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Report on the

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Document WHO-EM/NUT/232/E/01.06/35

CONTENTS

EXECUTIVE SUMMARY 1

1. INTRODUCTION 3

2. HISTORICAL OVERVIEW OF FOOD-BASED DIETARY GUIDELINES 5

3. TECHNICAL PRESENTATIONS 7
   - 3.1 Food-based dietary guidelines: overview and follow-up 7
   - 3.2 Regional overview of diet-related health problems 9
   - 3.3 Regional overview of food consumption patterns 10
   - 3.4 Summary of diet, nutrition and chronic diseases: Technical Report 916 and the global debate 12
   - 3.5 Overview of the Global Strategy on Diet, Physical Activity and Health and its regional implications 13
   - 3.6 Process and steps in developing food-based dietary guidelines 15
   - 3.7 Food and dietary data needed for the preparation of food-based dietary guidelines 17
   - 3.8 Health and nutrition information needed for the preparation of food-based dietary guidelines 18
   - 3.9 Developing food-based dietary guidelines: experiences from Thailand 19
   - 3.10 Developing food-based dietary guidelines: Experiences from India 21
   - 3.11 Linking food-based dietary guidelines and nutrition education 23
   - 3.12 Developing multisectoral nutrition communication plans: regional experiences . 25

4. COUNTRY PRESENTATIONS 26
   - 4.1 Bahrain 26
   - 4.2 Egypt 29
   - 4.3 Islamic Republic of Iran 30
   - 4.4 Jordan 30
   - 4.5 Kuwait 31
   - 4.6 Lebanon 32
   - 4.7 Pakistan 33

5. WORKING GROUP SESSIONS 34
   - 5.1 Group Session 1 34
   - 5.2 Group Session 2 35
   - 5.3 Group Session 3 38

6. CONCLUSIONS 39

7. RECOMMENDATIONS 40

Annexes

1. PROGRAMME 41
2. LIST OF PARTICIPANTS 43
3. LIST OF PUBLICATIONS DISTRIBUTED DURING THE CONSULTATION 47
4. WORKING GROUP SESSIONS SUGGESTED CHECKLISTS FOR DISCUSSION. 48
5. MEDITERRANEAN DIET 50
6. LIST OF COUNTRIES 51

EXECUTIVE SUMMARY

The FAO/WHO Technical Consultation on National Food-Based Dietary Guidelines (FBDG) invited 18 experts from selected Member States of the WHO Eastern Mediterranean and FAO Near East Regions, acknowledged experts from other countries and senior technical staff from FAO and WHO headquarters and regional offices.

The objectives of the technical consultation were to review the status of the food-based dietary guidelines in participating countries of the Region; identify gaps and resources involved in setting up national food-based dietary guidelines; and formulate a framework to assist Member States in developing and implementing food-based dietary guidelines.

The technical consultation was divided into plenary sessions and group work. A number of important presentations were given on: the food and nutrition situation in participating countries, including their experiences in the development and use of FBDG, and steps taken in their preparation; various aspects of diet, malnutrition and chronic diseases; recent international commitments by WHO Member States (Global Strategy on Diet, Physical Activity and Health); and the potential of FBDG in guiding policy formulation, nutrition education and communication strategies.

The topics for the working group sessions consisted of identifying constraints and gaps, including the availability of appropriate data and information in the countries to complete the process of developing FBDG; identifying the role of different sectors and partners in the development and implementation of FBDG; development of national plans of action and follow up. Participants were divided into two groups based on the priority nutrition problems identified, the level of development of FBDG, regional proximity, possibility of collaboration, and similarities in food habits.

Conclusions

- The group acknowledged that the countries in the Region are at different stages of nutritional transition, facing the entire spectrum of nutritional conditions.
- The group concluded that FBDG remained an important education and communication tool to address the burden of nutritional conditions. FBDG also have great potential for placing nutritional concerns on the national agenda, providing guidance for food, nutrition, food hygiene, education and agricultural policy formulation, and nutrition education activities. They can identify policy options of food supply and demand that promote lifelong healthy eating patterns, influencing the nutrition transition towards healthier outcomes and a decrease in the economic burden of diseases.
- The meeting concluded that physical activity should be closely integrated with food-related messages in the dietary guidelines in this Region.
- It was acknowledged that FBDG could contribute substantially to the implementation of the Global Strategy on Diet, Physical Activity and Health in the Region, and other initiatives to promote healthy diets.
- It was concluded that a considerable amount of basic and supportive data to enable the development of national FBDG already exists in all countries participating in the

consultation. External technical assistance may be required for undertaking further analyses to generate appropriate information in some countries.

- The consultation agreed that in order to develop and implement effective FBDG, key stakeholders need to be involved in the process, such as ministries of health, agriculture, education, commerce, finance and planning, research institutions and universities, consumer groups, United Nations agencies, nongovernmental organizations, private sector and other relevant bodies.
- In order to utilize the available resources within the Region for the development of FBDG, it was suggested that several countries with similar social, health and economic characteristics could consider the possibility of pooling their available resources and developing a common FBDG, where appropriate.

Recommendations

1. In view of the dual burden of nutritional conditions affecting countries in the Region, immediate action should be taken at the country level to follow up on the development and implementation of FBDG.

2. FBDG development and implementation is an ongoing process. Countries that have already initiated work on their national FBDG should expedite the process. Countries that have not initiated development of FBDG, should organize follow-up meetings and set up a steering committee.

3. Regular regional and subregional follow-up meetings should be organized to report progress, share experiences and lessons learned in the development and implementation of FBDG. FAO and WHO should facilitate this process.

4. To facilitate the dissemination of information and sharing of experiences on the development and implementation of FBDG in the Region, an email listserv should be established among countries.

5. Resources for the development and implementation of FBDG should be identified by countries. In addition, assistance from international organizations may be solicited, as required.

6. Intersectoral cooperation is essential for the development of successful FBDG. Based on available information, intersectoral cooperation should be strengthened in most countries.

7. Physical activity recommendations should be integrated in FBDG in the Region.

1. INTRODUCTION

The Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) have promoted the concept of food-based dietary guidelines (FBDG) since the International Conference on Nutrition (ICN), which was convened in 1992 by FAO and WHO. At this conference, strategies and actions were identified to improve nutritional well-being and food consumption throughout the world. The World Declaration and Plan of Action for Nutrition, signed by 159 states, included a section on "promoting appropriate diets and healthy lifestyles." The ICN Plan of Action emphasized that individual countries should develop their guidelines based on their greatest public health concerns. Governments were encouraged to create and disseminate simple dietary guidelines that were relevant for people of different ages, lifestyles and cultures.

FBDG are intended to provide nutrition education and dietary guidance for healthy individuals in terms that are understandable to most consumers. In 1995, FAO and WHO sponsored an Expert Consultation on the Preparation and Use of Food-Based Dietary Guidelines, which was held in Cyprus. The consultation produced a publication of the same title, published as a technical bulletin by WHO (1998). Since the Cyprus report was published, FAO and WHO have held a series of regional meetings to promote the development and implementation of dietary guidelines.

The FAO/WHO joint Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases in 2002 identified imbalanced dietary intake and inadequate physical activity as major factors in the causation of chronic diseases, such as cardiovascular diseases, cancers, diabetes and obesity. These are rapidly increasing worldwide and may become a major social and economic burden in developing countries.

FAO and WHO recognize that there is an urgent need to strengthen the capacity in countries to provide appropriate dietary guidance and nutrition education to address problems of malnutrition. The WHO Global Strategy on Diet, Physical Activity and Health, endorsed by the World Health Assembly in 2004 (WHA57.17), calls upon WHO, in cooperation with FAO and other organizations of the United Nations system, to provide assistance to Member States in updating, drafting and implementing FBDG.

In May 2004, FAO and WHO decided to organize a series of joint technical consultations to continue to strengthen the capacity of countries to develop FBDG and implement nutrition education activities. Considering that the FAO Near East and WHO Eastern Mediterranean Regions have one of the fastest growing rates of obesity worldwide, and few countries in the Region had so far initiated the development of dietary guidelines, it was considered timely to hold a joint FAO/WHO technical consultation in the Region[1].

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[1] Except where otherwise indicated, the Region refers to the common countries of the Eastern Mediterranean Region of WHO and the Near East Region of FAO (see Annex 6).

A regional technical consultation on National Food Based Dietary Guidelines (FBDG) was held in Cairo, Egypt, 6–9 December 2004. The consultation was organized jointly by the WHO Regional Office for the Eastern Mediterranean and FAO Regional Office for the Near East in close collaboration with WHO and FAO headquarters.

Experts from multiple disciplines participated from Bahrain, Egypt, Kuwait, Islamic Republic of Iran, Jordan, Lebanon, Pakistan, and the Syrian Arab Republic. In addition, international experts from outside the Region were invited as resource persons to share their expertise and enrich the discussions and outcomes.

The objectives of the technical consultation were to:

- review the status of the food-based dietary guidelines in countries of the Eastern Mediterranean Region;
- identify gaps and resources involved in setting up national FBDG; and
- formulate a framework to assist Member States in developing and implementing FBDG.

The consultation consisted of two elements: plenary technical presentations by experts in different disciplines; group discussions on technical issues, constraints and gaps, and requirements for developing FBDG. Group discussions and findings were presented and discussed further in plenary sessions and are included in this report.

The meeting was opened by Dr Mohamed Abdi Jama, Deputy Regional Director, WHO/EMRO, who welcomed the participants and delivered a message on behalf of Dr Hussein A. Gezairy, WHO Regional Director for the Eastern Mediterranean. In his message, Dr Gezairy noted that establishing national FBDG was not an easy task, as different population groups had diverse nutritional needs and different lifestyles may require adjustments in dietary intake. Furthermore, nutritional status was affected not only by the food that was eaten but also by the way it was prepared and handled, and by the patterns of food consumption. He said that that national FBDG were a practical way of reaching the nutritional goals of a population, taking into account customary dietary patterns and providing guidance on those aspects of dietary intake that need modification. Subsequently, dissemination of nutrition advice should be promoted through sustainable food-based approaches that encouraged dietary diversification and the consumption of a healthy diet.

Dr Gezairy closed by emphasizing that for national FBDG to be successful, they needed to express the principles of nutrition education mostly as foods and to use simple language that avoided technical terms to all extent possible, as the guidelines were intended for use by the general public.

On behalf of the FAO Regional Office for the Near East, Mr Abdellatif Tabet, FAO Representative in Cairo/Deputy ADG, delivered a welcome message in which he commended the collaboration between WHO and FAO in planning and organizing the consultation. Mr Tabet emphasized the need to address nutrition as a cornerstone in achieving the Millennium Development Goals. Developing effective national FBDG required identifying the major

public health issues that were related to food and dietary patterns, evaluating food availability and intake patterns that were pertinent to a country, and developing a process that was multidisciplinary and multisectoral.

A key element in the preparation of national FBDG was the availability of sufficient data to make possible a reasonable evaluation of the population's dietary patterns and nutritional status. Thus, research was essential in the process, including research on public health issues, food consumption patterns, consumer testing of messages to ensure that the public understood the messages, and finally evaluation of the guidelines to test their effectiveness among target audiences.

Chairs were appointed for the four days of the meeting: Dr Mohamed El Guindi, first day; Professor Nahla Hwalla, second day; Professor Parveen Liaqat, third day; Professor Seema Puri, fourth day. Ms Arine Valstar and Ms Lilas Tomeh were appointed as Rapporteurs. The objectives and mechanics of the consultation were elaborated by Dr Kunal Bagchi, Regional Adviser, Nutrition, WHO/EMRO.

The programme and list of participants are given in Annexes 1 and 2 respectively. Annex 3 contains a list of publications distributed during the FBDG consultation, Annex 4 the suggested checklist for working group discussions and Annex 5 information on the Mediterranean diet. A list of countries in the Eastern Mediterranean Region of WHO and the Near East Region of FAO is included as Annex 6.

2. HISTORICAL OVERVIEW OF FOOD-BASED DIETARY GUIDELINES

Dr Kraisid Tontisirin, FAO headquarters

FBDG are a tool for communication and education to create demand for healthy diet and desirable eating patterns leading to nutritional well-being and prevention of diet related diseases. FBDG can be viewed as tools for communicating with the general public through the media, as well as materials for nutrition educators working in health, schools and other educational settings. They can help policy makers to understand the priority areas in food and nutrition within their countries and may influence the setting of food and agricultural policies.

The development and implementation of FBDG is a comprehensive process. This process leads to information, which the public finds easy to understand, remember and use. Although FBDG look simple, they are based on scientific evidence about nutrition and health.

To be effective FBDG should be well-suited to the country environment and social, economic and cultural context. FBDG must reflect the dietary patterns, lifestyles and income of the consumers whom the nutrition educators wish to reach. Qualitative messages and food guides are developed and tested. The FBDG are disseminated through a wide range of activities and communication channels.

While nutrition education has always been important in public health, the need to inform the public has become more urgent as the world is rapidly changing. Different foods

are entering local markets and lifestyles are changing, factors which lead to new dietary patterns. While these changes can provide opportunities to improve nutrition, they can also present risks. Guidance is necessary to ensure that health is protected and diseases are prevented.

Countries face a number of nutrition challenges. There are still millions of people who are chronically hungry. Billions of people do not get all the vitamins and minerals they need. Obesity and related diseases of diabetes and heart disease are becoming serious burdens in the developing world.

FAO and WHO have provided and updated recommendations on energy, protein and nutrient requirements since the 1950s and they continue to do so. However, the information about nutrient requirements is too technical for the average person to understand. The public does not know how to use this information for making decisions about foods.

Following the International Conference on Nutrition in 1992, FAO and WHO embarked on a series of activities to promote the development of dietary guidelines for the public. The work began with an expert consultation held in Cyprus in 1995. Since then, FAO and WHO have supported workshops in all regions. A number of countries especially in Asia, Latin America and Eastern Europe have developed their FBDG.

FBDG promote the idea of a diverse and balanced diet. One of the challenges of promoting FBDG in developing countries is that the foods may not be available or affordable to everyone. By raising public awareness of the need to consume a variety of foods, it is hoped that demand for more diversity will increase and that food producers will respond to new consumer expectations by providing more diverse foods.

To accomplish these objectives requires a multidisciplinary approach and the commitment of participants in a number of sectors. Mobilization of different actors is an important step in the process of developing and disseminating FBDG. Key partnerships within the government, food industry and consumer organizations can be important during this process. The government can influence the public to make changes in their consumption patterns through influencing foods provided in institutional settings like schools. The food industry can support the goals of FBDG through product development and promotional activities.

Another challenge in developing dietary guidelines for the general public is that nutrition needs change during the lifecycle. Most FBDG are developed for the general adult population. However, there is a need to develop and promote specific guidelines for other population groups. Some countries have guidelines for infants and young children in which breastfeeding, complementary feeding and growth monitoring is addressed. FBDG may be needed for other target groups such as pregnant and lactating women, adolescents and the elderly.

Some essential aspects of the FBDG process should be emphasized: the importance of building a multisectoral team, commitment and leadership. Monitoring and evaluation,

including research to assess the impact of the FBDG, are important areas to consider. FBDG are not only a tool for communication and education, they are part of an integrated strategy to improve nutrition and health and should be linked to education, agriculture and food policies.

3. TECHNICAL PRESENTATIONS

3.1 Food-based dietary guidelines: overview and follow-up

Dr Chizuru Nishida, WHO headquarters

FBDG are not new. The 1992 ICN Plan of Action for Nutrition included nine action-oriented strategies:

1. Incorporating nutritional objectives, considerations and components into development policies and programmes
2. Improving household food security
3. Protecting consumers through improved food quality and safety
4. Preventing and managing infectious diseases
5. Promoting breastfeeding
6. Caring for the socioeconomically deprived and nutritionally vulnerable
7. Preventing and controlling specific micronutrient deficiencies
8. Promoting appropriate diets and healthy lifestyles
9. Assessing, analysing and monitoring nutrition situations.

The strategy for point 8 calls on governments "on the basis of energy and nutrient recommendations to provide advice to the public by disseminating qualitative and/or quantitative dietary guidelines relevant to different age groups and lifestyles, and appropriate for the country's population."

Fifty-four countries, 28% of WHO Member States, have included all nine action-oriented strategies in their national plans of action for nutrition. This includes seven countries in the Eastern Mediterranean Region.

FBDG are recommended as preventive strategies, because they provide a framework for advice on the selection and consumption of nutritionally adequate, safe, healthy and affordable diets and encourage healthy lifestyles. A FAO/WHO technical consultation was held in Cyprus resulting in the manual "Preparation and use of food-based dietary guidelines" issued in 1995 (TRS 880). Since then WHO has supported countries through regional workshops in the development of national FBDG. Five workshops were held in South America in 1995–1996, one in India in 1997, and one in the Philippines in 1999.

According to an inventory on the status of development of FBDG in the world in December 2004 only 37 countries had finalized their FBDG, and they are under preparation in six countries. In this Region three countries declared their willingness to prepare FBDG, based on information obtained in 2001.

The magnitude of malnutrition in the world shows the need for an effective strategy: intra-uterine growth retardation, 30 million/year (23.8% of all births); protein–energy malnutrition, 159 million under-5 children; iodine deficiency disorders, 740 million; vitamin A deficiency, 120 million under-5 children, 3 million under-5 children with xerophthalmia; anaemia, including iron deficiency anaemia, 2 billion; overweight and obesity, 1.2 billion (340 million obese) adults and 16 million children.

In the Eastern Mediterranean Region the most commonly cited factors affecting nutritional status were infectious diseases and parasites, poverty, changing dietary habits, physical inactivity, and insufficient intake of iron-rich foods.

Some of the emerging issues which countries identified as needing action include globalization of the economy; nutrition transition (overweight and obesity); fetal programming of chronic diseases; the impact of HIV/AIDS; biotechnology such as production and utilization of genetically modified foods; micronutrients beyond the big three (iodine, vitamin A and iron) such as zinc, folate (folic acid), calcium, vitamin C and selenium; and prion diseases such as bovine spongiform encephalopathy.

Examples of existing FBDG posters were shown, as well as core guidelines of the South-East Asia Region:

- Eat enough food to meet body needs and maintain a healthy body weight
- Eat a variety of foods
- Eat clean and safe food
- Eat whole grain cereals, legumes, roots and tubers
- Eat plenty of vegetables and fruit regularly
- Eat moderate amounts of fat in your diet
- Limit salt intake
- Moderate sugar intake
- Avoid or limit alcohol
- Breastfeed as appropriate.

For the development of national FBDG, nutrient recommendations can be obtained from FAO/WHO expert consultations on:

- Fats and oils (1993 and updates in 2006)
- Carbohydrates (1997 and updates in 2008)
- Energy (updates in 2001)
- Protein (updates in 2002)
- Diet, nutrition, and the prevention of chronic diseases (2002).

WHO is supporting countries through regional reviews and assessments; Central and Eastern European countries (Hungary, 2004); Eastern Mediterranean Region countries (Cairo, 2004); Latin American countries (2005); Asian countries (2005).

3.2 Regional overview of diet-related health problems

Dr Kunal Bagchi, WHO Regional Office for the Eastern Mediterranean

Countries of the Eastern Mediterranean Region may broadly be divided into four groups. In the first group are countries that are in an advanced stage of over-nutrition, characterized by overweight and obesity, together with the presence of dietary risk factors for chronic diseases and moderate micronutrient deficiencies. Any of the countries from the Gulf Cooperation Council (GCC) would fit into this category.

In the second category are countries that have moderate levels of over-nutrition with dietary risk factors for chronic diseases, as well as moderate levels of under-nutrition in specific areas and widespread micronutrient deficiencies. A good example is Jordan.

In the third category are countries with significant under-nutrition reflected in both acute and chronic child and maternal malnutrition, as well as emerging over-nutrition in specific population groups, for example, affluent urban populations. Pakistan is a good example.

In the fourth category are countries with severe child and maternal under-nutrition and widespread micronutrient deficiencies. Essentially these are countries that are experiencing humanitarian crises, such as Afghanistan. Under-nutrition continues to affect a large proportion of children in countries of the Region. The high prevalence of stunting and wasting demonstrates this fact.

Food and dietary habits have changed over the years in the Region, coupled with an increasingly sedentary lifestyle. The availability of total fat in selected countries of the Region has increased according to data taken from FAO Food Balance Sheets for different years. Traditional foods are being replaced by fast foods, soft drinks and increased consumption of meat. The proportion of energy derived from cereals and cereal products has decreased. There has been a sharp decline in the cost of vegetable oils and sugar, which has put such products in direct competition with cereals as the cheapest food ingredients. More high-fat and high-energy foods are incorporated in the diet.

The average overweight and obesity prevalence rate reaches over 30% among the entire adult population in the Region. The modern environment has allowed overweight and obesity to increase at alarming rates and become a major public health challenge.

Among the noncommunicable chronic diseases, diabetes mellitus is reaching pandemic proportions in several countries. The regional prevalence of type 2 diabetes mellitus is estimated to range between 7% and 25%. The prevalence of diabetes has increased steadily over the past ten years in the GCC countries. The prevalence of hypertension is estimated to be around 26% in the Region.

A large proportion of the adult and young population in the countries of the Region smoke, including 62% of adult males, 48% of adult females and 26% of young males.

Cardiovascular diseases account for the highest number of deaths in the Region. Total mortality from cancer has been estimated to be around 8%.

The close relationships between obesity, diabetes mellitus, hypertension, smoking and physical activity are demonstrated through information compiled from countries. It is estimated that 40%–45% of obese individuals develop type 2 diabetes, 85%–90% of all diabetics are overweight and obese, and 85%–90% of all diabetics are physically inactive.

Obesity appears to be the most important single target variable to control if the incidence of diabetes and other noncommunicable diseases is to be reduced. Control of obesity would help reduce prevalence of hypertension and reverse the lipid disturbances associated with obesity.

The issue of physical activity as it relates to diet and chronic disease in the Eastern Mediterranean Region countries was also addressed. The experience of the Regional Office, based on data available from countries, indicates that when obesity is a common feature in a cultural group, strong negative social pressure limits the involvement of population groups in weight control programmes. A tolerant attitude towards being overweight develops and some individuals even harbour an image of being attractive despite their obesity. Exercise is not part of a daily routine for the men and women living in many countries of the Region. Even among the obese population, exercise is not popular and is often combined with a low level of knowledge and poor attitude.

A number of needs and concerns exist. Firstly, there is a general lack of standardized and representative data on chronic diseases in countries of the Region. Efforts have been made to establish data-gathering surveillance systems but their linkages to food and diet have to be strengthened. Secondly, there is limited awareness regarding appropriate diets at the individual, community, school and government level. Thirdly, negative effects of mass media messages result in increased consumption of processed and fast food and sweetened soft drinks. Increased tobacco consumption and lack of physical activity are other concerns.

3.3 Regional overview of food consumption patterns

Dr Fatima Hachem, FAO Regional Office for the Near East

Countries in the Near East have witnessed many changes in the past 40 years, including a tremendous increase in the population and an improvement of income, as well as socioeconomic and political changes that have influenced to a great extent the way people eat in this Region. Many countries were food insecure in the 1960s, as is shown by the FAOSTAT Daily Energy Supply (DES) figures and the numbers of the undernourished. The situation has improved greatly since then and the DES has increased in all countries, reaching that of the industrialized countries for some. The share of total energy of proteins and fats has also increased, but has stayed within the international recommendations of 10%–15% for proteins and less than 30% for fat, except for Lebanon, Syrian Arab Republic and some GCC countries in which fat contribution to total calories exceeded the recommended 30%.

A closer look at the composition of DES by macronutrients reveals that for most countries the contribution of proteins stayed almost unchanged with vegetable proteins being the main contributor to total protein calories. On the other hand, the fat contribution to total caloric supply remained unchanged for most countries except for Kuwait, Lebanon, Saudi Arabia, Syrian Arab Republic and the United Arab Emirates. Here again, the major increase came from vegetable fats.

Supply of major food groups per capita has also seen an increase, which was more pronounced in some countries than others. Countries which are identified as low income have seen the lowest increase in food supply per capita.

The structure of food supply shows that minor changes have occurred among major food groups. However there have been major changes in some countries in the composition of these food groups. This has been particularly evident in the group of oils, where some countries have seen the introduction of new types of oil, such as palm oil, or the substitution of traditionally used oils, such as olive oil, by soybean oil. Similar trends have also been observed within the group of cereals. In addition, countries that witnessed a decrease in their per capita supply of cereals have also witnessed an increase in their per capita supply of oil.

The contribution of sugar to total caloric supply increased slightly in a few countries, but remained at around 10% of DES for all of the countries.

Many factors specific to the Region could explain these minor structural changes in the food patterns in the countries of the Region. Income is often associated with major changes in diet. While is true for most countries, the increase in income was not always concomitant with an increase in the percent contribution of animal protein to DES. The increasing inequality in the distribution of incomes in many countries could be one of the reasons to explain this observation. In addition, the engagement of women in paid activity is the lowest in the world in this Region, which could explain to a certain extent the slower change in food patterns. Cultural habits could also explain the high expenditure on fruits and vegetables as a percent of total food expenditure seen in some countries of the Region. On the other hand, food policies and food aid shape consumption patterns in these countries to a great degree. A few countries still use food subsidies as a means of protecting the less privileged in their societies. Mainly cereals, oils and sugar are subsidized. In combination with the policies of subsidizing cereal producers this contributes to the availability of these foods at lower prices to consumers all across society. In addition to all of the above, the food industry and supermarkets are increasing in number in many of these countries, but their impact on food habits has not yet been assessed.

It should be noted that the most populated countries are still practising policies that place a great deal of restrictions on imports, including food items. This has recently started to become less strict in some countries, which might influence food habits in the long run.

While Food Balance Sheets are invaluable for studying trends over time and for an overview of food patterns in a certain country, their use is limited when it comes to studying variations at the individual level including gender, regional variations, or socioeconomic

differences. With the increase in the number of those living under the poverty line in many countries in this Region, local food consumption surveys are required to obtain information at the micro level. Such information would be fundamental in advising policies and interventions.

3.4 Summary of diet, nutrition and chronic diseases: Technical Report 916 and the global debate

Dr Chizuru Nishida, WHO headquarters

Nutrition is coming to the forefront as a major modifiable determinant of chronic diseases, with scientific evidence increasingly supporting the view that alterations in diet have strong effects, both positive and negative, on health throughout life. For example, up to 70% of stroke, up to 80% of cases of coronary heart disease, and up to 90% of type 2 diabetes could be avoided through changing lifestyle factors. Furthermore, up to 70% of colon cancer and about one-third of other cancers, could be prevented by eating healthily, maintaining normal weight and being physically active throughout the lifespan.

Most importantly, dietary adjustments may not only influence present health, but may determine whether or not an individual will develop such diseases as cancer, cardiovascular disease and diabetes much later in life. However, these concepts have not led to a change in policies or in practice. Therefore, to address the growing epidemic of diet-related chronic diseases afflicting both developed and developing countries, the joint WHO/FAO Expert Consultation on Diet, Nutrition and the Prevention of Chronic Diseases was held in Geneva from 28 January to 1 February 2002.

The overall objective of the Consultation was to review current international recommendations on diet, nutrition and the prevention of chronic diseases, and to update them by evaluating the new scientific evidence and lessons learned from implementing national intervention strategies to reduce the burden of these diseases. The report of the joint WHO/FAO Expert Consultation updated the report of the 1989 WHO Study Group. The main features in the content and approach taken by the Joint WHO/FAO Expert Consultation are summarized as follows:

The primary purpose of the consultation was to examine and develop recommendations for diet and nutrition in the prevention of chronic diseases, but the need for sufficient physical activity was also discussed, and was emphasized in the final report. This emphasis is consistent with the trend to include physical activity as part of diet, nutrition and health.

The report of the consultation includes a chapter examining global and regional food consumption patterns and trends. It also addresses likely implications of nutrient recommendations and dietary guidelines for food supply and production and the need for developing integrated action strategies. The report also includes the criteria used to describe strength of evidence. These were based on the criteria used in the World Cancer Research Fund report on food, nutrition and the prevention of cancer, modified to include results of controlled trials, where relevant and available. Furthermore, the consultation recognized the complex interaction between environmental factors that affect excess weight gain as an

important contributing risk factor for many chronic diseases. Therefore, in categorizing risks, the consultation took into consideration consistent evidence on community and environmental factors, which lead to behavioural changes and thereby modify risk.

In updating the population nutrient intake goals, the consultation applied convincing and probable evidence. Convincing evidence is based on epidemiological studies showing consistent associations between the exposures and the disease, with little or no evidence to the contrary. The available evidence is based on a substantial number of studies, including prospective observational studies and where relevant, randomized controlled trials of sufficient size, duration and quality showing consistent effects. Furthermore, association should be biologically plausible. Probable evidence is based on epidemiological studies showing fairly consistent associations between the disease and the exposure, but there are perceived shortcomings in the available evidence or some evidence to the contrary, which make it difficult to make a more definite judgement.

Shortcomings in the evidence may be insufficient duration of trials (or studies), insufficient availability of trials (or studies), insufficient sample sizes; or incomplete follow-up. However, laboratory evidence is usually supportive and association should be biologically plausible. Detailed features, approaches and contents of the report of the Consultation can be viewed in an article in Public Health Nutrition.[2]

In the light of the updated population nutrient intake goals recommended by the joint WHO/FAO expert consultation, national FBDG should be reviewed, or formulated as necessary by adapting recommended population nutrient intake goals to local situations. The goals and recommendations of the joint WHO/FAO expert consultation provide an important scientific basis for developing and implementing global, regional and national strategies for improving the health and nutritional well-being of the world population.

3.5 Overview of the Global Strategy on Diet, Physical Activity and Health and its regional implications

Dr Denise Costa Coitinho, WHO headquarters

In May 2004, the 57th World Health Assembly endorsed the WHO Global Strategy on Diet, Physical Activity and Health (DPAS) in resolution WHA57.17. The DPAS was developed through an inclusive and extensive process of consultations with all concerned stakeholders, in response to a request from WHO Member States at the World Health Assembly 2002 (WHA55.23). A total of 81 countries attended six regional consultations, and 11 United Nations agencies, 25 international nongovernmental organizations and 25 international industry associations were consulted. The WHO Director-General chaired round-table discussions with senior executives of 13 international companies and with 13 nongovernmental organizations. An international reference group advised the process. A

[2] Nishida C et al. The Joint WHO/FAO Expert Consultation on diet, nutrition and the prevention of chronic diseases: process, product and policy implications. *Public health nutrition*, 2004, 7(1A):245–50.

consultation with countries of the Eastern Mediterranean Region was held in Cairo, 30 April–2 May 2003.

In the resolution, the Health Assembly acknowledged that "... malnutrition, including under-nutrition and nutritional deficiencies, is still a major cause of death and disease in many parts of the world, especially in developing countries, and that this strategy complements the important work of WHO and its Member States in the overall area of nutrition"(WHA 57.17). Members States have shown their concern that WHO should continue to consider the whole spectrum of nutrition diseases in its work. There are common solutions, common policy options to jointly address these conditions. Keeping the best balance is the challenge and the opportunity to move the nutrition agenda further.

DPAS sets as key principles for action that: strategies and policies should be multisectoral, address all major chronic noncommunicable disease risk factors and have a long-term perspective; its implementation needs to address all age, sex and socioeconomic groups; advocacy must be sustainable and continuing; entry point at country level should be political; tools for countries should be based on needs; macro and micro levels should be addressed in combination. It recommends that policies aiming at environmental change, and those aiming at change which are the individual's responsibility, should be balanced and appropriate to national and regional circumstances.

FBDG are a core component of DPAS implementation. Member States are encouraged to ".... draw up national (food-based) dietary guidelines, taking account of evidence from national and international sources. Such guidelines advise national nutrition policy, nutrition education, other public health interventions and intersectoral collaboration. They may be updated periodically in the light of changes in dietary and disease patterns and evolving scientific knowledge." WHO, in cooperation with other international organizations, is recommended to facilitate the drafting and implementation of national food-based dietary and physical activity guidelines, in collaboration with national agencies.

The private sector should also be a significant player in promoting healthy diets as the healthy choices should be the easy choices. The food industry is recommended to limit levels of saturated fats, trans-fatty acids, free sugars and salt in existing products and to develop and provide affordable, healthy and nutritious choices to consumers. The industry can play an important role in providing consumers with adequate and understandable product and nutrition information and in practicing responsible marketing that supports the strategy, especially to children. But, above all, they can and should strive for healthy workplaces that promote a healthy diet and physical activity among their workforces.

The DPAS created a new and exciting momentum for work in the area of nutrition for WHO. Nutrition-related diseases are interconnected in the life cycle. Populations, families and even individuals are being burdened by several of these conditions. Public policies can change this scenario and decrease the dual burden of nutritional diseases. A science-based, comprehensive, integrated and action/policy oriented "nutrition agenda" should be set at global, regional and country levels, addressing the whole spectrum of the nutrition problems, interconnecting current policies, technical guidelines and strategies. Building and

implementing the nutrition agenda should be a collective responsibility and a multi-stakeholder effort.

WHO's continued work in nutrition contributes to DPAS implementation while addressing the whole spectrum of nutrition diseases, and should be reinforced. It includes the development/updating of national intersectoral food and nutrition plans and policies, the updating and implementation of national FBDG, the development and implementation of strategies to address obesity, particularly childhood obesity, the promotion of fruit and vegetable consumption, and the setting-up of comprehensive school-based nutritional interventions through the "Nutrition Friendly Schools Initiative".

To reinforce its work in these and other areas, WHO aims at: building a strong network in nutrition with regions, countries and other global organizations; providing Member States and the international community with technical guidance and collaboration. WHO also acts globally and internationally to raise awareness and commitment, to build alliances, networks and partnerships, to address issues that are international in nature, as well as developing and implementing a communication strategy for "Nutrition: Where do we collectively want to be in 2015?"

In the plenary discussion which followed, the question was raised whether the BMI cut-off point for obesity in the Region should be 25 or 23 as is currently being considered in Asia. At present there is no agreement among the experts, so the BMI cut-off point of 25 is still valid.

3.6 Process and steps in developing food-based dietary guidelines

Dr Antonia Trichopoulou, University of Athens Medical School

The realization that diet is an important determinant of human health is not new. What is new, however, is first, the documentation of our knowledge about what is healthy in diet and what is not; second, the semi-quantification of our understanding; and third, the realization that changes can be successfully implemented at either the individual or the population level.

These facts impose on us, nutrition scientists and public health officials, an obligation to act. As a first step towards meeting this obligation, national FBDG have been developed, and conscientious citizens have been asked to adopt them toward better nutrition for a better life.

The ability to monitor and compare the dietary habits of different populations is important in the formulation of dietary guidelines and in planning and implementing national food, nutrition and agricultural policies. In the field of public health, emphasis should be placed on the importance of recording standardized and comparable dietary data and the promotion of nutrition surveillance systems.

The first step in developing FBDG is the compilation of a national report, which reflects available information on energy, food and nutrient intake, as well as health indicators (prevalence of overweight and obesity, blood lipids, mortality, morbidity, physical activity and smoking). The report should identify the major nutrition and health problems. It should also

point out the inadequacies of data collected, which would limit the comparability of the collected data.

The national report should not only compile data but should be a stimulus for future projects in the area of nutrition and health. The report should also serve as a basis for improvements and for the planning of such future projects, and show what still has to be done in order to obtain comparable and representative data. In order to obtain comparable data between countries, according to the European 2004 Health and Nutrition report the assessment should take place during a whole year in order to avoid seasonal fluctuations. Uniform age groups should be used; the sampling method should be standardized between all countries; a standardized database for the calculation of nutrient intake should be used among all countries; and the data should be representative for the target population.

Standardized assessment methods are also needed for physical activity and smoking, and for overweight and obesity (self-reported or measured), and uniform cut-off points should be applied. Many studies have evaluated the association between single foods, food groups, or nutrients and chronic diseases. During the last 10 years the focus has been on the identification of a dietary pattern that maximizes longevity.

FBDG are easier for the public to follow than recommendations about nutrient intake alone. Patterns of food intake may be more relevant to health and disease than intakes of specific foods or particular nutrients. FBDG can incorporate aspects of the socio-cultural environment that affect food availability and choices, and can overcome behavioural obstacles that hinder their implementation. To develop FBDG, consensus is needed among: the ministries of health, agriculture, and commerce, the scientific community and nongovernmental organizations. Dietary guidelines should also be as simple as possible and provide common-sense advice.

Dr Trichopoulou also presented the Mediterranean diet and the corresponding food guide in a pyramid shape (see Annex 5). She briefly mentioned the importance of preserving the knowledge and use of traditional foods, noting that the Department of Hygiene and Epidemiology in the University of Athens Medical School has started studying traditional foods of Greece.

3.7 Food and dietary data needed for the preparation of food-based dietary guidelines

Dr Antonia Trichopoulou, University of Athens Medical School

The presentation refers to the report *Monitoring public health nutrition in Europe* (European Union Report, 2003). Definition of indicators of health should be consistent across member states. Indicators should be defined for food and nutrient intake, including breast feeding; nutritional status, anthropometry and physical activity.

To define the food and nutrient intake the European Union uses the following indicators:

- consumption/availability of vegetables (excluding potatoes and vegetable juice)
- consumption/availability of fruit (excluding fruit juice)
- consumption/availability of meat and meat products
- consumption/availability of fish
- saturated fatty acid content of the typical diet
- polyunsaturated fatty acid content of the typical diet
- mono-unsaturated fatty acid content of the typical diet
- non-starch polysaccharides content of the typical diet
- vitamin content of the typical diet: vitamins C, D and E, folate and carotenoids
- mineral content of the typical diet: Fe, I, Ca and Se.

For nutritional status:

- serum carotenoid levels
- blood lipid pattern
- haemoglobin, serum ferritin
- serum transferrin receptor
- folic acid status
- selenium status
- serum 25-hydroxy vitamin D3.

The following sources can be used for the collection of nutritional data.

Level	Source	Type of data
Population	Food Balance Sheets (FBS)	Ecological: large units
Household	Household budget surveys (HBS)	Ecological: small units
Individual	Nutrition surveys (INS)	Analytical: individuals

The Data Food Networking (DAFNE) initiative of the European Union was launched with the objective of developing a regularly updated European databank of comparable food and socioeconomic information, as a tool for monitoring trends in food habits in Europe. Initially, 16 European countries participated and there are another five new European Union countries. Standard procedures have been identified for data collection.

Household budget survey (HBS) data on food availability at household level, as well as relevant demographic and socioeconomic characteristics are forwarded to the Greek centre coordinating the Data Food Networking (DAFNE) initiative. Central combination and post-harmonization of the raw HBS data are undertaken according to procedures developed in the DAFNE project.

The DAFNE data on mean food availability (g or ml/person/day) are integrated in *DafneSoft* (v 2.1), which is window-environment software allowing the presentation of dietary data in various formats (tables, bars, pie-charts, map presentations) and at various levels of detail. The software also makes possible the follow-up of trends in food availability over time, within and between countries; the study of the effect of the household's locality and of the education and occupation of the household head on the daily food choices, and the export of data for further uses.

Future plans of the DAFNE initiative include:

- integration of data from Albania, Bulgaria and Croatia in the DAFNE databank
- development of an approach to evaluate the effect of meals taken out of home;
- finalization of the DAFNE Food Composition Table;
- conducting a dietary survey in a sub-sample of the HBS population, in order to develop conversion factors (meals taken out of home, pregnancy, supplements).

In conclusion, the comparability of operational measures is crucial to the meaningful interpretation of comparisons among countries. This has been a key objective of the DAFNE initiative. A system allowing the regular update of the DAFNE database and the expansion of the network to embrace all European countries could provide a ready source of data for monitoring public health nutrition in Europe at reasonable cost.

The DAFNE-Software (*DafneSoft* v2.0) can be downloaded free of cost at: www.nut.uoa.gr

3.8 Health and nutrition information needed for the preparation of food-based dietary guidelines

Dr Kraisid Tontisirin, FAO headquarters

The overall goal of FBDG is to promote nutritional well-being, to prevent diet-related diseases and to provide guidance for food, agriculture and education policy. As FBDG aim to have an impact on people's behaviour, they need to take into consideration the in-country situation, epidemiological information on nutrition and health, as well as scientific evidence about diet/health relationships.

The information required for developing FBDG should help to identify significant nutrition and health issues, estimate the magnitude (prevalence) and severity (e.g. mild, moderate, severe) of these problems, distinguish high-risk age groups and other population groups, and set priorities for nutrition education interventions in the health, agriculture and education sectors.

To obtain nutrition and health information, epidemiology and surveillance methods have been used. Epidemiology is used for fact finding purposes and to understand the connections between the observed effects and the possible causes. Surveillance involves the continuous collection of information to define the current situation, to show trends, forecast changes, highlight priorities and lead preventive and corrective actions.

Ideally, each country would have good quality data from different sectors. However, in reality most countries will find that there are limitations in the available information. Such limitations should not be reasons to avoid the FBDG development process. It is important to begin with the analysis and interpretation of available information. Observations in the country can be compared to findings from other countries in a region, as well as with information from international scientific literature.

The process of FBDG development can lead to the recognition that more data is needed and this can stimulate the gathering of data. With regard to nutrition, data and information should include under-nutrition (inadequate energy consumption, protein energy malnutrition, micronutrient deficiencies) over-nutrition, diet-related diseases, and food safety in both rural and urban settings in the human life-cycle. Health information needed may include the prevalence of diet-related diseases, such as food-borne diseases (diarrhoeal diseases, parasitic infections and food intoxication), noncommunicable diseases (obesity, diabetes mellitus, hypertension, hyperlipidaemia and cholesterolaemia, cardiovascular diseases, cancer, dental caries and others), as well as other morbidity and mortality data. In addition, data on risk factors of noncommunicable diseases (undesirable food patterns, smoking, physical inactivity, stress and poor environments) may be needed, as well as data on the availability, accessibility and quality of health services. The extent to which nutrition and health information are required depends on the stage of the FBDG development process, the type of health issues that need to be addressed, the availability of nutrition data, and the timeframe and availability of funds and expertise. The following data and information sources may be consulted: health statistics, nutrition surveys, national census data, household expenditure surveys, food consumption surveys, physical activity assessments, FAO Food Balance Sheets, and international literature.

3.9 Developing food-based dietary guidelines: experiences from Thailand

Dr Prapaisri P. Sirichakwal, Mahidol University

Adequate nutrition is known to be essential for proper growth and development. Moreover, it has recently been accepted that healthy eating is a significant factor in reducing the risk of developing nutrition-related problems.

Thailand is a country in transition, facing both under-nutrition and over-nutrition, although aspects of under-nutrition, such as protein-energy malnutrition, vitamin A deficiency, iodine deficiency disorder, and iron deficiency anaemia, have been decreasing and infectious diseases have been brought under control. Concurrently, chronic and degenerative diseases or noncommunicable diseases, obesity, coronary heart disease, cancer, hypertension and diabetes mellitus, have become leading causes of death and disability in Thailand.

The purposes of developing Thai FBDG are to assist consumers in making dietary choices for well-being and diseases prevention; to assist governmental agencies in the development of policies to guide the implementation of nutrition interventions and education programmes; to assist agencies at the national and local level in the formulation and implementation of regulatory policies and programmes related to food, nutrition and health; to assist health care providers in primary diseases prevention; and to guide the implementation of food, nutrition and health goals by promotion of the production of healthy food.

Thai FBDG comprise two parts, one qualitative containing the nine guidelines, and one quantitative, containing, the food guide model "Nutrition Flag". The FBDG were designed to help people to choose what and how much to eat from each food group. The FBDG were developed jointly in 1996 by the Nutrition Division, Ministry of Public Health, Institute of Nutrition, Mahidol University, and other nutritionists and health personnel from various universities. There are nine guidelines for healthy Thais of 6 years of age and older:

- Eat a variety of foods from each of the five food groups and maintain proper weight.
- Eat an adequate amount of rice or alternative carbohydrate sources.
- Eat plenty of vegetables and fruit regularly.
- Eat fish, lean meat, egg, legumes and pulses regularly.
- Drink sufficient amounts of milk every day.
- Choose a diet that is moderate in total fat.
- Avoid an excessive intake of sweet and salty foods.
- Eat clean and safe food.
- Avoid or reduce the consumption of alcoholic beverages.

A rationale and principles were formulated for each dietary recommendation, reflecting current scientific consensus on the most important dietary measures associated with consuming adequate amounts of essential nutrients and reducing the risk of chronic diseases.

The Thai food guide is the "Nutrition Flag" and visualizes the first guidelines which contain messages relating to dietary moderation, proportionality and variety. The food guide suggests a range of daily serving from each of the major food groups. It is understood that a single model cannot represent every aspect of the FBDG, however it can visualize the most important concepts in a clear and memorable way.

Steps in the development of Thai Food Guide Model included setting nutritional goals based on Thai RDA and RDI ($\geq$ 70 %); assignment of unit used for one portion of each food group: using common household units typical for Thai, such as rice-serving spoon, table spoon, etc.; determination of portion size and portion number from actual consumption data and establishment of the amount of portions of each food group for 3 caloric levels, 1600, 2000 and 2400 kcal; determination of average nutritive value for each food group, using the popularity vote method, portion size and correction for cooking loss/gain; evaluation of nutritive value of the recommended amount of food from a combination of food groups by calculation for nutrient intake per day (and adjustment of the recommendation if it did not reach the nutrient goals).

Several kinds of food guide modes were developed based on Thai culture and the proportion of food groups that were easy to demonstrate. These modes included pilot testing for understanding and acceptability in various educational and economic groups; implementation through educational tools to public offices, schools, academic institutes, hospitals, hotels and other public places; training of target groups; monitoring and evaluation by periodic testing of knowledge, attitude and practice among schoolchildren, teenagers and adults.

Ongoing activities related to Thai FBDG include a campaign for lowering sugar consumption through a "no sugar kids network"; a healthy eating index for Thai people; healthy snacks for schoolchildren with friendly nutrition labelling; and the school lunch programme.

Several lessons have been learned from developing Thai FBDG. Policy-makers have to support the programme; collaboration between nutritionists from various universities and implementing organization is essential; a nutrient database for local food is necessary; recent national food consumption and nutritional surveys are required; audience input/comment is needed for guidelines and the food guide; different guidelines may be needed for special population groups; baseline data for food consumption are crucial for evaluating the success of the FBDG in terms of changes in eating patterns; information on new food products and food preparation may be incorporated in nutrition education in order to make the guidance more successful.

3.10 Developing food-based dietary guidelines: Experiences from India

Dr Seema Puri, Delhi University

India has witnessed unprecedented growth in food grain production and moved from chronic shortages to an era of surplus. Along with the steps to achieve adequate production, initiatives are being taken to distribute foodstuffs of the right quality and quantity to the right places and persons at the right time and at an affordable cost.

Achievement of food adequacy at the national level is a necessary though not sufficient precondition to ensure the achievement of household nutrition security. Available data also indicate that overall, diets have adequate amounts of protein, calcium, thiamine, niacin and vitamin C, but are inadequate in vitamin A, riboflavin and iron.

There has been a substantial reduction in severe grades of malnutrition, including chronic energy deficiency and some improvement in nutritional status of all segments of population. However, it is a matter of concern that although during the last five decades mortality rates have come down by 50% and fertility by 40%, the reduction in under-nutrition is only 20%. While there has been a decline in the prevalence of stunting and wasting, even now one third of all children weigh less than 2.5 kg at birth, half of the preschool children suffer from mild and moderate malnutrition and more than two thirds of women and children are anaemic. Vitamin A deficiency and iodine deficiency disorders still remain public health problems.

Diet-related chronic diseases do not affect only the elite population but are becoming a problem even among middle and lower income groups. The incidence of cardiovascular diseases and diabetes among the low-income group has also increased significantly.

With increasing longevity, the proportion of elderly is increasing rapidly. Available data from nutrition surveys indicate that the dual problem of chronic energy and micronutrient deficiency on the one hand and obesity on the other are seen among the elderly. Osteoporosis and its related consequences also impact the lives of older persons. The situation is being further compounded by the emergence of a rapidly increasing number of HIV/AIDS cases with their related health, nutritional and social implications. In India, an estimated 3.97 million people are living with HIV/AIDS.

During the present Tenth Plan period, there are focused and comprehensive interventions aimed at improving the nutritional and health status of individuals. There has been a paradigm shift from household food security and freedom from hunger to nutrition security for the family and the individual; from untargeted food supplementation to screening of all the persons from vulnerable groups, identification of those with various grades of under-nutrition and their appropriate management; from lack of focused interventions on the prevention of over-nutrition to the promotion of appropriate lifestyles and dietary intakes for the prevention and management of over-nutrition and obesity.

In India, the focus of nutrition programmes has undergone several priority shifts from food production, demonstration, consumption and community development efforts. The next shift was to include supplementary nutrition programmes and prophylaxis programmes against specific micronutrient deficiencies, such as iron deficiency anaemia, iodine deficiency disorders and vitamin A deficiency, as early as 1960s–1970s.

The next major shift was directed towards a multisectoral approach. The Integrated Child Development Services Scheme (ICDS) was launched in 1975 marking the beginning of a multisectoral phase. ICDS promotes child survival and development through an integrated approach for converging basic services for improved child care, early stimulation and learning, improved enrolment and retention, health and nutrition, and water and environmental sanitation. It is designed to bring about nutritional benefits for expectant and nursing mothers, women in the reproductive age group and children below the age of 6 years. It is one of the largest outreach programmes and extends to over 5.2 million mothers and 30 million children under 6 years of age belonging to low income groups.

Other supplementary feeding programmes are being implemented by the government along with initiatives to improve the nutritional status of children, which include setting up a targeted public distribution system for provision of essential food items to the underprivileged; improving household food security through food subsidies, food for work and economic uplifting; and nutrition education efforts to increase awareness and bring about desired changes in dietary practices, including promotion of breastfeeding, infant feeding and dietary diversification.

With the paradigm shift in policy from freedom from hunger to nutrition security for the family and the individual, the focus on increasing nutrition and health awareness gained momentum. Keeping these factors in mind, in 1998 the Department of Women and Child Development, Ministry of Human Resource Development in collaboration with the Nutrition Syndicate developed the Food Based Dietary Guidelines for Indians, a simple illustrated, book on guidelines for healthy eating. The book focuses on the types of foods which should/should not be consumed by various ages. In the same year, the National Institute of Nutrition also brought out a set of two documents entitled *Dietary guidelines for Indians*, one of a quantitative nature for policy makers and health professionals, and the second a more qualitative version for the general public. These publications are nominally priced and available to the general public. Both documents have been developed by groups of experts with representatives from the government and the fields of health, nutrition, community medicine, and so on.

In 2004, the Department of Women and Child Development, Ministry of Human Resource Development, released the national guidelines for infant and young child feeding, which focus on initiation of breastfeeding immediately after birth, exclusive breastfeeding for the first 6 months, appropriate and adequate complementary feeding and continuation of breastfeeding up to 2 years and beyond.

In conclusion, the formulation of FBDG is an ongoing process which needs periodic review and revision based on the feedback obtained on its usage. Monitoring and evaluation systems need to be put into place to study the impact of the FBDG on food consumption patterns. In a vast country like India, translation of these FBDG into local languages will help greater penetration. The campaign can further be strengthened by supporting these documents with educational material such as posters, handouts, CDs, etc. The media, particularly television, radio and the internet, should be exploited for widespread coverage of these messages. The private sector can be involved as partners as part of its corporate social responsibility initiatives.

It has to be realized that nutritional health in all age groups represents a national economic asset. Malnutrition-free India is the goal and the vision of the national nutrition policy in the next decade. India's strong institutional and human resource base is capable of bringing about such a transformation.

3.11 Linking food-based dietary guidelines and nutrition education

Mrs Ellen Muehlhoff, FAO headquarters

Merely having a set of dietary guidelines will not ensure that the population will follow the advice given or contribute to an effective nutrition policy. In order to achieve the desirable goal of improved nutrition, dietary guidelines need to be communicated to the public through appropriate nutrition education and promotion programmes. Supportive environments and policies also need to be in place to enable people to adopt and sustain healthy dietary behaviours.

Before starting educational programmes, it is important to understand that eating behaviour is complex. Food and eating patterns are influenced by a wide range of factors that operate at the individual and the societal level. Important determining factors include level of education, knowledge and understanding about nutrition, personal food preferences, learning history, cooking skills, income and food prices. Influences at the societal level are beliefs about food, religion and culture. Economic development and urbanisation may alter dietary habits and lifestyle patterns at the same time as new food products become available. The demand for traditional food may become less. Marketing and advertising of food products through television, radio, often especially targeted at children, also have an important impact on consumption. Food, agriculture, trade and fiscal policies influence a nation's food supply, food availability and food access.

Dietary guidelines are based on scientific research, and they need to be "translated" into a food-based format for a consumer audience. Consumer friendly dietary guidelines should have the certain characteristics. They should be:

- short: not more than 6 to 8 messages;
- simple and clear: formulated in a way that people from different cultural backgrounds and literacy levels will understand their meaning;
- user-friendly and not confusing'
- worded in a positive way and motivate consumers to make changes;
- emphasize improvement, not perfection.

There are also important issues of content. The guidelines should be practical, the recommended foods or food groups should be widely available, affordable and accessible to most people. They should also be comprehensible. The general public should be able to understand the guidance that is given and be able to translate the changes into their daily dietary and life patterns. In addition, they should be culturally acceptable and compatible with national food habits. To ensure that the guidelines are acceptable, testing of the guidelines with the users is critical to their success.

Complementary educational tools, such as a food guide, need to be developed to help consumers apply the dietary guidance in their daily eating patterns and life habits. Food guides are graphic representations, often in the form of a food wheel, plate or pyramid, or other culturally appropriate shapes. Food guides use pictures and diagrams that are visually striking to help people recall what foods they should include in the daily diet, and in what proportions or quantities.

The food guide pyramid from the United States of America is an example of a structure that groups foods according to similarity among nutrients. The pyramid illustrates the relative proportions of different foods to be eaten by using the concept of serving size or portion. Serving size can refer to the amount of food that is typically eaten, or a standardized unit of food (e.g. half a cup, 100 grams). Even in countries where serving size may not be a relevant concept, some thought needs to be given to showing the relative proportion of foods from each group that contribute to the total diet. The American food guide pyramid was designed to teach people about the concepts of variety, proportionality and moderation.

However, food guides cannot stand on their own. Materials and explanatory text need to be developed, focusing on the nutritional requirements of different population groups, such as infants, children from 6 months to 2 years, 2 to 5 years, schoolchildren, teenagers, adult men and women, and the elderly. Specific guidance is also needed for groups with special physiological needs, such as pregnant and lactating women, and others, e.g. people with low literacy levels, ethnic groups.

Putting the messages into action requires further steps: campaigns to raise nutrition campaigns, and educational programmes. An evaluation of nutrition programmes found that the more successful nutrition education programmes are those that set behaviour change as a goal, provide simple practical advice and motivation, develop personal skills, encourage individual and community participation, reach all people at various stages of the life cycle and operate in different settings, use a multimedia approach, and are backed up by supportive environments and policies to make healthy choices more accessible.

Action is required across a broad front, involving the agriculture, education and health sectors, consumer organizations, the food industry and retail companies. Broad areas of action where governments can support access to a range of healthy and safe foods could include food, agriculture and trade policies that promote production and access to a wide variety of foods at affordable prices; food safety and quality; consumer-friendly nutrition labelling; nutrition standards for schools and nurseries; nutrition education in school curricula; teacher training; and responsible marketing that limits advertising of low nutritious foods to children.

Countries still struggling to feed many of their people are now also facing the costs of treating obesity and chronic diseases. As developing nations move forward, they need to educate their people about eating the right foods, not just more food, to avoid what could be a crushing economic and social burden in the next 15 to 20 years. To tackle the double burden of disease effectively, nutrition information and education are essential elements in a comprehensive strategy aimed at nutritional well-being for all. Thus the challenge for nutrition education is helping consumers to develop lifelong healthy eating patterns from an early age, based on the recognition of the multiple uses and values of food, and a range of acceptable dietary intakes within different social and economic environments.

3.12 Developing multisectoral nutrition communication plans: regional experiences

Ms Lilas A. Tomeh, WHO Regional Office for the Eastern Mediterranean

Health communication is defined as the study and use of methods to inform and influence individual and community decisions that enhance health. It is a hybrid discipline that draws primarily from communication, behavioural science, health education and health promotion, political science and information technology. It encompasses everything from patient–health provider interactions to mass communication campaigns. Translating health information effectively at both the individual and societal level is essential for reducing mortality and morbidity as well as improving the quality of life.

The prevention and control of infectious diseases have always involved the need to communicate information to those at risk. For chronic diseases and injury, many of which can

be prevented through individual behaviour change or through policy change, communication becomes equally, if not more, important. FBDG are a powerful health communication tool. There is a need for health-care professionals and providers to acquire the knowledge and skills needed to plan and execute effective communication plans. The communication environment in the 21st century has been described as cluttered. Thousands of messages are sent every day encouraging people to buy this, to do and act now. In order to compete in this increasingly competitive and complex environment, public health professionals must make communication an integral part of their everyday activities, as with science and epidemiology.

The growing interest in health and the ongoing improvement in information technology provide unprecedented communication opportunities for public health professionals. Knowledge and implementation of health communication principles can greatly enhance the practice of public health. The health communication framework can be outlined as assessing the science, defining the purpose of communication, identifying the audience, understanding their characteristics, developing message concepts, choosing media and channels, implementation, and evaluation of the process and its impact.

With the collaboration and support of Centers for Disease Control and Prevention (Atlanta), the Regional Office was able to develop, plan and carry out several training workshops, both on regional and national levels, to improve health communication skills of public health professionals. The training focused on four main aspects: understanding non-scientific audiences and how to communicate information to them through various means; advocacy; social marketing and mobilization; monitoring and evaluation.

Learning and improving the skills for health communication strategies was the main goal, which needed to be applied to an important and practical public health problem. As one of the regional strategies of the Regional Office is to alleviate micronutrient deficiencies, it was decided to use health communication as one of the primary tools to help address this problem. It will probably take some time before the impact of such interventions can be measured, especially in this Region, where countries are at different nutritional stages and have different needs.

FBDG are a potent communication tool. However, it is not enough to promote behavioural change, unless people are taught how to achieve and maintain it. FBDG should not only list or point out the optimal dietary behaviour but should also give the practical solutions needed to change the behaviour.

4. COUNTRY PRESENTATIONS

4.1 Bahrain

Ms Nadia Ghareeb, Ministry of Health

Bahrain has experienced a rapid change and development in socioeconomic status, food consumption patterns, lifestyle and health status during the past three decades, mainly due to the oil boom and the sharp increase in income. These changes have had a great impact on the

nutritional and health situation of Bahrain, with the development of a paradoxical nutrition status, as both under and over-nutrition exists. Under-nutrition is manifest as growth retardation among pre-school children and anaemia in young children, adolescent girls and pregnant women, while over-nutrition is manifested as overweight, obesity and diet-related noncommunicable diseases.

The improved standards of living and health services have led to an improvement in life expectancy, which increased from 50–59 years in the 1950s to more than 70 years in the 1990s. On the other hand, this situation has contributed to the occurrence of several chronic diseases, especially cardiovascular disease, diabetes mellitus, hypertension and cancer. Additionally, sedentary lifestyles and the shift from a traditional diet to a more westernized diet have played an important role in changing the trends in diseases and the nutrition status of the population.

Therefore, because of the importance of dietary practices in nutrition-related diseases, it is essential that food-based dietary guidelines (FBDG) be developed for the Bahraini population, especially since consumers focus on foods not nutrients, in choosing what to eat. It is essential that individuals be provided with the necessary guidelines to assist in preventing them from nutrient deficiencies and chronic diseases.

Various nutritional survey studies were conducted by the Nutrition Section under the Ministry of Health in Bahrain during the last two decades. Results showed that nutrient intakes among pregnant women were below the recommended dietary allowances (RDA), mainly in energy, vitamin A, folic acid, iron and calcium. Anaemia prevalence, low haemoglobin as an indicator, showed an increase in levels from 33.5% (1996) to 41.9% (2002).

Data from a recent national survey on Bahraini adults (19 years and over) showed that obesity prevalence among males was 23.3% and females 34.2%. Overall, the data indicate that anemia and obesity problems, among various stages of life and age groups, are considered to be the most alarming health problems caused or related to diet and nutrition.

A comprehensive national survey was conducted between 1999 and 2000 on schoolchildren in Bahrain (6–19 years). Overweight/obesity, iron deficiency anaemia (IDA), folic acid deficiency and hyperlipidaemia were found to be more common among girls (26%, 33%, 24.6%, 22.3%) compared to boys (21%, 14.7%, 17%, 13.2%), respectively. While systolic and diastolic hypertension were found to be relatively high among the boys (16.4%, 12.3%).

Reported deaths due to noncommunicable diseases in 2003, including heart disease, neoplasms and endocrine, nutritional and metabolic diseases, were found to be relatively high percentage-wise in comparison to other causes. It is also noted that the percentage of these diseases as direct cause of death was higher among women than among men (31%, 14%, 10% versus 25%, 14%, 7%), respectively.

Data from the national nutrition survey of Bahraini adults showed that the consumption of certain foods with high fat and sugar content were very much on the higher side. Meat and full fat milk consumption were also relatively high compared to that of legumes, nuts and low fat milk products.

Furthermore, the results of a survey of schoolchildren, showed that soda drinks, sweets, snacks, meats, bread and cereals (rice) consumption were high compared to the consumption of legumes, vegetables, fruits and fruit juices, milk and dairy products among both girls and boys.

In general, it is observed that nutrient intake was equal to, or higher than, the standard among the population, especially for certain nutrients such as protein, sodium, and vitamin C. However, the intake of some micronutrients, such as potassium, calcium, magnesium were below the standard among both genders. Iron and folate intake among females of a certain age group (adolescents and adults) were also lower than the standard. Energy produced from proteins, carbohydrates and fat sources was found to be at normal levels.

Data on physical activities among Bahraini adults was gathered in the National Nutrition Survey in 2002. Although the majority reported practising moderate activities (73.5% females and 67.1% males), observations showed that these reported figures are relatively high, although more and more people are practising moderate forms of physical activity, such as walking.

Data obtained from the National School Survey for schoolchildren aged 6 to 19 years between 1999 and 2002, revealed that the majority of girls (80%) and half of the boys (50%) were frequently involved in some form of physical activities; 26.6% of the boys and only 6.4% of the girls reported exercising on a daily basis.

Bahrain is an oil producing country whose economy depends on oil and trade. In terms of agricultural activities, Bahrain has very limited agricultural production, which amounts to less than 3% of the food requirement. Approximately 97% of the food is imported Local food production is limited to certain items, such as fish, chicken, eggs, and some other minor items. Foods such as cereals, meat, fruit, oil, and fat are imported.

The government policy is to subsidize main food items such as sugar, rice, wheat and meat. However, it is suggested that it would be more preferable to subsidize some other important items, such as fruit and vegetables, to encourage consumption of healthier food.

Intervention programmes adopted by the Ministry of Health comprise clinics and nutrition education campaigns targeting obesity; in mother and child health, education and training of health professionals and mothers, implementation of regulations on breastfeeding and infant Hb screening; flour fortification (iron) for micronutrients; for schools, school canteen food regulations and lifestyle education campaigns focusing on diet and physical activity; the development of food-based dietary guidelines for Bahrain in 2003.

4.2 Egypt

Professor Nafissa M. Eid, National Nutrition Institute

Since the 1960s three food groups (energy, tissue building and protective foods) have been identified and visualized as three pyramids. In 1995 FBDG were prepared by the Nutrition Institute based on malnutrition problems (protein and energy malnutrition in children, micronutrient deficiency among different population segments), food consumption patterns, RDA, and population nutrition goals (WHO, 1990), as well as economic and cultural factors. FBDG target all family members and are a guide for educators. They were designed to include: guides for healthy, balanced and safe food for the family, the importance of eating a variety of foods (three food groups), scientific basis and consideration for planning meals for various age groups, along with models for whole-day balanced meals (low, moderate and high cost) for different family members, male and female (adult, adolescents, and elderly), pregnant and lactating mothers and children. Moreover, they include information on: ideal body weight and BMI, growth curve, importance of breastfeeding, RDA, household food measurements and portion sizes, a food exchange list for energy and protein, information on nutrient rich foods (iron, calcium, vitamins A and C), cholesterol and saturated fatty acids in foods, as well as the nutrient value of some common Egyptian foods.

FBDG promotion focused on food groups, food diversification, daily meal models for different economic groups; advise on iron intake and hygiene. UNICEF gave support for 52 000 copies issued in 1995, 1996 and 2000, and distributed mainly to mother and child health, primary health care (Ministry of Health and Population), other ministries (education, social affairs, agriculture, supply) and nongovernmental organizations.

The current food and nutrition status based on recent national surveys indicates a double burden: under-nutrition (underweight, wasting and stunting among children, micronutrient deficiency iodine, iron, vitamin A and calcium), as well as overweight and obesity (among adult males 53.2%, females 75%), osteoporosis (among adult males 14.9%, females 12.6%), hypertension (among adults, national figure 26% with 60% of detected cases unaware of hypertension) elderly, 57–71 years, (male 55%, female 71%), diabetes mellitus (prevalence 9.3% and up to 20% in higher socioeconomic classes in urban areas).

Dietary intake data per capita per day: energy, 2519 Kcal, protein 89.2 g, fat 71g; energy pattern: 61% cholesterol, 25% fat, 14% protein. Dietary adequacy: more than half the households consumed more than 100% of the RDA energy; excess energy intake among mothers was 65%, coupled with inadequate energy intake among 26% of children. Inadequate dietary iron, vitamin A, and calcium intakes were found among 60%, 50%, and 30% of households, respectively. Smoking is high among adult males (48%), females (10%), and adolescents (5.5%).

Current nutrition intervention programmes are supplementation (vitamin A capsules, children and postpartum mothers; iron/folic acid tablets, during pregnancy, and secondary school girls Upper Egypt), food fortification (national iodized salt, and iron-fortified school biscuits).

The development and implementation of FBDG on a periodic basis should be reviewed, based on experiences of agencies that use the document. There is a need to seek support for proper implementation and monitoring of FBDG, and to develop, update and disseminate food composition data. More emphasis should be placed on milk and dairy products among the three food groups, to address osteoporosis and low dietary calcium intake. There should be integration of messages on other policies related to health (smoking, physical activity).

4.3 Islamic Republic of Iran

Dr Nasr Kalantari, National Food Industry and Nutrition Institute

The first attempt of Iranian nutritionists to develop and express dietary guidelines and food groups, was in the first Iranian Congress of Nutrition (1990). In this congress the nutritionists came up with the following dietary recommendations:

- Select foods regarding balance and variety.
- Include fruit, vegetables, milk, yogurt, and fat-free cheese in your daily food plan.
- Avoid intakes of fried foods and foods with higher fat content especially hydrogenated fats.
- Consuming poultry and fish is healthier than beef and lamb.
- Breastfeed your infants, and introduce appropriate weaning food after 4–6 months of age.
- Avoid consuming too much sugar.
- Avoid consuming too many salty foods. Use iodized salt instead of common salt.
- After 30 years of age be aware of your weight, and avoid overweight and obesity.

In 1996, at the fourth Iranian Congress on Nutrition, the food groups and the dietary recommendations of 1990 were discussed in a consultative workshop on food groups and dietary guidelines. Seven food groups were recommended instead of the original four. Fruit and vegetables were separated, and fat and sugar were divided into two separate groups. Regular physical activity, at least three times a week for 30 to 40 minutes, was added as a recommendation. In these new dietary recommendations, the emphasis was on consuming more fibre.

The most recent attempt at defining FBDG took place in 2003. The Ministry of Health and Medical Education, Ministry of Education, the Iranian Nutrition Society and experts from the National Nutrition and Food Technology Research Institute began to prepare the first draft of the food groups based on provincial food consumption data of 1990–1994.

4.4 Jordan

Dr Khader El Masri, University of Jordan

The Jordanian community is a young community, with two thirds of the population below 25 years of age, a median population age of 20 years. Population growth rate is 3%. Household sizes are large (average six persons) and the urban population comprises 79%. Self-sufficiency in food supply is low in general, and especially low for staple foods. The

family food basket is comprised of mostly imported foods, which are expensive, especially for households around and under the poverty line.

A low and insecure national food security status prevails in Jordan because of disadvantageous ratios of self-sufficiency, negative trade balance, gaps in staple food supplies, high price index and poverty rate.

Higher mean food values were consumed in the urban region, where households depend on cash market food supply. In rural regions households depend more on the agricultural food supply system. In general households in Jordan consume more plant foods such as cereals, legumes and vegetables, than foods of animal origin. This is due to elevated food prices, and high prevalence of poverty combined with a slow increase in incomes. Increases in the consumption of oils and animal fats, sugar and salt have been witnessed.

A national study in 1993 registered that 2% of children (0–5years of age) were acutely malnourished (wasted), 16% suffered from chronic malnutrition (stunting) and less than 1% from marasmus and pre-kwashiorkor. A statistically significant higher incidence of malnutrition problems was observed among children of non-educated mothers with low socioeconomic levels and minimum paediatric care. A national study in 1997 registered 1% of children (0–5 years of age) as wasted and 17% as stunted (< –2 z-scores of ht/age and wt/ht). The prevalence of low birth weight was 10% among infants in 1998–2002. On the other hand, obesity rates were high, with 64.2% of women registered as obese or overweight (BMI ≥25.0). Anaemia is a major public health problem in Jordan, which affects about 32% of Jordanian women of reproductive age. Iron deficiency affects 41% and iron deficiency anaemia (IDA) 23% of all women. In children 0–5 years of age, the respective prevalence rates are 20% for anaemia, 26% for iron deficiency and 10% for iron deficiency anaemia.

4.5 Kuwait

Ms Suad Al-Hooti, Kuwait Institute for Scientific Research

Nutrition related chronic diseases, such as cardiovascular disease, high blood pressure, cancer, diabetes and obesity are becoming serious public health problems in Kuwait. The prevalence of anaemia among preschool children (< 5 years of age) is 20.9%, among children 6–10 years, while for the adult population of > 20 years of age it increases to 27.9% among females but is only 3.9% among males. The incidence of insulin-dependent diabetes mellitus among Kuwaiti children aged 0–14 has increased from 3.96 per 100 000 population during 1980–1981 to 15.4 per 100 000 during 1992–1993. Obesity is one of the predisposing factors for chronic disease, which is clearly reflected in the increase in the incidence of morbidity and mortality of cardiovascular disease and diabetes in Kuwait and the consequent continuous increase in medical care costs. There is no government plan of action that is geared towards their prevention.

In order to facilitate proper planning of preventive programmes a national survey to assess the nutritional status of the Kuwaiti population is required. This should provide cross-sectional baseline and reference information for future monitoring of the changes in dietary

intake, dietary habits, and risk factors. The survey should analyse the correlation between lifestyle characteristics with the prevalence of diseases.

To date there is no clear policy, action plan, or guidelines to address the continuous increase of health problems. The food and nutrition sector in Kuwait is facing a number of limitations, including unavailability of a higher governing body to coordinate the functions of the various sectors; lack of policies, strategies, guidelines and action plans; no formal university level training (which limits the available expertise); limited nutrition communication and mass media awareness programme; lack of a database and information system to accumulate baseline information needed for setting guidelines and policies.

4.6 Lebanon

Professor Nahla Hwalla, American University of Beirut

The last nationwide survey was conducted in 1997 and only included nutritional anthropometric measurements for obesity. Since then, studies conducted have been restricted to selected population groups (i.e. of low socioeconomic status) or geographic regions (i.e. Beirut). Therefore, it is important to emphasize that some of the available data do not represent the nutritional and health situation of the entire Lebanese population.

Nonetheless, recent dietary surveys were conducted in 2001 in Beirut by means of a quantitative food frequency questionnaire (QFFQ), and in 2004 on adults attending health centres across all six governorates in Lebanon by means of a 24-hour dietary recall. The total mean consumption of food per person was estimated to be 3030 g/day providing 2523.57 Kcal/day. Fat contributed 38.9% to the average daily energy intake, protein 13.4% and carbohydrates 47.2%. Cereals provided 35% of daily energy intake and bread was the most highly consumed item in this food group. Meat and poultry products provided 8.8% of daily energy intake, with consumption of butchery products especially beef being the highest, followed by poultry. A low consumption of fruit and vegetables was noted, and 73.6% of the subjects consumed less than the recommended two servings of fish per week. Dairy products provided 10.9% of daily energy intake and milk was the least consumed dairy product.

Prevalence of wasting and stunting observed over the years has decreased by 50% and by 25% respectively. Iron deficiency anaemia (IDA) remains a public health problem. Anaemia measured as haemoglobin (Hb) level <12 g/dl, was prevalent in 16.6% of the total sample of women. Of the total sample, 27.5% were iron deficient (defined as ferritin < 15μg/l) of which 7.9% had IDA. Folate and vitamin B12 deficiencies in the studied sample of reproductive age women were 24.8% and 39%, respectively. The prevalence of overweight and obesity data shows that 53.0% are overweight and 17.0% are obese); 22.8% of children (aged 6–11 years) and 20.8% of adolescents (12–19 years) were overweight, and 7.7% and 5.5% were obese.

There is an urgent need for a nationwide dietary survey that will be representative of the dietary intake of the Lebanese population. The survey should cover noncommunicable disease risk factors, prevalence of physical activity, iron deficiency anaemia, vitamin and mineral deficiencies among the elderly. It is also recommended that, based on available data albeit

incomplete, a process to establish FBDG should be started. In Lebanon, human resources to implement a sound food and nutrition agenda are available in media, schools and universities but leadership is needed to outline the agenda and push it forward.

4.7 Pakistan

Professor Perveen Liaqat, Allama Iqbal Open University

Pakistan is self-sufficient in food production as far as major crops are concerned (i.e. wheat, rice, sugar-cane and maize). However, a slight fluctuation has been observed in crop production, which is mainly due to disasters. The immediate needs of additional food are met through imports. Beside crop production, Pakistan has livestock production, which accounts for 49.1% of the economic value of the agricultural sector, and about 11.4% of the GDP. On average, daily intake of wheat is 322 grams by mothers and 165 grams by children at national level. Consumption of wheat flour is about 14% higher among rural mothers (338 g/day) as compared to mothers in urban areas (297 g/day). Rice is the next commonly consumed cereal, which adds up to 6% of national average cereal consumption. Consumption of rice is higher in urban (22.5 g/day) than in rural areas (18.3 g/day). Wheat is still the major commodity consumed by children in both rural (174 g/person per day) and urban areas (156 g). Most of the protein needs are met from milk and milk products in both urban and rural areas, (national nutrition survey 2001–02).

The major nutritional problems in Pakistan include low birth rate (22.1%) due to poor maternal nutrition, while almost the entire population is at risk of either under-nutrition or over-nutrition. A prevalence of stunting (40%), wasting (14%), and underweight (37.4%) among children under 5 has been observed in the national nutrition survey 2001–2002. Around 12.5% pregnant and 16.1% lactating mothers have been found to be undernourished (BMI <18.5). Biochemical results report that 23.7% mothers had moderate and 1.8% had severe iron deficiency anaemia. This was 33.0% and 2.6% respectively in children. Vitamin A deficiency is prevalent both in children and their mothers 1.2% and 7.8% respectively. Visible goitre is present in 12.2 % of mothers, palpable goitre in 8.9%, and 41% of others are zinc deficient. Overweight and obesity are problems manifested in urban areas. One out of seven older adults is either overweight or obese, 12.6% of the population was found to have elevated cholesterol levels, 21.5% of urban population was reported to have high blood pressure. Diabetes was more prevalent in urban females (18%) than in males (15%).

Malnutrition is directly and indirectly responsible for 30% of all infant and child deaths in Pakistan. Over the past 20 years there has been no significant change in the prevalence of malnutrition among the targeted population, despite the launch of many nutrition intervention programmes. Currently nine different nutrition programs at national level are being pursued by ministries and divisions, without clear rules and responsibilities across federal, provincial public and private stakeholders, or any sharing of vital information. There is no strategic national nutrition plan or framework.

There has been growth in food availability, and increases in calorie intake per capita and in budget allocation for food. A recent district level study indicates that 62% of districts are food deficient in terms of food availability. Food insecurity in rural Pakistan is 80% ranging

from minor to extreme insecurity levels. Disparity in access to food is also caused by income inequality.

Several development policy measurements can influence poverty and malnutrition. The ability of households to obtain food can be influenced by a host of policies aimed at providing the poor with access to food, such as distribution of food at subsidized rates, control of market prices, and availability of food. Similarly nutrition education can influence the nutritional status without working through the income-food nutrition nexus.

5. WORKING GROUP SESSIONS

5.1 Group session 1

Participants were divided into two groups for the group sessions. Group One comprised participants from Egypt, Islamic Republic of Iran and Pakistan; Group Two comprised participants from Bahrain, Jordan, Kuwait, Lebanon and the Syrian Arab Republic.

In the first session both groups were asked to identify constraints and gaps in the preparation of food-based dietary guidelines in the participating countries, including the availability of appropriate data and information, and to identify factors that can facilitate and promote the process, including the necessary technical skills and resources.

Presentation Group One (Egypt, Islamic Republic of Iran, Pakistan)

In all three countries in this group dietary guidelines are available, but they need to be updated and further developed into FBDG. The group agreed that this should be undertaken by a steering committee. Once developed the FBDG need to be pilot-tested with the appropriate target groups, implemented and monitored. The following organizations should be involved in the process: the Ministries of Agriculture, Commerce, Education, Health, and Supply, the media, nongovernmental organizations, academia, industry, policy makers and assemblies, while the steering committee, supported by FAO and WHO, should lead the process.

Constraints were to be overcome in Egypt included insufficient partner collaboration, limited financial and technical resources, the fact that nutrition and health are not national priorities, and the existence of contradictory messages. In the Islamic Republic of Iran harmonization and collaboration is required in order to jointly seek resources, donors and assistance.

Anticipated needs for technical assistance in this group included designing and analysing data collection; information and communication technology, intra and regional; communication message development and dissemination; evaluation and monitoring. The need for building capacity in nutrition and health for the public, professionals, epidemiologists and paraprofessionals, as well as in the IT sector, is also foreseen.

The group proposed that several FBDG could be developed to address different vulnerable groups, different age groups, and in Iran also ethnic groups. In Pakistan the FBDG should be translated into several languages. In the plenary discussion that followed participants were strongly advised to start with one set of FBDG. However, various education materials should be developed based on these FBDG for their dissemination to targeted age and vulnerable groups.

Presentation Group Two (Bahrain, Jordan, Kuwait, Lebanon, Syrian Arab Republic)

None of the countries in Group Two has developed national dietary guidelines.

The group identified the same data requirements as were provided in the presentation of Dr Antonia Trichopoulos and added under-nutrition to the list. Except for data on food composition most information is available, although it may not always be representative data. Despite this, countries should proceed to develop a country report as the basis for the development of their FBDG. The same format should be used by all countries in order to facilitate comparison. For future data collection the need for standardized methods and cut-off points was stressed.

Instead of developing one set of FBDG for the Region, the group agreed that national FBDG are required, based on a regional framework. To develop the FBDG the Ministry of Health (MOH) was identified as the key-stakeholder and a stepwise approach was recommended. The process should start with the establishment of a task force with experienced individuals, under the umbrella of the MOH. Once the highest level in the MOH is behind the initiative, interministerial support can be sought. The issue of leadership was deemed extremely important. The MOH should take the lead, supported by MOA, MOC, MOP and NGOs, while consensus with these ministries, as well as the MOD and the scientific community is needed.

The main constraint identified was the lack of political commitment and the difficulties expected in convincing decision makers. Therefore country data should be presented along with FAO/WHO recommendations and success stories on FBDG.

The lack of awareness of the need for nutrition education among medical doctors was another constraint identified by this group. Therefore integration of nutrition in the medical curricula is needed.

In general the technical capacities are available in the countries in this group. Where this is lacking FAO/WHO technical assistance may be needed or expertise from outside the country should be sought.

5.2 Group session 2

In Group Session 2 the groups reflected upon identifying the roles and responsibilities of different sectors and partners, and defining the outline of national FBDG.

Presentation Group One (Egypt, Islamic Republic of Iran, Pakistan)

Partnership is needed among all stakeholders (National Nutrition Committee or Institute the Ministries of Agriculture, Commerce, Education, Health and Supply, the media, NGOs, academia, industry, policy makers, FAO, WHO and UNICEF). In order to build partnerships, one single organization should take the lead and a focal point needs to be selected in each organization. In order to identify qualified and effective collaborating individuals within each organization, certain criteria can be applied: they should have authority and responsibility, as well as the necessary training and expertise. For each collaborating organization a job description will be needed in order to prevent overlapping activities and to optimize the use of resources.

Volunteer organizations may be asked to provide accurate statistical data and technical expertise, to carry out research, provide funds, help in advocacy and social marketing, assist in communication and dissemination, provide training, capacity building and the needed umbrella, authority and influence to implement the FBDG.

Building trust is needed both within the National Nutrition Committee or Institute and between this committee and the community. Full participation of the stakeholders will help to build trust. Intercommittee, intercountry and interregional linkages should be developed through personal contact, regular meetings, web sites and communication.

Exchange programmes with existing guidelines and expertise were recommended in order to learn from earlier experiences. Some of the lessons learned elsewhere included the need for robust participation, a long term action plan and communication plans.

In order to finance the process, the group recommended that each agency should use its own funds for the implementation of their role in the process. In addition the involvement of the national community, industry and private sector, nongovernmental organizations and international organizations was recommended, as well as the possibility of and fundraising.

In order to understand the public/consumer, the group agreed that focus group discussions would be important, as well as pilot testing of developed FBDG messages.

Group One prepared the following outline for national FBDG:

- nationally defined
- simple
- practical
- nutritional scenario
- basic information
- 6–10 guidelines
- rationale in simple words explaining choice of guidelines
- flyers and other media pamphlets.

Once FBDG has been defined, training for disseminating the FBDG, evaluation and monitoring, dietary guides, age specific, rural–urban, special considerations, and dietary serving information should be provided.

Presentation Group Two (Bahrain, Jordan, Kuwait, Lebanon, Syrian Arab Republic)

Partnerships are needed with the Ministries of Health, Agriculture, Commerce and Planning, the media, the National Council for Research, academia, the food industry, food producers, consumers, mass caterers, and nongovernmental and international organizations. To start the process this group recommended holding an initiation workshop, during which data on the country's nutrition-related problems should be presented, and compared with that of other countries. In preparation for this workshop the national nutrition report should be prepared. During the workshop the importance for developing FBDG will be stressed. Inputs from the different participating bodies in relation to the activities and responsibilities will be discussed, resulting in defining the roles of the various partners in developing and implementing FBDG. Volunteer organizations will be asked to adopt the FBDG and to assist in their implementation and dissemination. The need for training of professionals is foreseen among public health workers, health educators, medical doctors, nurses and dieticians.

In order to build trust periodic meetings are recommended to share information, update the group, and upgrade the procedure in view of the parties' input. Local, regional and international linkages can be enhanced by identifying a focal point in all collaborating organizations. In addition, reports of progress should be communicated either through a web page with a discussion group, a newsletter, a progress report or an e-mail list, (provided resources are available for a focal point and secretarial support), as well as periodic meetings.

The group identified the following roles for collaborating organizations:

- Ministry of Health: formulation and dissemination of FBDG
- Ministry of Agriculture: input related to agricultural policies including food production, processing and distribution as needed for the formulation of FBDG
- Ministry of Commerce: labelling, consumer protection, trade, food security
- Ministry of Planning: financial strategies and policies
- media: dissemination
- National Council for Research: funding support for research
- academia: scientific justifications and research for FBDG and education
- food industry: quality control, support for research to develop new products, collaborators
- food growers: produce food in line with FBDG
- consumers: collaboration, cooperation, testing and adoption
- mass caterers: collaborators
- nongovernmental and international organizations: collaborators.

Exchange programmes for information on and comparison of FBDG could take the form of annual meetings, or electronic linkages. Academia could be asked to study lessons and best practices from earlier experiences with FBDG, and has an important role to play in

providing training, which is needed for professionals and trainers, as well as for the media and community. Group 2 foresees that funds can be obtained from the private sector, government, international organizations and donor agencies.

A well-planned protocol should be developed for the dissemination of information, which may include a goodwill ambassador, television, brochures for distribution in schools, universities, clinics, community centres, supermarkets, etc., legislation for defining who can talk and inform on nutrition.

Group Two developed the following outline for national FBDG:

- Do not exceed the optimal body weight for your height
- Eat fruit and vegetables with meals and snacks
- Choose unsalted nuts as snacks, instead of sweets or candy bars
- Choose whole-grain bread, rice or pasta instead of refined ones
- Always drink water and fresh fruit juices rather than soda drinks
- Eat a variety of foods
- Increase physical activity
- Decrease intake of salt and sugar
- Decrease intake of solid fat (soft margarine and oils rich in saturated fat).

5.3 Group session 3

In Group Session 3, the groups were asked to discuss and develop a national plan of action for developing national FBDG, and suggest activities for further follow-up.

Presentation Group One (Egypt, Islamic Republic of Iran, Pakistan)

The group drafted a plan of action for developing national FBDG and outlined the steps necessary to be taken. A time frame applicable to each country was presented for all the activities suggested. The main steps in the plan of action were:

- Form a steering committee with the objectives of formulating tasks, and fulfilling them as well as fundraising. Involved bodies can include the ministry of health and the national nutrition committee. The committee can be funded by organizational support.

- Create and appoint task forces: for food consumption, food production, commerce, health data, advocacy and fund raising, as well as capacity-building education and database formation.

- Organize a meeting on national FBDG to agree on the work of the task forces, to formulate with a draft of the work plan, and to appoint working groups for circulation and dissemination plan of the draft and collecting feedback.

- Develop consumer materials: develop material, expert review, pilot testing, revision, finalization of the product and launching.

- Lay down a follow-up plan. This should be planned and implemented by the same steering committee and should include assessment of the need for extranational FBDG according to specific age, sex or special groups, as well as strengthening national expertise and building capacity.

- Organize evaluation, monitoring and dissemination of lessons learned: this includes collecting data and comparing them with the baseline data, measuring the impact of national FBDG, deciding on the need for revision, establishing a regional databank and sharing lessons learned.

Presentation Group Two (Bahrain, Jordan, Kuwait, Lebanon, Syrian Arab Republic)

The plan of action developed by Group Two was similar in principle to that of Group One, including establishing steering or intersectoral committees, organizing meetings and workshops to discuss and approve each step in developing national FBDG, and planning and implementing follow-up plans. In addition, the group went into more details in discussing each step of the process, and included specific ideas and examples.

6. CONCLUSIONS

The following conclusions were formulated and adopted during the last plenary session of the technical consultation:

- The countries in the Region are at different stages of the nutrition transition facing the dual burden and the entire spectrum of nutritional conditions.

- FBDG remain an important education and communication tool to address the dual burden. FBDG also have great potential for placing nutritional concerns on the national agenda, providing guidance for food, nutrition, food hygiene, education and agricultural policy formulation, and nutrition education activities. They can identify policy options of food supply and demand that promote lifelong healthy eating patterns, influencing the nutrition transition towards healthier outcomes and a decrease in the economic burden of diseases.

- Physical activity should be closely integrated with food-related messages in the dietary guidelines in this Region.

- FBDG can contribute substantially to the implementation of the Global Strategy on Diet, Physical Activity and Health in the Region, and other initiatives to promote healthy diets.

- A considerable amount of basic and supportive data to enable the development of national FBDG already exists in all countries participating in the consultation. External technical assistance may be required for undertaking further analyses to generate appropriate information in some countries.

- In order to develop and implement effective FBDG, key stakeholders need to be involved in the process, such as Ministries of Health, Agriculture, Education, Commerce/Trade, Finance and Planning, research institutions and universities, consumer groups, UN agencies, NGOs, private sector and other relevant bodies. Based on available information, intersectoral action needs to be strengthened in most countries.

- In order to utilize the available resources within the Region for the development of FBDG, it was suggested that several countries with similar social, health and economic characteristics could consider the possibility of pooling their available resources and developing a common FBDG where appropriate.

7. RECOMMENDATIONS

1. In view of the dual burden of nutritional conditions affecting countries in the Region, immediate action should be taken at the country level to follow up the development and implementation of FBDG.

2. FBDG development and implementation is an ongoing process. Countries that have already initiated work on their national FBDG should expedite the process. Countries that have not initiated development of FBDG should organize follow-up meetings and set up a steering committee.

3. Regular regional and subregional follow-up meetings should be organized by WHO and FAO to report progress, share experiences and lessons learned in the development and implementation of FBDG. To facilitate the dissemination of information and sharing of experiences on the development and implementation of FBDG in the Region, an e-mail list serve should be established among countries.

4. Countries will identify resources for the development and implementation of FBDG; assistance from international organizations may be solicited as required.

5. Intersectoral cooperation is essential for the development of successful FBDG.. Based on available information, intersectoral cooperation needs to be strengthened in most countries.

6. Physical activity recommendations should be integrated in FBDG in the Region.

Annex 1

PROGRAMME

Monday 6 December 2004

08:30–09:00	Registration
09:00–10:30	Opening session Message from Dr Hussein A. Gezairy, Regional Director, WHO/EMRO Address by Mr Abdellatif Tabet, ADG/Regional Representative, FAO/RNE Introduction of participants Election of Chairperson and Rapporteurs *Session I*
10:30–10:40	Objectives and mechanics of the technical consultation, Dr Kunal Bagchi, WHO/EMRO
10:40–10:50	Historical overview of food-based dietary guidelines, Dr Kraisid Tontisirin, FAO/HQ
10:50–11:00	Policy implementation of food-based dietary guidelines, Dr Chizuru Nishida, WHO/HQ
11:00–11:15	Regional overview of diet-related health problems, Dr Kunal Bagchi, WHO/EMRO
11:15–11:30	Regional overview of food consumption patterns, Dr Fatima Hachem, FAO/RNE
11:30–12:00	Discussion *Session II: National food-based dietary guidelines*
13:00–13:15	Egypt, Dr Nafissa Eid
13:15–13:30	Islamic Republic of Iran, Dr Nasser Kalantari
13:30–13:45	Kuwait, Ms Suad Al-Hooti
13:45–14:00	Jordan, Dr Khader El Masri
14:15–14:30	Pakistan, Professor Perveen Liaqat
14:30–14:45	Lebanon, Professor Nahla Hwalla
14:45–15:00	Bahrain, Ms Nadia Ghareeb
15:00–16:00	Discussion

Tuesday 7 December 2004

08:45–09:00	Administrative issues *Session III*
09:00–09:20	Summary of diet, nutrition and chronic diseases—Technical report 916 and the global debate, Dr Chizuru Nishida, WHO/HQ
09:20–09:40	Overview of the global strategy on diet, physical activity and health and its regional implications, Dr Denice Coitinho, WHO/HQ
09:40–10:30	Discussion *Session IV: Steps for the preparation of food-based dietary guidelines*
10:30–10:50	Process and steps in developing FBDG, Dr Antonia Trichopoulos
10:50–11:10	Food and dietary data needed for the preparation of FBDG, Dr Antonia Trichopoulos
11:10–11:30	Health and nutrition information needed for the preparation of FBDG, Dr

	Kraisid Tontisirin, FAO/HQ
11:50–12:40	Discussion
	Session V: Group session 1
13:40–15:40	A. Identify constraints and gaps, including the availability of appropriate data and information, in the preparation of FBDG in the participating countries (Group presentation) B. Identify factors that can facilitate/ promote the process including the necessary technical skills and resources (Group presentation)
15:50–16:20	Presentation of group work 1 (First group)

Wednesday 8 December 2004

	Session VI
09:00–09:20	Presentation of group work 1 (Second group)
09:20–09:40	Developing food-based dietary guidelines: experiences from Thailand, Dr Prapaisiri Sirichakwal
09:40–10:00	Developing food-based dietary guidelines: experiences from India, Professor Seema Puri
10:00–10:30	Discussion
	Session VII
10:45–11:00	Linking FBDG and nutrition education, Ms Ellen Muelhoff, FAO/HQ
11:00–12:00	Discussion
	Session VIII: Group session 2
13:00–15:30	A. Identify the roles and responsibilities of different sectors and partners (Group presentation) B. Define the outline of a national FBDG (Group presentation)
15:30–16:00	Presentation of group work 2

Thursday 9 December 2004

	Session IX: Group session 3
09:00–10:40	A. Develop national plans of action (group presentation)
10:40–12:00	B. Develop follow-up procedures (group presentation)
12:00–12:30	Presentation of group work 3
12:30–12:40	Developing multisectoral nutrition communication plans: regional experiences, Ms Lilas Tomeh, WHO/EMRO
14:30–15:30	Conclusions and recommendations
15:30–16:00	Closing ceremony

Annex 2

LIST OF PARTICIPANTS

WHO Temporary Advisers

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Dr Fatima Hachem, Food and Nutrition Officer, FAO Regional Office for the Near East, Cairo, Egypt
Dr Yassin Wehelie, Regional Economist, FAO Regional Office for the Near East, Cairo

WHO Secretariat

Dr Mohamed A. Jama, Deputy, Regional Director, WHO Regional Office for the Eastern Mediterranean, Cairo
Dr Ahmad Mohit, Director, Health Protection and Promotion, WHO Regional Office for the Eastern Mediterranean, Cairo
Dr Denise Coitinho, Director, Nutrition for Health and Development, WHO headquarters, Geneva
Dr Kunal Bagchi, Regional Adviser, Nutrition, WHO Regional Office for the Eastern Mediterranean, Cairo
Dr Chizuru Nishida, Scientist, Nutrition for Health and Development, WHO headquarters, Geneva
Dr Zuhair Dallal, Nutrition Officer, WHO Iraq
Dr Abdirahman Weyrah, National Nutrition Focal Point, WHO Somalia
Ms Lilas Tomeh, Technical Officer, Nutrition, WHO Regional Office for the Eastern Mediterranean, Cairo
Dr Tomo Kanda, Technical Officer, Nutrition, WHO Kobe, Japan
Ms Nashwa Nasr, Secretary, WHO Regional Office for the Eastern Mediterranean, Cairo

Annex 3

LIST OF PUBLICATIONS DISTRIBUTED DURING THE CONSULTATION

Codex Alimentarius – Food Labelling. Complete text, revised 2001, FAO, Rome.

Community-based food and nutrition programmes. FAO, Rome, 2003.

Diet, nutrition and the prevention of chronic diseases. Report of a joint WHO/FAO expert consultation (WHO Technical Report Series, No. 916, 2003).

Fats and oils in human nutrition. FAO Rome 1994 (FAO Food and Nutrition Paper 57).

Food, Nutrition and Agriculture.16, FAO Rome.

Food, Nutrition and Agriculture. 26/2000, FAO Rome.

Food, Nutrition and Agriculture. 28/2001, FAO Rome.

Food, Nutrition and Agriculture. 30/2002, FAO Rome.

Food, Nutrition and Agriculture. 32/2002, FAO, Rome.

Food, Nutrition and Agriculture. 33/2003, FAO Rome.

Global Strategy on Diet, Physical Activity and Health. Fifty-Seventh World Health Assembly 2004, WHA57.17.

Human vitamin and mineral requirements. Report of a joint FAO/WHO expert consultation in Bangkok, Rome 2002.

Nutrition education for the public. Discussion papers of the FAO expert consultation, Rome, Italy, 18–22 September 1995 (FAO Food and Nutrition Paper 62).

Preparation and use of Food-Based Dietary Guidelines. Report of a joint FAO/WHO consultation (WHO Technical Report Series, No. 880, 1998).

Testing nutrition education materials in Polish schools (Food Nutrition and Agriculture 24, 1999).

Testing the Russian version of Get the Best from Your Food.

Annex 4

WORKING GROUP SESSIONS SUGGESTED CHECKLISTS FOR DISCUSSION

Participants were divided into two groups for the group sessions. Group One comprised participants from Egypt, Islamic Republic of Iran and Pakistan. Dr Mildred Cody from the United States of America and Professor Seema Puri from India facilitated the work of this group. Group Two comprised participants from Bahrain, Jordan, Kuwait, Lebanon and the Syrian Arab Republic, and was facilitated by Dr Prapaisri Sirichakwal from Thailand, and Dr Antonia Trichopoulos from Greece. All facilitators were involved in the development of FBDG in their respective countries.

Session 1

Identifying critical data and information needs (1 hour)

Recalling the process of formulating FBDG, identify priority data and information needs and suggest how those needs can best be met in the participating countries. Consider:

- health, food, diet and other nutrition-related information;
- socioeconomic and cultural factors of concern;
- The capacity and resources available within countries and the sub-region to provide necessary information.

Planning and preparing food-based dietary guidelines (1 hour)

Recalling the process of formulating FBDG, briefly analyse existing dietary guidelines and discuss issues with regard to the steps and mechanisms for planning and preparing the guidelines in the participating countries.

To begin with, consider the issue as to whether individual country guidelines are needed or whether regional guidelines would be appropriate.

- Do the represented countries have dietary guidelines? Do they require changes or improvements? Are the guidelines part of a national policy?
- Which steps need to be taken? Where? Which organization should initiate the process?
- Who should be involved?
- Who will lead, provide technical guidance and coordinate the working group?
- What are the constraints? How can they be overcome?
- What technical assistance is needed for the preparation of the guidelines?
- What capacity building/training is needed?

Comment, if possible, on the need to consider a single set or several sets of guidelines (ethnic groups, age groups, languages, etc.).

Session 2

Building partnerships and strengthening collaboration (1 hour)

- With whom? Allies or new people/organizations.
- How?
- Role of volunteer organizations (consumer organizations etc)?
- Professional upgrading?
- Building trust
- Linkages? Local, regional, international.
- Defining roles of collaborators-overlapping, waste of resources.
- Exchange programmes?
- Research/lessons from the past/"best practices".
- Role of training-formal and non-formal.
- Setting clear expectations-communicating objectives, roles and responsibilities.
- Funds
- Dissemination/promotion.
- Understanding the public/consumer.

Outline of national food-based dietary guidelines (1 hour)

Annex 5

MEDITERRANEAN DIET

The Mediterranean diet can be thought of as having 9 components:

1. Olive oil as added lipid
2. Daily consumption of vegetables
3. Daily consumption of fruits
4. Daily consumption of unrefined cereals
5. Bi-weekly consumption of legumes
6. Bi-weekly consumption of fish
7. Daily consumption of cheese or yoghurt
8. Monthly or weekly consumption of meat or meat products
9. Daily moderate consumption of wine

Annex 6

LIST OF COUNTRIES

Countries in the Near East Region of FAO

Afghanistan
Algeria
Azerbaijan
Bahrain
Cyprus
Djibouti
Egypt
Islamic Republic of Iran
Iraq
Jordan
Kazahstan
Kuwait
Kyrgyzstan
Lebanon
Libyan Arab Jamahiriya
Malta
Mauritania
Morocco
Oman
Pakistan
Qatar
Saudi Arabia
Somalia
Sudan
Syrian Arab Republic
Tajikistan
Tunisia
Turkey
Turkmenistan
United Arab Emirates
Uzbekistan
Yemen

Countries in the Eastern Mediterranean Region of WHO

Afghanistan
Bahrain
Djibouti
Egypt
Islamic Republic of Iran
Iraq
Jordan
Kuwait
Lebanon
Libyan Arab Jamahiriya
Morocco
Oman
Pakistan
Palestine
Qatar
Saudi Arabia
Somalia
Sudan
Syrian Arab Republic
Tunisia
United Arab Emirates
Yemen