendous increase in overweight in children and adolescents indicates that the progress made in implementation of policies and actions has been insufficient. This situation requires programmes targeting both the obesogenic environment and critical elements in the life-course (58), such as preschool-age (e.g. IYCF programmes), as well as women before and during pregnancy (e.g. antenatal care programmes that focus on prevention of both maternal undernutrition and maternal overweight and obesity). Although 151 of 161 countries (94%) monitored growth in children aged under 5 years and most of them tracked overweight as an indicator, other actions and intervention programmes to promote healthy diets were seldom targeted at this age group.

Only 51 of 118 countries (43%) reported targeting nutrition education or media campaigns at pregnant and lactating women specifically, even though the WHO ANC guidelines recommend counselling about healthy eating and keeping physically active for pregnant women to stay healthy and to prevent excessive weight gain, recognizing that maternal obesity is a risk factor for early childhood obesity (98). Furthermore, 62 of the 94 countries (66%) providing detailed information concerning school health and nutrition programmes reported having such programmes in preschools, which indicates attention to health and nutrition of children earlier in the life course.

Actions to promote healthy diets generally focused on information (e.g. media campaigns and dietary guidelines) rather than structural approaches to changing the food environment (e.g. reformulation of food products, fiscal measures, control of portion sizes, and regulation of the promotion and sales of food and beverages in schools). Hence, there is great potential to strengthen these actions and measures, as well as those targeting maternal factors and the school setting. This would be in line with the call of the World Health Assembly (WHA 70(19)) for national responses, strategies and plans to end infant, childhood and adolescent obesity, including promotion of intake of healthy foods, preconception and pregnancy care, early childhood diet and physical activity as well as actions in schools (145).

The **global nutrition target to increase the prevalence of exclusive breastfeeding in the first 6 months to at least 50%** should, in principle, be the easiest to achieve because it concerns a practice rather than a health outcome. Breastfeeding is one of the smartest investments a country can make to build its future prosperity, through improving children's health, saving lives and building human capital (146). Globally, rates of exclusive breastfeeding increased from 14% to 38% between 1985 and 1995 (132) and although progress has slowed, the latest estimates show that 45% of infants aged 0–5 months are exclusively breastfed (147).

Exclusive breastfeeding was included as a policy goal by 119 of 167 countries (71%), although only by less than half of countries in the WHO European Region. It was also included as an important policy goal in just a fifth of national NCD policies.

Breastfeeding counselling was reported as the most commonly implemented nutrition intervention by GNPR1 and GNPR2 – 102 of 104 countries (98%) in GNPR1, and 163 of 165 countries (99%) in GNPR2. The vast majority of countries in the WHO regions of Africa and South-East Asia included all the recommended breastfeeding practices in their counselling activities; however, in other WHO regions, national recommendations sometimes diverted from international guidance in terms of shorter recommended duration of exclusive and continued breastfeeding. Most of the 107 countries (96 countries [90%]) that provided details on their GMP programmes reported using the opportunity to counsel the caretakers on IYCF. Although 115 of 162 countries (71%) reported implementing the BFHI, the initiative has not been adequately scaled up, reaching only about 10% of births (55). However, effective counselling for successful breastfeeding requires health workers to be trained in lactation management and breastfeeding support. While both preservice and in-service training in MIYCN were commonly reported, most countries providing details included less than 20 hours of training on breastfeeding in preservice curricula for health workers, and few provided this training to community health workers, who are the health professionals most likely to meet mothers regularly.

In addition to counselling and support, measures to protect breastfeeding through marketing regulation or through maternity leave are important. However, only 39 countries had comprehensive legislation that reflected most or all of provisions of the International Code of Marketing of Breast-milk Substitutes (45). Furthermore, not more than 57 countries had national regulations that met three requirements of the ILO Maternity Protection Convention 183 (44).

The in-depth analysis of exclusive breastfeeding trends and relevant policy environments in 106 countries showed that those with the higher rates as well as those on track to achieve the

global target more often had a relevant policy environment on almost every aspect analysed. However, important gaps existed for all groups of countries, in particular with regard to infant feeding in difficult situations, regulation of marketing of breast-milk substitutes and maternity protection. To achieve the global target of at least 50% of infants being exclusively breastfed for the first 6 months of life, countries – in particular those that are off track for this target – need to increase their efforts to protect, promote and support optimal breastfeeding practices.

The **global nutrition target to reduce and maintain childhood wasting to less than 5%** could potentially be one of the easier targets to achieve if countries implement, in the relevant communities, identification and treatment of children with SAM as well as effective prevention strategies addressing the underlying causes of wasting. The current estimate is that 50.5 million (7.5%) children aged under 5 years are wasted globally; 35 million of these children live in Asia and 13.8 million in Africa (3). About half of 167 countries (89 countries [53%]) had policies with a goal related to childhood wasting, and more than half of countries reported that they were implementing food distribution (85 of 140 countries [61%]), or programmes for the treatment of MAM (85 of 141 countries [60%]) or SAM (89 of 137 countries [65%]), which was an increase from GNPR1. Many countries with programmes to treat SAM had national protocols, but only a third of these had been published after 2013, which is when the WHO guidelines on the management of SAM were last updated (49).

The in-depth analysis of 106 countries showed that, among countries with wasting prevalence of 5% or higher, those making some progress towards achieving the target more often focused on preventive programmes such as MIYCN, whereas those making no progress or worsening more often focused on treatment of acute malnutrition. Further investment and action are thus needed to reach the target, with an equal emphasis on the prevention as well as the detection and treatment of MAM and SAM. Preventive actions should be tailored to the local context and should encompass a range of different services to promote nutrition

as well as hygiene, sanitation and targeted social protection. Although wasting is often perceived as a humanitarian or emergency issue, it is also associated with stunting (139), which is often thought of as more of a long-term development issue. For too long, wasting and stunting have been kept separate in terms of policies and funding, and the link between these conditions must be recognized and addressed through comprehensive policies and programmes in both humanitarian and development contexts.

The **global diet-related NCD target to reduce salt/sodium intake by 30%** is potentially achievable. The global mean intake is around 10 g of salt per day (4 g/day of sodium) (69). Furthermore, in 181 of 187 countries – equivalent to about 99% of the adult population in the world – the estimated mean levels of sodium intake exceed the recommended level of less than 2 g/day sodium (5 g/day salt) in adults (65). In industrialized countries, about 75% of sodium in the diet comes from manufactured foods and foods eaten away from home, and some children's foods are particularly high in sodium (148). For the most part, mean sodium intakes have not changed much over the past 20 years or more (69), although some downward trends have been noted in countries where there have been public health campaigns (148). Reducing sodium intake to recommended levels could prevent an estimated 2.5 million deaths every year (149). Policy-makers and programme managers need to assess current sodium intake relative to a benchmark and develop measures to decrease sodium intake, where necessary, through policy actions and public health interventions to reduce salt/sodium content in food products, and educate and inform consumers to promote behavioural changes (65).

Only 89 of 167 countries (53%) reported policies that had goals to reduce salt/sodium. One of the measures used to specifically reduce salt/sodium intake is reformulation of food and beverage products. Although salt/sodium was the most common nutrient targeted through reformulation, measures were mostly voluntary. Bread was the most commonly reformulated product to reduce salt content, as reported by 32 of 39 countries (82%) providing detailed information on their

reformulation programmes. Of 155 countries, 119 (77%) reported that they had dietary guidelines, particularly FBDGs. Culturally and contextually specific FBDGs, which are developed taking into account locally available food and dietary customs, would help in the promotion of healthy diets, including salt/sodium reduction. Nutrition labelling may also facilitate reduction in sodium intake by providing consumers with the tools to make informed decisions. Of 153 countries reporting, 124 countries (81%) had nutrition labelling measures, especially nutrient declaration and ingredient lists, although this was not always mandatory. In 66 countries providing details on nutrient declaration, 48 countries (73%) indicated that they included sodium in the labels.

Related to reduction in salt/sodium intake, but perhaps a more complex target to achieve is the **global diet-related NCD target of a 25% relative reduction in the prevalence of raised blood pressure**. In 2014, almost a quarter of adults aged 18 years and over had hypertension globally (150). During the past 4 decades, the highest worldwide blood pressure levels have shifted from high-income countries to low-income countries in South Asia and sub-Saharan Africa, while blood pressure has been persistently high in Central and Eastern Europe (151). The number of people with raised blood pressure in the world has increased by 90% during these 4 decades, with most of the increase occurring in low- and middle-income countries, and largely driven by the growth and ageing of the population.

The harmful use of alcohol, overweight and obesity, physical inactivity and high sodium intake all contribute to the incidence of hypertension globally. Prevention and control of hypertension demands multistakeholder collaboration, including governments, civil society, academia, and the food and beverage industry, but there are intervention strategies that are known to work (152). In addition to the measures to promote and protect healthy diets – and, in particular, reduction of sodium intake as described above – perhaps the most important is integrating NCD programmes through a primary health care approach that allows both early detection and treatment of hypertension, as well as counselling on topics

such as reducing sodium intake, maintaining a healthy weight, promoting physical activity, reducing alcohol intake and smoking cessation. Out of 155 countries, 129 countries (83%) reported implementing nutrition and dietary counselling, largely through primary health care and focusing on health effects of high intake of fats, sugars and salt/sodium, and consumption of healthier diets. However, less than half of 167 countries (77 countries (46%)) reported having policies with goals to reduce hypertension.

The **global diet-related NCD target to halt the rise in diabetes and obesity** is certainly a challenging one. The global prevalence of diabetes in 2014 was estimated to be 8.5%, and the number of adults living with diabetes had almost quadrupled since 1980 to 422 million adults (153). In 2016, more than 1.9 billion adults aged 18 years and older were overweight (39%). Of these, over 650 million were obese (13%) (154). The dramatic rise in diabetes is largely due to the rise in type 2 diabetes and the factors driving it (e.g. overweight and obesity). Diabetes prevalence has risen faster in low- and middle-income countries than in high-income countries, possibly also driven by prevailing undernutrition early in life, which accentuates the risk of disease later in life. Some effective measures to prevent overweight and obesity and type 2 diabetes include consuming healthy diets, exercising regularly, and monitoring body weight, blood pressure and blood lipids.

The marketing of unhealthy foods and beverages to children needs to be regulated, together with nutrition labelling of food products, and the reformulation of food and beverages to reduce the content of fats, free sugars and salt/sodium. In addition, fiscal policies can be introduced to reduce the consumption of sugar-sweetened beverages and increase the availability, affordability and consumption of healthy foods, including high-fibre foods such as whole grains, legumes, and fruit and vegetables. Out of 167 countries, 139 countries (83%) reported that they had policies with goals related to adolescent or adult obesity, and 125 countries (75%) reported that they had policies with goals related to diabetes.

The actions to promote healthy diets and prevent overweight and obesity that were most commonly

reported included nutrition and diet counselling by 129 of 155 countries (83%), media campaigns by 109 of 152 countries (72%), nutrition labelling by 124 of 153 countries (81%), food reformulation by 61 of 143 countries (43%) and fiscal policies by 39 of 143 (27%) countries. The implementation of all of these actions – but especially nutrition counselling, media campaigns and nutrition labelling – has increased since GNPR1 was conducted in 2009–2010. Yet implementation gaps remain. For example, measures to tax sugar-sweetened beverages in many countries do not comprehensively cover all beverages high in free sugars, such as fruit juices or sweetened milk-based beverages.

## 5.2. Country progress on the six action areas of the UN Decade of Action on Nutrition (2016–2025)

The UN Decade of Action on Nutrition (2016–2025) calls on Member States to act across six action areas for nutrition based on the commitments made at the ICN2 and the recommendations included in the ICN2 Framework for Action (15). The six pillars are based on the common vision enshrined in the 10 commitments of the ICN2 Rome Declaration (14), to ensure that everyone has access to affordable, diversified, safe and healthy diets, where children grow up healthy and achieve their full potential. Specifically, it seeks to support and catalyse nutrition actions and investments by helping countries attain SMART commitments by 2025, to end all forms of malnutrition in all population groups from stunting, wasting and micronutrient deficiencies to overweight, obesity and diet-related NCDs.

The **first action area of the UN Decade of Action on Nutrition (2016–2025) concerns sustainable resilient food systems for healthy diets**. As has been noted throughout this report, the national measures to ensure the reduction of saturated fatty acids, sugars and salt/sodium, and the elimination of *trans*-fatty acids from foods and beverages still focus more on information approaches than on

regulatory actions. Notable progress has been made in nutrition labelling (from 51 of 105 [49%] countries in GNPR1 to 124 of 153 countries [81%] in GNPR2), media campaigns (from 45 of 105 countries [43%] in GNPR1 to 109 of 152 countries [72%] in GNPR2) and nutrition counselling (from 56 of 105 countries [53%] in GNPR1 to 129 of 155 countries [83%] in GNPR2). More countries are also reformulating foods and beverages, banning *trans*-fatty acids, introducing fiscal policies and developing FBDGs.

Developing a global food system to deliver healthy diets for a growing population, while reducing the environmental impact and helping to mitigate the effects of climate change, is increasingly recognized as one of the greatest global challenges of our time (155). Trends and patterns related to food production, consumption and waste are among the most important drivers of climate change and related environmental pressures. At the same time, the increased consumption of so-called ultra-processed foods high in fats, sugars and salt/sodium is linked to poor health outcomes (144). Although this policy review was more focused on food consumption than on food production per se, it was striking that only 21 of the 660 policy documents reported were food security policies. This may be a result of the fact that the review questionnaire was sent to the ministries of health, which may not be the sector dealing with food security policies. Nevertheless, among countries providing detailed information in GNPR2, the agriculture sector was reported to be involved in implementing national nutrition policies and plans by 69 of 110 countries (63%), and nutrition programmes by 33 of 127 countries (26%).

There is an urgent need for food systems to function more sustainably and coherently, within the context of a finite and sometimes shrinking resource base, and in a way that uses natural resources more responsibly, preserving the ecosystems on which they rely. Food systems must also be reformed to improve production of and access to foods that comprise healthy diets, and to empower consumers to increase consumption of those foods. These two goals – improving the health of the humans and of the environment – can be approached simultaneously, and indeed they are best viewed as synergistic. Critical to meeting both these goals are strengthening local food

supply chains to provide healthy food products, and increasing production diversification in an environmentally sustainable manner.

The **second action area of the UN Decade of Action on Nutrition (2016–2025) concerns aligned health systems providing universal coverage of essential nutrition actions.** The health sector was reported to be involved in implementing national nutrition policies and plans by 105 of 110 countries (95%), and in implementing nutrition programmes by 124 of 127 countries (98%) providing detailed information. The health sector was also by far the most common location of nutrition coordination in countries; 85 of 105 countries (81%) reported that such mechanisms were located within the health sector. Most countries used health systems for delivering interventions on IYCN (120 of 122 countries [98%]), promotion of healthy diets (76 of 119 countries [64%]), and delivery of vitamin and mineral supplementation (96 of 131 countries [73%]). High coverages were achieved for IYCN interventions, whereas low coverages were reported for acute malnutrition interventions. The in-depth analysis of 56 countries with high stunting rates showed that countries on track to achieve the target more often implemented most of the interventions in a comprehensive MIYCN package than countries that were off track.

Community-based primary health-care systems help to provide adequate coverage of the essential nutrition actions (20). Community-based interventions were largely related to IYCN interventions (98 of 122 countries [80%]), but were also used in delivery of interventions focusing on vitamins and minerals, acute malnutrition, nutrition and infectious disease, as well as promotion of healthy diets in more than a third of countries. A major challenge of providing universal coverage of essential nutrition actions is the availability of sufficient numbers of trained front-line workers to deliver these services and actions, as discussed below. Other recommendations of the ICN2 Framework for Action within this action area also include periodic deworming of school-age children in endemic areas, zinc supplementation to reduce severity and duration of diarrhoea, and adopting and strengthening policies and interventions to prevent stunting.



The **third action area of the UN Decade of Action on Nutrition (2016–2025) concerns social protection and nutrition education.** The education sector was reported to be involved in implementing national nutrition policies and plans by 69 of 110 countries (63%), and in implementing nutrition programmes in 83 of 127 countries (65%). The education sector was the second most involved sector in all regions, notably as an implementer of school health and nutrition programmes. Among the 85 countries providing detailed information, the health sector (64 countries [75%]) was as closely involved in school health and nutrition programmes as the education sector (65 countries [76%]). This involvement helps to ensure the coherence of the content of school health and nutrition programmes, including nutrition education activities, in schools.

Although 142 of 160 countries (89%) reported that they had school health and nutrition programmes, nutrition education was included in the school curriculum by only 98 countries (61%). Many countries are still unclear about the importance of trained nutrition capacity, because just 90 of 160 countries (56%) reported that they conducted training of school staff in nutrition to deliver such activities. There was a striking deterioration of school health and nutrition programmes since GNPR1, even though comprehensive school-based programmes may serve as an action that addresses all forms of malnutrition.

Despite the rapid increase in overweight and obesity among school-age children and adolescents, as well as the high inclusion of policy goals to address this, schools remain an underused arena for protecting and promoting healthy diets. Not all countries with school meal programmes reported that the menus were based on school food standards or other guidelines (e.g. FBDGs). Moreover, there was a weak focus on regulating sales and marketing of foods and beverages, promotion of fruit and vegetables, and other actions to improve the school food environment.

The social welfare sector was reported to be involved in implementing national nutrition policies and plans by 39 of 110 countries (35%), and in implementing nutrition programmes by 27 of 127 countries (21%) providing detailed information.

Social welfare was often most involved in food distribution programmes, either through school health and nutrition programmes or acute malnutrition treatment programmes, or both.

Having capacities (i.e. competencies and skills) to implement relevant nutrition actions and measures are key to achieving the global targets and SDGs. Indeed, 153 of 159 countries (96%) in all regions reported having nutrition professionals (i.e. trained nutritionists or dietitians). However, the density was low, with a global median of 2.3 trained nutrition professionals per 100 000 population, including six countries that did not have any trained nutrition professionals. In contrast to the situation for health workers, there is no critical benchmark for trained nutrition professional density. For health workers, the critical benchmark is 23 physicians, nurses and midwives per 10 000 population (156). Only 23 of 126 countries (18%) had a trained nutrition professional density of 1 per 10 000 population or higher.

Not all countries have higher education institutions offering training in nutrition; hence, many of these had obtained training abroad. Equally important is the training of front-line workers in nutrition counselling and the delivery of nutrition services. The vast majority of 156 countries (140 countries [90%]) had conducted training for health workers on three aspects of MIYCN, but the number of hours dedicated to the curriculum were fewer than most WHO training courses require. Two of the three training topics (GMP, and counselling on breastfeeding and complementary feeding) are relevant for all forms of malnutrition, whereas the third topic (treatment of SAM) only pertains to undernutrition. Training on other topics (e.g. obesity, healthy diets and micronutrients) was not asked about in the questionnaire, not because they are less important, but because there are no widely rolled out training packages for these topics. This is important because countries that have weak policy responses and capacities are increasingly facing the double burden of malnutrition, but lack the well-trained staff and clear professional guidance needed to support the response to the double burden.

A regional review of capacity in selected countries in Asia found there were many “nutritionists”, but

most had been trained in clinical or individual-based nutrition; and the training given was often outdated and more focused on research than on managing public health nutrition programmes (157). This lack of training in public health nutrition was also highlighted in GNPR1. Unless increased priority and funding is given to building capacity for scaling up nutrition programmes in low- and middle-income countries, maternal and child undernutrition rates are likely to remain high and nutrition-related NCDs to escalate. It has been suggested that a hybrid distance learning model for public health nutrition workforce managers' in-service training is urgently needed in low- and middle-income countries (158).

The **fourth action area of the UN Decade of Action on Nutrition (2016–2025) concerns trade and investment for improved nutrition.** Inaction on NCD prevention comes at a great cost to society, hindering the health and productivity of people and economies, and far outweighs the investments required to prevent NCDs (159). The government sectors of trade, industry and labour were involved in the implementation of nutrition policies in 39 of 110 countries (35%), and of nutrition programmes in 25 of 127 countries (20%) that provided detailed information. Their principal engagement was in food fortification programmes as well as fiscal policies to promote healthy diets.

Trade and investment in agriculture can benefit food production, improved value chains, rising rural incomes, infrastructure development, increased use of digital and other technology, and higher safety and quality standards for food (160). The effect on food security and nutrition largely comes from increased purchasing power through direct employment of local people which allows them to buy more – and potentially more nutritious – food; however, this is not automatic and depends on stable job conditions as well as measures to prevent undesirable food consumption patterns. Although trade and investment agreements are recognized as a contributing factor to good nutrition, tools to measure their impact are an area in need of development. Links between trade policies and actions designed to address all forms of malnutrition are complex and generate considerable controversy (161). Trade liberalization

has influenced the food systems in many countries towards increased availability and accessibility of processed food, and greater consumption of foods high in fats, sugars and salt/sodium, thus contributing to the emerging obesity epidemic.

Policy coherence between trade and nutrition requires strong institutional capacities and governance mechanisms that will allow for analysis of the interaction between these two areas, and the implementation of complementary policies to create enabling food environment in countries. More investments for improved nutrition are greatly needed from all parties (e.g. government, civil society and the private sector). An example of the type of investments needed is government financing of nutrition-sensitive activities in the agriculture sector supporting small-scale agricultural producers to produce food products that will contribute to free meals in local schools where girls are encouraged to finish higher levels of education. In addition, fiscal policies can be introduced – for example, to reduce the consumption of sugar-sweetened beverages (among other unhealthy food products) – with the revenues going to fund the expansion of essential nutrition actions. Only 39 of 143 countries (27%) in this review had implemented fiscal policies, most of them taxes on unhealthy foods and beverages.

The questionnaire did not have further questions that were specifically looking at trade and investment and implications on nutrition. However, many of the regulations related to healthy diet (e.g. on nutrition labelling) are relevant because they may be questioned in the World Trade Organization as being technical barriers to trade. As WHO proceeds with examining the evidence of implications of trade and investment on nutrition, further questions may be added to future versions of this survey.

The **fifth action area of the UN Decade of Action on Nutrition (2016–2025) concerns enabling safe and supportive environments for nutrition at all ages.** Breastfeeding promotion and counselling was one of the main action areas included in national nutrition policies, being included by 124 of 167 countries (74%). Breastfeeding counselling was implemented by 163 of 165 countries (99%).

Fewer countries, 115 of 162 (71%), said they were implementing the BFHI, but at insufficient scale, as noted above. Furthermore, only 39 countries reported having comprehensive legislation or other legal measures from the International Code of Marketing of Breast-milk Substitutes (45). Standards existed for the foods and beverages available in schools in 86 of 160 countries (54%); however, as noted above, the reported relative implementation of school health and nutrition programmes had deteriorated since 2009–2010. Actions to promote healthy diets and prevent overweight and obesity more often involved providing information and education of the public than restricting availability and marketing of unhealthy foods and beverages. Just 43 of 142 countries (30%) reported regulation of the marketing of foods and non-alcoholic beverages to children, 39 of 143 countries (27%) reported the use of fiscal measures, and 26 of 139 countries (19%) had a ban on *trans*-fatty acids. Furthermore, in some regions that already suffer from a double burden of malnutrition and weak capacities, such measures were implemented by less than 10% of countries, indicating a need for stronger legal measures and capacity-building to monitor and enforce these. Another environmental concern is water and sanitation, the absence of which can have highly negative effects on nutrition status.

The **sixth action area of the UN Decade of Action on Nutrition (2016–2025) concerns reviewing, strengthening and promoting nutrition governance and accountability.** Although 167 countries had national policies that included nutrition and 149 countries (89%) had dedicated nutrition plans, only 58 of these 149 countries (39%) reported that they had costed operational nutrition plans. Without funding, it is unlikely that many of these nutrition policies will have much impact, because experience shows that essential activities such as ongoing in-service training and supervision simply do not happen without funding (162, 163). The inclusion of policy goals related to the global nutrition targets in national policies was generally high, except in the WHO European Region, where only the child overweight target was included by a majority of countries. Moreover, the double burden of malnutrition may not be dealt with in an integrated manner, because only a fifth of NCD policies included policy goals on exclusive breastfeeding.

The action areas included in the policies more often involved education and information than regulatory actions or those that require institutional changes. For example, breastfeeding counselling and promotion was commonly included but BFHI, the International Code of Marketing of Breast-milk Substitutes or training of health professionals in IYCN were less often included. If the global targets are to be met, the two thirds of countries that have not yet committed funding for their national nutrition policies need to do so, and ensure that aligned health systems begin providing universal coverage of essential nutrition actions. The challenge remains to encourage the remaining countries to develop these aspects of their national nutrition policies and plans, and to report on them in the future.

Most countries (135 of 169 countries [80%]) reported having coordination mechanisms for their national nutrition policies and plans; this was a slight increase from the proportion reported in GNPR1 (90 of 119 countries [76%]). However, gaps remain in some regions; for example, about a third of countries in the WHO regions of Europe and the Western Pacific do not have such mechanisms. Although this review did not assess the level of actual engagement by these sectors, it certainly reflects an enabling environment for multisectoral involvement. Encouragingly, the proportion of countries that house their nutrition coordination mechanism in the president or prime minister's office increased from 15 of 90 countries (17%) in GNPR1 to 32 of 105 countries (30%) in GNPR2. This undoubtedly reflects the growing awareness and recognition by governmental authorities that malnutrition problems require multisectoral responses, although the review did not examine whether multisectoral collaboration was simple task sharing or true joint activities. On the other hand, the high levels of private sector involvement that are increasingly being observed in recent years in nutrition actions (93 of 129 countries [72%]) and coordination mechanisms (54 of 105 countries [51%]) in countries reiterate the need for the measures to safeguard and manage the conflict of interest.

More in-depth analysis is needed, to determine, for example, the roles and nature of the private sector engagement in developing or implementing policy actions, how their contributions are being made,



in which action areas they are engaging, which types of private sector entities (e.g. multilateral companies, or small and medium enterprises) are involved. WHO is developing tools to support countries safeguarding against conflicts of interest in the policy development and implementation of nutrition programmes at country level (120).<sup>3</sup>

Virtually all countries in the world have ratified the Convention on the Rights of the Child, and are therefore accountable to progressively realise children's right to the highest attainable standard of health, including safe and nutritious food (164). The corresponding obligations of states to progressively realise these rights concern measures to respect existing good practices, protect right-holders from interference of third parties and fulfil the right through promotion, facilitation or provision (165, 166). Contextualized FBDGs, which were common in all regions except the WHO African Region, can contribute to respect and stimulate local food cultures that are conducive to healthy diets.

Protecting the right to adequate food and the highest attainable standard of health from third party interference is important to combat unhealthy diets, particularly the rise in consumption of ultra-processed foods. However, measures to protect from misleading information as well as from unhealthy elements were still low, with less than a quarter of countries reporting regulating the marketing of foods and non-alcoholic beverages to children, banning *trans*-fatty acids, controlling portion size or banning vending machines in schools. On the other hand, many countries had taken measures to facilitate access to healthy foods in terms of salt iodization or fortification of staple foods with iron, although fewer reported measures to stimulate reformulation to reduce the content of saturated or *trans*-fatty fatty acids, sugars and salt/sodium in foods, or to have standards or rules for foods and beverages served in schools. Measures to promote healthy diets and good nutrition through information and counselling were most commonly reported as being implemented – in particular, breastfeeding and complementary feeding counselling, inclusion of nutrition in the school curriculum, and counselling or media campaigns on healthy diets. Provision

of micronutrients or food supplements were also common in specific contexts; for example, to target population groups such as pregnant women or for prevention or treatment of acute malnutrition.

Accountability requires measuring the results of the actions implemented. Monitoring of intervention coverage was reported by 106 of 129 countries (82%). Most countries relied on routine reporting, with just half reporting that they used data from surveys. The intervention area with the highest monitoring of intervention coverage was vitamin and mineral nutrition, and the lowest was healthy diets. Among the countries with nutrition-related regulations, most monitored the implementation of any such regulations, and had a formal monitoring mechanism in place. Although not all regulations may be systematically monitored, the existence of some type of monitoring in almost all countries suggests the possibility of leveraging these existing monitoring mechanisms to expand into other areas. However, although most of these mechanisms engaged in monitoring compliance, just over half applied sanctions, and public dissemination of either violations or sanctions was low. Similar findings were reported on the monitoring of national measures to give effect to the International Code of Marketing of Breast-milk Substitutes (45). Of the 55 countries providing information, just 32 had a mechanism in place, even fewer reported that they were functional, and only six countries reported that they had dedicated budgets and funding for monitoring and enforcement.

To respond to these gaps, WHO has developed the NetCode toolkit to guide countries setting up ongoing government-run monitoring systems (167). Independent monitoring by NGOs and civil society can complement the formal monitoring by governments. Examples of independent monitoring include the work by the International Baby Food Action Network (IBFAN) to monitor implementation of the International Code of Marketing of Breast-milk Substitutes in countries and report violations, and the INFORMAS Food Environments Policy Index (Food-EPI), which benchmarks progress by governments on food policies for reducing obesity and NCDs (168).

<sup>3</sup> Safeguarding against possible conflicts of interest in nutrition programmes: approach for the prevention and management of conflicts of interest in the policy development and implementation of nutrition programmes at country level. Available at <http://www.who.int/nutrition/consultation-doi/comments/en/>.

### 5.3. Discussion of methods

The **response rate** of the GNPR2 was considerably higher than that of GNPR1. In assessing potential **risk of bias** arising from differences between respondents and non-respondents, it was noted that countries not responding to the survey generally had less data available for all five global targets investigated. Among countries with data available, levels of stunting and anaemia were similar in both groups, but the non-respondents had higher levels of child overweight and lower rates of exclusive breastfeeding, as well as lower rates of wasting. Another potential risk of bias is that the survey was answered primarily by government employees who may positively evaluate their own performance, although some countries had seized the opportunity to gather different stakeholders to take stock of nutrition policies and programmes in the country. Participatory reporting and benchmarking by government in collaboration with civil society – as is done, for example, through the Food-EPI<sup>4</sup> – may contribute to reducing the bias of self-assessment by government respondents. Another example of dual reporting by government and civil society is the human rights treaty bodies where NGOs submit shadow reports to complement the official government reports.

The **design of the review** captured information at the highest level in countries (i.e. policies, coordination, programmes and protocols), which may not always reflect actual implementation on the ground. For example, the protocol for a child GMP programme may prescribe quality counselling that actively involves parents in finding solutions or systematic follow-up with children that suffer from growth faltering, but health workers may not have the sufficient skills to carry this out. Common reasons why national-level protocols may not be implemented include lack of trained health workers, poor compliance and distance to health centres (20). To be successful at the community level, a combination of bottom-up (horizontal) and top-down (vertical) approaches are essential (169).

The design of the questionnaire was such that the top-level questions in the questionnaire were

simple tick box “yes” or “no” answers, which gives little indication of the quality. A remedy for this was sought in the full questionnaire, which drilled down further on the specifics of the policy measures. In addition, the background documents (policies, regulations and protocols) were examined to provide more in-depth information, where available. The responses were cross-checked against the documents that were submitted (about 2000 documents) and against other secondary sources.

The questionnaire was primarily focused on direct nutrition and healthy diet interventions and did not include interventions addressing underlying or basic causes of malnutrition (e.g. food insecurity and gender inequality). Though important, these were beyond the scope of this review. Given the importance of maternal nutrition for healthy growth and development of children, perhaps a missing element in the questionnaire was the content of nutrition counselling during ANC, and strategies to reach women of reproductive age, particularly adolescent girls.

Completing such a comprehensive questionnaire is a major undertaking and should be integrated into **accountability** systems at both global and national level. At the national level, the review has contributed to increased awareness of the national landscape. Although comprehensive and time consuming for countries to complete, the feedback from countries indicated that the process provided useful information on the status of critical elements of different nutrition actions, which is the first step to accountability. Some countries had also taken the opportunity to gather partners and discuss the country status. At the global level, the survey data are being reported to the World Health Assembly on progress of meeting the ICN2 outcomes. The review also serves as a baseline for the UN Decade of Action on Nutrition (2016–2025), and key results have been reported to the UN General Assembly. Furthermore, by making the survey data available in GINA and NLIS along with information from other sources including civil society and academic institutions, it is hoped that a comprehensive picture of the nutrition landscape can be drawn.

4 Available at <http://www.informas.org/food-epi/>.





A stylized graphic of an eggplant, centered on the page. The top part is a light green cap, and the main body is a dark purple. The text '6. THE WAY FORWARD' is overlaid in white on the purple section.

# **6. THE WAY FORWARD**

In 1992, the first intergovernmental conference on nutrition, organized by FAO and WHO, highlighted the emerging problems of the double burden of malnutrition. Twenty-four years later, the UN General Assembly proclaimed a Decade of Action on Nutrition (2016–2025) to accelerate actions to achieve global nutrition and diet-related NCD targets, with clear quantified targets and timelines. Furthermore, the 2030 Agenda for Sustainable Development also explicitly calls for ending all forms of malnutrition, thus demonstrating recognition of the pressing global problems related to unhealthy diets and nutrition at the highest political level. Under the UN Decade of Action on Nutrition (2016–2025), Member States, the global community, and regional political and economic communities are called upon to translate the commitments of the ICN2 Rome Declaration on Nutrition into SMART commitments for action, in the context of national policies and in dialogue with a wide range of stakeholders, particularly those most affected by nutrition challenges. Many countries have already developed and are implementing policies to address nutrition challenges; however, they should continue to review and, if necessary, raise the level of ambition, improve the design, further refine priority action, and allocate additional resources to accelerate and scale up their efforts to achieve the global nutrition and diet-related NCD targets.

The outcomes of the GNPR2 serve as a baseline for the UN Decade of Action on Nutrition (2016–2025), taking stock of policies, governance, capacities and actions to end all forms of malnutrition. The analyses presented in this report show that despite many improvements since the GNPR1 was conducted in 2009–2010, policy gaps and challenges remain, indicating the need for further actions to be taken at the country level, as outlined below:

- Strengthening national policies to address nutrition problems in countries, and making further efforts in costing and financing these policies so that they can be translated into operational actions with clear accountabilities.** A large number of countries have developed and are implementing nutrition policies, but many of them have not
- recently reviewed or updated their policies, and less than half have costed operational plans that will ensure the implementation and accountability. The inclusion of global nutrition targets is generally high, except in the WHO European Region, which only comprehensively includes child overweight, although anaemia and breastfeeding are relevant regional issues. Countries also need to comprehensively include all indicators of the Global Nutrition Monitoring Framework. For example, only a few countries included the indicator “minimum acceptable diet” in their policies. Although many countries included promotion of healthy diets in their policies, fewer countries had policy goals for specific nutrients that could help to further concretize the policy commitments to healthy diets and make them more specific.
- Increasing coherence in policies of different sectors to ensure synergistic action to address nutrition challenges.** Incorporating nutrition objectives into sector-specific policies can contribute to ensuring coherence and common goals that promote and facilitate healthy diets and good nutrition. Very few food security policies were reported to this review, despite such policies being highly relevant to nutrition. Almost half of development plans reported contained goals for stunting reduction but less frequently addressed the other global targets, even though they also contribute to losses in productivity and hinder other development goals. The double burden of undernutrition and overweight, obesity and diet-related NCDs is largely tackled separately, as indicated by only a fifth of NCD policies having goals related to exclusive breastfeeding, despite the need for an integrated and coherent response to meet the challenge of addressing diet-related NCDs.
- Engaging all relevant sectors and partners in implementing nutrition actions and using the full spectrum of delivery channels, ensuring effective coordination mechanisms by placing them at high political levels to facilitate multisectoral collaboration and policy coherence across sectors, while safeguarding against potential conflict of interest in the**

**development and implementation of nutrition programmes.** Most countries have nutrition coordination mechanisms with a high level of intersectoral involvement in coordination mechanisms across government sectors as well as nongovernment partners, but gaps remain in some regions. For example, about a third of countries in the WHO regions of Europe and the Western Pacific do not have such mechanisms. Just under a third of countries had a mechanism in high government offices (i.e. office of the president or prime minister) – almost twice as many as when the GNPRI was conducted in 2009–2010. The health sector was primarily involved in implementation of nutrition actions, with less support from other sectors despite their involvement at higher levels of planning (i.e. policies and coordination mechanisms). In particular, the sectors of food and agriculture, and trade, industry and labour should be involved in promotion of healthy diets. The increasing involvement of the private sector at the country level in coordination mechanisms – as well as policy and programme implementation, funding and monitoring – needs to be carefully monitored and managed to avoid conflicts of interest. Simultaneously, the full array of delivery channels for implementing nutrition actions is not fully used, especially for interventions promoting healthy diet and vitamin and mineral nutrition, for which delivery goes beyond the health system. In addition to coordination within countries, countries that import much of their food from abroad may need to engage in dialogue with manufacturers abroad or put in place measures that ensure that imported foods and beverages are conducive to healthy diets.

- **Strengthening accountability for implementation of high-quality nutrition interventions.** Although countries increasingly reported that they had regulations to promote healthy diets, many of these are voluntary regulations, codes or guidelines rather than being mandatory. Furthermore, these measures did not always cover the full criteria set by international guidelines. For example, national measures to implement nutrient declaration were not always aligned with Codex guidelines, and regulation of

marketing to children typically covered children aged up to 12–13 years but not older children and adolescents. Most countries reported having formal mechanisms to monitor compliance with national regulations, and in most regions countries also apply sanctions to identified violations, but dissemination of monitoring results or implemented sanctions was less common. These existing mechanisms may be leveraged and expanded to include other regulatory actions not currently implemented or monitored in countries. Monitoring intervention coverage and conducting evaluations are also essential to ensuring that nutrition programmes are reaching target groups and having the intended impact. Accountability to the human right to adequate food and the highest attainable standard of health should also be strengthened. Virtually all countries have ratified the Convention on the Rights of the Child, and a first step could be for countries to include in their reports to the Committee on the Rights of the Child the measures taken to respect, protect and fulfil these rights.

- **Strengthening capacity development for nutrition, including increasing the number of trained nutrition professionals with public health nutrition competencies as well as integrating training on essential nutrition actions among all front-line health workers.** Most countries in all regions have nutrition professionals, despite not all having institutions that offer higher level instruction in nutrition. However, the density of nutrition professionals was low, particularly in the WHO African Region, which is also facing a double burden of malnutrition and therefore is particularly in need of strengthened capacities. In addition to having dedicated trained nutrition professionals, both preservice and in-service training of health professionals in MIYCN was common, but the number of hours dedicated to the curriculum indicated that the quality of the training may be compromised. Countries need to conduct high-quality training for health workers in key areas such as breastfeeding and complementary feeding counselling, as well as GMP for children aged under 5 years to address all forms of malnutrition.

- Further institutionalising breastfeeding and complementary feeding counselling through baby-friendly maternity services as well as protocols for infant feeding in difficult circumstances.** Nearly all countries implement counselling on breastfeeding and complementary feeding, as well as GMP. However, many countries in the WHO regions of the Americas, Europe and the Western Pacific still need to align their national recommendations to the international guidance, in terms of recommended duration of exclusive and continued breastfeeding. Protocols for infant feeding in difficult situations were less common, especially in the WHO Eastern Mediterranean Region. Moreover, in all regions except the WHO African Region, national guidelines on infant feeding in the context of HIV give advice on replacement feeding above breastfeeding promotion and support, although counselling on attachment and positioning is especially important in the context of HIV to prevent breast conditions that may increase transmission of virus. Another gap related to IYCF is that the WHO child growth standards are not yet widely used in the WHO European Region. Furthermore, interventions tend to focus on education and information rather than institutional change or regulatory action, such as the BFHI, the International Code of Marketing of Breast-milk Substitutes, and the ILO Maternity Protection Convention.
- Expanding services to reach all stages of the life cycle, especially women before and during pregnancy and adolescent girls, with essential nutrition actions.** Few programmes targeted women of reproductive age, and those that did were mostly vitamin and mineral supplementation schemes. Yet, iron and/or folic acid supplementation in women of reproductive age only took place in about a third of countries. On the other hand, most countries implement supplementation schemes for pregnant women. Given the developmental origins of health and disease, more programmes to promote healthy diet should target women of reproductive age to prevent both maternal undernutrition and obesity. Furthermore, with a growing population of elderly people in the world, nutrition programmes need to increasingly target this population group.
- Strengthening school health and nutrition programmes to ensure nutrition-friendly schools where policies, curriculum, environments and services are designed to promote healthy diets and support good nutrition.** Most countries reported having school health and nutrition programmes, but individual components of school programmes had largely deteriorated between GNPR1 conducted in 2009–2010 and GNPR2 conducted in 2016–2017. Schools remain an underused delivery platform for promoting good nutrition and healthy diets, especially since they can address issues related to both undernutrition, and overweight and obesity. Although nutrition education in the school curriculum was the most common component of school health and nutrition programmes, it took place in less than two thirds of countries and was not necessarily accompanied by relevant training of teachers. Foods and beverages consumed in the school setting should contribute to healthy dietary practices. Rules on school foods and beverages or school meal standards were reported by more than half the countries, but less often in the WHO African Region. Countries also need to consider the relevance of other interventions to promote healthy diets; for example, banning sales and promotion of unhealthy foods and beverages in and around schools (including vending machines), healthy school lunch programmes, and school fruit and vegetable schemes.
- Continuing further development, implementation, monitoring and enforcement of legislative and regulatory measures to improve food environments in order to promote healthy diets.** Considerable progress has been made in the implementation of actions to promote healthy diets and prevention of obesity and diet-related NCDs since the GNPR1. The largest increases were in nutrition labelling policies, nutrition counselling in primary health care, and media campaigns on healthy diets and nutrition. But important gaps remain; for



example, FBDGs were less often implemented in the WHO African Region. Implementation of nutrient declaration in prepackaged foods was less common in the WHO regions of Africa and South-East Asia; also, where nutrient declarations were implemented, the requirements for such declaration did not always meet the Codex guidelines. FOPL systems are increasingly used in the WHO European and American Regions, but menu labelling continues to be an underused method of displaying and communicating nutrition information. Nutrition labelling and other regulatory actions can stimulate the food industry to reformulate the content of foods and beverages or change portion size; however, approaches that aim to educate and inform consumers were more common than those that make changes to the food environment. Few countries had issued a ban on *trans*-fatty acids, or had implemented regulation of marketing of foods and non-alcoholic beverages to children, fiscal policies or measures to control portion size. Hence, more countries are encouraged to consider implementing these effective measures to promote healthy diets. In implementing marketing regulations, it is recommended that WHO regional nutrient profile models be used as a tool to achieve coherence and alignment with WHO guidelines. Regarding fiscal measures, taxation of sugar-sweetened beverages (including fruit juices and sweetened and/or flavoured milk-based beverages) needs to induce a consumer price preference for beverages with a lower content of free sugars, to ensure healthy diets.

- **Establishing context-specific comprehensive strategies to address vitamin and mineral deficiencies through both general and targeted approaches and addressing underlying causes such as poor sanitation and hygiene.** No countries were on track to reach the global nutrition target to reduce anaemia. Pregnant women and children were often targeted through vitamin and mineral supplementation schemes, but fewer countries targeted women of reproductive age. Most countries fortified salt with iodine, and about

half of the countries fortified wheat flour with iron and folic acid. In addition to supplementation and fortification, it is important to consider how the environment interacts with micronutrient intake. For example, less than half of the countries with deworming campaigns provided adequate sanitation.

- **Where needed, implementing programmes to prevent and treat acute malnutrition, ensuring that programmes do not risk augmenting overweight and obesity in communities.** Food distribution programmes and treatment of MAM and SAM were most common in the WHO regions of Africa and South-East Asia. Although wasting rates remained high in these regions, they had also experienced a rise in overweight and obesity. Countries should maintain updated protocols for the treatment of MAM and SAM, taking into consideration the WHO guidelines on management of SAM as well as on the prevention of overweight and obesity in the context of the double burden of malnutrition.
- **Where needed, integrating nutrition into communicable disease programmes to stop the vicious cycle of malnutrition and infectious disease.** Only about half of the countries provided nutritional care and support to individuals living with HIV and active TB, with the most common component being nutrition counselling for prevention of undernutrition as well as prevention of obesity and diet-related NCDs. Nutrition assessment and food or nutrition support through the provision of fortified food supplements and food baskets were also common.

Importantly, this review shows that having the right nutrition policies and implementing relevant intervention programmes can make an impact. For example, supportive policy environments were associated with accelerating progress towards achieving the global nutrition targets. Therefore, ensuring that countries have effective and coherent national policies that guide the implementation of relevant intervention programmes is a critical element in advancing the improvement of nutrition and promotion of healthy diets.

The current WHO nutrition strategy – Ambition and Action in Nutrition 2016–2025 – affirms that WHO will catalyse the prioritization of nutrition on the political agenda and leverage the implementation of effective nutrition policies and programmes in all settings. This is also in line with WHO’s 13th General Programme of Work (2019–2023), which states that WHO will support all countries in conducting policy dialogue to drive impact, including the reduction of all forms of malnutrition.

Therefore, WHO will continue to support countries in developing, implementing and monitoring evidence-informed policies to achieve the global nutrition and diet-related NCD targets. Specifically, WHO will monitor nutrition trends, and progress in implementing policies and actions, through the global nutrition policy review every 5 years, and through tools such as GINA and the NLiS, or other questionnaire tools in other programmatic areas (e.g. maternal and child health, and NCDs) on a more frequent basis. WHO will also continue to develop evidence-informed guidelines following its robust guideline development process, and disseminate WHO-recommended evidence-informed interventions and related information through eLENA. A guideline development group – the WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Policy Actions – has been established to support WHO’s efforts in developing guidelines on policy actions to promote healthy diets. This subgroup will initially focus on nutrition labelling policies, policies to restrict marketing food and non-alcoholic beverages to children and fiscal policies (taxes and subsidies), after which it plans to review the issues related to trade and investment policies. Furthermore, WHO will continue to update the nutrition module contained within the OneHealth Tool for costing and estimating the impact of nutrition actions, and to compile best practices in implementing nutrition actions, as included in

GINA. Country-level data from the GNPR2 will be made available in GINA and in the NLiS Global Nutrition Monitoring Framework country profiles. This will allow countries to identify their own results and make use of the data to assess their own progress, and identify gaps in nutrition policies and actions. Finally, WHO will continue its support for Member States in strengthening monitoring and surveillance, as well as monitoring and evaluating the implementation of policies and programme activities through operational guidance related to the Global Nutrition Monitoring Framework and other activities.

WHO, jointly with FAO, will also support countries to formulate SMART commitments in the context of the Decade of Action on Nutrition (2016–2025) through making existing national commitments more ambitious or through adopting new national commitments, where required. A resource guide was prepared to help translate the 60 recommended policy options of the ICN2 Framework for Action into SMART commitments for action at country level. This process should be done according to the national context and needs, and be built on existing national policies, strategies, programmes, plans and investments in order to achieve the 10 commitments of the ICN2 Rome Declaration on Nutrition. These SMART commitments will then be registered and monitored in GINA, and their progress reported through the World Health Assembly, the FAO Conference and the UN General Assembly as part of reporting on the progress made in implementing the commitments of the Decade of Action on Nutrition (2016–2025). This will help to strengthen the accountability not only of Member States but also of WHO, other partner agencies and stakeholders, and the global community responsible for the health and nutritional well-being of the global population.

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