

Draft nutrition strategy and plan of action for the Eastern Mediterranean Region 2010–2019

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Draft nutrition strategy and plan of action for countries of the Eastern Mediterranean Region

2010–2019

*The Regional Office welcomes comments on this draft regional strategy and
plan of action which is being finalized for publication*



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Regional Office for the Eastern Mediterranean

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Preface

This new nutrition strategy and plan of action for the Eastern Mediterranean Region was prepared through a consultative process by a Regional Advisory Committee in Nutrition, which was established for this purpose. The terms of reference of the Committee also include to follow up on the implementation of the strategy in countries and to provide technical support to Member States, when required. The Advisory Committee comprises representatives of Member States; UN agencies (UNICEF, the Food and Agriculture Organization of the United Nations (FAO), the World Food Programme (WFP) and the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA)); civil societies (International Council for the Control of Iodine Deficiency Disorder (ICCIDD), the Global Alliance for Improved Nutrition (GAIN) and the League of Arab States); and from research and collaborating institutions; in addition to WHO staff from the Regional Office for the Eastern Mediterranean and headquarters. Two meetings were held in Cairo, Egypt, and one in Amman, Jordan, in 2009 to develop and finalize the strategy and the document was circulated to all Member States for input and feedback.

Although improvements in nutrition have taken place as a result of economic growth and as a natural outcome of health sector development and services, a rapid overview of nutrition programmes in the Region indicate that in most Member States, the situation has not improved greatly and nutrition has not been given the merit it deserves in development planning agendas. Only a few countries have managed to mobilize resources and establish national nutrition programmes.

The burden of disease associated with inadequate dietary intake is the immediate factor causing under-nutrition and this burden is increasing in many countries of the Eastern Mediterranean Region. The consequences resulting from a high burden of nutritional disorders in the Region are too grave to be ignored. Diet-related chronic diseases exert a heavy cost and are contributing to morbidity and mortality rates in the Region. In addition to the problem of under-nutrition, the burden of overweight, obesity and diet-related chronic diseases is increasing. This nutrition transition is alarming as it negatively impacts on health systems in the Region (1).

The new strategy also provides a plan of action that addresses the major health and nutrition problems and contains strategic directions to address the challenges supported by recommended interventions, approaches and programmes. This action plan can be readily adopted by Member States and adapted according to each national context; its implementation should be expedited by both government and nongovernmental agencies.

The major nutrition problems in the Region include: protein energy malnutrition, a high prevalence of low birth weight and micronutrient deficiencies, including iodine deficiency disorders (IDD), vitamin A deficiency (VAD), iron deficiency anaemia in young children and women of childbearing age and calcium, selenium, zinc and vitamin D deficiencies.

This strategy comes as a timely response to the worsening nutrition and food situation regionally and globally and aims to:

1. Promote and protect the nutritional well-being of people of all age groups, with emphasis on women and children
2. Promote adequate micronutrient intake
3. Provide comprehensive information and education to consumers
4. Carry out integrated actions to address obesity and noncommunicable diseases
5. Improve nutrition services in the health sector
6. Monitor and evaluate, and conduct research
7. Increase political commitment
8. Build capacity for nutrition in emergencies.

Through this strategy every effort has been made to direct the focus of Member States to results on the ground; to concentrate on the comparative advantages of the contributions of specialized agencies and donors, particularly in health and nutrition system strengthening; and to support the leadership of governments and international community programmes to achieve these results.

1. INTRODUCTION

1.1 Rationale

Health, nutrition and population policies play a pivotal role in economic and human development and in poverty alleviation. According to the World Bank (WB), improved economic growth has enabled improvements in health outcomes, creating a virtuous cycle—good health boosts economic growth—and economic growth enables further gains in health (*Healthy Development, the World Bank Strategy for Health, Nutrition, and Population Results*. New York, World Bank, April 24, 2007). Nutrition will remain a key element in ensuring security: adequate food is literally “vital” in keeping people alive as a basic need and human right. However, evidence is increasingly showing that increased wealth does not automatically lead to alleviation of hunger or child under-nutrition, or to the reduction of micronutrient deficiencies. Under-nutrition coexists with high rates of overweight, obesity, diabetes, cardiovascular disease and some types of cancer. The Region is still facing many challenges in the formulation and implementation of nutrition strategies and action plans that are holistic in their approach to addressing nutrition issues. The Region suffers from:

- the absence of clear political commitment for nutrition action and/or failure to turn political commitment for nutrition problems into tangible action;
- the absence of a policy framework and institutional capacity to plan, implement and monitor sustainable nutritional programmes that respond to the multisectoral dimensions of nutrition problems;
- recurrent conflicts and natural disasters;
- the disproportionate allocation of health budgets, often at the expense of preventive strategies such as nutrition;
- the abandonment of traditional diets in favour of fast foods, resulting in the reduction of dietary diversity and often a less nutritious diet; and
- the absence of nutrition expertise in related sectors and a lack of intersectoral coordination.

This strategy document presents an analysis of the regional nutrition situation and its causes and consequences. It defines the priority areas of action to include monitoring, advocacy, strengthening the implementation of nutrition programmes, promoting community participation and mobilizing resources. A complex set of other factors affect nutritional status, which include food safety, changing lifestyle patterns and decreased food production and availability. Food distribution and catering in many countries is concentrated in the hands of a few operators, who influence product supply, safety and price. The media, advertising and retail sectors and the food industry have an influence on dietary choices, sometimes in the opposite direction from that which public health specialists recommend. Urban design, too, often discourages recreational activities, such as walking or cycling, and the increasing use of television and computers encourages sedentary leisure activities, thus adding physical inactivity as an underlying factor contributing to many health challenges.

Leaving nutrition to the health sector alone has skewed the focus to those groups who are most affected by lack of food and poor health and who turn to health services for help,

mainly mothers and children. Focusing on them too narrowly deflects attention away from the action which is needed to remedy the economic and social contexts which predispose a community to poor nutrition. The Regional Office is working hard to ensure good health for all age groups—a life-cycle approach to nutrition should be adopted by the health sector and the interests of all age groups be addressed by health's partners in other sectors.

1.2 Country nutrition profiles

Over the last three decades the Region has witnessed significant social, economic, demographic and political changes that have greatly influenced the nature, scope and magnitude of health and nutrition problems and the burden of disease and related risk factors in most countries, and in the Region as a whole. The Region can be divided into four groups, or country clusters, with regard to nutrition stages and dominant nutrition problems, major risk factors and underlying causes, programme interventions and gaps in response to these problems, and enabling environment factors for improved action. These four groups can be categorized as: countries in advanced nutrition transition stage; countries in early nutrition transition stage; countries with significant under-nutrition; and countries in emergency and humanitarian crisis.

Countries in advanced nutrition transition stage

These countries have high levels of overweight and obesity, and moderate levels of under-nutrition and micronutrient deficiencies in some population subgroups. These countries include all member countries of the Gulf Cooperation Council (GCC), the Islamic Republic of Iran and Tunisia.

Countries in early nutrition transition stage

These countries are characterized by moderate levels of overweight and obesity, moderate levels of under-nutrition in specific population pockets and age groups, and widespread micronutrient deficiencies. Countries in this category are: Egypt, Jordan, Lebanon, Libyan Arab Jamahiriya, Morocco and Syrian Arab Republic.

Countries with significant under-nutrition

These countries have particularly high levels of acute and chronic child malnutrition, widespread micronutrient deficiencies, and emerging overweight, obesity and nutrition of indulgence in certain socioeconomic subgroups. These countries include: Djibouti, Iraq, Pakistan, Palestine and Yemen, all GCC member countries, Islamic Republic of Iran and Tunisia.

Countries in emergency and humanitarian crisis

Countries in emergency and humanitarian crisis with severe child and maternal under-nutrition and widespread micronutrient deficiencies include: Afghanistan, Somalia and Sudan.

The characterization of the Region into four country clusters aims to provide a summary tool to capture commonalities and differences among countries and to guide, to a certain extent, strategic planning and the development of nutrition policies and programmes at regional and country level. However, nutrition transition is affecting more countries and more

socioeconomic groups within countries; nutrition-related risk factors for noncommunicable diseases are also increasing rapidly in low- and medium-income countries; economic differences have widened among countries and emergency and humanitarian crises are affecting more countries in the Region, particularly Iraq and Palestine. The recent global food and financial crisis, while affecting all countries, has particularly affected Djibouti, Somalia and Sudan in the Horn of Africa and Afghanistan, Pakistan and Yemen.

As a consequence, a regional nutritional strategy with a clear plan of action on nutrition was urgently needed to respond to those challenges while taking into consideration the nutrition and food security profile for each country and to guide strategic planning and the development of nutrition policies and programmes at regional and country level.

2. NUTRITION SITUATION IN THE EASTERN MEDITERRANEAN

2.1 Malnutrition

The burden of disease associated with inadequate nutrition continues to grow in countries of the Eastern Mediterranean Region. Similar to many developing countries, the Region suffers from unprecedented nutritional and demographic transition, with a broad shift in disease burden. While problems of under-nutrition still exist, the burden of overweight, obesity and diet-related chronic diseases is increasing. This nutrition transition is alarming as it negatively impacts on health systems in the Region (1). Lack of information and updated data are an obstacle in the Region due to the unavailability of systematic nutritional surveillance system. Data obtained from ad hoc surveys or studies are often no longer valid following socioeconomic changes that countries experience. However, this strategy document presents the most recent data collected from a variety of sources to reflect the true regional situation of nutrition.

The Region faces other challenges that generally contribute to malnutrition, including in-country inequalities, limited natural resources (water scarcity, limited land for agriculture), recurrent drought conditions, high population growth rates, conflict and HIV/AIDS. The overall proportion of underweight in children under-5 years of age has increased in the Region from 14% in 1990 to 17% in 2004. The regional statistics have been weighted by three populous countries: Iraq, Sudan and Yemen (Progress for children Middle East/North Africa. A report card on nutrition: Number 4, May 2006. UNICEF, 2006). Subsequent to the global food and price crisis which started in early 2008, the nutrition situation of infants and children under-5 years of age has further deteriorated in disaster-prone countries but also in other countries without a previous track record for humanitarian crisis.

Malnutrition remains the most serious health problem with consequences that are too grave to be ignored. It is the single biggest contributor to child mortality and 15% of the global burden of newborn and child mortality occurs in countries of the Region (Tables 1 and 2, Annex 1). It is estimated that 50% of deaths in children under-5 years of age is attributable to mild to moderate malnutrition (2). Early childhood malnutrition is irreversible and intergenerational, with adverse consequences on adult health as it is implicated in poor mental and cognitive development. Unless policies and priorities are changed, the scale of the

problem will prevent many countries from achieving the targets of the Millennium Development Goals (MDGs). Furthermore, malnutrition in women of reproductive age increases the maternal mortality ratio. The mean maternal mortality ratio was estimated to be 210 per 100 000 live births in the Region in 2005, representing only a 20% reduction from the levels of 1990 (Table 3, Annex 1).

Recent reports indicate that six countries of the Region (Djibouti, Jordan, occupied Palestinian territory (oPt), Oman, Syrian Arab Republic and Tunisia) are on track to meet the targets of the MDGs to reduce the proportion of underweight children under-5 years of age (UNICEF 2006). Twelve (12) countries have maintained underweight prevalence rates at or below 10%, and six countries are not on track to meet the targets of the MDGs (Afghanistan, Iraq, Pakistan, Somalia, Sudan and Yemen).

One of the major contributing factors to under-nutrition in children and adolescents has been linked to decreased breastfeeding practices. Breastfed infants are less likely to die from diarrhoea, acute respiratory infections and other diseases. Breastfeeding boosts infants' immune systems and helps to protect them from chronic conditions later in life, such as obesity and diabetes (2). Wide variations in the incidence and duration of breastfeeding exist in the Region, depending on the rate and extent of development, modernization, urbanization, exposure to artificial foods and bottle-feeding, commercial advertising and maternal behaviour (9). The duration of breastfeeding is hence becoming increasingly shorter, particularly among the younger generations. Approximate prevalence rates of exclusive breastfeeding and complementary feeding in selected countries of the Region are provided in Tables 4 and 5, Annex 1.

Overall, children living in rural areas are 1.7 times more likely to be underweight than their counterparts in urban areas, and children living in the poorest households are more than twice as likely to be underweight than children living in high income households (UNICEF 2006). However, as indicated earlier, all these figures are undergoing rapid changes because of the global food crisis, and it is very likely that urban populations are being badly affected.

2.2 Micronutrient deficiencies

Several micronutrient deficiencies are still being reported from many countries of the Region (iron, iodine, zinc, calcium, folic acid and vitamins A and D), particularly among vulnerable groups, including children and women of childbearing age. It is estimated that more than one third of the population is anaemic in the Region, about 50% of pregnant women and 63% of children under-5 have iron deficiency anaemia (DCPP, 2006). Data on anaemia rates in preschoolers, pregnant women and women of childbearing age from 1995 to 2001 show no improvement in the overall situation (WHO, 2004; FAO, 2005). Iron deficiency anaemia is a serious public health problem for many countries; the prevalence in Bahrain reached 48.3% among children under-5 years of age and 41.6% among children between 5 and 14 years (4). In women of childbearing age the prevalence of anaemia was also reported to be approximately 40% in both Oman and Bahrain. Iodine deficiency disorder is recognized as a global nutritional problem in which 266 million school-age children worldwide (31.5% of

the population) are considered to be at risk of iodine deficiency (5). Reports from the Region indicate a similar widespread occurrence of the deficiency.

Vitamin A deficiency is considered a public health problem in several countries, affecting preschoolers, school-age children and women of reproductive age. The prevalence of zinc deficiency was found to range from 25% to 52% in the Region (6), and vitamin A deficiency is highly prevalent with 0.8 million preschool-age children estimated to have night blindness and 13.2 million preschool-age children with serum retinol levels $<0.70 \mu\text{mol/l}$ (7).

Iodine deficiency is recognized as a significant public health problem in 18 countries, and one third of the population is estimated to be at risk of developing iodine deficiency disorders, which have dramatic consequences on the fetal brain and on cognitive and functional development in early childhood (WHO, 2004).

Vitamin D deficiency has been reported among children under the age of five and in adults and adolescents, particularly among women who wear the veil. Vitamin D deficiency is a risk factor for osteoporosis, and the prevalence of this disease is expected to increase in the Region due to the steady growth of the ageing population (Maalouf et al., 2007). Other micronutrient deficiencies have also been documented in some countries of the Region, such as Beri beri (thiamin deficiency) and pellagra (niacin deficiency) in Sudan (Darfur), scurvy (vitamin C deficiency) in Afghanistan, folate and vitamin B12 deficiencies in women of childbearing age and zinc deficiency in children under-5 years of age in Lebanon. However, data are not available to document all micronutrient deficiencies and their magnitude and severity in most countries.

2.3 Nutrition throughout the life-cycle

The strategy takes a unified view of the life-cycle as a whole, with each life-cycle stage supported by nutrition foundations that are essential for positive development. While many aspects in the development and ageing process of the human being are genetically programmed, environmental factors are now recognized as highly significant in the manifestation of human characteristics. Nutrition impacts the development process at every stage from conception to death. The latest epidemiological research, using an evidence-based approach, explores the effects of nutrition on growth, development and normal functioning of individuals through each stage of life. The phases of life are classified into fetal, neonatal, infancy, adolescence, adulthood and old age.

3. FOODBORNE DISEASES

Foodborne diseases constitute a serious threat to achieving good nutritional status. Diseases of zoonotic origin represent a considerable public health burden and challenge; salmonellosis and campylobacteriosis are the most commonly reported foodborne illnesses (8). The lack of hygiene standards and control measures in food preparation and the wastage and pollution of water, especially in rural areas, are examples of underlying determinants (8). However, food safety came to the forefront of the public health agenda following the avian influenza outbreak and other global events, such as the contamination of milk melamine. This

facilitated intersectoral collaboration between the different ministries. It also assisted several countries to assess the food safety structure and systems which resulted in the establishment of food and drug administrations or interministerial committees to address food safety issue. (WHO Annual report, 2008).

3.1 Obesity and noncommunicable diseases

The epidemiology of noncommunicable diseases, such as cardiovascular disease, diabetes and cancer and the risk factors for these diseases are closely related to food consumption, dietary patterns, nutrition and lifestyles. Reports present alarming figures for the prevalence of obesity and noncommunicable diseases. It was noted that noncommunicable diseases accounted for 52% of all deaths and 47% of the disease burden in 2005 which is likely to rise to 60% in 2020 (10). Of particular interest is a WHO report in 2005 on the Region's population aged 20 years and older, among whom the prevalence of diabetes was reported to be 11%, hypertension 26%, dyslipidemia 50%, overweight and obesity 65% and physical inactivity 77% (Table 6, Annex 1). This rise in noncommunicable diseases is paralleled by a rise in the direct costs of health care resources needed for disease management. Indirect costs (such as the loss of economic activity due to illness and premature deaths associated with noncommunicable diseases) and the intangible costs (such as social and personal loss) are even greater and must be taken into account (10).

In addressing the increasing prevalence of noncommunicable diseases in the Region, many initiatives have been implemented by international organizations and countries. Of these initiatives the 'Eastern Mediterranean Approach to Noncommunicable Diseases Network' (EMAN), which was established in 2001, promotes collaboration and capacity-building in the prevention and control of noncommunicable diseases. There are other activities and strategic plans implemented in several countries, such as the "Move for health initiative" in Oman (10).

Cardiovascular disease and stroke are rapidly growing problems, and represent the main causes of morbidity and mortality in the Region, accounting for 31% deaths (WHO, 2002; Khatib, 2004). The prevalence of risk factors for cardiovascular diseases is high in most countries of the Region in which one quarter of the population aged 15–65 years is found to be hypertensive, 58% are overweight/obese and 23% have elevated blood cholesterol levels (Khatib, 2004).

Overweight and obesity are potent risk factors for cardiovascular diseases and type 2 diabetes and are major contributors to premature deaths. These metabolic disorders are dramatically increasing among adults in the Region. Compiled data for adults aged 15 years and older from 16 countries show the highest levels of overweight in Kuwait, Egypt, United Arab Emirates, Saudi Arabia, Jordan and Bahrain where the prevalence of overweight/obesity ranges from between 74% and 86% in women and 69% and 77% in men (WHO Global InfoBase). These data indicate a much higher prevalence of obesity among adult women whereas overweight is more marked among adult men. The escalating level of overweight and obesity among children and adolescents is of particular concern given the recent evidence

linking childhood and adolescent obesity to increased risk of obesity and morbidity in adulthood.

Data collected by STEPwise surveillance among adults aged 15–65 years in nine countries in the Region provide an adjusted mean figure for diabetes equal to 11%, with the highest prevalence (>20%) reported in the Syrian Arab Republic and member countries of the GCC, and prevalence between 10% and 12% in Egypt, Iraq, Jordan and Pakistan, and the lowest between 7% and 9% in the Islamic Republic of Iran and Lebanon. Other country estimates are 24% in the United Arab Emirates and 15% in Tunisia. The number of people with diabetes in the world is expected to double between 2000 and 2030, based solely on demographic change. The greatest relative increase is expected to occur in the Eastern Mediterranean Region.

Changes in food habits are visible in all countries, in which the traditional diet, which has generally consisted of dates, milk, fresh vegetables and fruits, whole wheat bread and fish, has been diversified, with an excess intake of energy-dense foods rich in fat and free sugars and deficient in complex carbohydrates. Sugar consumption is already very high (30–40 kg/per capita/annum), it continues to rise and its contribution to the total energy intake ranges from 10% to 15%. The same trend is applicable to fat consumption of vegetables and animal origin, with an average consumption rate of 20 kg/per capita/annum, contributing over 30% to the total energy intake (Musaiger AO (1993): Socio-cultural and Economic Factors Determining Food Consumption Patterns in Arab Countries. *Journal Royal Society Health*. 113: 69-75).

Countries with low income and/or affected by emergencies rely mostly on food subsidies and food aid and have the same food consumption characteristics as many low-income countries in the world, relying on cereals as a main source of energy. The daily caloric intake is insufficient (2000– 2300 kcal); cereals contribute to 60%–80% of total calorie intake. It is worth mentioning, however, that in most of these countries, such as in Sudan, wheat flour has replaced the traditional cereals, such as millet and sorghum (Musaiger AO,1993).

3.2 Nutrition surveillance

Nutrition data in the Region are not up date. Most countries have no functional nutrition surveillance systems able to analyse the nutrition situation and its possible evolution and trends in response to current policies and programmes. WHO will support the development of effective national nutrition surveillance systems in all countries of the Region, and hence, one of the key strategic interventions in this strategy is to assist Member States to establish national surveillance systems.

4. NUTRITION STRATEGY FOR THE EASTERN MEDITERRANEAN

4.1 Goals and objectives

The overall goal of the nutrition strategy and plan of action for the Eastern Mediterranean Region is to improve the nutritional status of people throughout the life-cycle by encouraging countries in this Region to reposition nutrition as central to their development agenda. It also provides a framework to assist countries to decide which nutrition actions are appropriate for a particular context and according to the most prevalent health problems. It aims to assist Member States to identify, develop, prioritize and adopt nutrition interventions which could assist in achieving the targets of the MDGs, agreed upon globally by the world's leading development institutions. The strategy addresses among other nutrition targets: MDG 1 (End poverty and hunger), MDG 4 (Reduce child mortality), and MDG 4 (Improve maternal health). It also addresses emerging issues of over-nutrition to overcome increasing rates of obesity and diet-related noncommunicable diseases.

The main objectives of the strategy are to:

- improve the nutritional status of people throughout the life-cycle;
- prevent and treat malnutrition among pregnant and lactating women and children under two years of age;
- promote adequate micronutrient intake;
- integrate actions to address the determinants of obesity and noncommunicable diseases;
- promote safe and healthy food choices;
- provide comprehensive nutrition information and education to consumers;
- improve nutrition services in the health sector;
- Enhance nutrition assessment, monitoring and evaluation and increase political commitment.

Special attention should also be given to emergency preparedness in the Region which is so affected by conflict and natural disasters.

The targets of the regional nutrition strategy, to be achieved by 2019, are:

1. To increase political commitment and enhance nutrition assessment, monitoring and evaluation.

Indicators

- All countries in the Region have developed national nutrition strategies and plans of action
- All countries in the Region have developed nutrition surveillance systems with efficient monitoring and evaluation system

2. To reduce the prevalence of wasting and stunting among children, especially children under-5 years of age, and of under-nutrition among women.

Indicators

- Reduced prevalence of underweight children by 30%
- Reduced low birth weight prevalence by 30%
- Decrease child mortality by 50%
- Decreased maternal mortality by 50%
- Increased percentage of women exclusively breastfeeding for the first 6 months by 50%
- Increased percentage of women adopting complementary feeding practices from 6 months to 2 years by 50%

3. To reduce the prevalence of micronutrient deficiencies.

Indicators

- Reduced prevalence of iron deficiency anaemia among preschool-aged and school-aged children, women of reproductive age women and the elderly by 30%
- Reduced prevalence of calcium and vitamin D deficiencies among women of childbearing age, lactating women, children and the elderly by 50%
- Reduced or eliminated prevalence of vitamin A deficiency among children under-5 years of age and pregnant and lactating women by 50%
- Eliminated iodine deficiency disorder through households consuming iodized salt by 50%
- Decreased prevalence of neural tube defects among newborn infants by 50%

4. To reduce the prevalence of diet-related noncommunicable diseases.

Indicators

- Reversed increasing trend in obesity in children and adolescents and adults by 50%
- Increased prevalence of physical activity among children, adolescents and adults by 75%
- Improved dietary practices by 50% in line with the strategies of the WHO Diet and Physical Activity Strategy in order to reduce the prevalence of noncommunicable diseases, including obesity
- Annual reduction in noncommunicable disease mortality rates by 5%

5. To build capacity for emergency preparedness in nutrition.

Indicators

All countries in the Region have developed contingency plans and preparedness in nutrition and food security enabling them to respond effectively and in a timely manner to any emergency.

6. To improve food safety.

Indicators

- Strengthened national regulations and legislation to meet international standards for food safety, including CODEX, by 70%
- Reduced incidence of foodborne diseases by 50%

5. APPROACHES

To achieve the above objectives, 10 approaches have been identified and summarized below. Each action area includes a series of suggested actions, selected for their established effectiveness and for their evidence-based potential. Their implementation requires, in many cases, cooperation between public sectors, as well as private and nongovernmental stakeholders, under the leadership of a government body.

Approach 1: Increasing political commitment for nutrition

One important reason for not meeting the challenges associated with many nutrition-related health problems in the Region is the absence of political commitment, governance and capacity to implement and monitor nutrition programmes. Thus, in order to ensure commitment to include nutrition in policies and health strategies, government should be encouraged to establish appropriate legislation, as well as allocate appropriate resources for nutrition issues that contribute to the prevention and treatment of diet-related diseases.

To increase political commitment for nutrition governments are encouraged to:

- Include malnutrition in development strategies and to promote the development of national food and nutrition policies.
- Establish national standards, as well as mandatory fortification and supplementation laws incorporating any technological developments.
- Address and promote obesity and obesity-related problems in association with international organizations.
- Establish appropriate legislation, strategies and allocate a considerable budget for the prevention and monitoring of noncommunicable diseases.
- Develop guidelines/regulations for food marketing and advertising to children.

Approach 2: Supporting a healthy start by promoting and protecting the nutritional well-being of women and children and ensure good nutrition throughout the life-cycle for all age groups

Good maternal nutrition promotes optimal fetal development, which may reduce the risk of chronic diseases in adulthood (4). Exclusive breastfeeding for up to six months and the timely introduction of safe and appropriate complementary foods, in addition to continued breastfeeding for up to two years can reduce the short- and long-term burden of ill-health. Thus, optimal fetal nutrition needs to be ensured for the nutritional well-being of both women and infants.

To promote and protect the nutritional well-being of women and children, governments are encouraged to:

- Promote optimal fetal nutrition, which includes: ensuring appropriate maternal nutrition from pre-conception; providing counselling on diet and food safety to pregnant women; and providing micronutrient supplementation, as required, to pregnant women

- Protect, promote and support breastfeeding and timely, adequate and safe complementary feeding of infants and young children by implementing the Global Strategy on Infant and Young Child Feeding, which sets the standards for optimal breastfeeding, complementary feeding and related maternal nutrition and health (11). The strategy calls for a dramatic increase in the number of infants who are exclusively breastfed. Currently, no more than 34% of infants worldwide are exclusively breastfed even during the first four months of life. Complementary feeding frequently begins too early or too late, and foods are often nutritionally inadequate and unsafe. Malnourished children who survive are more frequently sick and suffer the life-long consequences of impaired development. In addition to stressing the link between the health and nutritional status of mothers and children, the strategy addresses the challenges of feeding in exceptionally difficult circumstances, such as natural or man-made emergencies.
- Promote the development of pre-school and school nutrition and food safety policies and programmes, including education in nutrition, training teachers and other school staff, developing guidelines for healthy school meals, providing healthy options in canteens and other food distribution points in schools, eliminating vending machines or optimizing their contents, establishing fruit and vegetable distribution schemes (i.e. provide fruit free of charge or make it easily accessible) and promoting safe drinking-water; making use of the WHO nutrition-friendly school initiative (12) and WHO Diet and Physical Activity Strategy (13).
- To promote and protect nutritional well-being other age groups, including adolescents and women, as well as groups with special needs, such as people with physical and mental disabilities and the elderly.

Approach 3: Ensuring a safe, healthy and sustainable food supply

In collaboration with the Food and Agriculture Organization of the United Nations (FAO), the United States Agency for International Development (USAID), the Ministry of Agriculture and other agencies; adequate policies in agriculture and fisheries, food processing, marketing and distribution need to be established as they affect the health of the population by affecting the supply, availability, safety, affordability and accessibility of foods. Trade dynamics may also have a potential negative impact on food supply, especially in disadvantaged groups, as local shops in resource-poor areas are often over-priced and low on choice and quality (14).

Thus, proper actions are suggested to improve food accessibility and bioavailability of nutrients at household levels, ensuring food security and safety net programmes within each country, as well as developing national school feeding programmes. Other essential strategies include to increase community self-sufficiency in nutrition and improve the nutritional status of people living in zones under humanitarian crises by ensuring food aid and food availability in damaged areas, securing financial resources and addressing any sudden deterioration in the nutritional status of a population, especially in countries at risk of natural disasters, internal conflict and war.

To ensure a safe, healthy and sustainable food supply governments are encouraged to:

- Improve safety nets and social protection programmes and aim to increase the incomes and assets of those living below a certain level of income either directly through money transfers or indirectly via market interventions or government pricing policies.
- Increase community self-sufficiency in nutrition, as well as the physical status, intelligence and productivity of people.
 - Strengthen the productivity and incomes of hungry and poor people, targeting rural areas and strengthen the agriculture sector on which their livelihoods depend, by:
 - providing simple, inexpensive technology packages (water management, soil fertility management, use of green and animal manures, cover crops, crop rotation including vegetables, agroforestry and conservation tillage).
 - improving rural infrastructure (roads, water, etc.).
 - integrating farming systems to optimize the use of available land; the distribution of available land as a resource should be put to optimal use by households in rural areas.
 - improving small-scale irrigation and soil quality.
 - ensuring sustainable natural resource use and management (including forestry and fisheries).
 - creating farmer field schools (farmer training programmes on new and inexpensive techniques to increase food production and diversify food quality).
- Encourage small-scale community food production, by:
 - Improving the efficiency of the horticultural production system and associated support services.
 - Applying modern technologies and diversified cropping patterns to boost productivity and the incomes of small farmers in a sustainable manner.
 - Promoting conditions to ensure that households have sufficient access to fruits and vegetables at affordable prices.
 - Providing households with the necessary knowledge and skills to prepare and consume these foods to complement their diet.
 - Promoting and supporting food technology initiatives through collaborative schemes of government, industry and academic partnerships.
- Promote poverty alleviation programmes.
 - Identify areas of poverty needing urgent attention, and collect detailed information about communities' quality of life and nutritional status.
 - Provide the needed nutrition information to welfare providers.
 - Establish food subsidy programmes, in collaboration between governmental and nongovernmental organizations and private sectors, in order to protect and support vulnerable and low socioeconomic status groups.
 - Create rural job opportunities.
 - Design and implement village development projects.

- Allow poor households to make optimal use of local foods and practise healthy eating habits.
 - Determine the micronutrient composition of local foods, both raw and cooked, with special emphasis on identifying micronutrient-rich traditional foods.
 - Encourage the production and consumption of under-utilized micronutrient-rich traditional foods, such as wild edible plants, green leaves and liver, as this promotes both nutritional security, as well as biodiversity conservation.
 - Support and promote more initiatives to increase home-level production of micronutrient-rich fruits and vegetables:
 - promote home gardening more extensively.
 - ensure that target populations have access to high-yielding seeds and other inputs.
 - support the development of local infrastructure in order to promote home gardening.
 - Promote “biofortification”, the new mode of fortification. It is the use of conventional plant breeding to develop crops rich in certain nutrients, such as zinc, vitamin A and iron.
- Improve the bioavailability of nutrients and household-level technologies.
 - Encourage traditional household food technologies, which exist to improve the bioavailability of nutrients even when the basic diet cannot be changed for economic reasons. These include peeling, soaking, germination, fermentation, malting and roasting.
 - Encourage home-based preparation of complementary foods. The advantages of this technique include the use of locally available foods, the lower costs and the limited external inputs required, while the common limitations are the time and effort needed.
- Develop national school feeding programmes.
 - Explore the establishment of school "nutritious lunch or breakfast" programmes in public schools.
 - Distribute free meals to children who are economically challenged.

Approach 4: Promoting food with adequate micronutrient content

Despite all the existing attempts, additional food-based strategies and action plans are still needed in order to completely eradicate micronutrient deficiencies in the Region. Many communities still lack adequate awareness of the micronutrient deficiency problems that exist in their areas. Dissemination of information, education and community awareness of this issue should be conducted via proper education and mass media channels where needed. Governments should be encouraged to set up standards, introduce mandatory laws for the fortification of staple foods and control food prices.

To promote food with adequate micronutrient content governments are encouraged to:

- Engage in activities to prevent micronutrient deficiencies.
 - raise community awareness of the micronutrient deficiency problems, mainly via education and mass media.
 - increase political commitment to set up government standards for food labelling.
 - increase the availability of micronutrients through the food chain.
 - evaluate the feasibility, technological aspects and effectiveness of different options to provide micronutrients to young children.

- Encourage food-based strategies in order to address micronutrient deficiencies
 - Promote dietary diversity through information, education and food price control
 - Promote the production and consumption of micronutrient-rich foods as the only truly sustainable solution to micronutrient deficiency problems.
 - Encourage the re-use of traditional household food technologies as a way to improve the bioavailability of nutrients.
 - Encourage the fortification of commonly consumed (staple) foods. Steps should be taken to keep the price of fortified food within the purchasing capacity of the target groups.
 - Introduce mandatory laws for the fortification of staple foods.
 - Ensure the availability of the appropriate micronutrient supplements for distribution in highly deficient areas.

- In addition to the de-worming especially for school children.

Approach 5: Providing comprehensive information and education to public

Commercially-driven and incorrect nutrition information is a problem in many countries in the Region; adequate dissemination of nutrition knowledge to students in schools, to health professionals, to agriculturists, and to the public at large is lacking. The Extent, Nature and Effects of Food Promotion to Children: A WHO Review of the Evidence to December 2008 concluded that the commercial promotion of energy-dense and nutrient-poor food and beverages can adversely affect children's nutritional status and health. In addition, nutrition labels are needed to inform the consumer about food quality (15). Proper actions and communication are required to ensure adequate nutrition education and health promotion within each country of the Region. Countries need to strengthen the nutrition component of health education in order to build capacity in the country among the population and among health workers. Close coordination and cooperation with the different departments and communication among various sectors about food safety and nutrition should be integrated as a guide to food consumption.

To provide comprehensive information and education to public governments are encouraged to:

- Establish and monitor food-based dietary guidelines within each country of the Region.

- Aim at the general population, focusing on vulnerable groups (especially infants and young children, pregnant women, and elderly) and take into account cultural and religious sensitivities.
 - Provide strong incentives in order to ensure the implementation of food-based nutritional interventions and eventually to improve the nutritional well-being of the population.
 - Evoke public awareness about these guidelines via sensitization through mass media, panel discussions and wide-scale distribution of printed material at public places and academic institutions.
- Promote nutritional knowledge and appropriate attitudes and practices of caregivers towards food, social and dietary customs, family/child care and feeding practices as well as household hygiene.
 - Introduce nutrition education in school curricula as an integral part of instruction.
 - Conduct nutrition education campaigns.
 - Ensure the availability of nutrition education materials to the population
 - Develop and carry out information dissemination strategy.
 - Involve universities and institutions in innovative research.
 - Consult the global food-based dietary guidelines to develop regional food-based dietary guidelines to improve the food consumption patterns and nutritional well-being of individuals and populations (16).
 - Ensure De-worming programmes are integrated with school health programmes and school meals rich in micronutrients
 - Ensure appropriate marketing practices, in line with internationally agreed recommendations and dietary and food safety guidelines.
 - Adopt the appropriate marketing regulations.
 - Ensure adequate control of the marketing of foods and beverages to children.
 - Promote adequate labelling of food products, based on existing WHO/FAO CODEX Alimentarius standards, in order to support healthy choices (17).

Approach 6: Carrying out integrated actions to address noncommunicable disease-related determinants

Nutrition interventions have been shown to influence the increased prevalence of noncommunicable disease-related determinants through integrated action on nutrition risk factors in some developing countries (10). Specifically, and in order to reduce the burden from nutrition-related diseases, inadequate dietary habits, alcohol consumption and physical inactivity need to be addressed. Public awareness on the determinants and impact of noncommunicable diseases, including overweight and obesity, need to be increased through formal nutrition education at all levels, social marketing campaigns and incorporating positive messages in the media.

Food and dietary recommendations need to be promoted and enforced to assist individuals to follow and meet their healthy eating recommendations. Schools must formulate physical activity and nutrition policies and standardize nutrition education curriculum. In addition, the government plays a major role in promoting the demand for, and the supply of, healthy foods through developing food-based dietary guidelines, nutrition-sensitive agricultural policies, providing incentives for the production and marketing for fruits and vegetables and encouraging primary producers and food manufacturers to revise and provide the nutritional characteristics of their products. In the Region, lack of physical activity is estimated to cause 124 000 deaths, 1.48 million disability-adjusted life years (DALYs), and 1.24 years of healthy life lost (13). Accordingly, physical activity programmes should be encouraged and supported by governments to eliminate all barriers to a physically active community.

To carry out integrated actions to address determinants related to noncommunicable diseases governments are encouraged to:

- Increase public awareness on the main determinants, causes and serious impact of noncommunicable diseases, including overweight and obesity through performing, regularly, nutrition education and social marketing campaigns to encourage the adoption of healthy lifestyles; promote a healthy lifestyle culture by incorporating positive behaviour change messages into television programmes and magazines; and support nutrition education in schools.
- Enforce all food and dietary recommendations through encouraging the consumption of healthy foods and the limitation of saturated fats, processed foods and sugars; promoting the consumption of water over soft drinks in schools and workplaces; reducing the consumption of alcohol; abiding to life-cycle recommendations, more importantly during pregnancy, infancy, childhood, motherhood and old age; promoting environmental interventions that can assist individuals to follow and meet their healthy eating recommendations, including supply-side and demand-side interventions.
- Promote nutrition-friendly schools, where schools of the Region should adopt physical activity and nutrition policies; collaborate throughout the school community regarding nutrition and physical education; standardize nutrition education curriculum integrated into other school subjects. School canteens should provide healthy foods adhering to the United States Food and Drug Administration recommendations and ensure that the catering services comply with the recommendations of the food-based dietary guidelines. Schools should eliminate vending machines or optimize their contents, as well as identify and refer students with nutrition and physical activity problems.
- Promote the demand for, and the supply of, healthy foods through developing in agricultural policy incentives for the production and marketing of fruit and vegetables and encourage primary producers and food manufacturers to revise the characteristics of their products, and eventually lower total fat, saturated fat, added

sugar and salt content. Consider, in food pricing, economic measures that facilitate healthier food choices and restrict the consumption of fats and sugar, as well as encourage retailers to make more healthy food available at all sales points, at prices affordable for low-income groups. Reduce, in food advertising and promotion, the volume of commercial promotion of food and non-alcoholic beverages to children through both industry self-regulation and statutory action. Establish food labelling regulations, especially for products that contain high amounts of fat, sugar, energy and salt with a nutrition labelling scheme which is easily understandable and standardized. Avoid the localization of fast food outlets and vending machines providing energy-dense and nutrient-poor foods and ensure the availability of a variety of food choices compatible with the recommendations of the food-based dietary guidelines.

- Promote physical activity using the WHO Diet and Physical Activity Strategy (13). Encourage physical activity programmes in schools and kindergartens, providing children and adolescents with more and improved opportunities for physical activity, as well as ensuring that adequate infrastructure exists and barriers to achieving a physically active community are removed.

Approach 7: Strengthening nutrition and food safety

The health sector has crucial responsibilities in reducing the burden of food and waterborne diseases. National legislation and regulation for food and water supply based on international standards, in addition to mandatory laws to be followed by food manufacturers, need to be enforced. Creating public awareness about food safety issues is also highly essential. This may be achieved through conducting education campaigns and enforcing positive media messages. Water sanitation is also another area that needs to be controlled through expanding the development of water safety plans.

To strengthen nutrition and food safety governments are encouraged to:

- Update national legislation and regulations for food supply based on the international food safety standards, namely Codex.
- Conduct public awareness campaigns to educate the public on safe food practices, by conducting nutritional education campaigns, placing positive behavioural change messages in television programmes and in magazines.
- Apply mandatory laws and identify actions that retailers and food manufacturers can take to help in ensuring food safety, such as pasteurization and food irradiation and in preventing foodborne diseases.
- Monitor water sanitation through expanding the development of water safety plans, in order to reduce the incidence of waterborne diseases. In addition, support initiatives to increase community coverage of clean water for drinking and washing and ensure the use of water of drinking quality in the food processing chain in order to reduce the incidence of foodborne diseases.

Approach 8: Improving nutrition services and capacity building in the health sector

Regular, consistent and professional diet and lifestyle counselling by primary care professionals can highly influence individual food choices. Primary health care staff need to be better educated in order to conduct nutrition assessment, in addition to providing support for the promotion of healthy food choices and breastfeeding and complementary feeding. Poor standards of nutrition care can underlie many nutritional problems (18). Thus, improving the standards of service delivery for the prevention, diagnosis and treatment of nutritional-related diseases is of paramount importance. In addition, evidence-based guidelines need to be adopted and applied for screening and treatment.

To improve nutrition services and capacity-building in the health sector governments are encouraged to:

- Engage and educate primary health care staff in nutrition assessment and the provision of counselling on diet, food safety and physical activity, in addition to protection, promotion and support of breastfeeding and complementary feeding.
- Improve standards of service delivery for the prevention, diagnosis and treatment of nutrition-related diseases through establishing efficient outpatient and inpatient nutrition services, with adequate population coverage. Adopting and applying evidence-based guidelines on screening and treatment should be emphasized. In addition, the curricula for health staff need to be continuously revised. Nutrition support should be integrated in the treatment protocols of different diseases as well as accreditation schemes established and enforced for health practitioners involved in the diagnosis and treatment of nutrition-related diseases. Provision of foods for special dietary use and dietary supplements should be also supported and provided according to national needs and circumstances.

Approach 9: Monitoring, evaluating and conducting research into nutrition

It has been noted that many countries of the Region lack updated information on the nutritional and food security status of their populations, mainly due to the lack of adequate nutrition surveillance systems. Due to the diversity in population, technical skills, needs and resources of the country; it is not feasible to create one surveillance protocol that meets the needs of all countries. Therefore, countries are encouraged to develop a comprehensive plan of action based on existing WHO guidelines. The impact of programmes and policies should be also constantly assessed and programmes and policies evaluated for their effectiveness using appropriate health impact assessment methods. Scientists in universities and research centres need to be involved in improving research in public and private nutrition, strengthening the evidence base for interventions and policies and analysing the health impact of policy measures.

To monitor, evaluate and conduct research into nutrition governments are encouraged to:

- Support all countries of the Region to develop national nutrition surveillance systems to

monitor nutrition interventions and assess nutritional status, food availability and consumption and the physical activity patterns of their populations. Countries are encouraged to develop a comprehensive plan of action based on existing guidelines. At a minimum, it is recommended that the plan include a description of current nutrition programmes in the country, including information systems and interventions.

- Conduct a situation analysis and assess needs.
- Priority interventions for the Region may include: breastfeeding; infant and young child nutrition; vitamin and mineral supplementation and fortification, healthy growth promotion and chronic disease prevention, and specifically, obesity prevention and control.
- Identify the goals and objectives of the proposed surveillance system
- State methods, which should be based on current WHO guidelines and recommendations for nutrition assessment
- Provide a description of all the elements of the surveillance system, such as:
 - Planned uses and users of the data
 - Indicators
 - Existing policies or legal authorization of collection (or those needed)
 - Staff and resources
 - Unit responsible for the system (e.g., department in the ministry of health)
 - How this information system fits within the existing information systems
 - Flow chart of the system
 - Target population, data collection and sources of data
 - Description of data management and analysis plan
 - Description of dissemination plans
 - Resources needed and where they come from.
- Ensure quality control
- Evaluation plan: utility and systems operations (simplicity, flexibility, data quality, acceptability, sensitivity, predictive value positive, representativeness, timeliness, stability).
- Evaluate the impact of programmes and policies aimed at reducing the burden of food and nutrition-related diseases, by establishing input, process and output indicators in different socioeconomic population groups and by calculating the cost-effectiveness of interventions. Characteristics of the food environment, including nutritional quality, prices of foods and marketing practices, should be independently monitored. The impact of sectoral policies on health and nutrition should also be assessed using health impact assessment methods in order that better cross-government collaboration can be achieved to integrate health in all policies targeted at diet, food supply or food safety.
- Improve the review of public and private research to enhance the understanding of the role of nutrition, food safety and lifestyle factors in disease development and prevention to strengthen the evidence base for interventions and policies, to develop innovative solutions that address nutrition and food safety challenges, to describe the sociological and cultural aspects of eating, to assess the impact of social marketing techniques, new communication channels and different labelling schemes on

- consumers' dietary choices, especially in lower socioeconomic groups, and to develop simple, valid and economical monitoring and evaluation tools.
- Involve scientists in expanding the evidence base by designing and implementing pilot projects and by analysing the health impact of policy measures.

Approach 10: Building capacity for nutritional care and support in emergency situations

The basic right to adequate food and nutrition is implicit in any emergency response and is reflected in humanitarian law. Poor decisions are made in the short term, which have long-term negative impacts on the nutritional stability of the affected populations. Failure to meet the nutritional needs of populations in emergencies jeopardizes the ability to resist and fight infectious diseases (19). Growth and development, particularly of children and women, is disrupted resulting in increased childhood malnutrition, poor reproductive health and worsening pregnancy outcomes. Interventions must aim to strengthen household food security and promote and protect nutritional well-being while reducing dependency on long-term food aid. This calls for appropriate complementary and timely interventions, which need to be implemented flexibly in order to respond to the changing dynamics of a situation. A toolkit for addressing nutrition in emergency situations was developed by the Inter-Agency Standing Committee (IASC) in June 2008. The toolkit includes a set of interventions that are an essential aspect of population nutritional stability. Independently, the interventions address specific needs that could arise during an emergency; collectively, the interventions represent the work to be undertaken at the country level to ensure a timely, predictable and effective humanitarian response to nutritional needs during an emergency (19). The toolkit is available at <http://motherchildnutrition.org/resources/pdf/mcn-iasc-toolkit-nutrition-in-emergency-situations.pdf>.

To build capacity for nutritional care and support in emergency situations and under conditions of humanitarian crisis governments are encouraged to:

- Strengthen mobile teams and ensure the availability of nutrition services for those teams.
- Reinforce inpatient management of severe malnutrition in district referral hospitals.
- Establish distribution centres within each damaged area, village or city, where the collection and the distribution of all form of food aid, food surplus and food supplements take place.
 - Iron and folic acid supplements should be continued to be provided to pregnant and lactating women, if already being given.
 - Vitamin A supplements should be given to young children and mothers postpartum, according to existing recommendations.
 - The multiple micronutrient supplements should be given until the emergency is over and access to nutrient-rich foods is restored.
- Assess the need for food supplements for those who are moderately malnourished and therapeutic foods for the severely malnourished during and after an emergency.

6. STEPS FOR IMPLEMENTATION

Step 1. Establish or strengthen multisectoral standing committees for food and nutrition

Governments need to establish or strengthen multisectoral standing committees to develop national food and nutrition policies. The Regional Office will provide technical support and guidance to ensure an efficient coordination mechanism and exchange of knowledge between countries of the Region.

Step 2. Revise current food and nutrition action plans and sectoral policies

Multisectoral bodies could be instrumental in reviewing current nutrition action plans and evaluating achievements; analysing the relevant sectoral policies and evaluating their consistency with the goals in current plans; and advocating the revision of sectoral policies in accordance with the agreed action plans. The revised action plans should clearly identify the time scale for implementation of different actions, the lead implementing agency and the allocation of resources. Member States should establish specific targets for each of the health and nutrition goals, as well as specific food safety and food security goals, taking into account available resources and priorities.

Step 3. Prioritize the implementation of specific actions

The choice of actions should be based on the stage of national policy and capacity development reached:

- Countries that have not finished developing their national food and nutrition policy or have not established intersectoral coordination might give priority to this political and institutional development.
- Countries that have a nutrition policy but which have not yet agreed on policy tools (e.g. food-based dietary guidelines, surveillance systems) or have not yet established sustainable implementation mechanisms might prioritize the development of such tools.
- Countries that have a longer history of implementation of food and nutrition policies but which have mainly focused on health promotion might consider concentrating on mechanisms to sustain their policies (e.g. through legislation) and expanding their initiatives to cover the full range of actions envisaged by this action plan.
- Most countries need to strengthen the health sector's capacity to fully integrate nutrition into disease management and prevention, particularly through primary health care.

Step 4. Operationalize the action plan through a combination of macro policies, regulatory frameworks (legislation, regulations, ordinances, treaties) and fiscal and other measures

Voluntary actions and action-oriented partnerships of proven effectiveness can also be considered as ways of integrating and supporting the other policy tools. Actions should be designed at both national and local levels, with particular attention paid to community interventions and the health-promoting potential of arenas or settings such as schools, hospitals and workplaces. Actions should also take account of gender, ethnic and social differences; they should be designed to reduce inequalities in health and to target all stages of the life-cycle, especially early life. Special efforts should be made to maximize the opportunities arising from policies and strategies that address related health determinants, notably physical activity, alcohol consumption and water and food safety, taking into account the most recent developments in these fields.

Step 5. Establish dialogue and partnerships with other stakeholders

Private non-profit and profit organizations should be engaged in the implementation of action plans, with clear identification of their expected roles. Partnerships should be governed by guidelines, which ensure that they are appropriate and focused on clearly identified actions. Principles of avoiding conflicts of interest should always be highlighted.

Step 6. Allocate resources

Allocating the right mix of human, financial and temporal resources is crucial for successful implementation. Adequate resources from public budgets should be invested in preventive programmes. Revenues from increased taxes on certain categories of food products could be invested in such health-related initiatives. Investment from private sources could also be solicited.

Step 7. Monitor implementation and accountability

Continuous monitoring and reporting of updated data should be well focused on as a way to follow-up and ensure the implementation of every step agreed upon in the action plan. Nutritional surveillance systems in countries are fundamental for monitoring nutrition interventions and assessing nutritional status, food availability and consumption and the physical activity patterns of populations. The impact of programmes and policies aimed at reducing the burden of food- and nutrition-related diseases should be also constantly assessed and evaluated.

7. PLAN OF ACTION

Building on previous initiatives for nutrition, the action plan (Tables 1–4) addresses nutrition-related public health challenges and their determinants, and proposes strategies, activities and desired outcomes. It can be used by countries to develop their own policies according to their specific health needs, resources and cultural context. The action plan considers the various health challenges facing the Region and identifies eight areas where integrated action can be taken to address the challenges of under-nutrition, micronutrient deficiencies, overweight and obesity and noncommunicable diseases.

The eight approaches are:

- Promoting and protecting the nutritional well-being of women and children
- Promoting adequate micronutrient intake
- Providing comprehensive information and education to consumers
- Carrying out integrated actions to address obesity and noncommunicable diseases
- Improving nutrition services in the health sector
- Monitoring and evaluating and conducting research
- Increasing political commitment
- Building capacity for nutrition in emergencies.

All interventions are based on a scientific evidence base and international recommendations and guidelines.

Table 1. Plan of action for undernutrition

Health challenges	Determinants	Strategies	Activities	Outcome/tools
Under-nutrition	1. Lack of data on the under -nourished and their geographic locations	1. Establish and monitor national nutrition surveillance systems	1. Establish a national nutrition monitoring system on food consumption patterns and under-nutrition	1. Established national nutrition surveillance systems
	2. Inadequate child feeding practices	2. Protect, promote and support breastfeeding and timely, appropriate and safe complementary feeding of infants and young children	2a. Promote adequate nutrition knowledge about appropriate child feeding and safe food practices 2b. Implement the Global Strategy on Infant and Young Child Feeding 2c. Ensure the proper application of the code of marketing for breast milk substitutes 2d. Revitalize the effort of baby-friendly hospitals	2. Increased exclusive breastfeeding for the first 6 months
	3. Inadequate nutrition services in the health sector	3. Build up the nutrition-related capacity of primary health care staff	3. Educate health professionals on nutrition: include nutrition in health professionals curricula	3. Increased number of programmes to improve nutrition services in the health sector
	4. Poor nutrition knowledge	4. Introduce nutrition education in school curricula	4a. Introduce nutrition education in school curricula, and ensure the availability of nutrition education publications (books, cartoons, movies, pamphlets) to all sectors of the population 4b. Conduct nutrition education campaigns 4c. Enforce food labelling	4a. Established food-based dietary guidelines 4b. Established nutrition education programmes in schools, universities and the community

			regulations	
	5. Food insecurity and poverty	5. Develop national feeding programme	5a. Establish “nutritious lunch or breakfast” programmes in public schools 5b. Distribute free meals to vulnerable groups 5c. Establish effective food subsidy programmes	5a. Reduced proportion of people who suffer from hunger 5b. Reduced prevalence of stunting and underweight children. 5c. Reduced birth weight prevalence 5d. Decreased child mortality 5e. Decreased maternal mortality
	6. Foodborne diseases	6. Educate community on food safety and toxicity	6. Provide education to improve the use of safe food and promote hygienic practices	
	7. Humanitarian crises	7. Increase capacity in nutrition in emergencies	7. Strengthen household food security	
	8. Lack of political commitment towards the eradication of all forms of under-nutrition	8. Encourage governments to include malnutrition in their development strategies	8. Promote the development of national food and nutrition policies	8. Number of countries that have adopted national food and nutritional policies/strategies

Table 2. Plan of action for micronutrient deficiencies

Health challenges	Determinants	Strategies	Activities	Outcome/tools
<p>Micronutrient deficiencies</p>	<p>1. Inadequate access to foods with proper micronutrient content and poor environment</p>	<p>1. Encourage food-based strategies in order to address micronutrient deficiencies and other health interventions</p>	<p>1a. Promote the production and consumption of micronutrient-rich foods 1b. Encourage the re-use of traditional household food technologies as a way to improve the bioavailability of nutrients 1c. Encourage home-based preparation of nutritionally sound complementary foods 1d. Promote fortification of basic food with iron, vitamin A, vitamin D and iodine 1e. Promote micronutrient-rich school feeding and de-worming to school children 1f. Promote supplementation programmes with micronutrients for specific targeted groups at risk</p>	<p>1/2a. Reduced prevalence of iron deficiency anaemia among preschool-aged and school-aged children, non-pregnant and pregnant women, and the elderly 1/2b. Reduced prevalence of calcium and vitamin D deficiencies among women of childbearing age, lactating women, children and the elderly 1/2c. Reduced prevalence of vitamin A deficiency among children under 5 and pregnant and lactating women 1/2d. Reduced prevalence of iodine deficiency disorder in women 1/2f. Decreased prevalence of neural tube defects among newborn infants 1/2g. Increased percentage of households consuming iodized salt 1/2h. Increased percentage of households consuming adequate iron and folic acid A and D</p>

	2. Poor knowledge of dietary sources of micronutrients	2. Educate the public on micronutrient contents of foods	2a. Create community awareness of the seriousness of micronutrient deficiency problems 2b. Promote dietary diversity through information, education and food price control	
	3. Lack of updated data on the micronutrient status/problems of the Region	3. Establish and monitor national nutrition surveillance systems	3. Establish a national database on micronutrient consumption patterns and micronutrient deficiency status every 5–10 years	3. Increased number of countries with established national nutrition surveillance systems
	4. Lack of political commitment towards the eradication of micronutrient deficiencies	4. Encourage the political commitment to set up government standards, as well as establish mandatory fortification and supplementation laws	4. Promote the development of national fortification laws	

Table 3. Action plan for overweight and obesity

Health challenges	Determinants	Strategies	Activities	Outcome/tools
Overweight and obesity	1. Suboptimal fetal nutrition and unhealthy infant and child feeding practices	1. Promote optimal fetal, infant and child feeding practices	1a. Ensure adequate maternal nutrition from pre-conception 1b. Implement Infant and Young People Feeding Global Strategy guidelines 1c. Implement the international code of marketing of milk substitutes and ensure adherence to Codex	1. Increased exclusive breastfeeding for the first 6 months
	2. Increased demand and supply of unhealthy foods	2. Promote the demand and supply of healthy foods	2a. Encourage the development of nutrient-dense food products 2b. Encourage the government to consider economic measures that facilitate healthier food choices and restrict consumption of fats and sugar, and reduce the price of fruit and vegetables 2c. Encourage, the private catering sector to provide healthy food choices and discourage promoting energy-dense foods and larger portion sizes through price incentives 2d. Control food advertising and commercial promotions of food and sweetened beverages to children through both	2. Improved dietary habits of the population

			<p>industry self-regulation and statutory action</p> <p>2e. Establish food labelling regulations, especially for products that contain high amounts of fat, sugar, energy and salt</p> <p>2f. Support nutrition education in schools through the promotion of nutrition-friendly schools and ensuring the availability of healthy food choices at competitive prices</p> <p>2g. Avoid the localization of fast food outlets and vending machines providing energy-dense and nutrient-poor foods</p>	
	3. Absence of national nutrition surveillance systems	3. Establish and monitor national nutrition surveillance systems	3. Establish a national database and monitor food consumption patterns and overweight/obesity status performed every 5–10 years	3. Reduced prevalence of overweight and obesity among children, adolescents and adults
	4. Physical inactivity	4. Encourage physical activity, using the WHO Diet and Physical Activity Strategy guidelines	<p>4a. Encourage physical activity programmes in schools and kindergartens</p> <p>4b. Create opportunities for outdoor recreational activities</p> <p>4c. Promote physical activity at the workplace.</p> <p>4d. Enforce government regulations to provide adequate infrastructure to physically active transport</p>	4. Increased prevalence of physical activity

	5. Poor knowledge and awareness about the adverse health impacts of obesity	5. Educate the public about optimal eating habits	5a. Perform, regularly, nutrition education and social marketing campaigns 5b. Incorporate positive behaviour change messages into television programmes and magazines	5. Increased number of countries that have adopted nutrition-friendly schools
	6. Lack of political commitment	6. Increase political commitment towards obesity and obesity-related problems (task of international organizations)	6. Establish support schemes for low socioeconomic groups	

Table 4. Noncommunicable diseases

Health challenges	Determinants	Strategies	Activities	Outcome/tools
Noncommunicable diseases	1. Lack of national nutrition surveillance systems	1. Establish and monitor national nutrition surveillance systems	1. Establish a national database on food consumption, physical activity and smoking patterns, as well as on noncommunicable disease prevalence food consumption surveys, performed every 5–10 years	1. Achieved annual reduction in noncommunicable disease mortality rates
	2. Poor knowledge about healthy food choices	2. Increase community awareness of health risks of diet-related noncommunicable diseases	2. Promote accurate and objective education to the public and to patients on healthy foods and risk-associated food items	
	3. Inadequate dietary habits	3. Promote healthy food choices	3a. Adhere to adequate life-cycle nutrition recommendations 3b. Improve the quality of the diets/foods served or distributed by the public sector, food aid programmes, and school feeding programmes 3c. Promote standards of diet quality in restaurants and school cafeterias 3d. Improve product labelling	3/4. Increased number of countries that have adopted the WHO Diet and Physical Activity Global Strategy
	4. Sedentary lifestyle	4. Promote physical activity in line with the strategies of the WHO Diet and Physical	4a. Promote 30 minutes of moderate intensity physical activity per day	

		Activity Strategy	4b. Promote physical activity efforts use of stairs, creating an institutional culture for health promotion 4c. Encourage physical education programmes at schools in schools	
	5. Genetics			
	6. Smoking	6. Enforce all legislation concerned with tobacco control)		6/7. Increased number of countries that have implemented legislation and strategies to limit smoking and promote a healthy lifestyle for the prevention of diet-related chronic diseases
	7. Lack of political commitment	7. Encourage the government to establish the appropriate legislation and strategies as well as to allocate a considerable budget for the prevention and monitoring of noncommunicable diseases	7a. Create incentives for the development of healthier products by the food industry 7b. Increase the relative price of unhealthy food choices through taxes or other disincentives 7c. Develop guidelines/ regulations for food marketing and advertising to children	

8. KEY PLAYERS

Essential to the process is building institutional capacity to manage nutrition programmes by encouraging partnerships between governments, universities, communities and nongovernmental organizations; and between governments and the corporate sector, that plays a central role in implementing the action plan and its key activities especially the private sector who has a role to play in determining the nutritional content of snacks and fast foods and in fortifying foods and producing healthy food choices. Those key partners are:

8.1 Government

Government commitment is necessary for implementation of this action plan. Governments need to provide leadership and to formulate, monitor and evaluate food and nutrition policies. A successful policy or action depends on effective national coordination and the full collaboration of all the stakeholders. Starting with public health policy-makers who act as advocates and demonstrate stewardship and leadership for the public and private sectors including agriculture, consumer protection, education, sport, transport, environment, social and labour sectors. Each sector has an important role to play with regard to the implementation of the nutrition action plan and in the design of specific policies and programmes. The government is also responsible for fostering scientific and institutional innovation and research for the benefit of the people of the Region.

8.2 Civil society and professional networks

Health professional organizations, advocacy groups, trade unions and nongovernmental organizations who work in the field of nutrition and food can be a driving force behind the advocacy role of the health sector, act as watchdogs in monitoring whether the private and public sectors are keeping their commitments, as well as provide information to consumers and workers. Nongovernmental organizations and health professional organizations can also be involved in the development of nutrition guidelines, standards of care, quality assurance of services and professional accreditation schemes.

8.3 Academia and research

Academic institutions can provide the research-based knowledge needed for the implementation, monitoring and evaluation of the action plan. Many research and training programmes are currently run by academic institutions that have a cadre of well-educated nutrition scientists who are capable of conducting research studies and training nationals in their fields. Academic institutions collaborate with government parties and national and international agencies on many food and nutrition projects. Thus, researchers have the responsibility of disseminating the results of their studies and providing technical training to nutritionists through short courses, workshops and in-service training. Research findings can only achieve impact when they are known by, and available to, those who can use them.

8.4 Economic operators

Primary producers, food manufacturers, food retailers and caterers can improve the availability of fruits and vegetables and the nutritional quality and safety of products, as well as improve staff knowledge of healthy nutrition. A huge responsibility falls on the media, advertisers and marketers who should support adequate food and nutrition awareness campaigns and commercial advertising that comply with the recommendations on marketing to children and align with the recommendations of the food-based dietary guidelines.

8.5 International actors

United Nations specialized agencies and other international organizations have important roles to play in implementing this action plan by enhancing political awareness, providing consistent policy advice, stimulating intercountry collaboration mechanisms and coordinating international actions. The WHO Regional Office will support implementation of the action plan by raising awareness and fostering political commitment to address food- and nutrition-related health challenges in countries of the Region. The Codex Alimentarius Commission should establish food standards and guidelines on nutrition labelling, as well as on health and nutrient claims, promote food quality, safety and hygiene. The United Nations Standing Committee on Nutrition could foster collaboration and coordination among the different United Nations agencies.

9. CONCLUSIONS

The nutrition strategy and plan of action for the Eastern Mediterranean Region aims to assist countries to establish and implement action in nutrition according to their national situation and resources. The overall goal of the regional nutrition strategy is to improve the nutritional status of people throughout the life-cycle through encouraging countries to reposition nutrition as central to their development agenda. Efforts have been made to make these strategic directions relevant to each country in the Region as summarized in the plan of action with recommended interventions and programmes.

The WHO Regional Office, through this strategy, will work closely with Member States and provide technical support in coordination with other key partners and UN specialized agencies to ensure that the nutrition agenda is taking a prominent place in national development plans and related programmes to achieve health and nutrition security for all people. WHO will work with policy- and decision-makers to promote investment in nutrition as a pressing need that is essential to save the lives of people from malnutrition and noncommunicable diseases; prevention is also very cost-effective to national budgets. Advocacy to civil society and communities is also crucial. The Regional Office will continue hosting the Regional Advisory Committee on nutrition and monitor the implementation of the strategy and plan of action, in coordination with the various organizations involved in nutrition and health to strategically drive all concerned parties towards this goal.

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Annex

TABLES

Table 1. Levels of child malnutrition based on WHO standards in countries of the Eastern Mediterranean Region, 1995–2009

Country	Year	Underweight (%)		Stunting (%)	Wasting (%)
		Severe	Moderate and severe	Moderate and severe	Moderate and severe
Afghanistan	2004	12.2	32.9	59.3	8.6
Bahrain *	1995	2	9	10	5
Djibouti	2002	10.6	25.4	26.5	19.4
Egypt	2008	1.9	6.8	30.7	7.9
Iran, Islamic Republic of*	1998	2	11	15	5
Iraq	2006	2.5	7.1	27.5	5.8
Jordan	2002	0.7	3.6	12.0	2.5
Kuwait*	1996	3	10	24	11
Lebanon	2004	1.4	4.2	16.5	6.6
Libyan Arab Jamahiriya	2007	2.0	5.6	21.0	6.5
Morocco	2003–2004	3.2	9.9	23.1	10.8
Oman **	1999	1.5	17.9	10.6	7
Pakistan	2001	12.7	31.3	41.5	14.2
Occupied Palestinian territory *	2006	0	3	10	1
Saudi Arabia	2004–2005	1.0	5.3	9.3	11.8
Somalia	2006	13.1	32.8	42.1	13.2
Sudan	2006	16.4	31.7	37.9	21.0
Syrian Arab Republic	2006	3.4	10.0	28.6	10.3
Tunisia	2006	0.9	3.3	9.0	3.4
United Arab of Emirates*	1995	14	3	17	15
West Bank and Gaza Strip	2007	0.8	2.2	12.3	1.7
Yemen	2003	18.5	43.1	57.7	15.2

¹ Detailed and historical data are available from www.who.int/nutgrowthdb and www.who.int/nutrition/landscape

* Data available from UNICEF. Global database on child malnutrition, available at: <http://www.childinfo.org/nutrition.html>.

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Table 2. Under-5 mortality ratio (per 1000 live births) in selected countries of the Eastern Mediterranean Region

Country	Mortality ratio
Afghanistan	257
Bahrain	10
Djibouti	127
Egypt	36
Iran, Islamic Republic of	33
Iraq	45
Jordan	20
Kuwait	11
Lebanon	29
Libyan Arab Jamahiriya	18
Morocco	34
Oman	12
Pakistan	90
Qatar	10
Saudi Arabia	25
Somalia	142
Sudan	109
Syrian Arab Republic	17
Tunisia	21
United Arab of Emirates	8
Yemen	73

Data for 2007 are available at the World health statistics report 2009, WHO from www.who.int/entity/whosis/whostat/en/

Table 3. Maternal mortality ratio (per 100 000 live births) in countries of the Eastern Mediterranean Region

Country	Maternal mortality ratio
Afghanistan	1600
Bahrain	18.8
Djibouti	546
Egypt	55
Iran, Islamic Republic of	24.6
Iraq	84
Jordan	41
Kuwait	1.9
Lebanon	86
Libyan Arab Jamahiriya	27
Morocco	227
Oman	23
Pakistan	276
Qatar	35
Saudi Arabia	31.9
Somalia	1044
Sudan	1107
Syrian Arab Republic	58
Tunisia	36.5
United Arab of Emirates	0
Yemen	365

Source: Neonatal and perinatal mortality in 2004, Geneva, mps/hq,2007

Table 4. Rates of exclusive breastfeeding in selected countries of the Eastern Mediterranean Region

Country	Year of survey	Exclusive breastfeeding 0-5 months (%)	Source
Djibouti	2006	1.3	MICS
Egypt	2008	53.2	DHS
Iran, Islamic Republic of	2005-2006	EBF at 6 months: 28%	Integrated Monitoring and Evaluation System (IMES)
Iraq	2005	25.1	MICS
Jordan	2007	21.8	DHS
Morocco	2003-2004	31.0	DHS
Pakistan	2006-2007	37.1	DHS
Somalia	2006	9.1	MICS
Sudan	2006	33.7	Sudan Household health Survey
Syrian Arab Republic	2006	28.7	MICS
Tunisia	2006	6.2	MICS
Yemen	2003	11.5	Family Health Survey
Gaza Strip	2006	27.2	MICS
West Bank	2006	25.9	MICS
Palestinian Territory	2006	26.5	MICS

Source: The WHO Global Data Bank on Infant and Young Child Feeding

<http://www.who.int/nutrition/databases/infantfeeding/en/index.html>

Table 5. Complementary feeding and breastfeeding at 1 year in countries of the Eastern Mediterranean Region

Country	Year of survey	Introduction of solid, semi-solid or soft foods and breast milk (%)	Continued breastfeeding at 1 year (%)	Source
Afghanistan	2003	28.9	91.5	MICS
Djibouti	2006	23.1	53.5	MICS
Egypt	2008	68.3 (6-8 mo)	No data	DHS
Iran, Islamic Republic of	2005	68.0	90.0	Integrated Monitoring and Evaluation System (IMES)
Iraq	2006	51.0	67.6	MICS
Jordan	2007	No data	46.0	DHS
Morocco	2003-2004	90.9	56.5	DHS
Oman	2000	91.1	95.0	National Health Survey
Pakistan	2006-2007	37.4 (6-8 mo)	79.0	DHS
Somalia	2006	15.1	50.2	MICS
Sudan	2006	55.8	83.6	Sudan Household Health Survey
Syrian Arab Republic	2006	36.5	63.9	MICS
Tunisia	2006	61.1	48.1	MICS
United Arab Emirates	1995	No data	49.7	Family Health Survey
Yemen	1997	57.6	64.7	Demographic and Maternal and Child Health Survey
Gaza Strip	2006	65.0	No data	MICS
West Bank	2006	50.4	No data	MICS
Occupied Palestinian territory	2006	56.7	No data	MICS

The WHO Global Data Bank on Infant and Young Child Feeding available from

<http://www.who.int/nutrition/databases/infantfeeding/en/index.html>

Table 6. Prevalence of diabetes, hypercholesterolemia and hypertension in selected countries of the Region

Country	Diabetes*	Hypercholesterolemia**	Hypertension***
Egypt	15.8	19.4	26.7
Iran, Islamic Republic of	10.3	43.6	14.8
Iraq	10.4	37.5	40.4
Jordan	16.0	33.8	26.0
Kuwait	12.4	38.6	20.5
Lebanon	11.6	18.4	22.8
Oman	12.2	27.6	20.5
Saudi Arabia	18.3	19.2	21.3
Sudan	19.2	19.8	23.6
Syrian Arab Republic	20.5	34.0	28.4

* Diabetes is defined as blood glucose ≥ 126 mg/dl.

** Hypercholesterolemia is defined as total cholesterol ≥ 200 mg/dl.

*** Hypertension is defined as SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg.

Data available from www.emro.who.int/ncd/stepwise/html

Table 7. Prevalence of overweight, obesity, physical inactivity and low fruit and vegetable intake in selected countries of the Eastern Mediterranean Region

Country	Overweight/Obesity* (%)	Physical inactivity** (%)	Low fruit/ vegetable intake*** (%)
Egypt	66.0	70.4	79.0
Iran, Islamic Republic of	42.8	67.5	-
Iraq	66.9	56.7	91.4
Jordan	57.0	51.0	90.0
Kuwait	75.4	64.7	81.0
Lebanon	60.5 ¹	68.7	-
Oman	62.6	69.9	33.2
Saudi Arabia	68.8	67.7	93.5
Sudan	53.9	86.8	-
Syrian Arab Republic	56.3	31.2	95.7

*Overweight is defined as body mass index (BMI) $\geq 25\text{kg/m}^2$, and obesity as BMI $\geq 30\text{kg/m}^2$.

**Physical inactivity is defined as daily activity ≤ 10 minutes.

***Low fruit/vegetable intake is defined as total servings < 5 per day.

¹Data available from the preliminary result of an ongoing national study on Non-communicable Diseases and Behavioral Risk Factor Survey by Sibai et.al, 2009.

Data available from www.emro.who.int/ncd/stepwise.htm

