# **A Review of Nutrition Policies**

Draft report 20 December 2010

The review is based on a comprehensive survey questionnaire sent to WHO Member States in July 2009 and the responses received up to November 2010 were included in the analysis. The responses were provided by the total of 119 countries and four territories, covering 81% of the world population.

Peer-review was undertaken during October - November 2010 by external experts as well as by the representatives of concerned WHO Departments and Regional Offices. Thirteen detailed peer-review comments were received. When preparing this revised draft, some of these peer-review comments were taken into consideration. It should be noted, however, that many of the comments have not yet been addressed in this draft and these are currently being undertaken with a view to prepare a final draft after the open call for comments for the preparation of the 128<sup>th</sup> Session of the Executive Board in January 2011.



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## Acronyms

AFSI	L'Aquila Food Security Initiative
AMR	American Region
ARNS	African Regional Nutrition Strategy
ARV	Antiretroviral drugs
AU	African Union
BFH	Baby-friendly hospital
BFHI	Baby-friendly Hospital Initiative
BSE	Bovine spongiform encephalopathy
CAADP	Comprehensive Africa Agriculture Development Programme
CFA	Comprehensive Framework for Action
CFS	Committee on World Food Security
COPD	Chronic obstructive pulmonary disease
DALYs	Disability-adjusted life years
DFID	Department for International Development
DOTS	Directly observed treatment short
DPAS	WHO Global Strategy on Diet, Physical Activity and Health
EMR	Eastern and Mediterranean Region
EUR	European Region
FAFS	Framework for African Food Security
FAO	Food and Agriculture Organization of the United Nations
FPI	Food Price Index
GAIN	Global Alliance for Improved Nutrition
GFCPI	Global Food Consumption Price Index
HIV	Human immunodeficiency virus
HLTF	UN High Level Task Force
ICCIDD	International Council for the Control of Iodine Deficiency Disorder
ICN	International Conference on Nutrition
IDD	Iodine deficiency disorders
IFPRI	International Food Policy Research Institute
IHD	Ischemic heart disease
ILO	International Labour Organization
IYCN	Infant and young child nutrition
LBW	Low birth weight
LIFDC	Low Income Food Deficit Country
LMIC	Low and Middle Income Countries
MAM	Moderate acute malnutrition
MDGs	Millennium Development Goals
NCD	Noncommunicable disease
NEPAD	New Partnership for African Development
NGO	Nongovernmental organization
ODA	Official Development Assistance
PANI	Pan African Nutrition Initiative
PICT	Pacific Island Countries and Territories
PLWHA	People living with HIV/AIDS
PRSP	Poverty Reduction Strategy Paper
SAM	Severe acute malnutrition
SCN	UN Standing Committee on Nutrition
SEAR	South East Asian Region

SPC	Secretariat of the Pacific Community
SUN	Scaling Up Nutrition
ТВ	Tuberculosis
UNDAF	United Nations Development Assistance Framework
UNEP	United Nations Environment Programme
UNICEF	United Nations Children's Fund
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
VAD	Vitamin A deficiency
WFP	World Food Programme
WFS	World Food Summit
WHA	World Health Assembly
WHO	World Health Organization
WPR	West Pacific Region

### Glossary

**Policy** is a written statement of commitment (generally written in broad terms) by a nation state. **Strategy** may be similar to a policy.

Action plans (National plans of action on nutrition, NPANs) arise from policy, providing more detailed operational plans of action; include budgets and specific goals and targets that are specific, measurable, attainable, relevant and time bound (SMART).

**Programme:** provides the detail of the implementation of the action plan; with specific **projects** defined within a programme.

**Malnutrition in all its forms** is defined as all forms of poor nutrition. It relates to imbalances in energy, and specific macro and micronutrients- as well as in dietary patterns. Conventionally, the emphasis has been in relation to inadequacy, but it also applies to excess intake or inappropriate dietary patterns. Malnutrition occurs when the supply of essential macro- and micronutrients does not meet or exceeds the metabolic demands for nutrients. These metabolic demands vary with age and other physiological condisitions and are also affected by environmental conditions including poor hygiene and sanitation that lead to food- as well as water-borne diarrhoea. Food security (defined further below) is measured by the proportion of the population defined as hungry, so it too is a measure of malnutrition. Optimal breastfeeding and complementary feeding patterns are also part of good nutrition, and thus measures of poor rates of breastfeeding and inappropriate complementary feeding judged as measures of malnutrition. **Nutritional status** should capture all these aspects of nutrition.

#### Definitions of adult underweight and overweight

The following definitions and cut-off points were developed through various expert consultations, including the WHO Expert Committee on Physical Status (WHO 1995), WHO Expert Consultation on Obesity: Preventing and managing the global epidemic (WHO 2000) and WHO Expert Consultation on Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies (WHO 2004).

Classification	BMI(kg/m <sup>2</sup> )				
	Principal cut-off points	Additional cut-off points			
Underweight	<18.50	<18.50			
Severe thinness	<16.00	<16.00			
Moderate thinness	16.00 - 16.99	16.00 - 16.99			
Mild thinness	17.00 - 18.49	17.00 - 18.49			
Normal range	18 50 24 00	18.50 - 22.99			
I tollinai lange	10.30 = 24.77	23.00 - 24.99			
Overweight	≥25.00	≥25.00			
Pre obece	25.00 29.99	25.00 - 27.49			
TIC-ODESC	23.00 - 27.77	27.50 - 29.99			
Obese	≥30.00	≥30.00			
Obece class I	30.00 34.99	30.00 - 32.49			
	50.00 - 54-77	32.50 - 34.99			
Obece class II	35.00 30.00	35.00 - 37.49			
	55.00 - 57.79	37.50 - 39.99			
Obese class III	≥40.00	≥40.00			

Undernutrition: malnutrition related to all forms of inadequate food and nutrient intake or excessive losses.

**Child underweight**: weight-for-age <-2 standard deviations (SDs) from the WHO child growth standards median, cut-off point for public health problem  $\geq 10\%$  of population affected

**Child stunting**: height-for-age <-2 SDs from the WHO child growth standards median; cutoff point for public health problem  $\geq 20\%$  of population affected

**Child overweight**: weight-for-height> 2 SDs from the WHO child growth standards median.

**Child obesity:** weight for height >3 SDs; note in some countries overweight and obesity in children are measured using BMI centiles for age.

Low birthweight: weight at birth of <2500g (5.5 pounds)

**Early initiation of breastfeeding**: proportion of children born in the last 24 months who were put to the breast within one hour of birth

**Exclusive breastfeeding under 6 months**: Proportion of infants 0–5 months of age who are fed exclusively with breast milk.

**Continued breastfeeding at 1 year**: proportion of children 12–15 months of age who are fed breast milk.

**Food security** exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. The four pillars of food security are availability, access, utilization and stability. Household food security relates to the family level.

**Nutrition security** exists when food security is combined with a sanitary environment, adequate health services and proper care and feeding practices to ensure a healthy life for all household members.

Food and nutrition security implies nutrition security.

**Nutrition surveillance systems**: are data collection systems which, on an on-going basis, systematically collect, analyse, interpret and disseminate data on food- and nutrition-related outcomes, i.e. anthropometric indices for use in the planning, implementation and evaluation of nutrition action programmes.

**Anaemia** is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status. Iron deficiency is thought to be the most common cause of anaemia globally, although other conditions, such as folate, vitamin  $B_{12}$  and vitamin A deficiencies, chronic inflammation, parasitic infections, and inherited disorders can all cause anaemia. In its severe form, it is associated with fatigue, weakness, dizziness and drowsiness. Pregnant women and children are particularly vulnerable. In children 6 – 59 months and pregnant women a haemoglobin concentration of <110 (g/L) at sea level is used to define anaemia.

**Vitamin A deficiency** can be defined clinically or sub-clinically. The prevalence of the population with serum retinol below 0.70 µmol/l can be used to assess the severity of vitamin A deficiency in most age groups, as a public health problem. Vitamin A deficiency as a public

health problem requiring intervention when at least one of two specifications is met: 1) The prevalence of low serum retinol is within the range specified AND another biological indicator of vitamin A status (including night blindness, breast milk retinol, relative dose response, modified dose response, or conjunctival impression cytology) also indicates widespread deficiency; and/or 2) the prevalence of low serum retinol indicates widespread deficiency and at least four demographic and ecologic risk factors are met.

**Iodine deficiency** is the greatest cause of preventable brain damage in childhood which is the primary motivation behind the current worldwide drive to eliminate it. The main factor responsible for iodine deficiency is a low dietary supply of iodine. Iodine deficiency is considered to be a public health problem in populations of school-age children where the median UI is below 100  $\mu$ g/l or goitre prevalence is above 5% The median or range in urinary iodine (UI) concentrations used to categorise insufficient iodine intake of pregnant women is below 150  $\mu$ g/l.



### 1. Introduction

Malnutrition in all its forms either directly or indirectly is responsible for approximately half of all deaths worldwide. This applies to perinatal and infectious diseases as well as chronic diseases. Key nutrition actions, under various mandates including as part of national development and poverty eradication plans, have been recommended to reduce malnutrition. When implemented effectively nutrition actions can produce dramatic improvements in reducing rates of malnutrition. Brazil and China for example, have more than halved child malnutrition in less than two decades. Although there has been progress in some countries, the overall global progress has been too slow to meet agreed Millennium Development Goals (MDGs). The recent global food and fuel crises along with the global economic contraction have increased the pressure on the poorest countries, such that in 2009, more people were hungry than ever before (FAO, 2009). It is vital to understand why progress has been too slow and to identify ways to address these challenges including the increasing inequality between and within countries. It is also important to learn from the success stories.

Policies and programmes are the articulation of the commitment to act, usually expressed at a national level. Having a policy in place does not assure that the policy objectives are achieved. It may be that the policy objectives are vague and poorly articulated making translation into concrete plans difficult. It may be that policies are well articulated, but cannot be put into practice for lack of resources or capacity.

The review is based on a comprehensive survey questionnaires sent to WHO Member States in 2009, to which 119 countries and four territories had provided information. It aims to assess the extent to which countries currently have nutrition policies and programmes in key areas of nutrition, and to explore how these programmes are being implemented in terms of scale/coverage, responsible actors and systems for M&E. It has a particular focus on low- and middle-income countries and therefore, the review also aims to assess the state of readiness for action, in terms of having the necessary policy and institutional environment in place to respond to existing nutrition challenges that countries face.

Relevant existing qualitative and quantitative data were also reviewed and are included in this report to complement the findings from the questionnaires. In particular, the in-depth and rich experience gained from country assessments in the WHO-led Landscape Analysis in high stunting burden countries has been used to strengthen understanding about constraints to the effective implementation of policies and programmes (Nishida et al , 2009). Data from other sources on the coverage of supplementation and food fortification programmes have also been included. The methodology used in collecting the data and information for this report are described in details in Chapter Five.

The analysis provides an assessment as to how well current policies map against existing nutrition problems in countries in the regions. The infrastructure that has been developed to address problems of undernutrition may or may not be appropriate to address overweight. The policy tools and options that work for undernutrition may not work for overweight. Without knowing what tools and approaches are being used, it will not be possible to judge whether the current architecture is suitable for the present and future needs for effective action.

It is critical for international agencies to understand where the gaps are in the effectiveness of the implementation of policies and programmes so that they can provide the most effective support in areas of greatest need and where impact will be greatest. International agencies can

help enhance the capacity of local staff through suitable training and guidance about normative standards and best practice, as well as to help leverage more appropriate support mapped against local need. It is important to identify, and then support ways to address, bottlenecks in the implementation mechanisms before introducing new policies and programmes.

The report is presented in six chapters. Chapter Two describes current health and nutrition challenges. Chapter Three helps set the scene for the current state of nutritional health worldwide and provides an understanding of the wider determinants that affect nutrition that should be considered (or checked to assess how they are currently being considered) in future policy development in nutrition. Chapter Four summarizes the complexity of global food and nutrition issues which countries and the global community are facing today and also describes the changing global policy context and focus on addressing nutrition issues. Chapter Five summarizes the main findings from the policy review. In Chapter Five, cases studies of the successful implementation of various policies and programmes are included, highlighting the key factors, players and actions that have enabled the effective implementation of a policy or programme. Chapter Six reflects on the gaps and challenges ahead and presents the recommendations.

### 2. Current health and nutrition challenges

Since 1990 life expectancy at birth has increased in all regions, largely influenced by reductions in infant and child mortality. The gain in life expectancy has not been even across all regions, with Africa gaining the least. Although on a global basis the total age specific mortality rates have fallen, the burden of malnutrition, in terms of numbers of people affected, has increased. There are more underweight and overweight people today than ever and more people living with the effects of poor quality diets.

Table 2.1 summarizes the ten leading causes of death and disability worldwide. Mortality from cardiovascular diseases (ischaemic heart disease and cerebrovascular diseases) are the leading causes of death worldwide, followed by diseases of conditions affecting the respiratory system. It should be noted that all cancers are not combined in this analysis, if they were they would account for about 12% of deaths. Infectious diseases affect mortality and disability. The ranking of the causes of death and disability are similar but not identical. Disability-adjusted life years (DALYs), a combination of both years of life lost and years of life living with disability, is perhaps a better reflection of the burden and impact of poor health on a society, in terms of economic and social burden. When viewed from this perspective the burden of different health problems varies by region (data not presented). In countries in Africa, HIV and other infectious diseases, and perinatal health have the major impact; In the Eastern Meditteranian Region as well as in South East Asia Region, lower respiratory infections and food- as well as water-borne diarrhoeal disease are the two leadings causes, followed by ischemic heart disease (IHD). In the America Region, unipolar depressive disorders and violence are the leading causes followed by IHD; in the Western Pacific Region, Cerebrovascular diseases followed by unipolar depressive disorders and COPD; in European Region, IHD, Cerebrovascular disease and unipolar depressive disorders are the leading causes. In America, European and Western Pacific Regions, alcohol use disorders are in the top ten causes. In all regions road traffic accidents are in the top ten causes. (WHO, 2008).

Table 2.1 Percent attributable to the leading causes of death and disability worldwide (WHO, 2008)

M	ortality	%	D.	ALYs	%
1.	Ischaemic heart disease	12.2	1.	Lower respiratory infections	6.2
2.	Cerebrovascular disease	9.7	2.	Diarrhoeal diseases	4.8
3.	Lower respiratory diseases	7.1	3.	Depression	4.3
4.	Chronic obstructive		4.	Ischaemic heart disease	4.1
	pulmonary disease	5.1	5.	HIV/AIDS	3.8
5.	Diarrhoea; disease	3.7	6.	Cerebrovascular Diseases	3.1
6.	HIV/AIDS	3.5	7.	Prematurity, low birth weight	2.9
7.	Tuberculosis	2.5	8.	Birth asphyxia, birth trauma	2.7
8.	Trachea, bronchus and lung can	cers 2.3	9.	Road traffic accidents	2.7
9.	Road traffic accidents	2.2	10.	Neonatal infections and other	2.7
10.	Prematurity, low birth weight rat	te 2.0			

Figure 2.2 shows that the overall death rate in African adults is nearly twice as high per 1000 adults as in any other region of the world. Death rates are second highest in Europe, almost totally due to high rates of noncommunicable diseases, and heart diseases in particular.





Figure 2.3. Maternal death rates by region and changes from 1990 to 2005 (UN, 2009)



#### Maternal deaths per 100,000 live births, 1990 and 2005

Iron deficiency anaemia in pregnancy is considered responsible for 20% of maternal deaths at delivery. 115,000 deaths per year from maternal causes, resulting in 3-4 milion DALYs, have been attributed to this risk factor. Maternal death rates per hundred thousand live births (Figure 2.3) vary hugely across regions, with rates in Sub-Saharan Africa a hundred times higher than in developed regions. Rates in Eastern Asia are a sixth of those in Southern Asia. Over time (from 1990 to 2005) rates have hardly changed in Africa, but have fallen in most regions, although not sufficient to meet MDG targets. The MDG5 target is to reduce maternal mortality by three-quarters.

#### 2.1. Malnutrition in all its forms

#### 2.1.1. Stunting, underweight, overweight and acute malnutrition in children

Figure 2.1.1 1. presents the prevalence and number affected in 2005 by geographical regions. On average the prevalence of underweight is similar in Africa and Asia, while low in Latin American and the Caribbean. While the prevalence of stunting is higher in Africa than in Asia, in absolute numbers most children affected by stunting live in Asia.



Figure 2.1.1.1. Underweight and stunting prevalence estimates based on the WHO standards for the year 2010 by UN regions

In Africa the prevalence of underweight has not fallen significantly from 1990 to 2010, whereas it has almost halved in Asia and decreased by over a half in Latin America and the Caribbean (Table 2.1.1.1 and Figure 2.1.1.2). In 1990 the rates in Asia were more than 12% higher compared to Africa, whereas in 2010 the rates are estimated to be comparable at around 19%. Africa as well as Latin America and the Caribbean show not much variation across sub-

regions in the rates of decline. This is different for Asia and its sub-regions. In 1990, Western and Eastern Asia had significantly lower rates of underweight than South-eastern and particularly South-central Asia, and over time the differences between sub-regions have further increased. In 1990 there was a three-to fourfold variation between sub-regions, whereas in 2010 the variation is nearer to ten fold. In 2010, rates in Eastern Asia are similar to rates in Latin America and the Caribbean, whereas in 1990 they were twice as high. These rapid changes and sub-regional differences point to important variations in the distribution of the determinants of underweight. It is unlikely that variations of this size over time can be attributed to changes in the genetic make-up of the populations.

The trends and regional patterns for stunting are similar to those seen for underweight, except that the difference between the overall geographical regions in 1990 was smaller (Table 2.1.1.2 and Figure 2.1.1.3). In 1990, the highest stunting rates were in South-central Asia, and the lowest in the Caribbean sub-region. In Africa rates of stunting have changed little between 1990 and 2010. In Asia and Latin America and the Caribbean, in turn, rates have almost halved, with sub-regional variations; across the Asian sub regions the variation was two fold in 1990, and estimated to be threefold in 2010. In the sub regions of Eastern Asia and the Caribbean stunting rates have fallen by about one-third, while in Western Asia rates have not changed much.

The trends of overweight in children under 5 years of age (Table 2.1.1.3 and Figure 2.1.1.4) are different from those of stunting and underweight. I In 1990 rates of overweight were significantly higher in Latin America and the Caribbean compared with overall rates in Africa, Asia and Oceania. From 1990 to 2010 rates in Africa doubled to 8.5, whereas in Latin America and the Caribbean rates stagnated; and in Asia rates increased from 3.2 to 4.9. These overall figures, however, mask considerable sub-regional variation. Within Africa, the rates in the Southern sub region in 1990 were four times those compared to Middle and Western Africa; by 2010 the rates in Southern Africa show no further increase (and were non-significantly lower), whereas in Middle and Northern Africa the prevalence has increased four-fold. Within Asia, the Western sub-region prevalence increased five-fold from 3 to 15% between 1990 and 2010, whereas in the Eastern region the prevalence hardly changed. Within Latin America and the Caribbean, the rates in South America started higher than other sub-regions and fell slightly from 1990 to 2010.

These trends demonstrate that a rise in overweight is not necessarily associated with a fall in underweight nor stunting. In the Eastern region of Asia, rates of underweight and stunting have fallen dramatically while rates of overweight have not increased. In Western Asia rates of overweight have risen sharply, while rates of stunting and underweight have fallen, although not as dramatically as in Eastern Asia. In Africa, rates of underweight and stunting have not fallen, while rates of overweight have doubled. In Latin America and the Caribbean, despite starting in 1990 with relatively low rates of underweight and stunting, these rates have been halved, while at the same time rates of overweight have not changed. Table 2.1.1.1. Trends<sup>1</sup> in the prevalence of underweight by UN regions (below -2 SD weightfor-age) with 95% confidence intervals in children 0-5 years, by UN regions and sub-regions, 1990-2010

UN regions and sub- regions	1990	1995	2000	2005	2010
Africa	21.5	21.1	20.5	19.9	19.3
	19.0-24.0	18.8-23.3	18.4-22.6	17.8-22.0	17.0-21.5
$Eastern^2$	25.6	24.6	23.6	22.7	21.8
	20.8-31.0	20.4-29.3	19.8-27.9	18.9-26.9	17.8-26.3
Middle	24.3	23.3	22.3	21.4	20.5
	17.9-32.0	17.6-30.1	17.1-28.6	16.4-27.3	15.6-26.4
Northern	10.8	10.0	9.2	8.5	7.8
	6.5-17.5	5.7-16.9	5.0-16.4	4.3-16.0	3.7-15.8
Southern	11.7	12.1	12.5	13.0	13.5
	7.7-17.3	8.6-16.7	9.5-16.4	10.1-16.6	10.3-17.5
Western	25.1	24.4	23.6	22.8	22.1
	21.1-29.7	21.0-28.1	20.4-27.1	19.5-26.5	18.3-26.4
Asia	33.8	30.0	26.4	23.0	19.5
	29.8-37.7	25.8-34.2	22.0-30.7	18.6-27.4	15.3-23.7
Eastern	16.2	11.5	8.1	5.6	3.8
	15.5-17.0	11.0-12.1	7.6-8.5	5.3-5.9	3.6-4.1
South-central	49.9	44.6	39.4	34.4	29.7
	41.7-58.2	36.4-53.1	31.3-48.0	26.6-43.1	22.4-38.3
South-eastern	30.6	26.6	22.9	19.6	16.6
	26.1-35.5	22.7-30.8	19.5-26.6	16.5-23.0	13.8-19.8
Western	12.8	10.7	9.0	7.5	6.3
	9.6-16.8	7.2-15.7	5.1-15.3	3.6-15.1	2.5-15.0
Latin America & the Caribbean	7.5	6.2	5.0	4.1	3.3
	5.4-9.7	4.4-8.0	3.5-6.6	2.7-5.4	2.2-4.5
Caribbean	8.4	6.8	5.5	4.5	3.6
	4.9-13.9	3.9-11.8	3.0-10.0	2.3-8.5	1.8-7.2
Central America	10.6	8.5	6.8	5.4	4.3
	6.5-16.9	5.2-13.8	4.0-11.5	3.0-9.7	2.2-8.2
South America	6.1	5.1	4.2	3.5	2.8
	4.0-9.3	3.3-7.7	2.7-6.4	2.2-5.3	1.8-4.5
All developing	28.7	25.7	22.8	20.3	17.9
countries <sup>3</sup>	25.9-31.5	22.8-28.6	19.9-25.7	17.4-23.2	15.2-20.7

Source: Growth Assessment and Surveillance Unit, Department of Nutrition, WHO

Notes: 1) Prevalence rates (%) and 95% confidence intervals; 2) Excluding Japan; 3) Includes Oceania without Australia and New Zealand

UN regions and sub- regions	1990	1995	2000	2005	2010
Africa	40.3	39.8	39.3	38.8	38.2
	37.7-42.8	37.5-42.1	37.1-41.6	36.4-41.1	35.5-40.8
Eastern	48.1	47.4	46.7	46.0	45.3
	43.0-53.1	42.9-51.9	42.5-50.9	41.7-50.3	40.7-50.0
Middle	45.3	43.8	42.3	40.8	39.4
	37.7-53.2	37.3-50.7	36.8-48.1	36.3-45.6	35.7-43.2
Northern	29.4	27.4	25.5	23.7	21.9
	23.2-36.5	21.5-34.2	19.4-32.7	17.2-31.7	14.9-31.1
Southern	35.4	34.7	34.1	33.5	32.9
	29.5-41.7	29.1-40.8	28.7-40.0	28.1-39.4	27.3-38.9
Western	38.1	38.1	38.1	38.1	38.2
	34.4-42.0	34.8-41.6	34.7-41.7	34.1-42.3	33.2-43.3
Asia	48.6	43.1	37.7	32.6	27.6
	46.1-51.0	40.4-45.8	34.8-40.5	29.5-35.7	24.4-30.7
Eastern <sup>2</sup>	35.9	28.2	21.7	16.3	12.0
	34.7-37.1	27.1-29.4	20.6-22.8	15.4-17.2	11.3-12.8
South-central	60.7	54.6	48.4	42.3	36.4
	56.1-65.0	49.7-59.4	43.3-53.6	36.9-47.8	31.0-42.2
South-eastern	47.0	41.5	36.2	31.3	26.7
	38.4-55.7	34.3-49.1	30.1-42.9	25.8-37.4	21.4-32.8
Western	28.2	25.9	23.7	21.6	19.7
	22.5-34.6	19.4-33.7	16.2-33.2	13.4-33.0	11.0-32.9
Latin America & the Caribbean	23.7	20.9	18.1	15.7	13.5
	18.6-28.9	15.9-25.9	13.1-23.1	10.7-20.7	8.5-18.5
Caribbean	15.0	12.0	9.6	7.5	5.9
	8.4-25.5	6.3-21.9	4.6-18.7	3.4-15.8	2.5-13.4
Central America	32.5	28.6	25.1	21.8	18.9
	22.1-45.0	19.1-40.6	16.2-36.6	13.7-32.9	11.4-29.6
South America	20.9	18.3	16.0	13.9	12.0
	15.3-27.9	12.9-25.3	10.6-23.3	8.5-21.8	6.7-20.5
All developing countries <sup>3</sup>	44.4	40.1	36.1	32.5	29.2
	42.5-46.3	38.2-42.1	34.0-38.1	30.4-34.6	27.0-31.4

Table 2.1.1.2. Trends<sup>1</sup> in the prevalence of stunting (below -2 SD height-for-age) with 95% confidence intervals in children 0-5 years, by UN regions and sub-regions, 1990-2010

Source: Growth Assessment and Surveillance Unit, Department of Nutrition, WHO, 2010. Source: Growth Assessment and Surveillance Unit, Department of Nutrition, WHO Notes: 1) Prevalence rates (%) and 95% confidence intervals; 2) Excluding Japan; 3) Includes Oceania without Australia and New Zealand

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Figure 2.1.1.3. Trends in stunting by UN Regions



UN regions and	% Overweight					
subregions	1990	1995	2000	2005	2010	
Africa	4.0	4.7	5.7	6.9	8.5	
	3.1-4.9	3.8-5.6	4.8-6.6	6.0-7.8	7.4-9.5	
Eastern	3.9	4.4	5.1	5.8	6.7	
	2.6-5.6	3.3-5.9	4.0-6.4	4.7-7.2	5.2-8.5	
Middle	2.5	3.4	4.7	6.4	8.7	
	1.4-4.4	2.3-5.2	3.6-6.2	5.1-8.0	6.5-11.5	
Northern	6.1	8.0	10.3	13.3	17.0	
	3.4-10.8	4.8-13.0	6.7-15.6	9.3-18.7	12.8-22.2	
Southern	10.2	9.5	8.8	8.2	7.6	
	6.8-15.0	6.6-13.5	6.3-12.2	6.0-11.1	5.6-10.3	
Western	2.2	2.9	3.8	4.9	6.4	
	1.5-3.2	2.2-3.9	3.0-4.7	4.1-6.0	5.2-7.9	
Asia	3.2	3.4	3.7	4.2	4.9	
	1.6-4.7	2.0-4.8	2.4-5.1	2.8-5.6	3.2-6.6	
Eastern <sup>2</sup>	4.8	4.9	5.0	5.1	5.2	
	2.4-9.3	2.5-9.6	2.5-9.9	2.5-10.3	2.5-10.6	
South-central	2.3	2.6	2.9	3.2	3.5	
	0.8-6.5	1.1-5.8	1.5-5.4	1.7-5.7	1.7-7.0	
South-eastern	2.1	2.6	3.1	3.8	4.6	
	1.7-2.5	2.1-3.1	2.5-3.9	2.8-5.0	3.2-6.5	
Western	3.0	4.5	6.8	10.1	14.7	
	1.7-5.0	3.1-6.5	5.1-8.9	7.4-13.6	9.8-21.6	
Latin America &	6.8	6.8	6.8	6.9	6.9	
the Caribbean	5.6-8.1	5.7-7.9	5.8-7.9	5.8-7.9	5.9-8.0	
Caribbean	4.6	5.1	5.6	6.2	6.9	
	3.1-6.9	3.6-7.1	4.1-7.6	4.5-8.5	4.7-9.9	
Central America	4.8	5.3	5.9	6.5	7.2	
Gentral Finitefica	3.5-6.4	4.2-6.7	4.8-7.1	5.3-7.9	5.6-9.2	
South America	<b>8.0</b>	7.7	7.4	7.1	<b>6.8</b>	
Oceania <sup>3</sup>	0.3-10.1	2 1	3.9-9.1	2.2	2 5	
Occama	2.9	<b>3.1</b>	3.2	<b>3.3</b>	2440	
Developing	2.4-3.0 <b>3 7</b>	2.3-3.7 <b>4</b> 0	2.3-4.0 4 5	<u> </u>	61	
countries 4	264.9	2050	2654	12.61	5.0.7.2	
Develope 1	2.0-4.8 7 0	3.0-3.0	3.0-3.4 <b>9.7</b>	4.2-0.1	5.0-7.2 11 7	
Developed	1.9	0.0	7.1	10.0	11.7	
countries	6.0-10.4	6.6-11.5	7.3-12.7	8.1-13.9	8.9-15.3	
Global	4.2	<b>4.0</b> 3.6-5.5	<b>5.1</b> 4.2-5.9	<b>5.8</b> 4.9-6.6	<b>6.</b> 7 5.6-7.7	

Table 2.1.1.3. Trends<sup>1</sup> in the prevalence of overweight (above +2 SD weight-for-height) with 95% confidence intervals in children 0-5 years, by UN regions and sub- regions, 1990-2010

Source: Growth Assessment and Surveillance Unit, Department of Nutrition, WHO Notes: 1) Prevalence rates (%) and 95% confidence intervals; 2) Excluding Japan; 3) Excluding Australia and New Zealand; 4) Includes Oceania without Australia and New Zealand



Figure 2.1.1.4. Trends in overweight in 0-5 year old children by UN Region

#### Acute malnutrition

The May newsletter of the complex emergency database (CE DAT SCENE, May 2010) indicated that out of 99 settings in Africa and Asia for which data from both 2008 and 2009 were available, 48 (48%) showed an increase in global acute malnutrition (GAM measured using wasting and oedema) and 41 showed a decrease. Crude mortality increased from 2008 to 2009 in 21 countries (44% of those with data in both years), 19 (40%) had lower rates and 8 (17%) remained unchanged.

#### Low birthweight

Figure 2.1.1.4 shows that proportion of low birthweight babies has fallen by over 10% in South Asia from 1980 to 2000, but still remains considerably higher there than in any other region.



Figure 2.1.1.5. Prevalence of low birthweight by region

#### 2.1.2. Overweight in adults

Table 2.1.2.1 presents the most recent prevalence data for overweight and obesity by UN region and sub-regions. The prevalence of overweight varies considerably both within sub regions and between gender groups, and between UN regions. The highest prevalence of overweight was reported for females in Central America (67%) and Micronesia (62%), and for males in Northern America (71%) and Australia and New Zealand (67%). African women have a higher prevalence of overweight than males (nearly two fold higher in Southern Africa), whereas in Northern and South America and Europe, males tend to have a higher prevalence than females. Generally female levels of overweight are higher than males in each sub-region except for Northern America and Europe. The lowest prevalence of overweight was in Eastern African males (10%).

			Prevalence		
		Female	Female	Male	Male
UN_region	UN_subregion	obesity*	overweight*	obesity*	overweight*
Africa					
	Eastern Africa	4.17	15.91	1.80	10.23
	Middle Africa	5.22	19.05	3.11	14.87
	Northern Africa	24.02	50.56	12.31	42.46
	Southern Africa	28.73	57.18	8.41	29.61
	Western Africa	6.36	22.21	3.96	19.40
Americas					
	Caribbean	13.55	41.65	8.99	36.52
	Central America	30.79	66.80	20.87	61.08
	Northern America	33.72	61.46	31.43	71.37
	South America	18.96	48.62	12.56	46.32
Asia					
	Central Asia	11.01	33.62	4.60	30.45
	Eastern Asia	4.09	21.90	2.53	20.77
	South-Eastern Asia	5.52	22.83	2.24	14.74
	Southern Asia	4.41	16.78	1.93	12.75
	Western Asia	27.00	50.99	18.24	56.24
Europe					
	Eastern Europe	17.60	42.93	12.66	45.40
	Northern Europe	21.00	50.77	21.20	61.33
	Southern Europe	13.56	41.74	15.28	57.04
	Western Europe	20.06	47.70	17.30	59.81
Oceania					
	Australia and New Zealand	24.33	54.98	25.45	67.33
	Melanesia	6.73	22.38	4.28	21.24
	Micronesia	39.45	62.43	27.34	55.93
	Polynesia	39.52	60.54	30.21	54.26
* overweight	defined as BMI ≥25; obesity B	MI ≥30			

Table 2.1.2.1. Prevalence of overweight\* and obesity\* in adults by UN regions and sub-regions, (WHO, 2010)

### 2.1.3. Vitamin and mineral nutrition

Figures 2.1.3.1 to 2.1.3.3 show maps of the prevalence of anaemia for preschool age children, pregnant women, and non-pregnant women. These show that the prevalence of severe anaemia ( $\geq$ 40%) is common in Africa, South Asia and parts of Latin America (WHO/CDC, 2008).

Figure 2.1.3.1. Prevalence of anaemia in preschool aged children (WHO/CDC, 2008).



Prevalence of Anaemia in Preschool-age children 1993-2005

Figure 2.1.3.2. Prevalence of anaemia in pregnant women (WHO/CDC, 2008)



Prevalence of Anaemia in Pregnant Women 1993-2005

Figure 2.1.3.3. Prevalence of anaemia in non-pregnant women. (WHO/CDC, 2008).



Prevalence of Anaemia in Non-Pregnant Women 1993-2005

Figures 2.1.3.4 present trends in anaemia in non-pregnant women during the period 1993-2005. These show that rates have not varied significantly in Africa since 1990 and have remained similar in South-central Asia. Rates have declined in East Asia and Central America. Globally, anaemia affects 1.62 billion people (95% CI: 1.50–1.74 billion), which corresponds to 24.8% of the population (95% CI: 22.9–26.7%). The highest prevalence is in preschool-age children (47.4%, 95% CI: 45.7–49.1), and the lowest prevalence is in men (12.7%, 95% CI: 8.6–16.9%). However, the population group with the greatest number of individuals affected is non-pregnant women (468.4 million, 95% CsI: 446.2–490.6). WHO regional estimates generated for preschool-age children and pregnant and non-pregnant women indicate that the highest proportion of individuals affected are in Africa (47.5–67.6%), while the greatest number affected are in South-East Asia where 315 million (95% CI: 291–340) individuals in these three population groups are affected.

The estimated prevalence of vitamin A deficiency based on serum retinol levels (<0.70  $\mu$ mol/l) is shown for preschool aged children and pregnant women in figures 2.3.3.5 and 2.3.3.6 respectively. The WHO estimates reflect the time period between 1995 and 2005, and indicate that 45 and 122 countries have vitamin A deficiency of public health significance based on the prevalence of night blindness and biochemical vitamin A deficiency (serum retinol concentration <0.70  $\mu$ mol/l), respectively, in preschool-age children. WHO regional estimates indicate that the highest proportion of preschool-age children affected by night blindness, 2.0%, is in Africa, a value that is four times higher than estimated in South-East Asia (0.5%). This also means that Africa has the greatest number of preschool-age children affected with night blindness (2.55 million), and corresponds to almost half of the children affected globally.

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A comparable and high proportion of pregnant women affected by night blindness are in Africa (9.8%) and South-East Asia (9.9%), each of which is estimated to have over 3 million pregnant women affected, or one third of the pregnant women affected globally. The estimates show that the Africa and South-East Asia regions also contain the highest proportions of preschool age children with biochemical VAD, as indicated by a serum retinol concentration <0.70  $\mu$ mol/l, with South-East Asia having the greatest number of children and pregnant women affected.

Figures 2.1.3.7 show that for most regions, apart from parts of Africa, rates of vitamin A deficiency have declined since 1990, although there is still regional variation.

Risk of iodine deficiency based on urinary iodine concentrations (Figure 2.1.3.8) shows a rather more uneven distribution of risk than seen for anaemia and vitamin A deficiency, with higher risk in Europe than in many parts of the rest of the world.

Risk of iodine deficiency based on urinary iodine concentrations (Figure 2.1.3.8) shows a rather more uneven distribution of risk than seen for anaemia and vitamin A deficiency, with higher risk in Europe than in many parts of the rest of the world.



Figure 2.1.3.4. Trends in anaemia in non-pregnant women (WHO, 2009)

#### Figure 2.1.3.5. Serum retinol in preschool aged children (WHO, 2009)



Prevalence of Serum Retinol <0.70µmol/L in Preschool age children

Prevalence of Serum Retinol <0.70µmol/L in Pregnant Women







Figure 2.1.3.8. Countries by level of iodine deficiency. WHO Vitamin and Mineral Nutrition Information System, Geneva.



Degree of public health significance of iodine nutrition based on median urinary iodine: 1993-2006

#### 2.2. Infant and young child feeding

Data provided in this section are based on responses received from the countries through the nutrition policy review questionnaire survey, except the analysis of the trends data on the rates of exclusive breastfeeding under 6 months in Figure 2.2..1 which is derived from national data contained in the WHO Global Data bank on Breastfeeding which was recently renamed as the WHO Global Data bank on IYCF.

The data on the trend of the exclusive breastfeeding for 2000-2008 in Figure 2.2.1 were published for the first time in the World Health Statistics 2009 and 2010.

The three recommended breastfeeding practices include early initiation of breastfeeding, exclusive breastfeeding up to 6 month of age and continued breast feeding at one year. Among these three recommended breastfeeding practices, continued breastfeeding at one year is most commonly reported at high rates in all regions except the European Region, followed by early initiation of breastfeeding. The least frequent practice is exclusive breastfeeding up to 6 month of age.

These available data presented in Figure 2.2..1 shows that only about one-third of children under 6 month of age are exclusively breastfed. Although there seems to be a gradual increase in the rates of exclusive breastfeeding in all Regions since early 1990s to early 2000s, the rate of increase is much slower than it should be. During the period 2000-2008 in particular, the rates

of exclusive breastfeeding seem to have declined in all Regions, except in Africa. The African Region is the only region showing continued and steady increase in the rates of exclusive breastfeeding over the whole time period., where the rates have more than tripled from 1986-1990 to 2000-2008. The South East Asia Region has the highest rates of exclusive breastfeeding among all regions although even they do not reach 50% during the whole time period, whereas the European Region is the region with the lowest rates.



Figure 2.2.1 Trends in rates of exclusive breastfeeding under 6 months by region

Regarding early initiation of breastfeeding, it was found that about 40% of countries reported more than 60% of infants initiating breastfeeding within 1 hour of birth. More countries in the Eastern Mediterranean Region and European Region reported high rates of early initiation of breastfeeding. At the other end of the scale, low rates of early initiation were common among countries in South East Asia Region (Figure 2.2.2). More than 60% of countries reported that 40% or less of infants under 6 months were exclusively breastfed, including all countries in the Eastern Mediterranean Region. Data on exclusive breastfeeding was reported by 12 countries in the Western Pacific Region, with 75% of them (9 countries) reporting low rates and only 8% (1 country) reporting high rates. Very few countries (3 in AFR, 1 in AMR and 1 WPR) reported high rates of exclusive breastfeeding for the first six months (Figure 2.2.3). Concerning continued breastfeeding, more than half of the countries reported high rates of children being breastfed at 1 year of age. High rates of continued breastfeeding was most frequently reported in the countries in African Region, and the least in countries in the European Region (Figure 2.2..4). The African Region is also the only region showing increasing rates during the period 2000 - 2008 when the rates of exclusive breastfeeding seem to be decreasing in all other regions (Figure 2.2.1). Yet today still many of the countries in Africa are experiencing rising wasting and no significant improvements in stunting.

Regarding complementary feeding, more than 60% of countries stated a high percentage of children 6-8 or 6-9 months old receiving complementary foods. But comparing this information with that of exclusive breastfeeding, it seems that either complementary feeding is initiated much earlier or infants are receiving a breast-milk substitute (Figure 2.2.5).



Figure 2.2.2. Early initiation of breastfeeding by region (within one hour of birth)

Figure 2. 2.3. Exclusive breastfeeding under 6 months by region



Figure 2.2.4. Continued breastfeeding rates at one year by region





Figure 2.2.5. Introduction of complementary foods by region



#### 2.3. Dietary energy consumption

Few countries have national food consumption data with which to estimate the adequacy of the consumption of all essential nutrients as well as dietary energy and continuous and representative monitoring of the global, regional and national food consumption is still done relatively infrequently. The Food and Agriculture Organization of the United Nations (FAO) estimates that globally about one billion people, or around 17% of the worlds population, are "hungry" or undernourished.

Table 2.3.1 and Figure 2.3.1 provide a measure of changes in total food availability as judged by per capita dietary energy consumption derived from FAO food balance sheet data. until 2005. Despite their acknowledged limitations, these food balance sheet data provide the only globally and consistently collected data on food intakes estimated by food availabilities in countries, and thus represent a valuable resource.

Dietary Energy Consumption (kcal/person/day)						
Country groups	1990-92	1995-97	2003-05			
WORLD	2640	2700	2770			
Developed countries	3220	3230	3380			
Developing World	2470	2550	2620			
Asia and the Pacific <sup>1</sup> /	2460	2560	2630			
East Asia	2680	2830	2980			
Southeast Asia	2250	2410	2490			
South Asia	2280	2330	2340			
Central Asia	2810	2750	2660			
Western Asia	2050	2180	2470			
Latin America and the Caribbean	2690	2750	2900			
North and Central America	2880	2890	3050			
The Caribbean	2310	2240	2560			
South America	2650	2740	2870			
Near East and North Africa	3000	2980	2990			
Near East	2930	2860	2860			
North Africa	3110	3180	3230			
Sub-Saharan Africa	2050	2080	2170			
Central Africa	2050	1820	1750			
East Africa	1850	1870	2010			
Southern Africa	1910	1930	2040			
West Africa	2300	2430	2510			

Table 2.3.1. Global and regional per capita food consumption based on the food availability data of FAO Food Balance Sheet (kcal per capita per day)

<sup>1</sup>/ incl. Oceania

The global and regional per capita food consumption estimated from the food availability data of FAO Food Balance Sheet (Figure 2.3.1) show that overall per capita energy consumption has risen from 1990 to 2003-5 in all regions of the world except Near East and North Africa, where there was a small decline, albeit from a higher level than all other developing country regions.

Overall the proportion of the world's population that is undernourished has fallen from 16 to 13% from 1990 to 2003 (Figure 2.3.2), despite the absolute number of undernourished having risen (FAO, 2009). The proportion of undernourished has declined since 1990 in many regions except Southern Asia, Eastern and Western Africa. Despite having declined slightly, proportions remain high in Africa (Figure 2.3.2).



Figure 2.3.1. Trends in per capita energy supply by region (from FAO)

Figure 2.3.2. Trends in proportion undernourished by region (from FAO)


# 3. The evolving nature of nutrition challenges

# 3.1 What are the key challenges and how to conceptualise them?

The key challenges may be summarised as covering three broad dimensions:

- 1. dimension one covers the basic and underlying causes of nutritional status affected by food, health and care operating at individual, community and global levels;
- 2. dimension two covers the social determinants of vulnerability; and,
- 3. dimension three covers the need for addressing the lifecourse.

# 3.1.1 Immediate, underlying and basic (upstream) causes

The UNICEF conceptual framework is the most widely used to capture the factors affecting nutritional status which broadly covers dimensions one and two mentioned above. Although its focus is a child nutrition, the UNICEF model can also be applied to any stage of the lifecourse.

The UNICEF model describes immediate, underlying, and basic causes of malnutrition (Figure 3.1.1). The immediate cause is an imbalance between dietary intake of energy and nutrients and the demands placed on this supply by ill-health (and in children growth) or combating infections. The immediate causes operate at the individual level. The underlying causes relate to factors that lead to an imbalance in supply and demand, such as household food insecurity, inadequate care for women and children, and unhealthy environments including poor sanitation and hygiene and lack of services to address health needs. The underlying causes operate at the household or community level. The basic causes are further upstream and include poverty, inequity, civil unrest, and global structures and natural resources. The basic causes operate more at the national and international/global level. The strength of this model is that it shows that unless the international and national structures and systems are in place to support families and households, it will be more difficult that individuals will be able to achieve good nutrition and health.

While the individuals, families and communities are the ones who make choices, in particular those related to child care and health and nutrition well-being of their children and individuals, they are influenced by a mix of factors operating at different levels. These include being influenced by advertising and peer pressure, to more psychological factors such as self-efficacy and control as well as by more upstream factors such as the wider environment in which they live . In other words, the interventions aimed at increasing individual's knowledge and behaviour may not be effective if the upstream causes are not addressed at the same time. Even if families know what they should do and are motivated to do so, they may not be able to because of a lack of access to resources to buy or grow food, or because of limited access to clean water and healthcare. While addressing the factors affecting behaviour at the individual and family level can make a difference (treating the problem); unless the upstream factors are also addressed the problems will keep arising (preventing the problem from being eradicated).



Figure 3.1.1.1 UNICEF conceptual framework for causes of malnutrition

# 3.1.2 Social determinants of vulnerability

A second dimension of conceptualising nutrition challenges relates to the impact of structural versus intermediate determinants on health inequities observed in countries. The WHO Commission on Social Determinants of Health report highlighted the fact that within the factors affecting the basic and underlying factors described above, the effects are not evenly spread across all members within or between communities. The model developed to explore the social determinants is presented in Figure 3.1.2.1. The model shows that the global structure interact with the social and political context to:

- affect human rights, labour markets, and the education system,
- which in turn leads to social stratification by income, education, gender, ethnicity,
- which leads to differential exposure to living and working conditions, food availability, barriers to adopting health related behaviour,
- which has an impact on health.

At the same time the health system that is in place affects both the equitable access to, and delivery of services, meant to address the health problems. This inequity feeds back and perpetuates the social stratification and the inequity increases. The model also highlights the need for better quality information about the determinants and consequences of the inequity to enable a more effective assessment of the impact of interventions aimed at reducing the inequities and their consequences on health.

The overarching recommendations of the Commission are:

# **Improve Daily Living Conditions**

Improve the well-being of girls and women and the circumstances in which their children are born, put major emphasis on early child development and education for girls and boys, improve living and working conditions and create social protection policies supportive of all, and create conditions for a flourishing older life. Policies to achieve these goals will involve civil society, governments, and global institutions.

## Tackle the Inequitable Distribution of Power, Money, and Resources

In order to address health inequities, and inequitable conditions of daily living, it is necessary to address inequities –such as those between men and women – in the way society is organized. This requires a strong public sector that is committed, capable, and adequately financed. To achieve that requires more than strengthened governments – it requires strengthened governance: legitimacy, space, and support for civil society, an private sector that is accountable, and for people across society to agree with to basic public interests and reinvest in the value of collective action. In a globalized world, the need for governance dedicated to equity applies equally from the community level to global institutions.

### Measure and Understand the Problem and Assess the Impact of Action

Acknowledging that there is a problem, and ensuring that health inequity is measured – within countries and globally – is a vital platform for action. National governments and international organizations, supported by WHO, should set up national and global health equity surveillance systems for routine monitoring of health inequity and the social determinants of health and should evaluate the health equity impact of policy and action. Creating the organizational space and capacity to act effectively on health inequity requires investment in training of policy-makers and health practitioners and public understanding of social determinants of health. It also requires a stronger focus on social determinants in public health reseach.

Figure 3.1.2.1. Conceptual model of the Social Determinants of Health. From the Commission on Social Determinants of Health (Solar and Irwin 2010)



### 3.1.3. Lifecourse

A third dimension of conceptualising of nutrition challenges is the lifecourse perspective. The lifecourse model (Figure 3.1.3.1) shows the consequences of malnutrition at each stage of the life cycle and highlights the influence of malnutrition at an early stage of life on malnutrition at later stages of life. This shows that the biological consequences of malnutrition that are operating at one stage of an individual's life are carried forward with them and affect how they respond to causes operating at later stages of life. The response of an individual to the environment in which they live is affected by their past experience. The lifecourse perspective highlights the link between early life events and chronic diseases. Current environment alone will never describe all the variation in health, the variation in response to the same environment between two individuals will be a function of their past experience (this may have social as well as biological dimensions). The lifecourse approach raises questions as to when is the most effective age or stage of life to intervene. Ideally, of course, at all stages of life, but there are certain periods of rapid development called "window of opportunity" or most recently referred as "1000 days" by the high-level meeting in New York in September 2010, for interventions when greater attention is required and likely to have greater long term effectsthis is particularly for that period from before pregnancy, through to 24 months after birth.

The period of growth in early life, from fertilized ovum until the end of puberty, represents far more than just an accumulation of size. It involves a complex shaping of the body's key tissues, and of the processes by which these tissues function, and relate to each other and to the external world. It includes 'critical periods' for development, or windows of opportunity that open and close in an orchestrated sequence. If the environment does not support optimal development at the right time, and before the tissue matures, the opportunity is lost. Fetal life and infancy are phases of particularly rapid growth and development. They include critical periods for the development of several cell types and tissues that are important for 'human capital', such as skeletal muscle cells and brain neurones, as well as for metabolic homeostasis and therefore health, such as hepatocytes, pancreatic beta cells and renal nephrons. Evidence from epidemiological studies in humans, and from animal models, suggests that nutritional disturbances during fetal and early post-natal development can permanently alter not only the structural development of these tissues, but also their metabolic and endocrine 'set points'. These long-term effects of the early-life environment have been termed 'programming'. The result can be impaired function, and lower functional reserve, leading to a greater vulnerability to the stressors and toxins in later life that cause disability and disease. Compensatory growth, occurring in later childhood or adolescence after deprivation in fetal life or infancy, appears to be one such stressor. For example, excessive adipose tissue deposition on a background of low birth weight or low infant weight (a common scenario in many developing countries experiencing economic transition) further increases the risk of later type 2 diabetes and cardiovascular disease.

For the fetus, the 'environment' is the mother. The energy and nutrients required for fetal development are derived entirely from her. Immediately after fertilization, they come from within the ovum and from the maternal reproductive tract. During the pre-implantation phase and the process of organogenesis (the whole of the first trimester) development is particularly sensitive to disruption by maternal infections and nutritional deficiencies. Later, nutrients are delivered via the mother's bloodstream, vasculature and the placenta. Maternal stress, strenuous work, infections, undernutrition, and toxins such as alcohol and tobacco affect this supply line, and thus fetal exposure to nutrients and hormones. Post-natally, the mother remains the key determinant of the infant's environment, from its nutrition, and infection exposure, to the stimulation and emotional input it requires for psychosocial development. Risk factors in the mother that have been clearly linked to sub-optimal fetal and infant

development include poverty, undernutrition, infection, lack of emotional support, addiction to tobacco, alcohol or drugs, and living in polluted environments or in unstable or violent situations. Adolescent pregnancy, when the mother is still growing, and where nutrients are divided between the mother's own needs and those of her child, is another high-risk situation for the fetus as well as for the mother herself. 'Excess' or unbalanced maternal nutrition, as well as deprivation, may present problems. The simplest example is the excess glucose transmitted to the fetus of a mother with gestational diabetes. This hyper-stimulates the fetal pancreas and causes permanent overgrowth of fetal adipose tissue, insulin resistance and an increased risk of diabetes in later life.

In addition to these 'current' maternal factors, the environment experienced by the fetus and infant is influenced by maternal factors operating well before pregnancy. The mother's height reflects her own nutritional history from fetal life through childhood, and is a strong predictor of her babies' size at birth. The mother's metabolism and how she processes nutrients, are 'programmed' by her own early nutrition; for example, a woman who had a lower birth weight, is more likely to develop gestational diabetes. The mother's dietary choices during pregnancy, and the choices she makes in feeding and nurturing her infant (including the importance she puts on the safety of foodstuff to avoid severe infections with food-borne diseases), is influenced by numerous complex factors dating back to the nurturing behaviour of her own mother, and other family dynamics, when she was a child. Thus, ill health and malnutrition among girls and women cast a shadow on the capacity and health of future generations.





# 3.2 Factors affecting food and nutrition insecurity: climate change and the food price crisis

Food insecurity is a critical underlying cause of malnutrition. Food security implies physical, social and economic access to sufficient safe and nutritious foods at all times. The four pillars of food security are: availability; access; utilization, and stability. Factors that affect these four pillars depend on where and how people live, whether they are rural small farm-holders, rural landless or urban dwellers, whether they grow their own food or are dependent on purchasing/accessing food produced by others. In this report the focus is on two recent areas of concern: climate change and food prices.

In 2010, the number of undernourished people have declined from the peak recorded in 2009 of 1.02 billion people, but it remains unacceptably high at 925 million (FAO 2009, 2010). Most of world's hungry are living in rural areas in small holdings. These small holdings are vulnerable to the effects of global climate change as well as industrial agricultural practices. Climate change affects the food system, which in turn affects food security and health. A recent report from Africa (FAO 2010) has highlighted the impact that climate change has already had, and will increasingly continue to have, on food and nutrition security. Fifty per cent of North African food requirements currently come from imports; for Sub-Saharan Africa imports account for between 25-50%. In developing countries food import bills as a share of GDP more than doubled between 1974 and 2004, and the amount of trade made up of processed agricultural products rose much faster than primary agricultural products. Africa's cereal import bill has risen by around 30% since 2007. Given the importance of agriculture in Africa and Asia, both in terms of food production and employment (two thirds of the Sub-Saharan population depend on agriculture for their livelihood), the impact of climate change will profoundly affect food and nutrition security in Africa, and also large parts of Asia.

The production of crops for biofuels is replacing production for human consumption and contributing to food price increases. Increases in energy prices have driven up food prices as have weather-induced crop shortfalls against their rising demand in many emerging economies.

Household expenditure on food as a proportion of weekly household income varies enormously between countries but is consistently greater among low income households compared to wealthier households. The peak of food prices in mid-2008 have been moderated by downward pressure caused by the global financial and economic crisis. Food prices are relatively high by comparison with longer term trends. While the global financial crisis eased inflationary pressures in low income countries it, however, hit these economies severely as export growth, remittances, and Foreign Direct Investment (FDI) inflows shrank. The poorest, in particular, small scale food producers (very often women) and waged agricultural workers, and the urban poor are most vulnerable to fluctuations in costs of food as well as inputs and transport. These economic pressures are leading to compromises in the quality (and quantity) of diets, sale of assets, and forgoing healthcare and education.

Despite being crucial to food production and thus food security in households and communities, women are still often excluded from key decision making processes and influence.

The food price crisis and the breakdown of the world financial system in 2009 have highlighted that the structure and functioning of food markets was too fragile to withstand these successive shocks (Comprehensive Framework for Action (CFA), June 2010). The CFA May 2010 meeting in Dublin highlighted that this fragility reflected a history of inappropriate policies on effective land use and food production and chronic under investment in agriculture, rural development and infrastructure. They also highlighted that too little attention has been paid to the effective operation of markets for food and trading systems, as well the provision of safety nets and social protection.

The report from the May 2010 meeting of CFA highlighted key outcomes and actions:

- meeting immediate needs of vulnerable populations (emergency food assistance, nutrition interventions such as management of cases with severe acute malnutrition and safety nets enhanced and made more accessible; urgent increases in smallholder farmer food production;
- trade and tax policy adjustments;
- manage macro-economic implications;
- building longer term resilience and contributing to global food and nutrition security (expand social protection systems;
- sustain growth in smallholder food production;
- better managed ecosystems for food and nutrition security;
- developing an international biofuel consensus;
- improve international food markets as well as national and local markets through improved infrastructure (e.g. roads);
- and supporting information systems (strengthened monitoring and analysis systems).

To achieve these outcomes, actions must simultaneously occur at local, national, regional and global levels, taking account of variations at local and national levels and ensure coordination of efforts and long-term commitment by key stakeholders.

# 4. Evolving global and regional macropolicy context on nutrition

# 4.1 Complexity of Global Food and Nutrition Issues

# 4.1.1 Population growth, food production and food processing

The rapid increase in the world population in the last 150 years has coincided with the progressive industrialization of the food chain. Since 1850 the global population has grown from one to six billion people. This rapid growth in population, associated with the industrial revolution, was facilitated by development of food science and technology, including discoveries such the pasteurization of milk and the advent of the tin can. The increased capacity to store food safely without the need for drying or salting, permitted the extension of the food supply chain from the farm to the city, with an increasingly smaller rural population providing food for a rapidly increasing urban population.

The industrialization of the food chain has seen remarkable changes in the way how people eat and what they eat. Since farming and agriculture developed some ten thousand years ago, the number of plant and animal species that man depends on for food has steadily declined. Before agriculture and farming developed, hunter and gatherer populations typically ate several hundred different plant species of various types, in the form of seeds, flowers, fruits and roots, as they moved through the forest in function of the availability of animal and plant species during the different seasons. Today only eighteen plants are used as staple foods globally, and over 80% of the global population relies on just four staple foods, namely wheat, rice, maize and potatoes. These four staples are now transformed into a vast array of different processed food products by the food industry. More than 1500 different food products are produced from wheat alone.

Food technologists have become the modern alchemists. Many chemicals are added in order to make these few staple foods into the vast array of processed foods available in the market and for trading globally. These chemical additives include colourings, preservatives, antioxidants, emulsifiers, stabilizers, anti-caking agents and flavour enhancers. They help to make processed foods look, smell and taste better, as well as to improve their shelf life. There are some 540 of these food additives that are classified to be safe for human consumption by regulatory bodies although there have also been some critics about the safety of a number of these additives. In 2000, the food companies spent \$20 billion on such additives, and the average consumption was 7kg per person a year in the industrialized countries. In addition, there are 4500 different flavouring agents, with an annual market worth \$3.6 billion and 13 different sweetening agents besides sugars, with an estimated market of \$2.5 billion globally. The scale of the food trade today is unprecedented and approaches 1 trillion dollars annually. This compared with just a quarter of a trillion dollars a year just 30 years ago (Millstone and Lang 2008).

# 4.1.2 Producing enough food for 9 billion people in the world

The latest projections indicate that the global population has tripled from around 2 billion in 1950 to just over 6 billion in 2009, and will grow to about 9 billion in 2050 (UN Population Division 2009). The majority of the global population is located in Asia and Africa and this is where all of the projected population growth will occur over the next four decades, with Africa going from 1 billion to 2 billion, and Asia going from 4 billion to 5 billion. Furthermore most of this growth will occur in the urban areas of developing countries. The proportion of the global population living in urban areas surpassed those living in rural areas in 2009, and

projections are that by 2050 the majority of the global population, or just over 5 billion people, will be living in the urban areas of countries that are currently considered as developing, and just less than a third of the global population will live in rural areas.

While the global population has increased six fold since the industrial revolution began in Europe just two hundred years ago, per capita income has increased nine fold (Sachs 2005). However, although the total economic activity in the world rose an astounding forty-nine times in this period, economic growth has been highly uneven. Today there is a twenty fold gap between the richest economy, such as USA, and the poorest region (i.e. Africa), compared to a fourfold difference a century ago.

Between the early 1960s and the late 1990s, despite the population almost doubling per caput supply of calories for human consumption rose by just over 20%. Global food production has outpaced rising demand during the last four decades based on calculations made from FAO food balance sheet data. Whereas average food consumption was calculated at 2360 kcal per person per day in the mid-1960s, it rose to 2800 in the late nineties (FAO 2002). Furthermore it is predicted that the world population will be increasingly well-fed with 3050 kcal available by 2030, with this change reflecting above all the rising consumption in many developing countries whose average will be close to 3000 kcal in 2030, thus closing the gap on the industrialized countries with an average consumption of 3500 kcal.

This remarkable increase in global food production in the last few decades has been made possible mainly due to the "Green Revolution" — adoption of crop rotation, the mass production and use of petroleum-based fertilizers and chemical pesticides, the use of petroleum driven machinery, expanded irrigation, and the introduction of genetically superior, disease-resistant cultivars (cultivated crops). However after nearly tripling the production from 1950 to 1996, global grain production seemed to reach a plateau during the last decade. In the early 1990s, production fell short of consumption most years and world cereal production in 2006 had remained constant at about 2 billion tons - 2.4% less than in 2005. Agricultural land availability has fallen from 8 hectares per inhabitant in 1900 to 2 hectares in 2005.

The Food Price Index (FPI) of FAO has fallen progressively since the 1974 oil crisis to the early years of the new millennium. But in 2007 the FPI jumped 26% followed by another 24% increase in 2008 (FAO 2009). Yet while the FPI has decreased 25% since it peaked in mid 2008, the price of food as measured by the new Global Food Consumption Price Index (GFCPI), which tracks changes in the cost of the global food basket as portrayed by the latest FAO food balance sheet, has dropped less and is still about 50% over 2006 levels. Representative international prices for each of the commodities or commodity groups are weighted by their contribution to total calorie intake in the food basket. This departs from the methodology used to draw the benchmark FAO Food Price Index, where the different food components are weighted by their shares in the value of global food trade. The household level consequences of this increase in food prices are most acutely felt in Low Income Food Deficit Countries (LIFDCs) where a 50% rise in staple food prices causes a 21% increase in total food expenditure, increasing these from 50 to 60% of income. In a high income country this rise in prices causes a 6% rise in retail food expenditure with income expenditure on food rising from 10 to 11% (Trostle 2008).

The surge in food prices since 2002 has wiped out much of the global gains in hunger reduction achieved over the previous two decades. The most recent estimate is that about 1 billion people were undernourished in 2009, and most of these hungry people are in South Asia and sub-Saharan Africa. Furthermore in the period 2007-2009 the proportion of the

global population that is undernourished increased for the first time in four decades (FAO 2009).

# 4.1.3 Food production and environmental survival

Several long-standing environmental trends threaten the agricultural production momentum. Among these trends are the cumulative effects of soil erosion on land productivity, the loss of cropland to desertification, and the accelerating conversion of cropland to non-farm uses. All are taking a toll, although their relative roles vary among countries. Many of these trends are described in detail in the report of the United Nations Environment Programme entitled "Global Environment Outlook - environment for development (GEO-4)" (UNEP 2007).

Climate change will have a major impact on agriculture and food security. Mitigating climate change will be critical to avoiding future breakdowns in food and livelihood systems (FAO 2008). The unimpeded growth of greenhouse gases is raising the earth's temperature. The numerous pathways that climate change may impact food security include: increased frequency of extreme climatic events, sea-level rise and flooding of coastal lands leading to salination and/or contamination of water and agricultural lands; impacts of temperature increase and water scarcity on plants or animal physiology; beneficial effects to crop reduction through CO<sub>2</sub> "fertilization"; influence on plant disease and pest species and livestock diseases including zoonosis leading to crop and animal losses; damage to forestry, livestock, fisheries and aquaculture, and impaired sustainability, socio-economic, political /armed conflict and demographic impacts (Cohen et al 2008). The consequences include melting glaciers, more precipitation, rising sea levels, together with more extreme weather events and shifting seasons. It is estimated that in developing countries in the next two decades, climate change will cause yield declines across regions for the most important crops, and South Asia will be particularly affected.

Several recent UN agency reports conclude that even if very concrete steps are taken now to try to mitigate the effects of climate change, the world will become increasingly food insecure over the next few decades (IFPRI 2009, UNEP 2009). The United Nations Environment Programme (UNEP) Report predicts that up to 25 percent of the world's food production is likely to become lost due to "environmental breakdowns" by 2050. Globally, water scarcity may reduce crop yields by up to 12 percent. Climate change may accelerate invasive pests of insects, diseases and weeds, reducing yields by up to six percent worldwide. Continuing land degradation, particularly in Africa, may reduce yields by up to eight percent, the report finds. Croplands may be swallowed up by urban sprawl, biofuels, cotton and land degradation by up to 20 percent by 2050, and yields may become depressed by up to 25 percent due to pests, water scarcity and land degradation. In Sub-Saharan Africa, population growth is projected to more than double from the current 770 million to over 1.7 billion in less than 40 years, and the continent is also subject to severe climate change, water scarcity, and conflicts.

# 4.1.4 Changing Dietary Patterns and Emergence of Diet and Nutrition-related Noncommunicable Diseases

Industrialization of the food chain has also changed the macronutrient composition of the diet, which is now much more energy dense. Whereas the hunters and gatherers might have to eat 7kg of their predominantly vegetable foods to achieve their daily energy needs, modern man can do so by eating just half a kilo of processed foods. The type of carbohydrate in the diet has changed with industrialization, with decreases in complex carbohydrates, such as starches, and an increase in refined sugar. The consumption of sugars has typically increased in fifty fold in

industrialized countries, with upwards of 15% of energy intake now coming from refined sugar. The majority of these sugars is "hidden" in processed foods and drinks, rather than added to food by the consumer. The fat content of the diet has also increased from 20% to 40% in many industrialized countries.

Food consumption patterns are becoming more similar throughout the world, with shifts towards higher-quality and more expensive foods, such as meat and dairy products, reflecting the progressive urbanization of the population. Information obtained from FAO food balance sheets and presented in the Sixth World Food Survey (FAO 1996) indicate that the share of dietary energy supplies coming from vegetable sources in 1990-92 was 71% in developed countries and 90% in developing countries. Cereals alone provided 60% of dietary energy in developing countries, as compared to just 30% in developed. Meat and fish provided 14% in developing against just 6% in developed countries. FAO further reported in 2002 that meat consumption in developing countries had risen from only 10 kg per person annually in 1964-66 to 26 kg in 1997-99, and was projected to rise to 37 kg per person per year in 2030 (FAO 2002). Milk and dairy products have also seen rapid growth, from 28 kg per person per year in 1964-66, to 45 kg now, and could rise to 66 kg in 2030. Globally, some 660 million tons of cereals are used as livestock feed each year, representing just over a third of total world cereal use.

Changes in the composition of the diet observed in the last 150 years are associated with the increases in diet and nutrition-related noncommunicable diseases (NCDs) that are now the major causes of avoidable mortality globally (WHO 2002). Low consumption of fruit and vegetables is estimated to cause about 31% of ischaemic heart disease, and 11% of strokes worldwide. Furthermore these NCDs are becoming an increasingly worrying concern in Low and Middle Income Countries (LMICs) (Ebrahim and Smeeth 2005).

# 4.2 Changing global nutrition policy and strategy framework

As the complexity of the global food and nutrition issues increased, the international context and focus of macro-policy on food and nutrition have changed great deal during the last several decades, in particular since the 1974 World Food Conference which placed emphasis on food production as the solution to world hunger. Then the 'access' dimension of food security was introduced in the 1980s and the work to develop "structural adjustment with a human face" was developed by various international agencies.. This was then complemented during the 1990s by the emerging concept of 'entitlement'. Much of the entitlement is generated by the state through aid, subsidy, employment, public distribution of commodities, and incomes. A developing country's control over entitlement depends on external and internal political influences, and policies often become functions of political priority or compulsions (Drèze and Sen, 1989, Drèze and Sen, 1991).

The 'entitlement', or the 'capabilities approach' which Sen later developed it into, goes hand in hand with a 'human rights based approach'. The right to an adequate standard of living including food and health was already expressed in the Universal Declaration of Human Rights from 1948 and has been reiterated in a number of subsequent human rights instruments. Through integration into positive and enforceable law, the rights proclaimed in the Universal Declaration become real entitlements. The realization of the rights to food and health requires that nutrition entitlements are translated into legal provisions and policy commitments to ensure that duty-bearers at all levels respect, protect and fulfill their obligations, through facilitation, promotion or provision as necessary. It also requires effective accountability and

claim mechanisms which rights holders and social organizations can access and which should provide timely recourse mechanisms Most countries are today legally bound through ratification of international legal instruments to realise the rights to food and to health. For instance, virtually all countries in the world have endorsed children's right to food, health and care through their ratification of the 1989 Convention of the Rights of the Child. Another large number of countries have ratified the 1966 International Covenant on Economic, Social and Cultural Rights which contains the right to adequate food and the highest attainable standard of health, or the 1979 Convention on the Elimination of all forms of Discrimination Against Women, which stipulates women's right to adequate nutrition during pregnancy and lactation. In 2004, the right to adequate food was reaffirmed by FAO Member Countries adopting the Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security (FAO, 2004).

In 1990, the World Summit for Children set nutrition-related goals (UNICEF 1990) while in 1991, the Ending Hidden Hunger Conference addressed the issues of micronutrient malnutrition. In 1992, the International Conference on Nutrition (ICN) examined three underlying causes (food, health and care) (FAO/WHO, 1992a, FAO/WHO, 1992b). The ICN was the first global intergovernmental conference on "nutrition", and as such provided a unique opportunity to focus the world's attention on the multifaceted and often changing nature of nutrition problems, and to address them in a comprehensive manner. Attention was given not only to the problem of undernutrition, but also the increasing public health problems of obesity and other diet-related noncommunicable diseases, such as cardiovascular disease, diabetes, various forms of cancer. The ICN recognized the increasing incidence of these diet-related noncommunicable diseases in both developed and developing countries due to rapidly changing dietary practise and lifestyles. In addition, particular emphasis was placed on developing plans of action for improving the nutrition of the poor and vulnerable, and on utilizing nutritional outcomes as indicators of the development process.

In recognition of the vast differences in nutrition problems around the world, ICN had a strong regional and country focus. In fact, the process of preparing for ICN had started in countries themselves with an examination of problems and their causes and associated factors - whether social, political, economic, infrastructural or other - which had to be considered if realistic national and regional support strategies were to be developed. Each country prepared a country paper summarizing national trends and current problems in nutrition, experience in confronting such problems and plans for future action. These country papers then formed the basis for preparing a series of regional and sub-regional technical consultations. Country and regional findings, in turn, provided the basis and direction for formulating the Global Plan of Action for Nutrition which provided a framework for the preparation of national plans of action through 9 action-oriented strategies (Box 1) which involve various sectors of government, international agencies, NGOs and the private sector.

Table 4.1 ICN 9 action-oriented strategies

## ICN 9 action-oriented strategies

- incorporating nutritional objectives, considerations and components into development policies and programmes;
- improving household food security;
- protecting consumers through improved food quality and safety;
- preventing and managing infectious diseases;
- promoting breast-feeding;
- caring for the socio-economically deprived and nutritionally vulnerable;
- preventing and controlling specific micronutrient deficiencies;
- promoting appropriate diets and healthy lifestyles;
- assessing, analysing and monitoring nutrition situations.

Source: FAO/WHO, 1992a

In 1996, the World Food Summit (WFS) reinforced the validity of the goals and strategies identified at the 1992 ICN WFS also provided an exceptional opportunity to reaffirm the commitment to achieving food and nutrition security for all, to build on the efforts already made in implementing the ICN World Declaration and Plan of Action for Nutrition (FAO/WHO, 1992a) and to invest resources effectively at national, regional and global levels to accelerate the translation of national nutrition plans into meaningful action and visible results.

In 1999, a new approach to poverty reduction was introduced by the World Bank and International Monetary Funds and accelerated attention was given to poverty alleviation. Living standards have risen dramatically. The proportion of the people in the developing countries who were living in extreme economic poverty (defined as living on less than US\$ 1/ day) had fallen and substantial improvements in social indicators had accompanied growth in average incomes. Infant mortality rates in low - and middle-income countries had fallen; Life expectancy in these countries had risen; Adult literacy had also improved although serious gender disparities still remained. But wide regional disparities persisted. For example, it was recognized that global trends in poverty reduction had been dominated by rapid growth in China, the East Asia and Pacific regions. Poverty also fell in South Asia over the past 20 years although the decline was not as rapid. But in Sub-Saharan Africa, poverty had in fact increased.

Thus, there were increasing concerns on uneven progress of development as well as on the flows of trade and capital that integrate the global economy which had brought benefits to millions of people, but poverty and suffering still persisted for many others. Then responding to such concerns, governments and international development agencies had begun to re-examine the way they operate and in September 2000, world leaders came together and 189 countries signed the Millennium Declaration which let to the adoption of Millennium Development Goals (MDGs) which set out a series of time-bound targets to be achieved by 2015. The MDGs derived from and include earlier international development targets, including

those agreed at the 1996 World Food Summit and aim to spur development by improving social and economic conditions in the world's poorest countries.

It was also around this time, the issues related to food-borne diseases and threats to food safety were receiving increasing attention. Trade liberalization has exposed farmers and food manufacturers to global prices and to competition with those who may operate under less stringent food safety regulations, welfare or environment standards or who have access to cheaper animal feed. The effects of Bovine spongiform encephalopathy (BSE), Avian Flu and other food safety scares around the world had created an increased urgency to control these risks. To respond to this increasing public health problem related to food safety, in May 2000, the World Health Assembly adopted the WHO Food Safety Strategy (WHA53.15) which, among others, called Member States to integrate food safety as one of their essential public health and public nutrition functions and develop sustainable, integrated food safety systems for the reduction of health risk along the entire food chain, from the primary producer to the consumer (WHO, 2000).

In 2001, the World Food Summit + 5 was convened by FAO, highlighting the need for increasing agriculture development and food production while in 2002, there was a landmark UN Special Session devoted exclusively to children in order to build 'A World Fit for Children'. One of the priority actions and targets for 2010, as bench marks towards achieving MDGs by 2015 included measures to break the intergenerational cycle of malnutrition and poor health by providing a safe and healthy start in life. These included targets to reduce infant, under-five and maternal mortality rates, to improve access to clean water and hygienic sanitation, and especially to support early childhood and adolescent development. Also in 2002, UNICEF and WHO jointly developed the Global Strategy for Infant and Young Child Feeding (WHA in order to revitalize world attention to the impact that feeding practices have on the nutrition status, growth and development, health and thus the very survival of infants and young children (WHO, 2003).

While undernutrition and nutritional deficiencies still remain as a major cause of death and disease risks in many parts of the world, especially in developing countries, it was increasingly recognized that a profound shift in the balance of the major causes of death and disease has occurred in developed countries and is under way in many developing countries. Globally, the burden of noncommunicable diseases (NCDs) has rapidly increased and in 2001, NCDs accounted for almost 60% of the 56 million deaths annually and 47% of the global burden of disease (WHO 2002). Unhealthy diets and physical inactivity were among the leading causes of the major NCDs, including cardiovascular disease, type 2 diabetes and certain types of cancer, and contribute substantially to the global burden of disease, death and disability. To address this challenge, in May 2004, the World Health Assembly endorsed the WHO Global Strategy on Diet, Physical Activity and Health (DPAS) (WHA57.17), urging Member States to develop, implement and evaluate actions recommended in the Strategy, as appropriate to national circumstances and as part of their overall policies and programmes, that promote individual and community health through healthy diet and physical activity and reduce the risks and incidence of NCDs. The resolution also requested the Codex Alimentarius Commission to give full consideration to support the aims of DPAS and take evidence-based action to improve the food standards for the protection of human health. Furthermore, to address the increasing burden of NCDs, the World Health Assembly at its 61<sup>st</sup> Session endorsed the Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases (2008 -2013) (WHA61.8). The NCD Action Plan through its six objectives is now serving as a blueprint for WHO and various partners in implementing their activities and support for Member States in combating increasing public health problems of NCDs.

In 2006, the World Bank published a landmark document, Repositioning Nutrition as Central to Development: A Strategy for Large-Scale Action, which proposed the international development community and national governments a global strategy for accelerated action in nutrition. This call for action was based on evidence that the scale of the problem is very large and that nutrition interventions are essential for speeding poverty reduction, have high benefit-cost ratios, and can improve nutrition much faster than reliance on economic growth alone. Moreover, improved nutrition can drive economic growth. It was also in 2006, the global nutrition community has highlighted the need to consider both the persisting problem of undernutrition and increasing problem of overweight/obesity and associated diet and nutrition-related NCDs as the closely linked public health problem which requires a common policy framework from the lifecourse perspective. The UN Standing Committee on Nutrition (SCN) had highlighted this progressive perspective at its annual session entitled Double Burden of Malnutrition: A Common Agenda (SCN 2006). It was stated that governments often consider food and nutrition programmes as areas for humanitarian action, but not for development investment. Increasingly countries, including low and middle-income countries, are having to face the double burden of malnutrition and having two separate agendas to address seemingly different ends of the nutrition spectrum. But what is needed is to create a common understanding of what needs to be done to address hunger and malnutrition and what action needs to be put in place in the short, medium and long term to tackle the double burden of malnutrition, especially to achieve the MDGs.

The concept of the double burden of malnutrition was also taken up by the Pacific Health Summit in 2008 as the *Global Nutrition Challenge*. One key theme highlighted in the Summit discussions was the special challenge of ensuring a healthy start for children by focusing on maternal and infant nutrition. Following the Summit discussion on the global nutrition challenge, the 2008 G8 Health Experts Group had also highlighted nutrition in addressing maternal and child health.

Accelerated efforts to achieve MDGs, in particular MDG 4 on reducing child mortality and MDG 5 on improving maternal health were also being made through establishing the *Countdown to 2015* in 2005 as a multi-disciplinary, multi-institution collaboration. It called governments and development partners to be accountable and helps to identify knowledge gaps and propose new actions to reach MDGs 4 and 5. These include improved use of national data to accelerate attention, accountability, and action for scaling up coverage of priority maternal, newborn and child health interventions.

A similar effort to develop interagency initiative to end child hunger and undernutrition (ECHUI), which was later renamed as *REACH: Ending Child Hunger and Undernutrition*, was initiated by UNICEF and WFP in 2007 and was also later joined by other partner agencies including WHO, FAO and IFAD as well as various nongovernmental agencies. In addition, there have been a number of other efforts and initiatives in scaling up action to address maternal and child undernutrition during the last several years, including the publication of the Lancet Nutrition Series on Maternal and Child Undernutrition in 2008 which provided a unique advocacy opportunity to accelerate evidence-based action in nutrition and to initiate a broader harmonization of various actors, and the launching of the multi-agency initiative on the *Landscape Analysis on Readiness to Accelerate Action in Nutrition* in October 2007. The Landscape Analysis was initially developed as part of WHO's efforts to strengthen its contribution, along with Governments and other partners, towards the achievement of the MDGs, aiming to serve as a *"readiness analysis"* to assess countries' readiness to accelerate action

in nutrition, particularly in the 36 high-burden countries<sup>1</sup> where 90% of the world's stunted children live (Nishida et al, 2009). The concept of *"readiness analysis"* is frequently used in the private sector for assessing where investing resources is likely to give the greatest return and for determining how best to invest in order to yield the maximum benefits. But an analysis of readiness to act has not been systematically developed across a broad spectrum of countries in the area of food and nutrition programmes before. The Landscape Analysis therefore served as an assessment and mapping tool of countries' readiness, not only the readiness to act, but also the readiness to change, in particular in reducing maternal and child undernutrition.

The political attention on nutrition was also prompted by the Food Price Crisis and following Economic Crisis experienced by many countries in 2008. In April 2008, the UN Chief Executives' Board established the UN High Level Task Force on the Global Food Security Crisis (HLTF) to enhance the efforts of the UN system and International Financial Institutions in response to the global food security crisis. The HLTF has developed a Comprehensive Framework for Action (CFA) with two sets of actions to: 1) focus on meeting the immediate needs of vulnerable populations, 2) build resilience and contributes to global food and nutrition security. A High-Level Conference on World Food Security was held in Rome to discuss the problem of soaring food prices (FAO 2008), and in July 2008 the UN HLTF and World Bank jointly produced a Comprehensive Framework for Action (CFA), a strategy detailing action to tackle immediate food needs and build resilience for the future on a sustainable basis (UNHLTF 2008).

In November 2009, the Heads of State and Government signed the Declaration of the World Summit of Food Security. A sense of urgency and a commitment to solving the global food crisis have served as catalysts for strengthening international coordination and governance for food security through the Global Partnership for Agriculture, Food Security and Nutrition, of which the Committee on World Food Security (CFS) is a central component, as endorsed by FAO Member Countries at the 2009 World Food Summit (FAO 2009). The Summit adopted the "Five Rome Principles for Sustainable Global Food Security" as a basis for turning commitments into action (FAO 2009).

In July 2009, the world leaders gathered at the G-8 meeting in L'Aquila and committed to mobilize \$20 billion over three years for sustainable agriculture development and safety nets for vulnerable populations through the L'Aquila Food Security Initiative (AFSI) following the Five Rome Principles for Sustainable Global Food Security mentioned above. The effort was endorsed by 26 countries and 14 multilateral organizations and was a substantial recognition of the need to act with scale and urgency if sustainable global food and nutrition security are to be achieved.

Subsequently a "Dialogue on the Comprehensive Framework for Action" was organized in Dublin with over 150 regional organizations and nongovernmental organization, where participants welcomed the effort to broaden the scope of the CFA and emphasize the role of women, nutrition and the right to food (UN HLTF 2010). Subsequently, in August 2010, a revised Comprehensive Framework for Action was issued by UN HLTF in collaboration with the 22 member organizations of the Task Force. The Updated Framework reaffirmed the importance of a comprehensive approach not only for food security, but also for achieving

<sup>1</sup> The following are 36 high-burden countries with more than 20% stunting rates that were the focus of the Lancet Nutrition Series for investigating the effects of nutrition interventions (Bhutta et al 2008): Afghanistan, Angola, Bangladesh, Burkina Faso, Burundi, Cambodia, Cameroon, Côte d'Ivoire, Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, Guatemala, India, Indonesia, Iraq, Kenya, Madagascar, Malawi, Mali, Mozambique, Myanmar, Niger, Nigeria, Nepal, Pakistan, Peru, Philippines, South Africa, Sudan, United Republic of Tanzania, Uganda, Viet Nam, Yemen, Turkey, Zambia.

nutrition security of vulnerable populations in meeting both the immediate needs and longerterm strategies for lasting impacts (UNHLTF 2010).

During 2009 - 2010, there was also another global movement on nutrition was taking place originally initiated by the World Bank and various UN and multilateral agencies, but increasingly joined by bilateral agencies, NGOs and civil societies as well as academic institutions, to develop a policy brief, "Scaling up Nutrition: A Framework for Action". The SUN Framework was intended for policy-makers and opinion leaders and aimed to: 1) provide an outline of the emerging framework of key considerations, principles and priorities for action to address undernutrition; and 2) to mobilize support for increased investment in a set of nutrition interventions across different sectors. A Road Map for rapid scaling up of the SUN Framework was then undertaken in advance of the September 2010 UN General Assembly Summit on the Millennium Development Goals as a key contribution to realizing the Millennium Development Goals. The SUN Framework and the Road Map are offered to the International Community as a Public Good, although they have not been formally endorsed by any intergovernmental body (ref).

In 2010, there have also been several World Health Assembly (WHA) resolutions which relate to food and nutrition. The WHA resolution on Infant and young child nutrition (WHA63.23) (WHO 2010b) urged Member States to scale up interventions to improve infant and young child nutrition in an integrated manner with the protection, promotion and support of breastfeeding and timely, safe and appropriate complementary feeding as core interventions; the implementation of interventions for the prevention and management of severe malnutrition; and the targeted control of vitamin and mineral deficiencies. Furthermore, to include the strategies referred to above in comprehensive maternal and child health services and support the aim of universal coverage and principles of primary health care, including strengthening health systems as outlined in resolution WHA62.12. In addition, WHA63.23 requested WHO to develop a comprehensive implementation plan on infant and young child nutrition as a critical component of a global multisectoral nutrition framework for preliminary discussion at the Sixty-fourth World Health Assembly (2011) and for final delivery at the Sixtyfifth World Health Assembly (2012), through the Executive Board and after broad consultation with Member States.

The 63<sup>rd</sup> WHA also endorsed a new resolution on food safety: Advancing food safety initiatives (WHA63.3), which amongst other things urged member states to enhance the integration of food-safety considerations into food aid, food security and nutrition interventions in order to reduce the occurrence of food-borne disease and improve the health outcomes of populations in particular the vulnerable groups (WHO 2010).

Another resolution related to the marketing of food and non-alcoholic beverages to children (WHA63.14), which urged Member States: (1) to take necessary measures to implement the recommendations on the marketing of foods and non-alcoholic beverages to children, while taking into account existing legislation and policies, as appropriate; (2) to identify the most suitable policy approach given national circumstances and develop new and/or strengthen existing policies that aim to reduce the impact on children of marketing of foods high in saturated fats, trans-fatty acids, free sugars, or salt; 3) to establish a system for monitoring and evaluating the implementation of the recommendations on the marketing of foods and non-alcoholic beverages to children; (4) to take active steps to establish intergovernmental collaboration in order to reduce the impact of cross-border marketing; (5) to cooperate with civil society and with public and private stakeholders in implementing the set of recommendations on the marketing of foods and non-alcoholic beverages to children in order

to reduce the impact of that marketing, while ensuring avoidance of potential conflicts of interest (WHO 2010a).

# 4.3 Regional plans of action

There have been a number of regional initiative to strengthen nutrition strategies and the following are some examples.

# 4.3.1 Draft nutrition strategy and plan of action for countries of the Eastern Mediterranean region. 2010–2019

This new nutrition strategy and plan of action for the Eastern Mediterranean Region was prepared through a consultative process by a Regional Advisory Committee in Nutrition, which was established for this purpose. The terms of reference of the Committee also include to follow up on the implementation of the strategy in countries and to provide technical support to Member States, when required. The Advisory Committee comprises representatives of Member States; UN agencies (UNICEF, the Food and Agriculture Organization of the United Nations (FAO), the World Food Programme (WFP) and the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA)); civil societies (International Council for the Control of Iodine Deficiency Disorder (ICCIDD), the Global Alliance for Improved Nutrition (GAIN) and the League of Arab States); and from research and collaborating institutions; in addition to WHO staff from the Regional Office for the Eastern Mediterranean and headquarters. Two meetings were held in Cairo, Egypt, and one in Amman, Jordan, in 2009 to develop and finalize the strategy and the document was circulated to all Member States for input and feedback. Although improvements in nutrition have taken place as a result of economic growth and as a natural outcome of health sector development and services, a rapid overview of nutrition programmes in the Region indicate that in most Member States, the situation has not improved greatly and nutrition has not been given the merit it deserves in development planning agendas. Only a few countries have managed to mobilize resources and establish national nutrition programmes.

The burden of disease associated with inadequate dietary intake is the immediate factor causing under-nutrition and this burden is increasing in many countries of the Eastern Mediterranean Region. The consequences resulting from a high burden of nutritional disorders in the Region are too grave to be ignored. Diet-related chronic diseases exert a heavy cost and are contributing to morbidity and mortality rates in the Region. In addition to the problem of under-nutrition, the burden of overweight, obesity and diet-related chronic diseases is increasing. This nutrition transition is alarming as it negatively impacts on health systems in the Region. The new strategy also provides a plan of action that addresses the major health and nutrition problems and contains strategic directions to address the challenges supported by recommended interventions, approaches and programmes. This action plan can be readily adopted by Member States and adapted according to each national context; its implementation should be expedited by both government and nongovernmental agencies. The major nutrition problems in the Region include: protein energy malnutrition, a high prevalence of low birth weight and micronutrient deficiencies, including iodine deficiency disorders (IDD), vitamin A deficiency (VAD), iron deficiency anaemia in young children and women of childbearing age and calcium, selenium, zinc and vitamin D deficiencies. This strategy comes as a timely response to the worsening nutrition and food situation regionally and globally and aims to:

1. Promote and protect the nutritional well-being of people of all age groups, with

emphasis on women and children

- 2. Promote adequate micronutrient intake
- 3. Provide comprehensive information and education to consumers
- 4. Carry out integrated actions to address obesity and noncommunicable diseases
- 5. Improve nutrition services in the health sector
- 6. Monitor and evaluate, and conduct research
- 7. Increase political commitment
- 8. Build capacity for nutrition in emergencies.

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

# 4.3.2 WHO European action plan for food and nutrition policy 2007-2012

This Second Action Plan addresses the main public health challenges in the area of nutrition, food safety and food security, dealing with diet-related noncommunicable diseases (particularly obesity), micronutrient deficiencies and food-borne diseases. Integrating policies and programmes on nutrition, food security and food safety will maximize public health outcomes by simultaneously addressing all the hazards associated with food intake (e.g. inadequate food intake and food- and water-borne diarrhoea) and weighing the risks and benefits of consumption of existing and novel food products (e.g. nutrients and contaminants). This integration is in line with the way Member States organize their health systems and with WHO's Medium-term Strategic Plan 2008–2013.

The Action Plan aims to harmonize activities and to promote synergy in the use of resources at regional level, and it can be adapted by Member States according to their specific needs, resources, cultural context and policy developments on a voluntary basis.

The Action Plan presents goals and targets for the various health challenges being faced and identifies six areas where integrated action can be taken in individual Member States and at regional level. More specifically the Second Action Plan aims to achieve the following health goals:

- to reduce the prevalence of diet-related noncommunicable diseases
- to reverse the obesity trend in children and adolescents
- to reduce the prevalence of micronutrient deficiencies
- to reduce the incidence of food-borne diseases.

Nutrition, food safety and food security goals should be established to achieve these health goals. Goals related to other health determinants, notably physical activity, water and alcohol, are addressed in the strategy documents cited above. In order to achieve these health goals, population nutrition intake goals should be adopted in line with those recommended by the 2002 WHO/FAO Expert Consultation:

- <10% of daily energy intake from saturated fatty acids
- <1% of daily energy intake from trans fatty acids
- <10% of daily energy intake from free sugars
- $\geq$  400 g fruits and vegetables a day
- <5 g a day of salt.

In addition, at least 50% of infants should be exclusively breastfed for the first six months of life and continuously breastfed until at least 12 months (20). However, individual Member States may consider setting suitable targets as to which proportion of their populations will be able to achieve the goals in 2012, in view of considerations of feasibility and resources.

Food safety goals and targets should be risk-based and be established in individual Member States with reference to their current incidence of food-borne diseases, prevalence of microbiological and chemical contamination in the food chain, and occurrence of antimicrobial resistance in food bacteria, based on adequate surveillance systems. Reduction of Campylobacter and Salmonella contamination and eradication of zoonotic transmissible spongiform encephalopathies and brucellosis should be considered priorities. A food security goal should be established in line with Millennium Development Goal 1, to reduce by 50% the proportion of people who suffer from hunger. The availability and affordability of healthy foods, such as fruit and vegetables, should be improved and the supply of energy-dense and nutrient-poor foods should be reduced, if needed. The achievement of food security goals should be linked to the attainment of dietary goals in different socioeconomic groups.

# 4.3.3 African Regional Nutritional Strategy: 2005-2015

The African Regional Nutrition Strategy (ARNS) was adopted by the Conference of African Ministers of Health held in Gaborone, Botswana, from 10-14 October 2005 and adopted by the Summit of the Heads of States of the African Union (AU) in January 2006 in Sudan (AU 2006). The ARNS recognized that despite the declared commitment of African governments to the achievement of Millennium Development Goals, there remained a disconnect between the importance of nutrition and national socio-economic development resulting in abysmally low investments in nutrition at international, regional, national and sub-national levels. Furthermore there had also been the lack of strategic alliances or a regionally coordinated effort to mainstream nutrition or monitor its implementation at national levels. To address some of the issues the main purpose of the ARNS is to sensitize African Leaders about the essential role food and nutrition security plays in achieving sustainable socio-economic development of the continent.

The ARNS seeks to have an enabling institutional environment to ensure optimum nutrition, bringing about various actors at international, regional, sub-regional, national and sub-national levels to move the nutrition agenda forward within the health sector and across sectors. Its objectives and the priority areas of action are:

- To increase awareness among governments of the Region and the regional and international development partners, and the community on the nature and magnitude of nutrition problems in Africa and their implications for the development of the continent, and advocate for additional resources for nutrition.
- To advocate for renewed focus, attention, commitment and a redoubling of efforts by member states, in the wake of the worsening nutrition status of vulnerable groups.
- To stimulate action at the national and regional level that lead to improved nutrition outcome by providing guidance on strategic areas of focus.
- To provide a framework of action on nutrition that takes into account the emerging issues of HIV and AIDS, diet related chronic disease, the resurgence of TB and malaria etc in addition to the following ICN goals adapted to the Africa Region:

- To ensure regional, national and household food security in 10 years
- To reduce protein-energy malnutrition in children under 5 by half, and iron deficiency anaemia in pregnant women by one third, and to virtually eliminate iodine and vitamin A deficiencies.
- To reduce the prevalence of low birth weights (below 2.5 kg) to less than 10%
- To develop programmes for the prevention of diet-related non communicable diseases in one third of the African population.
- To address the nutritional requirements of people living with HIV/AIDS (PLWHA), including those on ARVs (antiretroviral drugs) and also tuberculosis patients on directly observed treatment short (DOTS).
- To define mechanisms for collaboration and cooperation among the various actors concerned with food and nutrition problems at national, regional and international levels.

# 4.3.4 The Pan African Nutrition Initiative

The Pan African Nutrition Initiative (PANI) was developed under the umbrella of the New Partnership for African Development (NEPAD), a programme of the AU (AU-NEPAD 2008). It was drafted through a multi-stakeholder consultative process in 2005 and further refined to finality in 2008. Through the development and endorsement of the Comprehensive Africa Agriculture Development Programme (CAADP) by African leaders in 2003, food insecurity, hunger and malnutrition were identified as major problems in Africa that required immediate action. However in the CAADP regional consultations during 2004-2006, it became clear that nutrition issues were not adequately reflected in the AU-NEPAD CAADP processes. To fill this gap, it was decided that a robust tool and guiding document was required to effectively address the multi-sectoral and crosscutting nature of nutrition, whereby all relevant sectors could see their contribution and role in reducing hunger and malnutrition. The problems, and more importantly the solutions, for food insecurity and malnutrition, as articulated in the PANI, are seen through what is dubbed the 'Nutrition Lens' - a tool for analysis, planning and program delivery. PANI is dedicated to catalyzing a multi-sectoral process of investment planning, facilitating capacity building and mobilizing resources to address the burden of malnutrition, through a "learning by doing" approach. The approach is two pronged: 1) applying the multisectoral Nutrition Lens approach to ongoing national planning and investment processes to identify opportunities, create multi-sectoral awareness and build capacity; 2) proceeding to urgently scale up proven low cost initiatives that have been demonstrated to be feasible and effective in Africa. These scaling-up activities relate to activities in CAADP Pillars 2, 3 and 4 as well as the NEPAD Health Strategy, and include: large scale food fortification; crop improvements; production, distribution and marketing of high energy and nutrient dense foods for vulnerable groups; nutrition education and school feeding; and the delivery of Essential Nutrition Interventions through the health services.

PANI is viewed as a key and main reference document alongside the Framework for African Food Security (FAFS) of CAADP. The purpose of the FAFS is to guide and assist stakeholders in Africa to simultaneously meet the objectives of CAADP Pillar 3 and the broader African development agenda (AU-NEPAD 2009). Pillar 3 aims to increase food supply and reduce hunger across the region by raising smallholder productivity and improving responses to food emergencies. The Pillar focuses on the chronically food insecure, and on populations vulnerable to and affected by various crises and emergencies in order to ensure that growing agricultural productivity, well-integrated markets and expanded purchasing power of vulnerable groups combine to eradicate hunger, malnutrition and poverty. The FAFS aims to provide principles, recommended actions, coordination, peer review and tools to guide national and regional policies, strategies, investments, partner contributions and advocacy efforts to overcome these challenges, leading to increased food supply, reduced hunger and malnutrition, and improved food security risk management.

# *Case Study 4.1. We are what we eat: communicating for political consensus and improved food security in the Pacific*

At the inaugural Pacific Food Summit in Port Vila, Vanuatu from 21-23 April 2010, 170 high-level representatives from more than 21 Pacific countries, representing governments, the private sector, NGOs, faith-based groups and development agencies endorsed the region's ambitious first, multi-sectoral Framework for Action for food security.

The World Food Summit, in 2009, determined that 'Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy lifestyle.'

The historic endorsement of the Framework for Action is particularly significant as Pacific Island Countries and Territories (PICTs) are adversely affected by food insecurity. Global influences are increasing food prices, exacerbating an already heavy reliance on imported and processed foods. They also contribute to the loss of local harvesting, production and cultural knowledge and create uncertainty around food supply. As such, Pacific populations are at greater risk of malnutrition, food-borne diseases and non-communicable diseases (NCDs). More than 50% of adults are overweight in most Pacific countries. Diabetes rates are more than 40% in some countries. Up to 80% of adults in the Pacific consume less than the recommended five or more serves of fruit and vegetables each day.

The path to the Summit began in 2007 when it was proposed at the 7<sup>th</sup> Pacific Health Ministers meeting. In the lead up, other regional Ministerial meetings endorsed the concept and six countries held National Food Summits.

The Framework presents a comprehensive plan with principles and ideas for action that build upon previous meetings, and plans that have been shared, discussed and endorsed by all sectors across the Pacific. The participatory approach engendered at the Summit meant that delegates identified the considerable role that less traditional sectors of transport, energy, ICT and education play in food security. The addition of a new theme in the Framework to address the cross-cutting function and enabling role of these sectors is notable.

#### Getting multiple agencies on the same page and bringing the media onside

In the lead up to the Pacific Food Summit, given the breadth of different stakeholders required to inform and adopt the Framework, a strategic communications approach was considered essential to ensure commitment, awareness and maximize opportunities for engagement among all stakeholders. Harnessing the power of the media to underpin the importance of a Pacific-wide, Pacific-led solution to the issues of food security and getting them on board to share information accurately with consumers was also seen as important.

In August 2009, a joint communications and advocacy plan was drafted to provide direction to the Summit Secretariat, consisting of six different agencies: the Food and Agricultural Organization of the United Nations (FAO), the Global Health Institute (Sydney, Australia), the Pacific Islands Forum Secretariat (PIFS), the United Nations' Children's Fund (UNICEF), the Secretariat of the Pacific Community (SPC) and the World Health Organization (WHO).

The Communications Plan outlined *pre-Summit* activities for building the body of knowledge on food security in the Pacific, so as to provide an evidence-base for decision-makers (case studies, fact sheets, website <www.foodsecurepacific.org>); media training to increase the capacity of journalists to report accurately and identify news-worthy stories about food security; spokesperson training for government officials responsible for talking to the media about food security; and *post-Summit* community advocacy materials (including an open letter from Pacific medical associations, a preaching guide for Pacific pastors and priests about food security and NCDs), and a regional government advocacy strategy to reinvigorate the 'Healthy Islands' theme first mooted by Pacific leaders in 1995.

WHO and SPC pooled resources to offer media training to 12 young journalists from across the Pacific: Fiji, Kiribati, Marshall Islands, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. A twoday training course was held, immediately prior to the Summit. Day One focused on introducing journalists to the concept of food security and how various sectors, for example, health, agriculture and trade, intersect with it. Technical experts from each of the agencies made presentations - with a focus on classroom participation - in their niche subject area, for example: WHO talked about NCDs, FAO spoke on agriculture and SPC on climate change. Day Two concentrated on improving journalists' soft skills: how to ask the tough questions in a cultural setting which discourages questioning one's elders, how to turn advocacy materials from agencies into news, how to build trust by operating with professionalism, and how to craft stories about food security after the Summit was over. A field trip, visiting a local fresh produce market, local healthy food manufacturers and a farm, provided journalists with the immediate opportunity to put their skills into action and generate stories.

### If we had to do it again, we'd repeat:

#### Invest in common, consistent messaging and branding across all Agency partners

Given that the topic of food security was generally thought to be little understood across the Pacific, it was essential not to add to any confusion. To this end, it was of particular importance to develop a consistent, branded identity under 'Food Secure Pacific'. All agencies agreed on common key primary and secondary messages, and that one common logo would be used in place of each agency's logo, so that all stakeholder information, including media and government correspondence would be badged corporately as 'Food Secure Pacific'. All committed to joint media releases and announcements. This ensured fair representation for all agencies and meant that stakeholders were presented with a united image.

### Present united messages to the media, and utilize unique relationships with individual journalists

To this end, all agencies agreed to pre-approve media releases for quick distribution during the Pacific Food Summit, share speeches from key leaders prior to release, and a press conference roster system ensuring equal representation to the press over the three days of the Summit. A central press release list was assembled, with each agency committing to distribute and follow-up with key journalists with whom they had good connections. Each agency uploaded the press releases to their own websites and linked through to the media centre established at the Food Secure Pacific website.

# Equip journalists with knowledge, allow them unfettered access to leaders, and trust them with the stories

Each journalist committed to filing at least three stories over the course of the Summit and jointly drafted a 'Statement of Commitment' outlining their commitment to continue to report on the topic. The journalists were then provided complete access to the Summit, including to all high-level representatives and given access to equipment to help them file stories. The trainers were on hand during the Summit to provide guidance as required.

### What did this result in?

All leaders at the Summit endorsed the Framework. Leaders were informed as to what the media were reporting, and could see the interest generated, encouraging them to reach consensus.

Pacific leaders had the opportunity to discuss policy and programmes with informed journalists who understood the topic and the necessity for action. Strong advocacy partnerships have been formed.

The Summit also saw leaders agree to continue addressing these issues in a multi-sectoral way, at national level through future national food summits and other related activities, and at a regional level, through the work of Pacific bodies addressing food standard setting, information systems, laboratory support, training and human resources, among others.

During the week in which the Summit was held more than 100 stories were generated across the Pacific, including coverage on Radio Australia's Pacific Beat and Radio New Zealand.

More importantly for continuing advocacy, 12 journalists from half the Pacific island countries, and across all media - print, radio and broadcast - now have a unique insight into food security and connected topics such as NCDs, agriculture, trade and development. They have relationships with and access to key experts in the region, and a well of story ideas to draw from. Two weeks after the Summit, press releases sent from the WHO to specific journalists on different topics are being followed up immediately, with expert comment sought. Relationships between agencies and the media have also been built with, for example, Radio Australia agreeing to continue sourcing Pacific health stories from WHO for the remainder of the year.

Impressively, for the six agencies involved, a model of working on joint media activities, in what is normally a competitive 'air-space', has been established. It has been agreed to keep the Communications Working Group convened to continue to work on food security communication issues across the region.

For more information on the Food Secure Pacific initiative and the Pacific Food Summit, please see http://www.foodsecurepacific.org/

#### Case study 4.2 Pan American Alliance for Nutrition and Development

The purpose of the Alliance is to implement comprehensive intersectoral programs that are both sustainable and coordinated, within the framework of an intercultural rights-based gender approach in order to accelerate achievement of the Millennium Development Goals.

The initiative recognized that malnutrition and health result from the interaction of many factors, some originating in the individual person, but many others directly linked to the social and economic conditions in which the individual lives. The social determinants approach recognizes this interaction and the importance of the underlying determinants of health.

Traditional approaches to the problem of malnutrition have targeted the individual through vertical food and/or health programs, downplaying or simply not recognizing the importance of social determinants, which include food security, the physical and social environment, education, access to information, maternal health status, family planning, access to health services, the exercise of human rights and fundamental freedoms, household income, and working conditions, among others.

Efforts to rectify this traditional, but reductionist, approach will require simultaneous, coordinated, and complementary technical cooperation from all United Nations agencies and other stakeholders committed to the development and well-being of the population.

The Alliance facilitates the coordination of international cooperation efforts and resources to promote, agree on, implement, monitor, and evaluate effective evidence-based multicultural inter-programmatic interventions that recognize the multiple causes with a multi-causal approach to malnutrition.

The conceptual premises of the Alliance are:

a) To develop approaches with an emphasis on modifying the determinants, rather than simply averting their impact, and on targeting activities not only to individuals but to highly vulnerable geo-demographic areas.

b) To replace the uni-sectoral approach with a multisectoral one based on social determinants and inequalities.c) To build an adequate institutional framework for coordinating joint efforts at the local, national,

transnational, and regional level.

d) To identify sustainable integrated interventions based on evidence from different sectors, and to develop, monitor, and evaluate them in a uniform, rather than fragmented, way.

e) To identify geo-demographic scenarios and opportunities for implementing these interventions.

As part of progress made since its official approval in July 2008:

a) Information about the rationale for the Alliance has been distributed to the UN Regional Director's Team, and the conceptual premises mentioned above have been endorsed;

b) The specific evidence-based contributions (in terms of instruments, interventions and good practices) for meeting the Alliance's objectives have been identified and debated;

c) The main features of the interventions to be developed and encouraged through a social determinants-based causality approach, have been outlined;

d) The main criteria for identifying interventions opportunities in national or transnational areas have been discussed and agreed upon;

e) The selection of the most critical countries in the Region: Bolivia, El Salvador, Guatemala, Nicaragua, Paraguay and Peru.

# 5. Policy analysis

# 5.1. Methodology of the review

A comprehensive seven module questionnaire was developed by the Department of Nutrition for Health and Development, with inputs from other concerned Departments in WHO, in particular the Departments of Child and Adolescent Health, and Ethics, Equity, Trade and Human Rights. Module 1 of the questionnaire aimed to obtain an overview of the national policy and institutional environment, and included detailed tables summarizing existing key policy documents, actors and stakeholders, national surveys, coordination mechanisms and capacities in a country, according to their main areas of focus, i.e. undernutrition, obesity and diet-related chronic disease, infant and young child feeding, micronutrients and underlying factors. Subsequent modules covered programme implementation in specific areas as follows: Module 2 focused on maternal, infant and young child nutrition policies, strategies and the scale of implementation of interventions to address maternal and child undernutrition. Module 3 covered regulatory and voluntary steps taken towards implementing the International Code of Marketing of Breast-milk Substitutes. Modules 2 and 3 incorporated questions that are usually asked to countries as part of their reporting for the World Health Assembly, and Module 2 therefore also contained questions on breastfeeding and complementary feeding practices. Module 4 focused on the scale of implementation of school-based programmes, drawing on the Nutrition-Friendly Schools Initiative which is a framework developed for addressing the double burden of malnutrition. Module 5 covered information on vitamin and mineral nutrition, and the scale of and policy basis for supplementation and fortification programmes. Module 6 covered the scale of implementation and policy basis for obesity and diet-related chronic diseases, as well as associated trade-related strategies. Module 7 covered food security and agriculture strategies, their policy goals and food types included. While the questionnaire aimed at being comprehensive yet at the same time as concise as possible, all aspects relevant to all countries may not have been covered. Respondents were invited to fill in additional information in the comment boxes that were included in the end of each Module. The questionnaire was translated into Arabic<sup>2</sup>, French, Spanish<sup>3</sup> and Russian<sup>4</sup> with the help of the WHO Regional Offices. The questionnaire was piloted through selected country case studies before its finalization.

The questionnaire was disseminated to Member States through the WHO Regional and Country Offices or through nutrition focal points in some cases in July 2009, with instructions that it should be completed by relevant concerned stakeholders who are responsible for each issue and programme areas described in each Module (or sections within each module) with the support and coordination of an appointed national focal point. Each module asked the affiliation and contact information of the person who provided the responses for the Module in order to facilitate any follow-up, if required. It was strongly encouraged that the legal department or unit of the Ministry of Health (if existing), in collaboration with other relevant focal point (i.e. nutrition, maternal and child health, family health, etc.) would provide the responses for Module 3 on the International Code of Marketing of Breast-milk Substitutes. Countries were asked to select a national focal point to allocate responsibilities and ensure that all parts were completed and sent back to the respective Regional Nutrition Adviser in their region. After repeated follow up through the Regional Offices, the receipt of responses was

<sup>&</sup>lt;sup>2</sup> By EMRO.

<sup>&</sup>lt;sup>3</sup> By PAHO.

<sup>&</sup>lt;sup>4</sup> By EURO.

closed in November 2010, when 119 countries and four territories<sup>5</sup> had responded to one or more modules, with 54 of them having responded to all seven modules. While 62% of WHO Member States worldwide responded (119/193), the rate was highest in EUR and SEAR where 83% (44/53) and 73% (8/11) of Member States responded, respectively. The responses from Member States covered more than 81% of the world population, with the highest coverage in WPR (99%), AMR (88%) and SEAR (86%). For the remainder of the analysis, the responding territories are treated as country responses within their respective regions, as all of them had specific nutrition policies or programmes and felt the questionnaire relevant to their national situations. It should be noted that all analysis presented represent the proportion of respondents by region, not the proportion of countries in the region.

Each response was reviewed and clarifications sought with respondents to complete missing information or for other clarification. The respondents were mainly government affiliated, in 80-100% of cases, with the exception of Modules 1 and 6 for a range of EU members states in the EUR region which just had completed a similar questionnaire for WHO EUR. In order not to duplicate efforts, WHO EUR directly inserted the information that had been received through the regional survey, and the modules were shared with the countries for validation and for completion of any missing data. Apart from this, non-government respondents included UN agencies, notably WHO, UNICEF and WFP, where they had been allocated the task by the government.

Data were cleaned and interpreted through several steps, for example, all policy documents that were not clearly identified as a policy, strategy, action plan, platform, programme or regulation were excluded (e.g. implementation protocols, survey reports). Redefinition of interventions was done to get a consolidated country picture. For example, a regrouping of interventions was done by country to assess the level of implementation of key maternal, infant and young child nutrition interventions highlighted by the Lancet Nutrition Series (Bhutta 2008). Data were read into an ACCESS database, with analysis through ACCESS, SPSS or Excel.

This report presents the analysis of data as reported in the questionnaire and based on some further clarifications and validated information received from countries. The information provided by the countries is currently being further verified with those countries that responded to the questionnaire and in addition, a follow-up consultation is being undertaken with those countries who unfortunately were not able to provide their response and inputs during the survey period (i.e. July 2009 - November 2010). The data from this review and

<sup>&</sup>lt;sup>5</sup> Respondents include 22 out of 46 AFR Member States (Burundi, Cameroon, Congo, Côte d'Ivoire, Ethiopia, Ghana, Guinea-Bissau, Kenya, Liberia, Madagascar, Mali, Mauritania, Mauritius, Mozambique, Niger, Nigeria, Seychelles, South Africa, Togo, Uganda, Zambia and Zimbabwe), 21 out of 35 AMR Member States (Antigua and Barbuda, Argentina, Barbados, Plurinational State of Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Ecuador, El Salvador, Grenada, Guatemala, Honduras, Mexico, Peru, Saint Lucia, Saint Vincent and the Grenadines, Suriname, United States of America and Uruguay) and three territories in AMR (Anguilla, British Virgin Islands and Montserrat), 8 out of 21 EMR Member States (Bahrain, Islamic Republic of Iran, Iraq, Kuwait, Lebanon, Oman, Sudan and Tunisia), 44 out of 53 EUR Member States (Albania, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Georgia, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkmenistan, The former Yugoslav Republic of Macedonia, Turkey, Ukraine, United Kingdom and Northern Ireland and Uzbekistan), 8 out of 11 SEAR Member States (Bangladesh, India, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste), and 16 out of 27 WPR Member States (Brunei Darussalam, Cambodia, China, Fiji, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Mongolia, Papua New Guinea, Philippines, Republic of Korea, Singapore, Solomon Islands, Tuvalu and Viet Nam) and one territory in WPR (French Polynesia).

additional information on nutrition policy and programme have been incorporated into the WHO Global Database on National Nutrition Policies and Programmes which is currently being further enhanced to enable web-based access. It is also planned that summary data of selected indicators will be displayed through the WHO Nutrition Landscape Information System (NLIS) which can be accessed at www.who.int/nutrition/nlis.

Furthermore, relevant qualitative and quantitative data were also reviewed and are included to complement the findings from the questionnaires. In particular, the in-depth and rich experience gained from in-depth country assessments in the WHO-led Landscape Analysis in 12 high stunting burden countries has been used to strengthen understanding about constraints to the effective implementation of policies and programmes (Nishida et al , 2009). Data on the implementation of the International Code of Marketing of Breast-milk Substitutes is based upon the most recent information that WHO has received from the 99 respondents to Module 3, as well as information regarding these and other countries received by the WHO Department on Child and Adolescent Health between 2006 and 2009. Moreover, data from other sources on the coverage of supplementation and food fortification programmes have also been included.

Region	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Total responses	22	24	8	44	8	17	123
Member States	22	21	8	44	8	16	119
Response rate by region	48%	60%	38%	83%	73%	59%	62%
Territories	4	3				1	4
Responses by module	Ŧ			7	4		
Module 1	20	23	8	41	8	17	117
Module 2	22	24	8	25	8	17	104
Module 3	22	24	5	24	8	16	99
Module 4	16	21	8	19	8	11	83
Module 5	18	23	8	16	7	14	86
Module 6	17	23	8	38	7	12	105
Module 7	15	21	7	8	7	8	66

Table 5.1. Responses by module and total response rate by WHO region

<sup>&</sup>lt;sup>6</sup> Burkina Faso, Comoros, Côte d'Ivoire, Ethiopia, Ghana, Guatemala, Indonesia, Madagascar, Mozambique, Peru, South Africa and Timor-Leste.

# 5.2. National policy and institutional environment

All but one<sup>7</sup> of the countries that responded indicated in any of the modules that their country had nutrition policies, strategies, action plans, programmes or regulations that were relevant to nutrition (Figure 5.2.1). A total of 631 such documents were reported.<sup>8</sup> The proportion of countries by region where these were officially adopted varied from 56% in AMR to 81% in EMR (Figure 5.2.2).

Figure 5.2.1. Total number of policies, strategies, action plans, regulations and programme reported by region



<sup>&</sup>lt;sup>7</sup> This country responded only to Modules 2 and 3, which did not prompt for named policies.

<sup>&</sup>lt;sup>8</sup> 282 reported documents had been excluded because they either were identified as not being policy documents e.g reports, dietary guidelines, etc (95), or represented duplications across modules (69), or could not be identified as being a policy document based on title, internet search and electronic copy had not been received (118).



Figure 5.2.2. Percentage of country respondents by WHO region with policy documents officially adopted

# Policy content

Details were obtained about the content of policies that covered, for example, various forms of undernutrition, obesity and diet-related chronic disease, infant and young child feeding, micronutrient supplementation and food fortification of specific micronutrients, together with underlying factors such as food security, conditional cash transfers, nutrition and infection, trade, gender and focus on vulnerable groups (Table 5.2.1).

The topic most commonly covered in the national policies by all respondents in the different regions was infant and young child feeding. Of all responding countries together, overweight and obesity was most often covered in national policies, followed by infant and young child feeding, undernutrition and vitamin and minerals. Overall, 43% of the responding countries had broad policies that covered all these four main areas, and such broad policies seemed to be most common among the SEAR respondents (75%) and least common among the EUR respondents (5%), though it should be noted that information for most countries in the latter group was obtained from the regional questionnaire focusing on obesity and diet-related chronic disease mentioned in the preceding section.

Many of the reported documents focusing on infant and young child feeding were national Codes of marketing of breast-milk substitutes. In most regions, breastfeeding was more commonly reported to be addressed in the policy documents than complementary feeding. Regarding overweight and obesity, this was often reported to be a policy topic in WPR (94%) and AMR (92%) and EUR (91%), and less often in EMR (75%) and SEAR (75%). More countries reported documents focusing on diet-related chronic disease than obesity. Overall undernutrition was most often reported to be a policy topic in AFR (90%) and AMR (92%), and the less often in EMR (63%) and EUR (7%). Among the various undernutrition topics, underweight was the most frequently mentioned, and maternal undernutrition the less frequently mentioned. AFR was the region that most consistently covered the various undernutrition topics, with 90% of countries reporting policy documents addressing underweight, stunting, wasting and low birth weight, whereas EMR and EUR were the regions with the lowest focus on undernutrition indicators.

The micronutrient interventions most often reported to be part of national policy documents was iron and folic acid supplements to women (51%), whereas zinc supplementation to children was the less commonly mentioned (22%)., AFR and SEAR were the regions with the most countries reporting micronutrient supplementation programmes, whereas besides EUR where such policies may not have been fully captured, EMR was the region with the less countries reporting such programmes.

Conditional cash transfers were reported to be included in polices in 58% of respondents from AMR, compared with 5% in EUR, 13% in EMR, 33% in AFR and 29% in WPR. There was also variation across regions in the inclusion of nutrition and infection in policies (3% in WPR to 82% in AFR). Outside of SEAR there were few (0% in EMR) that included gender.

	WHO_Region							
	AFR	AMR	EMR	EUR	SEAR	WPR	Total	
Number of countries reporting	1							
policies by topic	21	24	8	44	8	17	121	
% countries reporting that their policy documents address								
Undernutrition	90%	92%	63%	9%	88%	82%	58%	
Obesity and diet-related chronic	2070	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0070	270	0070	0270	0070	
disease	81%	92%	75%	91%	75%	100%	89%	
IYCN	100%	100%	100%	52%	100%	94%	82%	
Vitamins and minerals	90%	83%	75%	11%	88%	82%	58%	
All four areas	67%	63%	50%	5%	75%	71%	43%	
Other	95%	96%	50%	27%	88%	88%	66%	
Underweight	90%	88%	63%	7%	88%	76%	56%	
Stunting	90%	71%	63%	7%	88%	71%	52%	
Wasting	90%	67%	63%	7%	88%	71%	51%	
Low birth weight	90%	79%	50%	5%	88%	76%	52%	
Maternal undernutrition	81%	58%	38%	5%	88%	76%	46%	
Child obesity	57%	83%	63%	89%	63%	88%	79%	
Adult obesity	62%	67%	50%	86%	63%	94%	75%	
Diet-related chronic diseases	71%	79%	63%	66%	75%	94%	74%	
Breastfeeding	86%	96%	75%	30%	88%	88%	67%	
Complementary feeding	81%	83%	50%	1/1%	88%	76%	55%	
International Code of Marketing	0170	0370	3070	1470	0070	7070	5570	
of Breast-milk Substitutes	100%	67%	100%	45%	100%	82%	71%	
Vitamin A supplementation for								
children	81%	38%	25%	0%	88%	59%	37%	
Vitamin A supplementation to								
women	81%	33%	38%	0%	63%	53%	34%	
Iron and folic acid	710/	(70/	0507	00/	750/	520/	4007	
supplementation for children	/1%	6/%	25%	2%	/5%	53%	40%	
supplementation for women	86%	75%	63%	5%	88%	71%	51%	
Zinc supplementation for children	13%	21%	13%	0%	50%	/1/0 /7%	22%	
Eood fortification	71%	63%	75%	070	75%	76%	48%	
Food security	0.00/	00/	F 00/	200/	750/	000/	4070	
Food aid	50%	00 <sup>7</sup> 0	250/0	2070	/ 370	470/	270/	
Conditional cash transfers	220/	500/	23%0 120/	Z70	0070 E007	4/70	<u>)/%</u>	
Nutrition and infection	010/	58%0	13%	5%	50%	29%	<u>∠/%</u>	
Trada	81%	6/%	38%	5%	/5%	41%	42%	
Condor	29%	63%	13%	7%	25%	53%	30%	
Gender	38%	42%	0%	5%	88%	29%	26%	
Vulnerable groups	62%	92%	38%	11%	88%	71%	51%	

# Table 5.2.1. Proportion of countries reporting various policy contents by region

## **Policy coordination**

Seventy-seven of the 117 countries responding to Module 1 questionnaires reported a total of 218 coordination mechanisms such as committees, councils, working groups or task forces<sup>9</sup>. Health was the most commonly mentioned sector involved in the coordination of nutrition policies and was involved in nutrition coordination in all countries responding, followed by education, agriculture, food, trade and social welfare, consumer's affairs, development and finance. While trade was mentioned to be involved in nutrition coordination by more than half of respondents in all regions except EURO and SEARO, finance was seldom reported to be involved outside AFR and WPR. The social welfare sector was reported involved in nutrition coordination in less than a third of EUR and SEAR countries (Figure 5.2.3). UN Agencies and NGO/Civil Society were most often mentioned as other partners in the coordination mechanisms, especially in AFR, SEAR, EMR and WPR. Partner involvement was lowest in AMR and EUR. Private sector involvement was most often reported by EUR and AFR respondents (Figure 5.2.4).

The coordination was reported to be anchored in the Ministry of Health in the overwhelming majority of cases. SEAR was the region with countries most often reporting the coordination mechanism to be located in President's or Prime Minister's Office (Figure 5.2.5).

Figure 5.2.3. Government departments involved in coordination mechanisms in countries by regions



Alternative 5.2.3 including more sectors

<sup>&</sup>lt;sup>9</sup> Single institutions such as ministry departments, associations, organizations, institutes were excluded, as were laws and specific programmes.



Figure 5.2.4. Non-government partners involved in coordination mechanisms in countries by region

Figure 5.2.5. Location of administration of nutrition coordination mechanisms in countries by region



### Presence of nutrition in national development plans

There was considerable variation across regions as to whether country respondents mentioned any national development plans as part of their main policy documents for nutrition: with half in SEAR, 33% in AFR, 29% in AMR, 18% in WPR, 13% in EMR and 9% in EUR indicating such plans (Figure 5.2.6).

Figure 5.2.6. Proportion of respondents by region reporting broad development plans among their main nutrition policy documents



### Surveillance

Most respondents reported that several nutrition surveys were conducted in their country (426 surveys reported from 113 countries (Table 5.2.1.1). Virtually all country respondents reported that weight and height were measured. Dietary intake was reported to be measured by all EMR respondents, and by 91%, 88% and 86% of EUR, WPR and SEAR respondents, respectively, down to 47% in AFR. In AFR, SEAR, and WPR about three quarters of respondents indicated survey data disaggregated by gender. Breastfeeding and complementary feeding were reported to be measured by all EMR respondents, and over 80% of respondents in AFR, SEAR and WPR. Anaemia was reported to be measured by 86% of respondents in SEAR. Less than a third of all respondents indicated that blood pressure, blood lipids and blood glucose, were measured in national surveys. These indicators were most often reported measured by EMR and WPR respondents. Vitamin or mineral status indicators were most often reported by AFR, SEAR and WPR respondents than other regions, with the less respondents in EUR reporting these indicators being part of national surveys. Outside of EMR, where 57% of respondents reported measures, few respondents from other regions mentioned fortification monitoring. Monitoring of supplementation practices was reported by 65% of respondents in AFR.

	AFR	AMR	EMR	EUR*	SEAR	WPR	Total
Indicators							
Number of countries reporting							
surveys	17	20	7	46	7	16	113
Number of surveys	57	69	31	191	28	50	426
% Surveys that were reported to take place							
Every 1-2 year or more often	21%	12%	13%	2%	14%	18%	10%
Every 3-5 years	23%	22%	19%	5%	46%	28%	17%
Every 5-10 years	0%	9%	10%	3%	7%	22%	7%
No specific timeframe reported	56%	58%	58%	90%	32%	32%	67%
% Countries reporting various indicators being measured							
Weight	100%	100%	100%	98%	100%	100%	99%
Height	100%	100%	100%	98%	100%	100%	99%
Dietary intake	47%	60%	100%	91%	86%	88%	79%
Exclusive breastfeeding	94%	65%	100%	30%	86%	88%	62%
Complementary feeding	94%	60%	100%	9%	86%	81%	51%
Anaemia	65%	60%	71%	9%	86%	81%	45%
Birth weight	71%	50%	43%	13%	57%	63%	40%
Household expenditure	35%	55%	57%	4%	71%	63%	34%
Iron status	59%	45%	57%	2%	43%	56%	32%
Iodine status	65%	20%	71%	9%	71%	38%	31%
Food supply	29%	50%	57%	9%	57%	50%	31%
Supplementation practices	65%	30%	29%	2%	57%	56%	29%
Vitamin A status	65%	25%	43%	2%	57%	50%	28%
Hypertension	18%	35%	57%	11%	29%	69%	28%
Blood glucose	12%	35%	43%	2%	29%	63%	22%
Blood Lipids	12%	30%	43%	2%	43%	56%	21%
Fortification monitoring	41%	10%	57%	2%	29%	25%	18%
Bilateral pitting oedema	47%	10%	29%	0%	14%	31%	16%
Folate status	29%	10%	43%	2%	29%	31%	16%
Zinc status	18%	15%	29%	2%	14%	13%	11%
Vitamin D status	12%	5%	29%	4%	14%	13%	9%

# Table 5.2.1.1. Proportion of countries by region reporting indicators for surveys

# Additional data

### Nutrition Governance

The reports from country respondents on incorporation of nutrition in national development plans is supplemented by a review by Engesveen et al (2009) on the degree to which nutrition is being dealt with in Poverty Reduction Strategy Papers (PRSPs) and United Nations Development Assistance Frameworks (UNDAFs). A nutrition governance indicator was developed based on the existence of: intersectoral mechanisms to address nutrition; national nutrition policy, plan or strategy; adoption of the plan; nutrition plan or strategy as part of national development plan, existence of national dietary guidelines, whether budget allocated for nutrition in health budget and budget allocation for implementation. Data from the 36 high burden countries were extracted from WHO Global Database on National Nutrition Policies
and Programmes and updated by additional data collected from each country. Of the 23 (out of 36) high-burden countries that had a PRSP, only two were classified as strong with regard to nutrition, seven were medium, and 14 were weak. Of the 33 countries with a UNDAF, four were classified as strong with regard to nutrition, 21 as medium and eight as weak. In terms of governance, ten were classified as strong, 14 as medium, and 12 as having weak governance. Bangladesh was the only country that had a strong emphasis on nutrition in both PRSP and UNDAF and nutrition governance. Of the 36 high-burden countries, ten have an average annual rate of reduction that is on track to achieve the MDG1 targets. Except for Bangladesh and Malawi there appeared to be no consistent relationship between progress towards achieving the MDGs and nutrition priority in PRSPs, UNDAFs and governance.

Overall the analysis shows weak commitment to nutrition as demonstrated through PRSP and UNDAF documents in these 36 high-burden countries. This may in part relate to the lack of clarity and support provided to governments as to how they might do this. There are no guidelines as to how to ensure that UNDAF adequately deal with nutrition. The World Bank PRSP source book does include a chapter in nutrition; it has been criticized as being too short on practical assistance for those who develop the PRSP. The Lancet Series (Morris et al 2008) also criticized the normative guidance from the UN system as being difficult to translate into action.

## Resources

Official Development Assistance (ODA) has not increased substantially for basic nutrition from 1995 to the present. In 2005-07, out of a total of US\$5.608 million committed to health by the Global Fund, only 0.7% was for basic nutrition; the World Bank allocated 12.6% of its US\$2.675 million to basic nutrition; UK allocated 0.7% to basic nutrition; US 0.3%; and the European Commission committed 0.4%. Horton et al (2010) in a recent report 'Scaling Up Nutrition What will it cost?' argued that the scaling up of nutritional financing must be accompanied by a scaling-up of in-country capacities and systems to design, deliver, manage, and evaluate large-scale programmes. This report also concluded that while most is known about which interventions to scale up, much less is known about how to deliver these interventions to scale, and how to minimize costs through alternative delivery mechanisms.

## Landscape Analysis on Countries' Readiness to Accelerate Action in Nutrition

The Landscape Analysis provides further in depth analysis in the 36 high burden countries of their "readiness" to accelerate action in nutrition. Four broad indicators of "readiness" used were: nature, extent and distribution of nutrition problems; commitment (willingness to act) to act based in concrete plans; demonstrated resource allocation and coordination and involvement of partners; capacity (ability to act) based on sufficient and skilled staff management systems and supplies, quality of services and coverage; meta-indicators describing the general conditions and context that enable or constrain commitment and capacity. Based on in-depth analyses in the 12 countries<sup>10</sup> that have completed the Landscape Analysis the following cross-cutting issues have been identified:

• Many partners and stakeholders are involved in nutrition polices and programmes operating both at national and sub-national level. There is limited coordination (and therefore also the possibility that key areas of need are not covered) of the implementation of programmes because there is rarely one body in the country with this responsibility. More recently there have been attempts to create such a body.

<sup>&</sup>lt;sup>10</sup> Burkina Faso, Comoros, Côte d'Ivoire, Ethiopia, Ghana, Guatemala, Indonesia, Madagascar, Mozambique, Peru, South Africa and Timor-Leste.

- There is a lack of awareness and understanding, at all levels, from national to local community level, as to the importance of foetal and infant growth on the well-being of the whole population.
- A lot of data are collected on nutritional indicators or measures that are not effectively used to inform policy makers about the effectiveness of interventions. The data that are collected are rarely feedback to staff running programmes. Policies now exist, but they lack detailed goals and targets and specific operational plans that support effective implementation. PRSPs that mention maternal and child nutrition provide no operational budgets or work plans for implementation. Decentralization has lead to inconsistencies between national policy and provincial or district level policies and programme implementation.
- There is a lack of nutrition capacity. Nurses and other community workers who are primarily responsible for delivering nutrition programmes lack appropriate nutrition skills and awareness of current best practice in nutrition. Most countries have nutrition training institutions but few provide public health nutrition training. Skilled nutrition staff exists but is mainly located in the capital cities and often outside government.
- The promotion of preventive programmatic actions was weak: there was uncertainty as to exactly what to do in feeding practices and maternal young child anaemia programmes. There was also uncertainty about roles, funding, and structures for community workers.
- Funding for nutrition is overall limited and governments rarely define or allocate a specific budget for nutrition, particularly at sub-national levels.

## 5.3. Review of policies in topic areas

## 5.3.1. Maternal, Infant and Young Child Nutrition

Responses were received from 104 countries. Sixty-nine percent of respondents indicated that their country had a policy covering Infant and Young Child Feeding with 57% indicating that the policy had been officially adopted. Adoption rates were highest in WPR where all respondents that indicated to have a policy reported that it was officially adopted (Table 5.3.1.1). Table 5.3.1.1 also includes information on other policies and actions recommended by the Global Strategy on Infant and Young Child Feeding.

There was considerable variation between regions. Respondents from the African region were more likely to report that each area was covered. Regarding exceptionally difficult circumstances covered by the IYCF policy, low-birth-weight (LBW) was most often reported as an element of the policy. It was most often reported in AFR and SEAR by 64% and 63% of countries respectively, and the least in EMR and EUR by 38% and 36% of countries respectively. Regarding infant feeding in the context of HIV, this was mentioned most often in AFR and AMR by 55% and 54% of countries respectively, and the least in EMR and EUR at 13% and 20% respectively. About one third of respondents reported that infant feeding in emergencies was included in the policy, varying from 59% in AFR to none in EMR. However, it should be noted that some major emergency countries in EMR did not respond. More than half of the countries reported having a national breastfeeding or infant feeding coordinator, with 88% of EMR countries reporting this.

The proportion of respondents mentioning having a protocol for management of SAM showed great regional variation based on the epidemiology of the problem, with 82% of AFR respondents mentioning this, down to 25% in EMR and 8% in EUR.

	WHO Region								
	AFR	AMR	EMR	EUR	SEAR	WPR	Total		
Number of countries responding	22	24	8	25	8	17	104		
% countries reporting IYCF relevant policies or measures									
IYCF policy	86	54	75	60	63	82	69		
IYCF policy adopted	64	46	50	48	50	82	57		
Policy includes:									
Feeding of low-birth- weight infants	64	54	38	36	63	59	52		
Infant feeding in  emergencies	59	25	0	8	38	47	31		
HIV and infant feeding	55	54	13	20	50	47	41		
National coordinator breastfeeding/IYCF	64	46	88	44	63	71	58		
Protocol for SAM	82	46	25	8	50	41	42		

Table 5.3.1.1. Proportion of countries reporting implementation of policies or actions recommended by the WHO Global Strategy on Infant and Young Child Feeding

In relation to management of SAM and moderate acute malnutrition (MAM), most countries that reported to have a protocol for SAM also had one for MAM, usually implemented at national scale. For SAM, in and out patient treatment was usually included, as was counselling and use of various therapeutic foods. For MAM, interventions included counselling and distribution of a variety of targeted food or fortified food blends. For SAM, Formula-75 and Formula-100 as well as ready-to-use therapeutic foods were most often indicated by the AFR, EMR, EUR and SEAR respondents, but rather fewer from AMR and WPR (data not presented).

Few countries provided detailed information on the Baby-friendly Hospital Initiative (BFHI), especially regarding the number of births taking place in BFHI and non-BFHI accredited maternity services. The number of hospitals providing maternity care that are accredited as BFHI and the proportion of births in a BFH varied considerably: Four countries reported that all maternity services were BFHs, whereas nine countries reported that none were BFHIs. Five countries reported that all births take place in baby-friendly services, whereas two reported that no birth take place in a BFH (data not shown). High proportion of accredited BFHI hospitals was most commonly reported by EMR respondents with no AFR respondent reporting a high proportion of baby-friendly facilities (Figure 5.3.1.1). Other surveys have reported high rates of uptake of BFHI by countries, but these surveys only ask if the country has BFHI, not the number of births and hospitals covered. The contrast between the reported data and the qualitative data reported elsewhere would suggest that more details are required from these routine surveys to get a better indication of the coverage of the BFHI.



Figure 5.3.1.1 Percentage of countries by region reporting proportion of accredited BFHI

The implementation of the set of maternal, infant and young child related interventions highlighted in the Lancet Nutrition Series (Bhutta et al, 2008) as effective for reducing maternal and child undernutrition are reported in Table 5.3.1.2. Virtually all countries in all regions indicated that they promote breastfeeding and offer behaviour change counselling to improve complementary feeding. More than 90% of AFR, AMR and SEAR respondents indicated having such programmes - the vast majority of them at national scale. While all respondents in EUR reported breastfeeding promotion, fewer (68%) mentioned counselling on complementary feeding. Distribution of complementary foods was only commonly mentioned by AMR (75%) and SEAR (75%), most often at national scale. Hygiene promotion was also reported to be implemented by more than 80% of countries in all regions except EMR and EUR, and also these programmes were most often reported implemented at national scale.

For other interventions there was greater regional variation, which could be partly explained by regional variations in perceived health needs. Nutritional care and support for people living with HIV was highest in AFR (82%) and SEAR (88%) where prevalence is highest followed by WPR (59%), the majority of AFR and WPR respondents mentioned that these programmes were being implemented at national level while this was less common in SEAR. Interventions to reduce maternal tobacco consumption or indoor air pollution was most often mentioned by AMR (58%), EUR (64%) and WPR (65%) countries, the majority at national scale. Deworming of children was most commonly reported by AFR (77%), SEAR (75%) and WPR (47%) countries, whereas deworming of pregnant women only was commonly reported by AFR (68%) and SEAR (63%) countries. Management of SAM was mentioned by 82% of AFR respondents and about half of respondents in AMR, SEAR and WPR. A majority of these programmes in AFR and AMR were reported to be implemented at the national scale. Management of MAM was only commonly reported in AFR (77%). It was only in AFR and SEAR where distribution of insecticide treated bednets and preventive treatment of malaria were mentioned by two

thirds of respondents, with the former often implemented at national scale and the latter not except in AFR.

In general, interventions typically involving promotion were most often implemented at national scale, i.e. breastfeeding promotion, hygiene promotion and interventions to reduce tobacco consumption, the exception being promotion of delayed cord-clamping which may not have been fully known by the respondents. Among the interventions with potential additional costs for consumables in terms of medication or food supplements, more than two thirds of programmes involving ppreventive treatment of malaria, nutritional care and support for people living with HIV/AIDS except, deworming of children 0-2 years, and treatment of MAM and SAM programmes were reported implemented at a national scale.

		_	W	HO Regi	on		
Title	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Number of countries	22	24	8	25	8	17	104
responding							
% countries reporting implem	nentation of	of interven	tion (%cou	untries rep	orting im	plementati	ion at
national scale)	T			1	T		
Any programme	100	100	100 (75)	100	100	100	100 (98)
	(100)	(100)	100 (75)	(100)	(100)	(100)	00.(0.4)
Promotion of breastfeeding	91 (86)	(100)	100 (75)	100 (96)	(100)	(100)	98 (94)
Behaviour change	91 (82)	96 (88)	88 (63)	68 (60)	100 (88)	88 (65)	87 (74)
communication and/or	, - (0-)		00 (00)			00 (00)	S. ()
counselling for improved							
complementary feeding							
Promotion of handwashing or	86 (82)	83 (75)	63 (63)	52 (44)	100 (88)	82 (76)	76 (69)
hygiene interventions	. ,	· · /				. ,	
Nutritional care and support	82 (73)	67 (58)	13 (13)	28 (20)	88 (38)	59 (53)	57 (46)
for people living with							
HIV/AIDS							
Interventions to reduce	23 (18)	58 (46)	38 (38)	64 (56)	38 (25)	65 (65)	50 (43)
maternal tobacco consumption							
or indoor air pollution			, A				
Deworming of children 0-2	77 (73)	38 (29)	0 (0)	24 (12)	75 (50)	65 (47)	47 (37)
years							
Management of SAM	82 (68)	46 (38)	38 (25)	12 (0)	50 (25)	47 (29)	45 (32)
Distribution of	45 (14)	75 (54)	38 (13)	20 (16)	75 (63)	24 (12)	44 (27)
complementary foods							
Distribution of insecticide-	82 (68)	25 (8)	0 (0)	8 (4)	75 (38)	47 (24)	38 (24)
treated bednets							
Management of MAM	77 (55)	38 (33)	25 (25)	4 (0)	25 (25)	35 (24)	36 (27)
Preventive treatment of	73 (64)	33 (29)	13 (13)	0 (0)	63 (63)	29 (18)	34 (29)
malaria in women		50 (20)			<b>F</b> O ( <b>P</b> O)	17 (1.0)	a. (a.)
Promoting and	27 (18)	50 (38)	0 (0)	20 (12)	50 (38)	47 (18)	34 (21)
implementation of delayed							
cord clamping	22 (10)	42 (20)	20. (25)	0.(4)	(2,(25)	20 (12)	21 (10)
Providing maternal	32 (18)	42 (38)	38 (25)	8 (4)	63 (25)	29 (12)	31 (19)
supplements of balanced							
energy and protein	(9 (50)	9 (4)	0.(0)	1( (0)	(2 (50)	20 (12)	20 (10)
Maternal deworming in	68 (50)	8 (4)	0 (0)	16 (8)	63 (50)	29 (12)	50 (19)
pregnancy							

Table 5.3.1.2. Percentage of countries by region reporting implementation of key maternal, infant and young child related interventions

## Additional data

Figure 5.3.1.2 summarizes the proportion of all countries by regions (not just those that completed the questionnaire) that are implementing at least three of four high priority actions promoted through the Global Strategy on Infant and Young Child feeding (IYCF), i.e adoption of the International Code of Marketing of Breast-milk Substitutes, implementation of BFHI, maternity leave according to the ILO Maternity Protection Convention, and training in IYCF counselling; derived from all available sources for all countries. The data are derived from a mix of routinely collected sources. The figure shows that for four of the six regions, around 40% meet the criteria agreed of implementing three of the four key strategies to promote IYCF; EUR has the highest rate at 73%.

Figure 5.3.1.2. Proportion of countries in each region with at least three high priority actions from the Global Strategy on Infant and Young Child Feeding



## Implementation of WHO Child Growth Standards

The anthropometric indicators, weight-for-age, height-for-age and weight-for-height can be used for screening and monitoring the most common forms of malnutrition in children: underweight, stunting and wasting or overweight, respectively. The Executive Board resolution EB126.R5 (January 2010) urges WHO Member States to implement the WHO Child Growth Standards by their full integration into child health programmes. The standards were launched in April 2006 and by early 2010, over 100 countries had adopted and were at various stages of implementing them. As of February 2010 21 AFR, 37 AMR, 12 EMR, 18 EUR, 10 SEAR, and 11 WPR countries or territories had adopted the growth standards (Figure 5.3.1.3).

Figure 5.3.1.3. Implementation of WHO Child Growth standards



## Implementation WHO Child Growth Standards - February 2010

## Summary from case studies (5.3.1.1. to 5.3.1.6)

Six cases studies have been included in this section, focusing mainly on the promotion of improved breastfeeding as an outcome, but also outlining a surveillance system, and steps that lead to improvements in stunting. The first case study (5.3.1.1) gives an overview of global initiatives to protect, promote and support breastfeeding. The case study from Malaysia (5.3.1.2) highlighted the key factors that lead to improvements in rates of breastfeeding: supporting the policies with legislation; strengthening labelling and public awareness; including breastfeeding in the school curriculum; and training health and non-health professionals. In New Zealand (5.3.1.3) significant improvements in average exclusive breastfeeding rates were attributed to: strong political commitment backed up by a dedicated committee and a clear plan of work with targets; reaching out to the community beyond the hospital setting; well designed and appropriate training; well documented results and monitoring of progress. In the Philippines (5.3.1.4) the IYCF national programme lead to a national Plan of Action that was signed by the Secretary of Health. Key elements were: legislative and policy support; community engagement; effective operationalisation of the programme.

Case study 5.3.1.5 summarises how Brazil achieved reductions in stunting and inequalities in stunting over 18 years by the following: coordination across all ministries with responsibilities for the poor; the right to adequate food enshrined in law; monitoring of food and nutrition security through a structure that reports directly to the President and focuses on strengthening family agriculture, local food banks, community kitchens, and improved school meals; and conditional cash transfers linked to participation in basic health monitoring and keeping children at school.

Case study 5.3.1.6 summarise the efforts of Kuwait to develop a nutritional surveillance system. The successful adoption of the system required support of government and key health staff and resources and training and dedicated staff.

## Case Study 5.3.1.1. Promotion of Breastfeeding and BFHI in Malaysia

The National Breastfeeding Policy was developed in 1992, and reviewed in 2006 to be consistent with the World Health Organization recommendation for the duration of exclusive breastfeeding of 6 months.

The Ministry of Health Malaysia in collaboration with the government and non-government agencies has:

- Supported the policy with appropriate legislation: Code of Ethics for the Marketing of Infant Foods and Related Products , the Food Act 1983 and Food Regulations 1985
- Strengthened infant food labeling to promote breastfeeding
- Supported the Baby-Friendly Hospital Initiative (BFHI) and breastfeeding counseling by mothersupport groups
- Trained health and non-health professionals to provide the knowledge and skill to mothers and care takers through lactation management education and held hospital administrators' course on BFHI;
- Informed the public about the policy through printed and electronic media;
- Included breastfeeding in the integrated primary and secondary school curriculum;

BFHI was initiated in Malaysia in 1993. In March 1998, Malaysia was awarded the recognition by WHO as the third country in the world, after Sweden and Oman, to have all the government hospitals in the Ministry of Health as baby-friendly. Until March 2010, there are 132 baby-friendly hospitals in the country comprising 122 government hospitals, 2 army hospitals, 2 university hospitals and 6 private hospitals. The adoption of the BFHI through its 10 STEPS TO SUCCESSFUL BREASTFEEDING has been one of the effective strategies to promote and protect breastfeeding by the provision of the necessary support to mothers to initiate and maintain lactation even after discharge from hospitals. To strengthen STEP 10, the Malaysian Breastfeeding Advisory Association and the Lactation Consultant Association have played a major role in providing mother support to ensure that breastfeeding is continued as long as possible.

The existence of a structured health care delivery system in Malaysia has facilitated the implementation of the BFHI. The State Nutritionists are the coordinators for the promotion of breastfeeding at community level. They co-ordinate the lactation management training and the assessment of the hospitals for the baby-friendly status. The lactation training in all states is facilitated by a core group of trainers consisting of the pediatrician, obstetrician and gynecologist, nutritionist, family health officer, health sister and pediatric and obstetric wards sisters. The BFHI implementation at the hospital level is monitored by the BFHI Committee chaired by the Obstetrician and Gynecologist or the Pediatrician using the WHO/UNICEF monitoring tools. Re-assessments of hospitals are regularly conducted by national assessors drawn from a pool of trained professionals of various relevant disciplines from throughout the country. The BFHI Recognition Committee at the national level, chaired by the Director of Nutrition, meets every two months to view hospital assessment forms forwarded by assessment team.

The multi-pronged strategy adopted by Malaysia to promote breastfeeding, the latest being the BFHI, has brought improvements in breastfeeding practices. The prevalence of ever breastfed among infants less than 12 months increased from 88.6% (National Health and Morbidity Survey, NHMS 1996) to 95.0%. The rate of timely initiation of breastfeeding was 63.7% in 2006 with a significant increase of 22.3% compared to 10 years ago. The prevalence is among the highest in SEAR.

The national Lactation Centre was established in 2008, with the primary aim of strengthening the lactation training and services, and the breastfeeding practices in Malaysia.

## Case study 5.3.1.2. Baby-friendly in New Zealand

### Aim:

Implementation of the Baby Friendly Initiative (BFI) aims to improve breastfeeding statistics and practice, in both the maternity facilities and community health services in New Zealand (NZ).

### Method:

BFI was launched in 2000. In 2001 the Ministry of Health contracted for a BFHI audit of 30 (36%) of our maternity facilities. Each service was assessed on compliance to the Ten Steps, the International Code of Marketing of Breast-milk Substitutes and their breastfeeding rates. This provided a benchmark for the standards of care prior to facilities achieving Baby Friendly Hospital Initiative (BFHI) accreditation. Since 2002 the New Zealand Breastfeeding Authority (NZBA) has been assessing for BFHI accreditation. The MoH expected all of the maternity facilities to meet the BFHI standards by 2007.

With the continued support from the MoH, NZBA developed the standards for Baby Friendly Community Initiative (BFCI) and these were launched in 2006. NZBA has piloted the programme working with five community health services/groups. At the end of 2008 three were assessed for BFCI (compliance to the Seven Point Plan and the International Code of Marketing of Breast-milk Substitutes).

### **Results:**

At the end of 2006 58% of the maternity facilities were certificated as BFHI. By February 2009, 90% (70) of hospitals had gained BFHI status; 21 have been accredited twice and two facilities three times. Most have shown improvements in the standards achieved.

In 2007 BFHI documents were revised to meet the updated UNICEF/WHO standards. The average exclusive breastfeeding rate at discharge from BFHI facilities in 2008 was 83%, up from 56% in 2001; in 2007 52% of babies were being exclusively breastfed, up from 46% in 2002; in 2007 39% of babies were being breastfed at 3 months, compared to 33% in 2002.

The positive impact of BFCI on our community groups has already been confirmed by surveys of mothers and feedback from health workers.

### **Conclusions:**

In the nine years since BFHI was launched there has been significant progress. The implementation of BFHI has uniformly shown an improvement? in standards of care for mothers and babies. The endorsement of the practices entwined within the BFI by health workers will increase exclusive breastfeeding rates. BFCI and having trained health workers in the community will enhance the breastfeeding outcome in the longer term. The MoH has invested in BFI recognizing the impact that improving breastfeeding rates would have in creating a healthier country in the long term. Already NZ is beginning to reap the benefits for our mothers and babies. **Key influences:** 

- Focus on inclusion of Maori and other ethnic groups
- WHO and UNICEF Global Standards for BFHI
- International Code and subsequent WHA resolutions

What made it work:

- Strong political commitment and policy orientation on commencing work
- Dedicated Breastfeeding Committee
- Clear plan of work and targets well communicated to all involved
- Moving beyond hospital doors and out to the community
- Well designed training plan with selected courses for educating staff according to their level and role: level 1: Awareness (no clinical role) level 2: Generalist (some clinical role) and level 3: Specialist (clinical role)
- Well documented results and monitoring progress and achievements.

## Case study 5.3.1.3. The Philippines IYCF National Programme

After the launch of the UNICEF/WHO Global Strategy on Infant and Young Child Feeding (IYCF) in 2003, and the publication of the results of the National Demographic Health Survey (NDHS'03) in 2004, the Philippines developed the national policy on IYCF and a five (5) years National Plan of Action, to provide a strategic direction on how improve the IYCF situation in the country. The national policy was signed by the Secretary of Health May 2005 (Administrative Order No. 2005-0014).

National and Regional IYCF Technical Working Groups (composed of the different agencies within and outside the Department of Health, concerned with IYCF issues) were established and were responsible for the

overall management and monitoring of the programme implementation.

### Key actions

Legislative and Policy support

- Strengthening of the National Milk Code (EO 51)
- Policy on Donation of breast milk substitutes during emergency that provides a policy direction to the country during emergency situations, in connection to issues related to Infant Feeding in emergency.
- In December 2009 the Essential Newborn Care (ENC) protocol was launched, under the campaign "The First Embrace" (Unang Yakap). There are four major immediate newborn care steps in the protocol: 1) Immediate and Thorough Drying, 2) Early Skin-to-Skin Contact, 3) Properly Timed Cord Clamping, and 4) Non-separation of Newborn from Mother for Early and Complete Breastfeeding. A policy was issued on the same day.
- Expanded Rooming in Act (Republic Act10028, March 2010), that contains crucial maternity protection provisions, and that will eventually contribute in the creation of breastfeeding supportive workplaces.

Community engagement

• Great efforts were also invested in modelling key settings, like supporting the establishment of community based breastfeeding support groups in urban and rural settings and workplace based breastfeeding support systems. The work and resources involved national, regional and local level coordination among private and public sector. The documentation of the experiences produced initial guidelines, guiding tools, and good practices that were promoted and disseminated for the scaling up of the interventions. From a single community support group established in 2005, more than 2100 support groups have now been reportedly established.

Initial implementation of the Essential Newborn Care Protocol

• Operationalization of the protocol is now being discussed widely with government officials, hospital administrators, professional societies, residencies and medical, nursing and midwifery colleges so that it can be incorporated into hospital policies and practices. Initial results showed that exclusive breastfeeding rates at 28 days of life rose from 54% to 69%.

#### Research

The research has identified effective interventions. Community-based peer counselling was associated with a drastic improvement of exclusive breastfeeding practices. The number of exclusively formula-fed infants decreased seven-fold (P < .001). Mixed-fed infants decreased 37% (P < .001). Overall, of the 148 nonexclusively breastfeeding infants, 69.5% had changed feeding methods after 3 home visits, 76% of whom to exclusive breastfeeding.

A Case control study found Exclusively formula-fed infants were more likely to be hospitalized for any infection (3.7, 1.8-7.5), pneumonia (3.0, 1.2-7.4), and diarrhoea (10.5, 2.5-41.9) compared to exclusively breastfed infants. Further research revealed that the medical care given to newborn babies in the Philippines was below WHO standards, depriving newborns of their mother's natural protection in the first hour of life (warmth, colonization of family bacteria in lieu of hostile hospital bacteria, colostrum—the first immunization, and the calming effect of skin-to-skin contact causing quicker resolution of blood acid-base imbalance and hypoglycemia from delivery) and leading to high rates of neonatal sepsis and mortality. Another article showed how marketing efforts of milk companies in the Philippines negatively influence the mother's choice to breastfeeding.

### Operationalization of the programme

- Advocacy to get financial support from the national government that eventually translated into a major budget allocation for the training of health workers at the local level on Infant and Young Child Feeding Counselling. For the first time, the National Hunger Mitigation Strategy of the National Government contained a specific component aiming at improving IYCF issues.
- Supportive Supervision for IYCF implementation at the health centre level (on a national scale) were stepped up, with the integration of key IYCF indicators in the national Integrated Child Survival Monitoring Tool; and the institutionalization of local monitoring and training follow up visits conducted by the national and regional coordinators. To start tracking local progress, a specific monitoring tool was devised, and disseminated to regional IYCF coordinators.

Lessons

1. National and local governments have to invest (human and financial resources) in support of the

### Program.

- 2. IYCF requires concrete support from various stakeholders within and outside the health system;
- 3. Training activities must be sustained with mentoring, supportive supervisions, coaching. These need to be considered in ensuring policy and protocol implementation;
- 4. Milk code provisions that prohibits marketing and promotion of covered products in line with the International Code, effective monitoring and implementation, and enforcement are necessary to reduce the influence of the marketing practices on our women and families;
- 5. Maternity protection needs to be addressed to support women to exclusively breastfeed for six months;

### Initial Results: Creating the conditions

- 1. 21% of provinces and 17% of the cities have passed IYCF related ordinances (local laws)
- 2. 81% of health workers in 50 of the 80 provinces were trained using the UNICEF/WHO IYCF Counseling Training (other 30 will be trained between 2010 and 2012)
- 3. Community Support groups established: 2159 (AS OF SEPT 2009)
- 4. Milk Code Monitoring activities conducted : 31 (AS OF SEPT 2009)
- 5. Breastfeeding friendly workplaces: 88 (as reported last Sep 2009)

The Philippines IYCF programme, is a work in progress. Based on the latest available survey data (NDHS 2008), Exclusive Breastfeeding < 6 months rates have remain unchanged (34% for NDHS 2003 and 2008), as well as initiation within the first hour (54% for NDHS 2003 and 2008).

### Key next steps identified to support IYCF programme are listed below

- 1. Implementation Essential New Born Care Protocol and MBFHI policy, at hospitals to increase initiation rates within the first hour of life;
- 2. Reaching 1 Million pregnant women with the Communication for Behavioural Impact (COMBI) strategy that will focus on an integrated marketing communication effort, in support to the community breastfeeding support groups. This to increase exclusive breastfeeding rates;
- 3. Full implementation of the Expanded Rooming In Act (RA 10028) that includes provisions for Breastfeeding breaks, space and support for working women and will contribute to the increase exclusive breastfeeding rates;
- 4. Integration of IYCF in curriculum at the different levels; and
- 5. Strengthening the implementation, monitoring and reporting of violations of the Milk Code (local level and national level).

## Case Study 5.3.1.4. Breastfeeding in a Globalized World: A Public Health Success Story

Breastfeeding promotion is the single most effective intervention to improve child survival and is therefore essential to achieving the Millennium Development Goal (MDG) related to child survival (Goal 4) as well as MDG 1 related to child nutrition. It is also a public health best buy, having a large effect in improving intelligence and reducing infant morbidity and mortality and also highly amenable to public health intervention. The implementation of a series of policies and programs to protect, promote and support breastfeeding over the past 30 years has led to a remarkable increase in breastfeeding practices measured at the global level.

Improvements in the duration of breastfeeding and the proportion of infants exclusively breastfeeding for the first six months of life over the past 30 years likely have greatly improved the nutrition and health of millions of children. The median duration of breastfeeding increased in 36 (82%) of the 44 countries with nationally representative trend data and in 13 countries the increases were of 2 months or more. Exclusive breastfeeding has also increased, with 29 of the 44 (66%) countries in AMR showing gains of 1 percentage point or more and 13 countries showing gains of more than 25 percentage points. Despite these positive gains, however, the proportion of infants' breastfed for the 6 months recommended by WHO is low, indicating an important area for policy and programmatic action.

The policy and programmatic initiatives that led to the increases in exclusive and any breastfeeding have been well documented, as described below.

• The International Code of Marketing of Breast-milk Substitutes, adopted by the World Health Assembly (WHA) in 1981, and enhanced through subsequent WHA resolutions, the Code provides guidelines for the marketing of breast-milk substitutes, bottles, and teats. To ensure infant feeding decisions free from marketing pressures, the Code aims to restrict direct promotion to the public and other practices deemed to be detrimental to public health. Many countries have adopted parts or all of the provisions of the Code

through legislation or regulation. In most countries, however, mechanisms are not in place for routine Code monitoring and examples of violations abound.

• The 1990 Innocenti Declaration, endorsed by the 45<sup>th</sup> WHA, set four operational targets that all governments should achieve by 1995. These targets include appointment of a national breastfeeding coordinator, establishment of a multi-sectoral national breastfeeding committee and ensuring that all health facilities that provide maternity services fully practice the "10 Steps to Successful Breastfeeding" set out in the WHO/UNICEF statement "Protecting, Promoting, and Supporting Breast-feeding: The special role of maternity services".

• The WHO/UNICEF Baby Friendly Hospital Initiative (BFHI), which was launched globally in 1992 promotes 10 hospital practices to create an environment conducive to breastfeeding. Among other things, these practices address the need for establishing a hospital breastfeeding policy, health-worker training, early initiation of breastfeeding and compliance with certain breastfeeding provision of the Code, such as no donations of free or subsidized infant formula.

• **Capacity development** through the training of health professionals in lactation management and breastfeeding counselling. Training consists of practical clinical aspects of breastfeeding as well as information on how to set up national programs. It also includes health worker responsibilities under the Code.

• Creation of national multi-sectoral breastfeeding committees that establishes national breastfeeding policy, coordinates activities among sectors, advocates for resources and monitors and evaluates trends in breastfeeding practices.

• **Communications strategies** that targeted not only pregnant women but their partners, mothers, mothers-in-law and the community in general.

• **Community-based programs** that work with communities to tap into existing community resources, including community-health-workers, school teachers and other community leaders to create an environment conducive to making breastfeeding an easy behaviour for women to practice.

### Case study 5.3.1.5. Reductions in Stunting and Inequalities in Stunting in Brazil

Remarkable achievements in reducing child undernutrition can be achieved though political leadership and investment, as shown in the spectacular decline in child stunting in Brazil. In a 18-year period between 1989 and 2007, the prevalence of stunting fell from 20% to 7.%.(1) Two-thirds of the reduction from 13% to 7% between 1996 and 2007 was explained by four factors: 25.7% to increased maternal schooling; 21.7% to increased purchasing power of families; 11.6% to expansion of healthcare; and 4.3% to improvements in sanitation.(2) Importantly, the reductions were greatest in the poorest areas of Brazil, thus reducing disparities in stunting and its consequences for individual and national development. For example, among the poorest quintile of the population the prevalence of stunting fell from 59% to 11.2% and from 12.1% to 3.3% among the wealthiest quintile.

Brazil achieved this remarkable reduction through addressing the underlying socioeconomic determinants of stunting as opposed to direct interventions to improve diet and reduce illness (that reduces food intake, utilization and increases nutrient needs because of fever). Although addressing the underlying determinants, namely poverty, is sometimes described as one of the "long routes", the remarkable achievement by the Governments of Brazil in a relatively short period of years should cause rethinking of the timeframe in which strategies that address underlying determinants can achieve results.

How did Brazil achieve this remarkable decline in stunting and perhaps more importantly achieve the largest declines in the most impoverished region of the countries thereby reducing long-standing inequities? The Minister of Social Development and Fight Against Hunger in Brazil attributed the success to the following policies and strategies.(3)

• **The Zero Hunger Strategy** is a strategy that coordinates programs from 11 ministries focusing on the poorest of the poor. It also works in partnership with civil society.

• The Federal Law for Food and Nutrition Security was introduced in 2006 and ensures the human right to adequate food.

• **The National Council on Food and Nutrition Security (CONSEA)** monitors Brazil's policy of food and nutrition security. It includes 18 State Ministers and 36 representatives of civil society and reports directly to the President of Brazil. In particular, Brazil's polity on food and nutrition security includes strategies for strengthening family agriculture, local initiatives for food banks, community kitchens, etc, and strategies to improve school meals and promotion of healthy food habits.

• **The Bolsa Familia Program** provides a conditional cash transfer for 11 million poor families. To participate in the Program, beneficiary families must comply with basic health monitoring (prenatal care, vaccination, nutrition assessment of young children) and keep their children in school. The goal is to break the intergenerational cycle of poverty.

• **Other Initiatives** such as the Family Health Strategy that benefits over half the population and provides quality health care through a primary health care strategy. In addition, the Food and Nutrition Surveillance System permits the ongoing monitoring of the nutritional status of the population and its determinants.

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## Case study 5.3.1.6. Kuwait Nutrition Surveillance System [KNSS]

The Kuwait Nutrition Surveillance system (KNSS) was established under the Food and Nutrition Administration (FNA) following a meeting held in Kuwait with WHO and CDC in 1994 to develop a monitoring system to observe health/nutrition related trends.

In the first year (1995) only heights and weights in preschool children were measured. With continued communication and collaboration with CDC and WHO, as well as other factors such as the experience gained, more staff being trained and support from the MOH all contributed to expanding parameters included in future surveys. Thus, in 2001 all the age groups were included annually, in addition to heights and weights, bloods were taken for measurements of haemoglobin, blood sugar and cholesterol levels for adults, infant feeding practices for children less than two years were recorded, as were physical activity, smoking habits, and fruit and vegetable intake for adults.

## Purpose

KNSS is intended to provide data that are used to monitor health and nutritional status of Kuwaiti population. These data are useful to both health professionals who manage public health programs and for the decision makers.

Thus, the objectives:

- Identify prevalence of nutrition related health problems
- Identify high risk groups;
- Monitor trends;
- Guide and direct decision taking/policy making
- Target resources for program planning; and
- Evaluate the effectiveness of interventions
- KNSS was successful due to:
  - Support of MOH
  - Budget
  - Facilities at Primary Health Centres
  - Cooperation from the Primary Health Care physicians and the staff
  - Trained and dedicated staff
  - Regular consultations from the WHO/CDC experts

Difficulties that had to be overcome

- Logistics, getting permission to carry out duties, training staff/teams, providing facilities.
- Budget restrictions and uncooperative staff or subjects.

• Acquiring permission from the school authorities for proper time to collect the data.

### Outcome.

The surveillance system is in place and identifying problems of effective implementation. It is still too soon to see the impact on actually reducing anaemia and obesity. However, the data are being used to support changes in actions or modify practices which are not effective.

#### 1- Anaemia.

Data generated utilized for convincing higher administration at the MOH and the industry to fortify flour with iron in 2001. Data were beneficial as a re-evaluation tool on the impact of fortification on the anaemia trend. Thus when no improvement observed over 4 years (2001-05) a decision was taken to (1) assess efficacy of the iron fortificants used (2) Implement replacement with encapsulated iron sulphate.

At present, after 4 years, there is a slight drop in the anaemia trend but too early to confirm. The prevalence of anaemia among preschoolers, teenage girls and women of child bearing age is still high.

#### 2- Obesity.

KNSS helped to identify the obesity problem in all age groups, but to date there is no data on impact of programmes. Initiated establishment of National Prevention Program for overweight and obesity [NPPOO] in 2004. From September 2010, "Healthy School Snack" project will be implemented for all children 6-11 years. Junk foods will be prohibited and specific food items would be allowed in school canteens. In November 2009, "Facts of Life" book was assigned to 9th graders in all government schools in Kuwait. It is a competition with a financial reward for the best 10 healthy ideas to be executed in the immediate environment

(school/home/neighbourhood). 720 projects were entered!

Multi physical activity halls for all elementary and intermediate schools for girls in the government sector only. Green football pitches for all elementary schools for boys. Both facilities to be open for the community post school hours.

### What next

For the anaemia analysis of haemoglobin values are not enough, serum ferritin should be included specially for the vulnerable groups (preschool children, teenage girls and women of child bearing age)

Blood pressure values need to be assessed to identify the hypertensive people

Iodine- there is no information regarding iodine deficiency at the clinical level. Need data to find out if there are any iodine deficiency at the subclinical level.

Vitamin A- there is no information regarding vitamin A deficiency at the clinical level and requires information to find out vitamin A deficiency at the subclinical level.

## 5.3.2 International Code of Marketing of Breast-milk Substitutes

Responses to Module 3 on country implementation of the Code into national legislation was received from 97 countries and territories. Pursuant to Article 11.6 of the Code, Member States submit information annually to the Director-General of the WHO on action taken to give effect to the Code's principles and aim. Since 2006, response rate has varied from one year to another, and including the responses to the Global Nutrition Policy Review, WHO has received information from 132 of its 193 Member States plus four territories that voluntary submitted information for the Review<sup>11</sup>. The data included in this section is based upon the most recent information that WHO has received from each of these 136 countries and territories between 2006 and 2009.

The questionnaire asked about enacted law or regulations specifically aimed at effective implementation of the International Code and subsequent relevant WHA resolutions. Countries were asked to provide legal documentation to support their responses, however a minority of countries with legal measures did so. Like for the rest of the report, data included in this section are based upon self-reporting without a systematic review of legal documents. Verification of status and quality of legal documents remains an ongoing exercise and in this circumstance must be taken into account when interpreting the results displayed.

## Established Code legislation

Figure 5.3.2.1 summarises the Code legislation status of 136 countries by WHO region for which information is available. Overall, 71% reported to have legal measures, 24% to have voluntary measures only, and 6% that they have no measures in place.

In all regions except AMR, two-thirds or more of countries have reported that legal measures are in place. The highest proportion of countries with legal measures is in EMR (100%), followed by EUR (87%) and SEAR (78%). In all regions except for EMR, there are countries that are reporting voluntary measures. This may range from codes, to guidelines, agreements and policies covering various aspects of the Code such as information and education, or promotion of breast-milk substitutes to the general public and mothers. This category also includes countries with draft legislation awaiting legal implementation. AFR and AMR are the only regions with countries reporting to have no measures in place, reported by 10% and 16% of respondents respectively.

<sup>&</sup>lt;sup>11</sup>These are Anguilla, British Virgin Islands and Montserrat in AMR and French Polynesia in WPR. The information received from these territories have been included in this report as country responses.



Figure 5.3.2.1. Proportion of countries (by region) reporting to have legal measures, voluntary measures only, or no measures for marketing of breast milk substitutes, 2006-2009.



## Specific provisions of the Code

Whilst 96 countries have reported that legal measures in place, there is much variety between individual countries in the number of Code provisions actually covered by their legislation, and it has been observed that the majority of countries reporting established legislation do not cover all provisions of the Code. This report presents data and analysis on six of the provisions that are considered important and for which there have been collected data regularly since 2006 (Table 5.3.2.1).

Table 5.3.2.1.Porportion of countries with full, partial or no measures in relation to six key provisions of the International Code of Marketing of Breast-milk Substitutes

			I	WHO Regio	n			
	AFRO	AMRO	EMRO	EURO	SEARO	WPRO	All regions	
Number of countries with legal measures	21	15	12	27	7	14	96	
% f countries (by region) with re Breast-milk Substitutes to the Ge	ported legal eneral Public	l measures, 1 c,	which inclua	le a provisio	n prohibitin	g the Advert	tising of	
Full measure	95%	80%	75%	70%	100%	71%	80%	
Partial measure	0%	7%	0%	7%	0%	15%	5%	
No measure	0%	0%	8%	19%	0%	0%	6%	
No information given	5%	13%	17%	4%	0%	15%	8%	
% of countries (by region) with report Substitutes to the General Public	rted legal mea.	sures, which i	nclude a prov	ision prohibit	ring Sales Der	vices of Breast	t-milk	
Full measure	90%	87%	67%	78%	71%	57%	77%	
Partial measure	0%	0%	0%	4%	14%	14%	4%	
No measure	5%	0%	8%	11%	14%	14%	8%	
No information given	5%	13%	25%	7%	0%	14%	10%	
% of countries (by region) with reported legal measures, which include a provision Prohibiting Free or Low-Cost Supplies of Breast-milk Substitutes to Health Care Facilities								
Full measure	86%	87%	75%	48%	100%	71%	73%	
Partial measure	5%	0%	8%	22%	0%	0%	8%	
No measure	10%	0%	8%	19%	0%	7%	9%	
No information given	0%	13%	8%	11%	0%	21%	9%	
% of countries (by region) with repor Workers and Health Care Facilitie	rted legal mea. rs	sures, which i	nclude a prov	ision prohibit	ing Materials	s or Gifts to I	Health	
Full measure	90%	87%	83%	48%	100%	71%	75%	
Partial measure	0%	0%	0%	15%	0%	0%	4%	
No measure	5%	7%	8%	26%	0%	7%	11%	
No information given	5%	7%	8%	11%	0%	21%	9%	
%. of countries (by region) with repo Substitutes with a Message of Super	rted legal mea riority of Brea	usures, which estfeeding	include a prov	vision requirin	ng the Labelli	ing of Breast-,	milk	
Full measure	86%	93%	100%	100%	100%	86%	94%	
Partial measure	0%	0%	0%	0%	0%	0%	0%	
No measure	0%	0%	0%	0%	0%	7%	1%	
No information given	14%	7%	0%	0%	0%	7%	5%	

## Specific articles of the Code

# (1) Advertising of breast-milk substitutes to the general public should be prohibited (Article 5.1)

According to article 5.1 of the Code "there should be no advertising or other form of promotion to the general public of products within the scope of the Code"<sup>12</sup>.

Of those countries reporting legal measures, in each of the regions 70% or more of countries are also reporting full inclusion of Article 5.1 in their legislation. Overall, this is equivalent to 80% of all countries that have reported legal measures. Taking a closer look at individual regions, 100% of SEAR countries with legislation are reporting this to cover the prohibition of advertising of breast-milk substitutes. Many countries with legislation are still reporting only partial inclusion of Article 5.1, the highest proportion in WPR (15%).

## (2) Sales devices of breast-milk substitutes to the general public should be prohibited (under Article 5.3)

Under Article 5.3 it is prohibited to use promotion devices to induce sales directly to the consumer at the retail level, such as special displays, discount coupons, premiums, special sales, loss-leaders and tie-in sales, for products within the scope of the Code<sup>4</sup> (under Article 5.3 this also applies to point-of-sale advertising and giving of samples, however data here does not apply to these provisions).

In total, 77% of countries reporting legal measures are also reporting full inclusion of the provision on the prohibition of sales devices of breast-milk substitutes to the general public. AFR respondents report proportionally more often this regulation (90%). Whilst there are some countries in SEAR and WPR that report partial mechanisms, none have clarified the scope of this.

# (3) Free or low-cost supplies of breast-milk substitutes to health care facilities should be prohibited (Article 6.6)

This article applies to both use of such products within the facility or to the distribution of such products outside of the facility. These supplies may only be used for distribution to those infants that are required to be fed through use of breast-milk substitutes, and may only be bought by and distributed by the institution itself. Such donations or low-price sales should not be used by manufacturers or distributors as a sales inducement.

Of all countries with legal measures, 73% report to have fully included this Code provision. When examining individual regions however, there is much variation in this indicator, with a difference of 52% between the region with the highest proportion of legislation countries reporting full adherence to this provision (100% in SEAR), and the region with the lowest proportion for this indicator (48% in EUR). In EUR, 22% of countries reporting legislation mention that partial measures are in place.

## (4) Materials or gifts to health workers and health care facilities should be prohibited (Article 7.3)

According to the Code both financial and material inducements to promote products within the scope of the Code should not be offered by manufacturers or distributor to health workers or members of their families, nor should they be accepted by health workers or members of their families.

In total, 75% of countries reporting legal measures also report full inclusion of this Code provision, with most regions reporting a proportion of inclusion of this indicator in more than

<sup>&</sup>lt;sup>12</sup> The Scope of the Code as set out by Article 2 states that "the Code applies to the marketing, and practices related thereto, of the following products: breast-milk substitutes, including infant formula; other milk products, foods and beverages, including bottlefed complementary foods, when marketed or otherwise represented to be suitable, with or without modification, for use as a partial or total replacement of breast milk; feeding bottles and teats. It also applies to their quality and availability, and to information concerning their use".

70% of their countries with legislation. Once again in EUR there were a small number of countries reporting 'partial' implementation of this regulation.

# (5) Labelling of breast-milk substitutes with a message of superiority of breastfeeding is recommended (Article 9.2(b)).

According to Article 9.2(b) manufacturers and distributors of infant formula should ensure that each container has a clear, conspicuous, and easily readable and understandable message either printed on it or a tightly sealed label attached, in an appropriate language which includes a **statement of superiority of breastfeeding**.

Of all countries with legal measures, 94% report full inclusion of this provision as set out by the Code. This particular provision of labelling requirements is therefore the most extensively incorporated legal measure of the six provisions selected therefore. Examining each region, 100% of EMR, EUR and SEAR countries reporting legal measures also report full inclusion of this provision.

(6) Effective Monitoring and Enforcement of Law and Regulations (Article 11)

Article 11 of the Code includes a requirement for governments to take necessary measures to give effect to the provisions and ambitions of the Code within their legal and social infrastructure, including the adoption of national legislation, regulations, or other appropriate measures. It states that the responsibility for monitoring the implementation of the Code rests with governments both individually, and in collaboration with other parties (for example WHO, NGOs, professional groups, amongst others). The criteria that such monitoring mechanisms must follow to order to ensure efficacy are:

- (1) Independence and transparency.
- (2) Freedom from commercial influence.
- (3) Empowerment to investigate code violations.
- (4) Empowerment to impose legal sanctions.

Unlike previous Code questionnaires, the Global Nutrition Policy Review Module 3 questionnaires asked countries reporting legal measures to also describe the extent to which they have included legal regulations calling for effective monitoring mechanisms. This data can be observed in *Figure 5.3.2.2*, which shows the proportion of countries having mechanisms that meet all or some criteria or not and those that have not provided information about monitoring mechanisms. In total, only a third of countries that reported to have Code legislation mentioned having legal provisions on effective monitoring meeting all criteria. SEAR has the highest proportion for this indicator at 43%, and EMR the lowest at 25%. In all regions there are countries that provide no information on monitoring mechanisms, particularly in EMR where a third of countries with legislation have not provided this information.

Figure 5.3.2.2 Proportion of countries (by region) with reported legal measures, also reporting to have either: 1) monitoring mechanisms meeting all four criteria, 2) monitoring mechanisms meeting some criteria, 3) no monitoring mechanisms, 4) no information about mechanisms given, 2006-2009.



## Box 1: International Code of Marketing of Breast-milk Substitutes

## What is the International Code of Marketing of Breast-milk Substitutes and how is this related to WHO recommendations?

The Code is a set of recommendations to regulate the marketing of breast-milk substitutes, feeding bottles and teats. It was formulated in response to the realization that poor infant feeding practices were negatively affecting the growth, health and development of children, and were a major cause of mortality in infants and young children. The Code was adopted at the 34<sup>th</sup> session of the World Health Assembly (WHA) in 1981 as a minimum requirement to protect and promote appropriate infant and young child feeding. There have been a number of WHA resolutions adopted since 1981 that refer to the marketing and distribution of breastmilk substitutes<sup>13</sup>. The Code and subsequent WHA resolutions must be considered together in the interpretation and translation into national measures.

The Code essentially advocates that babies be breastfed. If babies are not breastfed, for whatever reason, the Code also advocates that they be fed safely on the best available nutritional alternative. Breast-milk substitutes should be available when needed, but not promoted.

## Why is the Code important?

Improper marketing and promotion of food products that compete with breastfeeding are important factors that often negatively affect the choice and ability of a mother to breastfeed her infant optimally. Given the special vulnerability of infants and the risks involved in inappropriate feeding practices, usual marketing practices are therefore unsuitable for these products. The Code is therefore an important part of creating an overall environment that enables mothers to make the best possible feeding choice, based on impartial information and free of commercial influences, and to be fully supported in doing so.

## What aspects does the Code cover?

The Code applies to the marketing and related practices of the following products: breast-milk substitutes, including infant formula; other milk products, foods and beverages, including bottle-fed complementary foods; feeding bottles, and teats. It sets out detailed provisions with regard to, inter alia14:

- (1) Information and education on infant feeding (Article 4).
- (2) Promotion of breast-milk substitutes and related products to the general public and mothers (Article 5).
- (3) Promotion of breast-milk substitutes and related products to health workers (Article 6).
- (4) Promotion of breast-milk substitutes and related products in health care settings (Article 7).
- (5) Labelling and quality of breast-milk substitutes and related products (Article 9).
- (6) Implementation and monitoring of the Code (Article 11).

<sup>13</sup> World Health Assembly Resolutions 33.32, 34.22, 35.26, 39.28, 41.11, 43.3, 45.34, 46.7, 47.5, 49.15, 54.2 and 55.25 have further clarified or extended certain provisions of the Code. <sup>14</sup> Other articles include: Article 8 - Persons employed by manufacturers and distributors; Article 10 - Quality of products; in addition to subsequent WHA

resolutions.

## 5.3.3. School-based programmes

Eighty-three responses, mainly from government departments, were received from 82<sup>15</sup> countries (Table 5.3.3.1). Only four country respondents reported no school-based programmes.

Primary school was reported as being the most common target group (85% overall), preschool programmes were most commonly reported in EUR (75%) and the least in EMR (36%), while secondary schools programmes were most commonly reported in EMR (82%) and the least in AMR (46%).

School level	WHO Region									
	AFR	AMR	EMR	EUR	SEAR	WPR	Total			
Number of country respondents	16	21	8	19	8	11	83			
Total programmes	79	155	50	133	66	98	581			
% Preschool	66	66	36	75	48	61	63			
% Primary school	82	90	90	83	86	80	85			
% Secondary school	54	46	82	72	52	71	61			

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The most commonly mentioned programmes were for training staff in health issues (83%), safe drinking water (73%), and hygienic cooking facilities (71%) (Table 5.3.3.2). Sixty percent of respondents mentioned that school meals were based on national dietary guidelines; respondents in the AFR region were least likely to mention this.

Provision of fruit and vegetable programmes were most commonly mentioned in AMR (67%), EUR (79%) and WPR (73%), whereas milk programmes were most commonly mentioned by countries in AMR (67%), EMR (63%) and EUR (63%). Such programmes were least likely to take place in AFR (31% for fruit and vegetables, 19% for milk).

About three quarters of EUR, SEAR and WPR respondents mentioned monitoring of children's growth and half or more of AMR, SEAR and WPR respondents reported referral health system for children who require nutrition interventions. These programmes were less of mentioned by AFR and EMR respondents.

Around half of all country respondents in all regions except AFR reported restrictions on marketing of unhealthy foods, whereas restrictions on vending machines were mentioned mainly by respondents from WPR (45%) and EUR (42%). In EUR, the latter intervention was less often reported to take place at national scale, in contrast to other regions.

Overall, 34% of countries reported deworming programmes-with very high rates in SEAR and WPR of 75% and 82% respectively and somewhat less in AFR at 44%. Micronutrient supplementation programmes were most commonly reported by AFR, SEAR and WPR respondents. The programme most frequently mentioned was iron and folic acid by 75% of SEAR respondents, but only 6% of AFR and 45% of WPR respondents. Vitamin A supplementation was mentioned by about half of AFR, WPR and SEAR respondents.

For the majority of programmes, respondents mentioned that monitoring and evaluation (M&E) of the programmes existed (73%), and responses were consistent across specific programmes (data not presented).

<sup>&</sup>lt;sup>15</sup> One country returned two completed questionnaires reflecting implementation of school-based programmes in the two main linguistic groups.

			V	WHO Regio	n		
	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Number of country	16	21	8	19	8	11	83
respondents							
% Countries reporting in	plementat	ion of inter	vention (%	countries r	eporting in	plementat	ion at
national scale)	ſ		1	1	1		
Any school based		100 (100)	22 (22)	100 (70)		100 (01)	0.6.(0.0)
programmes	88 (75)	100 (100)	88 (88)	100 (79)	100 (100)	100 (91)	96 (88)
in putrition and health	69 (44)	95 (90)	15(15)	74 (42)	100 (63)	91 (64)	83 (63)
related issues							
Safe drinking-water	56 (38)	67 (57)	88 (88)	74 (58)	88 (63)	91 (55)	73 (57)
Hygienic cooking facilities	50 (44)	86 (81)	75 (75)	68 (58)	63 (50)	82 (64)	71 (63)
and clean eating							
environment							
School meals based on national dietary guidelines	31 (19)	67 (67)	50 (50)	63 (47)	75 (50)	82 (45)	60 (47)
Provision of fruit and	31 (19)	67 (57)	50 (50)	79 (47)	38 (13)	73 (36)	59 (40)
vegetables Monitoring and informing	25 (25)	57 (48)	25 (25)	79 (58)	75 (50)	73 (55)	57 (45)
parents on children's	25 (25)	57 (40)	23 (23)	17 (30)	75 (50)	13 (33)	57 (45)
growth							
Provision of milk	19 (6)	67 (52)	63 (63)	63 (42)	38 (13)	55 (36)	52 (36)
Marketing of high-fat	38 (31)	48 (38)	50 (50)	53 (32)	50 (25)	55 (45)	48 (36)
energy dense							
and/or micronutrient-poor							
allowed on school premises							
Referral health system for	38 (31)	57 (52)	25 (25)	42 (37)	50 (25)	64 (45)	47 (39)
children who require						- (-)	
nutrition interventions							
Deworming	44 (38)	24 (19)	0 (0)	5 (0)	75 (50)	82 (73)	34 (27)
Vitamin A supplements	56 (56)	19 (10)	13 (13)	0 (0)	50 (38)	55 (36)	29 (23)
distributed	6.(6)	14 (10)	20 (20)	40 (11)	20 (20)	15 (07)	20 (17)
Vending machines not allowed on school premises	6 (6)	14 (10)	38 (38)	42 (11)	38 (38)	45 (27)	28 (17)
Breakfast club	13 (0)	33 (24)	25 (0)	32 (5)	0 (0)	45 (9)	27 (8)
Iron and folic acid	6(6)	19 (19)	25 (25)	0 (0)	75 (38)	45 (27)	22 (16)
supplements distributed			( )	- (-)	()		()
Take-home rations	13 (0)	14 (5)	13 (13)	0 (0)	0 (0)	18 (0)	10 (2)
distributed							
		7					
		7					

Table 5.3.3.2. Proportion of countries by region reporting school based activities

## 5.3.4. Vitamins and minerals

Two broad areas were addressed in the questionnaire: supplementation and fortification programmes.

## Supplementation

Responses to questions in module 5 were received from 86 countries. Respondents were asked whether there was a recommendation from the Ministry of Health to provide vitamin and mineral supplements, and if so which were recommended to be given to whom, how often and the dosage used. Table 5.3.4.1 summarizes the proportion of countries by WHO region that reported supplementation programmes and those that were reported to be implemented at national scale, ranked by order of reported implementation rates. The majority of respondents reported to have some kind of micronutrient supplementation programme (90% of all respondents, with 76% reporting that at least one of the programmes is being implemented nationally). Most programmes were reported by SEAR respondents, whereas EUR respondents reported fewest programmes.

Iron supplementation to pregnant or non-pregnant women was the programme most frequently mentioned by 83% of respondents in all regions, varying from 100% in SEAR at national scale, to 56% in EUR. In all regions, most of the countries reporting iron supplementation also reported folate supplementation to the same target group (72% of all respondents). Much fewer (27%) reported folate supplementation targeted to all women, ranging from 57% in SEAR down to 17% in AFR. Only 30% of respondents (71% SEAR, 22% AMR) reported national programmes of iron supplementation to anaemic women. Other supplementation programmes targeted to pregnant women (multiple micronutrient supplementation, calcium, iodine and vitamin A) was reported by 25% or less of all respondents, though some regions more often mentioned these programmes than other regions, e.g. multiple micronutrient supplementation in SEAR (43%) and WPR (36%). Vitamin A supplementation programmes for post-partum women were most often reported by SEAR (71%) and AFR (61%) respondents.

Among the supplementation programmes targeted to children, vitamin A was most frequently mentioned, followed by iron, zinc for the treatment of food- and water-borne diarrhoea, multiple micronutrient supplements, iodine and in-home fortification. Vitamin A supplementation to children, which was mentioned by less than half of countries, ranged from 86% in SEAR (all at a national scale) and 72% in AFR respondents down to 6% in EUR. Iron supplementation was reported by 50% of AFR and EMR respondents with all EMR respondents reporting national implementation, followed by 48% of AMR and 43% of SEAR respondents. Zinc for the treatment of diarrhoea was most commonly reported in SEAR (57%) and AFR (44%), with no EUR respondent mentioning this programme. Multiple micronutrient supplements to children was most frequently mentioned by SEAR (57%), WPR (43%) and EMR (38%) respondents. Other supplementation programmes targeted to children (iodine and in-home fortificants) were rarely reported in all regions.

The questionnaire asked whether supplements were recommended to be given daily or weekly. Few countries currently recommend weekly supplementation of any micronutrients.

Table 5.3.4.1.	Proportion	of countries	by region	reporting	various	supplementa	tion
programmes							

			W	HO Regio	n		
	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Total country responses	18	23	8	16	7	14	86
% Countries reporting imp national scale)	olementatio	on of interv	ention (%c	ountries re	porting im	plementati	on at
Any supplementation programmes	94 (83)	87 (78)	100 (88)	75 (31)	100 (100)	93 (93)	90 (76)
Iron supplementation to pregnant women or all women	89 (78)	83 (65)	88 (63)	56 (19)	100 (100)	93 (93)	83 (66)
Iron and folate supplementation to pregnant women or all women	78 (61)	74 (52)	75 (50)	44 (19)	86 (86)	86 (86)	72 (56)
Vitamin A supplementation to children	72 (44)	30 (26)	25 (25)	6 (0)	86 (86)	57 (43)	43 (33)
Iron supplementation to children	50 (28)	48 (39)	50 (50)	19 (0)	43 (29)	29 (21)	40 (27)
Vitamin A supplementation to postpartum women	61 (22)	22 (22)	25 (13)	0 (0)	71 (43)	36 (21)	33 (19)
Iron or iron-folate to	22 (22)	22 (17)	25 (12)	25 (6)	71 (57)	20 (20)	20 (21)
Folate supplementation to all women	17 (11)	26 (17)	25 (13)	25 (19)	57 (43)	29 (29)	27 (19)
Multiple micronutrient supplementation to pregnant women	6 (6)	26 (22)	25 (13)	25 (0)	43 (29)	36 (29)	24 (15)
Zinc supplementation to children with diarrhoea	44 (22)	13 (13)	13 (0)	0 (0)	57 (43)	14 (7)	21 (13)
Multiple micronutrient supplementation to children	6 (6)	9 (9)	38 (25)	6 (0)	57 (14)	43 (29)	20 (12)
Calcium supplementation to pregnant women:	17 (6)	22 (13)	25 (0)	19 (0)	29 (29)	7 (0)	19 (7)
Iodine supplementation to pregnant women	22 (17)	4 (4)	25 (13)	19 (6)	14 (14)	7 (7)	14 (9)
Iodine supplementation to children	22 (11)	9 (4)	13 (0)	0 (0)	14 (14)	0 (0)	9 (5)
Vitamin A supplementation to pregnant women	0 (0)	4 (4)	13 (0)	0 (0)	14 (14)	7 (0)	5 (2)
Inhome fortificatnts to children	0 (0)	4 (4)	13 (0)	0 (0)	14 (0)	7 (0)	5 (1)
Inhome fortificatnts to pregnant women	11 (0)	0 (0)	13 (0)	0 (0)	0 (0)	0 (0)	3 (0)

## Management of programmes

A majority of vitamin and mineral supplementation programmes in AMR, SEAR and WPR and about half of those in AFR and EMR were reported to be managed by government through free national schemes with distribution and management through the health system (Table 5.3.4.2). In EUR on the other hand, supplementation programmes were largely reported to be handled by the private sector and distributed through pharmacies at a cost, indicating that in addition to the health system, pharmacies are important point of distribution of supplements in EUR. In AFR, SEAR and WPR, UN agencies were often reported to be involved in the management of distribution of supplements in addition to the government, whereas NGO managed programmes are most common in AFR and SEAR.

Table 5.3.4.2.	Proportion reporting payment,	distribution and	management	of supplementation
by region				

			W	HO Regi	on	10010101010	
	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Number of	18	23	8	16	7	13	85
Countries						<b>B</b> .	
Number of							
supplementation	105	90	41	45	50	77	408
programmes							
Payment for	suppleme	ents					
Free	52%	89%	39%	11%	78%	79%	63%
Distribution sy	vstem			Ŧ	4		
Health System	75%	92%	56%	38%	76%	87%	75%
Pharmacies	30%	8%	2%	60%	22%	8%	20%
Shops	6%	0%	0%	11%	8%	4%	4%
School	2%	0%	2%	0%	0%	1%	1%
Community	14%	9%	0%	0%	18%	5%	9%
Manageme	nt of syste	m	7	₹ A			
Government	58%	91%	54%	18%	78%	78%	67%
UN agencies	27%	4%	0%	0%	18%	16%	13%
NGO	17%	2%	0%	0%	12%	8%	8%
Private Sector	21%	0%	0%	31%	18%	6%	12%

## Food Fortification

Table 5.3.4.3 summarizes the proportion of countries reporting to fortify food products by region and whether food fortification is mandatory. There was considerable regional variation in whether fortification programmes were mandatory, with few programmes reported to be mandatory except for fortification of sugar, salt and complementary foods. The majority of respondents indicated to have salt fortification (100% EMR- 48% AMR), overwhelmingly with iodine, but also vitamin A and other nutrients in a number of countries. Outside of SEAR, few of these were reported to be mandatory. In EMR for example, whereas 100% of countries reported salt fortification, only 38% reported to have mandatory programmes. Overall 44% of respondents reported wheat flour fortification, mostly with iron but also a mix of other nutrients, but only 11% that it was mandatory (EMR 75%, 13% mandatory). Fortification of other food vehicles was limited and variable across regions. About a third of respondents mentioned that there were country programmes fortifying margarine with vitamin A. Complementary foods was most often fortified in SEAR and EMR, and oil in AFR.

	WHO Re	gion								
	AFR	AMR	EMR	EUR	SEAR	WPR	Total			
Total country responses	18	23	8	16	7	14	86			
% Countries reporting fortification	% Countries reporting fortification of food products (% reporting mandatory fortification)									
Salt iodization and other fortification	67 (56)	52 (43)	100 (38)	81 (56)	71 (71)	79 (38)	71 (49)			
Wheat flour fortification	28 (17)	57 (13)	75 (13)	19 (0)	43 (0)	57 (15)	44 (11)			
Fortification of margarine/butter	28 (11)	17 (0)	13 (0)	63 (13)	14 (0)	43 (0)	31 (5)			
Fortification of complementary foods	6 (11)	22 (9)	38 (25)	25 (25)	43 (43)	29 (15)	23 (18)			
Oil fortification	33 (22)	9 (4)	13 (0)	6 (0)	14 (0)	21 (0)	16 (6)			
Sugar fortification	17 (22)	13 (13)	13 (13)	0 (0)	0 (0)	14 (15)	10 (12)			
Rice fortification	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	21 (0)	3 (0)			

Table 5.3.4.3. Proportion of countries by region reporting fortification of food products

## Management of Programmes

As might be expected, and in contrast with supplementation, the distribution of fortified foods was mainly through shops and the private sector, and were paid for rather than being free. Few respondents mentioned that fortification was subsidized in any way.

Of all the different fortification programmes mentioned about half were managed by a mandatory and half by a voluntary regulatory framework. Of the 62 programmes mentioning salt iodization, 74% were mandatorily regulated; for wheat flour fortification 23% were mandatorily regulated; for margarine and butter (most common in Europe) fortification, only 7% were mandatorily regulated.

Respondents were asked whether the fortification was with local or imported foods; about an equal proportion used local and imported foods.

The questionnaire asked about policy basis, implementation mechanisms, monitoring and evaluation and budgets for implementation. Where mentioned, a government agency was most often said to be responsible for implementation, with industry and UN agencies mentioned but less often. Few respondents mentioned whether any budget for the work existed or whether there was any monitoring and evaluation in place. Apart from a few programmes set up under a policy around iodine deficiency, fortification of flour or of complementary foods, few respondents mentioned under what policy framework the programmes were run and whether the programme had a specific target group. In EMR one country mentioned that the fortification programme was part of a national development plan or food security policy.

## Additional data

The data from respondents' questionnaires can be compared with data from the Flour Fortification Initiative (FFI) (Figures 5.3.3.1 and 5.3.3.2). This shows that the proportion of countries with reported flour fortification varied from 24% in EUR to 68% in EMR, although it should be noted that in some regions the proportion of unknown status was above 50%. The nutrient composition of the fortified flour varied by region. Among those countries reporting

flour fortification, the majority indicated that a mix of nutrients was being added, except perhaps in EMR where about half fortified with iron and folic acid. The exact composition of the nutrients was variable; for example in WPR, Australia and New Zealand added thiamine and folic acid and in the Philippines iron and vitamin A were added.



Figure 5.3.4.1. Proportion of countries with flour fortification, planned, and unknown (from Flour Fortification Initiative, FFI), 2010.



Figure 5.3.4.2. Among countries with flour fortification, the proportion containing either iron and folic acid, or various combinations of other micronutrients (from FFI)

## Coverage reported in Countdown 2015

In the 68 Countdown priority countries (Countdown 2015, 2008), that included all but two of the 36 high burden countries that contribute 90% of world's estimated 178 million stunted

children, median coverage rates for key nutrition measures were low and have not improved overall as rapidly as required to achieved agreed goals.

Coverage of iodization of salt based on latest UNICEF report is 72% for the developing world; 60% for Africa, 73% for Asia, and 89% for Latin America and the Caribbean. Vitamin A supplementation coverage rates vary from 65% in South Asia to 89% in East Asia and the Pacific; Africa is at 73%.

## Summary from case studies

One case study (5.3.4.1) from Nigeria focused on combating iodine deficiency by implementing universal salt iodisation (USI). This showed that the key elements in achieving reductions in goitre were: high level commitment and leadership; favourable industrial and market environment; sustaining success required coordination and commitment across multiple sectors to maintain ownership.

Case study 5.3.4.2 summarises how Jordan developed its wheat flour fortification programme which has recently been expanded to include more nutrients than the initial iron-folate fortification. The success factors of this programme have been a high level political support backed by mandatory legislation and a strong national fortification alliance that ensured multi-sectoral (including industry) support; consumer acceptance; capacity building to strengthen technical competence; reasonable cost, and sustainability.

Case study 5.3.4.3 reports on one year demonstration project from north-west Vietnam to address anaemia by weekly distribution of iron and folic acid supplementation together with deworming. The 48% reduction in anaemia prevalence was attributed to: effective distribution of tablets using village health workers; community involvement backed up by education; training and capacity building; and routine monitoring.

## Case study 5.3.4.1. Combating iodine deficiency disorders- The success story from Nigeria.

IDD has been a public health problem for three decades in Nigeria. In 1993, a national survey, revealed an average Total Goitre Rate (TGR) of 20% and the fact that less than 40% of circulating salt in the country was iodized. In the same year, Nigeria began an IDD control programme in line with the 1991 WHA resolution which called for the elimination of iodine deficiency disorders. The thrust of the programme was virtual elimination of IDD and institution of Universal Salt Iodization (USI) was the cornerstone strategy. In 2002, a national food and nutrition policy was launched; this specifically targeted reduction of micronutrient deficiencies including IDD by 50% by 2010.

## Implementing the IDD Programme

Universal Salt Iodization (USI), where 80% of the population must have access to iodized salt was adopted as a key strategy for prevention of iodine deficiency disorders. In pursuit of this, the Nigerian government passed a mandate that all food grade salt be iodized with 50ppm potassium iodide at packaging stage. This was preceded by a national consensus workshop attended by major domestic salt importers, distributors and packagers, the Standards Organizations of Nigeria (SON), the agency charged with maintenance of standards for all manufactured/imported products (including food and drugs) and line ministries. Since Nigeria's handful of large domestic salt companies import almost all salt for national consumption through four major ports, the market environment to achieve USI was very favourable. Iodization essentially involved specifying the required iodization levels from overseas suppliers in South America, Europe, Australia and Southern Africa.

Barely one year after the SON mandate (1994), monitoring of the USI programme revealed that less than 40% of Nigeria's salt had adequate levels of iodine. The growing body of evidence from other USI programmes suggested that there were major losses of potassium iodide, especially when sold in bulk in open air markets (as the case in Nigeria) where the product is exposed to elements. This caused SON to revise the standard, specifying potassium iodate to improve retention. The revised SON standard specifies over-all quality parameters for food grade salt, establishes packaging, labelling, transport and storage requirements, specifies analytical methods, and outlines substantial legal penalties -consignments not

meeting standard can be impounded and/or sent to an iodization facility prior to entering the market. The standard defines properly iodized salt as:

- > 50 ppm iodine at port of entry and salt factory level
- > 30 ppm iodine at distributor and retail levels
- > 15 ppm iodine at household level

Since 1995, SON records of inspection at port of entry and at salt companies consistently indicate 90-100% of consignments with iodine levels above 50 ppm.

In order to sustain USI efforts, Nigeria established a multisectoral IDD-USI Task Force which is still active to date. The Task Force consists of SON, the secretariat, relevant partners (including the salt producers/marketers, government regulatory agencies/line ministries, development partners, consumer associations and the media). This taskforce has responsibility for assessing iodine levels in edible salt (quarterly at factory and wholesale levels, and annually at retail and household levels), and convening quarterly meetings to review and document results of the assessment. These results reveal challenges that in turn provide the basis for continuous process improvement.

In addition, there is regular public awareness programme using print and electronic media to create awareness among consumers on the need to demand for and consume iodized salt. This is backed up by annual celebration of Micronutrient Day.

### Main Outcomes

As a result of effective implementation, the following were achieved:

- 1. Ninety-Eight percent (98%) of households in Nigeria have access to adequately iodized salt
- 2. Reduction in the prevalence of total goiter rate (TGR) from 20% in 1993 to 6% in 2005

3. Median urine iodine excretion rate greater that 100 microgram/dl for all zones, which means that no zone was deficient in iodine consumption during the national assessment.

These three indicators for IDD control show that Nigeria has made remarkable achievements.

According to a report titled Nigeria Damage Assessment Report (UNICEF,MI,2004), it is projected that a decrease in TGR from 20% estimated for 1993 to 7.7% in 2004, would benefit the country in two folds; 590,000 fewer babies born with intellectual impairments annually and future productivity gains of \$220million per year to the Nigerian economy.

### Success factors

There are a number of factors that can be ascribed to this success. These include high level commitment and good leadership, favourable industrial and market environment, domestic financing (donors and government investment) which absorbed the added cost for iodization, continuous improvement process-SON standard revision, and the private sector awareness, support and collaboration.

### **Opposing Forces**

There are two notable forces that the country continues to deal with in its IDD control efforts. The bigger one is the issue of smuggling of non-iodized salt into the country and the other on a small scale is that there are small village level producers of salt who account for 1-2% of salt with no iodine in circulation. For the latter, Nigeria is on one hand making efforts to assist them with small scale iodization facilities and on the other, looking for an alternative market for local salt production-such as ensuring that 100% of local (un-iodized) salt is sold to tanneries for industrial use. This will secure the means of livelihood for these village level producers. However, there is no reprieve for those who engage in smuggling of un-iodized salt as the full weight of the law would fall on them.

### Lessons learnt

Sustaining the achievement of USI requires coordination of multiple sectors to maintain ownership and commitment and coordinate key stakeholders to assure quality production, raise consumer awareness and monitor results.

Nigeria has a big influence in the West Africa sub-region, without Nigeria's USI success; about 50% of households in the sub-region who currently have access to iodized edible salt would have lacked it. This is trade related.

## Conclusion.

As a result of the achievement on IDD control, Nigeria has been recognized as the first African country to achieve universal salt iodization. This recognition by a global body concerned with IDD control coupled with the potential economic gains, has provided additional political and advocacy leverage to sustain efforts. It has instilled in government and the people the "we can do it" -spirit which can propel similar achievements in other areas of health and development.

### **References:**

1. Report on Assessment of Total Goitre Prevalence and Urinary Iodine in Nigeria-2006

2. Universal Salt Iodization in Nigeria

3. Nigeria Damage Assessment report ,UNICEF,MI 2004.

## Case study 5.3.4.2. Wheat Flour Fortification in Jordan

After the ICN 1992, Jordan has taken steps in the area of food and nutrition, particularly, in relation to micronutrient deficiencies. A comprehensive analysis of the nutrition situation has been made and strategies addressing various key components of food and nutrition policies have been developed. In 2006 and then 2009 the Jordanian Ministries of Health and Agriculture, as well as academic institutions with technical assistance from WHO adopted the food and nutrition policy and action plan.

**Micronutrient malnutrition** is a public health problem in Jordan, particularly with respect to vitamin A, iron, and iodine deficiencies. To address this problem, Jordan has undertaken two national micronutrient fortification programs; a national salt iodization program initiated in 1995 and a wheat flour fortification program initiated in April, 2002.

The first micronutrient status survey in Jordan was the 2002 national survey on iron deficiency anaemia and vitamin A deficiency conducted by the Ministry of Health, The survey showed that among Jordanian women 15-49 years of age, 32.3% were anaemic, 40.6% had iron deficiency, and 22.5% had iron deficiency anaemia. Among children 12 -59 months of age, 20.2% had anaemia, 26.1% had iron deficiency, and 10.1% had iron deficiency anaemia. Vitamin A deficiency was found in 15.2% of children.

In 2002, flour was initially fortified with iron and folic acid alone. However, in March 2006 the Flour Fortification Program was expanded to include iron, folic acid, zinc, niacin, and vitamins A, B1, B2, B6, and B12. In 2010 the Ministry of Health plans to add Vitamin D to the existing premix. Currently, all ten mills in Jordan fortify flour. The flour that is fortified is the Mowahad wheat flour (73-78% extraction rate). This is the only subsidized flour and constitutes 92.5% of wheat flour production in Jordan.

### Objective of the flour fortification program

- 1. Reduced prevalence of iron deficiency anaemia among preschool-aged, school-aged, non-pregnant and pregnant women, and elderly
- 2. Reduce the prevalence of vitamin D deficiency among women of childbearing age, lactating women, children and elderly
- 3. Elimination of vitamin A deficiency among under 5 children and pregnant and lactating women
- Increased percent of household consuming adequate amounts of iron, folic acid and vitamins A and D
  Decreased incidence of neural tube defects among newborns.
- Becretased include of include defects alloing new borns.
  Reduce the cost-benefit ratio of measures to control (prevents and corrects) iron deficiency and its anemia.

## Key success

- **1. Political Support**: High political commitment as the MOH included premix cost as budget line item in the annual budget, (one million Jordanian Dinar per year)
- 2. National Fortification Alliance: formulating flour fortification steering committee with multisectoral partnership Industry, Government, Civil Society and NGOs.
- **3. Capacity building:** Technical assistance received from WHO, GAIN, and FFI. MoH program staff and lab technician were trained on different program aspects as well as mills were trained and guided on the use of the feeders and quality control procedures.
- 4. Cost effective and Sustainable :). The cost of fortification is 0.03 JD Per capita /year compared to Anemia treatment of 4.9 JD/ Capita /year.
- 5. Industry Support: support response by the milling industry in light of the new requirement of adding additional fortificants to the current premix.
- 6. Legislations: It is mandatory and compulsory for Mohad flour, by the Jordanian laws.
- 7. Consumer Acceptance: feasibility study has been conducted on and the effect of iron fortification on the sensory and the effects of flour storage, baking process on the stability of iron quality of the fresh and stored bread production.
- **8.** Expand the benefits; Ministry of education adopted School Feeding program with fortified biscuits using the same fortified flour that currently use for bread making.

### Outcomes and what Next: Building on the evidence to move forward

- 1. Monitoring and Evaluation: MoH established an effective and routine Monitoring system to ensure proper and quality implementation of the program.
- 2. Developed strategic communication plan that addresses all target group, as well as developed an advocacy tool for decision makers
- 3. Recent DHS, 2010 Survey results showed an improvement on the Anemia status among children under five and women in childbearing age, using hemoglobin as an indicator.
- 4. School children program showed also an improvement on the serum ferritin, 2009 survey showed decrease in ID prevalence from11.5% in 2003 to 4.2% in 2009
- 5. The success of program implementation resulted in the decision to add more vitamins and minerals. By 2020, MOH will add vitamin D.
- 6. Impact survey will be conducted, with assistance of GAIN and CDC, the result will soon launch to measure the impact of fortification program on the national level .

## Case study 5.3.4.3. The Yen Bai story: a public health approach to reducing anaemia and improving women's health in Viet Nam

In May 2005, Yen Bai Province was selected for a demonstration project to address anaemia: a major public health problem in women of reproductive age in north-west Vietnam, where it was thought that both lack of dietary iron and hookworm infection contributed to iron deficiency.

The initial survey (November 2005) revealed 37.5% non-pregnant women were anaemic (Hb<120 g/L) and 23.0% were iron deficient (Ferritin <15 ng/L). Iron deficiency was more common among anaemic women, although less than one half of anaemia could be attributed to iron deficiency. Hookworm infection was present in 78.1% of women while heavy infection was recorded in 6.3% (1).

A one year demonstration programme of iron supplementation and deworming was launched in May 2006 in two districts of the Yen Bai Province -- Yen Binh and Tran Yen -- covering 50,000 women of reproductive age. The initial 12 months' intervention package comprised weekly iron-folic acid supplement (WIFS) and deworming. The supplement contained 60 mg elemental iron and 0.4 mg folic acid. Albendazole (400mg) was given three times a year.

Towards ensuring active support of the various authorities, presentations of the plan and advocacy meetings were made to the provincial People's Committee and Health Department heads, Centres of Preventative Medicine and heads of Commune Health Stations. Training sessions were organized for all village health workers (VHWs) to involve them in educating women to the value of regular iron supplementation and deworming and also in implementation activities including timely identification of constraints and resolving of the issues.

**Distribution of weekly iron – folic acid (WIFS) to women of reproductive age aimed at universal coverage** of all women 16-45 years and the consumption of WIFS was not supervised. To ensure high compliance in taking the tablets, women were encouraged by the village health workers (VHW) to take WIFS regularly on a designated day of the week, between meals.

**Community involvement was considered essential.** VHWs, being an integral part of village community, were able, during their usual activities and social interactions, to disseminate information on positive attributes of the intervention package.

**Information education communication** (IEC) was an essential component in both raising awareness of iron deficiency and anaemia and supporting women to participate and take the tablets regularly. IEC materials included information brochures, posters, informational calendars, radio segments and television commercials. Advocacy workshops were held for all layers of the project implementation team and women themselves.

**Training and capacity building** included training of the implementation team before the intervention. The nodal health team comprising 680 village health workers from two project districts, two nurses from each commune health station and two staff of each district Preventive Medicine Centre were trained about the causes, treatment, prevention and health risks of anaemia and hookworm infection.

**Monitoring was undertaken routinely** through regular visits to Yen Bai including to the district Preventive Medicine Centres, commune health stations and village health workers. Over the period of the project, monitoring by the core health team also contributed significantly to development of rapport among implementers at all levels. In addition, compliance was monitored by an independent non - government organization (NGO), the Research and Training Centre for Community Development (RTCCD).

**Impact evaluation revealed a significant decrease in anaemia prevalence** (Hb <120 g/L) -- a reduction of 48% in a period of 12 months. With the administration of Albendazole, hookworm infection fell from 76.2% at baseline to 25.2% after 12 months of project implementation.

Based on the success of the demonstration project and the low cost, the decision was made by provincial authorities to upscale to all districts of Yen Bai and in March 2008 the project was expanded to provincial-wide, to reach approximately 250,000 WRA.

## So, what have we learned?

In countries where IDA is a public health problem, it is vital to move beyond strengthening anaemia control programmes which address only pregnant women. In developing countries, high priority must be accorded to building iron and folate nutrition prior to pregnancy as this reduces risk during pregnancy and is critical for the health of mothers and their infants.

Anaemia programmes should include targeting adolescent girls in school and out of school as well as those who are in communities or part of the work force. In order for all women of reproductive age to have access to WIFS, a strategy of providing free WIFS for economically disadvantaged women needs to be combined with promoting, using a social marketing approach, the purchase of WIFS at a reasonable price for women with a higher socio-economic status.

A designated WIFS day / Iron Day contributes significantly to the success of the programme. Attractive blister packaging (4, 5 or 10 tablets per blister) enhances the value of the product.

For a WIFS programme to be successful, it is essential that an uninterrupted, quality supply of iron and folic acid (IFA) supplements, at a low cost, is ensured through partnership with the private sector.

IFA supplements need to be made available and accessible to individuals of the target group of various ages, in a wide range of situations, so dependency on a single delivery system of health is not advisable. Dovetailing WIFS programmes with other available infrastructures and networks should be encouraged.

Complementing regular supply of IFA supplements with an effective communication strategy is a critical factor for the success of WIFS programmes. Sharing the benefits of WIFS experienced by women in peer group discussions has been demonstrated to be a very effective communication strategy. Dissemination of information on the day designated as "WIFS Day" and promoting consumption of WIFS on this day facilitates increased compliance.

Technical information on WIFS should be accurate and standardized. Training should stress not only technical details but also skills in management of supply logistics, use of IEC materials and monitoring.

Monitoring of WIFS programmes is critical for effective implementation and high compliance. Evaluation should review the effectiveness and constraints of a range of WIFS programme components including policy, training, IEC, supply of supplements, system of compliance, assessment, monitoring and cost.

## Next steps for the Yen Bai programme:

With the low cost of implementation and the positive impact on women's health, representations to the Government of Vietnam via the Ministry of Health for support and expanded distribution are taking place. At present the National Institute of Nutrition is preparing a new nutrition strategy for 2011-2020 for submission to the government in 2010. Part of the guidelines includes a package of measures under the heading of Plan of Action to Accelerate the Reduction of Stunting (PAARS). Within this package it is proposed that WIFS for some of the target group perhaps women aged 20-35, should be made available.

In Yen Bai, various sustainability options are being considered, including using a social marketing approach in disadvantaged provinces that would encourage women who can afford it, to buy the supplement and thus, through small profits from their purchase fed back into the program, make the supplements freely available

for women who cannot afford it. Another option being explored is encouraging the government, through advocacy and presentation of the health benefits for women and babies, to consider including WIFS in the health insurance package, as it would support meeting several national health priorities.

## 5.3.5 Obesity and diet related chronic disease prevention

Responses were received from 105 countries, 86% of these mentioned having any specific policy implementation tools in this area, most of them at national scale. All SEAR countries mentioned to have programmes, whereas only half of AFR countries mentioned this (Table 5.3.5.1). Food based dietary guidelines, nutrition counselling in PHC and food labelling were the programmes most often mentioned by more than half the respondents, though regional differences were significant with programmes most often mentioned by AMR and SEAR respondents, and the less often by AFR respondents. Promotion of healthy messages through the media was reported by 44% of respondents, this was on of the most commonly mentioned programmes in both EMR and SEAR. . Seventy percent of respondents in AMR reported national programmes to promote fruits and vegetables whereas no country respondent in EMR reported this. Regulations on marketing foods and non-alcoholic beverages to children were mentioned by 6% of respondents from AFR, 22% AMR, up to 67% in WPR. Few responding countries mentioned any instruments focusing on removing salt and/or trans fats from processed foods (50% of EUR and WPR respondents for salt reduction), particularly in AFR (0%). Workplace based interventions were most commonly reported by WPR (67%). Measures to affect food prices were seldom mentioned in all regions.

			W	HO Regio	n		
	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Number of countries	17	23	8	38	7	12	105
% Countries reporting in	nplementat	ion of inter	vention/m	easures (%	countries	reporting	
implementation at nation	nal scale)	-	-	-	i	i	
Any obesity and diet-	53 (47)	96 (96)	88 (88)	100 (47)	100	83 (832)	89 (69)
related chronic disease					(100)		
relevant programme				()			
Food-based dietary	24 (18)	74 (70)	50 (38)	82 (32)	/1 (/1)	75 (75)	67 (46)
Suidennies (FBDG)	25 (20)	70 (71)	75 (75)	55 (10)	96 (96)	75 (67)	(2 (17)
primary health care	33 (29)	70 (74)	75 (75)	55 (18)	00 (00)	75 (07)	03 (47)
Labeling of foods with	47 (35)	70 (57)	63 (63)	39 (24)	71 (43)	75 (67)	55 (42)
Durational information	24 (24)	74 (70)	00 (00)	0 (0)	9( (9()	75 ((7)	44 (42)
putrition through media	24 (24)	74 (70)	00 (00)	0 (0)	00 (00)	/3 (07)	44 (42)
le g TV radio							
newspapers posters							
websites)							
Measures to promote	24 (18)	70 (70)	0 (0)	34 (18)	43 (43)	50 (42)	40 (32)
fruit and vegetable							
intakes							
Regulations on marketing	6 (6)	22 (17)	50 (50)	42 (21)	57 (43)	67 (42)	36 (24)
of foods and non-							
alcoholic beverages to							
children							
Measures/initiatives to	0 (0)	26 (22)	25 (25)	50 (18)	14 (14)	50 (33)	32 (18)
remove/reduce the salt							
content of processed		A					
Workplace based	12 (6)	18 (26)	38 (13)	13 (0)	13 (14)	67 (42)	30 (13)
intervention programmes	12 (0)	40 (20)	30 (13)	13 (0)	+3 (1+)	07 (42)	50 (15)
Nutrient reference values	12 (6)	48 (43)	50 (50)	8 (5)	57 (57)	50 (50)	29 (26)
Measures to affect food	6 (6)	0 (0)	13 (13)	24 (8)	0 (0)	25 (17)	13 (7)
prices (e.g. high fat, salt,	- (-)	- (-)	- ( - )		- (-)		- (.)
sugary products)							
Measures/initiatives to	0 (0)	30 (26)	38 (38)	5 (3)	0 (0)	0 (0)	11 (10)
remove/reduce trans		. ,	. ,	. ,		. ,	
fatty acids (TFA) from							
processed foods		1					

Table 5.3.5.1. Proportion of countries by region reporting implementation of obesity and dietrelated chronic disease relevant programmes and measures

For each policy implementation tool and instrument mentioned in Table 5.3.5.1 respondents were also asked the legislative basis for the action, the target group, the main body responsible for implementation, and whether budgets and M &E existed for each. In summary, the interventions to address obesity and diet-related noncommunicable disease were reported

- to be the responsibility of the government (except in EUR and AFR) and mainly the Ministry of Health,
- to be funded by government (with support from UN Agencies in AFR and SEAR where both UN as well as NGOs and private sector were mentioned as funding sources);
- 51% (only 15% in EUR and up to 73% in SEAR) reported that a budget existed for the work
- for the target group to be predominately the general population (55%) followed by children (21%); and
- for implementation to be reported to be monitored (48%)
- Of countries with labelling instruments and for countries with trans fatty acid reduction programmes, 57% and 58% respectively, were reported to be regulated by statute, whereas fewer instruments targeted at salt (36%) in processed foods were regulated by statute. Forty-two percent of countries with regulations on marketing of foods and non-alcoholic beverages to children reported that these were by statute.

### Summary from case studies

The steps taken to develop the Slovenian Nutrition Action Plan are summarised in case study 5.3.5.1. This highlighted the importance of the health impact assessment in raising awareness of key nutrition problems and the different perspectives on the determinants from different sectors such as health and agriculture. The support of WHO and the greater participation with European networks were considered to be crucial to the development of the national programmes.

Nutrition policy in France is summarised in case study 5.3.5.2. This suggests that the apparent stabilisation of obesity rates in France is attributable to the National Nutrition and Health Programme that included a comprehensive package of obesity-fighting initiatives. Some key activities seemed to be: using the school setting (and including banning vending machines); focusing on surveillance system to evaluate and alter programmes; and government regulation (to improve school meals and prevent advertising of food products in school; and regulating TV advertising).

#### *Case Study 5.3.5.1. Developments in Food, Nutrition and Nutrition Status in Slovenia* Policy developments and background

The public health elements of a holistic and comprehensive Nutrition Action Plan were included in the National Action Plan 2000 -2004 for Slovenia. Basic directions for food supply, food safety and nutrition were given in the plan, which was at the same time oriented towards general population and specific more vulnerable groups.

The first exclusively food and nutrition strategic policy plan was developed for the period 2005-2010 (FNAP 2005-10). The process of the preparation of the plan was very broad, all relevant stakeholders and sectors were involved in the numerous debates during the preparation process, via the Food and Nutrition Council. This AP was also structured into three pillars (food supply, food security and nutrition).

Slovenia was at the time of the development of the plan in the process of accession to EU, with obligations to harmonize with EU legislation, including the Common Agriculture Policy. A Health Impact Assessment (HIA) on Food and Agriculture policies, and the potential effects of accession to the EU, was conducted. The HIA produced recommendations which were taken into consideration during the preparation of the FNAP 2005-10.

The HIA helped to develop new communication between the Ministries on food and nutrition issues. Perceptions of HIA on food and agriculture policies were different by different stakeholders. For instance, medical experts were convinced that broader socio-economic determinants of health were included during the HIA process, whereas agricultural experts were adhering to the idea that HIA was based on a relatively narrow medical concept; lack of multidisciplinary competence was identified as one of the main obstacles. Thus, better understanding of positions/arguments on both sides, health and agriculture, and identification of common interests were also one of the most interesting outcomes of the process.

The implementation of the CAP Fruit School Scheme in Slovenia in school year 2009/10 with 75 % participating Slovene primary schools is one of the best practices in Health in All Policies approach, involving agriculture, education and health sector working together with harmonized goals.

The other sector which was very active in preparation and implementation of the Slovene FNAP 2005-10 was the education sector, where cooperation with the health sector has traditionally for decades gone well. Nutrition topics are systematically included in the regular school curricula, within home economics. Health topics, connected with nutrition, are included into cross-curricular activities in primary schools. School nutrition program, starting in kindergartens and being spread obligatory to the secondary schools in 2008, too, enables now all children from one till eighteen years to eat up to four cooked meals per day in the public education institutions. Up to one third of meals are distributed for free and the rest of them are subsidized by the state budget. School meals are in accordance to the guidelines for school nutrition, adopted by MoH in 2005, additionally to this standards for quality for food procurements were developed (2007) and the manual of menus was also developed (2008).

Numerous nutritional guidelines with manuals for implementation were developed or are under development for other subpopulation groups, too, as for instance for patients in hospitals, within health sector, for active working population, for students and others. Many health education activities are supporting empowered individual healthy choices in nutrition, starting from future parents on. Cooperation of schools and primary health centres is in some regions exemplary developed and it is foreseen to transfer best practices at the national level.

Cooperation with other sectors is challenging, closer relations with sector of finance (differentiation in taxation of different types of foods), culture sector (reducing marketing pressure to children), social affairs sector (nutrition for less well of population groups and specials vulnerable groups) is to be achieved in the future.

One of the most challenging future activities is the development of harmonized activities with private sector, where we see public health as the guiding sector. Reformulation of the food products, triggered and supported by in international activities is one of the top front challenges on the national level.

NGOs don't have long tradition in Slovenia and in spite of being very valuable in creating opportunities for (nutrition) health, only recently some more structured national developments started to support NGOs in the field of Nutrition and obesity prevention. It is a challenge to create alliances comparable to those in the field of tobacco in the field of nutrition, too.

Important added value which enabled Slovenia to be more active in the field of nutrition was the cooperation in the international activities and sharing best practices. The possibility to actively participate in the action networks (obesity surveillance initiative, salt, reducing marketing pressure to children, and now also nutrition for lower SE groups), set up by WHO European Regional office to facilitate the implementation of the second European Action Plan for food and nutrition, enabled Slovenia to follow the strategic developments and to elaborate national nutrition tasks and activities more competently. The same kind of expert stimulus was the collaboration with the WHO Venice office in investment for health, where one of Slovene regions, Pomurje region, developed the model, how to identify, develop, implement and support best practices in socio-economic and environmental development, to achieve better health and quality of life of the regional population. Health as the developmental potential was highlighted and inequalities were tackled with the regional strategy. Activation of communities is one of the main approaches in this process.

Participation in the EU activities and institutions also created a great momentum for common work and capacity building, specifically within the High Level Group on Nutrition and Physical Activity and within the EuroHealthNet, where inequalities were specially highlighted.

For the future, Slovenia as a small country with relatively low capacities should explore and employ such co operations and elaborate it further in different fields, also research.

World food days were used as mile stones to highlight the work done in the previous period and to launch new ideas and concepts for the future period. Starting with intersectoral consultation the period of the development of the FNAP 2005-10, presenting HIA results in the next step, followed by targeting local food supply and regional development strategy, defining indicators to follow up the developments, potential of cooperation among agriculture, education and health sector in improving school nutrition, role of agriculture in climate change – lively discussions and activities helped the developments.

A lot has already been done in the field of nutrition and food supply and links with food safety activities are well developed. Nutrition policy is "handled" in harmony with physical activity policy at the Ministry of Health and this broader understanding of common roots of the obesity epidemic is creating the basis for action in curbing the obesity trends in Slovenia. In spite of broad scope of activities, aimed at stopping the obesity epidemic, the results are not observed in young or adult population yet. Evaluation of the FNAP 2005-10 will be conducted

and the results will serve in development of the next Slovene FNAP2010-20 which will be more implementation and action oriented, emphasizing the importance of the structure influences to nutrition choices in comparison with the individual influence. Social determinants of health and health inequalities will be more actively and sensibly defined and approached in the future plan.

#### Case study 5.3.5.2. Nutrition Policy in France- effect on Obesity

Childhood obesity assumes epidemic proportions in Europe, and is still increasing in many countries although many European, National and Local initiatives have been conceptualized, implemented and evaluated following the important milestone that was the adoption of the European Charter to Counteract Obesity in Istanbul, November 2006. The prevalence of childhood obesity in France is among the lowest in Europe, but as in other countries, it has been increasing in recent years. Overweight rates have been rising faster in children than in adults.

According to several sources France may be the first country in Europe to see signs of a levelling off in the national prevalence of childhood obesity, although rates are higher in the lowest socioeconomic group. The change comes after the introduction in 2001 of a National Nutrition and Health Programme, Programme national nutrition santé (PNNS), that included a comprehensive package of obesity-fighting public health initiatives.

Public health policy has changed in France since 2000, and although one cannot prove that the stabilization is due to the major nutrition and physical activity interventions, it is well known that France developed a comprehensive Project on the Nutrition and Physical Activity area. At the same time there has been an increased awareness of the issue of obesity especially in children and it's possible that this general awareness has had some impact.

In January 2001, after a Prime Ministerial demand, France launched the PNNS, with nine priority quantifiable objectives. This program was mainly aimed at food behaviour, physical activity with the important aims to on one hand to reduce the prevalence of obesity among adults and on the other to stabilize the obesity prevalence growing in children.

The program was based on six articulated and comprehensive strategies including the delivery of information, communication and education, also the action in terms of the health system and the intervention over the economic stakeholders and consumers. The programme was coordinated by the Ministry of Health and included a strategic committee chaired by the Minister, as well as an executive commission that convenes frequently to discuss and propose agreed initiatives. Trying to involve all stakeholders and society sectors it included representatives of more than nine Ministries, namely agriculture, education, consumption, research young and sports, plus the health agencies, the research institutes, the local and regional governments, researchers from several areas like sociology, nutrition and also the economic actors, food industry, mass caterers, retailers, producers and consumers.

An enormous number of activities have been conducted in the context of this Program. Million of informative materials have been distributed to several groups of the population combined with big media campaigns. Also the local government's action deserves notice since in France several municipality based interventions have evidence of being effective. Also the interaction with major stakeholders deserves to be highlighted namely in relation to the salt reduction obtained following negotiations with the bread industry and at the same time initiatives to reduce added sugars in processed foods were initiated and with an added focus on disadvantaged groups of the population. Also in communication and media strategy a brand image was created and maintained over the years regarding the national Plan and keeping its notorious and brand value extremely high at the same time giving good arguments to convince policy makers in the health sector to scale up nutrition in their priority list.

The school setting was also in the priorities of the programme not only by using the pedagogical opportunities in the curricula to promote health and proper nutrition among families but at the same time working on the school food and nutrition environment namely by the banning of vending machines in schools.

The surveillance part of the Program was of great intensity and the evaluation not neglected. Individual action evaluation were conducted and major national surveys also served as tools to evaluate and reshape needed

#### action.

Government regulation was also used as an important tool namely in order to improve the nutritional quality of food served in schools and preventing advertising of food products in schools. At the same time restrictions to advertising on TV were implemented and the possibility of part of the revenue from the product sales was placed on the table.

This Program focused on the medium term interventions in the field of nutrition and physical activity looking at nutrition as a major health determinant with enormous impact namely on the growing of obesity. Recommendations adapted to the different groups of the population in terms of food habits, nutrition and physical activity were developed.

### 5.3.6. Food security and agriculture

Table 5.3.6.1 summarizes the number of countries from whom responses were received by region, together with the main areas addressed in their food security and agriculture policy documents. Module seven responses were received from 66 of the 123 countries that responded overall with 59 country respondents (89% of Module 7 respondents) listing 156 specific food security and agriculture strategies. The most commonly mentioned policy activities were provision of research and extension (59%) and seeds (55%), followed by subsidized sales and construction of irrigation systems (48%), construction of rural infrastructure (42%), price control (41%), international agreements to boost domestic food production (41%), production credit from State owned banks (39%) and subsidized food for vulnerable groups (38%).

Within each broad type of policy activity respondents were asked about the goal of the type of intervention included and food types covered from predefined sets of goals and food groups (data not presented). Across all the broadly defined types of policies, relatively few explicitly mentioned what may be defined as nutritional goals (combat undernutrition, reduce overweight/obesity, promote healthy diet), the most commonly mentioned goals were aimed at increasing outputs and farm incomes, followed by improving quality. Poverty alleviation was not commonly mentioned as a goal in any region for any type of programme.

When asked about the food types covered by the policies (data not presented) cereals, roots and tubers were the most commonly mentioned. AMR was more likely than other regions to have interventions that covered other food groups as well. EMR was more likely to provide seeds and support research particularly across a wider range of food groups. AMR and EUR countries were relatively more likely than other regions to mention subsidized sales of fruits and vegetables. Few countries mentioned subsidized food for vulnerable groups by any food groups.

	WHO Region						
	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Number of countries responding	15	21	7	8	7	8	66
%Countries mentioning any food	87	100	86	88	86	75	89
security and agriculture policy and							
strategy documents (all types)							
% countries mentioning							
Provision of research and extension	53	71	57	50	71	38	59
Provision of seeds	47	71	57	25	57	50	55
Subsidized sales and grants	40	52	57	38	57	50	48
Construction of irrigation schemes	53	57	43	38	43	38	48
Construction of rural infrastructure	47	43	29	50	43	38	42
Price control	40	43	29	50	57	25	41
International agreement to boost	40	52	43	25	29	38	41
domestic food production							
Production credit from State owned	33	43	57	25	43	38	39
banks							
Subsidized food for vulnerable groups	33	33	57	25	57	38	38

Table 5.3.6.1. Reported policy activities of food and agriculture policies by region

## 5.4. Analysis of the nutrition policy cycle

Of the 123 responses, 54 Member States or territories<sup>16</sup> had completed all seven modules and reported on policies, the coordination and institutional environment, interventions and surveillance for all the nutrition aspects covered in the full questionnaire. For these 54 countries a more in-depth analysis was undertaken of the policy cycle for selected nutrition challenges. The rationale for this analysis was to see whether countries with a high burden of challenges had a different policy environment or implementation from those with a smaller burden. The challenges selected were stunting, maternal undernutrition based on female underweight and low-birth-weight, female adult obesity, and a double burden of malnutrition based on coexistence of child stunting and female adult obesity. For each of the four nutrition outcome challenges, the 54 countries were grouped into a "concern" and a "no concern" group based on how the most recent national data available in the WHO Global Nutrition Databases in relation to the cut-off point for public health significance for the respective challenge derived from normative guidance developed by WHO where existing, or another cut-off where no established cut-off exists. Table 5.4.1 summarizes the distribution of the four nutrition challenges for the 54 countries by region.

<sup>&</sup>lt;sup>16</sup> The 54 respondents that completed all seven modules include 13 countries in AFR (Burundi, Cameroon, Côte d'Ivoire, Ethiopia, Ghana, Guinea-Bissau, Madagascar, Mauritania, Mauritius, Seychelles, Togo, Zambia and Zimbabwe), 19 countries and territories in AMR (Antigua and Barbuda, Barbados, Plurinational State of Bolivia, Brazil, Chile, Colombia, Dominica, El Salvador, Grenada, Guatemala, Honduras, Mexico, Montserrat, Peru, Saint Lucia, Saint Vincent and the Grenadines, Suriname, United States of America and Uruguay), 4 countries in EMR (Bahrain, Islamic Republic of Iran, Iraq and Kuwait) 5 countries in EUR (Armenia, Croatia, Latvia, Poland and Sweden), 6 countries in SEAR (Bangladesh, Maldives, Nepal, Sri Lanka, Thailand and Timor-Leste) and 7 countries and territories in WPR (Cambodia, Lao People's Democratic Republic, Malaysia, Mongolia, Papua New Guinea, Republic of Korea and Tuvalu).

		WHO Region					
	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Countries	13	19	4	5	6	7	54
Stunting							
Yes concern	11	5	2	0	4	5	27
No	2	8	2	1	2	1	
No data	0	6	0	4	0	1	
LBW/maternal							
Yes concern	11	6	1	1	5	3	27
Nø	1	12	3	4	1	4	
No data	1	1	0	0	0	0	
Overweight							
Yes concern	7	12	4	5	1	3	32
Nø	5	0	0	0	2	2	
No data	1	7	0	0	3	2	
Double burden					45		
Yes concern	6	5	2	0	0	2	15
No	6	6	2	1	3	2	
No data	1	8	0	4	3	3	

Table 5.4.1. Number of countries by region with nutrition concerns (54 country analysis)

As all the four nutrition challenges directly, or indirectly through a life course perspective, concerned maternal and child undernutrition, the implementation of key maternal, infant and young child nutrition interventions highlighted in the Lancet Nutrition Series (Bhutta 2008) was assessed. The assessment was done through grouping and/or redefining the interventions reported throughout the questionnaires in Modules 1, 2 and 5, so that they matched the set of interventions proposed by Bhutta et al (2008). The implementation of interventions and their reported coverage was further evaluated as "high" or "low", based on whether more than half or half or less of the possible interventions were reported to be implemented and at national scale.

	All contexts	Specific contexts*18
Maternal and birth outcomes	<ul> <li>Iron folate supplementation</li> <li>Maternal supplements of MMS</li> <li>Maternal iodine through iodisation of salt</li> <li>Maternal calcium supplementation</li> <li>Interventions to reduce tobacco</li> </ul>	<ul> <li>Maternal supplements of balanced energy and protein</li> <li>Maternal iodine supplements</li> <li>Maternal deworming in pregnancy</li> <li>Intermittent preventative treatment for malaria</li> </ul>
	consumption or indoor air	<ul> <li>Insecticide-treated bednets</li> </ul>
Newborn infants and children	<ul> <li>Promotion of breastfeeding</li> <li>BCC for improved complementary feeding</li> <li>Zinc supplementation</li> <li>Zinc in management of diarrhoea</li> <li>Vitamin A fortification or supplementation</li> <li>Universal salt iodisation</li> <li>Handwashing or hygiene interventions</li> </ul>	<ul> <li>Neonatal vitamin A supplementation</li> <li>Delayed cord clamping</li> <li>Conditional cash transfer programmes (with nutritional education)</li> <li>Deworming</li> <li>Iron fortification and supplementation programmes</li> <li>Insecticide-treated bednets</li> </ul>
	• Treatment of severe acute malnutrition	

Table 5.4.2 Key maternal, infant and young child nutrition interventions evaluated<sup>17</sup>

## 5.4.1 Stunting

Of the 54 countries, 27 have stunting levels above the cut-off for public health concern of 20%, whereas 16 did not.<sup>19</sup>

More countries with stunting levels of concern reported policies that addressed stunting than those who do not have high levels (Table 5.4.1.1). Nearly all policy documents were reported to include monitoring and evaluation, and about two-thirds had been adopted.

The policies reported to address stunting also covered a range of related and underlying issues, more often in the concern group than in the no-concern group. Over 90% of respondents in the concern group reported that breastfeeding, low birthweight/maternal undernutrition, and complementary feeding were addressed in these policies. Most concern countries also reported that these policies covered supplementation of children with vitamin A, but the proportion was lower for iron and folate and much lower for zinc. Of the underlying factors targeted in these policies, over three quarter of concern countries mentioned food security, and a majority also mentioned vulnerable groups, nutrition and infection and food aid, whereas less than half mentioned gender, conditional cash transfers or trade.

<sup>&</sup>lt;sup>17</sup> The analysis evaluated high or low implementation at any or national scale of these key interventions, based on countries' responses throughout Modules 1, 2 and 5. Coverage data were not collected for Conditional Cash Transfers, where the information is taken from Module 1 Section 1 National Policies, Strategies and Actions Plans.

<sup>&</sup>lt;sup>18</sup> Bhutta et al (2008) proposes a set of interventions relevant for all settings (all contexts) and another set of interventions relevant for specific settings, for example malaria endemic areas.

<sup>&</sup>lt;sup>19</sup> Most of the AFR (11/13), SEAR (4/6) and WPR (5/7) countries had levels of concern. AMR and EMR countries had a more even distribution with 5/19 and 2/4 countries of concern respectively. Data were not available for 6 AMR, 4 EUR and 1 WPR countries. Thus, the concern group was largely made up of AFR countries with representation of all other regions except EUR. The non-concern group was largely AMR countries, with a smaller representation of other regions.

Two-thirds of respondents in concern countries reported coordination mechanisms that address stunting, compared with 31% in no concern countries. On average, these mechanisms involved more sectors in the concern group. Health, followed by agriculture, food and education/research were the sectors most often reported to be involved. The mechanisms in the concern group were reported to have more authority and more often to address issues related to stunting than in the no concern group. About two thirds of concern country respondents indicated that the coordination mechanisms addressing stunting had authority to allocate responsibility to stakeholders, but only 19% to assign budgets. Most of the concern countries reporting mechanisms addressing stunting, mentioned that these also focus on breastfeeding, complementary feeding, low birth weight or maternal undernutrition, and vitamin A supplementation to children, whereas about half mentioned that the mechanisms also focus on other micronutrient supplementation or food fortification.

Most concern countries reported that there were actors and stakeholders addressing stunting; when the functions of these actors were assessed less than 60% were reported to be involved in implementation. MOH was most often reported to be involved in implementation, as much as all local NGOs together, followed by international NGOs and UN agencies. The UN agencies identified by the respondents as addressing stunting<sup>20</sup>, were more often reported to be involved in funding, coordination, monitoring, research or normative work rather than in implementation (data not shown).

The vast majority of stunting concern countries respondents reported promotion of breastfeeding, behaviour change communication and/or counselling to promote complementary feeding or vitamin A fortification or supplementation, most of them at national scale. Fewer mentioned other vitamin and mineral programmes such as fortification of wheat flour or of complementary foods, or zinc supplementation. More countries in the concern group had a high implementation of the key maternal, infant and young child nutrition interventions highlighted in the Lancet for all and specific contexts.

Eighty-five percent of stunting concern countries did reported national surveys that measure children's height, though less than a third of them reported surveys in the last two years and that surveys occurred more frequently than every other year.

<sup>&</sup>lt;sup>20</sup> FAO, UNDP, UNICEF, WFP and WHO

۲.	Fable !	5.4.1.1.	. Summary	of policy of	environm	ent for c	countries	with	stunting	levels of	concern
(	(≥20%	) com	pared with	those with	nout				_		

	Stunting is a	Stunting is
	concern	not a concern
Number of countries which have national data	27	16
POLICIES		
% Countries reporting policy document addressing stunting	96%	69%
Number of policy documents reported	73	30
% Documents that have been adopted	66%	67%
% Documents that include monitoring and evaluation	89%	90%
% Countries reporting related issues addressed in these		
documents		
Breastfeeding	96%	69%
LBW/Maternal undernutrition	93%	63%
Complementary Feeding	93 %	69%
Supplementation: Child vit. A	85 %	31%
Food Security	78%	25%
Food Fortification	74%	44%
Supplementation: child iron, folate	70%	56%
Vulnerable groups	67%	38%
Nutrition and infection	63%	31%
Food Aid	59%	31%
Gender	48%	25%
Supplementation: child Zn	41%	25%
Conditional cash transfers	30%	25%
Trade	19%	25%
COORDINATION MECHANISM AND INSTITUTIONAL	**************************************	
ENVIRONMENT		
% Countries reporting any mechanism addressing stunting	67%	31%
Total number of mechanisms reported to address stunting	43	6
Average number of sectors involved and most common sectors:	4.9	3.1
Leading involved sectors in countries	Health 67%,	Health 31%,
	Agriculture 56%,	Food 19%,
	Food 52%, Education/	Education/ Research 19%
	Research 41%.	Research 1970
	Development 37%	
% Countries reporting various degree of authority of		
coordination mechanisms that address stunting	<00 /	240 /
Allocate Responsibility to Stakeholders	63%	31%
Assign Budget	19%	0 %
% Countries reporting related issues being addressed by these		
mechanisms Departfording	(20/	250/
Grandamenter faction	63% 500/	25% 100/
L DW/ (M + 1 - 1 - + ···	59%	19%
LDW / Maternal undernutrition	50%	<b>31%</b> 0
Vitamin A supplementation to children	52%	13%
Iron-tolate supplementation to children	37%	6%
Food fortification	37%	0%
Zinc supplementation to children	30%	0 %
% Countries reporting actors and stakeholders addressing stunting	89%	75%

Number of actors reported	122	33
% Actors with various functions		
Monitoring	66%	79%
Funding	66%	58%
Coordinating	66%	64%
Research	59%	67%
Implementing	57%	61%
Normative	51%	58%
Commercial	4%	6%
INTERVENTIONS		
% Countries reporting implementation of intervention (% countries reporting implementation at national scale)		
Promotion of breastfeeding	96% (93%)	100% (94%)
Behaviour change communication and/or counselling for improved		
complementary foods	96% (81%)	88% (75%)
Vitamin A fortification or supplementation	93% (78%)	36% (19%)
Fortification of wheat flour	48% (11%)	63% (13%)
Supplementation of Zinc to children	44% (30%)	0% (0%)
Supplementation of Iron to children	41% (30%)	50% (38%)
Fortification of complementary foods	30% (19%)	13% (13%)
Interventions highlighted in the Lancet Nutrition Series		
% Countries reporting high implementation of all context interventions	89% (70%)	44% (30%)
% Countries reporting high implementation of specific situational		
contexts	67% (22%)	31% (13%)
SURVEILLANCE		
% Countries reporting surveys that measure children's height	85%	63%
% Countries reporting that last survey was conducted within past 2	26%	6%
years		
% Countries reporting that surveys are conducted every 1-2 year or more often	26%	6%

## 5.4.2 Maternal undernutrition and low-birth-weight

Of the 54 countries, 27 had female underweight (BMI<18.5) above the cut-off level for public health concern of 10% and/or low-birth-weight (LBW) rates higher than 10% (Table 5.4.2.1) and therefore assigned to the concern group, whereas 25 countries did not have high rates for any of these two indicators and therefore assigned to the no-concern group.<sup>21</sup>

Eighty-nine percent of countries in the concern group reported policies that address maternal undernutrition or LBW, slightly more than in the no concern group. Most of the documents reported had M&E components, and a majority had been adopted. More countries had policies addressing low birth weight than maternal undernutrition. In the concern group, a majority reported that these policies covered important intervention areas such as supplementation of iron-folic acid (74%) or vitamin A to women (56%), as well as underlying factors such as food security , vulnerable groups, nutrition and infection or food aid. Less than half of the concern countries mentioned that their policies addressing maternal undernutrition or LBW had a

<sup>&</sup>lt;sup>21</sup> The maternal undernutrition concern countries were mainly AFR countries (11/13), with the bulk of the remaining countries coming from SEAR (5/6), AMR (6/19) and WPR (3/7) as well. The non-concern group of 25 countries was largely made up of AMR countries (12/19), followed by EUR (4/5), WPR (4/7) and EMR (3/4). Two countries, from AFR and AMR, had insufficient data.

gender focus, or cover important intervention areas like food fortification, food security or conditional cash transfers.

Most countries in both groups reported a variety of actors working on maternal undernutrition, though fewer countries seemed to have any coordination in this area. Less than half of the countries in the concern group reported coordination mechanisms addressing LBW and/or maternal undernutrition; this was slightly lower than in the non-concern group. In the concern group, the Ministry of Health was involved in coordination in all countries that reported mechanisms. Other sectors frequently involved were agriculture, food and education/research, whereas the Ministry of Women's Affairs were seldom mentioned to be involved. The nonconcern countries involved on average a larger number of sectors in these mechanisms. Most of the mechanisms were reported to have the authority to allocate responsibilities, whereas very few to assign budgets. Only 19% mentioned that these mechanisms focused on gender issues and only 37% mentioned maternal undernutrition. Turning to the actors involved, most respondents indicated that there were actors focusing on maternal undernutrition or LBW; two thirds reported that these actors were involved in implementation, although slightly more reported involvement in coordination. Ministry of Health, UNICEF and WHO were the main actors among the concern countries (data not presented). Ministry of Health was most often mentioned to be involved in implementation, followed by international NGOs and UN agencies(data not presented).22

Regarding interventions that potentially could address maternal undernutrition, more countries in the concern group reported supplementation to pregnant women or to all women, whereas the non-concern group largely report more fortification programmes. Looking at the nutrition interventions highlighted in the Lancet Nutrition Series, only a third of concern countries reported high implementation of all context interventions concerned with maternal and birth outcomes, versus two-thirds of the countries in the non-concern group. More concern countries reported high implementation of the interventions suitable for specific contexts than those appropriate for all contexts.

Three quarters of concern countries reported surveys that measured either birth weight or the relevant nutrition indicators (weight and height, or anaemia, iron or folic acid status) of women of reproductive age. Despite the broad implementation of iron and folic acid supplementation programmes, about half of the concern countries reported national surveys that measured anaemia, only 37% and 11% that measured iron and folic acid status respectively. Only 15% of respondents reported that such surveys were undertaken more often than every other year, while 30% reported that a survey had been conducted in the last two years.

<sup>&</sup>lt;sup>22</sup> UNICEF, WFP and FAO

Table 5.4.2.13. Summary of policy environment for countries with level of concern for maternal underweight ( $\geq 10\%$ ) and/or high levels of low birthweight ( $\geq 10\%$ ), compared with those with lower levels for any of these indicators

	Maternal	Maternal
	underweight	underweight
	and/or LBW	and/or LBW
	is a concern	is not a
		concern
Number of countries which have national data	27	25
POLICIES		
% Countries reporting policy document addressing LBW/Maternal	89%	80%
Number of policy documents reported	62	47
% Documents that have been adopted	61%	59%
% Documents that have M&E	90 %	86%
% Countries reporting related issues addressed in these documents		
Low birthweight	85%	72%
Maternal undernutrition	74%	68%
Iron-folate supplementation to women	74%	64%
Food Security	74%	56%
Vulnerable groups	63%	56%
Nutrition and infection	59%	44%
Vitamin A supplementation to women	56%	36%
Food aid	56%	44%
Gender	44%	28%
Food fortification	33%	36%
Conditional cash transfers	26%	44%
Trade	22%	36%
COORDINATION AND INSTITUTIONAL ENVIRONMENT	Total	Total
% Countries reporting any mechanism addressing maternal undernutrition	48%	56%
and/or LBW		
Total number of mechanisms reported	28	22
Average number of sectors involved	3.5	5.1
Leading involved sectors in countries	Health 48%,	Health 56%,
	Agriculture 33%,	Agriculture 36%,
	Education/	Education/
	Research 26%	Research 36%,
		Trade 32%
% Countries reporting various degree of authority of coordination		
mechanisms that address maternal undernutrition or LBW		
Allocate Responsibility to Stakeholders	<b>41</b> %	44%
Assign Budget	7%	8%
% Countries reporting that these mechanisms address		
Low Birth Weight	44%	52%
Maternal Undernutrition	37%	48%
Supplementation Women Iron and Folic Acid	37%	32%
Supplementation Women Vitamin A	33%	16%
Food Fortification Vitamins or Minerals	26%	20%
Gender	19%	8%
% Countries reporting actors and stakeholders addressing	85%	84%
LBW/maternal undernutrition		
Number of actors reported	98	68
% Actors with various reported functions		
Coordinating	70%	74%
Implementing	69%	65%
Monitoring	66%	71%

Normative	65%	53%
Funding	57%	49%
Research	52%	76%
Commercial	5%	10%
INTERVENTIONS		
% Countries reporting implementation of intervention (%countries		
reporting implementation at national scale)		
Vitamin A supplementation to pregnant women	59% (41%)	20% (16%)
Iron-folate supplementation to women	85% (74%)	56% (44%)
Fortification of wheat flour	26% (0%)	76% (20%)
Interventions highlighted in the Lancet Nutrition Series		
% Countries reporting high implementation of all context interventions		
concerned with maternal and birth outcomes	33% (26%)	60% (28%)
% Countries reporting high implementation of specific situational contexts		
concerned with maternal and birth outcomes	41% (19%)	24% (8%)
SURVEILLANCE		
Countries reporting any surveys that measure birthweight and/or weight		
and height and/or anaemia, iron or folate status of women in reproductive		
age	74%	76%
% Countries reporting that last survey was conducted within past 2 years	30%	20%
% Countries reporting that surveys are conducted every 1-2 year or more		
often	15%	12%
% Countries reporting that these surveys include		
Anaemia	52%	48%
Iron status	37%	28%
Folate status	11%	16%

## 5.4.3 Overweight and obesity

Of the 54 countries, 31 had a prevalence of adult female obesity above a set cut-off at 5% of concern, whereas 8 countries had levels lower than 5%.<sup>23</sup>

The 31 countries of concern reported 88 policies that addressed obesity or diet related chronic disease, less than two thirds of which had been adopted and just over half that had a monitoring and evaluation component. In the concern group, more countries reported that these policies addressed child obesity than noncommunicable disease or adult obesity.

Just over a third of respondents from concern countries reported any coordinating mechanisms working on obesity and/or diet related chronic disease, which was less than in the no concern group. All such mechanisms were reported to involve the Ministry of Health. Just under a third of concern country respondents mentioned any mechanism that allocated responsibility to stakeholders, 16% mentioned authority to allocate budgets. In both groups, all countries that reported mechanisms mentioned that these covered adult obesity. In the concern group, a majority also mentioned that they address diet related chronic diseases and child obesity, whereas much fewer reported that they address breastfeeding and complementary feeding. Three quarters of country respondents from concern group, and 68% of countries that these actors engaged in implementation. The Ministry of Health was the actor

 $<sup>^{23}</sup>$  Most of the AMR (12/19) and all of the EMR (4/4) and EUR (5/5) countries had levels of concern. AFR (7/13) and WPR (3/7) countries had a more even distribution (Table 5.4.4). Data were not available for 1 AFR, 7 AMR, 3 SEAR and 2 WPR countries. The concern group was largely made up of AMR countries with representation of all other regions. The non-concern group was largely AFR countries, with a smaller representation of other regions.

most frequently reported to engage in obesity and diet related chronic disease, followed by local NGOs and WHO; few outside government were involved in implementation.

The concern group countries more often reported relevant interventions than the no concern group. Promotion of breastfeeding and behaviour change communication or counselling for improved complementary feeding were mentioned by virtually all concern country respondents. Promotion of healthy nutrition through the media and measures against marketing of high-fat energy dense foods were reported by 58% of respondents. Only 39% of concern respondents reported interventions to promote fruit and vegetable intakes. Most other interventions asked about were reported by around a third of respondents. Only 10% mentioned measures to affect food prices.

National surveys that measured both weight and height, and or specific indices for diet related chronic disease were reported by 84% of concern countries. Yet few countries reported surveys that specifically monitored blood glucose, lipid levels or hypertension. Only a third of respondents reported surveys in the last two years, and another third that they are conducted every two years.

Table 5.4.3.1. Summary of policy environment for countries with high levels of female adult obesity ( $\geq$ 5%), compared with countries with lower levels

	Female	Female
	obesity	obesity
Number of countries which have national data	21	
POLICIES	51	0
% Countries reporting policy documents addressing child or adult		
obesity or diet-related chronic disease	90%	100%
Number of policy documents reported	88	14
% Documents that have been adopted	57%	64%
% Documents that have Monitoring and evaluation	52%	79%
% Countries reporting related issues addressed in these documents		
Child obesity	81%	75%
Diet related chronic disease	71%	100%
Adult obesity	68%	88%
Breastfeeding	61%	100%
Complementary feeding	55%	100%
COORDINATION MECHANISM AND INSTITUTIONAL ENVIRONMENT		
% Countries reporting any mechanism addressing child or adult	39%	50%
obesity or diet-related chronic disease	22	10
diet-related chronic disease	23	10
Average number of sectors involved	3.7	2.9
Most involved sectors in countries	Health 39%, Education/ Research 26%, Food 23%, Agriculture 16%	Health 50%, Education/ Research 38%, Agriculture, Food, Finance and Development 25%
% Countries reporting various degree of authority of coordination		
Allocate Responsibility to Stakeholders	32%	50%
Assign Budget	16%	0%
% Countries reporting related issues being addressed by these	2070	
mechanisms		
Adult obesity	39%	50%
Diet related chronic disease	32%	38%
Child obesity	29%	38%
Breastfeeding	19%	38%
Complementary feeding	19%	38%
% Countries reporting actors and stakeholders addressing obesity or diet-related chronic disease	77%	88%
Number of actors reported	61	17
% Actors with various reported functions		
Monitoring	74%	88%
Coordinating	74%	75%

Research	71%	50%
Implementing	68%	50%
Normative	61%	75%
Funding	55%	88%
INTERVENTIONS		
% Countries reporting implementation of intervention (%countries reporting implementation at national scale)		
Promotion of breastfeeding	100% (90%)	88% (88%)
Behaviour change communication and/or counselling for improved complementary feeding	90% (81%)	88% (75%)
Promotion of healthy nutrition through media (e.g. TV, radio, newspapers, posters, websites)	58% (55%)	38% (38%)
Marketing of high-fat, energy dense, and/or micronutrient-poor foods	58% (39%)	25% (25%)
Measures to promote fruit and vegetable intakes	39% (35%)	13% (13%)
Measures/initiatives to remove/reduce the salt content of processed foods	32% (23%)	0% (0%)
Workplace-based intervention programmes	32% (19%)	13% (0%)
Measures/initiatives to remove/reduce trans fatty acids (TFA) from processed foods	26% (23%)	0%
Vending machines not allowed on school premises	23% (10%)	13% (13%)
Measures to affect food prices (e.g. high fat, salt, sugary products)	10% (3%)	0%
SURVEILLANCE		
% Countries reporting any surveys that measure weight and height, and/or chronic disease indicators	84%	100%
% Countries reporting that last survey was conducted within past 2 years	32%	50%
% Countries reporting that surveys are conducted every 1-2 year or more often	29%	38%
% Countries reporting that these surveys include		
Dietary intake	55%	75%
Household expenditure	48%	50%
Blood Lipids	35%	0%
Hypertension	35%	13%
Blood glucose	32%	0%

## 5.4.4 Double burden of malnutrition

Fifteen countries were identified as having levels of concern of both child stunting ( $\geq 20\%$ ) and female adult obesity ( $\geq 5\%$ ) indicating a double burden of malnutrition, whereas 20 countries had data which did not indicate such a double burden.<sup>24</sup>

Fewer countries with a double burden of malnutrition (67%) than countries without (90%) reported polices that simultaneously address issues related to both under- and overweight, and overall these policies less often addressed important interventions for prevention, Moreover, their policies were less often adopted though around 90% included M&E. The concern countries more often reported that such policies address underweight, stunting or wasting (all

<sup>&</sup>lt;sup>24</sup> The countries where a double burden of malnutrition exists were largely in AFR (6/13) and AMR (5/19), with a smaller representation of EMR (2/4) and WPR (2/7), whereas those with no double burden were largely in AFR (6/13), AMR (6/19), with a smaller representation of EMR (2/4), EUR (1/5), SEAR (3/&) and WPR (2/7). Nineteen countries (1 AFR, 8 AMR, 4 EUR, 3 SEAR and 3 WPR) had insufficient data to determine existence of double burden of malnutrition.

at 60%) than child obesity (53%), adult obesity (47%) or diet related chronic diseases (47%), and about half that they include breastfeeding and complementary feeding.

Only just over a quarter of the double burden countries reported any coordinating mechanism addressing both under and overweight, though they tended to be multisectoral on average involving six sectors, all of them health, agriculture and food sectors. All of them were reported to have authority to allocate responsibility to stakeholders, whereas only half to allocate budgets. As for the policies, the coordination mechanisms were more often reported to deal comprehensibly with undernutrition than obesity and diet related chronic disease or breastfeeding and complementary feeding.

Most countries in both groups reported actors that focus on both under- and overweight. Among the various actors reported in the double burden group, 60% were engaged in implementation compared with 80% involved in normative activities. These actors were mainly either from the Ministry of Health or WHO, where the former was more involved in implementation (data not presented).

The proportions of countries reporting implementation of various interventions related to the double burden were similar to that reported in table 5.4.4 for obesity. All countries with a double burden reported breastfeeding promotion, behaviour change communication or counselling for complementary feeding and micronutrient supplementation programmes for women and children. About half reported promotion of healthy nutrition through media, and a third measures to promote fruit and vegetable intakes, against marketing of unhealthy foods and salt reduction initiatives. Only 20% of concern country respondents mentioned any work based interventions, while only 7% mentioned that vending machines were not allowed on school premises. Only a third mentioned the promotion of fruits and vegetables. All concern countries were reported high implementation of all context nutrition interventions highlighted by the Lancet series, and about a third high implementation of those that are suitable in specific contexts.

Thirteen percent of countries with a double burden of malnutrition reported no national surveys that included indicators for both under and overweight. Two thirds included birth weight, but only 20% included blood glucose or lipids or hypertension. About half of the concern countries were reported to have had a survey in the past two years, and 40% reported that these surveys occur every two years.

Table 5.4.4.1. Summary of policy environment for countries where double burden of malnutrition exists, i.e. with level of concern of child stunting ( $\geq 20\%$ ) and high levels of female obesity ( $\geq 5\%$ ), compared with countries which do not have a double burden

	Double burden	Double burden
	exists	does not
	45	exist
Number of countries which have national data	15	20
POLICIES	<	200/
Proportion of countries reporting policies that address both under- and overweight	67%	90%
Number of policy documents reported	18	34
Proportion of documents that have been adopted	50%	71%
Proportion of documents that have monitoring and evaluation	89%	91%
Proportion of countries reporting that these policies address		
Underweight	60%	90%
Stunting	60%	85%
Wasting	60%	85%
Child Obesity	53%	80%
Breastfeeding	53%	85%
Complementary feeding	53%	85%
Any supplementation to children	53%	80%
Any supplementation to women	53%	80%
Adult Obesity	47%	75%
Diet related chronic disease	47%	80%
COORDINATION MECHANISM		
% Countries reporting any mechanism addressing both under- and	27%	30%
overweight		
Number of mechanisms reported	6	12
Average number of sectors in countries	6.1	3.4
Most involved sectors	Health 27%,	Health 30%,
	Food 27%,	Research 20%,
	Education/Research	Food 20%
	20%, Social Welfare	
% Countries reporting various degree of authority of coordination	2070	
mechanisms addressing both under- and overweight		
Allocate responsibility to stakeholders	27%	30%
Assign budget	13%	0%
% Countries reporting related issues being addressed by these		
mechanisms		
Underweight	27%	30%
Stunting	27%	30%
Wasting	27%	30%
LBW or maternal undernutrition	27%	30%
Adult obesity	20%	15%
Diet related chronic disease	20%	25%
Breastfeeding	20%	30%
Complementary feeding	20%	30%
Child obesity	13%	25%
% Countries reporting actors and stakeholders addressing both under- and overweight	80%	85%

Number of actors reported	22	37
% Actors with various reported functions		
Normative	80%	75%
Monitoring	73%	80%
Coordinating	67%	70%
Research	67%	65%
Implementing	60%	70%
Commercial	60%	70%
Funding	7%	5%
INTERVENTIONS		
% Countries reporting implementation of intervention (%countries reporting implementation at national scale)		
Promotion of breastfeeding	100% (93%)	95% (90%)
Behaviour change communication and/or counselling for improved	100% (87%)	90% (80%)
complementary feeding		
Any supplementation to children	100% (87%)	70% (60%
Any supplementation to women or pregnant women	100% (100%)	90% (85%)
Promotion of healthy nutrition through media (e.g. TV, radio, newspapers, posters, websites)	53% (47%)	55% (50%)
Measures to promote fruit and vegetable intakes	33% (33%)	40% (35%)
Marketing of high-fat, energy dense, and/or micronutrient-poor foods	33% (27%)	55% (40%)
Measures/initiatives to remove/reduce the salt content of processed foods	27% (13%)	25% (25%)
Workplace-based intervention programmes	20% (13%)	40% (20%)
Measures/initiatives to remove/reduce trans fatty acids (TFA) from processed foods	13% (13%)	30% (25%)
Measures to affect food prices (e.g. high fat, salt, sugary products)	13% (7%)	5% (0%)
Vending machines not allowed on school premises	7% (7%)	20% (15%)
Interventions highlighted in the Lancet Nutrition Series	, <i>,</i>	× ,
% Countries reporting high implementation of all context interventions	100% (73%)	60% (45%)
% Countries reporting high implementation of specific situational	67% (20%)	50% (15%)
contexts	· · ·	· · ·
SURVEILLANCE		
% Countries reporting to measure both under and overnutrition indicators	87%	100%
% Countries reporting that last survey was conducted within past 2 years	53%	30%
% Countries reporting that surveys are conducted every 1-2 year or more	40%	30%
often		
% Countries reporting that these surveys measure	970/	1000/
Weight	8/% 970/	100%
	8/%	100%
Exclusive breastreeding	8/%	/5%0
Complementary reeding	0/%	/ 5%
Dirui weight	0/%	/0%
	OU%0	/0%
Household expenditure	55%	55%
Blood glucose	20%	35%
Blood lipids	20%	40%
Hypertension	20%	45%

## 5.4.5 Implementation of key maternal, infant and young child nutrition interventions

Table 5.4.6 summarizes the proportion of countries (for the 54 countries that completed all 7 modules) that reported implementation of the set of key maternal, infant and young child nutrition interventions highlighted in the Lancet Nutrition Series, with those reporting implementation at national scale presented in table within brackets. Data are further subdivided into interventions focusing specifically on maternal and birth outcomes or on newborns, infants and child, relevant for all contexts or for specific contexts. There was regional variation reported for the implementation of most interventions. Outside of EUR over two-thirds of respondents reported maternal iron and folate supplementation. Less than a quarter of all respondents reported maternal supplementation with multiple micronutrients (8%AFR-43%WPR) or calcium (0%WPR-33%SEAR). Specific context maternal and birth outcome interventions were covered by less than 40% of all countries: maternal iodine supplementation (0%WPR-25%EMR); maternal deworming (0%EMR-62%AFR). Intermittent malaria treatment and insecticide bednets were most commonly mentioned in higher malaria areas. For interventions aimed at newborns, infants and children, promotion of breastfeeding and complementary feeding were reported by most countries. Zinc supplementation or with treatment of food- and water-borne diarrhoea was rarely mentioned except for treatment of diarrhoea in SEAR (50%) and AFR (31%). Vitamin A fortification or supplementation varied from 42% in AMR to 86% in WPR, although implementation at national scale was generally reported lower. Handwashing or hygiene interventions were mentioned most often in SEAR (100%) and WPR (86%); treatment of severe malnutrition was reported in AFR (69%) and WPR (71%), but less often in SEAR (50%). Newborn, infant and child interventions in specific contexts were only mentioned by more than half of respondents for iron fortification and supplementation programmes (70% of all countries - 41% national scale). Conditional cash transfers were reported in 67% of SEAR countries but not at all in EMR and EUR. Delayed cord clamping varied from 57% in WPR to 0% in EMR.

In summary, 44% of countries reported high implementation (more than half of the interventions being implemented) of all Lancet interventions (all and specific contexts), although only 24% at national scale. This varied from 0% in EMR to 83% in SEAR. Implementation of all context interventions was slightly higher, with high implementation in 63% of all countries (44% at national scale).

Table 5.4.5.1. Proportion of countries by region reporting implementation of the set of direct and indirect maternal, infant and young child nutrition interventions highlighted by the Lancet Nutrition Series

	WHO region						
	AFR	AMR	EMR	EUR	SEAR	WPR	Total
Number of countries	13	19	4	5	6	7	54
% Countries reporting implementation of interventions appropriate to all contexts, maternal and birth outcomes (%							
countries reporting implementation at national scale)							
Iron and folate supplementation	77 (62)	68 (42)	100 (75)	40 (20)	83 (83)	86 (86)	74 (57)
Maternal supplements of multiple micronutrients	8 (8)	26 (21)	25 (25)	20 (0)	33 (17)	43 (29)	24 (17)
Maternal iodine through iodisation of salt	69 (54)	58 (47)	100 (25)	100 (60)	67 (67)	86 (71)	72 (54)
Maternal calcium supplementation	23 (8)	16 (5)	25 (0)	20 (0)	33 (33)	0	19 (7)
Interventions to reduce tobacco consumption or indoor air	15 (15)	58 (47)	25 (25)	60 (40)	50 (33)	86 (86)	48 (41)
% Countries reporting implementation of interventions appropriate to all contexts, newborn, infant and child							
(%countries reporting implementation at national scale)							
Promotion of breastfeeding	92 (85)	100 (100)	100 (75)	100 (80)	100 (100)	100 (100)	98 (93)
BCC for improved complementary feeding	92 (85)	95 (84)	100 (50)	40 (40)	100 (100)	100 (71)	91 (78)
Zinc supplementation	8 (0)	11 (11)	0	0	0	0	6 (4)
Zinc in management of diarrhoea	31 (15)	16 (11)	0	0	50 ( 50)	14 (0)	20 (13)
Vitamin A fortification or supplementation	77 (54)	42 (26)	75 (50)	80 (20)	83 (83)	86 (71)	67 (46)
Universal salt iodisation	69 (54)	58 (47)	100 (25)	100 (60)	67 (67)	86 (71)	72 (54)
Handwashing or hygiene interventions	77 (69)	79 (74)	50 (50)	20 (20)	100 (83)	86 (86)	74 (69)
Treatment of severe acute malnutrition	69 (54)	47 (37)	25 (0)	0	50 (17)	71 (43)	50 (33)
% Countries reporting implementation of interventions appropriate to specific contexts, maternal and birth outcomes (%countries reporting implementation at national scale)							
Maternal supplements of balanced energy and protein	23 (15)	37 (32)	50 (50)	0	67 (33)	57 (29)	37 (26)
Maternal iodine supplements	23 (15)	5 (5)	25 (25)	20 (0)	17 (17)	0	13 (9)
Maternal deworming in pregnancy	62 (46)	11 (5)	0	0	67 (50)	57 (29)	33 (22)
Intermittent preventative treatment for malaria	62 (54)	32 (26)	0	0	50 (50)	29 (14)	35 (30)
Insecticide-treated bednets	69 (54)	26 (5)	0	0	83 (50)	71 (29)	44 (24)
% Countries reporting implementation of interventions appropriate to specific contexts, newborn, infant and child							
(%countries reporting implementation at national scale)							
Neonatal vitamin A supplementation	23 (23)	16 (16)	0	0	0	14 (0)	13 (11)
Delayed cord clamping	31 (15)	47 (32)	0	20 (20)	50 (33)	57 (29)	39 (24)
Conditional cash transfer programmes (with nutritional education) <sup>25</sup>	31	58	0	0	67	43	41
Deworming	62 (62)	37 (26)	0	0	67 (50)	71 (57)	44 (37)
Iron fortification and supplementation programmes	62 (38)	68 (37)	100 (50)	80 (20)	67 (67)	71 (43)	70 (41)
Insecticide-treated bednets	69 (54)	26 (5)	0	0	83 (50)	71 (29)	44 (24)
Summary :%Countries reporting implementation (%countries reporting implementation at national scale)							
% Countries reporting implementation of more than half of all interventions	54 (31)	37 (26)	0	0	83 (50)	71 (14)	44 (24)
% Countries reporting implementation of more than half of the interventions proven effective in all contexts	69 (46)	47 (37)	75 (25)	40 (0)	83 (67)	86 (86)	63 (44)
% Countries reporting implementation of more than half of the interventions proven effective in specific contexts	54 (31)	32 (5)	0	0	83 (50)	71 (0)	43 (15)

<sup>25</sup> No information collected on scale of implementation

## 5.5. Summary of findings

Leading on from the International Conference on Nutrition (ICN 1992), it is clear that all countries that responded to this review have been engaged in developing policies and plans of action to address nutrition challenges as evidenced through the wealth of nutrition policies, strategies, action plans and programmes reported on. Progress on developing these action plans was reviewed in 1999, and the present analysis extends that review to cover more countries and in greater depth than previously. The questionnaire based analysis has also been complemented by recent in depth analyses as part of the Landscape Analysis, and also by case studies.

The analyses presented here are based on the responses, mainly from respondents employed by government, from 119 of 193 member states plus four territories, which makes a total of 123 country respondents. The main question to ask here is do the responses received reflect the breadth and depth of what is actually happening, and are countries that did respond different from those that did not respond. A potential limitation of this analysis is that all information is self-reported and only those countries that are active in nutrition policy would have been motivated to complete the questionnaire. The length of the questionnaires and the level of detail required to answer might have been another limitation why some countries did not submit all seven modules.

For the reporting on policy documents, a thorough screening has been done of all reported policy documents, and only those which have been truly identified as policies, strategies, action plans, regulations or national programmes through inspection of title of document or of submitted documents were included in the analysis. This may have lead to an underestimation of the existing policy base. The list of reported coordination mechanisms was screened in a similar way to exclude single institutions that really are not representing multi-partner mechanisms. For the reporting of other aspects, such as policy content, focus areas of actors and mechanisms, and the implementation of specific programmes, there was no verification beyond clarification with respondents in case of inconsistencies in their responses. The respondents are likely to have reported what they know though other relevant policies and programmes may exist, i.e. underreporting, or perhaps what they think should be in place though it may not be fully implemented or covered in existing policies, i.e. overreporting. Given that most respondents were from Ministries of Health, they may have missed activities in other ministries, in particular agriculture which is closely linked to nutrition. This was however, sought to be addressed through the design of the survey, which consisted of a seven modules questionnaire to be completed by the focal points within each area. For example, Module 3 on the implementation of the International Code of Marketing of Breast-milk Substitutes specifically asked countries to allocate the completion to the legal unit of the Ministry of Health, whereas Module 7 on Food security and agriculture often was completed by employees of this ministry. Respondents were more likely to be based in the capital, and while they may be knowledgeable of national policies, institutions, coordination and surveillance as was asked for in Module 1, they may not know well what is happening in the regions or provinces so they may not have had the full knowledge of whether policies at national level are being operationalised in the regions which was asked for the in-depth topical Modules 2, 4, 5 and 6. While one may argue that the questionnaire may not have captured all aspects of what is happening in nutrition in countries especially on the implementation side, it has captured central stakeholders' awareness of this, which in itself is an important piece of information. Selected in-depth country case studies of policy content reported and document analysis revealed that responses were for the most part accurate, with slightly more incidents of underreporting than overreporting.

Regarding the question of whether respondents are different than non-respondents, almost two thirds of Member States responded, with a higher rate in some regions than others.

Due to these biases, the analysis has focused on broad patterns of responses and variation at a regional level, or between countries based on whether they have a nutrition challenge or not. It was not considered appropriate to focus on particular countries in depth, beyond the many case studies presented which have been provided by countries themselves.

The results presented here appear to be consistent with findings from other surveys and observations, such as the Landscape Analysis Country Assessments mentioned earlier in the report as well as intelligence assembled through the WHO Global Database on Nutrition Policies and Programmes which was developed to monitor the country progress in developing and implementing national nutrition policies and action plans as follow-up to the 1992 International Conference on Nutrition and the subsequent World Health Assembly Resolution. Thus, on balance the likely impression is that what is reported is a fair reflection of what is happening in countries in the regions, though perhaps not capturing all details of the full picture. The Department of Nutrition for Health and Development is continuing country consultation to further verify the data received as well as to obtain information from countries who unfortunately did not provide their responses and inputs during the survey period (i.e. July 2009 - November 2010). Key information on nutrition policy and programme action collected through this review is being incorporated into the WHO Global Database on Nutrition Policies and Programmes and it is also planned to display summary data of selected indicators as part of the country nutrition profile component of the the Nutrition Landscape Information System (NLIS)<sup>26</sup>, where all existing WHO Global Nutrition Databases are dynamically linked to provide integrated information system on nutrition.

## Are there policies in place?

Seventy-five percent or more of countries in all regions have reported policies and programmes that cover all key aspects of malnutrition; i.e. undernutrition, obesity and dietrelated chronic disease, infant and young child nutrition and vitamins and minerals, except for undernutrition among EMR respondents. Infant and young child nutrition was the most frequently mentioned topic in all regions. Undernutrition was usually more frequently addressed in policies than overweight and diet related chronic diseases by AFR and SEAR respondents, while EMR and WPR respondents more often reported overnutrition than undernutrition as a policy topic. Moreover, a majority of all respondents reported to have broad policies that covered all these aspects in one policy or strategy, except EMR where only half of respondents reported this.

## Are the policies operationalised into action in each of the main areas of nutrition?

Virtually all respondents (99%) reported policies that covered infant and young child nutrition, with breastfeeding more often mentioned as a policy topic than complementary feeding. Breastfeeding promotion followed by counselling for complementary feeding were also the interventions that were most frequently reported implemented and at national scale in all regions.

<sup>&</sup>lt;sup>26</sup> www.who.int/nutriiton/nlis

All AFR, EMR and SEAR countries reported policies or regulation that covered the International Code of Breast-milk Substitutes. Looking at data available to WHO for 136 countries and territories, a majority of countries in most regions except AMR have legal measures in place. However not all countries with legal measures reported to cover key provisions of the Code. The measure most often covered, was mandatory labelling of breastmilk substitutes with a message of the superiority of breastfeeding. Overall, EUR and EMR were the regions to less often report full or partial coverage of the measures. From the survey data, AFR respondents most often reported that their IYCF policies covered policies and actions recommended by the Global Strategy on Infant and Young Child Feeding, whereas EMR respondents most often reported that a majority of hospitals were accredited BFHI. Other routinely collected data on all countries has indicated that EUR is most consistently implementing at least three out of four high priority actions from the Global Strategy (the Code, BFHI, maternity leave and training in IYCF to promote maternal and child nutrition).

In the category of undernutrition, underweight was the most frequently mentioned topic, followed by low-birth-weight, stunting, wasting and maternal undernutrition. Existence of policies addressing maternal undernutrition in particular was variable across the regions, and was the least mentioned by EMR respondents.

While most countries reported implementation of several key maternal, infant and young child nutrition interventions, there was considerable variation regarding specific interventions. For example, distribution of complementary food or maternal supplements of balanced energy and protein were most commonly reported in AMR and SEAR, whereas management of SAM was most common in AFR and SEAR and of MAM in AFR, yet not all countries reporting implementation mentioned that they have appropriate protocols.

In order to prevent undernutrition, it is crucial to reach adolescent girls, for example through school-based programmes. Most countries in all regions reported nutrition activities in schools, especially training of staff in nutrition and health was common in all regions, whereas safe water and hygiene were common in all regions except AFR.

Existence of policies and programmes dealing with nutrition in emergencies was less consistent across regions. Food aid was most often mentioned as a policy issue by SEAR followed by AMR and AFR. Few countries outside AFR and WPR reported having a policy for infant feeding in emergencies.

Most countries mentioned having policies addressing obesity and nutrition related NCDs, however not all of these countries mentioned that their policies addressed both child or adult obesity. The majority of policy implementation tools focused on information approaches through guidelines, labels and promotion of healthy eating though the media. Of countries with labelling instruments, 75% were regulated by statute. Nutrition counselling in primary care was mentioned by over a half of all respondents Promotion of fruits and vegetables was reported by less than half of respondents, except AMR where 70% reported this at national scale. About half of respondents reported that marketing of unhealthy foods and beverages is not allowed in schools, whereas a third indicated that regulation exists. Measures against marketing was most commonly reported in WPR and least in AFR, and the prohibition of vending machines in schools showed a similar regional distribution. Few mentioned any instruments to reduce salt or trans-fatty acids in the diet, except in EUR where almost half of respondents reported salt reduction measures.

Vitamin and mineral nutrition, iron-folate supplementation to women was most commonly mentioned as covered by national policies in all regions. This was also reflected in the reported implementation of programmes, where iron supplementation to pregnant or all women was the programme most often mentioned in all regions, with EUR reporting the lowest implementation. In all regions, most countries also reported folate supplementation to the same target group, however much fewer reported folate supplementation to all women which would have ensured reaching women before pregnancy.

Less than a third of countries mentioned recommendations for supplementation in anaemic women. Other supplementation programmes targeted at women (vitamin A, multiple micronutrient supplementation, etc) were not often reported being implemented in any region. Regarding supplementation programmes targeted to children, AFR and SEAR both reported high policy coverage and implementation of vitamin A to this age group. Zinc supplementation showed the same regional pattern. Iron-folate was reported distributed through schools in a majority of SEAR and half of WPR respondents, whereas vitamin A by about half of AFR, SEAR and WPR.

Fortification was frequently mentioned in national policies in all regions and programmes focused on the following food groups: wheat flour, complementary foods, salt, margarine/butter, oil and sugar. The range of nutrients added to flour varied considerably by region; survey results were reinforced by data supplied by the Flour Fortification Initiative. It was not clear that the range of nutrients reflected the apparent state of nutrient deficiencies in a country. The most comprehensive coverage was reported for iodized salt which was mandatory in almost half the responding countries; although there was regional variation with EMR reporting highest implementation and AMR the lowest.

The more detailed content of polices and their focus on underlying issues varied across regions. Policies addressing nutrition and infection as well as infant feeding in the context of HIV/AIDS were most commonly mentioned in AFR, AMR and SEAR, but less often in WPR, with a similar regional pattern for the reported implementation of nutritional care and support for people living with HIV/AIDS.

Wider health interventions were reported as part of the nutrition policy activity. Promotion of handwashing was mentioned by three quarters of respondents as being part of nutrition activities. Deworming was most often reported for young as well as school-age children in AFR, SEAR and WPR, and for pregnant women in AFR and SEAR. Health interventions related to malaria prevention or treatment were most often mentioned by AFR and SEAR respondents followed by WPR, whereas interventions to reduce maternal tobacco consumption or indoor pollution was most often mentioned by AMR, EUR and WPR respondents. Promotion of delayed cord clamping was mentioned by only a third of respondents. It might be that respondents filling in the questionnaire have not been aware of wider health interventions such as tobacco reduction initiatives or protocols for birth assistance.

A separate module asked about existing food and agriculture strategies and their related policy goals, in which most respondents listed relevant policy documents and provided information about activities related to food and nutrition security and related policy goals and food groups covered. The most commonly mentioned activity was research and extension as well as provision of seeds. The strategies and activities reported were seldom linked to nutrition goals, and overall the emphasis of activities in this area was related to promoting farm incomes and output.

Regarding the more underlying issues of nutrition, few respondents except those in AMR mentioned conditional cash transfers as part if their nutrition policies. SEAR respondents reported most often that policies addressed gender and/or vulnerable groups, whereas EMR the least.

#### Are policies and action addressing existing nutrition challenges?

Regional variations in reported nutrition policies and programmes do to some extent match the epidemiology of nutrition challenges, as discussed above regarding regional variation in nutrition and HIV/AIDS, malaria and deworming.

The 54 country subset analysis of the nutrition policy cycle in countries with and without levels of concerns revealed whether countries with certain nutrition challenges have an appropriate policy response. With regard to stunting and maternal undernutrition (mostly from AFR), countries of concern tended to report more relevant policies, coordination mechanisms and institutions, interventions and surveillance than other countries. Regarding stunting, a majority of the concern countries reported that important issues like breastfeeding, complementary feeding and vitamin A was consistently addressed in policies, by coordination mechanisms and with actions. Other issues however were less consistently addressed, for example supplementation of zinc to children which seemed to be implemented in more countries than for which there exist a policy basis. Regarding maternal undernutrition, concern countries reported to address important issues in their policies, with the exception of less than half reporting that policies covering maternal nutrition were reported to be gender focused. However, less than half of concern countries report that there are coordination mechanisms focusing on maternal undernutrition, and only a third report that they implement a larger part of the key maternal, infant and young child nutrition interventions highlighted by the Lancet Undernutrition Series.

With regard to obesity and the double burden of malnutrition however, the concern countries tend to report less measures than the no-concern group, in particular in the area of policies, though less so for programmes. For obesity, more countries with low levels of female adult obesity report policies and coordination mechanisms addressing adult obesity than those with high levels, with only some third of concern countries report mechanisms addressing obesity or nutrition related NCDs. Regarding actions however, concern countries were more consistently reporting to implement relevant interventions, though less than half of them mentioned important interventions like promotion of fruits and vegetables, down to not more than a tenth of countries with an obesity problem reporting measures to affect food prices. Regarding the double burden of malnutrition, not only were the policies and coordination mechanisms in countries where a double burden exists less consistently addressing under- and overweight, but also the implementation of relevant interventions to combat either under- or overweight was often lower than in countries where there is no double burden. Also, only one country with a double burden problem reported actors focusing on both under- and overweight that have a funding role. Nevertheless, all countries with a double burden did report a high implementation of the key maternal, infant and young child nutrition interventions highlighted by the Lancet Nutrition Series.

Overall, since ICN1992, most countries that responded to this survey have developed policies that should be addressing the prevailing nutrition challenges, except for focusing on gender and maternal undernutrition.

#### Nutrition Governance

Not all policies in all countries were reported to have been officially adopted by their government, one positive exception being WPR where all respondents reporting IYCF policies in Module 2 mentioned that it had been adopted. There were also few countries who reported their broader national development plans among the key nutrition policy documents, except for SEAR and AFR.

A majority of respondents reported that there exist coordination mechanisms - often several in each country. In all regions the vast majority of coordination and administration of policies was within Ministries of Health, with variable input from Education, Agriculture, Food, and Social Welfare departments. Of external partners, UN agencies were most often reported involved in countries in AFR and SEAR, whereas NGOs/civil societies and bilaterals were to a variable extent reported to be partners in nutrition policies. Few countries outside SEAR reported that these mechanisms were established under Prime Minister's or President's Office. Moreover, their authority was usually limited to allocation of responsibilities and rarely the control of budgets.

More than half of respondents reported having national breastfeeding coordinator, with EMR most often reporting this.

#### Targeting vulnerable groups and coverage

In most regions, the nutrition policy documents reported appeared not to be systematically targeted at women or groups in vulnerable situations. SEAR respondents reported most often that policies addressed gender and/or vulnerable groups, whereas EMR the least. Specific interventions and policy implementation tools were often reported to be implemented at a national scale. Overall, breastfeeding promotion and complementary feeding were the most commonly mentioned activities by all countries in all regions. Regarding coverage, some of the vitamin and mineral supplementation programmes and many of the programmes regarding obesity and nutrition related NCDs were more often reported at national scale than other interventions, followed by the key IYCN interventions. In EMR, a majority of schoolbased interventions were reported at national scale.

#### Is there adequate information available to monitor and evaluate polices?

Most countries reported that surveys were conducted and that they have monitoring and evaluation in place for the various programmes. Almost all countries report height and weight data, but not for all age groups. Moreover, few countries reported recent national surveys or that they were conducted frequently to reliably assess trends of existing nutrition challenges over time, as shown in the data from the more in-depth analysis in 54 countries.

The coverage of indicators reported did not match well against the information that would be ideal to monitor both progress on nutrition challenges and uptake and impact of interventions. Few mentioned measures for specific vitamins or minerals, or chronic disease risk factors. Fortification monitoring was rarely mentioned outside of AFR.

A majority of policy documents were reported to include M&E components, and many countries had specified responsible bodies for this actity. Regarding Code implementation, almost half of the countries for which WHO has information have reported monitoring mechanisms that meet all or some criteria set out in the Code and subsequent WHA resolutions.

# 6. Conclusions: identifying the gaps

# 6.1. Nutrition challenges remain high

The true test of the effectiveness of policies and programmes is the measured change in key outcome measures- changes in rates of malnutrition and ultimately reductions in age and disease specific morbidity and mortality rates. As judged by the Millennium Development Goals, such as MDG 1 as well as other MDGs which nutritional well-being contributes greately to their achievements, there are large parts of the world that are not making adequate progress. The starkest statistic is the hundredfold variation in maternal mortality rates around the world. Over one billion people are chronically undernourished and many low- and middle-income countries, in particular those in Africa have not achieved reductions in wasting, nor stunting as well as various micronutrient deficiency disorders, while rates of overweight and obesity are rising. There is now good evidence that stunted children are more susceptible to becoming overweight and obese and more likely to suffer from noncommunicable diseases in later life, and that the rates of chronic diseases will rise rapidly unless maternal and childhood nutrition are improved.

## 6.2. Nutrition policy has made progress in the last 20 years

Although since the 1992 International Conference of Nutritionmost countries have developed and implemented their national nutrition policies or action plans, this review has indicated that only about fifty percent or more of countries in all regions have reported to have national policies, strategies or programmes that cover all key aspects of malnutrition. This discrepancy indicates the need for a follow-up with countries in further obtaining information, in particular from those who were not able to provide inputs during the survey period.

Regional nutrition strategies and frameworks have been developed almost all regions and nutrition is now being considered alongside food security and maternal and child health in the context of important policy commitments, such as the G8 development Ministers' in Muskoka, Canada.

The case study from Brazil shows that dramatic changes can be achieved in stunting in a relatively short time frame if the right combination of actions are taken, and are supported at the highest level. Gaining political commitment backed up by resources and legislation (laws and regulation that enforce polices) are key factors in successful policies and programmes. Some good achievements have also been documented in breastfeeding promotion, in curbing childhood overweight, in reducing the consumption of salt and trans fatty acids.

## 6.3. Policies inadequate or not implemented

However, the persisting challenges indicate that the current approaches to addressing the nutrition challenges are not effective enough. It is important to ask why, and not to assume that the answer is that more of the same polices are needed.

Findings from this review also confirm the findings of the cross-cutting issues identified among those 12 high stunting burden countries that have undertaken Landscape Analysis country assessment during 2008 - 2010 (WHO 2010). The implementation gaps seem particularly to be linked to having a full set of interventions to comprehensively address the double burden of malnutrition, and implementing them at national scale. This review has

demonstrated that countries indeed have a variety of nutrition policies and strategies in place which renewed efforts to highlight nutrition can and should be built on. The policy base however, does not always respond to country challenges, in particular regarding the increasing publie health problem of obesity and the double burden of malnutrition. Countries in the African region which already have a high burden of undernutrition, increasingly also have to address growing rates of overweight and chronic diseases. Moreover, it may not cover key issues such as maternal nutrition or both child and adult obesity, or key interventions such as zinc supplementation to children. Food security strategies did not include policy goals to address all forms of malnutrition. Many policies had not been officially adopted, which may give less authority for securing necessary funding and political support for implementation. While a large number of actors were reported from various sectors and constituencies, their reported roles indicated that more were involved in coordination than in implementation, even if not all concern countries had coordination mechanisms in place. A clarification of the roles of actors and coordination mechanisms may be necessary to facilitate scaling-up in countries through capitalizing on and strengthening existing opportunities and structures.

Despite some observed shortcomings at central level, many key interventions are being reported to be implemented at national scale by the vast majority of countries including breastfeeding promotion, counselling for complementary feeding, iron supplementation to pregnant women or all women, and training of school staff in nutrition. Yet the rates of exclusive breastfeeding are not increasing as rapidly as they should during the two past decades, complementary feeding practices still remains sub-optimal, micronutrient deficiencies are persisting, and both undernutrition and overweight and obesity problems remains great challenges among school-age children. This shows the need for a comprehensive approach where a series of important and mutually reinforcing interventions are being implemented and at national scale. Though many other key interventions also were reported by a large number countries, the weakest areas seemed to be obesity and nutrition-related NCDs where many countries with concern did not report implementation of key intervention. However, this may be due to the fact that many of those NCD specific interventions are not necessarily included in policies and strategies to address nutrition issues and this is an area which requires further review as the undernutrition and overweight/obesity and related NCDs are not totally separate issues, in particular low- and middle-income countries going through rapid transition.

Based on the information compiled from this review as well as from experiences from the Landscape Analysis country assessment implemented in 12 high burden countries, indicate the great need to strengthen monitoring and evaluation processes in countries. In most countries, large amounts of nutrition-related data are available, but while many countries reported they conduct national surveys, these are not conducted regularly and even where the routine nutrition data collection process and outcome data collected, they are rarely, if at all, being verified for completeness and accuracy. Often a large number of indicators are collected, but there appeared to be little understanding of how these are linked to each other or how they relate to the performance of nutrition programmes and interventions being implemented. Data on the coverage and quality of nutrition interventions were absent in most cases. Countries are data-rich, but information-poor. Senior managers often expressed uncertainty as to: 1) how to reconcile the nutrition data coming from different sources and with different biases and completeness, and 2) how to interpret these available data. As a consequence, they are not being used for policy development or decision-making purposes nor for evaluating the effectiveness of nutrition programmes and interventions at any level. It is, therefore, critical to ensure that monitoring and evaluation plans be included as part of the countries' scale up plans in order to effectively manage the efforts to accelerate action in countries.

Data on the extent, causes and consequences of nutrition challenges, will help increase the demand for effective interventions at the government and service provision level and may also increase the awareness at high political level which may lead to adoption of policies and stronger commitment fo implementation, whereas communication will trigger demand from consumers. For example, just some half of countries responding reported having labelling of food with nutrition information. This survey only asked for national surveys, however previous Landscape Analysis country assessments have showed an unsatisfactory flow of routine data as well.

The wider determinants and challenges at different levelsshow that what is required is a dualtrack approach, continuing to treat and moving to prevention. How well do current policies achieve this dual track approach? It did not seem that food and nutrition security were either well integrated or appreciated by respondents who mainly came from Ministries of Health. Opportunities to use existing nutrition services to support wider health interventions were not being fully exploited. Nutrition coordination mechanisms were rarely described to be anchored in the President or Prime Minister's Office, suggesting that it is not given the highest priority, and key actors rarely had control of the budgets.

Outside of SEAR and AFR few countries reported national development plans as important policy documents to advance nutrition, suggesting that nutrition was not likely to be well integrated with poverty alleviation and other social development plans (or that respondents were not aware of this) that have been shown to be fundamental to incremental gains in addressing malnutrition. This has been confirmed in the Landscape Analysis Country Assessments, which observed a lack of awareness and understanding, at all levels, from national to local community level of the importance of fetal and infant growth on the well-being of the whole population.

Overall, country readiness to accelerate nutrition action varies across regions. While a comprehensive policy that is officially adopted and effective and multisectoral coordination mechanisms with sufficient authority form the basis for sustainable and large scale action, scale-up plans also need to consider factors for successful implementation such as financial and human resources, infrastructure for outreach, as well as systems for monitoring and evaluation.

## 6.4. A summary of policy gaps

The policy gaps identified by this review through the policy questionnaire as well as other information cited can be summarised as follows:

## Design and content of policies and programmes

- Policies do not adequately respond to existing nutrition challenges in countries and regions, in particular the double burden of undernutrition and overweight as well as maternal nutrition. The design of policies and programmes also needs to take into account how to combine universal and targeted policies, and the appropriate mix of structural (more intersectoral) interventions and interventions on exposures and vulnerabilities and differential consequences of ill-health. The design of policies is required to take into account the interests, evidence and capacities of difference sectors involved, especially with respect to interventions on structural determinants of health inequities. This was demonstrated in the case study on the Pan American Alliance for Nutrition and Development.
- Nutrition policies do not adequately consider gender and groups in vulnerable settings

- Nutrition policies often do not include evidence-informed key interventions in a comprehensive manner
- Conditional cash transfers, trade and food security are often not addressed consistently in nutrition policies across regions.
- Food security strategies do not adequately include policy goals aimed at comprehensively addressing malnutrition in all its forms, including the vicious circle between malnutrition and food-borne diseases.
- National development plans as well as PRSPs are seldom considered as important policy documents to advance nutrition.
- Policies do not clearly articulate operational plans and programmes of work that:
  - have clear goals and targets with timelines and deliverables;
    - o specify roles and responsibilities for those involved;
    - identify the capacity needs and areas of competencies required for the workforce (including evaluation);
    - build in process and outcome evaluation using appropriate indicators for the work areas.
    - o Have necessary and adequate budgets for implementing policies

### Nutrition governance

- Nutrition policies are often not officially adopted
- There is inadequate or ineffective coordination within and between ministries as well as UN agencies and other development partners in countries.
- Not all countries have specific coordination mechanisms that address existing nutrition challenges
- Coordination mechanisms are seldom anchored at high level policy-making framework or structure where it could have efficiently involved all relevant sectors, such as Prime Minister's, President's office or planning commission, or any other relevant place in the context of the countries
- There are often inconsistencies and discrepancies between national policy and provincial or district level policies and programme implementation.

## Implementation

- Implementation of key interventions across the lifecourse is not comprehensive, with only some few interventions being broadly implemented in all regions
- Interventions are seldom implemented at national scale
- Beyond promotion of breastfeeding and complementary feeding, maternal, infant and young child nutrition interventions are not adequately implemented or scaled-up.
- Key provisions of the International Code of Marketing of Breast-milk Substitutes as well as other high priority actions of the Global Strategy on Infant and Young Child Feeding are not adequately covered
- Vitamin and mineral supplementation and fortification programmes are inconsistent but generally inadequate across regions, both in terms of nutrient mix, target groups and coverage. Women are not reached with important interventions before they enter pregnancy
- Implementation of programmes to address obesity and nutrition related NCDs varies much across regions, with low implementation in regions where the double burden is an increasing concern

- Settings such as schools and workplaces are not sufficiently used to enhance reach and delivery of key interventions. School-based interventions do not cover the full range of undernutrition and overweight faced by countries
- National capacity in public health nutrition is limited, especially among nurses and other community workers who are primarily responsible for delivering nutrition programmes but also at all levels of the system including UN Agencies. A more in-depth mapping of capacities in nutrition is needed.
- Financial resources for nutrition are lacking and there is a high reliance on development assistance jeopardizes the sustainability of nutrition programmes. Those with responsibilities for addressing nutrition challenges tend not to have control over budgets.

## Monitoring and evaluation

- o National nutrition surveys do not adequately cover key nutrition indicators disaggregated by key equity stratifiers
- o Indicators on determinants valuable to other sectors should also be investigated to promote intersectoral coherence across surveillance and evaluation system.
- National nutrition surveys are not conducted routinely in timely manner
- Most policies did include M&E, however insufficient flow of routine data has been reported, so that policy makers are not well informed and the needs for community level intelligence are not met
- Too few countries have established monitoring mechanisms for the International Code of Marketing of Breast-milk Substitutes

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